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SWITCH System DLBB Functional Product Specification

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1. INTRODUCTION

The SWITCH® System is an operations system to inventory and assign digital central office switching equipment and related facilities. It has been expanded to support digital loop transport technology as well. It will allow the Bellcore Client Companies (BCCs) to provision a digital network, efficiently and economically. The SWITCH system provides a computing methodology and a database structure that supports quick incorporation of new technological developments and accommodates differences in technology between vendors. The SWITCH system supports digital and other new technologies/services in a single, integrated, flow-through provisioning system. In particular, the SWITCH system is designed to handle ISDN inventory and assignment requirements, and to facilitate ISDN flow-through provisioning. The SWITCH system is also designed to support inventory and flow-through assignment capabilities, as appropriate, for digital overlay networks and integrated digital facilities.

The SWITCH system is the catalyst for the Digital Loop Electronics (DLE) provisioning architecture. The SWITCH system will assist the BCCs in increasing the automation of their assignment and record keeping functions to better manage and utilize central office equipment, distributing frames, DLE facilities and circuits. It will provide integrated inventory and flow-through assignment control for circuit switches, packet switches, ISDN switches, derived channel technologies, and for any associated transmission equipment and intra-office facilities (e.g., tie pairs) required to support the provisioning of these switches and technologies.

The SWITCH system is designed according to OSCA® principles, which are based on an open architecture, well-defined functions and interfaces, and modular design structures. The SWITCH system follows the OSCA open architecture principles as closely as possible considering the evolution of OSCA principles and computing technology.

This document contains the current understanding of the functional product design for release 3.0 of the SWITCH system. Significant enhancements to the 3.0 release of the SWITCH system are support of Local Number Portability, support for new switching generics, upgrades to DLE equipment, and operability improvements.

This document is not a commitment on the part of Bellcore to implement any feature. Such commitments are made by formal release commitment letters. The same is true of any discussions of future enhancements or staging strategies.

Changes may be required during the implementation process due to unforeseen problems or resource limitations. Such necessary changes will be made as required and may result in differences between the description herein and the way the SWITCH system is ultimately implemented. Significant changes will be discussed and resolved with the appropriate BCC subject matter experts.

1.1 Motivation for the SWITCH System

In the 1990's, emerging technological advances will occur at an increasingly rapid rate, resulting in large-scale applications of digital technologies. The telecommunications network will evolve rapidly towards a digital, software-based, high-capacity structure that will both replace and coexist with today's network. The increasingly rapid introduction of digital switching and transport technology will offer tremendous potential for new types of services and revenues and is already causing a strain on the BCCs' ability to provide the proper mechanization and operational procedures to administer these new technologies and services. The primary thrust for the SWITCH system is to provide an enabling environment that will allow our clients to become more profitable in an increasingly competitive world.

The development of the SWITCH system is driven by the following business needs:

- The need to handle the rapid introduction of new technologies, new services, different vendors, and different vendor products
- The need to drive down operating expenses through low-cost, flexible operations and flow-through provisioning
- The need to make more efficient use of capital dollars through more effective planning and use of equipment and facilities
- The need to evolve toward major changes in database architecture in order to minimize data duplication, better manage data redundancy, and move toward an open, modular operations system structure that will provide easy user access to its data
- The need to make significant changes in today's provisioning systems to facilitate direct customer-control capabilities, in order to accommodate the needs of major account customers
- The need to introduce more change-tolerant computing technology in order to reduce the complexity of current processes for major operations system releases, to reduce the need for increasingly complex interfaces, and to provide more timely and user-specific system updates to the BCCs.

The SWITCH system is designed to meet these needs and to provide significantly improved provisioning capabilities to the BCCs. The handling of customer service requests will be automated to the maximum extent possible in order to enable a high degree of flow-through for the provisioning process. The primary goal of the SWITCH system is to provide a modern, cost-effective support environment designed to meet the needs of the evolving digital network architecture, so that the BCCs may avoid inefficient and costly patches to operations systems that were designed for the traditional analog network.

1.2 Objectives

In order to meet this goal, the objectives of the SWITCH system are to provide:

- User tunability and flexibility to accommodate the rapid introduction of new products and to accommodate differences in BCC environments
- The highest degree of provisioning flow-through possible
- Automated handling of new technologies, new services and service architectures, and a multi-vendor product environment
- Well-defined system interfaces to support an open architecture
- A database architecture that supports these objectives

In summary, the SWITCH system will allow the BCCs to avoid costly and inefficient workarounds and manual handling, will facilitate workforce consolidation and savings, and will help to minimize redundant data entry and the associated error resolution. In addition, it will help to avoid rigid algorithms and rigid data structures, which can force organizational restrictions and limit the ability to easily handle changes caused by evolving network technologies.

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2. OVERVIEW

2.1 Architecture

The SWITCH system will meet BCC business needs for integrated inventory and flow-through assignment in the service activation process. As the owner of corporate central office *provisioning* data, the SWITCH system is a major component of the provisioning environment.

The SWITCH system Data Layer Building Block (DLBB) is designed as a set of *contract processors*. A contract is an agreement between the SWITCH system DLBB and any other building block to provide or request data. A *request* is an FCIF message between two building blocks. FCIF, the Flexible Computer Interface Format, is a tag-value language used for internal and external communications. A *response* may be returned to the building block originating the request, may be directed elsewhere, or may be null.

In addition to the DLBB, the SWITCH system has additional building blocks, as shown in Figure 2-1. Human interaction with the SWITCH system is provided through the synchronous terminal User Layer Building Block (ULBB). Users interact with the user layer via *work sessions*. The work session accepts user input, and formulates the appropriate contracts to submit to the data layer. Interactions between the DLBB and ULBB may be in *immediate* mode, where the DLBB processes the request with high priority and the ULBB "waits" for the response, or in *deferred* mode, where the DLBB queues the request for processing while the ULBB is "freed" for other tasks. In deferred mode, responses are sent to the Deferred Contract Output Review (DCOR) system, where they may be viewed by the user.

The Frame Operations Management System (FOMS) provides frame force management support. Manual access into FOMS will be through asynchronous terminals. Asynchronous access into the SWITCH system for transactions commonly needed by frame and RCMAC personnel will be provided by the Frame User assignment System Access (FUSA), which is a special purpose asynchronous user layer building block.

As a major service provisioning operations system, the SWITCH system is a high volume, transaction-based application, accessing large database files, which will use computing hardware capabilities currently available in a mainframe environment. Vendor selection and specific hardware model selection will be the prerogative of each client.

The SWITCH system and its ULBB may run on the same mainframe hardware. Alternatively, some parts of the ULBB (e.g., inquiries and reports) may be on separate workstation hardware using the PAWS (Provisioning Analyst's Workstation System) platform. The SWITCH system is developed primarily in the C language, with some modules in PL/I or in assembler. The application is built upon the provisioning platform PPLAT, an application execution environment for the MVS/IMS SOE. PPLAT provides common support services and open contract access across building blocks.

2.2 Interfaces

The SWITCH system communicates with other building blocks in the provisioning environment. It has on-line communication with SOAC (Service Order Analysis and Control) to exchange provisioning contracts and with MediaPulse/Delivery™ to exchange provisioning contracts and receive corporate database updates. It has on-line communication with FOMS/FUSA to exchange frame related contracts.

Several on-line interfaces are indirect, via SOAC. These are to receive contracts from LFACS (Loop Facilities Assignment and Control System) for work order setup, completion, or cancellation, to send contracts to LFACS and LMOS/NSDB (Loop Maintenance Operations System/Network and Services Database) for Assignment Redundancy Management (common update), and to send contracts to the MARCH® System for Translations Redundancy Management (TRM).

The SWITCH system can receive updates from Customer Centrex Support Systems (CCSS) via FUSA. There is an interface with PREMIS (Premises Information System) for telephone number (TN) lists via Work Manager Consolidation.

The SWITCH system supports several interfaces that are bulk transfers. These may be implemented either as tape or file transfers. These include TIDE (Traffic Information Distributor Editor) and TDAS (Traffic Data Administration System) for traffic data, COSMOS and FOMS for conversion, MELD (Mechanized Engineering Layout for Distributing Frames), PACE (Programs for Arrangement of Cables and Equipment) and FrameMate (a MELD-like interface) for frame layout information, and certain Intelligent Controller (IC) extracts for translation audits or updates.

2.3 Release Plan

Release 1.6, delivered in December 1992, contained significant feature content for *line* side inventory, assignment, and administration. It supported the latest generics of all major Intelligent Controllers, both analog and digital. It was put in live operation in March 1993.

Release 1.6.5, delivered in December 1993, contained significant additional capabilities and was intended for wide-scale deployment.

Release 1.7, delivered in August 1994, completed the line-side functionality with the delivery of area transfers.

Release 1.8, delivered in February 1995, supported digital loop technologies such as IDLC with time-slot interchange, Fiber-in-the-Loop (FITL), and TR-303 based systems.

Release 1.9, delivered in August 1995, provided support for mass market broadband and hybrid fiber coax technology.

Release 2.0, delivered in February 1996, provided enhanced support for broadband networks.

Release 2.5, delivered in November 1996, provided flow-through support of ISDN in a TR-303 DLE environment.

Release 3.0, delivered in November 1997, provided flow-through support of telephone numbers which can now be ported in, ported out, and location ported (within a rate center). This allows the SWITCH system to support service provider portability. This feature has been referred to as Local Number Portability (LNP). Related LNP features include: TN Administration for LNP, Centrex Administration for LNP, NPA Splits for LNP, and Dial Transfers for LNP.

Future releases will be market driven. Near term emphasis is expected to be on DLE, local number portability, loop unbundling, expansion into international markets, keeping current with new technologies and operability improvements.

2.4 Document Overview

This document contains the current understanding of the functional requirements for Release 3.0 of the SWITCH system. Its sections describe the underlying principles and the major functional areas of the system.

All sections are diffmarked, except those that are noted below. The sections that are not diffmarked are either new or changed/rearranged sufficiently to make the diffmarks useless.

Section 3 describes, at a high-level, the entity-relationship database which is used to build the SWITCH system. It describes models for services, circuits, and Intelligent Controllers (ICs).

Section 4 discusses the content of the database, with a description of each type that can exist. Figures and tables in Appendix 4A are not diffmarked.

Section 5 describes inventory processing, the capabilities for adding, deleting, and modifying the contents of the database, and related management tools such as reservations and inventory orders.

Section 6 describes assignment processing and the assignment engine. The tables used to control and tune the assignment process in the SWITCH system are provided. They are not diffmarked.

Section 7 describes the service provisioning process, including both flow-through and non-flowthrough modes of FACS (Facility Assignment and Control System) order processing.

Section 8 describes the associated control contracts.

Section 9 describes the various work orders, such as cable pair transfers and switchport equipment transfers, that are used to rearrange plant, balance traffic load, or for other company-originated purposes.

Section 10 discusses Capacity Activation for DLE.

Section 11 describes conversion of the database from COSMOS to the SWITCH system.

Section 12 describes bulk data processing. This includes bulk data input, that is typically larger in size but smaller in frequency than typical contract interfaces, and bulk processes that modify the database, such as an NPA (Numbering Plan Area) split.

Sections 13, 14 and 15 describe the on-line interfaces for provisioning requests, redundancy management, and frame operations. Appendix 13A contains a catalog of all translation tags.

Section 16 describes the processing of dial transfers.

Section 17 describes the processing of area transfers.

Section 18 describes the set of capabilities for verifying and maintaining database integrity.

Section 19 describes the on-line interface to MediaPulse/Delivery.

Section 20, discusses performance objectives and queuing.

A glossary of acronyms and a glossary of DLBB contracts is provided at the back of this document.

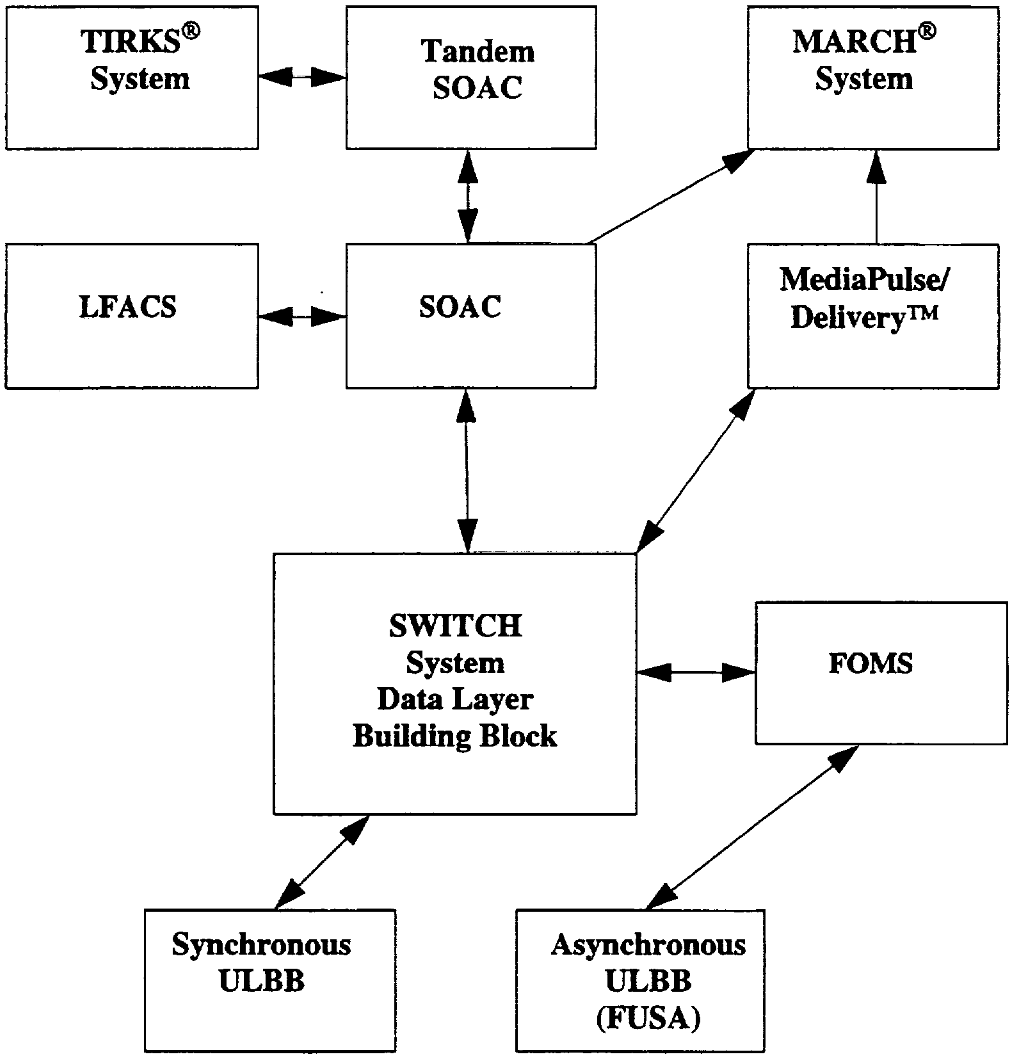

Figure 2-1. The SWITCH System in the Provisioning Environment

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3. DATA BASE STRUCTURE

The SWITCH system database structure is discussed here to provide a basis for understanding requirements described in the following sections of this document. Entity-relationship modeling concepts are used to describe the SWITCH system database.

3.1 The Entity-Relationship Model

The entity-relationship (ER) model is a method used to model the data that is needed by the SWITCH system. The ER model employs three main constructs: entities, relationships, and attributes.

- Entities - Entities are the distinct objects that usually represent components of inventory (e.g. cable pairs). Entities are also called nodes.

  There are three basic classes of entities in the SWITCH system's inventory: network units, groups, and assemblies. Network units are individual inventory items. A network unit will be considered to be the smallest assignable entity in the SWITCH system.

  A group is a collection of like network units or assemblies. A group is represented as an entity in the database. For example, a cable is a group and its individual factors are cable pairs, which are network units. A group can also be made up of other groups. For example, a load division is made up of load groups which are made up of switch ports.

  An assembly is a collection of unlike network units that are associated together in the database. This association can represent either a permanent collection of items or a temporary one. Given certain attributes, assemblies can represent the following types of entities: circuits, services, reservations, or lower level assemblies.

  Each of the three classes of entities in the SWITCH system database contains a few broadly defined types of entities. They are broadly defined in the sense that one basic entity type can be used to represent a family of real-world objects. For example, analog, digital, and packet switch ports are all represented as network unit entities of type "switch port" in the SWITCH system database. The attributes which can be assigned to these basic types of entities, can further define the basic entity to a lower level entity, thereby allowing many different real-world objects to be expressed using a few basic entity types. In this way, a new object can be added to the database by adding new values to existing attribute(s) for an existing basic entity type. For example, if a new type of switch port needs to be inventoried, it could be added to the database through the addition of new attribute values to the basic switch port entity.

- Relationships - Relationships represent interactions among entities. Objects do not normally exist in isolation but participate in some way with other objects. For example, a cable pair is part of a cable, therefore a relationship exits between those two entities. In most instances, the entities that are in a relationship are connected together in the database via an "edge". An edge is a pointer that associates one entity to another. [1]

Each kind of relationship in the database has a name. For example, a cable pair is seen to be a factor of a cable. Therefore, a relationship exists between the cable pair and the cable. The name of this relationship is "factorization".

The relationships in the SWITCH system database have directionality represented by three types of edges:

— One-way edge: One object is related to a second object but the second object is not related back to the first. For example, a cable pair has an edge to a cable. But the cable does not have an edge back to the cable pair.

— Two-way edge: One object is related to a second object and the second object is related back to the first. For example, a circuit entity has an edge to a cable pair and the cable pair has an edge back to the same circuit.

— Three-way edge: A three way edge is a edge that connects three entities. For example, a switch port (SWPT) can be connected to a cable pair. The fact that these two entities are connected help to define a circuit (CKT). Therefore, the circuit must "know" about this type of connection. In this sense the circuit must be associated to these two other entities via one relationship. Likewise, the cable pair must "know" it is connected to the switch port and that this connection is part of a particular circuit. Therefore, a three-way connectivity relationship is used to associate all three entities.

- Attributes - Attributes are units of information that describe both entities and relationships. For example, an attribute of the frame entity is frame type. An attribute of the cable pair/frame relationship is the frame location where that cable pair appears.

Diagrams can be used to provide a picture of the entities and their relationships. In the diagrams in this section, the entities/objects are represented by circles. Some of the more important relationships between the entities/objects are included in the diagrams and are represented by arrows that connect the involved entities/objects for a specific relationship. One-way edges are shown with one-headed arrows, while two-way edges have two-headed arrows. Three-way edges have a connected set of lines with three end points, each with an arrow at the end. Attribute data can also exist for a relationship between entities/objects. The attribute describes something about the particular relationship in which the entities/objects participate. For a complete listing of entities/objects, attributes and relationships, refer to Section 4 of this document.

One of the primary advantages of using the ER database model for the SWITCH system is the relative ease of taking a "real-world picture" and modeling it as a database

1. In addition to edges, entities can be connected together in other ways, such as entries in reference data tables. These other types of connections will not be discussed in detail in this section.

configuration. The database model will be discussed in three sections: intelligent controllers, copper facilities, and DLE facilities. Although intelligent controllers will be discussed separately, they can also be considered part of both the copper and DLE worlds. Each of these views has its own set of entities and relationships. For example, intelligent controllers will be discussed along with switch equipment groups and load divisions; copper facilities with cable pairs, frames, and frame appearances; and DLE facilities with carrier controllers, carrier controller ports, and channels. These real-world objects need to be related to one another in different ways in order to supply service to the customer. The real-world picture can be modeled in an ER configuration by establishing entities for each real-world object and establishing an ER relationship for each real-world relationship.

In the description of both the copper and DLE models the "basic" configurations will be used as a basis for an introduction to the SWITCH system database model. There can be, and there usually are, exceptions to these basic configurations. Since the primary goal of this section is to introduce the database model, these exception cases will not be discussed. To do so would greatly lengthen and complicate this discussion and thereby take away from the fundamental goal of this section. As part of the description of these basic configurations, a set of relationships (i.e., data base edges) will be discussed. This set of relationships is not meant to be exhaustive for the same reasons discussed above.

3.2 Intelligent Controllers

Various types of ICs are supported by the SWITCH system (e.g., 1ESS™ IC, 5ESS® IC). Each type of IC has its own unique characteristics. One of these characteristics is the hierarchical nature of the hardware (see Figure 3-1). At the bottom of this hierarchy for all ICs is the switch port, the equipment that connects the IC to a frame. Switch ports are grouped to form a level of the IC hierarchy. The equipment groups formed by these switch ports are grouped again to form other levels, higher in the hierarchy. The IC hierarchy is different for each IC.

Different assignment functions are performed at these predefined levels. The major types of functions are load balancing, spreading, and measurement. More than one of these functions can be performed at any given level. A load level is the place where the load, or usage, placed on an IC by customer activity, is estimated. A measurement level occurs at the level where measured data, which is a sample of actual customer usage, is gathered. Load balance and traffic measurement can occur at the same level in the IC. Spread occurs at the level(s) where an attempt is made to spread all the services being assigned to one community of interest (e.g., Centrex group) across the IC. In this way, one part of the IC will not become congested with the same calling patterns (e.g., 9:00 a.m. - 5:00 p.m.), which might cause an unbalancing of the load across the IC. Also, a given group will not be put completely out of service by a failure of one part of the IC.

Figure 3-1 depicts the physical hierarchy for analog switch ports in a 5ESS IC. In this figure, switch ports are at the lowest level in the hierarchy, which is level six. Spread, load, and measurement are considered at level four. Spread is done at level two. Spread is also considered at level one, which is the highest level in the IC.

3.2.1 Data Base

Given the hierarchical nature of the IC, the SWITCH system database model of these levels is also hierarchical (see Figure 3-2). A switch port entity exists at the bottom of the data base hierarchy. Many of these switch ports will point to one switch equipment group (SWEQ) entity, that represents a level in the IC hierarchy. Each switch port will have a relationship with the switch equipment group via a one way "factor of" edge. In other words, the switch port is seen as a factor of the switch equipment group. The SWITCH system database will only inventory entities which represent IC levels which are load, spread, measure, allocation, and ISDN. In the 5ESS IC for analog service, there is a spread group and a measurement group at hierarchy level four. There is also a load group at level four. These load groups are grouped in two different ways. All load groups with the same engineered capacity will have a "member of" relationship with a load division (LDIV) entity. The switch equipment groups at level 4 will have "factor of" edges to equipment groups at level two. These level two groups will be spread groups and will have a "factor of" relationship to another spread group at level one, the highest level in the IC hierarchy. Since this is the highest level, the equipment group will have a "factor of" relationship to the IC node. In addition to these hierarchical type of relationships, the SWPT will also have a "controlled by" (CTL) relationship with the IC node, since the switch port can be seen as being controlled by the IC. As mentioned above, this database configuration is specifically for the 5ESS IC. Other types of ICs will follow the same basic principles for equipment groups but with slightly different configurations. This approach allows many different ICs to be modeled and processed the same way.

3.3 Copper

The copper model, as it is represented by the SWITCH system database model, is related to "older" technology equipment. In this model, a copper pair from the outside plant enters the central office and terminates on a main distributing frame. This model is also used for some "older" digital loop carrier systems where the cable pairs represent real-world digitized channels that enter the central office on carrier systems. In this case, "IDLC" pairs are shown "assembled" directly to switch ports. This chapter will not discuss this particular model in detail. Carrier systems will be discussed in more detail in the DLE section, below.

Figure 3-3 shows a simplified view of several central office components needed to provide service to a customer. The figure shows a cable with an identifier, or name, of "2". The figure also shows one cable pair from the cable terminating on frame "F1". The cable pair is identified by a combination of the cable name and a pair identifier, separated by a dash. In this case it is 2-1. The frame where pair 2-1 is connected is frame "F1". A switch port also appears on frame "F1" and supplies a hard-wired connection to the IC - also known as "a switch or a switching machine" (not to be confused with the SWITCH system). The IC sets up and establishes a customer's call, including supplying dial tone and switching (or sending) the call to the appropriate central office. The switch port's identifier in Figure 3-3 is "1ES.1.00.204.315" and the IC's identifier is "1ES.1".

Figure 3-3 shows some basics of the central office equipment. It does not show any connections needed to supply service. Facilities with these connections will be discussed later.

3.3.1 Basic Data Base

Figure 3-4 shows a picture of the SWITCH system's database for the configuration appearing in Figure 3-3. In this figure, cable pair (CP) 2-1 has a relationship, or an edge, to Cable (CA) 2. In this relationship, the pair is considered a factor of the cable, therefore the name of this relationship is "factor of". The CP also has a relationship to frame (FRM) 1; it has a "physical appearance" on the frame, which is the name of the relationship. In a similar fashion the switch port (SWPT) also has a physical appearance relationship to the frame. The SWPT is controlled by the IC so there is a control relationship between the SWPT and the IC. (The frame and the IC are related but only through special tables called reference data (REF). There is no "direct" relationship or edge between these two entities.)

3.3.2 Detailed Data Base

Figure 3-5 shows the primary inventory components of the SWITCH system database and reflects their basic relationships that may be known at the time the inventory is established in the database. Generally, Figure 3-5 should be reviewed starting from the left of the page moving toward the right.

Cable pairs (CP), in the copper model, can be viewed as the "entrance point" into the central office. They typically have a physical appearance relationship to a one or more frame locations. (A cable pair will not have a frame appearance when it is part of a Integrated Digital Loop Carrier system [IDLC].) Cable pairs have a relationship to the Cable on which they reside.

Trunk pairs (TKP) are interoffice facilities that are assigned for non-designed foreign exchange service. One or more of these facilities would connect the cable pair in the local wire center (where the customer is located) to the wire center where the service is switched. They have a physical appearance relationship to a minimum of one frame location although there may be more than one. Trunk pairs have a relationship to the Trunk Cable on which they reside.

Intra-Wire Center Facilities (IF) have two physical appearance relationships which may be on different frames. Intra-Wire Center Facilities are used to connect items from one frame to another or from one zone to another zone on the same frame. Intra-Wire Center Facilities are also referred to as Tie Pairs.

Transmission Equipment (TRE) includes such items as dial long line sets, voice repeaters, etc. This type of equipment could have two (or more) physical appearance relationships but have a minimum of one physical appearance to a frame.

Switch Ports (SWPT) include both line equipment and trunk equipment. For switch ports that terminate on a frame (i.e., cross-connect point exists), at least one physical appearance relationship to a frame exists. In addition, a logical control relationship exists to the IC and the Remote Unit (RU) (if the switch port resides at a Remote Unit). Switch Ports have a relationship to the lowest level Switch Equipment Group (SWEQ) in the intelligent controller hierarchy.

Bridge Lifters (BL) are equipment used in bridged services (i.e., when two or more cable pairs are connected to one switch port). In these cases the BL is not only required to make the connection but also helps to improve transmission quality when only one cable pair is in use. A BL will have a physical appearance relationship to a frame.

Miscellaneous Equipment (ME) includes items such as scan points, Open Switch Interval Protection (OSIPs), distribution points, user-definable inventory, burglar alarms, meter reading service, etc. which also have a physical appearance relationship to a frame location. Miscellaneous equipment is also referred to as auxiliary equipment.

Telephone Numbers (TN) are included as an item of inventory and have a logical control relationship to one or more ICs. TNs have a membership relationship to the NXX equipment group and may be members of TN Lists (TNL) and TN Groups (TNG) (see the discussion of Administrative Groups below).

Logical Terminal Identifiers (LTIDs) are used by Northern Telecom ICs (in their non-GSF architecture) [2]to uniquely identify ISDN service appearances . An ISDN service appearance is considered by Northern Telecom to be a Logical Terminal. Logical Terminal Identifiers are inventoried by the SWITCH system for assignment to ISDN service requests for the DMS-100 IC. LTIDs are network unit inventory related to a specific IC. They are logical rather than physical, and do not have connectivity. LTIDs have a controlled by and factor of relationship to an IC, and may have pending edges from a delta. LTIDS do not have physical appearances on frames, and can not be a component of

IC Equipment (ICE) is used to model Special Subscriber Equipment (SSE) used for party and coin service in an Ericsson IC. ICE have a controlled by and a factor of relationship to an IC. It will also have a physical appearance relationship to a frame.

2. DMS-100 ICs support ISDN provisioning with a newer Generic Services Framework (GSF) or with an older architecture referred to as non-GSF. GSF ISDN circuits do not require LITDs while non-GSF ISDN circuits do require LTID assignments.

Equipment Groups such as Frames, Cables, Switch Equipment Groups (i.e., Load/Spread/Measurement/Allocation/ISDN Groups) and ISDN Collections (CLCT) represent groupings of physical components.

— *Frame* includes the attribute of frame type (FRTYPE) such as COSMIC, conventional, etc. and has associated attributes about the frame, such as number of zones, verticals, etc. The frame and the IC are related through Reference Data (REF). There are no direct relationships between these two entities. An IC might not have equipment that appears on all frames and there may be certain frames that are preferred to be used for assignment purposes.

— *Cable (CA)* includes the attributes of cable name and the frame locations.

— *Trunk Cable (TKCA)* includes the attributes of cable name and the frame locations.

— *Switch Equipment Groups (SWEQ)* (i.e., Load/Spread/Measurement/Allocation/ISDN Groups) include the attributes of group name, type of group (load, spread, measurement, allocation, ISDN or a combination), hierarchy level, and a count of the number of SWEQ groups below it at each level in the hierarchy. All switch ports belong to the lowest SWEQ group in the switching hierarchy at which load balancing, spreading, etc., is done. A relationship exists between each SWEQ group and the next highest SWEQ group in the switching hierarchy. The highest level group (and the switch port) is related to the IC. (See the section on Intelligent Controllers - 3.4.)

— *ISDN Collections (CLCT)* and *Collection Groups (CLG)* model the timeslot resources between the circuit-switched and packet-switched portions of the 5ESS intelligent controller. Specifically, these database constructs model the DPIDB relationship between an ISLU or IDCU[3] and a shelf in a packet switching unit (PSU). A DPIDB provides 32 timeslots which can be used for D channel signaling, D channel packet, permanent packet B, and on-demand B packet services. Channel usage rules differ for D channel (signaling and packet), permanent packet B, and on-demand B services.

   — In the ISLU case, a collection exists between each Line Group Controller (LGC) and PSU shelf combination that has timeslot resources between them. A collection group exists between an ISLU and a PSU shelf and is associated to the set of collections existing for LGCs of the ISLU and the PSU shelf. In the database, there is a three way relationship between a collection and the switch equipment groups that model the LGC and shelf. There is a three way relationship between a collection group and the switch equipment groups that model the ISLU and shelf, and there is a two-way relationship between each collection and its collection group.

   — In the IDCU case, a collection exists between each Bandwidth (BW), discussed Section 3.4.1, and PSU shelf combination that has 1/4 timeslot resources between

3. Support of ISDN on an IDCU is provided on the DLE platform and requires that the client specific feature, tr303 dle isdn, be enabled.

them. A collection group exists between an IDCU and PSU shelf and is associated to the set of collections existing for BWs which terminate on the IDCU and the PSU shelf. In the database, there is a three way relationship between a collection and the BW[4] and the PSU shelf. There is a three way relationship between a collection group and the switch equipment groups that model the IDCU and shelf, and there is a two-way relationship between each collection and its collection group.

Administrative Groups such as Multi-line Hunt Groups (HML), NXX Groups, Centrex Groups (CTX), and Simulated Facility Groups (SFG) all have logical appearances within the switching machine; therefore, a control relationship exists between the group and the switching machine. Services that belong to these groups may have an association to the group (depending on the type of administrative group involved). For example, all the services that belong to a particular Centrex group are associated to that group. Another kind of administrative group is a TN Group (TNG). A TN Group is a set of telephone numbers that are set aside for use with a particular Regular Centrex group or family of Combined Centrex groups. Telephone numbers are members of the TN Group and the TN Group is related to the Centrex group(s) but the TN Group is not related to the IC controller. Telephone numbers may also be members of a TN List (TNL). NXX Groups provide information about a range of telephone numbers within the NXX. Each TN within that range has a relationship to the NXX Group.

The *Intelligent Controller (IC)* has relationships to all of the individual components and groups with which it is associated. ICs have different characteristics and features which will be represented in the SWITCH system. Some of the IC attributes include its name and identification and its software version.

The *Remote Switch Unit (RU)* has a relationship to the switch ports that it serves and to the IC to which it belongs. Other than switch ports, no other individual components have relationships to the Remote Unit. Administrative and equipment groups also do not have relationships to the Remote Unit (they are related to the owning intelligent controller). Some of the Remote Unit attributes include its name and identification, the type of equipment that it is, and its software version.

3.4 DLE

Digital Loop Electronics deals with equipment that extends from the central office out to the field, near the customer. The DLE equipment typically allows multiple-customer circuits to operate over a small number of facilities. Figure 3-6 shows an example of a real-world DLE configuration. On the left side of the picture are cable pairs that terminate on the "field side" of a remote terminal (RT). (These cable pairs do not enter the central

4. Even though nodes which are part of Collections or Collection Groups are typically switch equipment groups (of type *isdn*), the BW is not a switch equipment group.

office.) The cable pairs terminate on a port on the RT. These ports are similar in concept to the switch ports discussed above. On the RT are slots. These slots are places in the RT equipment where a electronic card, called a plug-in, can be installed. Depending on the vendor of the RT, one slot can be associated with one or more cable pairs. Each of these cable pairs is associated with one port. Therefore, one slot can be associated with one or more ports. Figure 3-6 shows a slot that is associated with two ports. On the other side of the RT (i.e., the central office side) is a digital transmission facility, which has a "high speed digital" data rate. The RT in the figure has a high speed rate of DS-1. A DS-1 digital data rate can allow 24 POTS circuits to simultaneously work on the line. The DS-1 line in this configuration terminates directly on an IC, via a DS-1 switch port. This line is considered to be "integrated" into the IC and therefore the equipment in this configuration is often referred to as Integrated Digital Loop Carrier system or IDLC. In this case the IC can directly administer each of the 24 POTS circuits on the DS-1 facility.

One DS-1 facility is made up of 24 channels, also referred to as timeslots. In one type of hardware implementation, each of the 24 POTS circuits on a DS-1, is associated with a specific channel for the life of the service. In another implementation, the customer circuit is not directly associated with a channel, rather, a customer is only associated with a channel at the time of the call. The IC picks the channel when a call is made. The next time a call is made from or to that same customer, a different channel can be chosen by the IC. This will allow the 24 channels on a DS-1 to be shared by more than 24 customers, although only 24 customers can use the phone at any one time. In this instance, each customer is associated with a Call Reference Value (CRV) for the life of the service. This CRV is used by both the IC and the RT as a common identifier for the customer.

An RT is a device that can take analog input (from cable pairs) and digitize (i.e., multiplex) these signals onto the high speed line. Other types of devices have similar characteristics (e.g., central office terminals, digital cross connect system). All of these similar devices are referred to as carrier controllers in the SWITCH system data model.

Figure 3-7 shows a similar configuration, except that there is no integrated lines into the IC. The field side of the remote terminal is identical to that in Figure 3-6. But the central office side of the remote terminal has a much "faster" transmission facility. It has an OC-3 digital data rate. The "OC" implies that there is a fiber optical transmission facility. The OC-3 digital data rate has 2016 channels. Once the OC-3 facility enters the central office, it terminates on another electronic device called a central office terminal (COT). The COT takes the digital signals from the OC-3 facility and translates each of the possible 2016 customer signals back to analog. These analog signals then terminate on a frame, much the same way that cable pairs terminated on a frame in the copper model described above. Switch ports, from the IC, also terminate on a frame. (DS-1 facilities can also exist between the COT and the IC. This configuration is not discussed in this section.)

3.4.1 Data Base

Like the copper configuration, the DLE database picture can be derived from the DLE real-world picture. If each DLE entity, described above, is transformed into a database node and each real-world relationship is turned into a database relationship or edge, a database picture can be constructed.

Figure 3-8 shows a sample database picture for the integrated DLE configuration shown in Figure 3-6. Starting from the far left or field side of the picture, each cable pair (CP) is associated to a carrier controller port (CCPT or CC port) at the Remote Terminal (RT). Each of the "major" electronic devices (e.g., remote terminal and central office terminal) is generically referred to as Carrier Controllers (CCs). There is one kind of node for these devices, referred to as a CC node. The ports on these CCs are referred to as Carrier Controller ports. The relationship between the CP and CCPT is not a direct relationship but one that is made through an assembly node (ASM). (Assemblies are covered in more detail in Section 3.6.) Each of the CCPTs have a "contains" relationship to a slot as well as a "controlled by" relationship to the remote terminal (CC). The slot node has a "factor of" relationship to the RT.

The RT is associated to the IC in a number of ways. There is a path edge from the RT to a path node and then from the path node to the IC. The path node is used to find connections from one CC to another CC or IC. The is also a path edge from the RT to a bandwidth (BW) node and a path edge from the BW to a SWEQ on the IC. The BW node is used primarily to keep track of the available capacity between the two CCs or, as in this case, between a CC and an IC. One or more BW nodes can be associated to one path node by "factor" edges. (The BW node is known to the SWITCH system users as a carrier group.)

In the real-world picture (Figure 3-6), the RT is connected to the IC by a DS-1 "high speed" transmission line. This DS-1 connection is represented in the SWITCH system database as a Carrier Service/Circuit. Therefore, there is a service node (SVC) and a circuit node (CKT). (Services and circuits will be explained more fully in Section 3.6.) The service and circuit nodes are connected via a two-way "provides" edge. In this carrier circuit, the service and circuit nodes each have the same components, that is, the DS-1 CCPT on the CO side of the CC and the SWPT node at the IC. That is, these two network units make up the carrier circuit. Other carrier circuits can have other components, such as channels. The CCPT and SWPT are connected to both the service and circuit nodes through two way composition edges.

The creation of the carrier circuit will cause channels (CHANs) to be created and become part of the inventory. (See chapter 10, Capacity Activation, for a detailed description of this process.) These channels are created in a hierarchy. A super channel, which is a special type of channel node, will always be on top of the hierarchy. The super channel has detailed capacity information about the channels below it in the hierarchy. The super channel has a "factor of" relationship to the BW node. There may be more than one super channel pointing to one BW node, each with its own hierarchy. The type of hierarchy built is dependent on a user controllable table (Channel Rules Table, see chapter 10 for more details.) The super channel will have a "control by" edge to the CC as well as to the IC. The super channel will also have an "activates" edge to the CC port at the RT as well as to the DS-1 switch port at the IC. Below the super channel is one channel node with an assignment rate of DS-1. Below this channel node are 24 channel nodes with assignment rates of DS-0.

CRVs can also be created by the same process that creates channels. When CRVs are created in association with a specific BW, channels are not created for that same BW. Figure 3-9 shows the data base picture of CRVs created as part of an IDLC system. Unlike channels, CRVs are not associated to any one CC port or switch port. But they are associated to a BW node. Therefore, each CRV node will have a one-way "factor of" edge to a BW node. Each CRV will also have a "control by edge" to a CC and another "control by" edge to an IC. The number of CRVs created for a specific BW is under user control.

Figure 3-10 shows the database diagram for the real-world picture shown in Figure 3-7. Much of this database picture is very similar to the one in Figure 3-8. The carrier circuit in Figure 3-10 has an end point of a COT instead of an IC. (A COT is another type of CC.) The channel hierarchy in this configuration has more levels and more channels. Since there are no switch equipment groups on a CC, the BW node has a path edge that terminates directly on the COT CC. On the right side of the COT (i.e., the central office side), there exists the same type of CC ports and slots that are found on the field side of the remote terminal, except there are no cable pairs on the central office side of the COT. Instead, the CC ports have a "physical appearance" edge to a frame node. There is information on this edge that describes the actual location on the frame where the wire leading from the CC port terminates. As in the copper model, switch port nodes, that are associated with the IC, also have a "physical appearance" edge to a frame.

3.5 Circuits and Services

Figure 3-3 showed several central office facilities which, because they were not connected to each other, could not supply service. Figure 3-11 shows the same facilities in a configuration that can supply service. The one addition is a jumper, which connects the cable pair to the switch port. (This jumper is not stored in the database.) An electrical path now exists from the cable pair, where it comes in from the customer via the outside plant, across the jumper to the switch port, and finally to the IC.

If this group of facilities were "working" and supplying telephone service to a customer, then a full description of this group would include a service and a circuit. The "service" describes the type of service being provided to the customer. The "circuit" describes the electrical path that conveys the service to the customer. A circuit defines the components that make up the circuit and the connections between the components. In the case shown in Figure 3-11, the circuit information would include the cable pair, the switch port, and the fact that these two items are connected together.

Since a circuit provides a service, the service and a circuit are related to one another through a "provides" relationship. One circuit can provide multiple services. This is the case with party service where multiple customers will share the same central office components and therefore the same database circuit. Services are also related to the major components of the circuit. This allows SWITCH system processing to know which circuit components go with which services.

3.5.1 Circuits

A *circuit* identifies the physical components (e.g., not TNs) and their connections that are required to provide service. The circuit is not a physical object itself but is composed of other objects such as switch ports and cable pairs that are connected together. A circuit always refers to a "working" group of facilities (i.e., they can currently supply service) and must always have a "provides" relationship to a service. Figure 3-12 depicts a circuit which represents the database view of the "real-world" picture shown in Figure 3-11. In Figure 3-12 the entities shown in grey and the dashed relationship lines are not part of the circuit and are shown for completeness. Two different relationships are associated with a circuit. The physical components are related to the circuit through a composition relationship (comp). And the related connections are associated to the circuit through connection relationships (conn). Of course, the individual network units also have their inventory relationships, which are described above (shown as dashed lines in Figure 3-12).

3.5.1.1 Composition Relationship

The composition relationship which exists in circuits, also exists in services, and assemblies, which will be discussed in more detail later. Since real-world circuits are actually composed of several objects, the database model of a circuit depicts the circuit as a entity that has relationships to the entities that it is composed of. The components of circuits can be network units such as: switch ports, cable pairs, channels, CC ports, intra-office facilities, bridge lifters, transmission equipment, and miscellaneous equipment.

The database will show the components of circuits through a two way composition relationship. Figure 3-12 shows a circuit (CKT) with a cable pair (CP) and switch port (SWPT) as its components. For example, a cable pair has a relationship to a circuit because it is a component of that circuit and therefore is connected through a "is component of" (comp) edge. Conversely, the circuit node is related to the cable pair through a "has component" edge. Each component of a circuit will have this two way composition relationship. See Figure 3-13 for an example of a circuit with several components and therefore several composition edges.

3.5.1.2 Connection Relationship

The previous section discussed the various components that make up a circuit. In the copper world, these physical components are connected together either through jumper cables, which are not inventoried in the SWITCH system, or through intra-office facilities, which are inventoried in the SWITCH system. In either case, the fact that these connections exist is shown in the database through connection relationships.

The connections which exist in an assembly and circuit are shown through connectivity three way relationships (conn) depicted as three headed arrows (see Figure 3-12). In the real-world, the cable pair and switch port are connected through a "jumper", which is a type of cable pair that is not inventoried in the SWITCH system database. Therefore, in the database, the cable pair and the switch port will be part of the same connection relationship. Since the circuit is the entity which defines the connections between its components, the connection relationship between the cable pair and switch port will also include the circuit in a three way relationship. A circuit can have many of these three way connection relationships depending on how many components are connected together.

Circuits can have several more components than the basic few that are shown in Figure 3-11. These can be connected together through intra-office facilities (IFs), sometimes called tie pairs. Figure 3-13 shows a database view of a circuit, that in addition to a cable pair and a switch port contains miscellaneous equipment (ME) and IFs. The diagram shows that the cable pair (CP) is connected to an IF. These two items form a three way relationship with the circuit via the connectivity edge. That IF is physically connecting the CP to the ME. Therefore the same IF is also associated with the ME and the circuit in another three way relationship. In the same manner a second IF is connecting the ME to the SWPT. All the components including the IFs have composition edges to the circuit. The TN is not included in the circuit.

Circuits and services for DLE related facilities will include network units, such as cable pairs, CC ports, and channels (see Figure 3-14 for a database view).

3.5.1.3 Network Element Provisioning Relationship

Circuits on copper facilities have mechanical/electrical connections, that is, the connections are made through equipment such as, tie pairs and jumper cables. But in the DLE model, connections are typically made electronically. These connections are needed so that there is a full "path" for a customer's signal to travel from their living unit, through the remote terminal to the IC in the central office (for POTS services). For example, an electronic connection can be made between a CC port and a channel. These electronic connections that go through a carrier controller can sometimes be made remotely (depending on the vendor), when the customer's service/circuit is established. This capability is called Time Slot Interchange (TSI). Other carrier controllers have the electronic connections established when the carrier controller equipment is installed. This is call non-TSI. When connections must be made in a TSI service/circuit, the downstream systems that will remotely issue the instructions for these connections, must be told what these connections are. The SWITCH system keeps track of the TSI type of electronic connections through Network Element Provisioning (NEP) edges. These edges are similar to the connectivity edges described above. They are three way edges connecting the circuit to the two network units that must be electronically connected together. See Figure 3-15 for a database of a service/circuit and a NEP edge for the configuration shown in Figure 3-6.

3.5.2 Services

A *service* describes the characteristics of the service provided to the customer, identifies the components (including TN) that are used to provide the service, defines design information for the service, identifies translations data for the service and is associated with administrative groups (e.g., Multi-Line Hunt groups (HML)), if appropriate. A service always refers to a "working" group of facilities and must have a "provides" relationship to a circuit. It does not identify the connections (e.g., intra-office facilities (IFs)) needed to supply service to the customer. Services can be either primary or secondary. Every circuit has a primary service. They may also have zero or more secondary services (e.g., an ISDN "pipe" is considered a primary service while a service riding on the pipe is considered secondary).

A service is not a real-world object per se but it does represent a group of related items which together define a service supplied to a customer. The database models a service as a separate entity (SVC) that has relationships to other entities.

The same real-world working set of facilities, shown in Figure 3-11, is shown in a database configuration as part of a service on copper facilities in Figure 3-16. In Figure 3-16, the entities shown in grey and the dashed relationship lines are not part of the service and are shown for completeness. The same basic set of components that made up the circuit (Figure 3-12) also make up the service in this case. As with the circuit, the CP and the SWPT have "component of" relationships to the service. The service has a relationship to a TN which does not exist in the circuit. Since the service entity is not concerned with how its components are connected together, there are no connectivity relationships with the service and any component. The service also has a provides relationship to the circuit.

The components of services can be: switch ports, cable pairs, and telephone numbers.

The same, more complex, set of components shown in Figure 3-13 as a circuit, is shown in Figure 3-17 as a service. The function of the IFs is to "connect" two different facilities together (e.g., a cable pair and miscellaneous equipment). Since a service doesn't care about connectivity information, the IFs are not associated to the service. The separate components are related to the service through composition edges.

Services for DLE facilities have the same concepts as described for copper facilities. A database view of a service on DLE facilities is shown in Figure 3-18

3.6 Assemblies

An *assembly* describes the entities and their connections for a related group of components (e.g., a cable pair and switch port can form a DIP). These related components are usually used to describe a non-working state in the SWITCH system database. The components and connections will usually stay connected in the same way when they become working. When the components are in a working state, then the assembly entity might or might not still exist but the components may be related to both a service and circuit entity. (In the case of dormitory service the assembly is not related to the circuit.)

There are four different types of assemblies: a permanent assembly, a temporary assembly, a modifiable assembly, and a pseudo-service.

— A *permanent assembly* will still exist in the database after the completion of the provisioning request that used the items that comprised the assembly. A permanent assembly identifies the physical components of the assembly (e.g., a CC port and a cable pair).

— A *temporary assembly* disappears following the completion of the provisioning request (i.e., it is not retained in the circuit). A temporary assembly identifies the physical components of the assembly (i.e., not TNs) and their connections (e.g., Dedicated Inside Plant (DIP)).

— A *modifiable assembly* still exists after the completion of the provisioning request. However, the assignment process can change the makeup of the assembly when defining the circuit. When this happens the assembly will still exist but its components and connections will be modified to match the new circuit (e.g., dormitory service).

— A *pseudo-service* is a type of assembly that provides a type of auxiliary service to a customer. A pseudo-service remains intact after the service is disconnected. The entire pseudo-service must be used for a new connect and cannot be modified. A telephone number cannot be a component of a pseudo-service (e.g., door answering service).

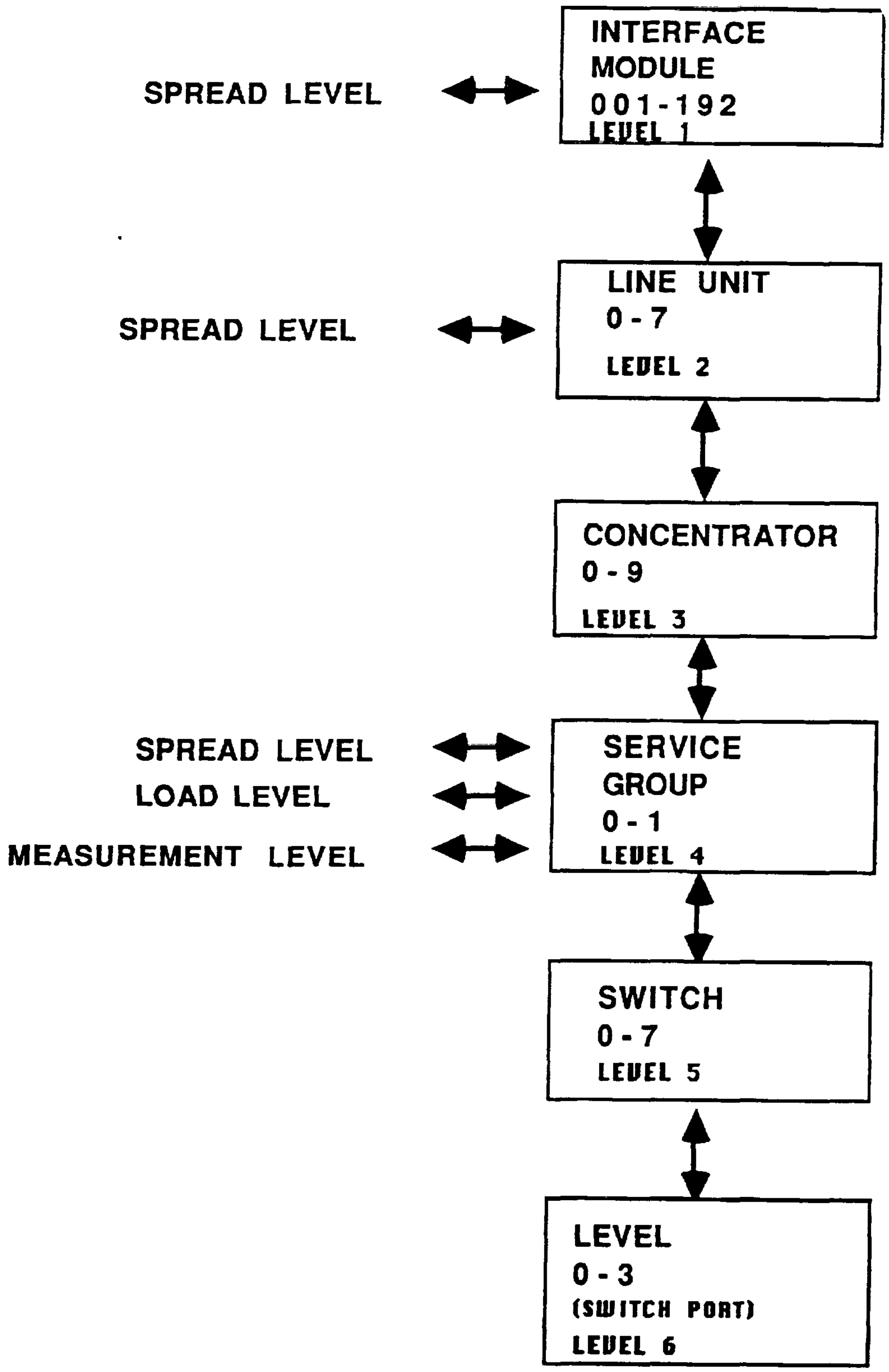


Figure 3-1. IC HIERARCHY REPRESENTATION

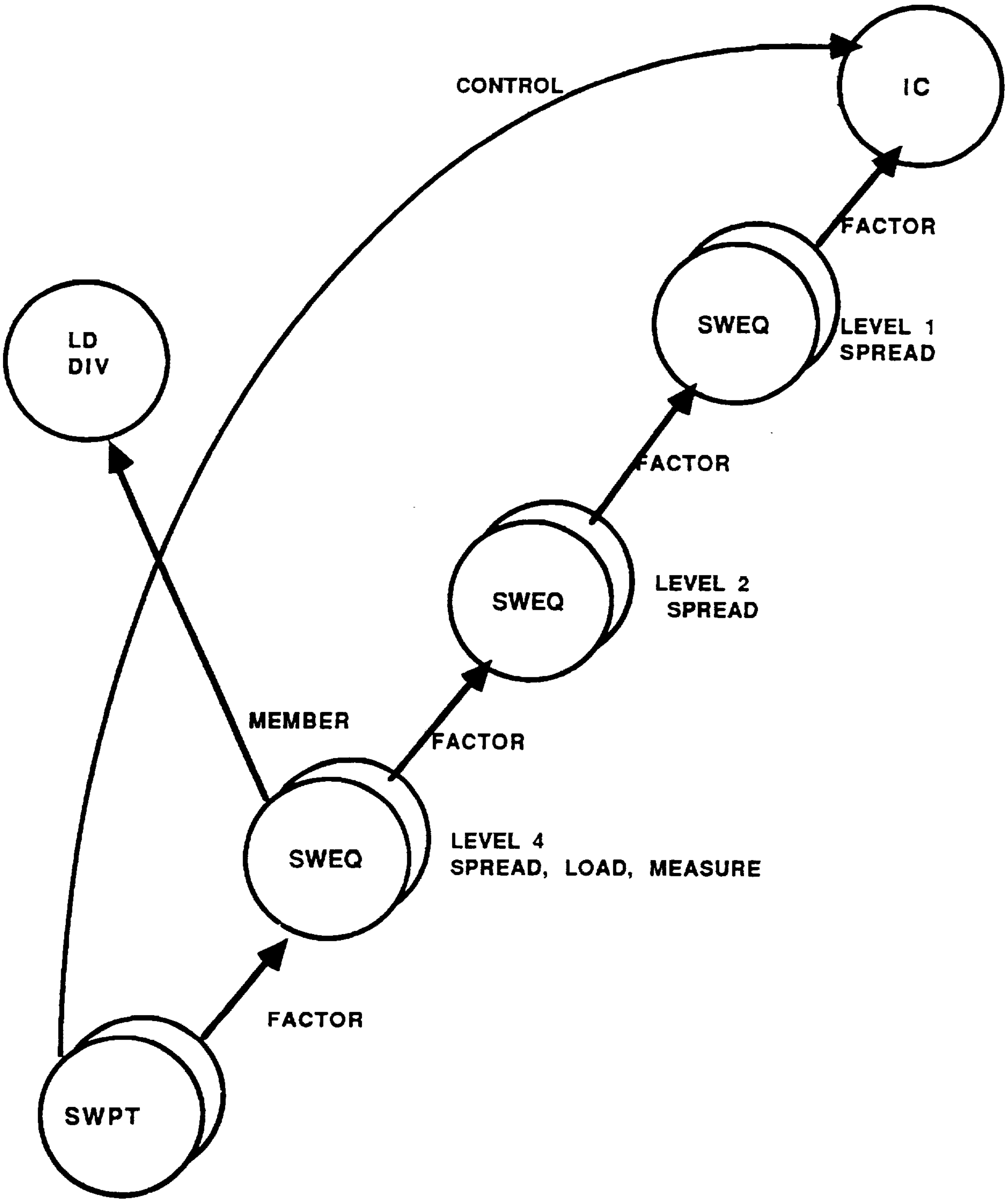


Figure 3-2. DATA BASE VIEW - IC HIERARCHY - 5ESS

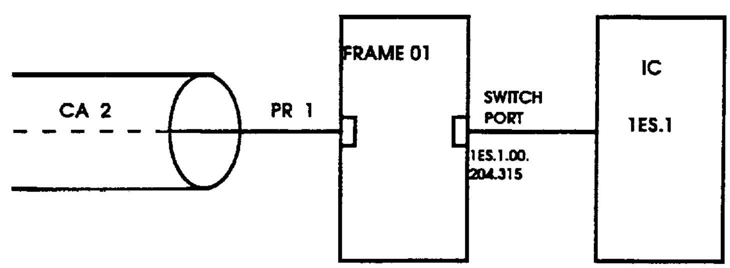


Figure 3-3. COPPER FACILITIES

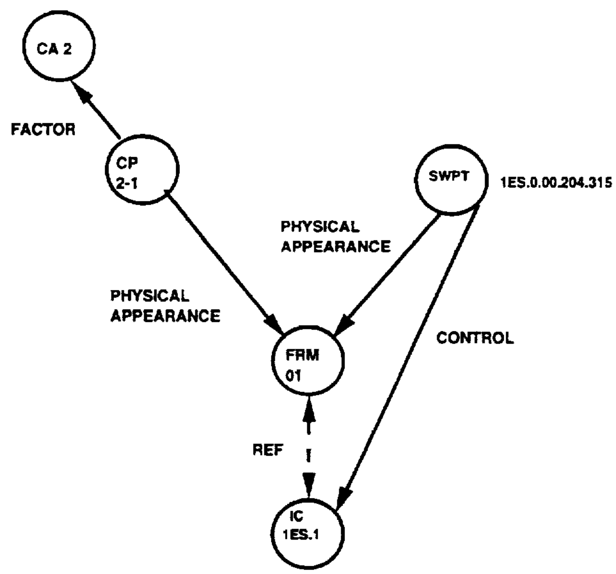


Figure 3-4. DATA BASE VIEW - COPPER FACILITIES

Figure 3-5. PRIMARY INVENTORY COMPONENTS-COPPER

INVENTORY

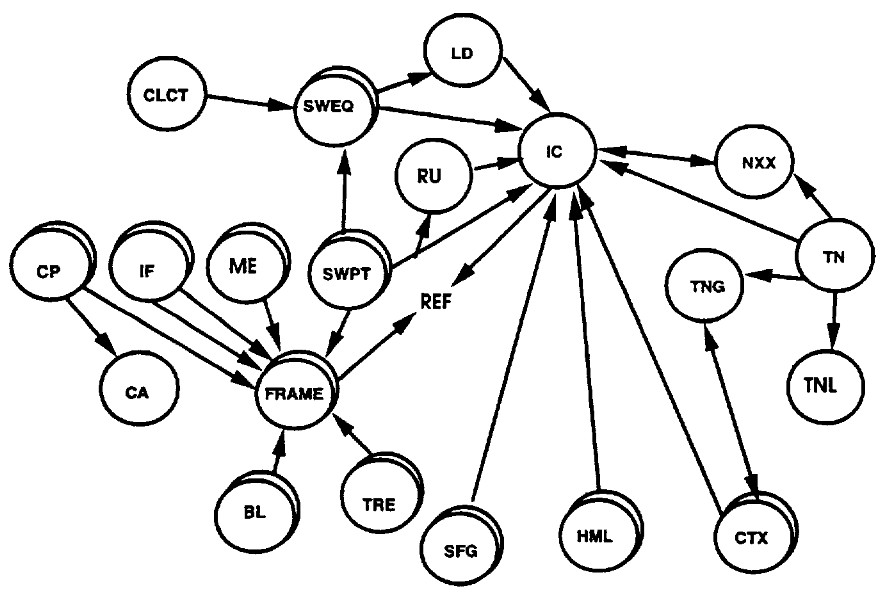


Figure 3-6. DLE - IDLC FACILITIES

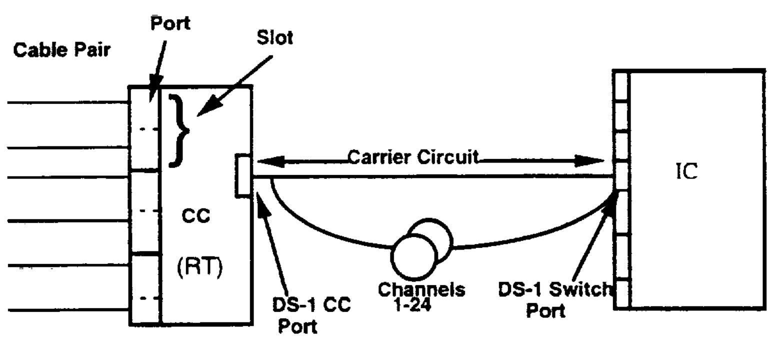
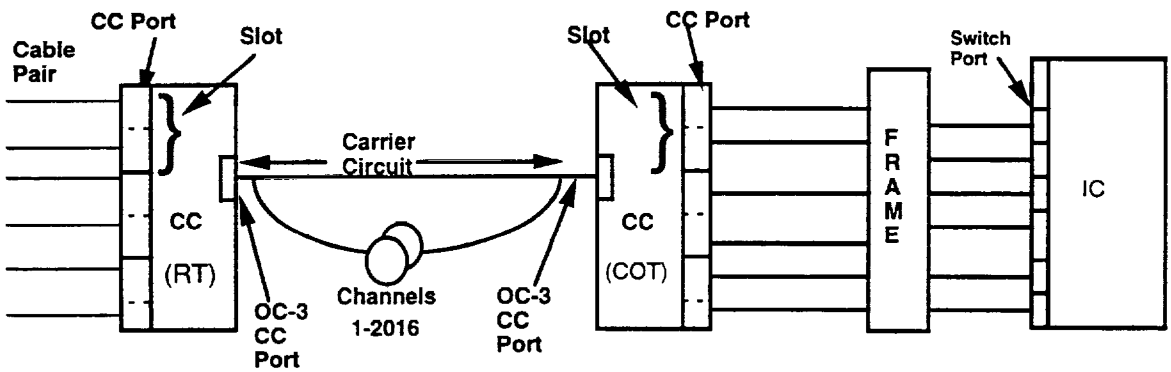
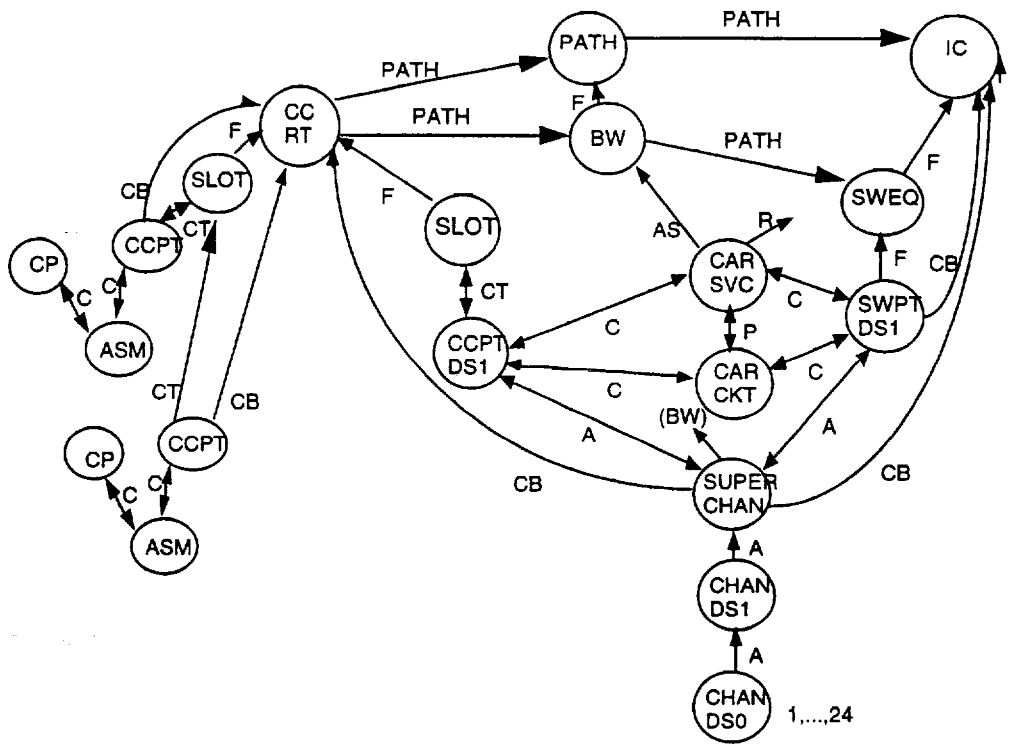


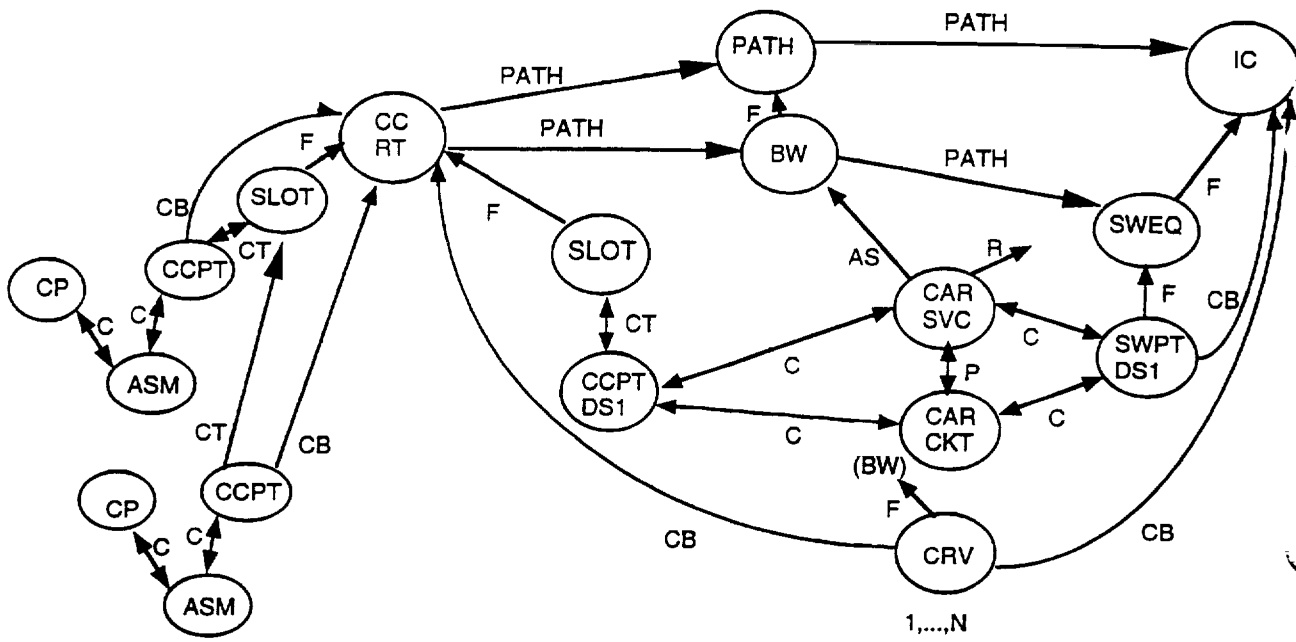
Figure 3-7. DLE - UDLC FACILITIES





A = Activates
AS = Associates
C = Composition
CB = Controlled By
CT = Contains
F = Factor Of
P = Provides
R = Route

Figure 3-8. DATA BASE VIEW - DLE - IDLC



A = Activates
AS = Associates
C = Composition
CB = Controlled By
CT = Contains
F = Factor Of
P = Provides
R = Route

Figure 3-9. DATA BASE VIEW - DLE - CRV

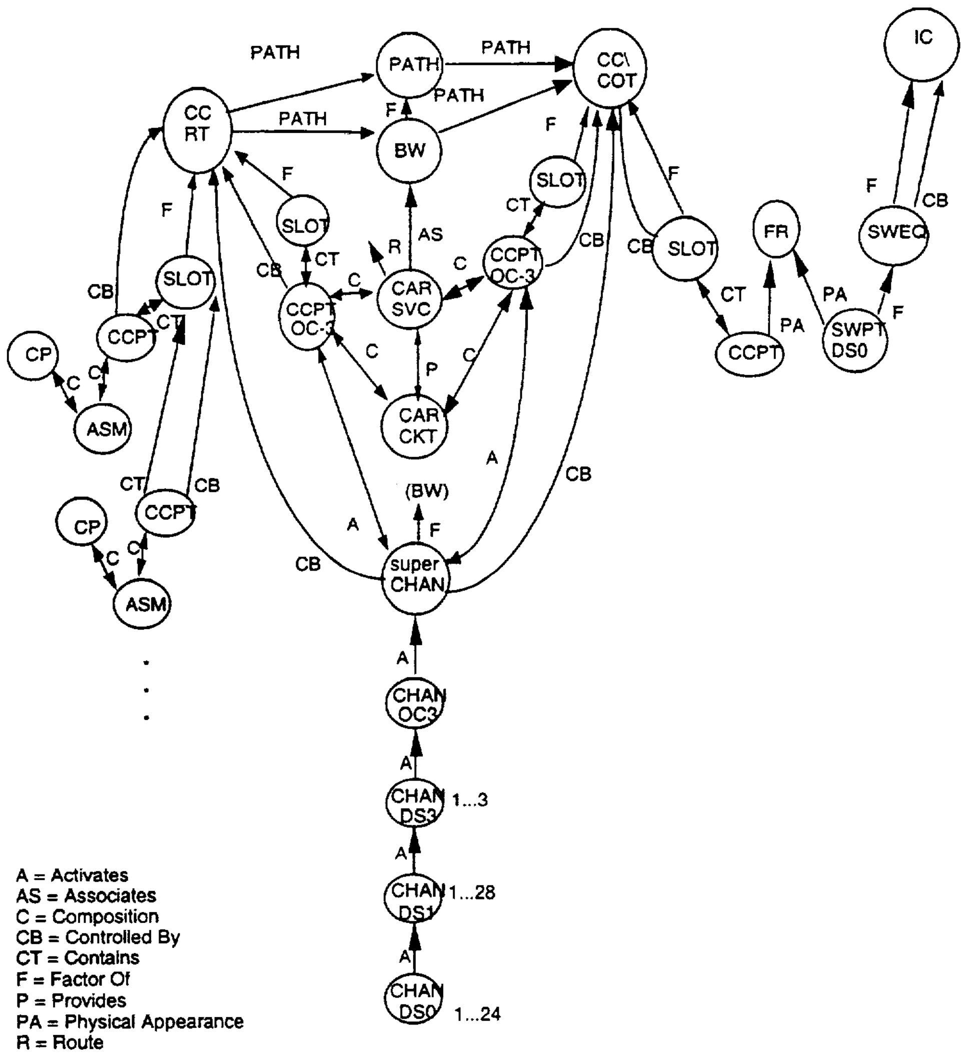


Figure 3-10. DATA BAS VIEW - DLE - UDLC

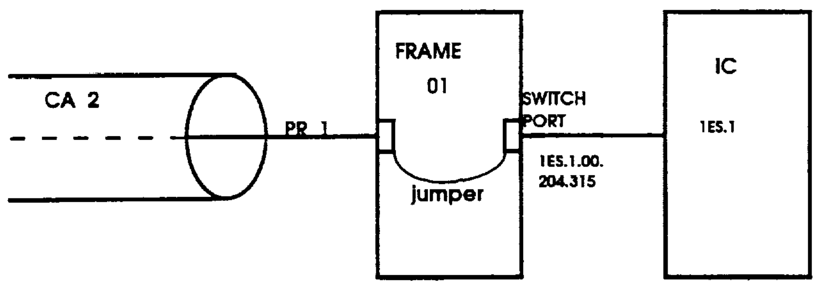


Figure 3-11. CENTRAL OFFICE (COPPER) CONNECTED FACILITIES

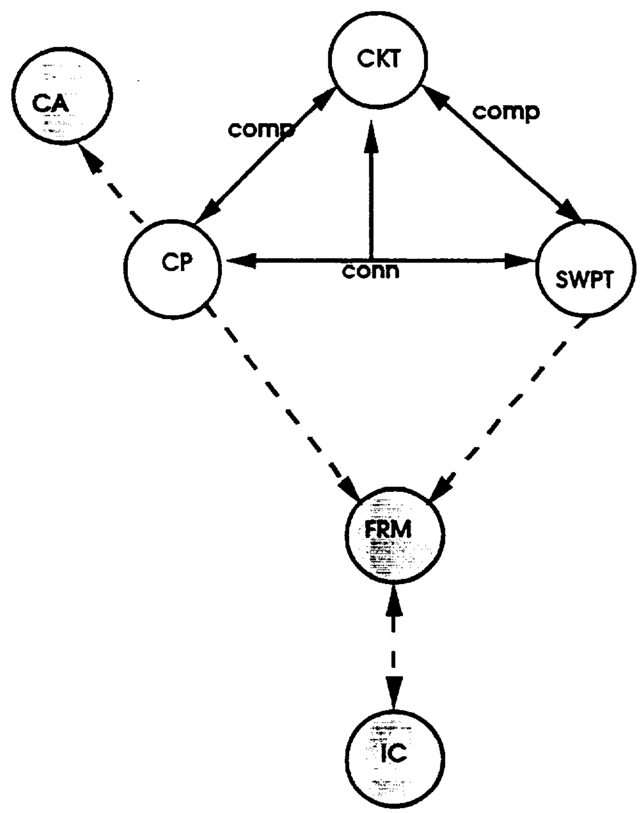


Figure 3-12. DATA BASE VIEW - COPPER CIRCUIT

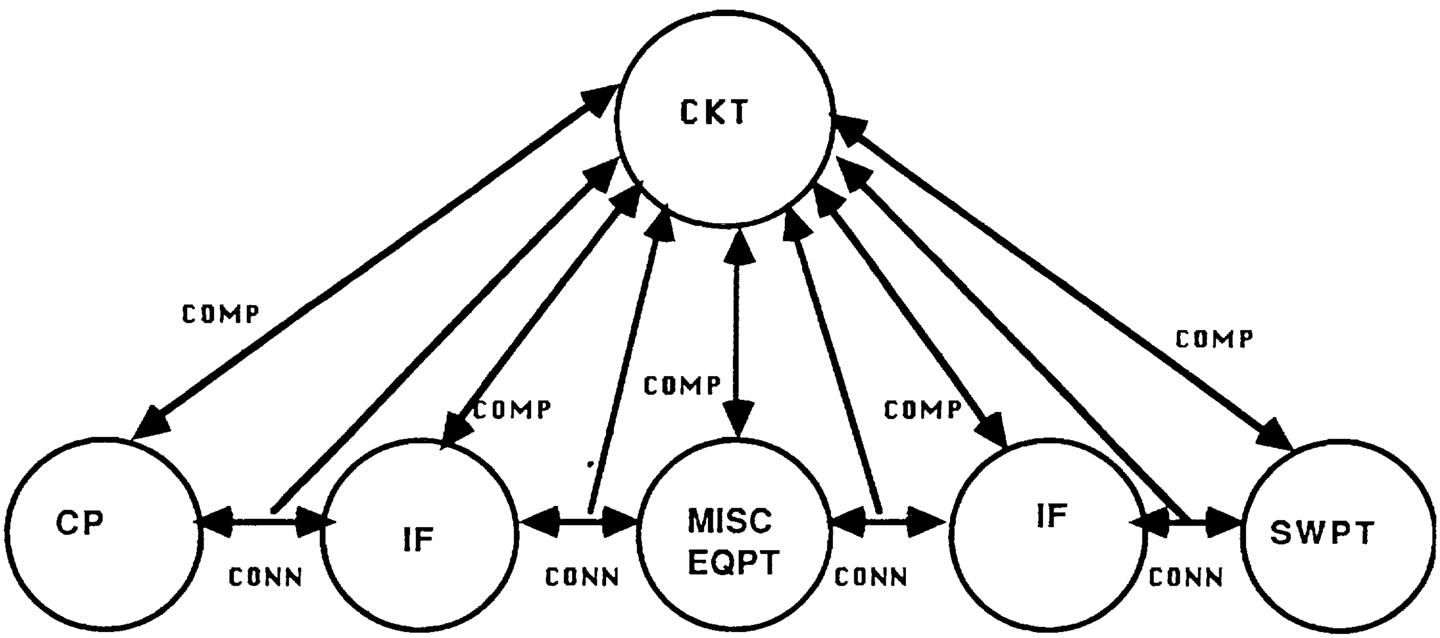
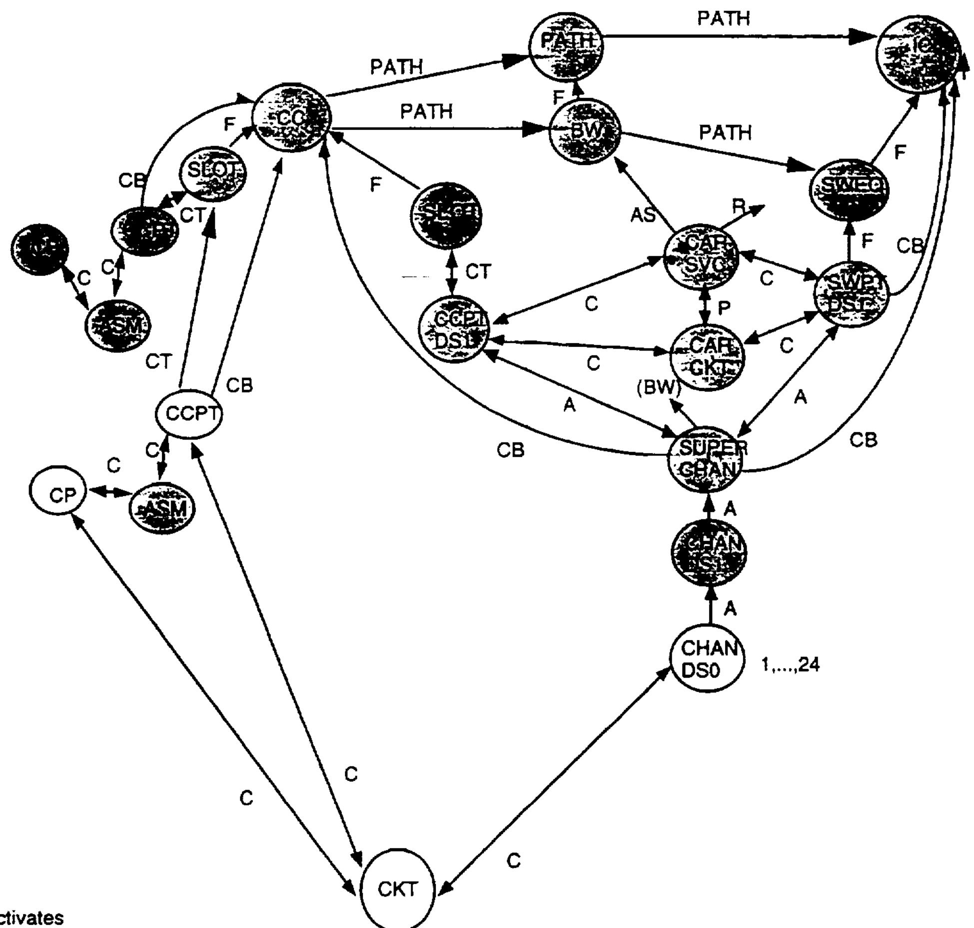
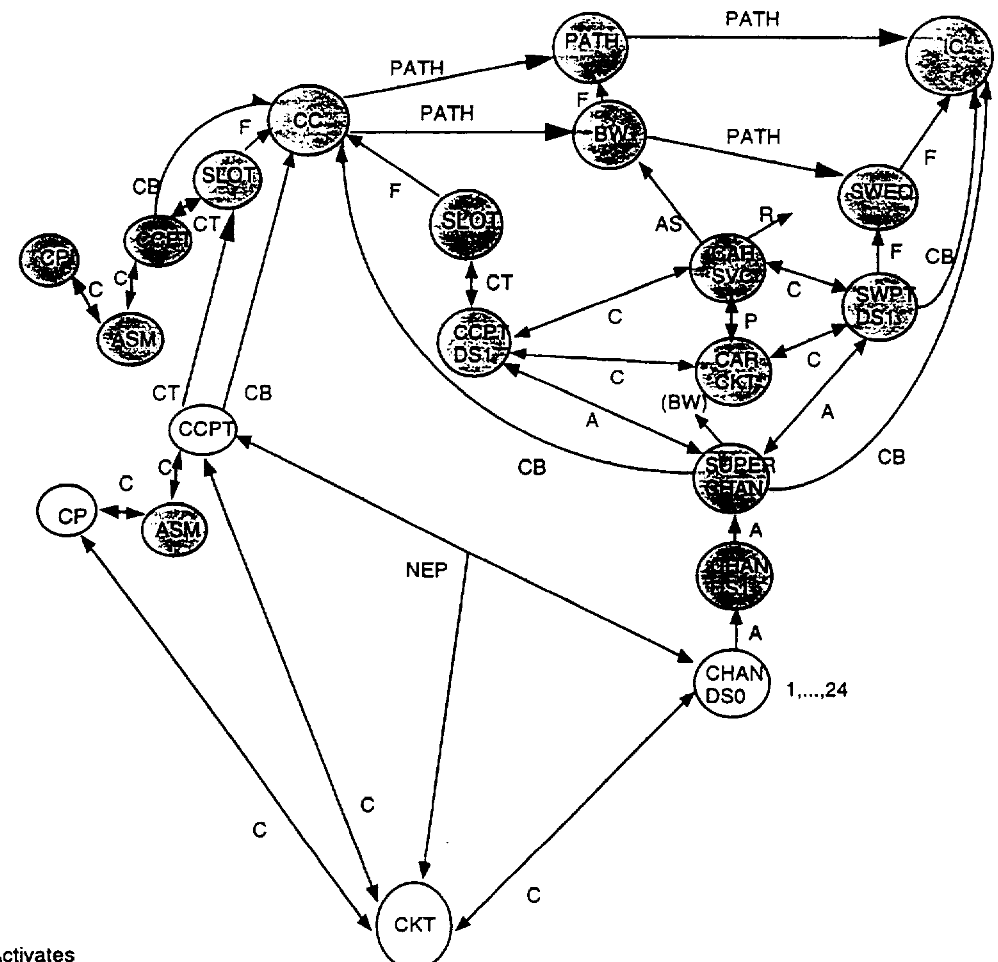


Figure 3-13. COPPER CIRCUIT WITH MULTIPLE COMPONENTS



A = Activates
AS = Associates
C = Composition
CB = Controlled By
CT = Contains
F = Factor Of
P = Provides
R = Route

Figure 3-14. DATA BASE VIEW - DLE-IDLC CIRCUIT



A = Activates
AS = Associates
C = Composition
CB = Controlled By
CT = Contains
F = Factor Of
P = Provides
R = Route

Figure 3-15. DATA BASE VIEW - IDLC WITH NEP

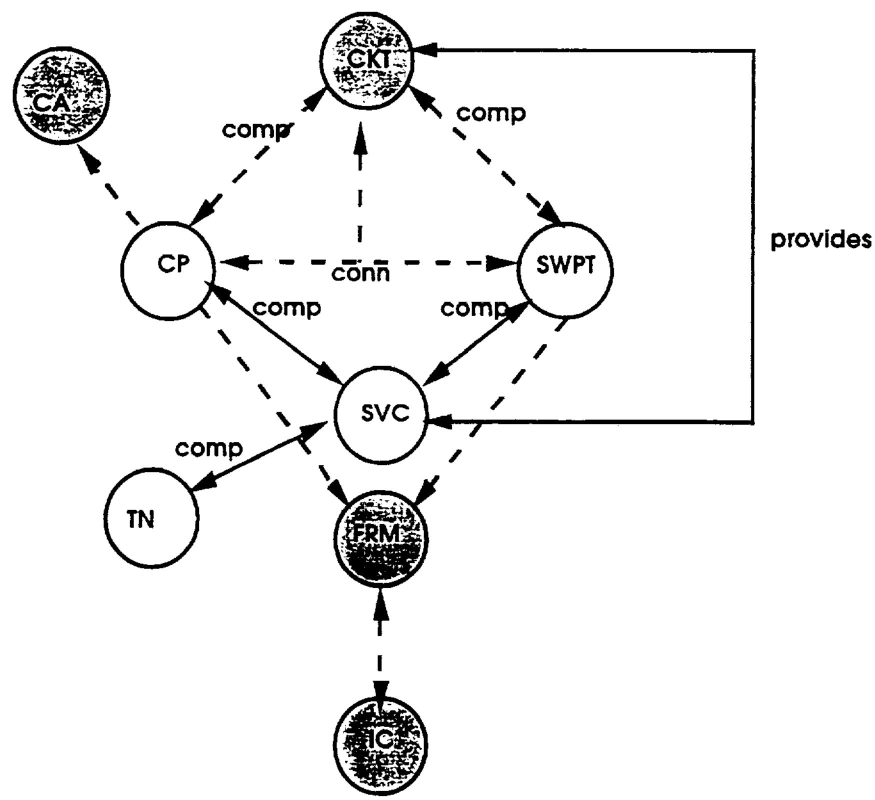


Figure 3.9 Data Base View of Service

Figure 3-16. DATA BASE VIEW - COPPER SERVICE

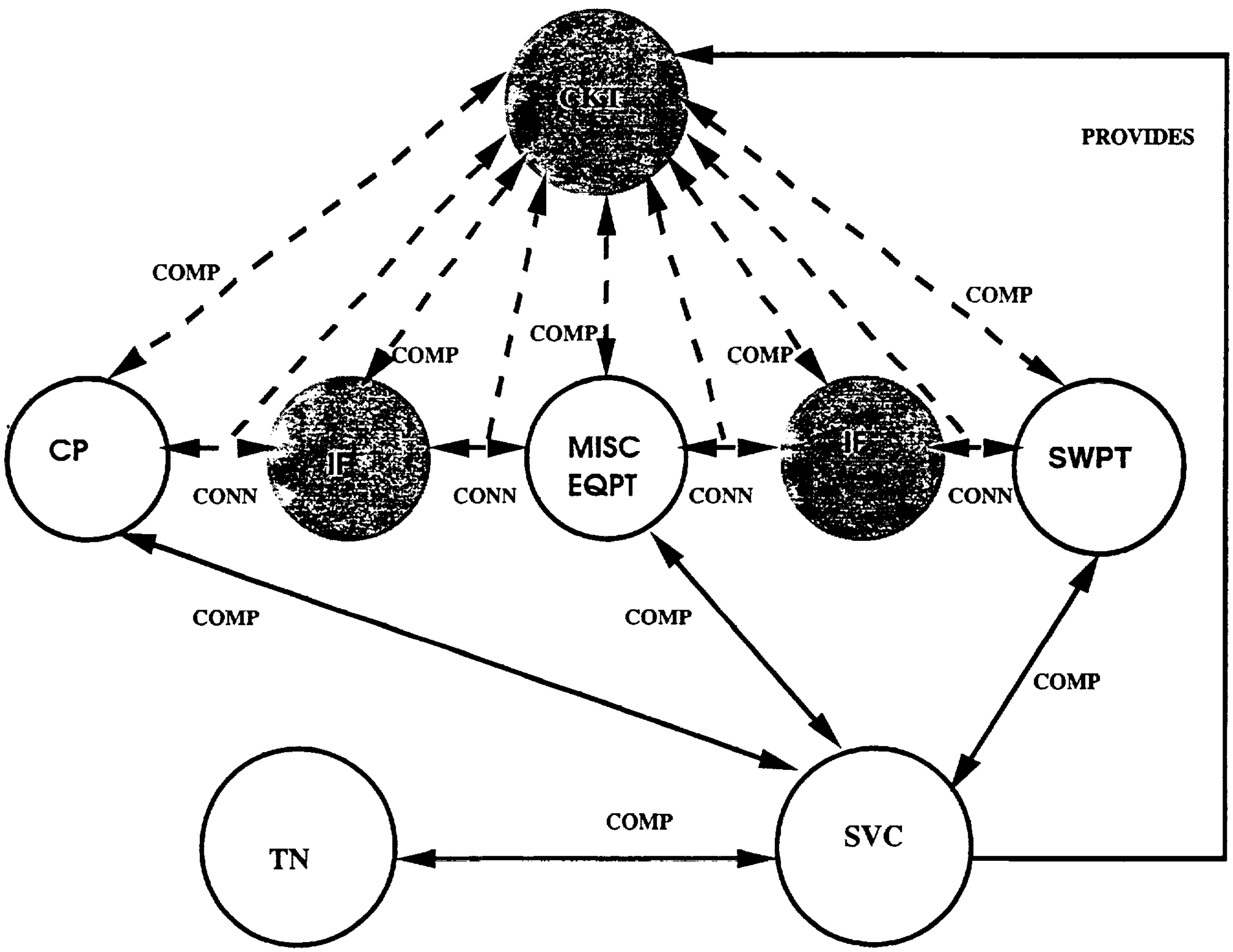


Figure 3-17. COPPER SERVICE WITH MULTIPLE COMPONENTS

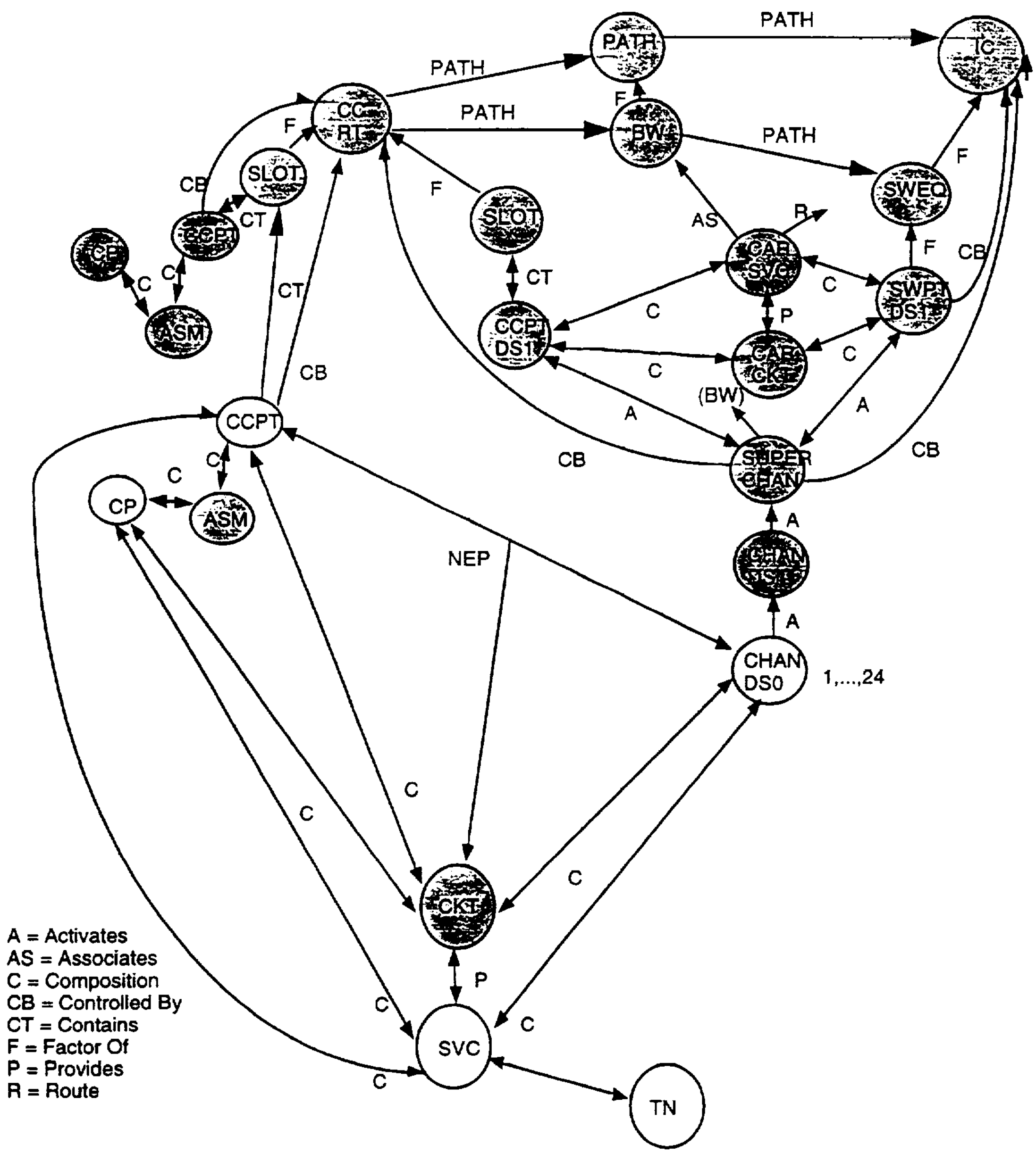


Figure 3-18. DATA BASE VIEW DLE SERVICE

SWITCH System DLBB Functional Product Specification

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4. DATA BASE CONTENT

This section specifies the inventory information that will be maintained in the SWITCH system DLBB. Primarily, this information is a description of switching machine equipment, the Digital Loop Electronic (DLE) Equipment, and associated transmission equipment. The SWITCH system will encompass both line (access) and trunk (network) components of switching machines. The SWITCH system will also inventory equipment needed to support technology such as ISDN, Time Slot Interchange (TSI), MADN (Multiple Appearance Directory Number), etc. This information will be maintained by location (i.e., wire center).

4.1 Definitions

Inventory items can be of various types: units, groups, or assemblies. The SWITCH system will support all these types as well as any attributes or relationships necessary for provisioning, report, and work order support. All inventory items have certain attributes associated with them. These attributes may be associated with the inventory items themselves or associated with the relationships the inventory item may have. Section 5 discusses updates to the SWITCH system inventory.

Inventory will be checked for inventory completeness. Inventory completeness is defined as the condition when the inventory item contains all the required attributes to allow its inclusion as SWITCH system inventory. These attributes describe the item such as item ID, item type, etc. Inventory Completeness does not mean that the unit is assignable, only that it can be inventoried.

4.1.1 Network Units

Network Units are individual inventory items. A network unit will be considered to be the smallest assignable entity in the SWITCH system. The user will be able to identify the values of the equipment characteristics and attributes used in the assignment process. Some of the units that the SWITCH system will inventory are: switch ports, carrier controller ports, cable pairs, and telephone numbers.

4.1.2 Groups

A group is an inventory item that contains data that applies to all members/factors of the group. The SWITCH system will inventory all administrative equipment, intelligent controller (IC) and carrier controller (CC) equipment group records associated with switch port provisioning. As described in Section 3, [1]Administrative Groups are groups that have a logical relationship to the switching machine and provide various service features.

Logical groups associated with switching machines can include Load Divisions, Centrex Groups, Multi-Line Hunt Groups, Series Completion Hunt Groups, and Simulated Facility Groups.

Another type of group is an IC equipment group. Equipment groups are groups whose components of the group are considered factors of the group. These groups are considered to be physical type items whose function may be: load groups, measurement groups, spread groups, allocation groups, ISDN groups, and collections.

Equipment groups also have components which are considered factors of the group. They are: frames, cables, or NXX groups.

4.1.3 Assemblies

An assembly is a collection of inventory items and their attributes that are associated together in the data base. This association can represent either a permanent collection of items or a temporary one. The permanency of an assembly is determined by checking to see if the assembly will continue to exist within a working circuit. If the assembly continues to exist, it has the property of permanence; if the assembly will not exist within the circuit, it has no permanence property. These associations will be created, modified, or deleted either by inventory transactions, service order processes, or work order processes.

4.1.4 External IDs

A node is known to the SWITCH system community by its external ID. An external ID is usually the concatenation of the node type (ckt, cp, tn, etc.) and ID value (201.555.1212, 101-1, 123-456-789, etc.). The IC, RU, SWEQ, SVC, FRM, CHNL, and CRV nodes may have more than one external ID. External IDs are defined by the "end user" (e.g., terminal user or contract initiated from another system).

Appendices 4A and 6A discuss external IDs for all database objects in detail.

4.2 Reference Data Functionality

Basically, data is information that needs to be known to drive various processes. There are various categories of reference data, with fine lines of separation between them. The categories have mostly to do with partitioning of reference data. How specific the data can be, (i.e., is the data on a SWITCH System Entity basis, on a wire center basis, or on a specific object basis), is an important consideration when trying to categorize the data.

1. An exception of a group that only exists when services are associated to it is a Series Completion Hunt Group. These groups are not inventoried when spare.

There are four categories of reference data that the SWITCH system needs to support its software functions. The first is data about data, known as non-table data. The others are data about processes or process control data. Non-table data applies to an entire SWITCH System Entity. Process control data can apply to various levels. These levels describe how specific the data is, for example, the data is on a SWITCH System Entity basis, on a wire center basis, or on a specific object basis.

The various categories of SWITCH system reference data are described below:

1. Non-Table Data

   Category 1 is known as non-table data and will be stored in the active reference data database. This data describes what data is allowed (e.g., tags), the relationships allowed, the types of data allowed, the attributes of objects, screen definitions, contract definitions, SWITCH System Entity data, etc. This data is primarily on a release basis and is very infrequently updated.

2. SWITCH System Entity Process Control Data

   Category 2 is data that applies to a SWITCH System Entity. An Entity is a set of wire centers grouped together. The data in this category applies to all wire center partitions in the Entity. This data is usually is table-like in nature. Examples of this data may be process control data for a category of network unit. This data is wire center independent, but possibly may be overridden at a wire center or object level.

3. Wire Center Specific Process Control Data

   Category 3 is process control data that is wire center specific. This data is table-like and is usually more than just read only. This data may describe what ICs are supported in this wire center, process control defaults for the wire center, network unit selection control data, etc. This data may be overridden at an object level. This data, being wire center specific, can be updated frequently, but usually less than once a day.

4. Object Instance Process Control Data

   Category 4 is process control data that describes specific instances of database objects. It is generally table-like in nature. The database object is either part of the table pathname or part of the data. The pathname is how the table and possibly the rows and columns are accessed. This data can be updated frequently, but usually less than once a day.

4.2.1 Reference Data Use

Reference data *use* refers to the function that the reference data supports. The various features are input validations, Inventory process control, Service Provisioning process control, Engineering Work Order process control, Interface process control, Reports, and

System administration type functions. The reference data used by these features is summarized below.

1. SWITCH System Data
The SWITCH system requires the ability to store comprehensive information about its data. The reference data that supports this will contain the definition of objects, relationships, and attributes that make up the SWITCH system DLBB and the contracts that operate on those objects. Also contained in this feature will be error and information messages that may occur in SWITCH system processing. This data is non-table data in the active reference data database and applies across multiple SWITCH System Entities.

2. Inventory Data
Inventory reference data is either validation data of tags and values for network units, process control data for the updating of the database inventory, or instance data for other processes. When network units are updated in the database, the validity of associated attributes is checked and the existence of all required attributes is verified.

3. Service Provisioning Data
Reference data for service provisioning can be separated into two functions. The first is the circuit analysis portion of assignment processing. The second function is the component selection process of assignment. This data usually pertains to an object instance in a wire center. There are however some tables that can reside at a SWITCH System Entity level. The functionality supported by this set of reference data is discussed in Sections 6 and 7 of this document.

4. Engineering Work Order Data
Reference data for engineering work orders is used to support both multi- pass and single-pass work orders. Work orders also use a lot of assignment processing, thus the service provisioning reference data comes into effect as well. Some of the reference data for orders are wire center default parameters used in the processing of the order. This data can be overridden at the order level.

5. Interface Data
Reference data required to support the processing of data in or out to external systems consists of data that define how to package the data and determine if output is necessary. The two known interfaces with identified reference data are FOMS and MARCH® system (via SOAC). The functionality supported by this set of reference data is discussed in Sections 13 and 15 of this document.

6. Reports and Administration Data
Report data is used to customize report formats. Administrative data is used for system security, screen customization, output message routing, etc.

4.2.2 Overrides

Overrides can be used when the default reference data for the process is not applicable. Overrides can exist at the wire center level for SWITCH System Entity reference data, and at the specific object level for wire center reference data.

As an example, work orders use wire center defaults for cable throws to either start assignment logic, send frame output, send translations data, or coordinate frame and translation output. These parameters can be overridden for a specific instance of an order. Thus the wire center defaults are ignored and the order parameters are used.

The reference data access primitives must be intelligent enough to know that overrides must be looked for and implemented if found. There is a hierarchy of overrides from specific object overriding wire center level or SWITCH System Entity level data, and wire center overrides for SWITCH System Entity level. The processing of these overrides is as follows: the application needs reference data (parameter value, object value, etc.) and looks first at the specific object level (if appropriate). If overrides are found, they are used. If overrides are not found the application bumps up to the next level, wire center specific, and looks for overrides. If overrides are found, they are implemented. If no overrides are found, the application bumps up to the last level, SWITCH System Entity. If no values are found, the application is notified and either continues or RMAs (depending on the part of the application).

The application bumps up to the highest level it expects to find data; not all processes have defaults at the SWITCH System Entity level. For some processes, the highest level may be wire center specific, for others, the highest and only level may be object specific. The application knows the highest level where the data can reside so the appropriate access keys (instance keys) can be provided.

4.2.3 Client Specific Features

While this document describes the functional areas of the SWITCH system, certain capabilities within these areas are often discussed. The SWITCH system has the ability to limit the availability of certain capabilities or features to the clients. The method of authorizing the use of these capabilities is controlled via the *customerfeatures* table (Table 4-4).

All features that are offered on a client specific basis are listed in this table. Activation of a specific feature requires the assistance of Bellcore personnel. When client specific features are discussed is this document, they are referred to by their name as given in this table.

4.3 Intelligent Controllers

The intelligent controller/switching machine has relationships to all items, frames, and groups with which it is associated. Intelligent controllers are vendor specific, and as such possess different characteristics and features that must be retained in the SWITCH system. Some of the controller attributes should include its name and identification, generic, etc.

Some of the vendors to be supported, based on BCC requests, are:

- Lucent Technologies
- NORTEL
- Ericsson
- Siemens Stromberg Carlson (EWSD® and DCO® ICs)

4.3.1 Intelligent Controller Attributes

Listed below are attributes that apply to intelligent controllers. These attributes appear once for each intelligent controller in a wire center and may be used by the assignment processes when selecting a controller.

1. Intelligent Controller Identification - Identifies the controller either by control group (e.g., CG0), switch entity code ID from an 11 character CLLI™ code, or an exchange key (typically NPA and NXX) for the MARCH system.[2]
2. Intelligent Controller Type - indicates the type of intelligent controller (with latest release supported by SWITCH System). Valid values are:

IC Type	Valid Value
1/1AESS™ (1ae13)	1ES
2BESS™ (2be5)	2ES
3ESS™ (3e3)	3ES
5ESS™ (5e12)	5ES
DMS® -10 (410.10)	DMX
DMS® -100 (na008)	DMC
EWSD® (aps14E)	EWSD
DCO® (19.0)	DCO
Ericsson AXE® -10 (7.0)	AXE

2. The IC ID in the form of IC type and control group is a required ID (See Appendix 4A).

3. Generic - identifies the software version used by stored program control switches.
4. Change Date - indicates the last time the intelligent controller's database record was changed. The format will by year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and second (ss).
5. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the network unit.
6. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.
7. Hierarchy Level and Count - identifies the level of an IC's hierarchy (i.e., concentrator level) and the total number of equipment groups (i.e., load groups) at that level. The IC itself is not counted.
8. Remarks - user values that are input that provide remarks about the IC.
9. Site ID - indicates the site ID for DMS-100 ICs. This is a six character alphanumeric field and is needed to support the MARCH system.

4.3.2 TIDE Supporting Data

This section contains attributes required to support and maintain the SWITCH system and TIDE system interface.

1. Measurement Originator (Measurement Source) - identifies the originator of the traffic measurement data. The values are TDAS or NDS.
2. Originator Version (Measurement Version) - identifies the originator version (Software Release of reporting system) of the measurement data.
3. Tape Creation Date (Measurement File Creation Date) - indicates:
   - for a TIDE (NDS) measurement data file, the date on which the file was created, and
   - for a TDAS measurement data file, the end date of the first valid data record.
4. Measurement Update Date - indicates the date upon which the measurement data was updated in the SWITCH system.
5. Measurement End Date - indicates the end date when the traffic study was completed.

4.4 Remote Switching Units

A Remote Switching Unit (RU) is a hardware extension of an Intelligent Controller that is located at a site different from the main body of the IC. Remote units can provide some switching functionality. Remote Units are treated as part of the host IC, *not* as a separate IC. Remote Units are controlled by the host IC and thus have no direct relationships to administrative groups. Remote units will have relationships to switch ports.

Remote Units are vendor specific and as such possess different characteristics and features that must be maintained in the SWITCH system. The Remote Unit's attributes should include its name and ID, generic, etc.

4.4.1 Remote Unit Attributes

Listed below are attributes that apply to remote units. These attributes appear once for each remote in a wire center and may be used by the assignment processes when selecting a remote unit.

1. Remote Unit Identification - Identifies the remote either by its relationship to its host IC and its control group (e.g., RS0), and/or the IC entity code ID from an 11 character CLLI code. See Appendix 4A for details on RU IDs.
2. Remote Unit Type - indicates the type of remote unit. Valid values are:

   RSS
   RSM
   RLM
   RLCM
   RLS-1000
   RLS-4000
   RNS
   RSC
   RISDN
   SLC96
   RIDLC96
   OPM
   DMS1U
   DMS1R
   RISLU
   RSLE
   RSLM
   OPSM
3. Generic - identifies the software version used by the host stored program control switches.
4. Change Date - indicates the last time the remote unit's database record was changed. The format will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).

5. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the remote unit.
6. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.
7. Remarks - user values that provide remarks about the RU.
8. Site ID - identifies the site ID for DMS-100 remote units. The site ID helps differentiate between the host and remotes for use in the MARCH system.
9. Exchange Key - used to identify a remote unit. For DMS-100 RUs it is not necessarily unique. The exchange key and Site ID are both needed to achieve uniqueness in this case. For RUs, it is only an attribute and not an external ID.

4.4.2 TIDE Supporting Data

This section contains attributes required to support and maintain the SWITCH system and TIDE system interface.

1. Measurement Originator (Measurement Source) - identifies the originator of the traffic measurement data. The values are TDAS or NDS.
2. Originator Version (Measurement Version) - identifies the originator version (Software release of system providing data) of the measurement data.
3. Tape Creation Date (Measurement File Creation Date) - indicates:
   - for a TIDE (NDS) measurement data file, the date on which the file was created, and
   - for a TDAS measurement data file, the end date of the first valid data record.
4. Measurement Update Date - indicates the date upon which the measurement data was updated in the SWITCH system.
5. Measurement End Date - indicates the end date when the traffic study was completed.

4.5 Carrier Controllers

A carrier controller (CC) models a terminal in a Digital Loop Carrier system. Carrier controllers consist of equipment elements (e.g., slots and ports). Examples of CCs are: Remote Terminals (RTs), Central Office Terminals (COTs), Host Digital Terminals (HDTs), Add/Drop Multiplexors (ADMs), Digital Cross-connect Systems (DCSs), Optical Network Units (ONUs), and Electronic Digital Cross-connect frames (EDSXs).

4.5.1 Carrier Controller Attributes

Listed below are the attributes that apply to carrier controllers.

1. Carrier Controller Name - identifies the carrier controller. A carrier controller's name includes a single string that can be 1-55 characters long.
2. CC Type - identifies the type of CC for use in reports and inquiries. Valid values are: RT, COT, HDT, ADM, DCS, ONU, and EDSX. This field is up to 4 alpha-numeric characters.
3. TSI Indicator - indicates whether the SWITCH system will provide TSI data (e.g., cross-connects or CRV associations) to downstream systems (Y/N).
4. Target Identifier - the target identifier associated with the CC. Valid values for this attribute are a maximum of 20 alphanumeric characters.
5. Carrier Controller Address - the address of the carrier controller. It can be up to 50 alpha-numeric characters.
6. Generic - identifies the generic or feature package number of the CC (6 a/n).
7. Carrier Controller Location - identifies the CLLI code (11 a/n)) for the CC.
8. Carrier Controller Building Identifier - identifies the 8 or 11 CLLI code of the building of the CC.
9. Carrier Controller Human Equipment Catalog item (HECIG) - identifies one channel bank mounting HECIG (8 a/n) for the entire CC.
10. Drop Rates - identifies, in an array, the drop rates (assignment rates) that the CC can be engineered to support. There may be up to 10 drop rates. A drop rate is the rate at which channels may be 'dropped' (drop side) out of a CC. Each value is up to 6 alphanumerics.
11. Carrier Controller Model - identifies a model (7 a/n) which distinguishes the hardware characteristics of one CC from another. It is used to access CC specific reference data.
12. Remarks - field that allows up to 60 alphanumeric characters of text.

4.5.2 Other Attributes

This section describes other attributes stored for carrier controllers.

1. Change Date - indicates the last time there was a change to this piece of inventory's database record. The format for change date will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
2. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the network unit.

3. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.

4.6 Switch Ports

Switch ports are a physical and/or logical external connection point to a switch. All switch ports will be inventoried in the SWITCH system. Access (line) and some network (trunk) ports will be inventoried.

4.6.1 Equipment Feature Attributes

This section defines all features of switch ports that describe the hardware functionality of the switch port. Since some of the attributes described are appropriate for only some of the valid switch port types, null is a valid value if the attribute is not applicable.

Following is a list of equipment feature attributes:

1. Switch Port Name - identifies the switch port either by COMMON LANGUAGE, USO, or local name. A switch port's name will include the IC ID and the switch port ID.
2. Switch Port User Name - indicates the name used by the user when the switch port is created in inventory. Switch port input names are: OE (Office Equipment) and POE (Packet Office Equipment). Each of these user names will be mapped to a SWITCH system internal type of "swpt".
3. Card Type - identifies the abstract representation of the switching machine hardware to which the switch port belongs (e.g. analog, ISDN). Each card type may have different spread, load, measurement, allocation and ISDN levels.
4. Remarks - indicates any user remarks against the switch port.
5. Pulsing - indicates the pulsing used by the switch port. This is a plug-in attribute. Valid types of pulsing are:

   blank - does not apply
   d - dial pulse (rotary)
   j - multi-frequency (touchtone)
6. Signaling - indicates the start signal mode. This is a plug-in attribute. Valid types of signaling are:

   b - loop and ground start
   l - loop start
   g - ground start
   r - reverse battery

q - Q.931 (ISDN)
p - proprietary

7. Essential - indicates that the switch port is either essential or non- essential. Valid values are "y" or "n."
8. Band - identifies the ISDN Band supported by the switch port. Valid values are 0-15.
9. Administrative Constraint - indicates the switch port's function capabilities. Known code set values are indicated below:

1b - Average usage business
1c - Public coin
1r - Residence
hb - High usage business
pb - Medium usage business
iu - ISDN U interface with multiple terminals
it - ISDN T interface with multiple terminals
iusp - ISDN U interface with single terminal
itsp - ISDN T interface with single terminal
data - Circuit switched data
nt - No termination
dch - D channel POE
ppb - Permanent packet B POE
odb - On demand B POE
dch2 - D channel, PH2
ppb2 - Permanent packet B channel, PH2
odb2 - On demand B channel packet, PH2
dchc - D channel, channel selection
ppbc- Permanent packet B channel, channel selection
odbc - On demand B channel packet, channel selection
idch - D channel POE for use with IDCU[3]
ippb - Permanent packet B POE for use with IDCU
iodb - On demand B POE for use with IDCU
idch2 - D channel, PH2 for use with IDCU
idchc - D channel, channel selection for use with IDCU
ippbc- Permanent packet B channel, channel selection for use with IDCU
iodbc - On demand B channel packet, channel selection for use with IDCU
madn - Multiple Appearance Directory Number
mws - Message Waiting Service
test - Access for "test" equipment.
zb - Extra High usage business

3. POEs to be used for ISDN assignments in an IDCU have administrative constraints prefixed with an "i". These POEs can be automatically assigned if IDCU Collections and Collection Groups exist. IDCU Collections and Collection Groups can be built if the client-specific feature, tr303 dle isdn, is enabled.

note - Access for "no test" equipment
idlc - Integrated Digital Loop Carrier
2rp - Residence 2-Party
4rp - Residence 4-Party
8rp - Residence 8-Party
2bp - Business 2-Party
4bp - Business 4-Party
8bp - Business 8-Party
t1 - Low CCS trunk (folded networks)
t2 - Medium CCS trunk (folded networks)
t3 - High CCS trunk (folded networks)

10. Number of wires - represents the number of physical transmission leads. The valid values are:

    0 - No physical appearance
    2 - Two wire
    4 - Four Wire

11. Mounting Rate - indicates the rate supported by the mounting. The valid values are:

    vce - Voice
    ds0 - DSO (56 or 64 kbs)
    ds1 - DS1 (1.544mbs)
    bri - Basic Rate ISDN (144kbs)

12. Mounting Type of Access - indicates the type of network access the mounting prov ides. The valid values are:

    line - line
    trnk - trunk
    fold - both line and trunk (folded)

13. Mounting Type of Switch Fabric - indicates the kind of switching fabric to which the mounting can provide access. The valid values are:

    ckt - circuit switched
    pkt - packet switched
    isdn - ISDN switched
    chan - channel switched

14. Integrated - indicates whether the switch port in question is incorporated within a higher level switch port or not. The valid values are "y' or "n."

15. Data Protocol - indicates the data protocol the mounting supports. The valid values are;

    blank - does not apply
    bx - both X.25 and X.75

x25 - X.25
x75 - X.75

16. Inherited Features - indicates a trait associated with the mounting, that is inherited from higher level equipment relationships. The valid values are:

    blank - does not apply
    x - concentrated range extension (1ESS, 2ESS, and DMS-10 ICs)
    p - PSU contained within switch module (5ESS IC)
    m - can access message switch buffer (DMS-100 IC)
    s - sidedoor capability (DMS-100 IC)

17. Plug-in Rate - indicates the rate supported on the input side of the plug- in. The valid values are:

    vce - voice
    ds0 - DSO (56 or 64 kbs)
    ds1 - DS1 (1.544 mbs)
    bri - Basic rate ISDN (144kbs)

18. Plug-in Type of Access - indicates the type of network access that the plug -in provides. The valid values are:

    line - line
    trnk - trunk
    fold - both line and trunk (folded)

19. Plug-in Type of Switch fabric - indicates the kind of switching fabric to which the plug-in can provide access. The valid values are:

    ckt - circuit switched
    pkt - packet switched
    isdn - ISDN switched
    chan - channel switched

20. Encoding Protocol - indicates the coding scheme used by the channel unit for transmitting data. The valid values are:

    blank - does not apply
    a - AMI (Alternate Mark Inversion)
    b - 2B1Q (2 Binary Bits/Quartile)
    f - 4B3T (4 Binary, 3 Tertiary bits)

21. Directionality - indicates the call set-up direction that the plug-in can provide. The valid values are:

    blank - does not apply
    i - inward
    o - outward
    b - both inward and outward

22. Transmission Quality - specifies the standard of transmission the plug-in can provide. The valid values are:

    blank - does not apply
    l - local
    t - toll

23. Data Rate - indicates the data rate the plug-in can furnish. The valid values are:

    blank - does not apply
    l - 2.4, 4.8, or 9.6 kbs
    h - 56 kbs
    a - 64 kbs

24. ISDN On-Demand B Band - The Band specified for a 5ESS IC On-Demand B POE. The valid values are:

    0 - 15

25. Network Unit Selectability Scale - identifies the selectability scale from the network unit to determine if it can be selected even if though it is in an assembly (1N).

4.6.2 Physical Location Attributes

This section describes attributes that deal with the switch port's frame and equipment location. The frame location of a specific piece of hardware identifies such things as frame, zone, and LOIS. The equipment location (switch port ID) is used to identify equipment group IDs and relationships.

1. Switch Port Identification - Identifies the switch port location. Formats differ for line and trunk sides. This attribute (from COSMOS OE file, field OE ID) will identify where the port is located by relay rack, bay, etc. See Appendix 4A for more details on equipment IDs.

2. Frame and Zone - indicates the frame and zone of the switch port appearance on a distributing frame. This attribute may have multiple values. The format for the frame will generally be fxx, f followed by two alphanumerics, and zone will be three numerics from 001 to 999.

3. LOIS (Location Oriented Identification System) or Frame Termination Data - indicates the LOIS or frame termination information for the switch port. There will be one entry for each frame appearance.

4. Equipment Group Attributes - indicates the hierarchy level and equipment group ID at that level, for each equipment group to which the switch port belongs and the hierarchy level of each equipment group. A switch port can belong to one or more of the following category of equipment groups: load, spread, measurement, allocation, isdn.

4.6.3 Assignability Attributes

This section describes attributes that provide various status information such as available capacity, assignment limitations, use (e.g., in an SFG), order information, etc. Generally, a new switch port is entered into inventory with available capacity. Assignability attributes are set by various provisioning requests, work order, etc. contracts that operate on the switch port.

To make valid selections during the assignment process, a switch port must have available capacity and the correct amount of capacity for the assignment. Some switch ports are capable of having only one assignment made against them. Other switch ports have multiple assignment capacity and could be partially spare or working. Thus, the values of spare and working are too restrictive and a new philosophy has been created.

Each switch port will have three attributes associated with it to determine assignment availability. These attributes are assignment capacity, assignment use, and available capacity. They are described below, along with assignment limitations.

These are the attributes associated with each switch port:

1. Assignment Capacity - indicates the total assignment capacity of the switch port. In most cases, the assignment capacity of a switch port is 1 for single line service. Another example would be an assignment capacity of 4 for a four party switch port. The valid format for this attribute is one numeric character.

2. Assignment Use - indicates the total assignment use of the switch port. For example a four party switch port might have only one service associated with it; thus the assignment use is one.

3. Available Capacity - indicates whether the switch port has available capacity for assignment. It is a derived attribute, taking the assignment capacity and subtracting the assignment use from it. If the result is greater than zero there is available capacity. A yes or no indicator will be used for this attribute's value. Thus a four party switch port with only one party assigned would have an available capacity of "y" since capacity is 4 and use is one (4-1>0).

4. Assignment Limitations - identifies various assignment limitations for the switch port. Switch ports with an assignment limitation will never be considered by the automatic selection process, with one exception. This is the consideration of defective switch ports for remote call forwarding service. Assignment limitations consist of a type and a value. The values are user-definable. The valid types and the corresponding values are:

   - DEF (Defective) - indicates that the switch port is physically defective. The assignment limitation type is def and its valid value is def (defective).
   - RST(Restricted) - indicates the switch port is not capable of being automatically assigned (or having its assignment changed) by SWITCH system. This is due to

SWITCH system limitations or physical conditions (other than defective) which prevents assignment or assignment changes. The assignment limitation type is rst and its valid values are:

— atr - Area Transfer

— idc - IDCU assignment - for POE only

— res - restricted

— rsl - RISLU assignment - for POE only

— sus - suspend - for OE only

- WTH (Withheld) - indicates that the network unit, though normally assignable by the SWITCH system, has been withheld from the assignable pool by the user. Assignment validations will not allow a network unit with this limitation type to be assigned (auto or pre-specified). The assignment limitation type is wth and its valid values are:

  — ex- excluded

  — prs - permanent reserved

  — unk - unknown

  — unq - unequipped

  — wth - withheld

- TMP (Temporary) - indicates that this inventory is temporarily reserved for a subsequent service request. When the inventory is selected for a pending service request, the limitation is removed. The valid values for this limitation type are:

  — ars - temporarily reserved for Area Transfer

  — trs - temporarily reserved

- WKG (Working) - indicates that this network unit, though not a component of a service or a circuit is working. Assignment validations will check to ensure any network units that have a working limitation type are not assigned (auto or pre-specified). The valid value for switch ports of a WKG type are:

  — ms - miscellaneous - for OE only

  — ptk - packet trunk - for POE only

  — tst - test

- Null - indicates that there is no limitation.

5. Availability Date - indicates the date the inventory will be physically available for use. Assignment will validate that the availability date of the switch port is before the due date of the service request which selected it.

6. Use - indicates any special use of the switch port when it becomes a component of a service or a Simulated Facilities Group (SFG).

   When a switch port is associated to an SFG, the valid value is SLEN.

   When a switch port is associated to an ISDN service, valid values are B1, B2 or D. When a switch port is associated to a remote call forwarding service, the valid value is SLEN.

7. Digital Bridge Indicator - indicates that this switch port is digitally bridged to one or more additional switch ports to support the service. Valid values are P for primary switch port and S for non-primary switch port.

8. Assigned Party Position - (8 Y/N or null values) indicates all the Party positions that are in use in the circuit. The status of a Party position (assigned Y or N) is found by looking in that same position in the array.

9. Party Position - (1N) indicates the party of the switch port when it is in a service.

10. Assignment History - six attributes are stored for switch ports when they are assigned to a service. They are:

    Assignment Engine Selected - indicates if the switch port was selected ("Y") by the assignment engine or not ("N").

    Circuit Design Class - indicates what the zero penalty administrative constraint was for the assignment category when this switch port was selected.

    Load Factor - indicates the load factor at the time of assignment of the load group to which the switch port belongs.

    Jumper Iteration - indicates the jumper iteration number at the time the switch port is assigned.

    Relaxation Level - indicates the relaxation level at the time of assignment.

    Date of Assignment - indicates the date at the time of assignment.

11. Packet OE (POE) Indicator - an indication that consideration should be given to the number of assignable D channel packet users field during selection of a POE.This attribute is only relevant when the client specific feature, 5ESS ISDN Protocol Handler D Channel User Limitations (5ess ph dpkt user limit), is enabled.

4.6.4 Carrier Circuit Attributes

These are the attributes that are associated with the switch port that terminate the carrier circuit on the IC. These attributes only apply to DS1 carrier circuit switch ports.

1. Bandwidth Internal ID - the bandwidth internal ID will be stored for end point switch port that is a component of a carrier circuit.

2. Path Internal ID - the path internal ID will be stored for end point switch port that is component of a carrier circuit.
3. Carrier Availability Date - date at which the carrier circuit, for which the switch port is a component, becomes activated; thus the switch port becomes working. This date is removed when the carrier new connect is completed. This attribute is only present for switch ports that are components of pending carrier circuits.
4. Carrier Disconnect Date - date at which the carrier circuit, for which the switch port is a component, is disconnected; thus the switch port is spare. This date is removed when the carrier circuit disconnect is completed. This attribute is only present for SWPTs that are components of working carrier circuits.
5. Carrier Circuit Cost - identifies the cost of the carrier circuit. The value is propagated from the service node. The valid values for this field is up to 7 numeric characters.
6. Dynamic Indicator - indicates if the switch port is part of a bandwidth which supports dynamic, mixed, or static TSI.

4.6.5 Other Attributes

This section describes other attributes stored for switch ports.

1. Change Date - indicates the last time there was a change to this piece of inventory's database record. The format for change date will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
2. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the network unit.
3. Last Order Identifier - indicates the last order number for history processing.
4. Due Date - indicates the due date of the last order identifier. The format for due date will be year (yyyy) month (mm) and day (dd). The value could be null if there is no order associated with the switch port.
5. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.

4.7 Carrier Controller Ports

Carrier Controller ports (CC ports) are similar to switch ports in that they provide access into the internal network of the controller to which they belong.

Processing, inventory, and provisioning is different for CC ports and switch ports; therefore a separate node type is required.

4.7.1 Carrier Controller Port Attributes

Listed below are the attributes that apply to carrier controller ports.

1. Carrier Controller Port Name - identifies the name of the carrier controller port. A carrier controller port name is composed of the CC ID and hardware configurations.
2. Administrative Constraint - indicates whether the CC port provides "station" or "office" end functionality. Valid values are null, "s", and "o".
3. Assignment Limitations - indicates assignment limitations for carrier controller ports. The assignment limitation types and their corresponding values are:
   - DEF (Defective) - indicates that the carrier controller port is physically defective. The assignment limitation type is def and its valid value id def (defective).
   - RST (Restricted) - indicates the carrier controller port is not capable of being automatically assigned (or having its assignment changed) by SWITCH system. This is due to SWITCH system limitations or physical conditions (other than defective) which prevents assignment or assignment changes. The assignment limitation type is rst and its valid value is res (restricted).
   - WTH (Withheld) - indicates that the network unit, though normally assignable by the SWITCH system, has been withheld from the assignable pool by the user. Assignment validations will not allow a network unit with this limitation type to be assigned (auto or pre-specified). The assignment limitation type is wth and its valid values are:
     — ex - excluded
     — prs - permanent reserved
     — unq - unequipped
     — wth - withheld
   - TMP (Temporary) - indicates that this inventory is temporarily reserved for a subsequent service request. When the inventory is selected for a pending service request, the limitation is removed. The valid value for this limitation type is trs (temporarily reserved).
   - NA (Non Assignable) - indicates that no assignment can be made. CC ports having this assignment limitation are still allowed to be assembled to cable pairs but are not allowed to exist in a working service/circuit. The only valid value is NA (not assignable (NO AID).
   - Null - indicates that there is no limitation.
4. Assignment Capacity - identifies the assignment capacity for the CC port (1 N).
5. Assignment Use - identifies the used capacity for the CC port (1 N).

6. Available Capacity - identifies the available capacity for the CC port (1 a/n).
7. Carrier Availability Date - date at which the carrier circuit, for which the CC port is a component, becomes activated; thus the CC port becomes working. This date is removed when the carrier new connect is completed. This attribute is only present for CC ports that are components of pending carrier circuits and that are controlled by the end point CCs for a bandwidth (BW).
8. Carrier Disconnect Date - date at which the carrier circuit, for which the CC port is a component, is disconnected, thus the CC port is spare. This date is removed when the carrier circuit disconnect is completed. This attribute is only present for CC ports that are components of working carrier circuits and which are controlled by the end point CCs for a bandwidth (BW).
9. Card Type - identifies the generic functionality of the type of channel unit for which a slot is pre-engineered or pre-equipped. This attribute is inherited down to the CC port from the slot. For valid values of the CC port card type, refer to slot card type values (Section 4.8).
10. CC Terminating Point - identifies the EDSX in the central office where a CC port used for HICAP terminates. The valid value for this attribute is the 11 character CLLI code of the EDSX.
11. Desirability - describes the desirability of selecting one CC port over another. Selecting ports that belong to an equipped slot is more desirable than selecting ports in unequipped slots. The value is either "Y" or "N".
12. Assigned Party Position - (8 Y/N or null values) indicates all the party positions that are in use in the circuit. Only present when card type is for party.
13. Party Position - (1N) indicates the party position of the carrier controller port when it is in a service.
14. Receive/Transmit Flag - identifies whether the CC port is the receive or transmit port for four wire services (1 a/n).
15. ADSR - identifies whether the CC port is to be used for designed services or not. Valid values are "Y" (design), "N" (non-design), or null.
16. Encoding Protocol - identifies the encoding protocol of the CC port. The encoding protocol is inherited from the slot. The valid values are:

    blank - does not apply
    a - AMI (Alternate Mark Inversion)
    b - 2B1Q (2 Binary Bits/Quartile)
    f - 4B3T (4 Binary, 3 Tertiary bits)
17. Date of Assignment - indicates the date at the time of assignment.

18. Network Unit Selectability Scale - identifies the selectability scale from the network unit to determine if it can be selected even though it is in an assembly (1N).
19. Adjacent Point - identifies the adjacent CC (by internal ID of the CC) for a CC port when it is assembled to at least one channel.
20. Access Identifier - Identifies the AID (access identifier) for the CC port. The AID is used to uniquely identify the CC port to the CC. The access identifier field can be up to 45 alphanumeric characters.

4.7.2 Carrier Circuit Attributes

The attributes listed below apply only to CC ports that are part of a carrier circuit.

1. Bandwidth Internal ID - the internal ID of the bandwidth node to which the carrier circuit belongs. This attribute is only present for CC ports which are components of pending or working carrier circuits and which are controlled by end point CCs for a BW.
2. Path Internal ID - the internal ID of the path node to which the carrier circuit belongs. This attribute is only present for CC ports which are components of pending or working carrier circuits and which are controlled by end point CCs for a BW.
3. Carrier Circuit Cost - identifies the cost of the carrier circuit. The value is propagated from the carrier service node. The valid values for this field is up to 7 numeric characters. This attribute is only present for CC ports which are components of pending or working carrier circuits and which are controlled by end point CCs for a BW.
4. Dynamic Indicator - indicates if the CC port is part of a bandwidth which is dynamic, mixed, or static TSI. This attribute is only present for CC ports which are components of pending or working carrier circuits and which are controlled by end point CCs for a BW. Valid values are "d", "m", "s", or null.

4.7.3 Physical Location Attributes

The following list describes the physical location attributes for carrier controller ports.

1. Frame - identifies the frame on which the CC port (in the CO only) terminates (3a/n).
2. Zone - identifies the zone (in the CO only) on which the CC port terminates (3n).
3. Frame Termination Data - identifies the frame termination data for the CC port. This attribute is up 18 alphanumeric characters.

4.7.4 Other Attributes

This section describes other attributes stored for carrier controller ports.

1. Change Date - indicates the last time there was a change to this piece of inventory's database record. The format for change date will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
2. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the network unit.
3. Last Order Identifier - indicates the last order number for history processing.
4. Due Date - indicates the due date of the last order identifier. The format for due date will be year (yyyy) month (mm) and day (dd). The value could be null if there is no order associated with the switch port.
5. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.

4.8 Slots

A channel unit (e.g., a plug-in) is an electronic card that provides one or more assignable ports. This channel unit resides in a slot. A slot provides an electrical and processing contact for the channel unit which is the access point into the CC.

Only slots will be inventoried, not the channel units that reside in the slot. Data associated with the channel unit will be stored in the slot node.

Only slots for customer channel units and carrier channel units will be inventoried. Slots for common channel units will not be administered by the SWITCH system.

Slots may be equipped (the channel units are in place) or pre-engineered (service characteristics of the channel units are defined, but the channel units are not in place).

4.8.1 Slot Attributes

The following attributes apply to slots.

1. Slot Name - identifies the slot. The slot name consists of a single string of 1 - 55 characters in length. The slot name is composed of a CC ID and slot ID.
2. Equipped - indicates whether a channel unit is in place in the slot or not. The valid value are "Y" or "N."
3. Channel Unit HECIG - indicates the Human Equipment Catalog Item Group (HECIG) identifier for the channel unit. Valid values are 8 alphanumeric characters.

4. ADSR Involved - used to indicate whether the channel unit is reserved for specials or non-specials. The valid values are "Y," "N," or null. This attribute will be propagated to the CC port nodes that are factors of the slot.

5. Absolute Number of Circuits - indicates the number of circuits allowed for the slot based on what the slot is pre-engineered or equipped for (2N).

6. Number of Working circuits - a count of the number of circuits working on the slot (2N).

7. Card Type - identifies the functional capabilities of the channel units occupying the slot which the CC port is a factor of. This attribute will be propagated to the CC port nodes that are factors of the slot. The valid values for this field contain up to 8 alphanumeric characters and are listed below.

   - POTS
   - COIN
   - SAD - Service Adaptive
   - BRI - Basic Rate Interface
   - BRI4 - Basic Rate Interface 4 wire
   - BRI303 - Basic Rate Interface TR-303
   - BRI303Q - Basic Rate Interface TR-303 Quad
   - DDS - Digital Data Service
   - DDSE - Digital Data Service Enhanced
   - DDSP - Digital Data Service Partial
   - 4WS - 4 wire special (single circuit)
   - 4WSD - 4 wire special (dual circuit)
   - 2WS - 2 wire special
   - MRD - 2 wire transmission only service
   - DID - Direct Inward Dial
   - EBS - Extended Business Set
   - MPTY - Multi-party
   - DS1
   - DS2
   - DS3
   - OC3

- OC12
- DC - DC Alarms
- OU - Optical Unit
- UVGV - Universal Voice Grade Versus® [4]
- UVG - Universal Voice Grade
- EUVG - Extended UVG
- CXMU - Coaxial Master Unit
- RFDS - Radio Frequency Distribution Shelf transceivers
- EPOTS - Extended POTS

8. Encoding Protocol - identifies the encoding protocol of the CC port. This attribute will be propagated to the CC port nodes that are factors of the slot. The valid values are:

   blank - does not apply
   a - AMI (Alternate Mark Inversion)
   b - 2B1Q (2 Binary Bits/Quartile)
   f - 4B3T (4 Binary, 3 Tertiary bits)

9. AID Format - identifies the AID format name used in deriving the AIDs for the CC ports associated with the slot. This field is up to 9 alphanumeric characters.

4.8.2 Other Attributes

This section describes other attributes stored for slots.

1. Change Date - indicates the last time there was a change to this piece of inventory's database record. The format for change date will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
2. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the network unit.
3. Last Order Identifier - indicates the last order number for history processing.
4. Due Date - indicates the due date of the last order identifier. The format for due date will be year (yyyy) month (mm) and day (dd). The value could be null if there is no order associated with the switch port.
5. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.

4. Versus is a registered trademark of VerSus Technologies Inc.

4.9 Cable Links

A cable pair is a transmission path that may consist of physical wires or may be derived from a pair-gain system. The SWITCH system will inventory feeder cable pairs and their associated physical or logical frame (derived) locations.

A trunk pair is an interoffice facility that is assigned for non-designed foreign exchange service, assigned by the Loop Assignment Center (LAC). One or more of these facilities would connect the cable pair in the local wire center (where the customer is located) to the wire center where the service is switched, or the foreign serving office. A given trunk pair will be terminated on two frames, each in separate wire centers, connecting the two offices. For administrative purposes, a trunk pair can only be assigned by one of the two wire centers in which it is terminated. The SWITCH system will inventory and assign trunk pairs.

An intra-wire center facility (tie pair) is a facility used to provide electrical connectivity between two distributing frames within an office. The SWITCH system will inventory intra-wire center facilities interconnecting subscriber main distributing frames. Intra-wire center facilities interconnecting frames to obtain access to transmission equipment required for POTS or special service provisioning are also inventoried. In addition, the SWITCH system will inventory and assign intra-wire center facilities to eliminate long jumpers or to support a multiple line-up frame. Intra-wire center facilities between a host frame and a remote frame will be supported.

Cable link attributes are described in various categories. Section 4.9.1 describes any identification attributes the cable link has. Section 4.9.2 describes assignability attributes; attributes that provide status information about the cable link. Section 4.9.3 describes physical location attributes; attributes that describe the link location and are used for assignment purposes. Section 4.9.4 contains any other attributes required for inquiries and common updates to other systems. All of these attributes are stored with each individual inventory unit.

4.9.1 Cable Link Identification

This section describes all features of cable links that pertain to the functionality of the link.

1. Pair ID - contains cable name and pair designation. Valid values for the cable name may be up to 10 alphanumeric characters long; leading zeros are significant. The pair designation value can be up to four alphanumeric characters long; leading zeros are stripped off.
2. Cable Type - indicates the cable link type such as cable pair (CP), trunk pair (TKP) or intra-wire center facilities (IF).

3. Specific Functionality - indicates the specific functionality that applies to the cable link such as integrated (int), non-carrier (non), universal DLC (udlc) or carrier controller (cc).

4. TID (Termination ID) Code - indicates the circuit termination ID for the pending or working pair. This is a valid attribute for cable pairs and trunk pairs and null for other cable link types. The values for each part (DPA, LTI, etc.) are four alphanumeric characters each.

   Different premises address (DPA) code
   or
   Circuit location (CKL)
   and/or
   Loop termination ID (LTI) code

5. CLCI (Circuit Identification) Segment Number - indicates the identity of the circuit segment for the pending or working pair. This is a valid attribute for cable pairs and null for other cable link types. The valid format for this attribute is three alphanumeric characters.

4.9.2 Assignability Attributes

This section describes attributes that provide various status information such as the available capacity, or whether the pair is defective, pending, part of a work order, etc. Also included is an indicator to identify participation in an assembly (e.g., DIPed). Generally a new cable link is entered into inventory with available capacity status. Assignability attributes are set by various provisioning or work order contracts that operate on the cable link.

1. Assignment Capacity - indicates the total assignment capacity of the cable link. The valid format for this attribute is one numeric character; typically a value of 1.

2. Assignment Use - indicates the total assignment use of the cable link. Values for this attribute should be in the same units as assignment capacity.

3. Available Capacity - indicates whether the cable link has available capacity for assignment. It is a derived attribute, taking the assignment capacity and subtracting the assignment use from it. If the result is greater than zero there is available capacity. A yes or no indicator will be used for this attribute's value.

4. Assignment Limitations - identifies various assignment limitations for the cable link. Most of the assignment limitations apply to intra-wire center facilities and trunk pairs. The assignment limitation consists of a type and a value. The values can be user-definable. The following standards are:

   - DEF (Defective) - indicates that the cable link is physically defective. Various values of defectiveness can be identified for the cable link and are user definable.

This attribute is valid for intra-wire center facilities and trunk pairs. The assignment limitation type is def and its valid values are:

— BKN - Broken - for tie pairs only

— DEF - Defective - for tie pairs and trunk pairs only

- RST(Restricted) - indicates the cable link is not capable of being assigned (or having its assignment changed) by the SWITCH system. This is due to SWITCH system limitations or physical conditions (other than defective) which prevents assignment or assignment changes. The assignment limitation type is rst and the valid values are:

  — atr - Area Transfer - for tie pairs only

  — res - restricted

  — tks - restricted for TIRKS - for tie pairs only

- RSD (Restricted Dial Transfer) - indicates the cable link is not capable of being assigned (or having its assignment changed) by the SWITCH system. The assignment limitation type is rsd and its valid value is tkd (restricted for TIRKS - Dial Transfer - for tie pairs only).

- WTH (Withheld) - indicates that the network unit, though normally assignable by the SWITCH system, has been withheld from the assignable pool by the user. Assignment validations will not allow a network unit with this limitation type to be assigned (auto or pre-specified). The assignment limitation type is wth and its valid values are:

  — ex- excluded

  — prs - permanent reserved - for tie pairs and trunk pairs only

  — unk - unknown - for cable pairs and tie pairs only

  — unq - unequipped - for cable pairs and tie pairs only

  — wth - withheld - for tie pairs only

- TMP (Temporary) - indicates the cable link is not capable of being assigned. The assignment limitation type is tmp and its valid values are:

  — ars - temporarily reserved for Area Transfer

  — trs - temporarily reserved - for tie pairs only

- Null - indicates that there are no limitations for this cable link.

5. Component Usage - indicates special usage for the cable link.

   SS - Special Status

SSP - Special Safeguard Protection

SSM - Special Safeguard Measures

DSP - Designed and Special Safeguard Protection

DSM - Designed and Special Safeguard Measures

DC - Designed Circuit

6. Unigauge - indicates whether the cable link is unigauge or not, valid for cable pairs only. Valid values are "L" or "NL."
7. Mini-Bridge Lifter Usage for Frame Location - indicates whether a pair has or can be served by a mini-bridge lifter. This is a valid attribute for cable pairs and null for other cable link types. Valid values are "a" (allowed - assignment is permitted but none are currently installed) and "e" (equipped - a mini-bridge lifter is installed on this physical appearance.) A cable pair can have multiple physical locations. This value must be the same for each physical location for a cable pair.
8. Next Location - identifies the wire center destination of the trunk pair, or the other wire center where the trunk pair is terminated. This is a valid attribute for trunk pairs only. Valid values are six numeric characters, or an NPANXX.
9. Control Location Indicator - indicates if this wire center is the controlling office for assignment of a cable link. This is a valid attribute for trunk pairs only. A yes or no indicator will be used for this attribute's value.
10. Loaded Indicator - indicates if a cable link is loaded or non-loaded. Loading is a means of improving an electrical signal for voice-grade services through the use of a load coil. This attribute is valid for trunk pairs only. A yes or no indicator will be used for this attributes value to indicate whether the trunk pair is loaded or non-loaded, respectively.

4.9.3 Physical Location Attributes

This section describes attributes that deal with physical location. The location of a cable link identifies frame zone, etc.

1. Frame and Zone - indicates the frame and zone by identifying the MDF (main distributing frame) and zone the pair is terminated on. This attribute may have multiple values. Frame is generally identified by an "f", followed by two alphanumeric characters. Zone is identified by three numeric characters, 001 to 999.

2. LOIS or Frame Termination Data - indicates the LOIS or frame termination data for the cable link. There will be one entry for each frame appearance.
3. Protector Frame - indicates the protector frame associated with the cable link. Valid formats are dependent on the intelligent controller type.
4. Resistance Zone - indicates pair resistance zone of pending and working links. This is a valid attribute for cable pairs and trunk pairs and null for other cable link types. The valid values are two numeric characters.
5. Carrier Zone - indicates pair carrier zone of pending and working links. This is a valid attribute for cable pairs and null for other cable link types. The valid values are two numeric characters.

4.9.4 Other Attributes

This section describes any other attributes that are not assignment affecting, but will be used to provide information for inquiries, common updates to other systems, and filtering on certain work orders.

1. Origin Point - identifies the origin point (i.e., CC) for the cable pair when this is in an assembly to be used by route analysis. The internal ID of the CC is the stored value.
2. OSP disconnect - indicates that information received from LFACS at the time of disconnect indicated the cable pair is CT (Connect Through) or CF (Connected Facility). Valid values are CT, CF or null.
3. Remarks - remarks on this pair can be either permanent (history) or temporary (customer related).
4. Change Date - indicates the date on which the cable link database record was last changed. The valid format is year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
5. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the network unit.
6. Last Order Identifier - indicates the last order number for possible trouble investigation.
7. Due Date - indicates the due date for the associated last order identifier. Null is a valid value. The format will be year (yyyy), month (mm), and day (dd).
8. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.

4.10 Telephone Numbers

The SWITCH system inventories telephone numbers to aid in the assignment and management of them. Also the SWITCH system inventories data telephone numbers. Telephone number attributes are broken up into several categories. Section 4.10.1 describes telephone number features; features that describe the functionality of the number for selection and assignment purposes. Section 4.10.2 describes assignability attributes; attributes that describe the status information of the number. Section 4.10.3 describes any other attributes that are associated with the telephone number, but are not assignment affecting.

Some clients may use another Operation Support System (e.g.; MediaCore/Customer_ Number™) to perform the telephone number administration functionality currently provided by the SWITCH system. When this occurs, the client specific feature called TN Suppression is activated for the wire center. In this situation, the SWITCH system will continue to inventory telephone numbers. However, telephone selection, telephone number aging, and some telephone number validations will not occur and the appropriate data base attributes/relationships will not be built.

With Local Number Portability (LNP), the client specific LNP - Ad Hoc TN feature is utilized when the SWITCH system supports the inventory of imported and exported telephone numbers[5]. The SWITCH system will also perform TN administration for imported and exported telephone numbers if the client specific feature called LNP - TN Administration is activated. In addition, the SWITCH system will support imported and exported telephone numbers in a Centrex group if the client specific feature LNP - Centrex Administration is activated.

4.10.1 Telephone Number Feature Attributes

This section describes all features of telephone numbers as they apply to its functionality.

1. Telephone Number Identification - NPA, Exchange Code (NXX) and line number.
2. Terminating Equipment Type - indicates the type of telephone number. Valid values are TN (telephone number) and DTN (data telephone number).

5. A telephone number can be imported for two reasons. It can be a "ported in" TN, which is one that is owned by a Certified Local Exchange Company (CLEC) but a customer wants a BCC to provide their service with the same TN. The TN would then be served out of the BCC's IC once it was ported in. The second case is a "location ported" TN which is a TN that has changed physical location within a BCC rate center (i.e., the customer moved or needs to change IC). This could apply to a BCC TN or a CLEC TN and could involve changes of location from one BCC wire center to another or from one BCC IC to another within a wire center, as long as the move leaves the customer in the same rate center in which they began. A telephone number is exported if it is moved from a BCC that owned the TN, to a CLEC. The TN would then be served out of the BCC IC once it was ported out.

3. Telephone Number Type - indicates the telephone number kind. These types are user-defined, except for C = Coin, X = POTS, and Q = Centrex. A BCC-tunable wire center-based reference data table exists as a tool for end-users to record the description of each telephone number type for the wire center. See Table 4-2.

   If the client specific TN Suppression feature is activated for the wire center, this attribute and Table 4-2 will not exist.

4.10.2 Assignability Attributes

This section describes attributes that provide various status information such as, available capacity, defective, etc. Also included is an indicator to identify participation in an assembly.

1. Assignment Capacity - indicates the total assignment capacity of the telephone number. The valid value is 1.
2. Assignment Use - indicates the total assignment use of the telephone number. Values for this attribute should be in the same units as assignment capacity.
3. Available Capacity - indicates whether the telephone number has available capacity for assignment. It is a derived attribute, taking the assignment capacity and subtracting the assignment use from it. If the result is greater than zero there is available capacity. A yes or no indicator will be used for this attribute's values.
4. Assignment Limitations - identifies various assignment limitations for telephone numbers and data telephone numbers. The limitations consist of a type and a value. The values are user definable. The current standards are:
   - RST (Restricted) - indicates the telephone number/data telephone number is not capable of being assigned (or having its assignment changed) by the SWITCH system. This is due to SWITCH system limitations or physical conditions (other than defective) which prevent assignment or assignment changes. The assignment limitation type is rst and its valid values are res (restricted) and prt (portable). If the client specific LNP - TN Administration feature is activated, then a value of exp (exported) is also valid.
   - TMP (Temporary) - indicates the telephone number/data telephone number is not capable of being assigned. The assignment limitation type is tmp and its valid values are ars (temporarily reserved for Area Transfer) and trs (temporarily reserved).
   - WTH (Withheld) - indicates that the network unit, though normally assignable by the SWITCH system, has been withheld from the assignable pool by the user. Assignment validations will not allow a network unit with this limitation type to be assigned (auto or pre-specified).

For data telephone numbers, the assignment limitation type is wth and its valid values are:

— prm- permanently reserved (via TCP)

— prs - permanent reserved

For telephone numbers, the assignment limitation type is wth and its valid values are:

— ex - excluded

— prm - permanently reserved (via TCP)

— prs - permanent reserved

— unk - unknown

— unq - unequipped

- WKG (Working) - indicates that this network unit, though not a component of a service or a circuit is working. Assignment validations will check to ensure any network units that have a working limitation type are not assigned (auto or pre-specified). The valid values for TNs of a WKG type are:

  — cel - cellular

  — did - DID trunk group TNs

  — mob - mobile

  — ms - miscellaneous

  — pag - paging

  — rcc - radio common carrier

  — tst - test

  — ucd - UCD

- Null - indicates that there are no assignment limitations for the telephone number/ data telephone number.

If the client specific TN Suppression feature is activated for the wire center, this attribute will not exist.

5. Selectable - indicates whether the telephone number is available for telephone number selection. Values are 'y' or 'n'.

   If the client specific TN Suppression feature is activated for the wire center, this attribute will not exist.

6. Intercept Value - indicates the telephone number is on intercept. Past values for this attribute were operator intercept and machine intercept. Current values for this attribute are:

   - DTC - Disconnected, transfer calls.
   - DNT - Disconnected, do not transfer calls.
   - CTC - Changed, transfer calls.
   - CNT - Changed, do not transfer calls.

   If the client specific TN Suppression feature is activated for the wire center, this attribute will not exist.

7. Use - indicates the use of the telephone number when it becomes a component of a service or a group (i.e., Simulated Facilities Group or a Multi-line Hunt Group).

   Valid values for use when a telephone number is a component of a service are:

   - TN (Telephone number) - This usage is valid for telephone numbers only.
   - PTN (Plant Telephone Number) - This usage is valid for telephone numbers and not data telephone numbers.
   - NHN (Non-Hunt Telephone Number) - This usage is valid for telephone numbers and not data telephone numbers.
   - NSV (Night Service Telephone Number) - This usage is valid for telephone number numbers and not data telephone numbers. (It is valid only with the Night Service client-specific feature which is controlled through SOAC tables.)
   - DPTN (Data Plant Telephone Number) - This usage is valid for telephone numbers (used to test terminals in a modem pool multi-line hunt group) and not data telephone numbers.
   - AUX (Auxiliary) - This usage is populated by conversion from COSMOS.

   Valid values for use when a data telephone number is a component of a service are:

   - DTN (Data Telephone Number) - This usage is valid for data telephone numbers only.
   - ACTN (Access Data Telephone Number) - This usage is valid for data telephone numbers and not telephone numbers.

   Valid value for use when a telephone number is a component of a Simulated Facilities Group is:

   - STN (Screening Telephone Number) - This usage is valid for telephone numbers and not data telephone numbers.

   Valid value for use when a telephone number is the TLI of a Multi-line Hunt Group is:

- TLI (Telephone Line Identifier) - This usage is valid for telephone numbers and not data telephone numbers.

8. Release Date - indicates the date on which the telephone number becomes available for reassignment. The valid format for this attribute is year (yyyy) month (mm) and day (dd).

   If the client specific TN Suppression feature is activated for the wire center, this attribute will not exist.

9. Release Date Override - indicates that the rules to calculate the release date of the telephone number were overridden.

   If the client specific TN Suppression feature is activated for the wire center, this attribute will not exist.

10. Transfer Calls - indicates whether the disconnected/changed telephone number has its calls transferred to another telephone number. This attribute is used in conjunction with order type to determine the intercept value.

    If the client specific TN Suppression feature is activated for the wire center, this attribute will not exist.

4.10.3 Other Attributes

This section describes any other attributes associated with the telephone number, but are not assignment affecting. They will be used for inquiries and common updates to other systems.

1. Order Identifier - Identifies the order number of the last order that affected the TN.
2. Due Date - indicates the due date of the order identifier. the valid format is year (yyyy) month (mm) and day (dd).
3. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.
4. Change Date - indicates the date on which the telephone number database record was changed. The format for the change date will be year (yyyy) month (mm) day (dd) hour (hh) minutes (mm) and seconds (ss).
5. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the network unit.
6. Non Published Indicator - indicates whether the telephone number is published or non-published.

   If the client specific TN Suppression feature is activated for the wire center, this attribute will not exist.

7. Assignment Category on Disconnect - used by remove request processing (Section 6) to determine how long a telephone number is aged.

   If the client specific TN Suppression feature is activated for the wire center, this attribute will not exist.

8. CATY code - Central Office Administrative Type (CATY) is a CEC attribute used by request processing (Section 6) to determine how long a telephone number is aged.

   If the client specific TN Suppression feature is activated for the wire center, this attribute will not exist.

9. Remarks - indicates any remarks associated with the telephone number. This attribute can contain up to 60 alphanumeric characters.

10. Call Count - indicates the number count from the AIS (Automatic Intercept System) tape (two digits or blank).

11. Telephone Number Code - indicates the AIS code for this NXX. This code identifies the subset of the NXX for the intelligent controller.

12. Imported - indicates that a TN is ported in (from a different service provider. i.e., CLEC) or location ported (from the same service provider). Valid values are: "c" (CLEC- i.e., from a different service provider), "i" (ILEC - i.e., same service provider). This attribute will only be present when the client specific LNP - Ad Hoc TN feature has been activated.

13. Adhoc - indicates that the TN did not exist in the SWITCH database and was created at assignment time and associated to the IC where service is provided (i.e., in the recipient IC). Also, indicates that a TN, even though inventoried in the SWITCH database, is assigned to an IC different than the one to which it belongs (i.e, the donor IC). This attribute will only be present when the client specific LNP - Ad Hoc TN feature has been activated.

14. LRN - Location Routing Number. A 10 digit number (with no delimiters), used to route a call to the terminating IC, when the dialed TN is imported. This attribute will only be present when the client-specific LNP - Ad Hoc TN feature has been activated.

15. LRN Disconnect - Location Routing Number on Disconnect. The LRN of the service at the time it was disconnected. This attribute will only be present when the client-specific LNP - Ad Hoc TN feature has been activated.

4.11 Transmission Equipment

Transmission equipment is required to compensate for transmission and/or signaling loss. The SWITCH system inventories all transmission equipment required to support the provisioning of access ports and packet switch ports.

Transmission equipment attributes will be broken up into several categories. Section 4.11.1 describes identification features; features that describe the function and identification of the hardware for selection and assignment purposes. Section 4.11.2 describes physical location attributes; attributes, because they deal with the equipment location, affect the assignment processes. Section 4.11.3 describes assignability attributes. These attributes describe the status information of the equipment. Section 4.11.4 describes any other equipment attributes that are associated with the equipment, but are not assignment affecting.

4.11.1 Equipment Identification Attributes

1. Equipment Identification - identification number of the equipment. This attribute is usually the relay rack and unit number.
2. Specific Functionality - identifies the specific functionality of the equipment. The valid values are:

   RE - Range Extension
   RE1 - Range Extension with gain
3. CLEI Code - Equipment Identification Code.
4. TID Code - Circuit termination ID for this equipment. The values for each part DPA, LTI, etc. are four alphanumeric characters each.

   Different premises address (DPA) code
   or
   Circuit location (CKL)
   and/or
   Loop termination ID (LTI) code

4.11.2 Physical Location Attributes

This section describes attributes that deal with the equipment's location. The location of a specific piece of hardware is expressed in terms of frame and zone, etc.

1. Frame and Zone - indicates the frame and zone of the equipment on the MDF. The format for the frame is generally a "f" followed by two alphanumeric characters. Zone is a three character numeric field valued between 001 to 999.
2. LOIS or Frame Termination Data - Identifies the LOIS or frame termination data that is associated with the equipment.
3. Termination Direction - used to indicate the termination direction for split terminations.

4.11.3 Assignability Attributes

This section describes attributes that provide various status information such as available capacity, defective, pending, etc. Also included is an indicator to identify participation in an assembly and usage parameters.

1. Assignment Capacity - indicates the total assignment capacity of the equipment. Values for this attribute might be the number of DS0 channels, the number of services that can be supported, etc. The valid format for this attribute is one numeric characters.

2. Assignment Use - indicates the total assignment use of the equipment. Values for this attribute should be in the same units as assignment capacity.

3. Available Capacity - indicates whether the equipment has available capacity for assignment. It is a derived attribute, taking the assignment capacity and subtracting the assignment use from it. If the result is greater than zero there is available capacity. A yes or no indicator will be used for this attribute's value.

4. Assignment Limitations - identifies various assignment limitations for the equipment. The limitations consist of a type and a value. The values are user definable. The current standards are:

   - DEF (Defective) - indicates that the equipment is physically defective. The assignment limitation type is def and its valid value is def (defective).

   - RST (Restricted) - indicates the equipment is not capable of being assigned (or having its assignment changed) by SWITCH system. This is due to SWITCH system limitations or physical conditions (other than defective) which prevents assignment or assignment changes. The assignment limitation type is rst and its valid values are res (restricted) and tks (restricted for TIRKS).

   - RSD (Restricted Dial Transfer) - indicates the equipment is not capable of being assigned (or having its assignment changed) by the SWITCH system. The assignment limitation type is rsd and its valid value is tkd (restricted for TIRKS - Dial Transfer).

   - WTH (Withheld) - indicates that the network unit, though normally assignable by the SWITCH system, has been withheld from the assignable pool by the user. Assignment validations will not allow a network unit with this limitation type to be assigned (auto or pre-specified). The assignment limitation type is wth and its valid values are:

     — ex - excluded

     — prs - permanent reserved

     — unk - unknown

     — unq - unequipped

— wth - withheld

- TMP (Temporary) - indicates that this inventory is temporarily reserved for a subsequent service request. When the inventory is selected for a pending service request, the limitation is removed. The valid values for this limitation type are:
  — ars - temporarily reserved for Area Transfer
  — trs - temporarily reserved
- Null - indicates that there are no assignment limitations associated with this equipment.

5. ADSR Tag - indicates if this equipment is used in a designed service or not.

4.11.4 Other Attributes

This section describes any other attributes associated with the equipment, but not assignment affecting. They are used for inquiries and common updates to other systems.

1. Remarks - indicates any remarks associated with the equipment. This attribute can be up to 60 alphanumeric characters in length.
2. Change Date - indicates the date on which the equipment's database record was last modified. The valid format for change date is year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
3. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the network unit.
4. Last Order Identifier - indicates the last order number for trouble investigation.
5. Due Date - indicates the due date of the last order identifier. The valid format for this attribute is year (yyyy), month (mm), and day (dd).
6. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.

4.12 Bridge Lifters

Bridge lifters are equipment that remove, either electrically or physically, bridged cable pairs that are not in use. A bridge lifter must be assigned on each central or remote office talking conductor leg when such legs are metallically bridged in the office.

Bridge lifter equipment attributes will be broken up into several categories. Section 4.12.1 describes identification features. These features that describe the function and identification of the hardware for selection and assignment purposes. Section 4.12.2 describes physical location attributes; attributes, because they deal with the equipment location, affect the assignment processes. Section 4.12.3 describes assignability attributes. These attributes that describe the status information of the equipment. Section 4.12.4 describes any other equipment attributes that are associated with the equipment, but are not assignment affecting.

4.12.1 Equipment Identification Attributes

1. Equipment Identification - identification number of the equipment. This attribute is usually the unit number (bridge lifters).
2. Specific Functionality - identifies the specific functionality of the equipment. The valid values are:
   - BL - Bridge Lifter
3. CLEI Code - Equipment Identification Code.
4. TID Code - Circuit termination ID for this equipment. The values for each part DPA, LTI, etc. are four alphanumeric characters each.

   Different premises address (DPA) code
   or
   Circuit location (CKL)
   and/or
   Loop termination ID (LTI) code
5. Network Unit Selectability Scale - identifies the selectability scale from the network unit to determine if it can be selected even though it is in an assembly (1N).

4.12.2 Physical Location Attributes

This section describes attributes that deal with the equipment's location. The location of a specific piece of hardware is expressed in terms of frame and zone, etc.

1. Frame and Zone - indicates the frame and zone of the equipment on the MDF. The format for the frame is generally a "f" followed by two alphanumeric characters. Zone is a three character numeric field valued between 001 to 999.
2. LOIS or Frame Termination Data - Identifies the LOIS or frame termination data that is associated with the equipment.

4.12.3 Assignability Attributes

This section describes attributes that provide various status information such as, available capacity, defective, pending, etc. Also included is an indicator to identify participation in an assembly and usage parameters.

1. Assignment Capacity - indicates the total assignment capacity of the equipment. The only valid value is one.
2. Assignment Use - indicates the total assignment use of the equipment. Values for this attribute should be in the same units as assignment capacity.
3. Available Capacity - indicates whether the equipment has available capacity for assignment. It is a derived attribute, taking the assignment capacity and subtracting the assignment use from it. If the result is greater than zero there is available capacity. A yes or no indicator will be used for this attribute's values. [6]
4. Assignment Limitations - identifies various assignment limitations for the equipment. The limitations are user definable and consist of a type and a value. The current standards are:
   - DEF (Defective) - indicates that the equipment is physically defective. The assignment limitation type is def and its valid value is def (defective).
   - RST (Restricted) - indicates the equipment is not capable of being assigned (or having its assignment changed) by the SWITCH system. This is due to SWITCH system limitations or physical conditions (other than defective) which prevent assignment or assignment changes. The assignment limitation type is rst and its valid values are res (restricted) and tks (restricted for TIRKS).
   - RSD (Restricted Dial Transfer) - indicates the equipment is not capable of being assigned (or having its assignment changed) by the SWITCH system. The assignment limitation type is rsd and its valid value is tkd (restricted for TIRKS - Dial Transfer).
   - WTH (Withheld) - indicates that the network unit, though normally assignable by the SWITCH system, has been withheld from the assignable pool by the user. Assignment validations will not allow a network unit with this limitation type to be assigned (auto or pre-specified). The assignment limitation type is wth and its valid values are:
     - — ex - excluded
     - — prs - permanent reserved
     - — unk - unknown

6. The values of assignment capacity, assignment use, and available capacity must be the same for each BL in the assembly (e.g., mated BLs).

— unq - unequipped

— wth - withheld

- TMP (Temporary) - indicates that this inventory is temporarily reserved for a subsequent service request. When the inventory is selected for a pending service request, the limitation is removed. The valid values for this limitation type are:

  — ars - temporarily reserved for Area Transfer

  — trs - temporarily reserved

- Null - indicates that there are no assignment limitations associated with this equipment.

4.12.4 Other Attributes

This section describes any other attributes associated with the equipment, but not assignment affecting. They are used for inquiries and common updates to other systems.

1. Remarks - indicates any remarks associated with the equipment. This attribute can be up to 60 alphanumeric characters in length.
2. Change Date - indicates the date on which the equipment's database record was last modified. The valid format for change date is year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
3. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the network unit.
4. Last Order Identifier - indicates the last order number for trouble investigation.
5. Due Date - indicates the due date of the last order identifier. This attribute can be null. The valid format for this attribute is year (yyyy), month (mm), and day (dd).
6. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.

4.13 Miscellaneous Equipment

Miscellaneous equipment is defined as any equipment that does not simulate, for one reason or another, one of the standard types of network unit inventory in the SWITCH system. Miscellaneous equipment will contain some of what is today treated as Special Equipment (SEs) and Generic Facilities (GFs) in COSMOS. The SWITCH system will provide inventory, report, connectivity, and constrained assignment processes for this equipment.

The following attributes are used in support of miscellaneous equipment. [7]

4.13.1 Inventory ID Attributes

1. Equipment Type - indicates that this equipment is miscellaneous equipment. The valid value for this attribute is "me."
2. Equipment Identification - indicates the external ID for this equipment. The ID will be free formatted up to 45 characters. The BCCs have the choice to standardize the IDs for certain flavors of the inventory by defining those standards to the ID parser process.
3. Specific Functionality - indicates the specific functionality the inventory can provide. The valid values for this attribute are:
   - dpp - Distributor point for OSIP (Open Switch Interval Protector)
   - dpr - Distributor point for recall city of origin announcement
   - dpmr - Distributor point for hotel/motel remote message registers
   - dpof - Distributor point for overflow registers
   - dpit - Distributor point for INWATS (Inward Wide Area Telecommunications Service) timers
   - dpai - Distributor point for attendant interface circuit.
   - sp - Scan point for terminal make-busy
   - sprb - Scan point for random make-busy
   - sprg - Scan point for group make-busy
   - spet - Scan point for end-hunt terminal
   - met - Applique for telemetry meter reading service
   - awsr - Apartment entry control service - residence
   - awsc - Apartment entry control service - control circuit
   - abs - Alarm block - series
   - abp - Alarm block - parallel
   - pcp - Added main line carrier - physical port
   - dcp - Added main line carrier - derived port
   - clc - Client line control device
   - cme - Cable monitoring equipment

7. Not all attributes listed will apply to all the inventory. For example, the termination ID code would apply to only those units of inventory used in a multi-leg circuit.

- msic - Miscellaneous IC equipment
- msfe - Miscellaneous frame equipment
- aml - Single Subscriber Carrier, additional main line, analog device
- slc1 - Single Subscriber Carrier, analog loop carrier device
- daml - Single Subscriber Carrier, additional main line, digital device
- dssc - Single Subscriber Carrier, digital device (not ISDN compatible)
- udc - Single Subscriber Carrier, digital device (ISDN compatible)
- mpta - Modem pooling terminal adapter
- modem - Modem pooling modem

User defined values can also be incorporated.

4. CLEI Code - identifies the 10 character equipment ID.
5. Termination ID Code - identifies the termination ID code (DPA, CKL, LTI) for the database object. The valid values for each part DPA, LTI, etc. are four alphanumeric characters.

   Different premises address (DPA) code or Circuit location (CKL) and/or Loop Termination ID (LTI) code

4.13.2 Physical Location Attributes

1. Frame and Zone - indicates the frame and zone of the miscellaneous equipment (ME) appearance on a distributing frame. This attribute may have multiple values. The format for the frame will generally be fxx, f followed by two alphanumerics, and zone will be three numerics from 001 to 999.
2. Frame Termination Data - indicates the full LOIS for this connect point. There may be multiple values of this attribute, one for each frame appearance.
3. Terminal Direction - indicates the directionality of the cross connect point. The valid values for this attribute are out, in, or both.

4.13.3 Assignability Attributes

1. Assignment Limitations - identifies various assignment limitations for the equipment. The limitations are user definable and consist of a type and a value. The current standards are:

- DEF (Defective) - indicates that the equipment is physically defective. Various values of defectiveness can be identified for the equipment and are user definable. The assignment limitation type is def and the valid value is def (defective).
- RST (Restricted) - indicates the equipment is not capable of being assigned (or having its assignment changed) by SWITCH system. This is due to SWITCH system limitations or physical conditions (other than defective) which prevent assignment or assignment changes. The assignment limitation type is rst and its valid values are res (restricted) and tks (restricted for TIRKS).
- RSD (Restricted Dial Transfer) - indicates the equipment is not capable of being assigned (or having its assignment changed) by the SWITCH system. The assignment limitation type is rsd and its valid value is tkd (restricted for TIRKS - Dial Transfer).
- WTH (Withheld) - indicates that the network unit, though normally assignable by the SWITCH system, has been withheld from the assignable pool by the user. Assignment validations will not allow a network unit with this limitation type to be assigned (auto or pre-specified). The assignment limitation type is wth and its valid values are:
  - ex - excluded
  - prs - permanent reserved
  - unk - unknown
  - unq - unequipped
  - wth - withheld
- TMP (Temporary) - indicates that this inventory is temporarily reserved for a subsequent service request. When the inventory is selected for a pending service request, the limitation is removed. The valid values for this limitation type are:
  - ars - temporarily reserved for Area Transfer
  - trs - temporarily reserved
- Null - indicates that there are no assignment limitations associated with this equipment.

2. Assignment Capacity - indicates the total assignment capacity of the inventory. The valid format for this attribute is one numeric characters.
3. Assignment Use - indicates the total assignment use of the inventory. Values for this attribute should be in the same units as assignment capacity.
4. Available Capacity - indicates whether the inventory has available capacity for assignment. It is a derived attribute, taking the assignment capacity and subtracting the

assignment use from it. If the result is greater than zero there is available capacity. A yes or no indicator will be used as this attribute's value.

5. Party Positioning - used for ringing combinations and partial party assignment in order to fill the inventory. Valid values are 1-8.

4.13.4 Other Attributes

1. Remarks - indicates any remarks for this inventory.
2. Commonality Indicator - indicates whether the inventory is common to all legs of the circuit. Valid values are "y" or "n."
3. Manual Connectivity Indicator - indicates the connectivity was manually defined when the inventory was placed in the current circuit.
4. Side - applies only to Single Subscriber Carrier. Valid values are "P", "D", "A", "B", "1", or "2".
5. Change Date - indicates the last time the body of the database record of the inventory was modified. The valid values of this attribute are in the format, year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
6. Order Number - indicates the order number of the last order to process on the inventory.
7. Due Date - indicates the due date of the last order processed. The valid format for this attribute is year (yyyy) month (mm) and day (dd).
8. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.
9. Employee ID - indicates the ID of the last "user" (human or external system) that changed the database record for the inventory.

4.14 IC Equipment (ICE)

IC Equipment (ICE) is network unit inventory related to a specific IC. It is controlled by an IC, has specific functionality, has connectivity, and does not load or spread. ICE is used to model Special Subscriber Equipment (SSE) used for Ericsson party and coin service. ICE will have a controlled by and factor of relationship to an IC, it will have a physical appearance relationship to a frame, it will be a component of a PASM (permanent assembly), and may have pending edges from a delta.

4.14.1 Inventory ID Attributes

ICE will have the following Inventory ID attributes:

1. Equipment Type - indicates that this equipment is IC Equipment. The valid value for this attribute is "ice".
2. Equipment Identification - indicates the external ID for this equipment. The equipment ID looks like a part of the Ericsson switch port hierarchy:

   #AAA-BB-CCC

   (However, SSE can only be in Extension Modules 16 - 31, with circuits 000 - 063.)
3. CLEI Code - identifies the 10 character equipment ID.

4.14.2 ICE Assignability Attributes

1. Specific Functionality - indicates the specific functionality the inventory can provide. Valid values are:
   - 2P - SSE for two party service.
   - 4P - SSE for four party service.
   - 8P - SSE for eight party service.
   - CN - SSE for coin service.
2. Assignment Capacity - indicates the total assignment capacity of the inventory. The only valid value is 1 since only 1 ICE can be in the circuit for Ericsson party service.
3. Assignment Use - indicates the total assignment use of the inventory.
4. Available Capacity - indicates whether the inventory has available capacity for assignment. It is a derived attribute, taking the assignment capacity and subtracting the assignment use from it. If the result is greater than zero, there is available capacity. A yes or no indicator will be used as this attribute's values. In the case of Ericsson party service, an Available Capacity of no indicates that the ICE is a component of a circuit.
5. Assignment Limitations - identifies various assignment limitations for the equipment. The limitations consist of a type and a value. The values are user definable. The current standards are:
   - DEF (Defective) - indicates that the equipment is physically defective. Various values of defectiveness can be identified for the equipment and are user definable. The assignment limitation type is def and its valid value is def.

- RST(Restricted) - indicates the equipment is not capable of being assigned (or having its assignment changed) by the SWITCH system. This is due to SWITCH system limitations or physical conditions (other than defective) which prevent assignment or assignment changes. The assignment limitations type is rst and the valid value is res (restricted).
- WTH (Withheld) - indicates that the network unit, though normally assignable by the SWITCH system, has been withheld from the assignable pool by the user. Assignment validations will not allow a network unit with this limitation type to be assigned (auto or pre-specified). The assignment limitation type is wth and its valid values are:
  - — ex - excluded
  - — prs - permanent reserved
  - — unq- unequipped
  - — wth - withheld
- TMP (Temporary) - indicates that this inventory is temporarily reserved for a subsequent service request. When the inventory is selected for a pending service request, the limitation is removed. The valid values for this limitation type are:
  - — ars - temporarily reserved for Area Transfer
  - — trs - temporarily reserved
- Null - indicates that there are no assignment limitations associated with this equipment.

4.14.3 ICE Physical Location Attributes

1. Frame and Zone - indicates the frame and zone of the miscellaneous equipment (ME) appearance on a distributing frame. This attribute may have multiple values. The format for the frame will generally be fxx, f followed by two alphanumerics, and zone will be three numerics from 001 to 999.
2. Frame Termination Data - indicates the full LOIS for this connect point. There will be one value for this attribute.

4.14.4 Other ICE Attribute

1. Remarks - indicates any remarks for this inventory.

2. Change Date - indicates the last time the body of the data base record of the inventory was modified. The valid values of this attribute are in the format, year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and second (ss).
3. Order Number - indicates the order number of the last order to process on the inventory.
4. Due Date - indicates the due date of the last order processed. The valid format for this attribute is year (yyyy) month (mm) and day (dd).
5. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking. The valid format for this attribute is year (yyyy) month (mm) and day (dd).
6. Employee ID - indicates the ID of the last "user" (human or external system) that changed the database record for the inventory.
7. Data Rate - indicates the data rate the plug-in can furnish. The valid values are:

   blank - does not apply
   l - 2.4, 4.8, or 9.6 kbs
   h - 56 kbs
   a - 64 kbs

8. ISDN On-Demand B Band - The Band specified for a 5ESS IC On-Demand B POE. The valid values are:

   0 - 15

4.15 Channels

Channels model the facilities derived from a carrier circuit between two CCs or a CC and an IC. Channels are created to track the use of a timeslot. For static TSI, a customer has the same timeslot for the life of the circuit. Channels will be created at capacity activation time and removed with capacity activation.

Inventory will only modify a subset of the attributes associated with a channel.

Channels will be stored as a digital hierarchy of channels with the "topmost" channel (one per carrier circuit) called a super channel.

4.15.1 Channel Attributes

The following list describes attributes for channels.

1. Assignment Rate - indicates the data rate for the channel. Valid values are: DS0, DS1, DS2, DS3, OC3, and OC12.

2. Assignment Limitations - indicates the assignment restrictions on the channel. The valid types and the corresponding values are:
   - RST (Restricted) - indicates the channel is not capable of being automatically assigned (or having its assignment changed) by SWITCH system. This is due to SWITCH system limitations or physical conditions (other than defective) which prevents assignment or assignment changes. The assignment limitation type is rst and its valid value is res (restricted).
   - WTH (Withheld) - indicates that the network unit, though normally assignable by the SWITCH system, has been withheld from the assignable pool by the user. Assignment validations will not allow a network unit with this limitation type to be assigned (auto or pre-specified). The assignment limitation type is wth and its valid values are:
     — ex- excluded
     — prs - permanent reserved
   - TMP (Temporary) - indicates that this inventory is temporarily reserved for a subsequent service request. When the inventory is selected for a pending service request, the limitation is removed. The valid value for this limitation type is trs (temporarily reserved).
   - Null - indicates that there is no limitation.
3. Available Capacity - indicates whether the channel is available for selection or not (Y/N).
4. Assignment Capacity - identifies the assignment capacity for the CC port (1 N).
5. Assignment Use - identifies the used capacity for the channel (1 N).
6. Internal Id of a super channel - indicates the ID of the super channel for all channels within the hierarchy. A super channel is the "topmost" channel in the channel hierarchy. It is needed for ease of building relationships inherited from the super channel to the lower channels.
7. Engineered Compatibility - identifies the functionality that the channel is engineered to support at the IC. This attribute is used for the channel selection and compatibility purposes with the card type of a CC port at a carrier controller. This attribute is 6 alphanumeric characters long. The valid values are:
   - SP
   - SPOTS
   - COIN
   - MPTY
   - FSR

- NAILUP
- NAILU1

8. Proprietary Indicator - indicates whether the channel is associated with a bandwidth that is managed as a proprietary bandwidth.

9. Capacities are stored in a 6 alphanumeric character array (one array for each rate below in the channel hierarchy):

   - Assignment Array Rate - identifies the rate of the channels associated with the array (6A/N). Values are the same as the assignment rate.
   - Engineered Capacity - total capacity in CCS for each assignment rate below in the channel hierarchy (6N).
   - Used Capacity - total used capacity in CCS for each assignment rate below in the channel hierarchy (6N).
   - Pending Disconnect Availability Capacity - total capacity in CCS due to pending disconnects for each assignment rate existing in the bandwidth (6N).
   - Restricted Capacity - total restricted capacity in CCS for each assignment rate below in the channel hierarchy (6N).
   - Non-selectable Capacity - total non-selectable capacity in CCS for each assignment rate below in the channel hierarchy (6N). This is the sum of the used and restricted capacities.

10. Spare Available Capacity (each lower channel rate) - a list of assignment rates which have spare capacity below in the channel hierarchy.

11. Disconnect Available Capacity (each lower channel rate) - a list of assignment rates which have spare capacity below in the channel hierarchy due to pending disconnects.

12. Channel Name - identifies the name of the channel. Channels will have one of two names, one for the CC and one for the IC. The CC name is composed of the CC ID and digital hierarchy levels. The IC name consists of the IC ID. It is similar to a switch port ID.

13. Access Identifier - indicates the AID for the channel as it relates to a CC. An AID is used to uniquely identify the channel to the CC. For a configuration consisting of a CC and an IC, there is only one AID (associated with the CC). For a configuration consisting of two CCs, there are two AIDs, one for each CC. The access identifier field can be up to 45 alphanumeric characters.

14. Hierarchy Levels - contains either the different levels of the channel hierarchy or the levels of the IC hierarchy that make up the channel name.

15. Carrier Circuit ID - the carrier circuit ID portion of the channel name. This data will not be parsed into individual fields as is done today by the circuit ID parser.

16. Digital Bridging Indicator - indicates if the channel is digitally bridged. This attribute only applies when a channel belongs to an IC. Valid values are "p" or "s" for primary or secondary.
17. Component Usage - indicates the usage of this channel for packet use in ISDN (D, B1, B2). This attribute only applies when the channel is between two CCs.
18. Party Position - (1N) indicates the party position of the channel when it is in a service.

4.15.2 Other Attributes

This section describes other attributes stored for channels.

1. Change Date - indicates the last time there was a change to this piece of inventory's database record. The format for change date will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
2. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the network unit.
3. Last Order Identifier - indicates the last order number for history processing.
4. Due Date - indicates the due date of the last order identifier. The format for due date will be year (yyyy) month (mm) and day (dd). The value could be null if there is no order associated with the switch port.

4.16 Call Reference Values (CRVs)

A call reference value (CRV) is used to associate a customer at a CC with a memory location in the IC, which provides that service, in a dynamic TSI configuration. Service is provided without dedicating a timeslot over the path(s) between the CC and the IC (the timeslot is assigned dynamically when a call is made).

CRVs will be created between a specific CC and an IC at capacity activation time.

4.16.1 Call Reference Value (CRV) Attributes

The following list describes the attributes for call reference values.

1. Assignment Limitation Type - indicates the assignment restriction for the CRV. The valid types and the corresponding values are:
   - RST (Restricted) - indicates the CRV is not capable of being automatically assigned (or having its assignment changed) by SWITCH system. This is due to SWITCH system limitations or physical conditions (other than defective) which

prevents assignment or assignment changes. The assignment limitation type is rst and its valid value is res (restricted).

- WTH (Withheld) - indicates that the network unit, though normally assignable by the SWITCH system, has been withheld from the assignable pool by the user. Assignment validations will not allow a network unit with this limitation type to be assigned (auto or pre-specified). The assignment limitation type is wth and its valid values are:
  - — ex- excluded
  - — prs - permanent reserved
- TMP (Temporary) - indicates that this inventory is temporarily reserved for a subsequent service request. When the inventory is selected for a pending service request, the limitation is removed. The valid value for this limitation type is trs (temporarily reserved).
- Null - indicates that there is no limitation.

2. Assignment Capacity - identifies the assignment capacity for the CRV (1N).
3. Assignment Use - identifies the used capacity for the CRV (1N).
4. Available Capacity - identifies the available capacity for the CRV (Y/N).
5. Engineered Compatibility - identifies the functionality the CRV is engineered to support at the IC. This attribute is used for CRV selection (DMS-100 IC) and compatibility purposes with the card type of a CC port at a carrier controller. This attribute is 6 alphanumeric characters long. The valid values are:
   - SPOTS
   - COIN
   - ISDN
6. CRV Name - identifies the name of the CRV. The CRV will have one of two names: one for the CC and one for the IC. The CC form of the name will be a single string of 1 to 55 characters, composed of a CC ID, Virtual Interface Group (VIG), and a CRV number. The IC ID is similar to a switch port ID.
7. Digital Bridging Indicator - indicates if the CRV is digitally bridged. This attribute is only for CRV belonging to an IC. Valid values are "p" or "s" for primary or secondary, respectfully.
8. Party Position - (1N) indicates the party position of the CRV when it is in a service.

4.16.2 Other Attributes

This section describes other attributes stored for call reference values.

1. Change Date - indicates the last time there was a change to this piece of inventory's database record. The format for change date will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
2. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the network unit.
3. Last Order Identifier - indicates the last order number for history processing.
4. Due Date - indicates the due date of the last order identifier. The format for due date will be year (yyyy) month (mm) and day (dd). The value could be null if there is no order associated with the switch port.

4.17 Logical Terminal Identifiers (LTID)

Logical Terminal Identifiers (LTIDs) are used by Northern Telecom ICs to uniquely identify ISDN service appearances. An ISDN service appearance is considered by Northern Telecom to be a Logical Terminal. Logical Terminal Identifiers are inventoried by the SWITCH system for assignment to ISDN service requests for the DMS-100 IC. LTIDs are network unit inventory related to a specific IC. They are logical rather than physical, and do not have connectivity. LTIDs have a controlled by and factor of relationship to an IC, and may have pending edges from a delta. LTIDs do not have physical appearances on frames, and can not be a component of a PASM.

4.17.1 Inventory ID Attributes

LTIDs will have the following Inventory ID attributes:

1. Equipment Type - indicates that this equipment is an LTID. The valid value for this attribute is "ltid".
2. Equipment Identification - indicates the external ID for this equipment. The equipment ID takes the form of ICtype.ICid.group.number. LTID Group ids are alphanumeric character strings from 1 to 8 characters. LTID numbers range from 1 to 1022.

4.17.2 LTID Assignability Attributes

1. Assignment Capacity - indicates the total assignment capacity of the inventory. The only valid value is 1.

2. Assignment Use - indicates the total assignment use of the inventory.
3. Available Capacity - indicates whether the inventory has available capacity for assignment. It is a derived attribute, taking the assignment capacity and subtracting the assignment use from it. If the result is greater than zero, there is available capacity. A yes or no indicator will be used as this attribute's values.
4. Assignment Limitations - identifies various assignment limitations for the equipment. The limitations consist of a type and a value. The values are user definable. The current standards are:
   - RST (Restricted) - indicates the equipment is not capable of being assigned (or having its assignment changed) by the SWITCH system. This is due to SWITCH system limitations or physical conditions (other than defective) which prevent assignment or assignment changes. The assignment limitations type is rst and the valid value is res (restricted).
   - WTH (Withheld) - indicates that the network unit, though normally assignable by the SWITCH system, has been withheld from the assignable pool by the user. Assignment validations will not allow a network unit with this limitation type to be assigned (auto or pre-specified). The assignment limitation type is wth and its valid values are:
     - — ex- excluded
     - — prs - permanent reserved
   - TMP (Temporary) - indicates that this inventory is temporarily reserved for a subsequent service request. When the inventory is selected for a pending service request, the limitation is removed. The valid values for this limitation type are:
     - — ars - temporarily reserved for Area Transfer
     - — trs - temporarily reserved
   - Null - indicates that there are no assignment limitations associated with this equipment.

4.17.3 Other LTID Attributes

The following list describes other attributes for logical terminal identifiers.

1. Remarks - indicates any remarks for this inventory.
2. Change Date - indicates the last time the body of the data base record of the inventory was modified. The valid values of this attribute are in the format, year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and second (ss).

3. Order Number - indicates the order number of the last order to process on the inventory.
4. Due Date - indicates the due date of the last order processed. The valid format for this attribute is year (yyyy) month (mm) and day (dd).
5. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking. The valid format for this attribute is year (yyyy) month (mm) and day (dd).
6. Employee ID - indicates the ID of the last "user" (human or external system) that changed the database record for the inventory.

4.18 Equipment Groups

An equipment group is an inventory item that has assignable members associated to it. An example of an equipment group would be a cable; it has many cable pairs related to it. The equipment group would not be used in any real time assignments. The equipment group does not have to exist before its members exist; it can be created when its first members are added to the inventory.

4.18.1 Cables

A cable is a group of cable links having the same cable name as part of their identification. Cable attributes appear below.

1. Cable Name - is the external name of the cable.
2. Change Date - indicates the date on which the equipment's database record was last modified. The valid format for change date is year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and second (ss).
3. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the network unit.
4. Cable Count - states the specific range of cable pairs that the cable contains. This attribute identifies the low pair number, the high pair number, and the pair count. Low and high numbers can be up to 4 characters long. The count is a six character numeric value.
5. Remarks - an user entered field for remarks associated with the cable.

4.18.2 NXX Groups

NXX groups are a relationship between an NXX and its associated line numbers. The only attributes that currently have been identified are as follows:

1. NXX Group ID - indicates the ID of the NXX group. The NXX itself is the ID value.
2. Change Date - indicates the date on which the equipment's database record was last modified. The valid format for change date is year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and second (ss).
3. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the network unit.
4. Rate zone - indicates the rate zone for this NXX group.

4.18.3 IC Equipment Groups

Equipment groups are groups of originating switch ports (line side) at different levels in the IC hierarchy. These levels typically correspond to some administrative process that is maintained at this level, such as loading, spreading, bulk allocation, or timeslot resource monitoring. For example, these levels correspond to concentrators in ESS type controllers, or subgroups in DMS entities or line group controllers in the 5ESS IC.

There are several types of equipment groups; load, measurement, spread, allocation and isdn. An equipment group can be more than one type (i.e. both a load and spread group).

Some of the attributes equipment groups can have are:

1. Equipment Group Type - indicates the type of equipment group. The type value is "sweq."
2. Equipment Group ID - identifies the equipment group. See Section 5 for the process on creating equipment group IDs.
3. Change Date - indicates the date on which the equipment group's database record was last modified. The valid format for change date is year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
4. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the network unit.
5. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.
6. Service Type - for equipment groups of type load and measurement, indicates whether the load associated with the equipment group is in units of ccs or pps.

7. Engineered CCS/PPS Capacity - for equipment groups of type load and measurement, indicates the maximum engineered (heavy hour use) capacity of the load group. This attribute is a 6 character numeric value.
8. Estimated CCS/PPS Usage - for equipment groups of type load only, indicates the estimated CCS/PPS of the load group. This attribute is a six character numeric value.
9. Measured Load - for equipment groups of type load only, indicates the measured CCS/ PPS load on the load group. This attribute is a six character numeric value.
10. Theoretical CCS/PPS Usage - for equipment groups of type load only, indicates the theoretical CCS/PPS usage for the load group. This attribute is a six character numeric value.
11. Overwrite Estimated with Theoretical Date - indicates the date that the estimated CCS/ PPS usage was last overwritten with theoretical CCS/PPS usage.
12. Load Pending Add - for equipment groups of type load only, indicates the CCS/PPS load due to pending connect orders. This attribute is a six character numeric value.
13. Load Pending Removal - for equipment groups of type load only, indicates the CCS/ PPS load due to pending disconnect orders. This attribute is a six character numeric value.
14. Remarks - user-definable comments associated with the equipment group.
15. Measurement Quality - for equipment groups of type load only, indicates the quality of the load measurements as high (h), low (l), or old (o).
16. Normalization Required - for equipment groups of type load only, indicates that all the usage attributes in the load group require normalization (needed when load groups with different engineered capacities are in the same load division). The value in this field is the normalization factor.
17. Hierarchy Level - indicates the hierarchy level at which the equipment group resides in the physical hierarchy of the intelligent controller.
18. Hierarchy Level and Count - an array which identifies the level of an IC's hierarchy (e.g., concentrator level) and the total number of equipment groups at that level and at each level below the equipment group's own level, including the number of switch ports. The IC itself is not included in the count.
19. Load indicator - indicates whether this equipment group is a load group.
20. Spread indicator - indicates whether this equipment group is a spread group.
21. Measurement indicator - indicates whether this equipment group is a measurement group.
22. ISDN indicator - indicates whether this equipment group is part of a collection.

23. Allocation indicator - indicates whether the allocation pattern (i.e., order in which administrative constraints are assigned to switch ports in the equipment group) is maintained with this equipment group.

24. Received Measurement End Date - for equipment groups of type load/measurement only, indicates the end date of the study when the data is received.

25. Valid Measurement End Date - for equipment groups of type load/measurement only, indicates the valid end date for the study measurements.

26. Measurement Originator - for equipment groups of type load/measurement only, indicates whether the measurement were input manually or mechanically.

27. Load Factor - indicates the load factor for the load group.

28. Low Load Factor Limit - indicates the low CCS/PPS limit for the load factor of this group.

29. High Load Factor Limit - indicates the CCS/PPS factor limit for the Load factor of this load group.

30. Adjusted Usage Date - indicates the date the usage data was adjusted with measurement data for the load group. Valid format is year (yyyy), month (mm), and day (dd).

31. Load Group Exclusion - a 1-6 alphanumeric user defined value which can be used to exclude switch ports in the group from automatic selection, allow switch ports to be used only if prespecified or preassigned, to direct (steer) switch port selection to these groups for CTX and HML groups on service order requests in the case of customer-purchased equipment, or to direct (steer) switch port selection to these groups on Switch Port Equipment Transfers (SETs), Channel/CRV Transfers (CTRs), Dial Transfers (DTRs), and Area Transfers (ATRs). The exclusion is a scoreable attribute (on validations only) which allows the exclusion to be classified as severe (no automatic selection, scores a -), or moderate (only preassignments and prespecifications allowed, scores a 99). For work order steering, the exclusion must be specified as an override in the work order work session. See Table 4-3.

32. Additional D channel users assignable - indicates the number of additional D channel users that can be assigned to a Protocol Handler. This attribute is only relevant when the client specific feature, 5ESS ISDN Protocol Handler D Channel User Limitations (5ess ph dpkt user limit), is enabled.

33. Protocol Handler Usage - contains the actual count of the number of D channel packet users being served by a Protocol Handler.This attribute is only relevant when the client specific feature, 5ESS ISDN Protocol Handler D Channel User Limitations (5ess ph dpkt user limit), is enabled.

34. Maximum Protocol Handler Usage - contains the maximum number of D channel packet users allowed to be served by a Protocol Handler. Value is 128 for a 5ESS

Protocol Handler. This attribute is only relevant when the client specific feature, 5ESS ISDN Protocol Handler D Channel User Limitations (5ess ph dpkt user limit), is enabled.

4.19 Collections and Collection Groups

Collections and collection groups are database constructs used to provision Basic Rate ISDN in the 5ESS IC. Collections and collection groups model the DPIDB timeslot resources between the circuit-switched and packet-switched portions of the 5ESS IC[8]. More specifically, collections and collection groups are used to model the DPIDB relationship between an ISLU (Integrated Services Line Unit) and a PSU (Packet Switching Unit) shelf. If the client specific feature, tr303 dle isdn is enabled, collections and collection groups are also used to model the DPIDB relationship between an IDCU (Integrated Digital Carrier Unit) and a PSU shelf.

In the ISLU case, each DPIDB provides 4 timeslots to a PSU shelf per LGC in the ISLU half, which can be allocated for D channel and Permanent Packet B usage. In the IDCU case, each DPIDB provides 32 timeslots to a PSU shelf for use by the entire IDCU. Timeslots in DPIDBs can be reserved for On Demand B (ODB) usage. In the ISLU case, the capacity associated with the ODB timeslot reservations (CCS capacity) can be dynamically used between any DSL in the ISLU and the PSU shelf upon which the DPIDB terminates. In the IDCU case, the capacity associated with the ODB timeslot reservations can be dynamically used by any IDCU termination and the PSU shelf upon which the DPIDB terminates.

For ISLUs, a collection exists between each LGC/PSU shelf combination that has timeslot resources between them. A collection group exists between an ISLU and PSU shelf. For IDCUs, a collection exists between each BW (Bandwidth) terminating on an IDCU and a PSU shelf that has timeslot resources between them. A collection group exists between an IDCU and a PSU shelf.

The data attributes of collections and collection groups differ depending on whether the DPIDB relationship being modeled is between an ISLU and PSU shelf or IDCU and PSU shelf.

8. A DPIDB is a Directly Connected Peripheral Data Bus which carries packet-switched calls (B-channel packet, D-channel) to the PSU and its packet network. A DPIDB originates from an ISLU or an IDCU and terminates on a PSU shelf.

4.19.1 Collection Data Contents - ISLUs

Collections for ISLUs maintain data which is associated to the LGC and shelf of the collection, and data which is associated to LGCs and specific Protocol Handlers on the PSU shelf. The following are attributes that apply to ISLU collections:

1. Type - specifies the type of the collection. The valid value is clct.
2. Collection indicator - distinguishes ISLU from IDCU collections. For ISLU collections, the valid value is null.
3. Collection ID - indicates the ID (canonical form only) of the collection. The format is IC.SM-ISLU-SHELF-LGC. The input is all the piece parts (i.e., SM, ISLU, etc.) of the collection that the inventory process uses to create the ID in the database.
4. Change Date - indicates the date on which the group's database record was last modified. The valid format for the change date is year (yyyy) month (mm) day (dd) hour (hh) minute (mm) seconds (ss).
5. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the collection.
6. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.
7. Remarks - user-definable comments associated with the collection.
8. Timeslots Engineered - the number of whole timeslots associated to the LGC by the 5ESS IC automatic assignment algorithm for D channel and Permanent Packet B usage as a result of DPIDB addition/deletion.
9. Timeslots Allocated - the number of whole timeslots allocated to Protocol Handlers (PHs) as a result of B or D channel provisioning.
10. Timeslots Restricted - the number of whole timeslots that are not to be considered for allocation.
11. Maximum D Timeslots - the maximum number of whole timeslots that may be allocated for D service.
12. Maximum B Timeslots - the maximum number of whole timeslots that may be allocated for B service.
13. PH Timeslot array - for each PH (up to 16) on the shelf the following timeslot counts are maintained:

    D service counts:

    — Timeslots Allocated - the number of quarter timeslots allocated for D service in a PH.

    — Timeslots Used - the number of quarter timeslots used for D service in a PH.

B service counts:

— Timeslots Allocated - the number of whole timeslots allocated for B service in a PH.

— Timeslots Used - the number of whole timeslots used for B service in a PH.

14. PH summary timeslots - for all PHs on the shelf the following timeslot counts are maintained:

D service counts:

— Timeslots Allocated - the number of quarter timeslots allocated for D service in all PHs on the shelf.

— Timeslots Used - the number of quarter timeslots used for D service in all PHs on the shelf.

B service counts:

— Timeslots Allocated - the number of whole allocated used for B service in all PHs on the shelf.

— Timeslots Used - the number of whole timeslots used for B service in all PHs on the shelf.

Remarks and Inventory Order Number and Step will be maintained in the node body of the Collection. All other data elements will be stored on the capacity edge.

4.19.2 Collection Group Data Contents - ISLUs

Collection groups for ISLUs contain data at two levels. The first level contains data which applies between the ISLU and the PSU shelf. The second level contains data which applies between each of the two Service Groups (Service groups 0 and 1) and the PSU Shelf. Service Group 0 contains LGCs 0 through 7, while Service Group 1 contains LGCs 8 through 15. Data to be maintained at the ISLU/PSU shelf level includes:

1. Type - indicates the type of the collection group. The valid value is 'clg'.
2. Collection indicator - distinguishes ISLU from IDCU collection groups. For ISLU collection groups, the valid value is null.
3. Collection ID - indicates the ID (canonical form only) of the collection group. The format is IC.SM-ISLU-SHELF. The input is all the piece parts (i.e., SM, ISLU, etc.) of the collection group which the inventory process uses to create the ID in the database.
4. Change Date - indicates the date on which the group's database record was last modified. The valid format for the change date is year (yyyy) month (mm) day (dd) hour (hh) minute (mm) seconds (ss).

5. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the collection group.
6. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.
7. Remarks - user-definable comments associated with the collection group.
8. List of DPIDBs and the number of timeslots reserved for ODB in each DPIDB
9. Engineered timeslots for all DPIDBs (32 times the number of DPIDBs)
10. Total number of Timeslots Reserved for ODB (Sum of timeslots reserved in all DPIDBs)
11. Engineered CCS for ODB (Initially calculated from the Number of timeslots reserved for ODB times the engineered CCS per timeslot, but user modifiable)
12. Estimated ODB CCS load (Sum of the estimated CCS for all assigned and pending ODB services)

Data maintained at the Service Group/PSU Shelf level (for Service Groups 0 and 1) includes:

1. Engineered Timeslots for D channel & Permanent Packet B (32 times the number of DPIDBs specifically engineered between this Service Group and PSU shelf)
2. Timeslots Reserved for ODB (Timeslots reserved in DPIDBs specifically engineered between this service group and PSU shelf)
3. Timeslots Available for D Channel & Permanent Packet B (items 1 - 2)
4. Timeslots Allocated for D Channel & Permanent Packet B (Sum of allocated and restricted timeslots for LGCs in this Service Group).

Remarks and Inventory Order Number and Step will be maintained in the node body of the Collection group. All other data elements will be stored on capacity edges (one for the ISLU/PSU level data and one for each Service Group).

4.19.3 Collection Data Contents - IDCUs

Collections for IDCUs maintain data specifically for managing quarter timeslots between BWs and Protocol Handlers on the PSU shelf. However, counts of whole timeslots for PPB use are also maintained to provide a complete count of timeslots allocated. The following are attributes that apply to collections:

1. Type - indicates the type of the collection. The valid value is clct.
2. Collection indicator - distinguishes ISLU from IDCU collections. For IDCU collections, the valid value is “idcu”.

3. Collection ID - indicates the ID (canonical form only) of the collection. The format is IC.SM-IDCUG-SHELF-BW[9]. The input is all the piece parts (i.e., SM, IDCU, etc.) of the collection that the inventory process will use to create the ID in the database.
4. Change Date - indicates the date on which the group's database record was last modified. The valid format for the change date is year (yyyy) month (mm) day (dd) hour (hh) minute (mm) seconds (ss).
5. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the collection.
6. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.
7. Remarks - user-definable comments associated with the collection.
8. PH Timeslot array - for each PH (up to 16) on the shelf the following timeslot counts are maintained:

   D service counts:

   — Timeslots Allocated - the number of quarter timeslots allocated for D service in a PH.

   — Timeslots Used - the number of quarter timeslots used for D service in a PH.

   B service counts:

   — Timeslots Allocated - the number of whole timeslots allocated for B service in a PH.

   — Timeslots Used - the number of whole timeslots used for B service in a PH.
9. PH summary timeslots - for all PHs on the shelf the following timeslot counts are maintained:

   D service counts:

   — Timeslots Allocated - the number of quarter timeslots allocated for D service in all PHs on the shelf.

   — Timeslots Used - the number of quarter timeslots used for D service in all PHs on the shelf.

   B service counts:

   — Timeslots Allocated - the number of whole timeslots allocated for B service in all PHs on the shelf.

9. The letter G is appended to the IDCU number since both ISLU and IDCUs can have the same unit number. Although only needed for Collection Groups, it is used for Collections for consistency (it is not expected that LGCs and BWs would have the same id value). The use of a G is analogous to use of a G type switch port format for the G-type IDCU.

— Timeslots Used - the number of whole timeslots used for B service in all PHs on the shelf.

Remarks and Inventory Order Number and Step will be maintained in the node body of the Collection. All other data elements will be stored on the capacity edge.

4.19.4 Collection Group Data Contents - IDCUs

Collection groups for IDCUs contain data which applies at the IDCU level and a PSU shelf. This data includes:

1. Type - indicates the type of the collection group. The valid value is 'clg'.
2. Collection indicator - distinguishes ISLU from IDCU collections. For IDCU collection groups, the valid value is "idcu".
3. Collection ID - indicates the ID (canonical form only) of the collection group. The format is IC.SM-IDCUG-SHELF. The input is all the piece parts (i.e., SM, IDCU, etc.) of the collection group which the inventory process will use to create the ID in the database.
4. Change Date - indicates the date on which the group's database record was last modified. The valid format for the change date is year (yyyy) month (mm) day (dd) hour (hh) minute (mm) seconds (ss).
5. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the collection group.
6. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.
7. Remarks - user-definable comments associated with the collection group.
8. List of DPIDBs and the number of timeslots reserved for ODB in each DPIDB.
9. Engineered timeslots for all DPIDBs (32 times the number of DPIDBs).
10. Total number of Timeslots Reserved for ODB (Sum of timeslots reserved in all DPIDBs).
11. Engineered CCS for ODB (Initially calculated from the Number of timeslots reserved for ODB times the engineered CCS per timeslot, but user modifiable).
12. Estimated ODB CCS load (Sum of the estimated CCS for all assigned and pending ODB services).
13. Restricted timeslots - the number of whole timeslots that are not to be considered for allocation. Timeslots needed for the EOC and TMC channels must be restricted.

14. Timeslots allocated for D service - the number of whole timeslots that have been allocated for D service.
15. Timeslots allocated for PPB service - the number of whole timeslots that have been allocated for PPB service.
16. Maximum number of timeslots for D service - a user-modifiable field containing the maximum number of whole timeslots that can be used to support D service. When the collection group is initially created, this value is set to the number of engineered timeslots minus the number of ODB reserved timeslots.
17. Maximum number of timeslots for PPB service - a user-modifiable field containing the maximum number of whole timeslots that can be used to support PPB service. When the collection group is initially created, this value is set to zero.

Remarks and Inventory Order Number and Step will be maintained in the node body of the Collection group. All other data elements will be stored on the capacity edge.

4.20 Administrative Groups

Administrative groups are groups that have a logical relationship to the switching machine and provide various services or application support. Some of these groups are Load Divisions, Centrex Groups, Multi-Line Hunt groups, etc. These groups may have member relationships such as equipment groups to load divisions, telephone number to telephone number lists, etc. These groups will store all group level data that will be applied to each of its members.

4.20.1 Load Divisions

There is a group concept to store load divisions in the SWITCH system database. Load divisions have the following attributes:

1. Group Type - indicates the type of administrative group that the load division is. The valid value is 'ldiv.'
2. Load Division ID - Indicates the ID of the load division. This ID consists of the IC ID and up to four alphanumeric characters.
3. Load Factor Calculation Date - indicates the date the load factors were calculated for the load groups in the load division. Valid values are in the year, month, day format.
4. Adjustment Usage Date - indicates the date that the estimated load values are adjusted with the measured load values. Valid values are in the year, month, day format.

5. Overwrite Estimated with Theoretical Date - indicates the date that the Estimated CCS/PPS Usage was last overwritten with Theoretical CCS/PPS Usage for the load groups within the load division.
6. Adjustment Factor - indicates the adjustment percentage that is used when adjusting the estimated load values against the measured load values.
7. Minimum Delta - indicates the default value for the load division when establishing or re-establishing the "picket fence."
8. Maximum Measurement - indicates the maximum measurement in CCS/PPS that will be accepted from the measurement's study.
9. Minimum Measurement - indicates the minimum measurement in CCS/PPS that will be accepted from the measurement's study.
10. Minimum Hours - indicates the minimum number of hours a study must be run to be acceptable as input.
11. Change Date - indicates the last time the load division database record was changed. The format will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) seconds (ss).
12. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the load division.
13. Allocation save date - indicates the last time the allocation profiles for the load division were saved in yyyymmdd format.
14. Allocation Employee ID - indicates the employee ID of the user who requested saving the profiles.

4.20.2 Centrex Groups

A Centrex Group is the set of telephone numbers which are treated as a whole for the purposes of pre-allocation, spreading of switch port assignments, definition of group data such as custom calling features and reporting capabilities. There are three types of Centrex groups; Regular, Combined, and Multi- Variety package. A Regular Centrex Group "uses" one or more blocks of telephone numbers. Administrative data exists for the group and applies to the services using those TNs. A Combined Centrex Group shares the same collection of pre-allocated TNs with one or more other associated groups. Each group in the family has its own administrative data which applies only to the services assigned to that group. A Multi-Variety Package Centrex Group does not have TNs pre-allocated to it; any TN that is supported by the intelligent controller on which the MVP group resides can become a member of that MVP group.

The following attributes apply to Centrex Groups:

1. Administrative Group Type - indicates what type of administrative group this group is. For Centrex Groups, the valid value is 'ctx.'
2. Centrex Group ID - indicates the ID for the Centrex Group. Valid values are the IC ID plus 1-18 alphanumerics.
3. Individual Dialing Pattern Name - The IDP name is used as a key to store Centrex data within the memory of 5ESS controllers. Valid values are 1-8 alphanumerics and there can be up to three occurrences of this attribute for each group.
4. Key number - indicates the group ID used by other systems if the ID is different from the ID used in the SWITCH system. Valid values are 1-5 alphanumerics or null.
5. Group Start Date - This field is used to permit provisioning requests for non-Centrex service to continue to be processed after the establishment of the group and before the group is operational. Valid values are standard date format or null.
6. Intercept type - indicates the intercept value to be associated with the TN when a disconnect occurs. The provisioning request may override this default for the individual circuit. Valid values are 3 alphas (DTC-Disconnect Transfer Calls, CTC-Change Transfer Calls, DNT-Disconnect Not Transfer Calls, CNT-Change Not Transfer Calls) or null.

   If the client specific TN Suppression feature is activated for the wire center, this attribute will not exist.
7. Route index - This field (RTI) identifies the default intercept trunk announcement given for TNs that are part of the centrex group when they change or disconnect. Valid values are 4 numerics or null.
8. Spreading indicator - This indicates whether spreading algorithms should be used during switch port selection processing for circuits in this group. Valid values are 1 alphanumeric (Y or N).
9. PIC - This identifies the primary Inter-LATA carrier (PIC) to be used on Inter- LATA calls originated from this Centrex group. Valid values are 3-5 alpha-numerics (must be a valid Inter-LATA carrier).
10. TN Aging Period - This field is used as an override for the TN Aging parameter table which is based on Assignment Category and selected CEC (Central Office Equivalency Codes) attributes. Valid values are 1-3 numerics or null.

    If the client specific TN Suppression feature is activated for the wire center, this attribute will not exist.
11. Remarks - user-definable comments about the Centrex Group. Valid values are 0-60 alpha-numeric characters.

12. TN Type - This field is used to set the TN Type attribute for TNs that are removed from the Centrex group or when the group itself is deleted. Valid values are a (see Table 4-2) user-defined list that includes C=Coin and X=POTS.

    If the client specific TN Suppression feature is activated for the wire center, this attribute and Table 4-2 will not exist.

13. Change Date - indicates the last time the Centrex Group's database record was changed. The format will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
14. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the Centrex Group.
15. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.

4.20.3 Multi-Line Hunt Groups

A multi-line hunt group (HMLG) consists of lines, each of which is assigned a terminal. The group of lines share common terminating features and translation data, resulting in an efficient use of memory in the intelligent controller. Any line in the group can also be given a telephone number(s).

The following attributes apply to HMLGs:

1. Administrative Group Type - indicates what type of administrative group a HMLG is. The valid value is 'hml.'
2. HML ID - indicates the user's external identification of the hml. This ID form consists of up to four numeric characters plus the IC ID.
3. Change Date - indicates the last time the HMLG's database record was changed. The format will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
4. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the HMLG.
5. Order Number - indicates the last order number associated with the HMLG.
6. Due Date - indicates the due date of the order number. The format for due date will be year (yyyy) month (mm) and day (dd).
7. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.

8. Remarks - indicates any permanent remarks associated with the HMLG. This attribute can be up to 60 alphanumeric characters in length. This attribute can only be input or removed by inventory processes.
9. Temporary remarks - indicates any temporary remarks associated with the hml. This attribute can be up to 60 alphanumeric characters in length. These remarks are removed when the group is provisioned.
10. Spreading Indicator - indicates whether spreading algorithms should be used when provisioning lines of the HMLG. Valid values are "y" or "n."
11. Selection Indicator - indicates whether the group is associated to services or is available for selection (e.g., spare). Valid values of "y" (meaning spare) and "n" (meaning working) are allowed.
12. Assignment Limitations - indicates whether the group has already been selected for a not yet received service order. The limitations consist of a type and a value. The values are user definable. The current standards are:
    - RST (Restricted) - indicates the HMLG is not capable of being automatically assigned (or having its assignment changed) by SWITCH system. This is due to SWITCH system limitations or physical conditions (other than defective) which prevents assignment or assignment changes. The assignment limitation type is rst and its valid value is res (restricted).
    - TMP (Temporary) - indicates the HMLG is temporarily reserved for a subsequent service request. When the HMLG is specified for a pending service request, the limitation is removed. The valid value for this limitation type is trs (temporarily reserved).
    - Null - indicates that there are no assignment limitations associated with this HMLG.
13. Translation data - storage place for valid translation data associated to the hml group. All valid translation tags supported in the SWITCH system are in Section 13, Appendix A.

4.20.4 Series Completion Hunt Groups

A series completion hunt group (SCH) consists of lines, each of which has a telephone number which hunts to another telephone number (i.e., each member of the hunt group is assigned a telephone number). SCH groups exist only with services associated to them. They are removed when the last associated service is removed. SCH groups are created via provisioning requests only.

The following attributes apply to SCHs:

1. Administrative Group Type - indicates what type of administrative group a SCH is. The valid value is "sch."
2. Change Date - indicates the last time the SCH's database record was changed. The format will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
3. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the SCH.
4. Order Number - indicates the last provisioning order number associated with the SCH.
5. Due Date - indicates the due date of the order number. The format for due date will be year (yyyy) month (mm) and day (dd).
6. Remarks - user comments that are input that provide remarks about the SCH.
7. Translation data - storage place for valid translation data associated to the sch group. All valid translation tags supported in the SWITCH system are in Section 13, Appendix A.
8. Spreading Indicator - indicates whether spreading algorithms should be used when provisioning lines of the SCH. The valid values are "y" or "n."

4.20.5 Simulated Facility Groups

Simulated and Virtual Facility Groups (SFGs & VFGs) are associated with groups of services and are used to control access to certain IC resources sold on a limited basis. These groups, via software, simulate physical hardware instead of providing dedicated lines or trunks. These groups are assigned on a per-customer basis. The quantity of facilities purchased is stored in the Intelligent Controller's memory and is used to identify and control the number of simultaneous calls for a given customer's service.

If an IC's SFGs are inventoried, an indicator is set to "y" in the *wc parms* reference data table (see Table 6-8). there is an instance of this table for each IC in the wire center. The wc parms tables are a set of tables at the wire center or IC level that set certain options for the wire center or IC.

Attributes that support SFGs are as follows:

1. External ID - indicates the user's external identification of the SFG. This user external ID of the SFG group usually consists of up to four numeric characters plus the IC ID.
2. Change Date - indicates the date on which the group's database record was last modified. The valid format for change date is year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
3. Employee ID - indicates the ID of the "user" (human or external system) that last changed the group.

4. Last Order Identifier - indicates the last order number for trouble investigation.
5. Due Date - indicates the due date of the last order identifier. This attribute can be null. The valid format for this attribute is year (yyyy), month (mm), and day (dd).
6. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.
7. Remarks - indicates any permanent remarks associated with the SFG. This is an attribute input during inventory processes and can be up to 60 alphanumeric characters in length. This attribute can only be input or removed by inventory.
8. Temporary Remarks - indicates any temporary remarks associated with the SFG. This is an attribute input during inventory processes and can be up to 60 alphanumeric characters in length. This attribute can only be removed by inventory or provisioning processes.
9. Selection Indicator - indicates whether the group is associated to services or is available for selection (e.g., spare). A value of "y" signifies that the group is available for selection. This is the default value set when the group is initially inventoried.
10. Assignment Limitations - indicates whether there are any assignment limitations against this group. The limitations consist of a type and a value. The values are user definable. The current standards are:
    - RST(Restricted) - indicates the SFG is not capable of being automatically assigned (or having its assignment changed) by the SWITCH system. This is due to SWITCH system limitations or physical conditions (other than defective) which prevents assignment or assignment changes. The assignment limitation type is rst and its valid value is res (restricted).
    - TMP (Temporary) - indicates that this inventory is temporarily reserved for a subsequent service request. When the inventory is specified for a pending service request, the limitation is removed. The valid value for this limitation type is trs (temporarily reserved).
    - Null - indicates that there are no assignment limitations associated with this SFG.
11. Translations data - storage place for valid translation data associated to the SFG.
    - Screening Index - indicates the screening index for each band. Screening index is required for OUTWATS service so that band screening may be done and the appropriate charging can occur. This attribute is set by provisioning processes and can be up to four numerics in length; leading zeros are important. This attribute only supports the 5ESS IC.
    - Group Size - indicates the number of simultaneous calls that can be in progress for the SFG. For a 1/1AESS IC the value may be 1 to 126, or 127 to indicate unlimited number of calls. For the 5ESS IC the maximum number of calls is 1984. For the

DMS IC the maximum number of calls is 2048. This attribute is set by provisioning processes and can be up to four numerics.

- BAAD - indicates the band advance associated with the SFG. The band advance identifies the SFG that will be hunted to if the number of simultaneous calls equals the group size of the accessed SFG. This attribute is set by provisioning processes.
- Q Feature - identifies the queue name assigned to the SFG. It is supplied by the "QP" FID on the service order. This attribute is set by provisioning processes. This attribute can be up to eight alpha-numeric characters in length.

4.21 Frames

Frames are structures that serve as a common terminating point for central office equipment, cables, jumpers, etc. This section describes attributes for frames that are used in the assignment algorithms.

1. Equipment group type - the type of equipment group. For frames the value is "frm."
2. Frame Name - indicates the name of the frame. The values for this attribute consists of three alpha-numeric characters. The three character frame name is required.
3. Frame CLLI Code - identifies the frame by an 11 character location ID for cross-reference with the TIRKS system. The CLLI code is an optional frame name, in addition to the three character frame name above.
4. Change Date - indicates the last time the frame's database record was changed. The format will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
5. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.
6. Frame Type - indicates frame type. This is used by assignment processing to figure out the zone iteration values.

   COSMICI - COSMIC I or other frames that are assigned like COSMIC
   COSMICII - COSMIC II or other frames that are assigned like COSMIC II
   ESS - ESS Modular or other frames that are assigned like ESS Modular
   CON - Conventional
   PRT - Protector frames
   CODS2SIDE - CODS 2 side-by side configuration
   CODS2OVER - CODS 2 over/under configuration
   DIGITAL - DSX frames

7. First Zone - indicates the first zone for the frame. This field is a three character numeric value (001 to 999). Unzoned frames will be given a value of 001.

8. Last Zone - indicates the last zone for the frame. This field is a three character numeric value (001 to 999). Unzoned frames will be given a value of 001.
9. First Module - indicates the first module of the frame configuration. This field is a three character numeric value (000 to 999). This field applies only to COSMIC frames.
10. Last Module - indicates the last module of the frame configuration. This field is a three character numeric value (000 to 999). This field applies only to COSMIC frames.
11. First Vertical - indicates the first vertical of the frame configuration. This field is a three character numeric value (000 to 999). This field applies only to Conventional frames.
12. Last Vertical - indicates the last vertical of the frame configuration. This field is a three character numeric value (000 to 999). This field applies only to Conventional frames.
13. Jumpers per terminal - indicates the number of jumpers per terminal. This field is a one character numeric value (0 to 9).
14. Zones per Module - identifies how many zones there are in a single module. The vendor recommendation for the CODS 2 over/under frame is 6. This attribute is optional for all frame types. Conversion will set this attribute to 6 for CODS 2 over/under frame types.
15. Two Stage Frame Indicator - indicates whether the frame is two stage or not. Valid values are "Y" or null. A two stage frame contains switch ports on one frame and cable pairs on another frame. Tie pairs connect the switch ports to the cable pairs.
16. COMMON LANGUAGE Frame Format - identifies the frame format for digital frames. Valid values are C, J, and X.

4.22 Telephone Number Groups

Telephone Number Groups (TNGs) are used as a way to relate telephone numbers (TNs) that all belong in the same Centrex group(s). Each TN that can be used in a Centrex Group (Regular or Combined) will be a member of the TNG that is "used" by the Centrex Group.

TNGs do not have external IDs. The attributes that support TNGs are:

1. Administrative Group Type - indicates the administrative group type. The valid value is "tng."
2. Change Date - indicates the last time the intelligent controller's database record was changed. The format will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).

3. Employee ID - indicates the ID of the last "user" to modify the database record for the TNG.
4. User Name - indicates the user name for the TNG. The valid value is "tng."

If the client specific TN Suppression feature is activated for the wire center, TNGs will not exist.

4.23 Telephone Number Lists

Telephone Number Lists (TNLs) will be created to list TNs that are to be pre-assigned by upfront systems (e.g., PREMIS). The valid list of attributes for TNLs are:

1. Administrative Group Type - indicates the administrative group type for TNLs. The valid value is "tnl."
2. TN List ID - indicates the external ID for the TNL. The ID is a system generated sequence number between 1 and 999.
3. Employee ID - indicates the ID of the last "user" to modify the database record for the TNL.
4. Remarks - stores remarks about the TNL.
5. Change Date - indicates the last time the TNL's database record was changed. The format will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
6. Group Create Date - indicates the date the TNL was created. The valid format is year (yyyy), month (mm), and day (dd).
7. Line Count - indicates the number of TNs to be put on the list.
8. Telephone Number Range - indicates the range of TNs on the list by NPA NXX, Low end and High end.
9. IC List - indicates the ICs associated with the TNL by the IC ID.
10. Centrex Group ID - indicates the Centrex Group ID that is associated to the TNL.
11. Skip TN - indicates the minimum number of consecutive TNs to skip within a hundreds block. The valid values are 2 to 9.
12. Hunt Block Size - indicates the number of spare telephone numbers designed for hunting blocks. If hunt block is present, skip TN is ignored. Valid values are 2 to 5.
13. Minimum Block Size - indicates the minimum number of consecutive TNs required. Valid values are 2 to 99.
14. Department - indicates the department requesting the list. Valid values are 1 to 3 numerics.

15. PREMIS Wire center - indicates the PREMIS wire center information. Valid values are 1 to 6 alphanumerics.
16. PREMIS Number List ID - indicates the PREMIS number list ID. Valid values are 1 to 12 alphanumerics.
17. Terminating Traffic Name - indicates the mapping in PREMIS for rate zone. Only TNs from the same rate zone will be chosen upon list creation. Valid values are 1 to 3 alphanumerics.

When the client specific TN Suppression feature is activated for the first time in a wire center, there may exist some TNLs. As the telephone numbers in a TNL are assigned, the telephone numbers are removed from the TNL. When the last telephone number in a TNL is in working service, the TNL is removed from the data base.

4.24 Paths

A path node is created by the capacity activation processes to show the existence of physical carrier circuits which provide a route from a CC to either an IC or another CC. One and only one path node exists between a set of endpoints.

4.24.1 Path Attributes

This section describes the attributes for paths:

1. Change Date - indicates the last time there was a change to this piece of inventory's database record. The format for change date will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
2. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the network unit.
3. Last Order Identifier - indicates the last order number for history processing.
4. Due Date - indicates the due date of the last order identifier. The format for due date will be year (yyyy) month (mm) and day (dd). The value could be null if there is no order associated with the switch port.
5. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.
6. Management Indicator - indicates whether the bandwidth that is a fact or of the path is proprietary or not managed. Valid values are proprietary (p), non-managed (n) or null.
7. Spare Available Capacity (Assignment Rates) - a list of assignment rates which have spare capacity in some bandwidths that are a factor of the path.

8. Disconnect Available Capacity - a list of assignment rates which have pending disconnects in some bandwidth that is a factor of the path.
9. SCID - SONET Carrier Circuit ID. This only applies to SONET and will be kept on a path edge from the CC to the path node. It is 6 alphanumeric characters.

4.25 Bandwidths

The bandwidth node is created by capacity activation processes and represents the set of capacity that is to be managed together. A bandwidth summarizes the capacity of one or more carrier circuits and models the carrier system. One or more bandwidths can exist for a given Path, as specified by the user.

4.25.1 Bandwidth Attributes

The following list describes the attributes for bandwidth:

1. Bandwidth Name - identifies the name of the bandwidth. The bandwidth name is composed of a 1 to 12 alphanumeric string. It can be entered by the user, or derived during capacity activation.
2. Change Date - indicates the last time there was a change to this piece of inventory's database record. The format for change date will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
3. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the network unit.
4. Last Order Identifier - indicates the last order number for history processing.
5. Due Date - indicates the due date of the last order identifier. The format for due date will be year (yyyy) month (mm) and day (dd). The value could be null if there is no order associated with the switch port.
6. Management Type - indicates how the bandwidth is managed. Valid values are "mix" (mixed), "stat" (static TSI), "dyn" (dynamic TSI), prop (proprietary), or non (non-managed).
7. Originating AID Format - identifies AID format name used in deriving the AIDs for channels related to the origination CC. This attribute is 9 alphanumeric characters.
8. Destination AID Format - identifies AID format name used in the AIDs for channels related to the destination CC. This attribute is 9 alphanumeric characters.
9. Assignment Rate Array - Capacities stored in a alphanumeric character array of assignment rates and capacities.

- Engineered Capacity - total capacity in CCS for each assignment rate existing in the Bandwidth (6N).
- Assigned Capacity - total assigned capacity in CCS for each assignment rate existing in the Bandwidth that is a component of a pending or working circuit or that has a WKG Assignment Limitation (6N).
- Pending Disconnect Availability Capacity - total capacity in CCS that is involved in pending disconnects for each assignment rate existing in the Bandwidth (6N).
- Assignment Limited Capacity - total capacity in CCS for each assignment rate existing in the Bandwidth that has Assignment Limitations (other than the WKG Assignment Limitation) (6N).
- Assembled Capacity - total capacity in CCS for each assignment rate existing in the Bandwidth that is a component of an assembly (circuit, pasm or reservation (6N).
- Non-selectable Capacity - total Non-selectable capacity in CCS for each assignment rate existing in the Bandwidth (6N). This is the sum of the Assignment Limited and Assembled capacities.
- Utilization Factor - specifies the utilization factor for each assignment rate existing in the Bandwidth. This is similar to load factor and is based on the percentile of Assigned capacity divided by Engineered Capacity (2N).

10. Route Available Capacity Assignment Rates - a list of assignment rates which have some capacity in the Bandwidth that can be selectable or able to be validated.
11. Disconnect Available Capacity Assignment Rates - a list of assignment rates which have pending disconnects in the Bandwidth.
12. Interface Standard - identifies the interface standard for the Bandwidth (e.g., TR303, TR008). This field is 5 alphanumerics and is an optional attribute.
13. SCID - SONET Carrier Circuit ID. This only applies to SONET. It is 6 alphanumeric characters and always begins with an "n".
14. Channel Format - a 1 to 7 alphanumeric character string that is used as the instance key to Reference Data to obtain the channel hierarchy used to create channels.

4.26 Service Assemblies

A service assembly is an association of items that provide a service. Listed below are some of the attributes associated with a service assembly.

1. Type - indicates that the type of record is "svc."

2. Assembly ID - identifies the service assembly. The ID uses the CKID and STID formats described in Appendix 6A.
3. Service Indicator - indicates if the service is suspended or denied service. Valid values are O (suspend out), I (suspend in), Y (suspend both), DO (deny out), DI (deny in), DB (deny both), or SUBL (sublet).
4. Change Date - indicates the last time this service assembly's database record was updated. The valid format for this attribute is year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
5. Employee ID - indicates the user ID of the "user" (human or external system) that last changed the body of the assembly.
6. Last Order Number - indicates the last service or work order number associated with the assembly.
7. Due Date - indicates the due date for the last order associated with the assembly. The valid format is year (yyyy) month (mm) and day (dd).
8. Remarks - indicates any remarks about the service.
9. CEC Attributes - identifies the set of design attributes known as the Central Office Equivalency Codes. Each attribute is a field in the database. The complete set of CEC attributes are specified in Appendix 6B.

4.26.1 Carrier Circuit Attributes

The following attributes are required enhancements for service assemblies to allow carrier type circuits to be processed correctly. These attributes apply only to DS1 carrier circuit assemblies.

1. Detailed Regulatory Length - a 6 alphanumeric character field that identifies the length of a the carrier circuit for one area. The values for this field may contain decimal points. There may be up to three occurrences of this field.
2. Detailed Regulatory Area - a 4 alphanumeric field that describes the regulatory area for the carrier circuit. There may be up to three occurrences of this field.
3. Detailed Regulatory Unit - a 2 alphanumeric character field that provides the units that apply to the length. There is only one occurrence of this field.
   - FT - feet
   - MI - Miles
   - KF - Kilofeet
   - M - meters

- KM - Kilometers

4. Carrier Indicator - indicates that the service is a carrier type service (Y or null).
5. Material - indicates the carrier circuit make-up. This a single alphanumeric character field where "c" stands for copper, "f" stands for fiber, and "m" stands for metallic.
6. Carrier Circuit Cost Ratio - identifies an optional multiplier (4a/n) for the cost of the carrier circuit.
7. Carrier Circuit Cost - the cost of the carrier circuit using the length, cost ratio, and facility type (7N).

4.26.2 Routing Attributes

The following list describes routing attributes for service assemblies:

1. Carrier Circuit Destination - identifies by 11 alphanumeric characters the destination CC for the route.
2. Building Destination - identifies by 8-11 alphanumeric characters the building destination for the route.
3. Terminal Identifier Separator - identifies the TID separator for Dual F and T services (1a/n).
4. Terminal Identifier - the terminal identifier for dual service. This attribute is used when there is more than one leg.
5. Internal IDs of every CC, Path, and IC in sequence to show route from origin to final destination.
6. Next Facility value - data from TIRKS indicating the type of facility in the "next segment" of a design circuit. Valid values are:
   - dc - digital carrier
   - ac - analog carrier
   - 2p - two-wire copper
   - 4p - four-wire copper
   - no - "next segment" does not exist (circuit does not ride on another carrier nor does another leg exist).
7. Two/Four-wire override - user override to the Next Facility value or to the transition condition (see Section 6.3.5). Valid values are null, 2w, or 4w.
8. Origination Controller - the internal id of the Carrier Controller (NAU or ONU only) used as the starting point for assignment instead of a cable pair (16 a/n).

9. Origination Card Type - the card type of the slot at the Origination Controller, used for compatibility checking during the assignment process (8a/n).

4.26.3 Other Attributes

Additional design attributes are as follows:

1. WATS Band - indicates the WATS band associated with the service.
2. Party Position - indicates the party position of the service.
3. SVID - indicates the service ID of the service.
4. SPID - indicates the service profile ID for the service.
5. SID - indicates the service ID portion of the STID (Service Termination ID).
6. Service - indicates whether the service is primary or secondary.
7. Recent Change USOC - indicates the recent change USOC.
8. Assignable Line USOC - indicates the assignable line USOC.
9. Class of Service USOC - indicates the class of service USOC.
10. End Location - indicates the wire center where LAC assigned foreign exchange service is switched, or the foreign serving office (NPANXX).

4.27 Circuit Assemblies

A circuit assembly is an association of items that provide services.

Unlike service assemblies circuit assemblies have connection relationships

(see Section 3).Circuits do not have external IDs in the SWITCH system; services do.

Listed below are some of the attributes associated with a circuit assembly:

1. Telecommunications Services Priority (TSP) Indicator - indicates the value of TSP associated with a circuit if appropriate. It is used to indicate the quickness restoration and provisioning capabilities after maintenance activity on the circuit. The indicator consists of two parts:provisioning and restoration. The values for provisioning range from E = Highest, 1, 2, 3, 4, 5 = lowest, with 0 = no priority. The values for restoration range from 1= highest, 2, 3, 4, 5 = lowest, with 0 = no priority. Any combination of the two parts is valid except for "00.
2. Special Circuit Usage - indicates the circuit's usage. Valid values are :

   OF - Official

   TS - Test

MS - Miscellaneous
PTN - Plant Test Number
SSP - Special Protection
SSM - Special Safeguard Measures
DSP - Designed and Special Safeguard Protection
DSM - Designed and Special Safeguard Measures
DC - Designed Circuit

3. Manual Connectivity - indicates if the connectivity of the circuit was manually provided. Valid values are ‘b’ (both the circuit and connectivity was manually specified).
4. Manual Activity Indicator - indicates that only manual activity can process on this circuit. Valid values are CO (no connectivity determined by conversion), (processing limitations in the SWITCH system), TC (totally constrained assignment), or PC (partially constrained assignment).
5. Remarks - indicates any remarks about the circuit.
6. Change Date - indicates the last time the circuit’s database record was changed. The format will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
7. Employee ID - indicates the ID of the “user” (human or external system) that last changed the body of the assembly. If the change was affected from an external system the user ID will be retrieved from reference data that has an ID for that system.
8. Last Order Number - indicates the last order number associated with the assembly.
9. Due Date - indicates the due date for the last order associated with the assembly. The valid format is year (yyyy) month (mm) and day (dd).

4.28 Assemblies

Assemblies are a method of grouping components and attributes. The attributes an assembly can have are:

1. Type - indicates the internal type of assembly. The valid value is 'asm.'
2. Change Date - indicates the last time the assembly's database record was changed. The format is year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
3. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the assembly.

4. Order Number - indicates the last order number associated with the database record.
5. Due Date - indicates the due date of the last order associated with the assembly. The format is year (yyyy) month (mm) and day (dd).
6. Inventory Order - indicates the ID of the inventory order, if the inventory was created using an inventory order for tracking.
7. Remarks - indicates any remarks about the assembly.
8. User Name - identifies a user name for the assembly.
9. Assembly Category - determines the processing that will take place on the assembly. The following assembly categories have been defined:
   - permanent assembly (PASM) - the network units must remain together regardless of the provisioning request processing on the assembly. When a PASM becomes part of a circuit, additional network units that are part of the circuit are not added to the PASM. The PASM remains after the service is disconnected. A PASM may exist with or without connectivity. A telephone number (TN) cannot be a component of a PASM. Examples of PASMs are integrated digital loop carrier (IDLC), cable pressure transducers and mated bridge lifters.
   - modifiable assembly (MASM) - the network units may or may not remain together when a provisioning request processes on the assembly. A MASM becomes the circuit when there is an existing service. When a service is established, the MASM is modified to reflect all the components in the circuit. When the service is disconnected, the whole assembly remains in place. A TN may be a component of a MASM. A packet switch port may be a component of a MASM. Examples of MASMs are dormitory service, exhibition hall service and seasonal service.
   - pseudo service (PSSV) - provides a type of service to a customer that when the service is inactive remains as a PSSV. A PSSV may be modified on a change order. The entire PSSV must be used for a new connect and cannot be modified. A TN cannot be a component of a PSSV. Examples of PSSVs are meter reading service and door answering equipment.
   - temporary assembly (TASM) - the network units do not remain together once a provisioning request processes on the assembly. A TASM does not exist once the network units become part of a circuit. A TASM may be broken if one component of the assembly is needed to satisfy a provisioning request. A TASM created by a work order or a service order cannot contain a TN. An example of a TASM is a DIP.
10. Network Unit Selectable Scale - indicates a selectable choice, for the network unit within the assembly, which can be found in reference data associated with a penalty score. The choices for the scale are from 0 to 6 with 0 being the most selectable and 6 being the least selectable.[10]

11. Aging Date - indicates the date the assembly was created.
12. Aging Month - indicates the month and year the assembly was created. It is derived from aging date and allows for selection of network units that are part of assemblies that have aged for some specified number of months.
13. OSP Disconnect - indicates the outside plant processing tag (e.g., CT or CF) that came across from SOAC on a disconnect order or through UPD CKT.
14. Specific Functionality - indicates the specific functionality of the assembly. It helps distinguish among the different assemblies for administrative, validation and tracking purposes. The following values have been defined:
    - PRD - paired mated bridge lifter
    - FPT - four party mated bridge lifter
    - IDLC
    - DIP
    - CN - coin service
    - 2P - 2 party service
    - 4P - 4 party service
    - 8P - 8 party service
    - FIXCC - used to determine whether an adjacent point attribute should exist for a CC port within the assembly.
    - 4WCCP - identifies when 2 CC ports (each with a receive or transmit attribute) controlled by the same CC, are components of an assembly.
15. Frame Location Override - frame location of the IC equipment (used for connectivity algorithms, see Section 6.13)
16. Retention - indicates if the assembly relationship continues to exist between the components of the assembly when the components are assigned to a circuit.

4.28.1 LTID Groups

An LTID group is a group of LTID numbers. LTID group attributes appear below.

1. LTID group Name - is the external name of the LTID group.

10. The value of the selectable scale of an assembly with a specific functionality of fixcc is set to 0.

2. Change Date - indicates the date on which the equipment's database record was last modified. The valid format for change date is year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and second (ss).
3. Employee ID - indicates the ID of the "user" (human or external system) that last changed the body of the network unit.
4. Index Code - a unique number for the group. Valid values are 0-31.
5. Remarks - an user entered field for remarks associated with the LTID group.

4.29 Multi-Line Reservations

A multi-line reservation (reservation group) associates all reservations (see Section 4.30) that were made in one work session for a particular provisioning request. A reservation group may contain either a single circuit reservation or multiple circuit reservations. Attributes stored in the reservation group are not used by the assignment algorithms.

4.29.1 Multi-Line Reservation Attributes

This section describes the attributes associated with a reservation group.

1. Type - indicates the type for processing. The valid value is rsvg.
2. Group ID - contains the associated order number of the claiming provisioning request, if it is known. The group ID is optional.
3. Due Date - indicates the anticipated due date of the claiming provisioning request.
4. Remarks - indicates any remarks associated with the reservation group.

4.30 Reservations

Reservations enable network units to become unavailable for automatic assignment, except when the specific circuit for which they were reserved appears on a provisioning request. (Ad Hoc telephone numbers cannot be part of reservations.) A reservation may contain inventoried items or non-inventoried items. When a reservation is created, all the units are linked together enabling them to be pulled into a circuit at the time of service order establishment. Listed below are attributes associated with a reservation:

1. Type - this is 'rsv'
2. Reservation ID - identifies the reservation. The ID is the CTID that appears on the claiming provisioning request.

3. Change Date - indicates the last time the reservation's database record was changed. The format will be year (yyyy) month (mm) day (dd) hour (hh) minute (mm) and seconds (ss).
4. Employee ID - indicates the ID of the user or system which last changed the body of the reservation.
5. User name - indicates the user name for a reservation. The valid value is "rsv."
6. Aging Date - used to indicate the date the reservation was created.
7. Remarks - indicates any remarks about the reservation.

4.31 Inventory Orders

The SWITCH system is implementing an *inventory order* for use in tracking and managing multi-step inventory activities. The order will consist of:

1. multiple steps that are user-defined, based on defaults from reference data for "typical" inventory orders.
2. log-type history for activity pertaining to the order performed in any work sessions that are used to complete the steps contained in the inventory order.

The log will be updated automatically, or may also be updated manually. The status for each step will be updated manually. The order will exist in the database until it is completed at which time the history log will be printed at a designated destination and the order record removed.

Inventory orders are stored as a node type INVO. This node will have a unique identity. The ID is user defined and can be up to 12 characters in length. The attributes stored in the body of an inventory order node are:

1. Type - INVO
2. Employee ID - ID of the employee who created the order.
3. Remarks - modifiable field of 60 characters to provide comments or a brief description of the order.
4. Change Date - Date the order node was last modified.
5. Due Date of Inventory Order - indicates the due date of the order. This attribute is for information only. It will not be processed.

An inventory order may contain a number of different steps that refer to database types (e.g., swpt, tn, hml, etc.) and for each of those types a number of ranges. SWITCH system reference data will contain sets of default steps for "typical" inventory orders. These default steps will reside in the reference data tables "inv order steps," with instance keys describing node type (e.g., IC), action (e.g., a=add), and optionally flavor of node type (e.g., 5ES IC) (see table 5-9). Some of these orders will contain multiple object types. These steps can be copied and edited for each order from Bellcore delivered defaults in reference data (see Section 5). A step may equate to a single work session action (e.g., ADM NTU) or multiple work sessions (e.g., add 100 Centrex groups with UPDCTX), but will not span types.

4.31.1 Step X-File

The steps for an order will be stored in an xfile and the history for an order will be stored in another xfile. An x-file are UNIX like files that can be used for storing defined record structures.

The information that will be kept in the step xfile for each step is the following: IDs of the steps, type of object and range of IDs, remarks, status and function of the step.

4.31.2 History X-File

The log-type history file will contain information for each step as it is processed. This information could be logged automatically from an inventory work session, or manually when the need requires (i.e., reference data update steps). Automatic updates contain the ID of the step, control information (object type and range) and process information (object type and actual objects processed).

If a step is manually updated (e.g., reference data steps) the information stored in the history file is the employee ID, ID of the step and any remarks input.

TABLE APPENDIX 4

Table 4-1. Inv Category Attributes

INSTANCE KEY: asm

pname1	pname2	fcif
asm_cat		rec.acl(3).grpattr.asmcat
spec_func		rec.acl(3).grpattr.spfcn

INSTANCE KEY: cp

pname1	pname2	fcif
spec_func		rec.acl(3).ntu.uattr.spfcn

INSTANCE KEY: swpt

pname1	pname2	fcif
wires		rec.acl(3).ntu.uattr.wires

Table 4-2. Telephone Number Type Description
(Wire Center Reference Data name = tn type description)

TN type	description
a	not used
b	business
c	coin
d	not used
•	not used
•	not used
•	not used
o	official
p	paging
q	centrex
r	radio common carrier
•	not used
•	not used
•	not used
w	outwats
x	pots
y	time and temp
z	not used

Table 4-3. Determine Load Group Exclusion Score
(Global Reference Data name = swpt penalty score excl)

Instance = DEFAULT ASCAT/ALL ICs		
Attribute value	Penalty	When
NULL	0	
MAN	99	
EX	-	
DTR	99	
SET	99	
ATR	99	
CTR	99	

Table 4-4. Client Specific Feature Control Table
(Reference Data Name = customer features)
(Instance Key = date)
(Scope = modgl)
SCCS level = 13.1

Instance =		
feature_name	feature_id	status
dataset input to ewo		
est swpts non seq		
filter by adm func		
immediate asg mct		
immediate chg asg		
immediate upd grp		
inquire assign poe		
multi line hunt term renumber		
multiple updaters		
ntu change with delete		
remove dangling f		
report map		
resolve assign modify cec attrs		
tn sharing for isdn analog		
tn suppression		
5ess ph dpkt user limit		
tr303 dle isdn		

Appendix 4A: EQUIPMENT IDENTIFICATIONS

A node is known to the SWITCH system community by its external ID. [1]An external ID is the concatenation of the user name (oe, cp, tn, etc.) and ID value (201.555.1212, 101-1, 12456-789, etc.). A node may have more than one external ID. [2]External IDs are defined by the "end user" (e.g., terminal user or contract initiated from another system).

External IDs will be mapped to a SWITCH system internal ID for the ease of SWITCH system processing. The external ID of a node may change (CTX). Separation of external and internal IDs allows renaming of a node without significant changes to the node and its relationships in the database.

The SWITCH system will store the external ID to provide the external to internal mapping. The SWITCH system will store the external ID in a standardized or canonical format. This will aid in matching or finding IDs when slightly different formats are entered.

4A.1 SWITCH System External ID Process

Since the SWITCH system will be used by various work centers, its naming problems are compounded. Different users may refer to the same network unit, assembly, etc. by different names. These names may differ in format, in content or both. For example, in wire centers that contain more than one building, entity number (intelligent controller) 2 in COSMOS may be identified as entity number 1 in the TIRKS system.

The SWITCH system requires that external IDs be unique; external IDs within a type must be unique (e.g., cp 789-1234 and if 789-1234 and tn 789-1234 are all allowed and considered to be unique). This may force adding additional data (location, serial numbers, etc.) to an ID to make it unique. Output identifiers may also be desired that are not unique. For these cases, these identifiers cannot be used as external ids, but can become other attributes (e.g., CLEI - equipment identification code will be an attribute rather than an external id). To deal with these problems and to allow for support of new technology (with new names), SWITCH system provides generic solutions to the general naming problem.

There are three processes the SWITCH system will provide when interpreting external IDs:

1. Accept and Parse ID Input

The SWITCH system must be able to collect input data from "end users" and interpret this data using ID parsers. Parsers will identify, from the input, the pieces of data that make up the ID. Based on that data, the parsers will create a canonical form that provides a consistent format for that set of data. ID attributes and the canonical form will be stored on

1. Service IDs and TN IDs use the circuit ID parser which is discussed in Appendix 6A.

2. Though the SWITCH system database can support multiple IDs for all database objects, other processes have a limitation of a single ID, except in the case of ICs, frames, services, switch equipment groups, channels, and CRVs.

the EX edge for the object. These attributes along with the canonical form will be used for output formatting. The canonical form is the SWITCH system internal form of the external ID value.

2. Match on the ID Input Data

Once the input data is parsed and processed into a canonical form, the database object's type and canonical form (ID value) are used as matching criteria to access the object using the External to Internal ID (EIX) table. The user does not see the canonical form.

3. Create the Proper Output Format

An output formatter is needed to convert the canonical form(s), and any additional attributes required, into a recognizable external ID for the "end user." The "user" can be either an external system, or a human through the ULBB. If a specific output format cannot be determined, the output will be determined using a prioritized hierarchy of output formats.

Other areas that are impacted by use of external IDs are reference data and conversion. The above processes and areas are discussed in the following sections.

4A.1.1 Accept and Parse ID Input

Input will be presented to a specific parse routine depending on database object type (e.g., swpt, HML etc.). The user name is translated using reference data to type and stored with the canonical form and type on the ex edge. Once the database object type is determined, rules in reference data are used to determine what pieces of data (attributes) are needed to be passed to the appropriate parse routine. The parse routines will determine three things:

1. The attributes that make up the name

2. The type (or dialect) of the name

3. The canonical form of the name

Parsing must identify the attributes required to make up the name and then process on them. The attributes may have delimiters separating them (e.g., cable-pair), leading zeros that need to be deleted (cable pair's leading zeros will be deleted), or need to be concatenated with other attributes. The parser should have the capability to add default attributes, if they are required but not provided on input (e.g., DTN when NPA not provided). The rules for the parsing process will be stored in reference data.

Table 4A-1, **Parse Input**, is a set of reference data that based on the type (instance key) and input format, will derive a dialect ID (pdtkey). This dialect ID is an instance key for other tables that are used in the parsing process (**Parse Dialect**).

Assuming the database object is being added to the inventory, the attributes that are parsed will be stored on an EX edge for that node. The attributes will be examined to determine what dialect(s) are possible by matching the attributes to a list of dialects. This mapping is stored in reference data. A dialect describes the type of ID that has been input, and leads to rules for processing on that ID. For example three dialects of intelligent controller may be known to the SWITCH system: CLLI code, exchange key, controller type and number. Once the dialect is identified, the rules to create the canonical form for the dialect are followed and the type and canonical form are placed on the EX edge. Also the entry in the EIX table is created.

Table 4A-2, **Parse Dialect**, is a set of tables used to derive the rules and parse the ID into piece parts which are stored on the EX edge to build the canonical form. Additional attributes that are not part of the ID might be required to derive the appropriate set of rules.

Table 4A-3, **Parse Rules** (instance rules), is a table that provides the rules for parsing the ID into piece parts and identifies into what database fields they are stored. Table 4A-4, **Parse Rules** (instance exidr), identifies how the piece parts are arranged into the database canonical form.

There may also be a variety of canonical forms that can be associated with a network unit type. If the external ID formats differ in content, there will be more than one canonical form. As stated above, an intelligent controller can be identified by its exchange key for MAS or controller type and number as in COSMOS. Because the external IDs differ entirely in content, there will be two canonical forms needed to support the two external IDs.

There is one limitation to using canonical forms; a database conversion must be done if the canonical form is to be changed.

4A.1.2 Match on the ID Input Data

There are many functions the SWITCH system performs that require the ability to search the database and find database objects. All these functions can break down into two features; inquiring on the database about database objects and adding database objects to the inventory.

An external ID to internal ID "table" (EIX table) will be used to locate and access network units. Most SWITCH system processing will work with internal IDs for network units. The canonical forms will be stored with the network units as well as in the external ID table. The external ID table will contain the following:

- type
- canonical form
- internal node ID

This table may contain multiple canonical forms for a network unit (i.e., multiple canonical forms mapping to one internal id). Also, some network units will not have an entry in this table (i.e., will not have an external ID). Duplicate canonical forms within a type will not be allowed, they must be unique. Internal IDs will not be used or presented outside the SWITCH system process. Access into the SWITCH system will use external IDs, parsing them into canonical forms, and retrieving the internal ID through the EIX table.

The SWITCH system will use a system-generated internal node ID to identify a network unit in the database. No other network unit, within the same SWITCH system data base, will have the same internal ID. A unique internal ID is assigned from a free ID pool when a network unit is first created. When the network unit is deleted, the ID is returned to the free pool. The external identifier will be allowed to change (within limits discussed above) during the life of the network unit, but the internal ID is never changed.

An additional consideration is that not all network units are required to have an external id. An internal ID is always required to represent the network unit. In these cases, the network unit will only be accessed by its relationship(s) to other network units or through indexing on its type or attribute values.

When a SWITCH system function, or user through the ULBB, inquires about a database object, it is required to pass a set of appropriate attributes for the database object that will identify the object. These attributes provided on input will be validated, parsed, used to determine a dialect, and, based on the dialect, formed into a canonical form.

For addition of inventory, either through conversion or inventory contracts, the same process can be implemented to check to see if the database object(s) currently exist in the database. However there are dangers that are not readily apparent. If the canonical form is not found in the EIX table, the object can be added with the canonical form derived from the input. The danger that exists is that the database object is not found in the database from the given input, but it does exist under a canonical form that cannot be derived from the input. Thus, there is the possibility for the database object to exist once in the database for each canonical form. When a database object exists more than once, there is the danger of it being assigned more than once, resulting in jeopardy conditions. For example, an IC can exist with an external ID of the CLLI form, Exchange Key, or controller type and ID form. Because the content of each external ID is different, there will be a canonical form for each and two occurrences for the database object.

If the database object can have more than one canonical form, the user **must** know whether the object exists in the database when trying to add the object to the inventory.

4A.1.3 Create the Proper Output Format

When a database object has multiple external IDs, which of the ID(s) will be seen on output? Since the data will be stored as parsed attributes on the EX edge, an output formatter will be used to pass attributes back to the application as that application, or user, wishes to see it. Based on the attributes available, the dialect determined, and the application or user options, the formatter will present the output based on rules from reference data for the above criteria. The output formatter must perform the following steps:

1. Determine the culture (USO, COMMON LANGUAGE culture, or other) for the output
2. Determine the type of the object to be formatted
3. Determine the content (dialect) of the output
4. If multiple names exist determine if all names are output or if the "best match" is used
5. Determine the output destination (e.g., SOAC, FOMS, reports, etc.)
6. Determine the format of the output
7. Construct the content of the output.

A database object can have multiple EX edges. For each edge there can exist multiple dialects. For each dialect, there might be multiple output formats that can be supported. To construct an output ID, the appropriate dialect needs to be determined, and the output format must be chosen. For example, is a FOMS or MAS ID needed as output?

The first step in ID output formatting is to determine the culture. Culture is defined as the standards used by various software systems and users to identify database objects. The three defined cultures are COMMON LANGUAGE, Universal Service Order (USO) standards, and "other."

Next the formatter retrieves the type of the object whose name is to be formatted. Using the internal Idname and culture, a list of dialects in priority order is retrieved from table 4A-5, **fmt culture** (other, common language, and uso are the three culture tables). The external ID edges of the object are searched until one of the dialects in the priority list is found on an edge.

If a "best match" is required, the process of looking at the edges will be repeated until the highest priority dialect is found. For each edge the dialect retrieved is then compared to the previous dialect found to check if it is higher in priority. If the dialect is higher in priority, it is kept as the "best" dialect so far and compared to the subsequent dialects checked. This checking process will determine the highest priority dialect that exists for the database object. If all IDs are to be returned for output, all edges are retrieved and the data on the edges processed for output.

The next step is to determine the ID format. The output destinations will be identified as ulbb, soac, foms, rpt, and query. Using this output destination, the dialect retrieved, and the type, table 4A-6, **fmt usage**, is used to retrieve a format ID for the output.

Once the output format is determined, the content can be constructed. The format ID is used in another reference data table to point to the rules that are to used to construct the output ID. The parsed pieces of data on the EX edge will be used to construct the output.

Appropriate delimiters and other necessary constraints for the output format will be added as required by the formatter by using table 4A-7, **fmt rules**.

If an output dialect and format cannot be determined, a default hierarchy of dialects and default output formats will be used. The highest priority dialect will be output if the data is available to construct the output. If the data is not available for the dialect chosen from the hierarchy, the next highest priority dialect is chosen and the process is repeated. A default format (that is appropriate for the dialect selected) will be used.

Users may have the need to create their own output *format* based on the attributes of the canonical form. Output formatting will be table driven, so that if an interfacing system or user changes the format it is expecting on output, the SWITCH system can accommodate that format without requiring a release. The formatting rules for the output field are simply changed in the tables that define them. Users will not be able to modify the canonical form of existing objects without a conversion of the existing IDs.

4A.1.4 External IDs and Reference Data

Some reference data refers to objects that are in SWITCH system database. Applications first use external IDs to locate an object in the database by using the EIX table to get an internal ID. The applications then refer to the objects using internal IDs. This is done because objects may have multiple external IDs and many forms of external IDs.

The canonical form will be maintained in the reference data when the data is being created in the Primary Data Dictionary. The Data Dictionary description of the table will flag those fields which contain IDs and the reference data software will support translation between external and internal IDs. When the user is building or inquiring about reference data, they will enter an external ID for the object referenced by the reference data. On output the user will see the external ID of the object. The input process or a load process maps the external ID into the internal ID and that will be stored. The application can then reference the object through the internal ID.

If an object is referred to in reference data is not an inventoried item in the SWITCH system, the ID for the object is just treated as data to be accessed, not as an external ID.

4A.1.5 External IDs from Conversion

A mechanized conversion process will be provided to build the new SWITCH system database from the existing COSMOS database. Conversion will be moving ID data from COSMOS to be input into the SWITCH system database.

Conversion will be treated as any other input process. The external ID data being brought from the system being converted will be input to the parsers. The parsers will determine the dialect, parse the data, and store the parsed attributes and dialect on the EX edge.

Matching will also be performed to check for the current existence of the network unit being converted.

4A.2 SWITCH SYSTEM FORMATS

The following sections describe for various database types the ID formats that apply to that type. Tables 4A-8, 4A-9a, 4A-9b, 4A-10a, and 4A-10b show the SWITCH system input formats and the output formats for the various destinations and various node types.

4A.2.1 External IDs for Intelligent Controllers

Intelligent controllers can be identified by various external ID forms. There is an eleven character CLLI code that identifies the building the controller resides in along with the entity code number of the controller. The controller can also be identified by its exchange key, typically an NPA, NXX pair. Another form of the ID consists of the controller type (i.e., 1ES) and the entity code number.

4A.2.1.1 COMMON LANGUAGE ID

When using an eleven character CLLI code as the external ID of the intelligent controller, the dialect derived will be the CLLI code dialect. The eleven character CLLI code will be parsed into the building (first eight characters of the CLLI code) and the entity code number (last three characters of the CLLI code). The two parsed attributes and the dialect will be stored on the EX edge for the IC.

4A.2.1.2 Controller Type and Number ID

If the attributes that make up the external ID are the controller type and entity code number, the dialect CTN (Controller Type and Number) is derived. The two attributes and the dialect will be stored on the EX edge for the IC. A list of valid controller types is in Section 4.

4A.2.1.3 Exchange Key ID

When the external ID for the IC is the exchange key, the dialect EXK is derived. The exchange key will be parsed and stored as an attribute on the EX edge. The dialect is also stored on the EX edge. This format is required to support MAS.

4A.2.2 External IDs for Remote Units

Remote units are segments of ICs that have been physically located apart from the IC. Remote units will be known by an eleven character CLLI code that identifies the building the remote resides in along with the entity code number of the remote. Exchange keys are not valid IDs for remote units, because they are not necessarily unique across remotes in the same host. The remote can also be identified by the type of host controller (i.e., 1ES), the entity code number of the host, and the entity code number of the remote.

4A.2.2.1 COMMON LANGUAGE ID

When using an eleven character CLLI code as the external ID of the remote unit, the dialect derived will be the CLLI code dialect. The eleven character CLLI code will be parsed into the building (first eight characters of the CLLI code) and the entity code number (last three characters of the CLLI code). The two parsed attributes and the dialect will be stored on the EX edge for the remote unit.

4A.2.2.2 Controller Type and Remote Number ID

If the attributes that make up the external ID are the controller type, entity code number of the host, and entity code number of the remote, the dialect RMT (Controller Type and Number) is derived. The three attributes and the dialect will be stored on the EX edge for the remote. A list of valid remote unit types is in Section 4. The RMT form is required for support of FOMS.

4A.2.3 External IDs for Switch Ports

Switch Port IDs have many different external ID forms. These forms can, but not always, differ by intelligent controller type, who (or what system) is using it, or whether the ID is "physical" or "logical." ID values are generally fixed in length and leading zeros are significant.

Switch ports may also have a variety of user names. The user names will map to a switch type. Regardless of the external ID form and user name, the only valid type will be "swpt" for switch ports.

Switch ports encompass both line and trunk side functionality. Both the line and trunk side switch ports require a port ID value and the identification of its intelligent controller relationship. The IC relationship can be either derived from the port ID (e.g., current OE ID formats), or explicitly given (e.g., 11 character CLLI code).

The format of the port ID value is not always different between IC types. It is required that when the format of the switch port ID can be the same, the entity code for the IC relationship must be unique. This will give the switch port uniqueness for the ICs in that wire center, since in another wirecenter the ID value may repeat. The dialect will be determined from the IC type and format.

The input for a switch port is the physical ID format. Switch port formats may differ because of the functionality the intelligent controller can perform (e.g., line, trunk, ISLC, etc.). However, the formats do not have to differ between functionalities on an IC. With AT&T release 5ESS generic 5E4 the ISLC, Analog, and ISDN functionalities will have the same port ID formats with possibly the same values. A 5ESS IC may have ISLC, Analog, ISDN all on the same IC. The SWITCH system will require that an alpha character be appended to the port ID when the format and values of the port ID can be the same.

With Release NA004 of the DMS-100, NORTEL expanded the range number of frames supported on Line Group Controllers (LGCs) and Subscriber Carrier Modules (SCMs) from 00-99 to 000-511. Thus the value of the frame range expanded from 2 to 3 digits. The SWITCH System supports both a 2-digit and 3-digit frame format. However, the switch port format for an IC in a wire center must be either all 2-digit or 3-digit. Hosts and remotes must be consistent with respect to a 2-digit or 3-digit format to prevent duplication of IDs.

Switch port IDs will be parsed into various fields. These fields can be considered levels of the IC's physical hierarchy. The first field will be considered the first level, the second the second level, and so on. On the EX edge an array will be used to store the levels. Thus, by knowing the canonical form for the dialect derived on input and using rules from reference data, the ID can be parsed and stored in the various levels on the EX edge for the switch port.

Table 4A-9 shows the valid input formats for switch ports by IC type and Hierarchy if appropriate. The variations of output formats for each are also provided. The valid values for each portion of the switch port ID are shown in the IC hierarchy Figure 4A-1 through Figure 4A-22.

4A.2.4 External IDs for Transmission Equipment

Transmission equipment (TRE) has various forms of external IDs. One version consists of the CLEI (Equipment Identification) code and a unit number. Transmission equipment may just have an arbitrary unit number assigned. Another external ID form consists of the relay rack location data and the unit number. Another form has a TRE name (e.g., 5Areg, etc.) and an unit number.

Transmission equipment in the SWITCH system will be identified by its relay rack location data, its unit number, and optionally its CLEI code and its CLLI code. The relay rack location data is required to give the ID uniqueness. The CLEI code is an optional input, and is needed as part of the ID data for USO standards and LMOS. The above attributes will be parsed and stored on the EX edge for the equipment. The CLEI code is not required to be part of the canonical forms because it does not add any uniqueness to the ID. The CLEI code will be stored on the EX edge for output to systems that require it (e.g., LOMS).

4A.2.5 External IDs for Bridge Lifters

Bridge Lifters have various forms of external IDs. One version consists of the CLEI (Equipment Identification) code and a unit number. A bridge lifter may have just an arbitrary unit number assigned to it. Another external ID form consists of the relay rack location data and the unit number. Another form has a BL name (e.g., BL52, etc.) and an unit number.

A Bridge Lifter in the SWITCH system will be identified by its relay rack location data, its unit number, and optionally its CLEI code and its CLLI code. The relay rack location data is required to give the ID uniqueness. The CLEI code is an optional input, and is needed as part of the ID data for USO standards and LMOS. The above attributes will be parsed and stored on the EX edge for the equipment. The CLEI code is not required to be part of the canonical form because it does not add any uniqueness to the ID. The CLEI code will be stored on the EX edge for output to systems that require it (e.g., LOMS).

4A.2.6 External IDs for Telephone Numbers and Data Telephone Numbers

A telephone number has only one external ID form. This form is the NPA (area code), NXX, and line number (XXXX). A variation on this form is that the NPA is not present on input. Various NPAs may exist; 800 or 900 numbers, default NPA for the wire center, or a specific NPA associated with the TN.

There are many usages of TNs such as STN (screening telephone number), NHN (non-hunt number), PTN (plant test number), etc. These usages will be identified by an attribute of the relationship between the TN and the service ID rather than as a type for the equipment.

The attributes that are to be parsed and stored on the EX edge are the NPA, NXX, and line number. Even though there are two possible external ID forms (with or without NPA), there will only be one canonical form. This canonical form is NPA.NXX.XXXX. For TNs the dialect derived will be TN and for DTNs the dialect will be DTN.

If the NPA is not provided on input, the wire center will have a default NPA associated with it for TNs and DTNs.

TNs are not parsed by the equipment ID parser, but by the service ID parser.

4A.2.7 External IDs for Cable Links

There are three types of cable links the SWITCH system supports. They are cable pairs (CP), trunk pairs (TKP) and intra-wire center facilities (IF). These three types have similarities in their external ID forms, but might require additional identifiers to make them unique to the database.

Cable pairs have at least three different external ID formats. The first is the most typical and is in the format of Cable-Pair. Finally the last format is for cable pairs known as X-pairs. These cable pairs can be identified by the pair number preceded by an alpha "x" in the pair designation portion of the ID.

Trunk pairs follow the same forms as type CP. There are no X-pairs for trunk pairs. The trunk cable and pair ID for a TKP is the same as for a cable pair.

IF cable links can follow the same forms as type CP. There is the possibility that the cable and pair ID for a IF is the same as for a cable pair. The SWITCH system has three types (CP, TKP & IF) because IDs must be unique within a type.

4A.2.7.1 IDs for Cable Pairs

For cable pairs the length of the cable designation, using the LFACS conventions, is up to ten alphanumeric characters. The pair designation is up to four alphanumeric characters. On input, leading zeros are important when identifying the cable ID. Cable "3" is different from cable "03." Leading zeros will be stripped off the pair designation, as they are not important. For x-pairs, cable IDs will be the same as above, but pair IDs will be preceded by an alpha "x." For example, cable 3 and x-pair 3 will be identified as 3-x3. The attributes that will be parsed and stored on the EX edge are the cable and pair IDs.

4A.2.7.2 IDs for Trunk Pairs

As for cable pairs, the length of the cable and pair designations will follow LFACS conventions. To give the TKP uniqueness, TKPs have a different type than cps. If the cable and pair designations are the same for a TKP and a CP, the type will give the pair its uniqueness.

4A.2.7.3 IDs for Intra-Wirecenter Facilities

As for cable pairs, the length of the cable and pair designations for IFs will follow LFACS conventions. To give the IF uniqueness, IFs have a different type than cps. This way if the cable and pair designations are the same for an IF pair and a CP (or TKP), the type will give the pair its uniqueness.

4A.2.8 External IDs for Assemblies

Assemblies of the following categories will not have an external IDs in the SWITCH system. They can be accessed through one of the inventoried components of the assembly with that component's external ID.

PASM - Permanent assembly
MASM - Modifiable assembly
TASM - Temporary assembly
PSSV - Pseudo Services

4A.2.9 External IDs for Service Assemblies

For service assemblies, an ID parser already exists, mostly as borrowed from the SOAC/LFACS/COSMOS systems. This parser exists to support the CLCI code and the Universal Service Order (USO) Circuit Termination Identifier (CTID). There are a number of dialects employed to describe the type of external ID form input. There are many attributes that can be associated to an external ID form for a service. These attributes will be parsed and stored in the SWITCH system database.

TNs are also parsed by the service ID parser since a TN may be a service ID as well as an ID of the TN ntu. [3]

4A.2.10 External IDs for Reservations

Reservations are a means of reserving network units that will subsequently be claimed by a service provisioning request. The external ID of the reservation is the service ID by which the claiming provisioning request will retrieve the reserved network units.

4A.2.11 External IDs for Reservation Groups

Reservation groups are a group of related reservations. The external ID of a reservation group is optional and will be the ID of the claiming order.

4A.2.12 External IDs for Centrex Groups

Centrex Group refers to a group of terminating equipment (e.g., telephone numbers) that is treated as a unit for the purpose of TN management, switch port assignment, and reports.

3. For a complete description of service IDs and the functionality SWITCH system requires to deal with them, see Appendix 6A of the SWITCH Functional Product Specification.

Centrex groups usually have only one external ID form. This form will be the IC ID (controller type and entity number), along with the centrex group ID. The IC ID is required to uniquely identify centrex groups in those wire centers with multiple ICs where the centrex group IDs can be repeated for each IC. The attributes that are parsed and stored on the EX edge are the IC type, IC entity code number and the centrex group ID.

There is an attribute in IC specific reference data (WC Parms table) that identifies centrex group IDs as having leading zeros stripped off or retained. The centrex group ID can be up to 18 alphanumeric characters.

4A.2.13 External IDs for Hunt Groups

Hunt Group refers to a group of lines that allow for an incoming call which reaches a busy line, to be transferred to a predetermined alternate line. Hunt groups have only one external ID form. This form will be the IC ID, along with the Hunt group ID. The IC ID is required to uniquely identify hunt groups in those wire centers with multiple ICs where the Hunt group IDs can be repeated for each IC.

Hunt groups may be either HML for multi-line hunt groups or SCH for series completion hunt groups. Series completion hunt groups do not have external IDs. The attributes that are parsed and stored on the EX edge are the IC type, IC entity code number (i.e., control group number), and the Hunt group ID. Hunt group IDs can be up to 4 numeric characters long for the ICs supported with leading zeros stripped for inquiries and storage.

4A.2.14 External IDs for Frames

Frames serve as a point of termination and interconnection interface between systems in central offices. Frames can have two external ID forms. One form is an alpha "f" followed by two alphanumeric characters.

The other external ID form for frames will be an 11 character CLLI code. The ID will be parsed into a 8 character building portion and a three character ID in the form FXX.

4A.2.15 External Ids for NXX Groups

NXX groups are an administrative group that associates all the line numbers belonging to that NXX designation. The attributes that will make up a NXX group ID are the NPA and the NXX designation.

4A.2.16 External Ids for Cable Groups

Cable groups are created when cable or tie pairs are created in the database with a new cable designation. The length of the cable name, following LFACS conventions, can be up to 10 alphanumeric characters.

4A.2.17 External IDs for Simulated Facility Groups

Simulated and Virtual Facility Groups (SFGs & VFGs) are associated with groups of services, and used to control access to certain IC resources sold on a limited basis. SFGs and VFGs have only one external ID form. This form will be IC ID, along with the group ID. The IC ID is required to uniquely identify the SFGs/VFGs in those wire centers with multiple ICs where the group IDs can be repeated for each IC. The attributes that are parsed and stored on the EX edge are the IC type, IC entity code number (i.e., control group number), and the group ID. These group IDs can be up to 4 numeric characters long with leading zeros stripped for inquiries and storage.

4A.2.18 External IDs for Load Divisions

Load divisions are administrative group that associates all load groups with the same engineered capacity. The attributes that make up the load division ID are the IC ID (Controller type and entity number) and a two character numeric identifier.

4A.2.19 External IDs for Equipment Groups

Equipment groups are physical groups tied to an IC's hierarchy. They can be of various flavors: load, spread, measurement, ISDN, allocation, or a combination of the above. The hierarchy differs for the various switching machine types (1ESS IC, 5ESS IC, etc.) and within a switching machine type there may be different hierarchies (ISLC, ISDN, Remotes). More than one flavor of the groups may or may not be at the same hierarchical levels and there are more levels designated for spreading than there are levels designated for load or measurement groups.

In determining equipment groups for the SWITCH system, each level of the hierarchy needs to be sequentially numbered, starting with one for the highest level. For example, the 1ESS IC has six levels in its hierarchy: LLN, LSF, BAY, CONC, SW, LVL. For the SWITCH system the LLN will be level one and the LVL would be level six.

There are multiple units of equipment at each level of the switching machine hierarchy and each is numbered uniquely. A switch port is, therefore, uniquely identified by its unit number for each level of the switch. When the unit numbers are combined to create the switch port ID it has a certain format such as XX-XXX-XX.

4A.2.19.1 Forming External IDs for Equipment Groups

Equipment groups will be built by inventory processes. Inventory processes using the *inv group rules* table will be implemented.

The external id of the equipment group will be the abbreviated switch port id format, which is the format shown in the ID FORMAT column of the *inv group rules* Table (see table 4A-11) without the ?s. One external id will be created for each equipment group. When multiple equipment units make up an equipment group (01 and 03) the *inv supp group rules* table (see table 4A-12) will indicate the name to be used for the equipment group. The instance key will contain IC type, hierarchy, and hierarchy level of the group.

The canonical form will include the intelligent controller type, entity number, and hierarchical level the group represents. An example of a canonical form group id would be 1es.1.2.00-000 where 1es is the intelligent controller type (1ESS IC), 1 is the entity number, 2 is the hierarchical level of the group, and 00-000 is the ID FORMAT. The user external ID will be a partial switch port ID (e.g., 100-000).

The parser must be able to accept both the canonical forms of the ID and the user input forms. The inventory process will build the canonical forms of the ID when adding equipment groups. This canonical form will be passed to the parser to have the ID parsed into pieces for the population of the EX edge. Subsequently the user can then use the abbreviated switch port form of the equipment group ID in any future processing.

Those equipment groups that require alpha characters for uniqueness (i.e., 5ESS IC and DMS10 IC) will always have the alphas appended to the end of the ID in external form and in the appropriate position in the canonical form.

4A.2.20 External Ids for Collections and Collection Groups

Collections and Collection groups are a database construct used to model the DPIDB resources between the circuit-switched and packet-switched portions of the 5ESS IC in order to support ISDN provisioning in an ISLU and IDCU.

Canonical forms of collection and collection group IDs will be made up of various fields entered by the user in the UPD ISDN work session. There will be no user external ID input into the SWITCH system. The canonical form of the ID will be stored in the database.

4A.2.21 External Ids for Miscellaneous Equipment

Miscellaneous equipment is defined as any equipment that does not simulate, for one reason or another, one of the standard types of network unit inventory in the SWITCH system. Scan points and distribution points will be the only flavor of MEs that will have their IDs parsed. Standard USO formats were chosen as the external ID formats.

For other flavors of MEs, there is no way to determine standard formats for all BCCs. Therefore, the SWITCH system will support up to 45 free formatted, alphanumeric characters as an ID. It is up to the BCC to ensure that the ID content is unique since the SWITCH system requires unique IDs within a type.

External IDs for miscellaneous equipment will be user definable and supported as long as all the supporting reference data is updated (i.e., tables 4A-1 through 4A-7). The dialect will be user definable.

4A.2.22 External Ids for Telephone Number Lists

Telephone number lists are generated to provide a list of assignable telephone numbers for an upfront system (e.g., PREMIS) The external ID is a system generated sequence number. A TN list will not be parsed.

4A.2.23 External ID for IC Equipment

IC equipment (ICE) only applies to the special subscriber equipment required by the Ericsson IC. Its ID format is similar to a switch port with the parts of the IC hierarchy making up the content of the ID. ICE IDs will be parsed just like switch ports IDs. Their ID will be stored as input.

4A.2.24 External IDs for LTIDs and LTID Groups

LTIDs are logical Terminal Identifiers for ISDN services in a DMS100 IC. In order to provide identifier uniqueness for LTIDs in the cases where two DMS ICs exist in a wire center, the LTID external identifier canonical format will take the form ICTYPE.ICID.GROUP.NUMBER. The canonical format for an LTID group identifier will be ICTYPE.ICID.GROUP).

4A.2.25 Carrier Controller IDs

The external ID of a CC can have up to 55 alpha-numeric characters. The special character set (i.e., #,&,(,),_,+,=,{,}.[,]) is not allowed. Spaces are allowed.

4A.2.26 CC Port IDs

CC Port (CCPT) IDs will consist of many data items with two main parts: the CC ID and the port ID. The CC ID is the same as defined in Section 5.6.1 The port ID can be composed of a "hierarchical" structure or just a port ID. The hierarchical structure consists of the equipment shelf to which the port is related, the slot to which the port is associated, and the port itself. Not all parts of the hierarchy are required to be part of the ID. Characterization of the CCs that the SWITCH system supports, has led to the following variations:

— Shelf-slot-port

— Shelf-port

— Slot-port

— Port

As a result, the CCPT ID can be defined in a variety of formats and content. The data items will be separate, but concatenated when passed to the parser. The port ID, which is treated as one data item from the ULBB (i.e., ID field), will also be concatenated. The delimiter between the CC and the port will also be a ":". Delimiters between data items that make up the port ID will be "-". The port part of the ID will be parsed into pieces by recognizing that the pieces fall between the delimiters. These pieces of the port part of the ID will be stored in the same hierarchy level fields on the EX edge that are used in the current SWITCH system release.

The following example will be parsed as follows:

CC ID part	:	port part
10 Broad Street	:	shelf-slot-port

shelf - hierarchy level 0
slot - hierarchy level 1
port - hierarchy level 2

4A.2.27 Slot IDs

Slot IDs will be derived from CCPT IDs in a manner similar to equipment group IDs. A reference data table,*inv slot rules* (Table 4A-13), will be used to derive the slot ID based on CC model and a row key that is input called "CC Port Parse Key."

Accessing the CC that the slot is controlled by, the model can be determined for the CC. This model is the instance key for the *inv slot rules* table. The CC Port Parse Key is the row key, and from there the slot ID can be derived.

There are two possibilities on how the slot ID is derived. One possibility is to derive the slot ID directly from the CCPT IDs that are factors of the slot. For example, the CCPT ID is the CC ID part and a port part made up of shelf-slot-port. By just dropping off the port at the end, the slot ID will be a CC ID part and a slot part made up of shelf-slot.

The other possibility is that the slot ID can not be derived directly from the CCPT ID and a *inv supp slot rules* table is needed (Table 4A-14). This table will provide a direct map from the CCPT IDs (or a masking of them) to the slot ID.

The parser will treat slot IDs the same as CCPT IDs, by parsing out the CC ID part as a separate field and the slot part into the hierarchy levels.

4A.2.28 Channel IDs

Channels will have one or two IDs. If the carrier system the channel is riding on has CCs as both endpoints, there is only 1 ID. If the channel is riding on a carrier system whose endpoints are a CC and an IC, then the channel has two IDs: one for the CC and one for the IC.

The ID of a channel when it relates to an IC, looks exactly like a SWPT ID and will be treated as such. For example, a channel ID for a 5ESS IC type looks like :

#sm-idcu-rt-channel#

Where the pieces are:

— # is the entity ID or control group (0-9 or A-Z)

— sm - switch mod (000-192)

— idcu - idcu (0-7)

— rt - rt (01-31)

— channel# - channel # (0-96)

The parser will parse it the same way it parses SWPT IDs in the current SWITCH system release: putting the control group in the IC ID field, deriving 5ESS as the IC type, and storing the rest of the parts in the hierarchy level fields.

The channel ID in relation to a CC will consist of the carrier circuit ID, followed by a hierarchy of the digital rates from the digital rate of the carrier circuit, down to the digital rate of the channel. This carrier ID may be either a CLFI™ code form or a CKT (free formatted) form. [4]For example, the following may be a DS0 channel ID riding on a DS3 carrier circuit:

101.T3.piscnjmtk01.nwbknjmtk02:1-02-03

Where the ID is interpreted as follows:

— 101 - carrier circuit designation

— T3 - carrier circuit type

4. CLFI is a trademark of Bellcore

— piscnjmtk01 - CLLI code for A end CC endpoint

— nwbknjmtk02 - CLLI code for the Z end CC endpoint

— 1 - DS3 channel

— 2 - DS1 channel

— 3 - DS0 channel

The circuit ID portion of the ID is separated from the channel hierarchy portion by the delimiter ":'. The parser will parse out the circuit ID portion into its own field on the EX edge and then parse each channel rate in the hierarchy into the hierarchy level fields.

4A.2.29 CRV IDs

CRVs will have two IDs; one relating to the IC endpoint of a carrier circuit and the other relating to the CC endpoint of the carrier circuit.

The ID of a CRV when it relates to an IC, looks exactly like a SWPT ID and will be treated as such. For example, a CRV ID for a 5ESS IC type looks like :

#sm-idcu-rt-CRV#

Where the pieces are:

— # is the entity ID or control group (0-9 or A-Z)

— sm - switch mod (000-192)

— idcu - idcu (0-7)

— rt - rt (01-31)

— CRV# - CRV # (1-2048)

The parser will parse it the same way it parses SWPT IDs in the current SWITCH system release: putting the control group in the IC ID field, deriving 5ESS as the IC type, and storing the rest of the parts in the hierarchy level fields.

The CRV ID, when it relates to a CC, will consist of a CC ID, a virtual interface group, and a CRV number. The virtual interface group and CRV number is input as one string separated by a "-". This portion of the ID will be treated as one data item from the ULBB (i.e., ID field). The delimiter between the CC ID part and the virtual interface group will be a ":".

The parser will parse the data items that make up the CC ID part into separate fields on the EX edge as was done for CCs. The rest of the ID as well will be parsed into pieces by recognizing that the pieces fall between the delimiters. The pieces of the port part of the ID will be stored in the same hierarchy level fields on the EX edge that are used in the current SWITCH system release.

The following example will be parsed as follows:

3 corporate place:1-2010

3 corporate place - CC ID

1 - virtual interface group

2010 - CRV #

4A.2.30 Carrier Group IDs

The Carrier Group is stored as a bandwidth node, is created by capacity activation processes, and represents the set of capacity that is to be managed together. A carrier group summarizes the capacity of one or more carrier circuits and models the carrier system.

Carrier Group IDs will be composed of the internal ID of the node. It is modifiable to be whatever the user would like up to 12 alpha-numeric characters. An example of a carrier group ID may be as follows:

ltsp2-12

4A.3 IC Hierarchies

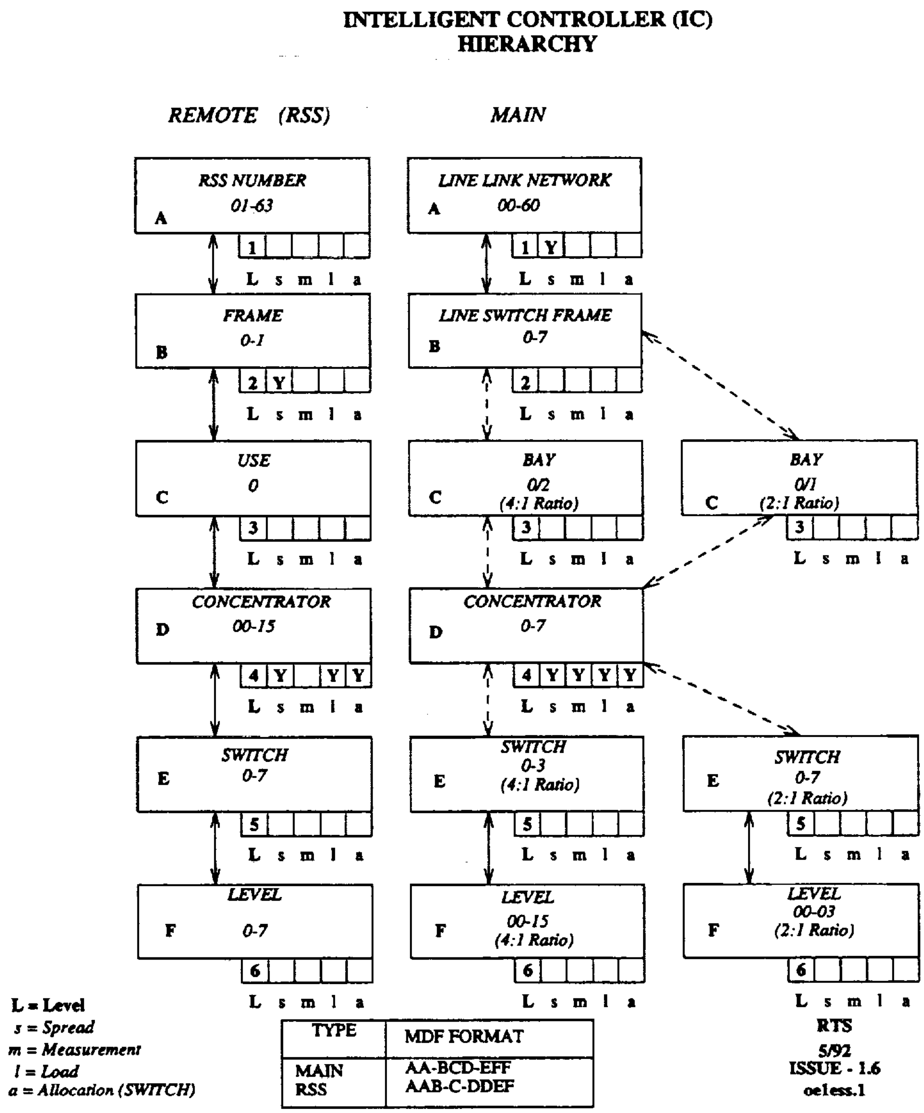


Figure 4A-1. IC Type - 1ESS Main and RSS Remote

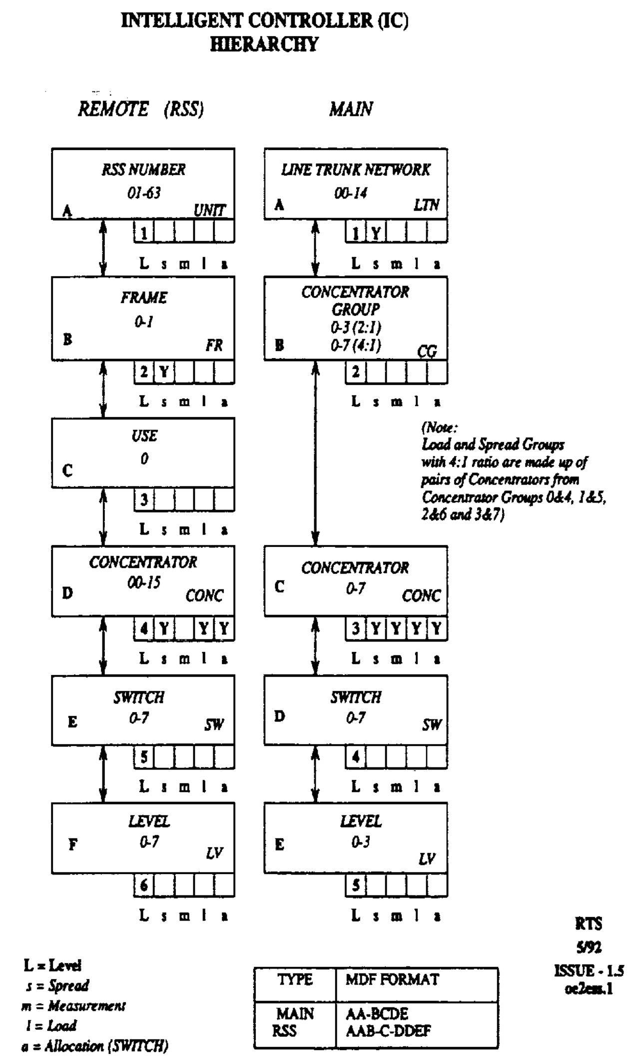


Figure 4A-2. IC Type - 2ESS Main & RSS Remote

**INTELLIGENT CONTROLLER (IC)
HIERARCHY**

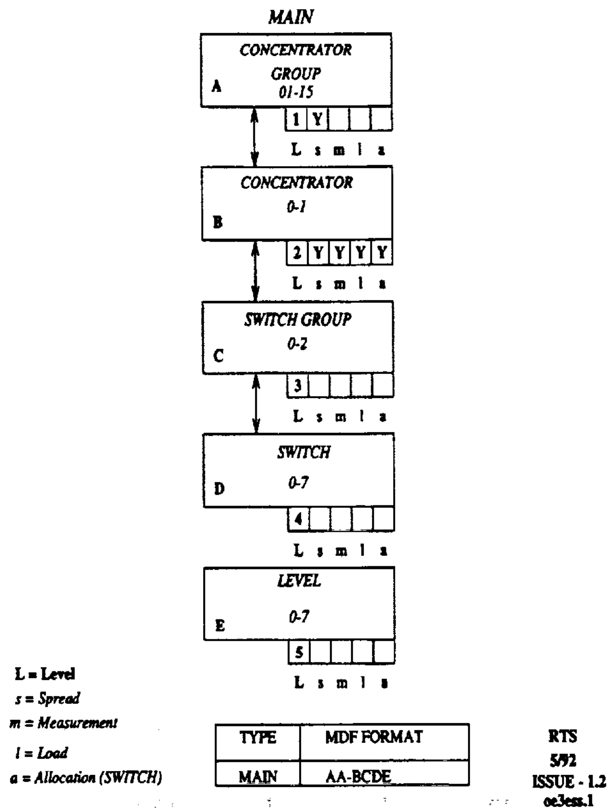


Figure 4A-3. IC Type - 3ESS Main

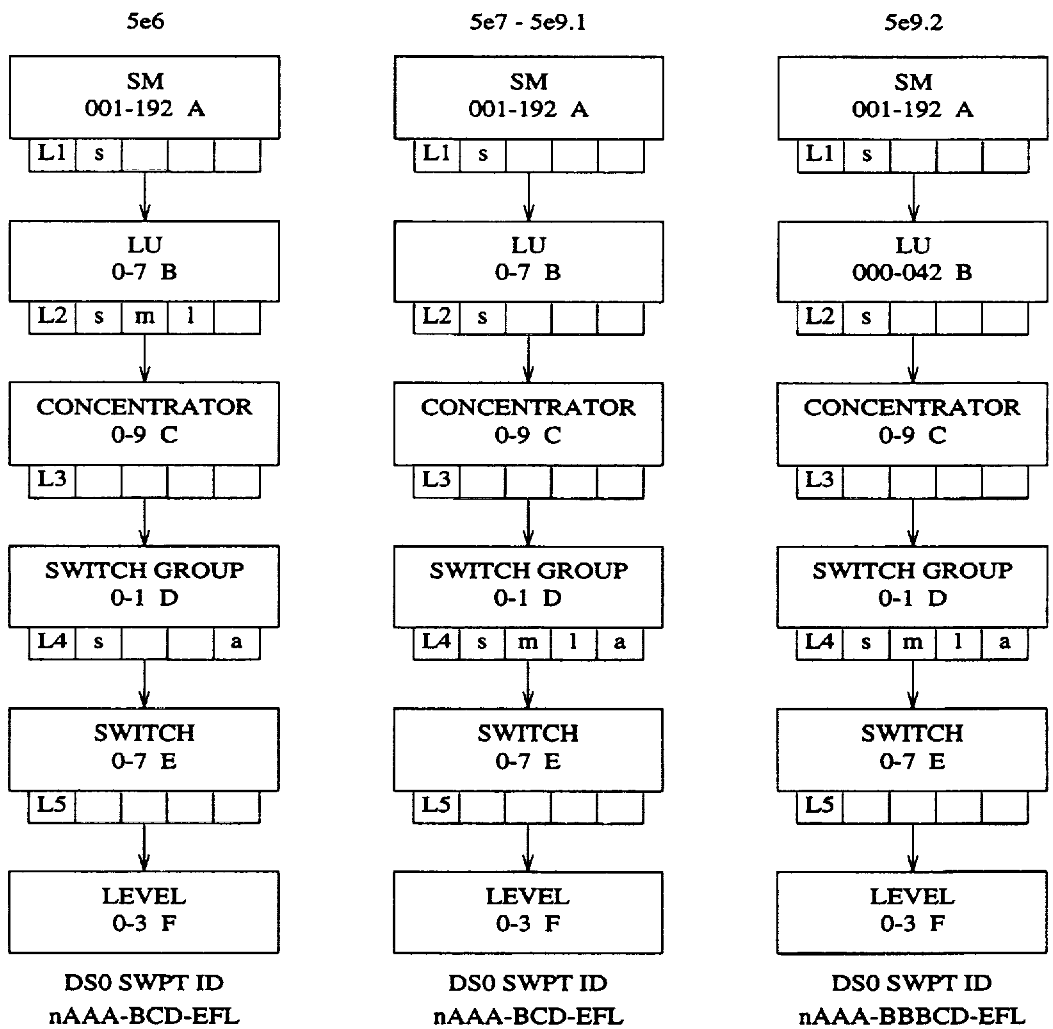


Figure 4A-4. IC Type - 5es Analog

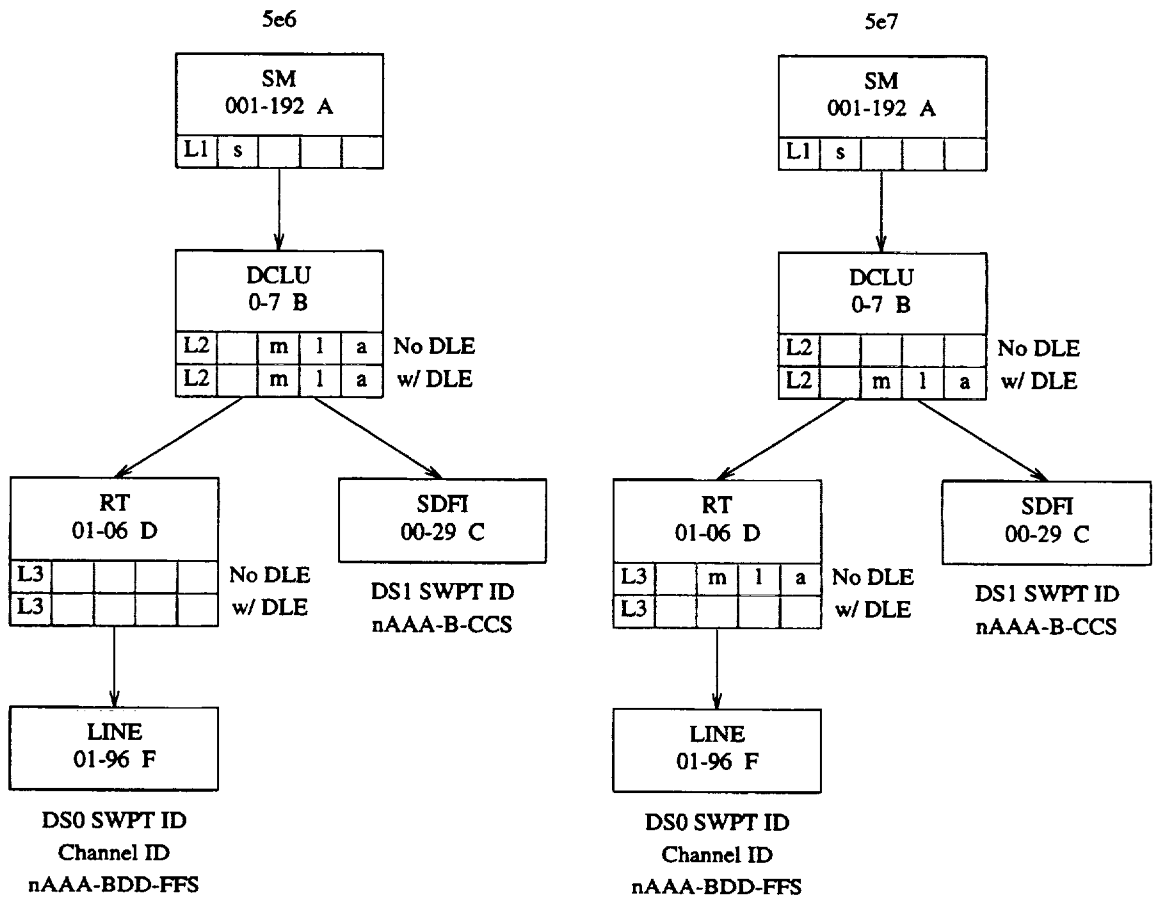


Figure 4A-5. IC Type - 5es IDLC (5e6 and 5e7)

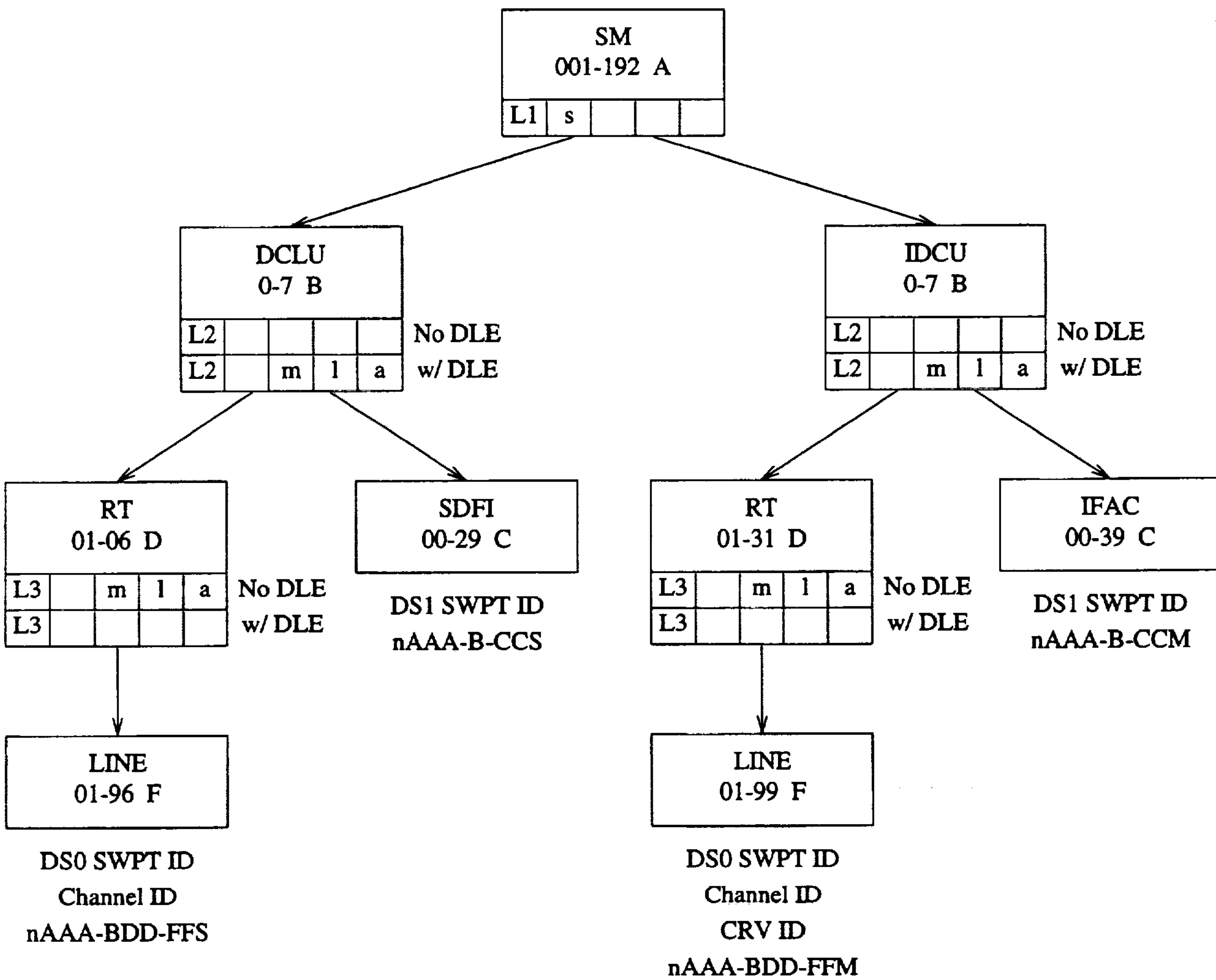


Figure 4A-6. IC Type - 5es IDLC (5e8 - 5e9.2, 'M' Type IC)

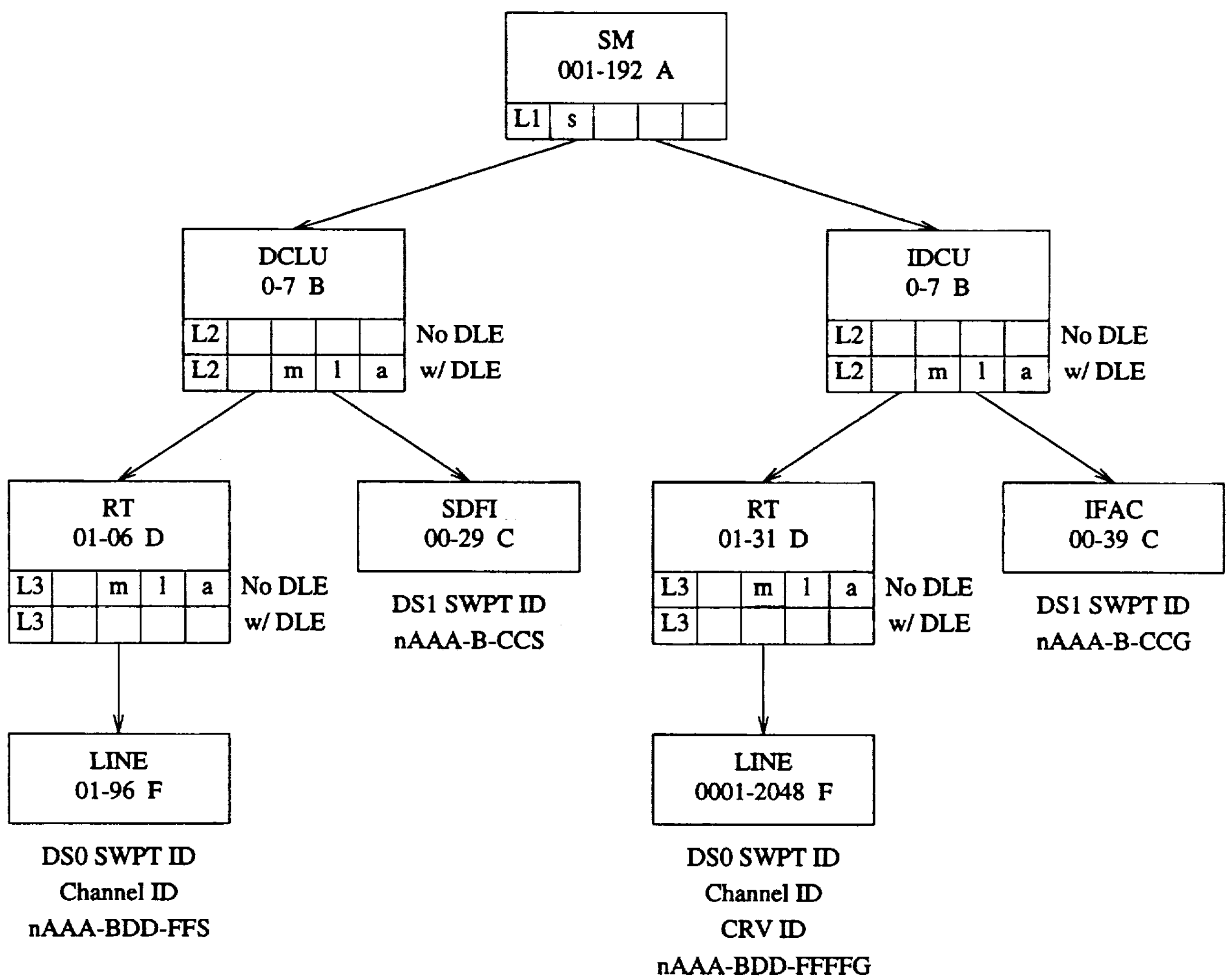


Figure 4A-7. IC Type - 5es IDLC (5e8 - 5e9.2, 'G' Type IC)

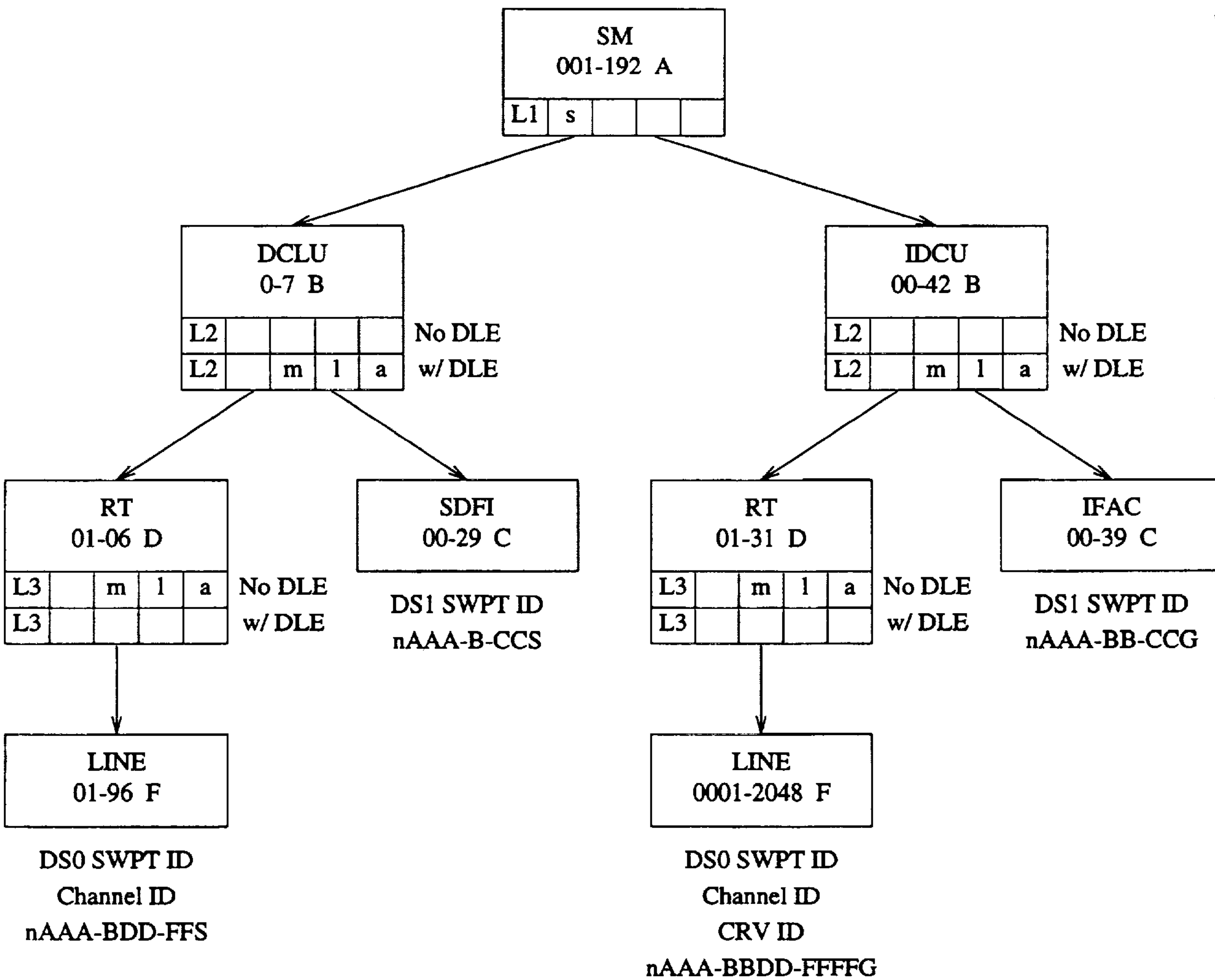


Figure 4A-8. IC Type - 5es IDLC (5e10)

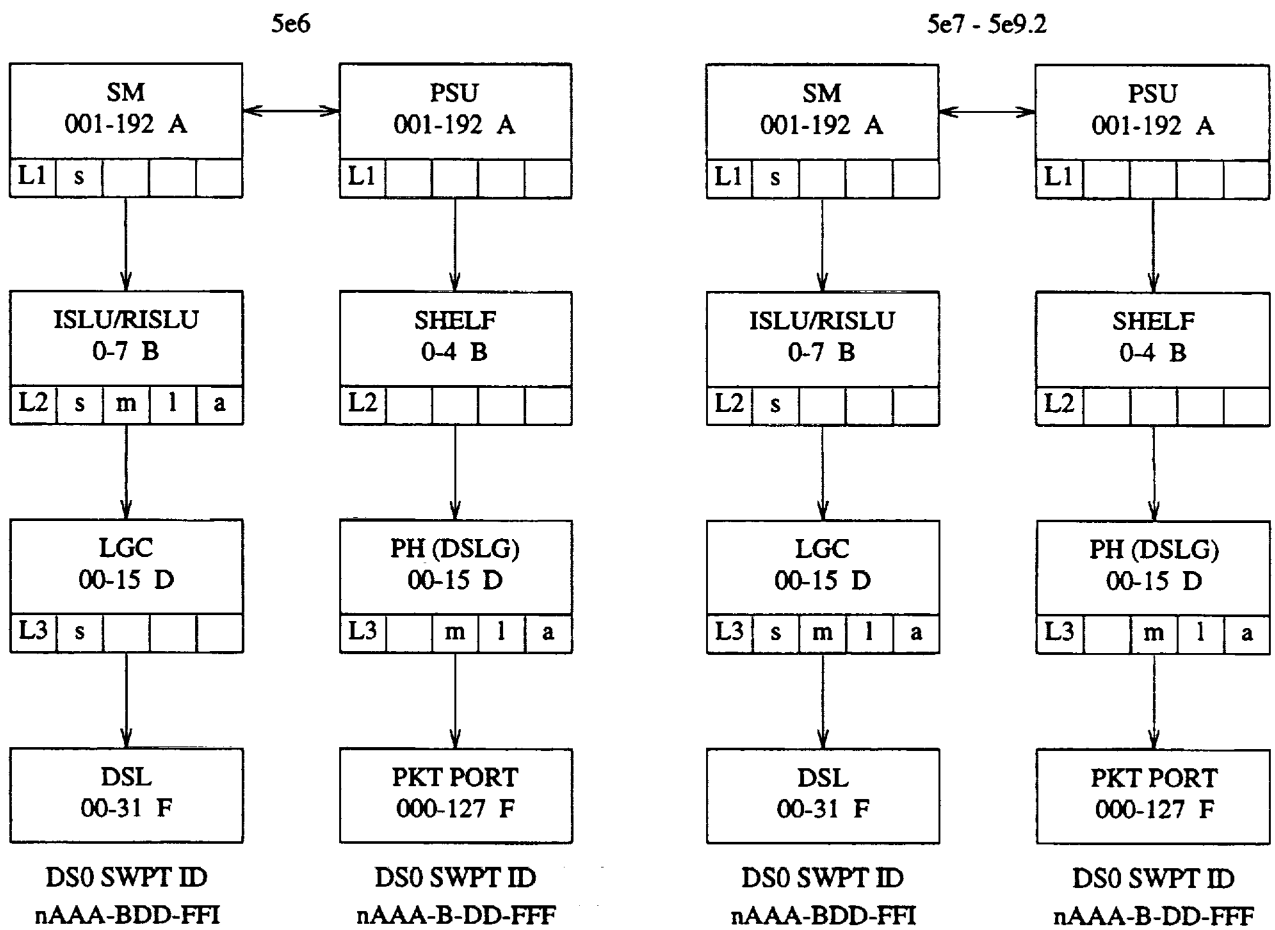


Figure 4A-9. IC Type - 5es ISDN (5e6 & 5e7-5e9.2)

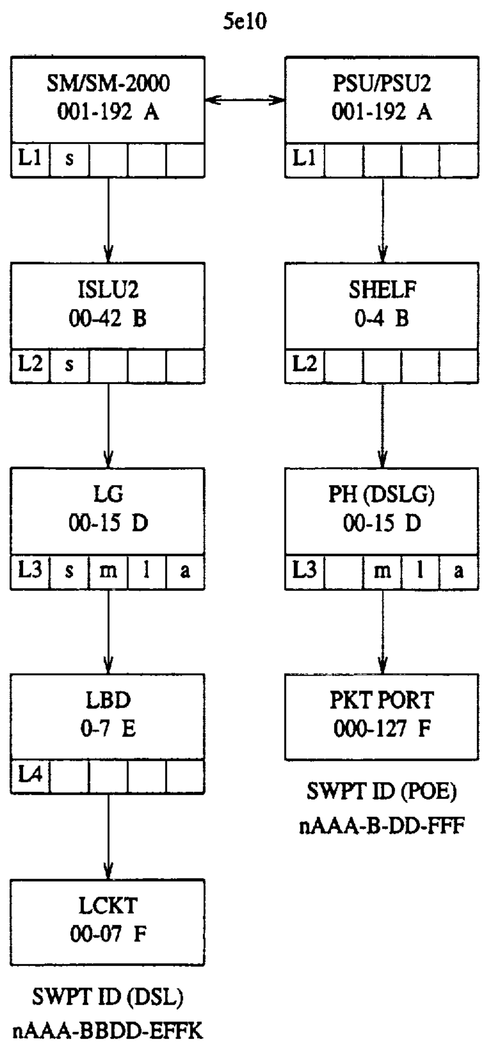
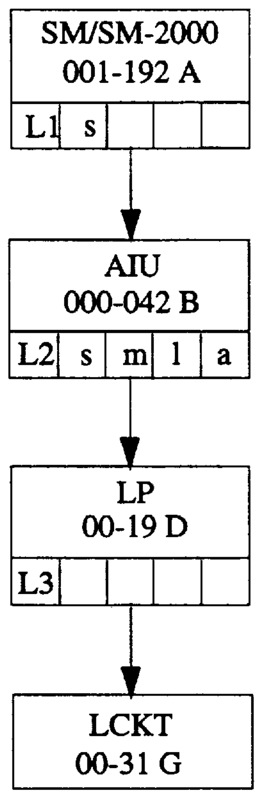
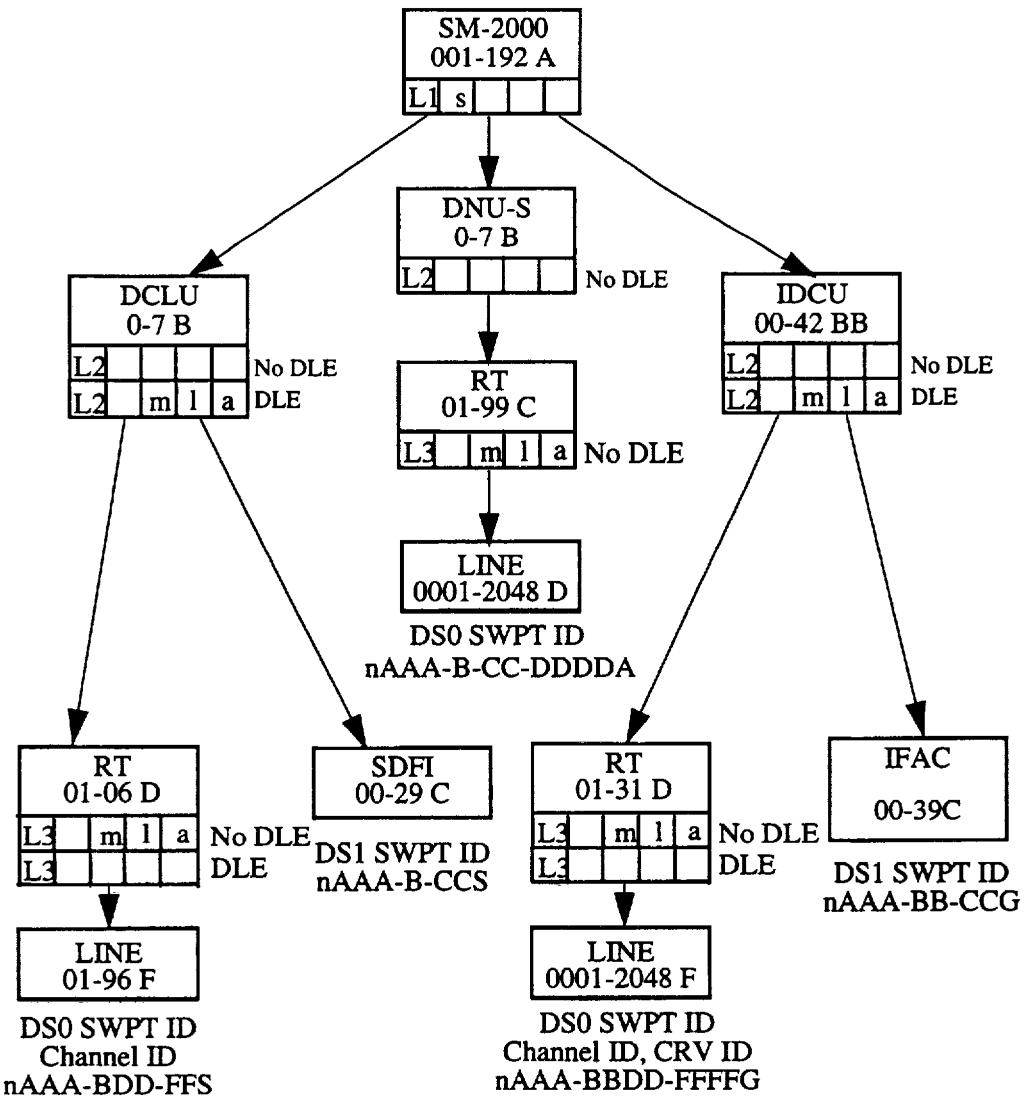


Figure 4A-10. IC Type - 5es ISDN (5e10)



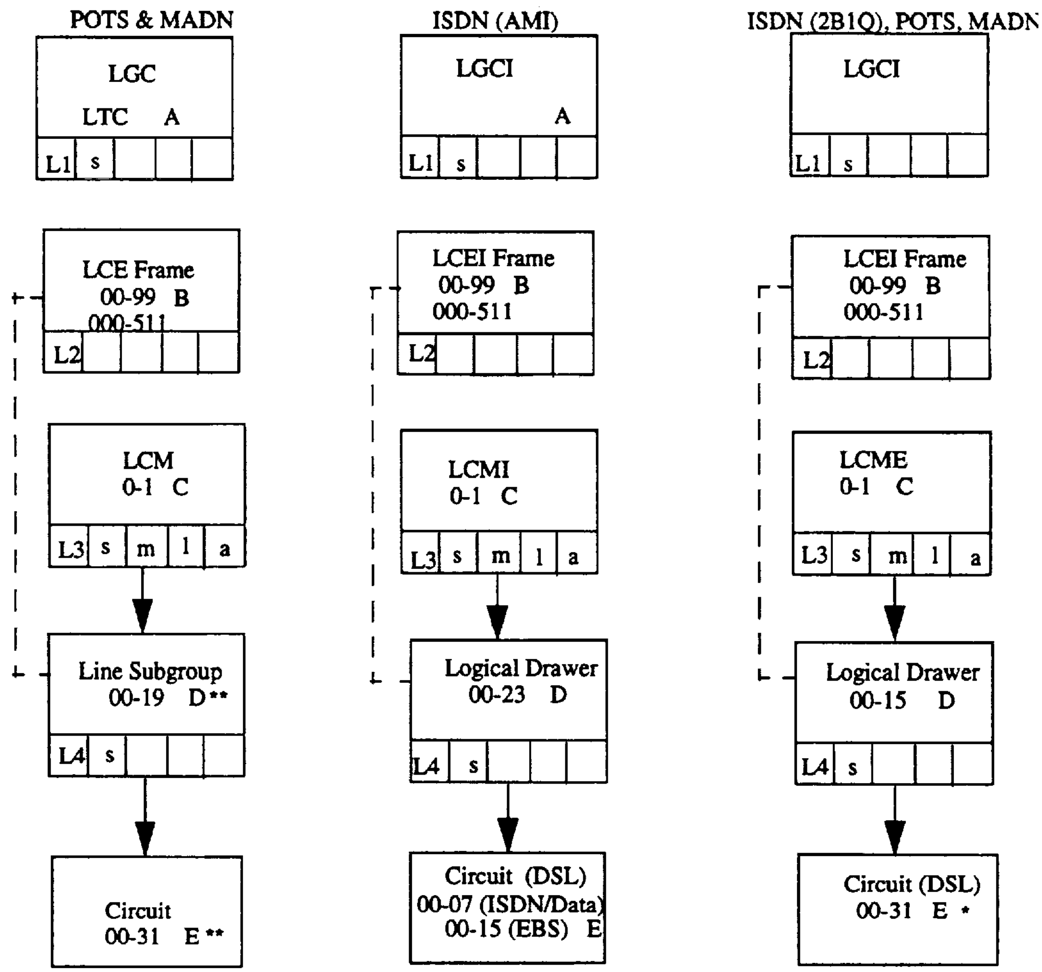
Notes: L=Level; s=spread; m=measurement; l=load; a=allocation

Figure 4A-11. IC Type - 5es AIU (5E11)



Notes: L=Level; s=spread; m=measurement; l=load; a=allocation

Figure 4A-12. Type - 5es IDLC (5e12)



DS0 SWPT ID	DS0 SWPT ID	DS0 SWPT ID
nBB-C-DD-EE	nBB-C-DD-EE	nBB-C-DD-EE
nBBB-C-DD-EE	nBBB-C-DD-EE	nBBB-C-DD-EE
&	&	&
nrBB-C-DD-EE	nrBB-C-DD-EE	nrBB-C-DD-EE
nrBBB-C-DD-EE	nrBBB-C-DD-EE	nrBBB-C-DD-EE

Notes: L=Level; s=spread; m=measurement; l=load; a=allocation
* LCME (introduced BCS32) supports ISDN U cards & non-ISDN cards.
** ISDN Line Drawer Line Subgroups 01, 02, 10, 11 are disallowed; only circuits 00-13 supported

Figure 4A-13. IC Type - DMS-100 non-IDLC

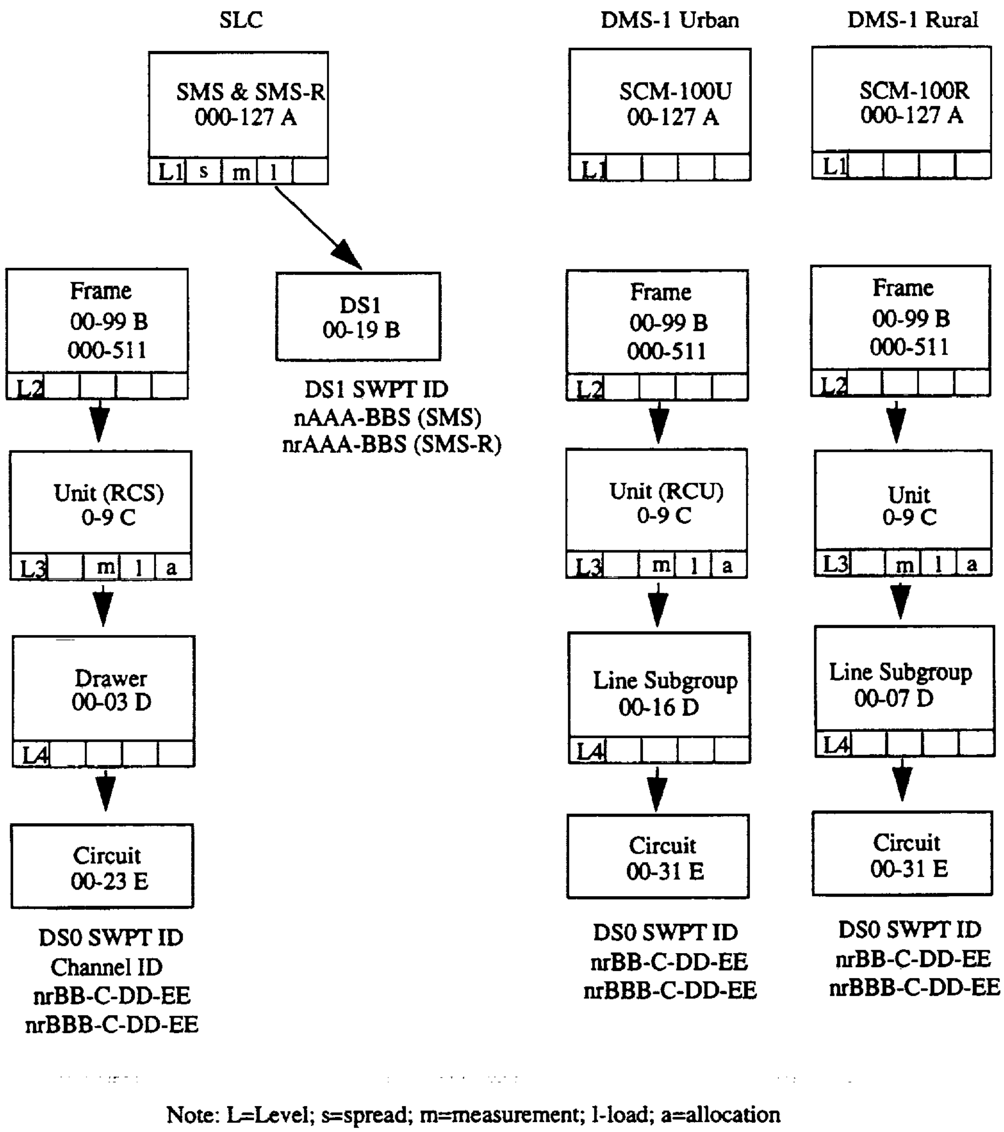
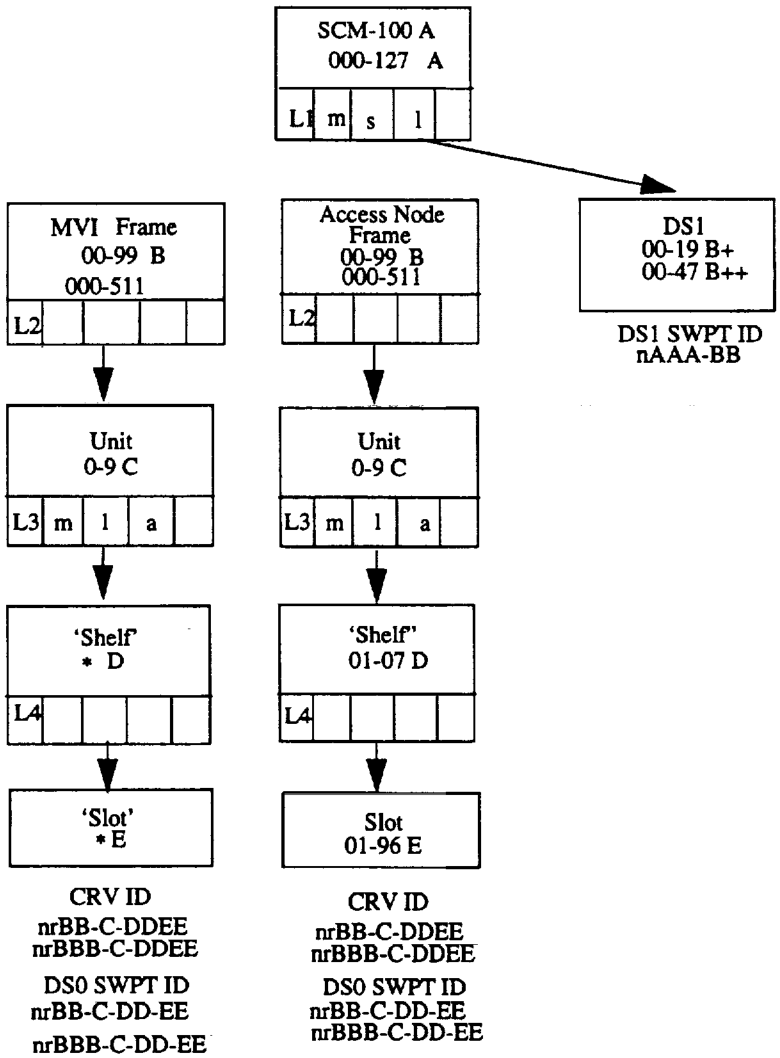
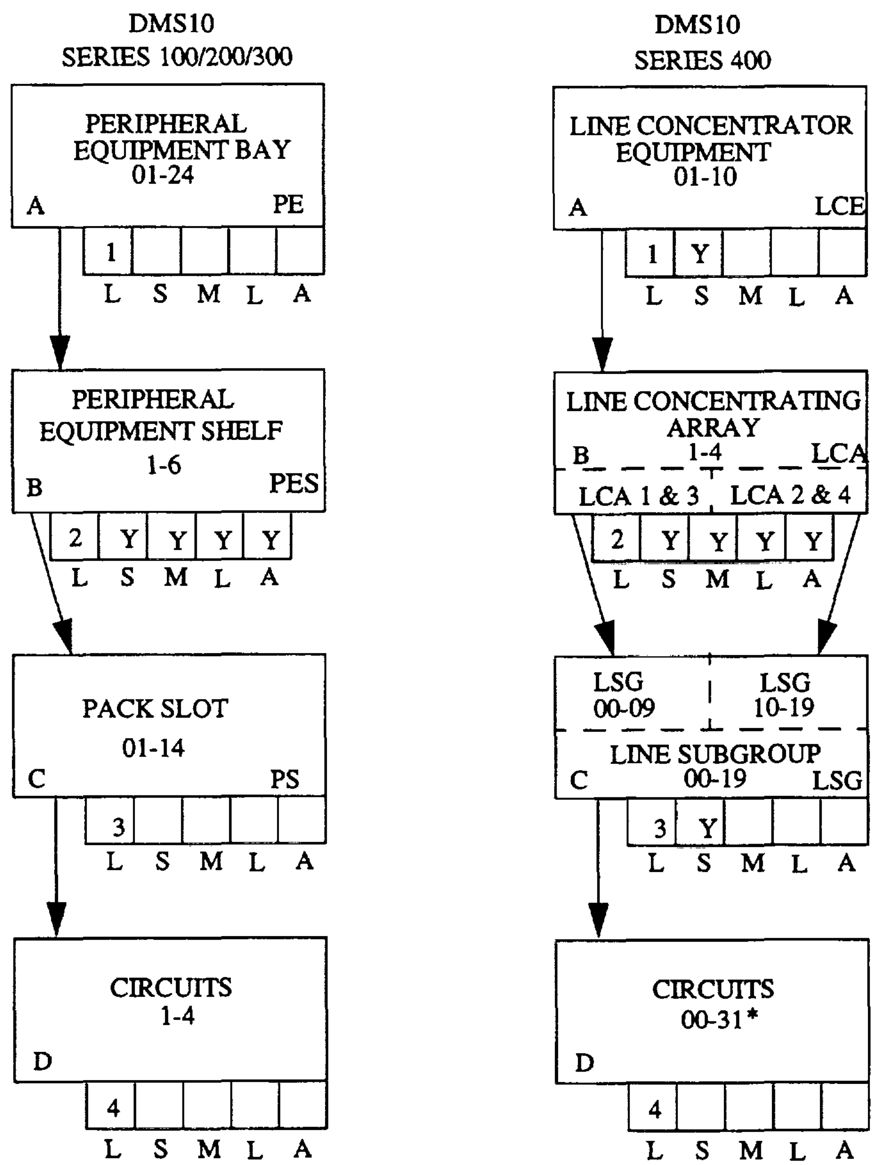


Figure 4A-14. IC Type - DMS-100 IDLC: TR08 (SLC) & DMS-1



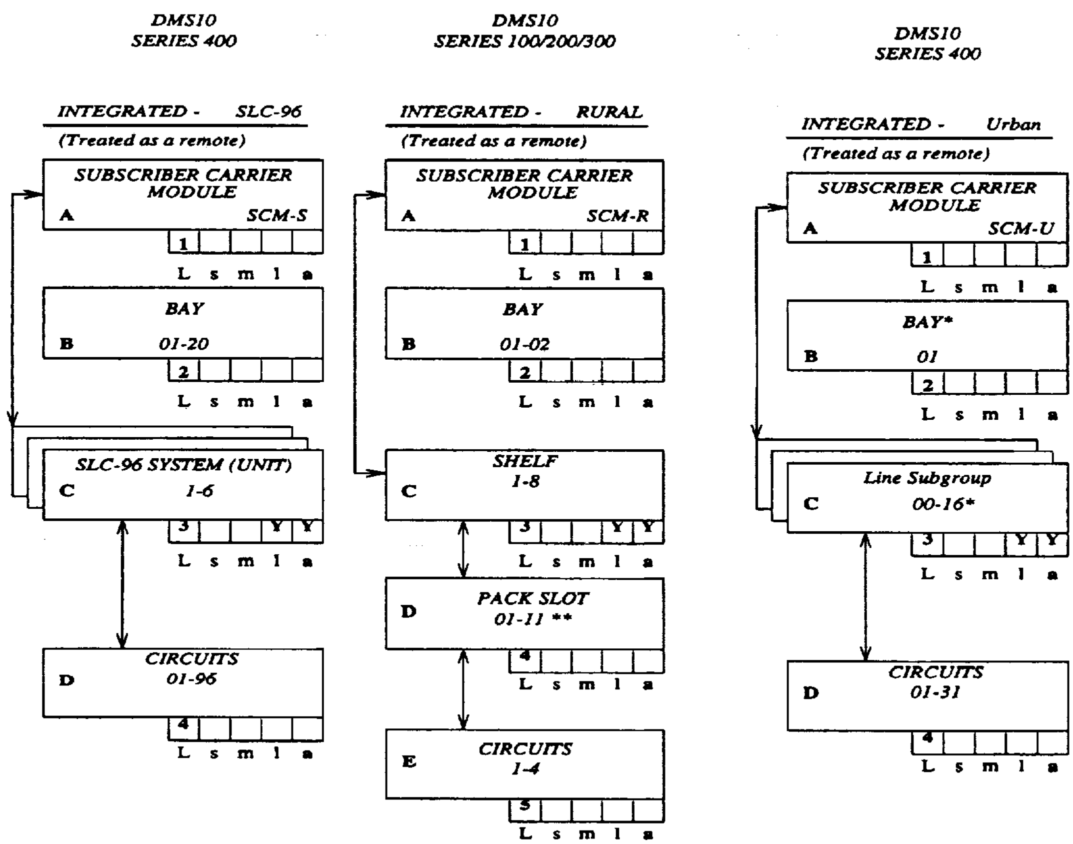
Notes: L=Level; s=spread; m=measurement; l=load, a-allocation
* DDEE = 0001-0672 for initial versions
0001-2048 for expanded port verions
+ range for initial version
++ range for expanded port version

Figure 4A-15. IC Type - DMS-100 IDLC: TR303



* Circuits 00 - 13 if ISDN Line Drawer

Figure 4A-16. IC Type - DMS10 Host



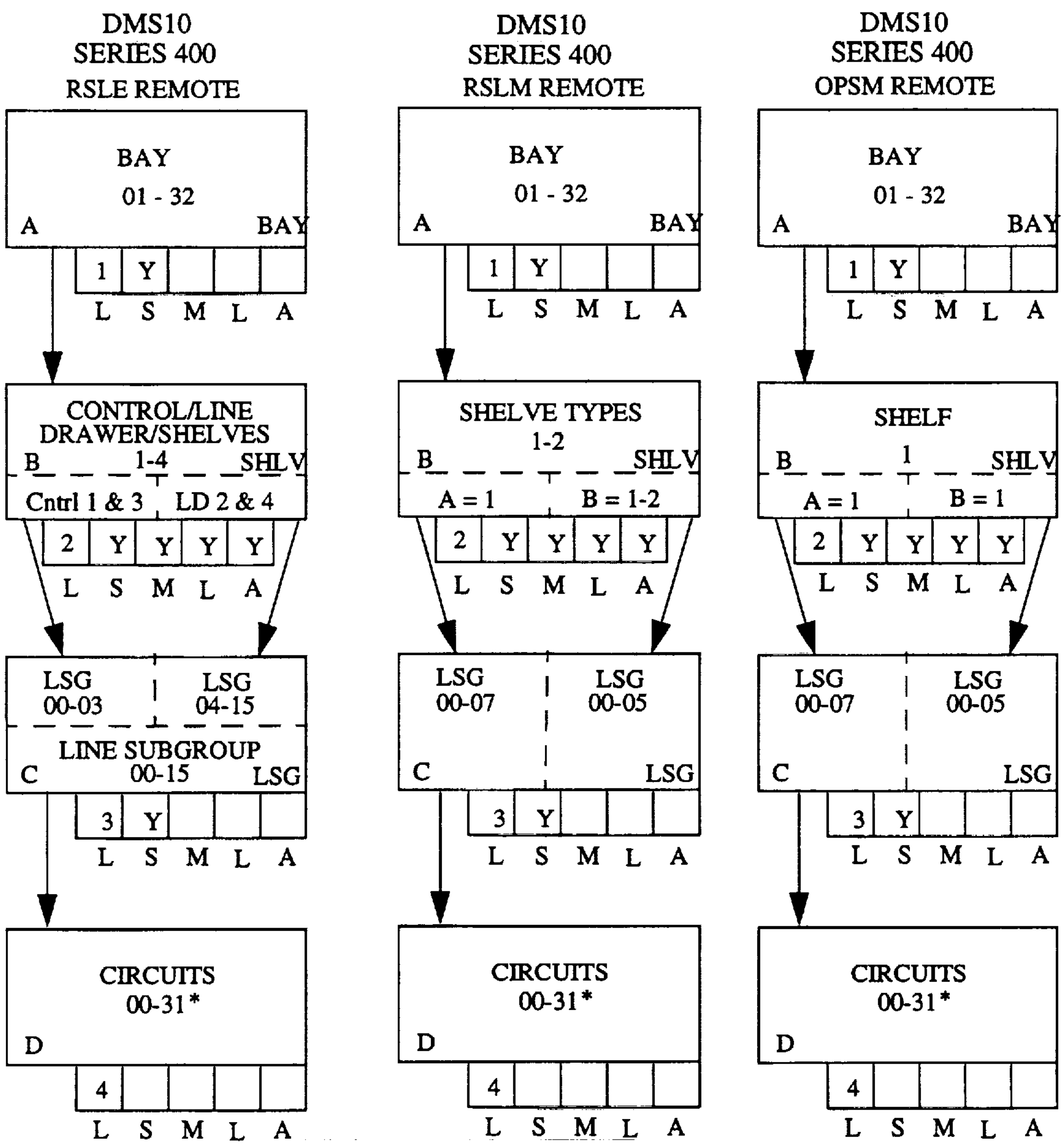
L = Level
s = Spread
m = Measurement
l = Load
a = Allocation (SWITCH)

PORT TYPE	MDF FORMAT
400 Series SLC-96	BB-C-DD
300 Series Rural	BB-C-DD-E
400 Series Urban	BB-CC-DD

11/92
ISSUE 1.5
oedms10.1

** Slots 1,6,11 cannot be used for switch ports
* All Urban LSGs support 32 circuits with the exception of LSG 11, which only supports 16 circuits. Each Urban bay requires a unique site name

Figure 4A-17. IC Type - DMS10 Remotes



* Circuits 00 - 13 if ISDN Line Drawer

Figure 4A-18. IC Type - DMS10 Remotes

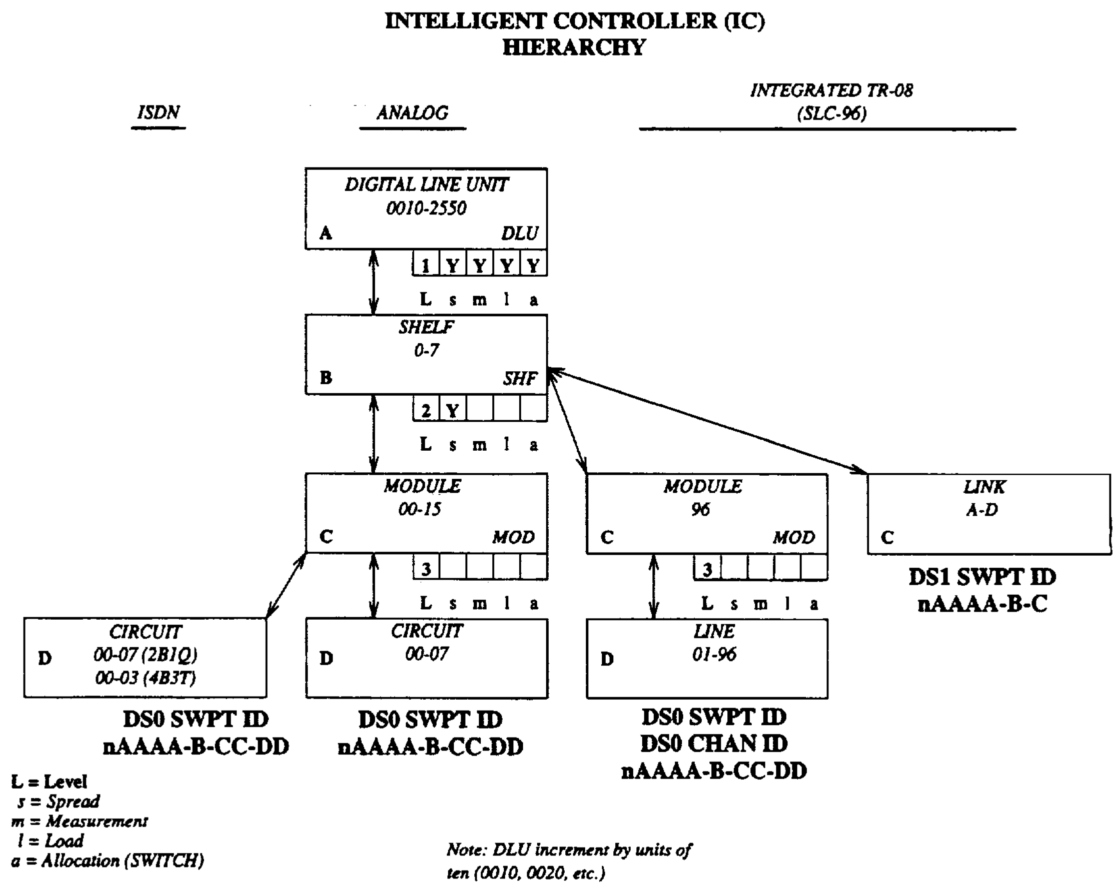


Figure 4A-19. IC Type - EWSD Host and Remote

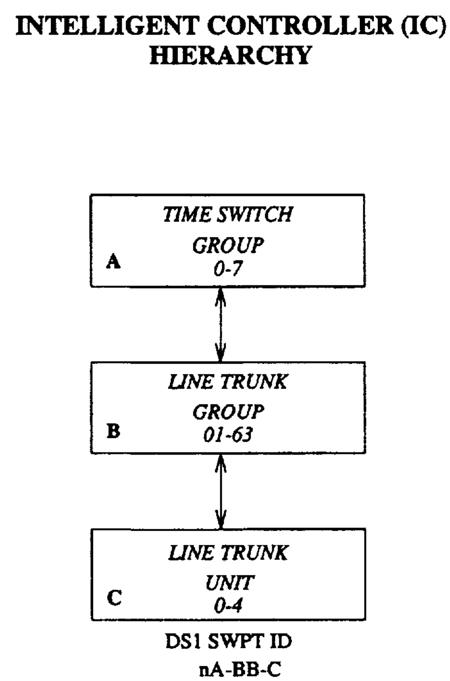


Figure 4A-20. IC Type - EWSD TR-303 IDLC (APS 13.0)

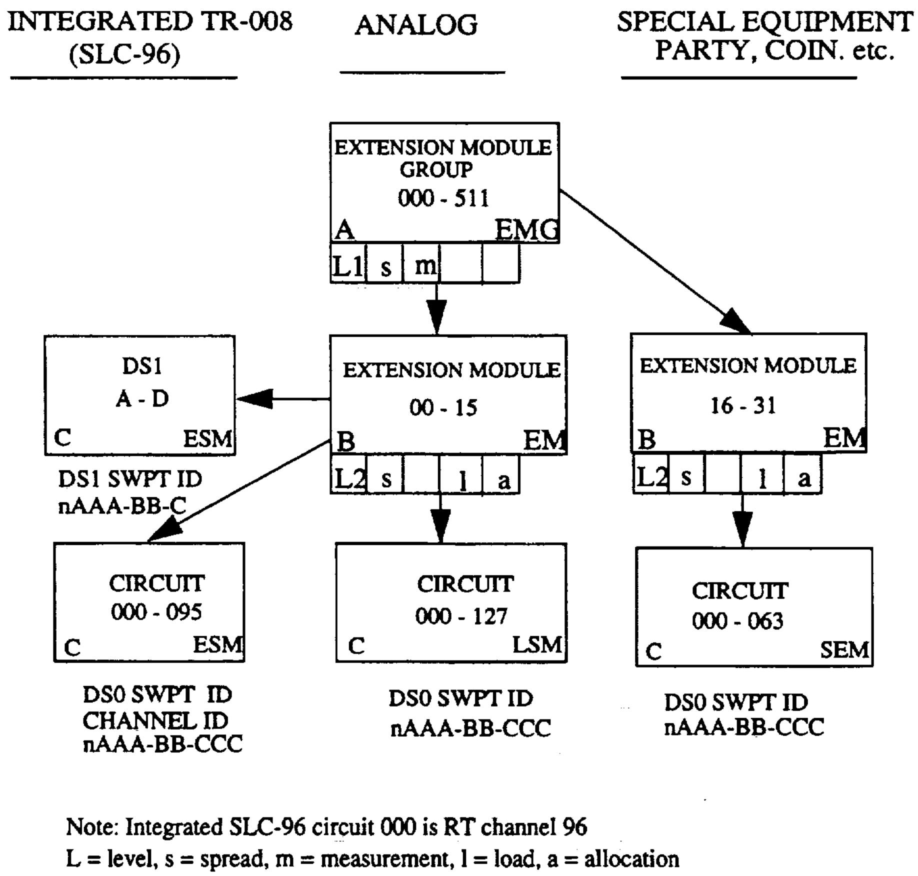
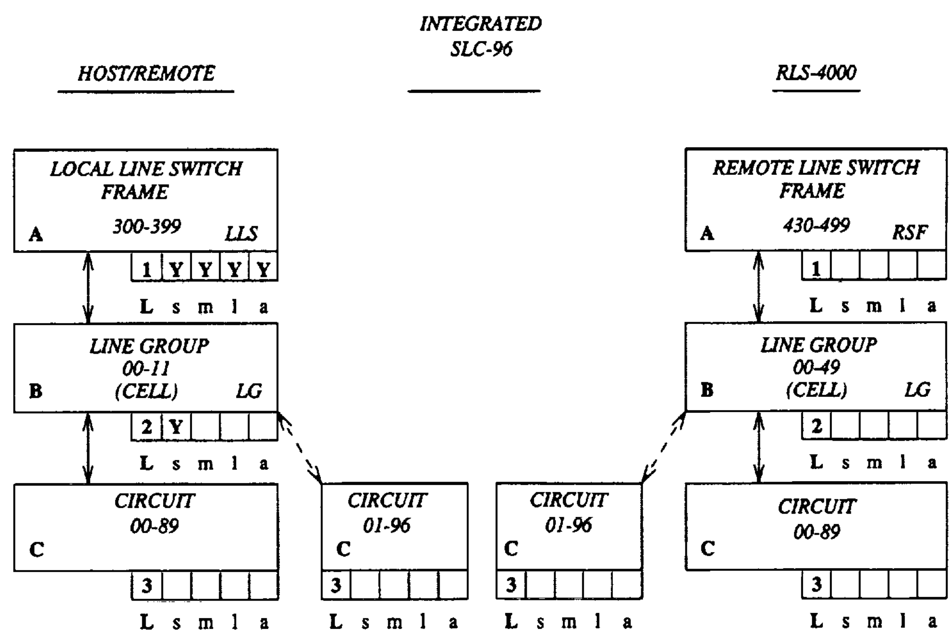


Figure 4A-21. IC Type - AXE Host & Remote

INTELLIGENT CONTROLLER (IC) HIERARCHY



Note: SLC-96 Circuits 91 thru 96 are not assignable (release 17.0 effective 1/90)

L = Level
s = Spread
m = Measurement
l = Load
a = Allocation (SWITCH)

TYPE	*MDF FORMAT*
MAIN	*AAA-BB-CC*

RTS
5/92
ISSUE 1.5
oestr.1

Figure 4A-22. IC Type - DCO Host & Remote

TABLE APPENDIX 4A

Table 4A-1. PARSE INPUT

INSTANCE KEY: bw

input_fmts	pdtkey
1#	bw1

INSTANCE KEY: cc

input_fmts	pdtkey
1#	cc1

INSTANCE KEY: ccpt

input_fmts	pdtkey
2#	ccp1
3#	ccp2
4#	ccp3
5#	ccp4

INSTANCE KEY: chan

input_fmts	pdtkey
1#	chn7
2#	chn1
3#	chn2
3112122	spc8
3113122	ch1b
31323	sp11
31342	spc4
31344	spc5
31354	sp19
4#	chn3
4122	ch1c
41522	spc9
423	d155
433	d15e
435	d15i
445	d15a
5#	chn4
5122	ch1a
6#	chn5
7#	chn6

Table 4A-1. `PARSE INPUT (cont.)`

```
INSTANCE KEY: crv
*******************************************************************************
input_fmts                                             pdtkey
3#                                                      crv1
311214                                                  crv5
311314                                                  crv6
31342                                                   spc4
31344                                                   spc5
31354                                                   sp19
414                                                     crv3
4154                                                    d185
433                                                     d15e
435                                                     d15i
445                                                     d15a
514                                                     d184
-------------------------------------------------------------------------------
INSTANCE KEY: slot
*******************************************************************************
input_fmts                                             pdtkey
2#                                                      slt1
3#                                                      slt2
4#                                                      slt3
-------------------------------------------------------------------------------
INSTANCE KEY: sweq
*******************************************************************************
input_fmts                                             pdtkey
3                                                       noic
31                                                      noic
31112                                                   swc9
311121                                                  sc10
3111212                                                 sc11
31113                                                   se20
311131                                                  se21
3111312                                                 se22
311132                                                  se45
311141                                                  se23
31115                                                   swcd
31116                                                   swcf
3112                                                    swc1
31121                                                   swc4
3112112                                                 sc12
311212                                                  sc13
31122                                                   se60
31123                                                   swc2
3113                                                    swc5
31131                                                   se25
311312                                                  swc3
31132                                                   swc6
-------------------------------------------------------------------------------
```

Table 4A-1. PARSE INPUT (cont.)

INSTANCE KEY: sweq

****

input_fmts	pdtkey
311322	swa1
31133	sec1
31134	swc7
31135	seck
31136	swc8
3114	dmc3
31141	se27
3115	swbd
312	noic
313	noic
32	noic
33	swe5
331	swe4
3312	swe9
3313	s313
332	se61
333	swe1
34	swe6
341	se10
3412	swe2
3413	se34
342	se40
343	se35
344	swe3
345	se36
346	swea
35	swe7
351	se11
3512	se12
352	se46
36	swad
37	swed
38	swef
4	noic
41	noic
4114	se50
4115	se51
412	noic
413	noic
42	noic
43	noic
44	noic
45	se52
451	se53
46	noic

Table 4A-1. PARSE INPUT (cont.)

INSTANCE KEY: sweq

input_fmts	pdtkey
5	noic
51	noic
512	noic
52	noic
6	noic
7	noic
8	noic

INSTANCE KEY: swpt

input_fmts	pdtkey
221	dl86
3112122	spc8
311312	sp16
3113122	sp15
311322	sp17
3114121	sp12
31152	ds1d
31162	ds1g
3121	dl50
312114	spc2
312122	spc6
3122	dlt3
31233	spca
3124	spc7
313122	sp14
313123	spc3
31321	ds1i
31322	sp10
313224	sp24
31323	sp11
31332	sp20
31342	spc4
313422	sp23
31344	spc5
31353	sp21
31354	sp19
31362	sp18
314121	sp13
315122	dl73
3152	ds1b
333	dlt2
34	dl70

Table 4A-1. PARSE INPUT (cont.)

INSTANCE KEY: swpt

input_fmts	pdtkey
41121	dl87
412	dl52
4121	dl51
4122	dl36
4123	dlt6
4125	dl5d
413	dl76
414	dl38
4151	dl81
41522	spc9
42	ds1a
421	ds1h
422	dl30
423	dl55
43	ds1e
4323	sp22
433	dl5e
435	dl5i
444	dl52
445	dl5a
453	dl51
511	dl80
5122	dl61
52	ds1c
522	dl66
53	ds1f
6122	dl72

INSTANCE KEY: dtn

input_fmts	pdtkey
10	dtn1
334	dl16
34	dl17
37	dtn3
64	dtn4
7	dtn2

Table 4A-1. PARSE INPUT (cont.)

INSTANCE KEY: tn

input_fmts	pdtkey
10	tn1
334	dlt8
34	dlt9
37	tn3
64	tn4
7	tn2

INSTANCE KEY: tre

input_fmts	pdtkey
default	utre
21	tre6
22	tre6
23	tre6
24	tre6
31	tre7
311	tr30
312	tr30
313	tr30
314	tr30
32	tre7
321	tre4
322	tre4
323	tre4
324	tre4
33	tre7
331	tre
332	tre
333	tre
34	tre7
41	tre3
411	tr22
412	tr22
413	tr22
414	tr22
42	tre3
421	tre5
422	tre5
423	tre5
424	tre5
43	tre3
44	tre3

Table 4A-1. PARSE INPUT (cont.)

INSTANCE KEY: tre

****

input_fmts	pdtkey
5	tr11
51	tre2
511	tr10
512	tr10
513	tr10
52	tre2
521	dlt7
522	dlt7
523	dlt7
524	dlt7
53	tre2
54	tre2
6	tre
61	tr26
611	tr23
612	tr23
613	tr23
614	tr23
62	tr26
621	tr24
622	tr24
623	tr24
624	tr24
63	tr26
64	tr26
7	tre
71	tre8
711	tr21
712	tr21
713	tr21
714	tr21
72	tre8
721	tr20
722	tr20
723	tr20
724	tr20
73	tre8
74	tre8
81	tr12
82	tr12
821	tre9
822	tre9
823	tre9
824	tre9

Table 4A-1. PARSE INPUT (cont.)

INSTANCE KEY: tre

input_fmts	pdtkey
83	tr12
84	tr12
8522	dl21
91	tre1
92	tre1
921	tr25
922	tr25
923	tr25
924	tr25
93	tre1
94	tre1

INSTANCE KEY: bl

input_fmts	pdtkey
1	dl26
11	bl10
12	bl10
13	bl10
14	bl10
15	bl10
2	dl26
21	bl4
22	bl4
221	bl1
222	bl1
223	bl1
223	bl1
23	bl4
24	bl4
25	bl4
3	dl26
31	bl11
32	bl11
321	bl2
322	bl2
323	bl2
33	bl11
34	bl11
35	bl11
4	dl26
41	bl12
42	bl12
421	bl3
422	bl3

Table 4A-1. PARSE INPUT (cont.)

INSTANCE KEY: bl

input_fmts	pdtkey
423	bl3
43	bl12
44	bl12
45	bl12
5	dl26
521	dlt7
522	dlt7
523	dlt7
6	dl26
621	dl29
622	dl29
623	dl29
81	bl13
82	bl13
83	bl13
84	bl13
85	bl13
8522	dl21

INSTANCE KEY: ca

input_fmts	pdtkey
default	dl14

INSTANCE KEY: clct

input_fmts	pdtkey
default	dl22

INSTANCE KEY: cp

input_fmts	pdtkey
cppair	dl23
xppair	dl24

INSTANCE KEY: ctx

input_fmts	pdtkey
default	dl15

Table 4A-1. PARSE INPUT (cont.)

INSTANCE KEY: frm

input_fmts	pdtkey
11	dl33
3	dl11

INSTANCE KEY: hml

input_fmts	pdtkey
default	dl25

INSTANCE KEY: ic

input_fmts	pdtkey
11	dl18
31	dl19
32	dl19
41	ew41
6	dl20

INSTANCE KEY: ice

input_fmts	pdtkey
3131323	ice6
31323	ice4
313323	ice5
41323	ice3
423	ice1
4323	ice2

INSTANCE KEY: if

input_fmts	pdtkey
cppair	dl23

INSTANCE KEY: invo

input_fmts	pdtkey
default	invo

Table 4A-1. PARSE INPUT (cont.)

INSTANCE KEY: ldiv

input_fmts	pdtkey
312	dl12
314	dl41
412	ew12
414	ew14

INSTANCE KEY: me

input_fmts	pdtkey
default	me0
21	me9
223	me21
231	me20
2311	me8
31	me10
32111	me12
322	me1
32211	me16
33111	me13
33211	me17
34	me2
34111	me14
34211	me18
35111	me15
35211	me19
41	me11
41122	me3
422	me5
44	me6
5111	me4
52	me7
7	me23

INSTANCE KEY: nxx

input_fmts	pdtkey
3	dl10
6	dl10

Table 4A-1. PARSE INPUT (cont.)

```
INSTANCE KEY: oc
*****************************************************************************
input_fmts                                              pdtkey
default                                                  cpt1
-----------------------------------------------------------------------------


INSTANCE KEY: ow
*****************************************************************************
input_fmts                                              pdtkey
default                                                  cpt1
-----------------------------------------------------------------------------


INSTANCE KEY: owt
*****************************************************************************
input_fmts                                              pdtkey
default                                                  ar1
-----------------------------------------------------------------------------


INSTANCE KEY: rsvg
*****************************************************************************
input_fmts                                              pdtkey
default                                                  rsvg
-----------------------------------------------------------------------------


INSTANCE KEY: ru
*****************************************************************************
input_fmts                                              pdtkey
11                                                       dl18
311                                                      dl40
312                                                      dl39
411                                                      ew01
412                                                      ew02
-----------------------------------------------------------------------------


INSTANCE KEY: sfg
*****************************************************************************
input_fmts                                              pdtkey
default                                                  sfg
-----------------------------------------------------------------------------
```

Table 4A-1. PARSE INPUT (cont.)

INSTANCE KEY: tie

input_fmts	pdtkey
default	dl14

INSTANCE KEY: tnl

input_fmts	pdtkey
1	dl35
2	dl35
3	dl35
4	dl35
5	dl35

INSTANCE KEY: clg

input_fmts	pdtkey
default	dl59

INSTANCE KEY: ltdg

input_fmts	pdtkey
311	ltg1
312	ltg1
313	ltg1
314	ltg1
315	ltg1
316	ltg1
317	ltg1
318	ltg1

Table 4A-1. PARSE INPUT

INSTANCE KEY: ltid

input_fmts	pdtkey
3111	ltd1
3112	ltd1
3113	ltd1
3114	ltd1
3121	ltd2
3122	ltd2
3123	ltd2
3124	ltd2
3131	ltd3
3132	ltd3
3133	ltd3
3134	ltd3
3141	ltd4
3142	ltd4
3143	ltd4
3144	ltd4
3151	ltd5
3152	ltd5
3153	ltd5
3154	ltd5
3161	ltd6
3162	ltd6
3163	ltd6
3164	ltd6
3171	ltd7
3172	ltd7
3173	ltd7
3174	ltd7
3181	ltd8
3182	ltd8
3183	ltd8
3184	ltd8

INSTANCE KEY: tkca

input_fmts	pdtkey
default	d157

INSTANCE KEY: tkp

input_fmts	pdtkey
tkpair	d158

Table 4A-2. PARSE DIALECT

```
INSTANCE KEY: bl10
**************************************************************************
dlct type rule_id exidrl position character ic_generic
bl   none  bl10    trel
--------------------------------------------------------------------------

INSTANCE KEY: bl11
**************************************************************************
dlct type rule_id exidrl position character ic_generic
bl   none  bl11    trel
--------------------------------------------------------------------------

INSTANCE KEY: bl12
**************************************************************************
dlct type rule_id exidrl position character ic_generic
bl   none  bl12    trel
--------------------------------------------------------------------------

INSTANCE KEY: bl13
**************************************************************************
dlct type rule_id exidrl position character ic_generic
bl   none  bl13    trel
--------------------------------------------------------------------------

INSTANCE KEY: bw1
**************************************************************************
dlct type rule_id exidrl position character ic_generic
bw1  none  bw1     bw1
--------------------------------------------------------------------------

INSTANCE KEY: ccp1
**************************************************************************
dlct type rule_id exidrl position character ic_generic
ccp1 none  ccp1    ccp1
--------------------------------------------------------------------------

INSTANCE KEY: ccp2
**************************************************************************
dlct type rule_id exidrl position character ic_generic
ccp2 none  ccp2    ccp2
--------------------------------------------------------------------------

INSTANCE KEY: ccp3
**************************************************************************
dlct type rule_id exidrl position character ic_generic
ccp3 none  ccp3    ccp3
--------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: ccp4
********************************************************************************
dlct type rule_id exidrl position character ic_generic
ccp4 none  ccp4    ccp4
--------------------------------------------------------------------------------

INSTANCE KEY: cc1
********************************************************************************
dlct type rule_id exidrl position character ic_generic
cc1  none  cc1     cc
--------------------------------------------------------------------------------

INSTANCE KEY: chla
********************************************************************************
dlct type rule_id exidrl position character ic_generic
?    ?     r5122   e5122
chla dmc   rulca   exi36                      3frm
ewsd ewsd  rul61   exi60
--------------------------------------------------------------------------------

INSTANCE KEY: chlb
********************************************************************************
dlct type rule_id exidrl position character ic_generic
chla dmc   rulcb   exi36                      3frm
--------------------------------------------------------------------------------

INSTANCE KEY: chlc
********************************************************************************
dlct type rule_id exidrl position character ic_generic
dms2 dmc   rul36   exi36
--------------------------------------------------------------------------------

INSTANCE KEY: chn1
********************************************************************************
dlct type rule_id exidrl position character ic_generic
chn1 none  chn1    chn1
--------------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: chn2
**********************************************************************************
dlct type rule_id exidrl position character ic_generic
chn2 none  chn2    chn2
----------------------------------------------------------------------------------

INSTANCE KEY: chn3
**********************************************************************************
dlct type rule_id exidrl position character ic_generic
chn3 none  chn3    chn3
----------------------------------------------------------------------------------
INSTANCE KEY: chn4
**********************************************************************************
dlct type rule_id exidrl position character ic_generic
chn4 none  chn4    chn4
----------------------------------------------------------------------------------

INSTANCE KEY: chn5
**********************************************************************************
dlct type rule_id exidrl position character ic_generic
chn5 none  chn5    chn5
----------------------------------------------------------------------------------

INSTANCE KEY: chn6
**********************************************************************************
dlct type rule_id exidrl position character ic_generic
chn6 none  chn6    chn6
----------------------------------------------------------------------------------

INSTANCE KEY: chn7
**********************************************************************************
dlct type rule_id exidrl position character ic_generic
chn7 none  chn7    chn7
----------------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: cpt2
*************************************************************************
dlct type rule_id exidrl position character ic_generic
cpt2 none  cpt2    cpt2
-------------------------------------------------------------------------
INSTANCE KEY: cpt3
*************************************************************************
dlct type rule_id exidrl position character ic_generic
cpt3 none  cpt3    cpt3
-------------------------------------------------------------------------

INSTANCE KEY: crv1
*************************************************************************
dlct type rule_id exidrl position character ic_generic
crv1 none  crv1    crv1
-------------------------------------------------------------------------

INSTANCE KEY: crv2
*************************************************************************
dlct type rule_id exidrl position character ic_generic
crv2 dmc   crv2    crv2
-------------------------------------------------------------------------

INSTANCE KEY: crv3
*************************************************************************
dlct type rule_id exidrl position character ic_generic
crv3 dmc   crv3    crv2
-------------------------------------------------------------------------

INSTANCE KEY: crv4
*************************************************************************
dlct type rule_id exidrl position character ic_generic
crv2 dmc   crv4    crv2
-------------------------------------------------------------------------

INSTANCE KEY: crv5
*************************************************************************
dlct type rule_id exidrl position character ic_generic
crv3 dmc   crv5    crv2
-------------------------------------------------------------------------

INSTANCE KEY: crv6
*************************************************************************
dlct type rule_id exidrl position character ic_generic
crv6 dmc   crv4    crv2                          3frm
-------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: ds1a
***************************************************************************
dlct type rule_id exidrl position character ic_generic
ds1a dmc   ds1a    ds1a
---------------------------------------------------------------------------

INSTANCE KEY: ds1b
***************************************************************************
dlct type rule_id exidrl position character ic_generic
ds1a dmc   ds1b    ds1a     11        c
ds1e dmc   ds1b    ds1e     11        m
---------------------------------------------------------------------------

INSTANCE KEY: ds1c
***************************************************************************
dlct type rule_id exidrl position character ic_generic
ds1c dmc   ds1c    ds1c
---------------------------------------------------------------------------

INSTANCE KEY: ds1d
***************************************************************************
dlct type rule_id exidrl position character ic_generic
ds1c dmc   ds1d    ds1c
---------------------------------------------------------------------------

INSTANCE KEY: ds1e
***************************************************************************
dlct type rule_id exidrl position character ic_generic
ds1e dmc   ds1e    ds1e
---------------------------------------------------------------------------

INSTANCE KEY: ds1f
***************************************************************************
dlct type rule_id exidrl position character ic_generic
ds1f dmc   ds1df   ds1f
---------------------------------------------------------------------------

INSTANCE KEY: ds1g
***************************************************************************
dlct type rule_id exidrl position character ic_generic
ds1f dmc   ds1g    ds1f
---------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: ds1h
**************************************************************************
dlct type rule_id exidrl position character ic_generic
ds1h axe   ds1h    ds1h
--------------------------------------------------------------------------

INSTANCE KEY: ds1i
**************************************************************************
dlct type rule_id exidrl position character ic_generic
ds1h axe   ds1i    ds1h
--------------------------------------------------------------------------

INSTANCE KEY: se40
**************************************************************************
dlct type rule_id exidrl position character ic_generic
axe1 axe   swe43   swe43
dco1 dco   swe43   swe43
dmle dmx   swe34   swe34    11       l
dmsl dmx   swe35   swe35    11       s
se8g 5es   sweq6   sweq6    11       g
se8i 5es   sweq6   sweq6    11       i
se8l 5es   sweq6   sweq6    11       l
se8m 5es   sweq6   sweq6    11       m
se8s 5es   sweq6   sweq6    11       s
5dn2 5es   sweq6   sweq6    11       a
--------------------------------------------------------------------------

INSTANCE KEY: slt1
**************************************************************************
dlct type rule_id exidrl position character ic_generic
slt1 none  slt1    slt1
--------------------------------------------------------------------------
INSTANCE KEY: slt2
**************************************************************************
dlct type rule_id exidrl position character ic_generic
slt2 none  slt2    slt2
--------------------------------------------------------------------------

INSTANCE KEY: slt3
**************************************************************************
dlct type rule_id exidrl position character ic_generic
slt3 none  slt3    slt3
--------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: spc5
*************************************************************************************
dlct type rule_id exidrl position character ic_generic
5esg 5es  sp4g    e5ep3    11       g
-------------------------------------------------------------------------------------

INSTANCE KEY: sp10
*************************************************************************************
dlct type rule_id exidrl position character ic_generic
dco  dco  sp10    exir5
5edg 5es  spd1    e5ed1    11       g
5edm 5es  spd1    e5ed1    11       m
5eds 5es  spd1    e5ed1    11       s
-------------------------------------------------------------------------------------

INSTANCE KEY: swad
*************************************************************************************
dlct type rule_id exidrl position character ic_generic
swad dmc  swad    swad
-------------------------------------------------------------------------------------

INSTANCE KEY: swa1
*************************************************************************************
dlct type rule_id exidrl position character ic_generic
5dn3 5es  sweac   sweac    13       a
-------------------------------------------------------------------------------------

INSTANCE KEY: swbd
*************************************************************************************
dlct type rule_id exidrl position character ic_generic
swad dmc  swbd    swbd
-------------------------------------------------------------------------------------

INSTANCE KEY: swcd
*************************************************************************************
dlct type rule_id exidrl position character ic_generic
swed dmc  swcd    swcd
-------------------------------------------------------------------------------------

INSTANCE KEY: swcf
*************************************************************************************
dlct type rule_id exidrl position character ic_generic
swed dmc  swcf    swcd
-------------------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: swed
**********************************************************************************
dlct type rule_id exidrl position character ic_generic
swed dmc   swed    swed
----------------------------------------------------------------------------------

INSTANCE KEY: swef
**********************************************************************************
dlct type rule_id exidrl position character ic_generic
swed dmc   swef    swed
----------------------------------------------------------------------------------

INSTANCE KEY: ar1
**********************************************************************************
dlct type rule_id exidrl position character ic_generic
ar   none  rul10   exi10
----------------------------------------------------------------------------------

INSTANCE KEY: atr1
**********************************************************************************
dlct type rule_id exidrl position character ic_generic
atr  none  rul10   exi10
----------------------------------------------------------------------------------

INSTANCE KEY: bl1
**********************************************************************************
dlct type rule_id exidrl position character ic_generic
ru   none  rul44   exir7
----------------------------------------------------------------------------------

INSTANCE KEY: bl2
**********************************************************************************
dlct type rule_id exidrl position character ic_generic
ru   none  rul45   exir7
----------------------------------------------------------------------------------

INSTANCE KEY: bl3
**********************************************************************************
dlct type rule_id exidrl position character ic_generic
ru   none  rul46   exir7
----------------------------------------------------------------------------------

INSTANCE KEY: bl4
**********************************************************************************
dlct type rule_id exidrl position character ic_generic
bl   none  rul47   tre1
----------------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: chla
******************************************************************************
dlct type rule_id exidrl position character ic_generic
?    ?    r5122   e5122
chla dmc  rulca   exi36
ewsd ewsd rul61   exi60
------------------------------------------------------------------------------
INSTANCE KEY: cptl
******************************************************************************
dlct type rule_id exidrl position character ic_generic
wo   none rul10   exi10
------------------------------------------------------------------------------

INSTANCE KEY: dlt2
******************************************************************************
dlct type rule_id exidrl position character ic_generic
1es  1es  rule3   exir3
------------------------------------------------------------------------------

INSTANCE KEY: dlt3
******************************************************************************
dlct type rule_id exidrl position character ic_generic
?    ?    r3122   e3122
dmle dmx  rul53   exi53
dms  dmc  rule4   exir4
------------------------------------------------------------------------------

INSTANCE KEY: dlt6
******************************************************************************
dlct type rule_id exidrl position character ic_generic
5esp 5es  rule6   exir6
------------------------------------------------------------------------------

INSTANCE KEY: dlt7
******************************************************************************
dlct type rule_id exidrl position character ic_generic
ru   none rule7   exir7
------------------------------------------------------------------------------

INSTANCE KEY: dlt8
******************************************************************************
dlct type rule_id exidrl position character ic_generic
tn   none rule8   exir9
------------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: dlt9
********************************************************************************
dlct type rule_id exidrl position character ic_generic
tn   none rule9   exir9
--------------------------------------------------------------------------------
INSTANCE KEY: dl10
********************************************************************************
dlct type rule_id exidrl position character ic_generic
nxx  none rul10   exi10
--------------------------------------------------------------------------------

INSTANCE KEY: dl11
********************************************************************************
dlct type rule_id exidrl position character ic_generic
frm  none rul34   exi34
--------------------------------------------------------------------------------

INSTANCE KEY: dl12
********************************************************************************
dlct type rule_id exidrl position character ic_generic
ldiv none rul42   exi42
--------------------------------------------------------------------------------

INSTANCE KEY: dl13
********************************************************************************
dlct type rule_id exidrl position character ic_generic
eqpt none rul10   exi10
sweq none rul10   exi10
--------------------------------------------------------------------------------

INSTANCE KEY: dl14
********************************************************************************
dlct type rule_id exidrl position character ic_generic
ca   none rul14   exi14
--------------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: dl15
***************************************************************************
dlct type rule_id exidrl position character ic_generic
ctx  5es   rul25   exi25
ctx  1es   rul25   exi25
ctx  dmx   rul25   exi25
ctx  dmc   rul25   exi25
ctx  axe   rul25   exi25
ctx  ewsd  rul24   exi25
ctx  2es   rul25   exi25
ctx  3es   rul25   exi25
ctx  dco   rul25   exi25
---------------------------------------------------------------------------
INSTANCE KEY: dl16
***************************************************************************
dlct type rule_id exidrl position character ic_generic
tn   none  rule8   exir9
---------------------------------------------------------------------------

INSTANCE KEY: dl17
***************************************************************************
dlct type rule_id exidrl position character ic_generic
tn   none  rule9   exir9
---------------------------------------------------------------------------

INSTANCE KEY: dl18
***************************************************************************
dlct type rule_id exidrl position character ic_generic
clli none  rul12   exi12
---------------------------------------------------------------------------

INSTANCE KEY: dl19
***************************************************************************
dlct type rule_id exidrl position character ic_generic
ctn  none  rul11   exi11
---------------------------------------------------------------------------

INSTANCE KEY: dl20
***************************************************************************
dlct type rule_id exidrl position character ic_generic
exk  none  rul10   exi10
---------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: dl21
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
cru  none  rul21   exi21
-----------------------------------------------------------------------------

INSTANCE KEY: dl22
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
clct none  rul10   exi10
-----------------------------------------------------------------------------

INSTANCE KEY: dl23
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
cp   none  none    exi23
-----------------------------------------------------------------------------
INSTANCE KEY: dl24
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
xp   none  none    exi24
-----------------------------------------------------------------------------

INSTANCE KEY: dl25
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
hml  5es   rul25   exi25
hml  1es   rul25   exi25
hml  dmx   rul25   exi25
hml  dmc   rul25   exi25
hml  axe   rul25   exi25
hml  ewsd  rul24   exi25
hml  2es   rul25   exi25
hml  3es   rul25   exi25
hml  dco   rul25   exi25
-----------------------------------------------------------------------------

INSTANCE KEY: dl26
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
un   none  rul22   exi22
-----------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: dl27
******************************************************************************
dlct type rule_id exidrl position character ic_generic
ref1 none rul10   exi10
------------------------------------------------------------------------------

INSTANCE KEY: dl28
******************************************************************************
dlct type rule_id exidrl position character ic_generic
refg none rul10   exi10
------------------------------------------------------------------------------
INSTANCE KEY: dl29
******************************************************************************
dlct type rule_id exidrl position character ic_generic
ru   none rul23   exir7
------------------------------------------------------------------------------

INSTANCE KEY: dl30
******************************************************************************
dlct type rule_id exidrl position character ic_generic
?    ?    r422    e422
dco  dco  rul30   exir5
dm1u dmx  swe70   swe70
------------------------------------------------------------------------------

INSTANCE KEY: dl33
******************************************************************************
dlct type rule_id exidrl position character ic_generic
clli none rul33   exi33
------------------------------------------------------------------------------

INSTANCE KEY: dl34
******************************************************************************
dlct type rule_id exidrl position character ic_generic
frm2 none rul34   exi34
------------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: dl35
***************************************************************************
dlct type rule_id exidrl position character ic_generic
tnl  none  rul35   exi35
---------------------------------------------------------------------------

INSTANCE KEY: dl36
***************************************************************************
dlct type rule_id exidrl position character ic_generic
?    ?     r4122   e4122
dml1 dmx   rul54   exi54
dms2 dmc   rul36   exi36                       2frm
dms3 dmc   rul37   exir4                       3frm
---------------------------------------------------------------------------

INSTANCE KEY: dl38
***************************************************************************
dlct type rule_id exidrl position character ic_generic
?    ?     r414    e414
rss  les   rul38   exi38
2er  2es   rul71   exi71
---------------------------------------------------------------------------
INSTANCE KEY: dl39
***************************************************************************
dlct type rule_id exidrl position character ic_generic
rmt2 none  rul39   exi40
---------------------------------------------------------------------------

INSTANCE KEY: dl40
***************************************************************************
dlct type rule_id exidrl position character ic_generic
rmt1 none  rul40   exi40
---------------------------------------------------------------------------

INSTANCE KEY: dl41
***************************************************************************
dlct type rule_id exidrl position character ic_generic
ldv1 none  rul41   exi42
---------------------------------------------------------------------------

INSTANCE KEY: dl43
***************************************************************************
dlct type rule_id exidrl position character ic_generic
ldv2 none  rul43   exi43
---------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: dl5a
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
5esa 5es   r5ep5   e5ep3
-----------------------------------------------------------------------------

INSTANCE KEY: dl5d
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
5dn0 5es   r5ea0   e5ea0    15        a
-----------------------------------------------------------------------------

INSTANCE KEY: dl5e
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
5esi 5es   r5ep2   e5ep2    12        i
5esl 5es   r5ep1   e5ep1    12        l
5esm 5es   r5ep2   e5ep2    12        m
5ess 5es   r5ep2   e5ep2    12        s
-----------------------------------------------------------------------------

INSTANCE KEY: dl5i
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
5esg 5es   r5ep3   e5ep3    14        g
-----------------------------------------------------------------------------
INSTANCE KEY: dl5l
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
5e9l 5es   r5ep4   e5ep1    14        l
-----------------------------------------------------------------------------

INSTANCE KEY: dl50
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
dmpe dmx   rul50   exi50
-----------------------------------------------------------------------------

INSTANCE KEY: dl51
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
dmp1 dmx   rul51   exi51
-----------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: dl52
*************************************************************************
dlct type rule_id exidrl position character ic_generic
?    ?    r412    e412
dmsl dmx  rul52   exi52
5esk 5es  r5ep6   e5ep4
-------------------------------------------------------------------------
INSTANCE KEY: dl55
*************************************************************************
dlct type rule_id exidrl position character ic_generic
?    ?    r423    e423
axe  axe  rul55   exi55
5eda 5es  r5ed2   e5ed1
-------------------------------------------------------------------------

INSTANCE KEY: dl57
*************************************************************************
dlct type rule_id exidrl position character ic_generic
tkca none rul14   exi14
-------------------------------------------------------------------------

INSTANCE KEY: dl58
*************************************************************************
dlct type rule_id exidrl position character ic_generic
tkp  none none    exi23
-------------------------------------------------------------------------

INSTANCE KEY: dl59
*************************************************************************
dlct type rule_id exidrl position character ic_generic
clg  none rul10   exi10
-------------------------------------------------------------------------
INSTANCE KEY: dl61
*************************************************************************
dlct type rule_id exidrl position character ic_generic
?    ?    r5122   e5122
dms4 dmc  rul43   exi36                    3frm
ewsd ewsd rul61   exi60
-------------------------------------------------------------------------

INSTANCE KEY: dl66
*************************************************************************
dlct type rule_id exidrl position character ic_generic
dcor dco  rul66   exi66
-------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: dl70
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
?    ?    r34     e34
2es  2es  rul70   exi70
3es  3es  rul70   exi70
-----------------------------------------------------------------------------

INSTANCE KEY: dl72
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
fcl  fcl  rul82   exir6
-----------------------------------------------------------------------------

INSTANCE KEY: dl73
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
fcl  fcl  rul83   exir6
-----------------------------------------------------------------------------

INSTANCE KEY: dl76
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
5edg 5es  r5ed1   e5ed1   10       g
5edm 5es  r5ed1   e5ed1   10       m
5eds 5es  r5ed1   e5ed1   10       s
-----------------------------------------------------------------------------

INSTANCE KEY: dl80
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
ewd1 ewsd rul80   exi80
-----------------------------------------------------------------------------

INSTANCE KEY: dl81
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
ewd1 ewsd rul81   exi80
-----------------------------------------------------------------------------

INSTANCE KEY: dl84
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
?    ?    r514    e514
crv6 dmc  crv2    crv2                         3frm
ewd2 ewsd rul84   exi84
-----------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: dl85
*********************************************************************************
dlct type rule_id exidrl position character ic_generic
ewd2 ewsd  rul85   exi84
---------------------------------------------------------------------------------

INSTANCE KEY: dl86
*********************************************************************************
dlct type rule_id exidrl position character ic_generic
ewdd ewsd  rul86   exi86
---------------------------------------------------------------------------------

INSTANCE KEY: dl87
*********************************************************************************
dlct type rule_id exidrl position character ic_generic
ewdd ewsd  rul87   exi86
---------------------------------------------------------------------------------
INSTANCE KEY: dmc3
*********************************************************************************
dlct type rule_id exidrl position character ic_generic
dmc3 dmc   swc23   swc23
---------------------------------------------------------------------------------

INSTANCE KEY: dtn1
*********************************************************************************
dlct type rule_id exidrl position character ic_generic
tn   none  tn1     exir9
---------------------------------------------------------------------------------

INSTANCE KEY: dtn2
*********************************************************************************
dlct type rule_id exidrl position character ic_generic
tn   none  tn2     exir9
---------------------------------------------------------------------------------

INSTANCE KEY: dtn3
*********************************************************************************
dlct type rule_id exidrl position character ic_generic
tn   none  tn3     exir9
---------------------------------------------------------------------------------

INSTANCE KEY: dtn4
*********************************************************************************
dlct type rule_id exidrl position character ic_generic
tn   none  tn4     exir9
---------------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: dtr1
********************************************************************************
dlct type rule_id exidrl position character ic_generic
dtr  none  rul10   exi10
--------------------------------------------------------------------------------

INSTANCE KEY: ew01
********************************************************************************
dlct type rule_id exidrl position character ic_generic
rmt1 none  rew01   xew01
--------------------------------------------------------------------------------

INSTANCE KEY: ew02
********************************************************************************
dlct type rule_id exidrl position character ic_generic
rmt2 none  rew02   xew02
--------------------------------------------------------------------------------

INSTANCE KEY: ew12
********************************************************************************
dlct type rule_id exidrl position character ic_generic
ldiv none  rew12   eew12
--------------------------------------------------------------------------------

INSTANCE KEY: ew14
********************************************************************************
dlct type rule_id exidrl position character ic_generic
ldiv none  rew14   eew12
--------------------------------------------------------------------------------

INSTANCE KEY: ew41
********************************************************************************
dlct type rule_id exidrl position character ic_generic
ctn  none  rew41   eew41
--------------------------------------------------------------------------------

INSTANCE KEY: ice1
********************************************************************************
dlct type rule_id exidrl position character ic_generic
sse  axe   rice1   eice1
--------------------------------------------------------------------------------

INSTANCE KEY: ice2
********************************************************************************
dlct type rule_id exidrl position character ic_generic
ice2 axe   rice2   eice2
--------------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: ice3
************************************************************************
dlct type rule_id exidrl position character ic_generic
ice3 axe   rice3   eice2
------------------------------------------------------------------------

INSTANCE KEY: ice4
************************************************************************
dlct type rule_id exidrl position character ic_generic
sse  axe   rice4   eice1
------------------------------------------------------------------------

INSTANCE KEY: ice5
************************************************************************
dlct type rule_id exidrl position character ic_generic
ice2 axe   rice5   eice2
------------------------------------------------------------------------

INSTANCE KEY: ice6
************************************************************************
dlct type rule_id exidrl position character ic_generic
ice3 axe   rice6   eice2
------------------------------------------------------------------------

INSTANCE KEY: invo
************************************************************************
dlct type rule_id exidrl position character ic_generic
invo none  rul10   exi10
------------------------------------------------------------------------

INSTANCE KEY: iv1
************************************************************************
dlct type rule_id exidrl position character ic_generic
iv   none  rul10   exi10
------------------------------------------------------------------------

INSTANCE KEY: lprt
************************************************************************
dlct type rule_id exidrl position character ic_generic
lprt none  lprt    lprt
------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: ltd1
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
ltid none  ltid1   ltid1
-----------------------------------------------------------------------------

INSTANCE KEY: ltd2
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
ltid none  ltid2   ltid1
-----------------------------------------------------------------------------

INSTANCE KEY: ltd3
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
ltid none  ltid3   ltid1
-----------------------------------------------------------------------------

INSTANCE KEY: ltd4
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
ltid none  ltid4   ltid1
-----------------------------------------------------------------------------

INSTANCE KEY: ltd5
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
ltid none  ltid5   ltid1
-----------------------------------------------------------------------------

INSTANCE KEY: ltd6
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
ltid none  ltid6   ltid1
-----------------------------------------------------------------------------

INSTANCE KEY: ltd7
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
ltid nond  ltid7   ltid1
-----------------------------------------------------------------------------

INSTANCE KEY: ltd7
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
ltid nond  ltid7   ltid1
-----------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: ltd8
*************************************************************************
dlct type rule_id exidrl position character ic_generic
ltid none  ltid8   ltid1
-------------------------------------------------------------------------

INSTANCE KEY: ltg1
*************************************************************************
dlct type rule_id exidrl position character ic_generic
ltg  none  ltg1    ltg1
-------------------------------------------------------------------------

INSTANCE KEY: mct1
*************************************************************************
dlct type rule_id exidrl position character ic_generic
mct  none  rul10   exi10
-------------------------------------------------------------------------

INSTANCE KEY: me0
*************************************************************************
dlct type rule_id exidrl position character ic_generic
me         rul10   exi10
-------------------------------------------------------------------------

INSTANCE KEY: me1
*************************************************************************
dlct type rule_id exidrl position character ic_generic
me1  1es   me1     me1
-------------------------------------------------------------------------

INSTANCE KEY: me10
*************************************************************************
dlct type rule_id exidrl position character ic_generic
me10 dmc   me10    me9
-------------------------------------------------------------------------

INSTANCE KEY: me11
*************************************************************************
dlct type rule_id exidrl position character ic_generic
me11 dmc   me11    me9
-------------------------------------------------------------------------

INSTANCE KEY: me12
*************************************************************************
dlct type rule_id exidrl position character ic_generic
me12 dmc   me12    me12
-------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: me13
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
me13 dmc  me13    me12
-----------------------------------------------------------------------------

INSTANCE KEY: me14
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
me14 dmc  me14    me12
-----------------------------------------------------------------------------

INSTANCE KEY: me15
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
me15 dmc  me15    me12
-----------------------------------------------------------------------------

INSTANCE KEY: me16
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
me16 dmc  me16    me12
-----------------------------------------------------------------------------

INSTANCE KEY: me17
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
me17 dmc  me17    me12
-----------------------------------------------------------------------------

INSTANCE KEY: me18
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
me18 dmc  me18    me12
-----------------------------------------------------------------------------

INSTANCE KEY: me19
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
me19 dmc  me19    me12
-----------------------------------------------------------------------------

INSTANCE KEY: me2
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
me2  2es  me2     me2
-----------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: me20
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
me20 2es   me20    me5
-------------------------------------------------------------------------------

INSTANCE KEY: me21
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
me21 1es   me21    me21
-------------------------------------------------------------------------------

INSTANCE KEY: me23
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
me23 3es   me23    me23
-------------------------------------------------------------------------------

INSTANCE KEY: me3
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
me3  5es   me3     me3
-------------------------------------------------------------------------------

INSTANCE KEY: me4
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
me4  ewsd  me4     me4
-------------------------------------------------------------------------------

INSTANCE KEY: me5
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
me5  1es   me5     me5
-------------------------------------------------------------------------------

INSTANCE KEY: me6
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
me6  2es   me6     me2
-------------------------------------------------------------------------------

INSTANCE KEY: me7
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
me7  2es   me7     me7
-------------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: me8
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
me8  3es   me8     me4
-----------------------------------------------------------------------------

INSTANCE KEY: me9
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
me9  dmc   me9     me9
-----------------------------------------------------------------------------

INSTANCE KEY: noic
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
none none  none    none
-----------------------------------------------------------------------------

INSTANCE KEY: rsvg
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
rsvg none  rul10   exi10
-----------------------------------------------------------------------------

INSTANCE KEY: sc10
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
sc10 dmc   swc10   swec5
-----------------------------------------------------------------------------

INSTANCE KEY: sc11
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
sc11 dmc   swc11   swc11
-----------------------------------------------------------------------------

INSTANCE KEY: sc12
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
sc12 1es   swec3   swec2
2es2 2es   swe64   swe64
-----------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: sc13
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
sw14 dmc   swc14   swc14
-------------------------------------------------------------------------------

INSTANCE KEY: seck
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
5esa 5es   swc25   swec4    13       g
5esk 5es   swc25   swec4    13       k
-------------------------------------------------------------------------------

INSTANCE KEY: secl
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
secl 5es   swccl   swccl    13       l
se8a 5es   swc24   swec6    13       g
se8k 5es   swc24   swec6    13       k
-------------------------------------------------------------------------------

INSTANCE KEY: set1
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
set  none  rul10   exi10
-------------------------------------------------------------------------------

INSTANCE KEY: se10
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
dmc6 dmc   sweph   sweq5                       3frm
seph 5es   sweph   sweph
sw10 dmc   swe17   swe17                       2frm
-------------------------------------------------------------------------------

INSTANCE KEY: se11
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
dmc9 dmc   swe14   swe17
-------------------------------------------------------------------------------

INSTANCE KEY: se12
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
dm10 dmc   swe19   swe15
-------------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: se20
******************************************************************************
dlct type rule_id exidrl position character ic_generic
dcor dco   swe44   swe44
dmc8 dmc   swe44   swe44
dml1 dmx   swe20   swe20
------------------------------------------------------------------------------

INSTANCE KEY: se21
******************************************************************************
dlct type rule_id exidrl position character ic_generic
dmc9 dmc   swc15   swec5
dmle dmx   swe21   swe21    11       1
dmsl dmx   swe22   swe22    11       s
------------------------------------------------------------------------------

INSTANCE KEY: se22
******************************************************************************
dlct type rule_id exidrl position character ic_generic
dml2 dmx   swe23   swe23
dm10 dmc   swc16   swc11
------------------------------------------------------------------------------

INSTANCE KEY: se23
******************************************************************************
dlct type rule_id exidrl position character ic_generic
dl71 dmx   swe24   swe21    9        3
dmpe dmx   swe24   swe21    9        2
------------------------------------------------------------------------------
INSTANCE KEY: se25
******************************************************************************
dlct type rule_id exidrl position character ic_generic
dmc6 dmc   swcph   swc13
dxle dmx   swe26   swe26
seph 5es   swcph   sweph
------------------------------------------------------------------------------

INSTANCE KEY: se27
******************************************************************************
dlct type rule_id exidrl position character ic_generic
dxpe dmx   swe28   swe26
------------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

INSTANCE KEY: se34

dlct	type	rule_id	exidrl	position	character	ic_generic
dml2	dmx	swe36	swe36			
5dn3	5es	swea3	swea3	14	a	

INSTANCE KEY: se35

dlct	type	rule_id	exidrl	position	character	ic_generic
dmpe	dmx	swe37	swe34	12	e	
d10u	dmx	swe38	swe35	12	s	
secl	5es	swecl	swecl	12	l	
se8a	5es	swe76	sweq6	12	g	
se8k	5es	swe76	sweq6	12	k	

INSTANCE KEY: se36

dlct	type	rule_id	exidrl	position	character	ic_generic
5esa	5es	swe77	swe12	14	g	
5esk	5es	swe77	swe12	14	k	

INSTANCE KEY: se45

dlct	type	rule_id	exidrl	position	character	ic_generic
dcr1	dco	swe45	swe45			
d10u	dmx	swe71	swe21			

INSTANCE KEY: se46

dlct	type	rule_id	exidrl	position	character	ic_generic
dcr1	dco	swe47	swe47			

INSTANCE KEY: se50

dlct	type	rule_id	exidrl	position	character	ic_generic
ewdd	ewsd	swe50	swe50	10	5	
ewdd	ewsd	swe50	swe50	10	6	
ewdd	ewsd	swe50	swe50	10	7	
ewsd	ewsd	swe50	swe50	10	0	
ewsd	ewsd	swe50	swe50	10	1	
ewsd	ewsd	swe50	swe50	10	2	

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: se51
*************************************************************************************
dlct type rule_id exidrl position character ic_generic
ews1 ewsd  swe51   swe51
-------------------------------------------------------------------------------------
INSTANCE KEY: se52
*************************************************************************************
dlct type rule_id exidrl position character ic_generic
ewdd ewsd  swe52   swe52    7        5
ewdd ewsd  swe52   swe52    7        6
ewdd ewsd  swe52   swe52    7        7
ewsd ewsd  swe52   swe52    7        0
ewsd ewsd  swe52   swe52    7        1
ewsd ewsd  swe52   swe52    7        2

INSTANCE KEY: se53
*************************************************************************************
dlct type rule_id exidrl position character ic_generic
ews1 ewsd  swe53   swe53
-------------------------------------------------------------------------------------

INSTANCE KEY: se60
*************************************************************************************
dlct type rule_id exidrl position character ic_generic
2es3 2es   swe60   swe60
-------------------------------------------------------------------------------------

INSTANCE KEY: se61
*************************************************************************************
dlct type rule_id exidrl position character ic_generic
dxle dmx   swe30   swe30
2es3 2es   swe61   swe61
-------------------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

INSTANCE KEY: sfg

dlct	type	rule_id	exidrl	position	character	ic_generic
sfg	5es	rul25	exi25			
sfg	1es	rul25	exi25			
sfg	dmx	rul25	exi25			
sfg	dmc	rul25	exi25			
sfg	axe	rul25	exi25			
sfg	ewsd	rul24	exi25			
sfg	dco	rul25	exi25			
sfg	2es	rul25	exi25			
sfg	3es	rul25	exi25			

INSTANCE KEY: spca

dlct	type	rule_id	exidrl	position	character	ic_generic
1es	1es	spca	exir3			

INSTANCE KEY: spc1

dlct	type	rule_id	exidrl	position	character	ic_generic
spc1	none	rul10	exi10			

INSTANCE KEY: spc2

dlct	type	rule_id	exidrl	position	character	ic_generic
rss	1es	spc2	exi38			
2er	2es	spc2	exi71			

INSTANCE KEY: spc3

dlct	type	rule_id	exidrl	position	character	ic_generic
5esp	5es	spc3	exir6			

INSTANCE KEY: spc4

dlct	type	rule_id	exidrl	position	character	ic_generic
5esi	5es	spc4	e5ep2	11	i	
5esl	5es	sp4l	e5ep1	11	l	
5esm	5es	spc4	e5ep2	11	m	
5ess	5es	spc4	e5ep2	11	s	

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: spc6
******************************************************************************
dlct type rule_id exidrl position character ic_generic
dms  dmc    spc6    exir4
------------------------------------------------------------------------------
INSTANCE KEY: spc7
******************************************************************************
dlct type rule_id exidrl position character ic_generic
2es  2es    spc7    exi70
3es  3es    spc7    exi70
------------------------------------------------------------------------------

INSTANCE KEY: spc8
******************************************************************************
dlct type rule_id exidrl position character ic_generic
dms2 dmc    spc8    exi36
------------------------------------------------------------------------------

INSTANCE KEY: spc9
******************************************************************************
dlct type rule_id exidrl position character ic_generic
ewsd ewsd   spc9    exi60
------------------------------------------------------------------------------

INSTANCE KEY: sp11
******************************************************************************
dlct type rule_id exidrl position character ic_generic
axe  axe    sp11    exi55
------------------------------------------------------------------------------

INSTANCE KEY: sp12
******************************************************************************
dlct type rule_id exidrl position character ic_generic
dmp1 dmx    sp12    exi51
------------------------------------------------------------------------------

INSTANCE KEY: sp13
******************************************************************************
dlct type rule_id exidrl position character ic_generic
dmpe dmx    sp13    exi50
------------------------------------------------------------------------------

INSTANCE KEY: sp14
******************************************************************************
dlct type rule_id exidrl position character ic_generic
dmle dmx    sp14    exi53
dms3 dmc    sp19    exir4                        3frm
------------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: sp15
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
dml1 dmx    sp15    exi54
dms4 dmc    sp20    exi36                         3frm
-----------------------------------------------------------------------------


INSTANCE KEY: sp16
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
dmsl dmx    sp16    exi52
-----------------------------------------------------------------------------


INSTANCE KEY: sp17
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
dcor dco    sp17    exi66
dmlu dmx    sp18    swe70
-----------------------------------------------------------------------------


INSTANCE KEY: sp18
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
5e91 5es    sp51    e5ep1    11       1
-----------------------------------------------------------------------------


INSTANCE KEY: sp19
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
5esa 5es    sp4h    e5ep3
-----------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: sp20
********************************************************************************
dlct type rule_id exidrl position character ic_generic
5eda 5es   spd2    e5ed1
--------------------------------------------------------------------------------


INSTANCE KEY: sp21
********************************************************************************
dlct type rule_id exidrl position character ic_generic
5esk 5es   sp4i    e5ep4
--------------------------------------------------------------------------------

INSTANCE KEY: sp22
********************************************************************************
dlct type rule_id exidrl position character ic_generic
5ese 5es   sp22    e5e11    15        e
--------------------------------------------------------------------------------

INSTANCE KEY: sp23
********************************************************************************
dlct type rule_id exidrl position character ic_generic
5ese 5es   sp23    e5e11    11        e
--------------------------------------------------------------------------------

INSTANCE KEY: sp24
********************************************************************************
dlct type rule_id exidrl position character ic_generic
5dn0 5es   rspa0   e5ea0    11        a
--------------------------------------------------------------------------------

INSTANCE KEY: swc1
********************************************************************************
dlct type rule_id exidrl position character ic_generic
swc1 1es   swec1   swec7
sw12 dmc   swc12   swc12
2es  2es   swe62   swe62
3es  3es   swe62   swe62
--------------------------------------------------------------------------------


INSTANCE KEY: swc2
********************************************************************************
dlct type rule_id exidrl position character ic_generic
swc2 1es   swec2   swec1
--------------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

INSTANCE KEY: swc3

dlct	type	rule_id	exidrl	position	character	ic_generic
dmc7	dmc	swec8	swc14			
dml3	dmx	swe27	swe27			
swc8	5es	swec8	swec3			

INSTANCE KEY: swc4

dlct	type	rule_id	exidrl	position	character	ic_generic
swc4	1es	swec4	swec9			
sw13	dmc	swc13	swc13			
2es1	2es	swe63	swe63			
3es1	3es	swe63	swe63			

INSTANCE KEY: swc5

dlct	type	rule_id	exidrl	position	character	ic_generic
axe	axe	swe40	swe40			
dco	dco	swe40	swe40			
dmc5	dmc	swec5	swc12			
d41e	dmx	swe25	swe25			
swc5	5es	swec5	swc10			

INSTANCE KEY: swc6

dlct	type	rule_id	exidrl	position	character	ic_generic
axe1	axe	swe41	swe41			
dco1	dco	swe41	swe41			
swc6	5es	swec6	swec6			
5dn2	5es	swec6	swec6	13	1	

Table 4A-2. PARSE DIALECT (cont.)

INSTANCE KEY: swc7

dlct	type	rule_id	exidrl	position	character	ic_generic
see1	5es	swe73	swec6	13	e	
se91	5es	swe73	swec6	13	l	default
swc7	5es	swec7	swec4	13	i	
swc7	5es	swec7	swec4	13	l	5e7
swc7	5es	swec7	swec4	13	s	
swc7	5es	swec7	swec4	13	m	
swc7	5es	swec7	swec4	13	l	5e8
swc7	5es	swec7	swec4	13	l	5e9.1
swc7	5es	swec7	swec4	13	l	5e6
5esg	5es	swec7	swec4	13	g	

INSTANCE KEY: swc8

dlct	type	rule_id	exidrl	position	character	ic_generic
se4l	5es	swe75	sweca	13	l	

INSTANCE KEY: swc9

dlct	type	rule_id	exidrl	position	character	ic_generic
swc9	dmc	swec9	swc16			

INSTANCE KEY: swea

dlct	type	rule_id	exidrl	position	character	ic_generic
se4l	5es	swe74	sweq4			

INSTANCE KEY: swe1

dlct	type	rule_id	exidrl	position	character	ic_generic
dxpe	dmx	swe33	swe30			
swe1	1es	sweq1	sweq1			

INSTANCE KEY: swe2

dlct	type	rule_id	exidrl	position	character	ic_generic
dmc7	dmc	sweq3	swe11			3frm
se11	5es	sweq3	sweq3			
se12	dmc	swe15	swe15			2frm
swe2	1es	sweq2	sweq2			
2es2	2es	swe67	swe67			

Table 4A-2. PARSE DIALECT (cont.)

INSTANCE KEY: swe3

dlct	type	rule_id	exidrl	position	character	ic_generic
d171	dmx	swe37	swe35			
see1	5es	swe72	sweq6	13	e	
se3i	5es	swe12	swe12	13	i	
se31	5es	sweq4	sweq4	13	1	5e7
se31	5es	sweq4	sweq4	13	1	5e8
se31	5es	sweq4	sweq4	13	1	5e9.1
se31	5es	sweq4	sweq4	13	1	5e6
se3s	5es	swe12	swe12	13	s	
se91	5es	swe72	sweq6	13	1	default
5esg	5es	swe12	swe12	13	g	
5esm	5es	swe12	swe12	13	m	

INSTANCE KEY: swe4

dlct	type	rule_id	exidrl	position	character	ic_generic
swe4	dmc	sweq5	sweq5			
3es1	3es	swe68	swe68			

INSTANCE KEY: swe5

dlct	type	rule_id	exidrl	position	character	ic_generic
none	none	none	none			
se13	dmc	sweq8	sweq8			
swe5	1es	sweq7	sweq7			
2es	2es	swe65	swe65			
3es	3es	swe65	swe65			

INSTANCE KEY: swe6

dlct	type	rule_id	exidrl	position	character	ic_generic
axe	axe	swe42	swe42			
dco	dco	swe42	swe42			
dmc5	dmc	swe42	sweq8			3frm
d41e	dmx	swe29	swe29			
se14	dmc	swe16	swe16			2frm
se18	5es	swe18	swe18			
swe6	1es	sweq9	sweq9			
2es1	2es	swe66	swe66			

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: swe7
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
dcor dco   swe46   swe46
dmc3 dmc   swe69   swe69    9          l
dmc3 dmc   swe69   swe69    9          r
dmc8 dmc   swe46   swe16
dml1 dmx   swe32   swe32
-------------------------------------------------------------------------------

INSTANCE KEY: swe8
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
dmle dmx   swe34   swe34    7          l
dmsl dmx   swe35   swe35    7          s
dxpe dmx   swe33   swe30    6          p
-------------------------------------------------------------------------------

INSTANCE KEY: swe9
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
swe9 dmc   swe11   swe11
-------------------------------------------------------------------------------

INSTANCE KEY: s313
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
dml3 dmx   swe31   swe31
-------------------------------------------------------------------------------

INSTANCE KEY: tn1
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
tn   none  tn1     exir9
-------------------------------------------------------------------------------

INSTANCE KEY: tn2
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
tn   none  tn2     exir9
-------------------------------------------------------------------------------

INSTANCE KEY: tn3
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
tn   none  tn3     exir9
-------------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: tn4
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
tn   none  tn4    exir9
-------------------------------------------------------------------------------

INSTANCE KEY: tre
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
tre  none  tre     tre
-------------------------------------------------------------------------------

INSTANCE KEY: tre1
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
tul  none  tre1    tre1
-------------------------------------------------------------------------------

INSTANCE KEY: tre2
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
tul  none  tre2    tre1
-------------------------------------------------------------------------------

INSTANCE KEY: tre3
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
tul  none  tre3    tre1
-------------------------------------------------------------------------------

INSTANCE KEY: tre4
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
ru   none  tre4    exir7
-------------------------------------------------------------------------------

INSTANCE KEY: tre5
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
ru   none  tre5    exir7
-------------------------------------------------------------------------------

INSTANCE KEY: tre6
*******************************************************************************
dlct type rule_id exidrl position character ic_generic
tul  none  tre6    tre1
-------------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: tre7
**************************************************************************
dlct type rule_id exidrl position character ic_generic
tu1  none  tre7    tre1
--------------------------------------------------------------------------

INSTANCE KEY: tre8
**************************************************************************
dlct type rule_id exidrl position character ic_generic
tu1  none  tre8    tre1
--------------------------------------------------------------------------

INSTANCE KEY: tre9
**************************************************************************
dlct type rule_id exidrl position character ic_generic
ru2  none  tre9    exir7
--------------------------------------------------------------------------

INSTANCE KEY: tr10
**************************************************************************
dlct type rule_id exidrl position character ic_generic
tr10 none  tr10    exir7
--------------------------------------------------------------------------

INSTANCE KEY: tr11
**************************************************************************
dlct type rule_id exidrl position character ic_generic
tr11 none  tr11    tr11
--------------------------------------------------------------------------

INSTANCE KEY: tr12
**************************************************************************
dlct type rule_id exidrl position character ic_generic
tr12 none  tr12    tre1
--------------------------------------------------------------------------

INSTANCE KEY: tr20
**************************************************************************
dlct type rule_id exidrl position character ic_generic
tr20 none  tr20    exir7
--------------------------------------------------------------------------

INSTANCE KEY: tr21
**************************************************************************
dlct type rule_id exidrl position character ic_generic
tr21 none  tr21    exir7
--------------------------------------------------------------------------
```

Table 4A-2. PARSE DIALECT (cont.)

```
INSTANCE KEY: tr22
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
tr22 none  tre4    exir7
-----------------------------------------------------------------------------

INSTANCE KEY: tr23
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
tr23 none  tr23    exir7
-----------------------------------------------------------------------------

INSTANCE KEY: tr24
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
tr24 none  tr21    exir7
-----------------------------------------------------------------------------

INSTANCE KEY: tr25
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
tr25 none  tr25    exir7
-----------------------------------------------------------------------------

INSTANCE KEY: tr26
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
tr26 none  tr26    tre1
-----------------------------------------------------------------------------

INSTANCE KEY: tr30
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
tr22 none  tr30    exir7
-----------------------------------------------------------------------------

INSTANCE KEY: utre
*****************************************************************************
dlct type rule_id exidrl position character ic_generic
utre none  rul10    exi10
-----------------------------------------------------------------------------
```

Table 4A-3. PARSE RULES (RULES)

INSTANCE KEY: rule

****

rulid	lineno	rule
bl10	01	tre_name@1@!1unit@5@!
bl11	01	tre_name@3@!1unit@5@!
bl12	01	tre_name@4@!1unit@5@!
bl13	01	tre_name@8@!1unit@5@!
bw1	01	bw_id@12@!
ccp1	01	cc_id@:@!1hier_level_id@.-@(0)!
ccp2	01	cc_id@:@!1hier_level_id@.-@(0)!
ccp2	02	1hier_level_id@.-@(1)!
ccp3	01	cc_id@:@!1hier_level_id@.-@(0)!
ccp3	02	1hier_level_id@.-@(1)!1hier_level_id@.-@(2)!
ccp4	01	cc_id@:@!1hier_level_id@.-@(0)!
ccp4	02	1hier_level_id@.-@(1)!1hier_level_id@.-@(2)!1
ccp4	03	hier_level_id@.-@(3)!
cc1	01	cc_id@:@!
chn1	01	cr_id@:@!1hier_level_id@.-@(0)!
chn2	01	cr_id@:@!1hier_level_id@.-@(0)!
chn2	02	1hier_level_id@.-@(1)!
chn3	01	cr_id@:@!1hier_level_id@.-@(0)!
chn3	02	1hier_level_id@.-@(1)!1hier_level_id@.-@(2)!
chn4	01	cr_id@:@!1hier_level_id@.-@(0)!
chn4	02	1hier_level_id@.-@(1)!1hier_level_id@.-@(2)!
chn4	03	1hier_level_id@.-@(3)!
chn5	01	cr_id@:@!1hier_level_id@.-@(0)!
chn5	02	1hier_level_id@.-@(1)!1hier_level_id@.-@(2)!
chn5	03	1hier_level_id@.-@(3)!1hier_level_id@.-@(4)!
chn6	01	cr_id@:@!1hier_level_id@.-@(0)!
chn6	02	1hier_level_id@.-@(1)!1hier_level_id@.-@(2)!
chn6	03	1hier_level_id@.-@(3)!1hier_level_id@.-@(4)!
chn6	04	1hier_level_id@.-@(5)!
chn7	01	cr_id@:@!
crv1	01	cc_id@:@!1vig@.-@!1
crv1	02	hier_level_id@.-@(0)!
crv2	01	ic_num@1@!rmt_unit@1@!
crv2	02	hier_level_id@3@(0)!1hier_level_id@1@(1)!1
crv2	03	hier_level_id@2@(2)!hier_level_id@2@(3)!
crv3	01	ic_num@1@!rmt_unit@1@!
crv3	02	hier_level_id@2@(0)!1hier_level_id@1@(1)!1
crv3	03	hier_level_id@2@(2)!hier_level_id@2@(3)!
crv4	01	ic_type@3@!1ic_num@1@!1rmt_unit@1@!1
crv4	02	hier_level_id@3@(0)!1hier_level_id@1@(1)!1
crv4	03	hier_level_id@2@(2)!hier_level_id@2@(3)!
crv5	01	ic_type@3@!1ic_num@1@!1rmt_unit@1@!1
crv5	02	hier_level_id@2@(0)!1hier_level_id@1@(1)!1
crv5	03	hier_level_id@2@(2)!hier_level_id@2@(3)!

Table 4A-3. PARSE RULES (RULES)

```
INSTANCE KEY: rule
*****************************************************************************
rulid lineno rule
ds1a    01    ic_num@1@!hier_level_id@3@(0)!$1$hier_level_id@2@(1)!
ds1b    01    ic_type@3@!$1$ic_num@1@!$1$
ds1b    02    hier_level_id@3@(0)!hier_ind@2@!$1$
ds1b    03    hier_level_id@2@(1)!
ds1c    01    ic_num@1@!rmt_unit@1@!hier_level_id@3@(0)!$1$
ds1c    02    hier_level_id@2@(1)!
ds1d    01    ic_type@3@!$1$ic_num@1@!$1$rmt_unit@1@!$1$
ds1d    02    hier_level_id@3@(0)!hier_ind@2@!$1$
ds1d    03    hier_level_id@2@(1)!
ds1e    01    ic_num@1@!hier_level_id@3@(0)!$1$
ds1e    02    hier_level_id@2@(1)!hier_ind@1@!
ds1f    01    ic_num@1@!rmt_unit@1@!hier_level_id@3@(0)!$1$
ds1f    02    hier_level_id@2@(1)!hier_ind@1@!
ds1g    01    ic_type@3@!$1$ic_num@1@!$1$rmt_unit@1@!$1$
ds1g    02    hier_level_id@3@(0)!hier_ind@3@!$1$
ds1g    03    hier_level_id@2@(1)!
ds1h    01    ic_num@1@!hier_level_id@3@(0)!$1$hier_level_id@2@(1)!$1$
ds1h    02    hier_level_id@1@(2)!
ds1i    01    ic_type@3@!$1$ic_num@1@!$1$hier_level_id@3@(0)!$1$
ds1i    02    hier_level_id@2@(1)!$1$hier_level_id@1@(2)!
lprt    01    hier_cat@3@!tre_name@6@!$1$unit@1@!
ltg1    01    ic_type@3@!$1$ic_num@1@!$1$group@8@!
ltid1   01    ic_type@3@!$1$ic_num@1@!$1$group@1@!$1$number@4@!
ltid2   01    ic_type@3@!$1$ic_num@1@!$1$group@2@!$1$number@4@!
ltid3   01    ic_type@3@!$1$ic_num@1@!$1$group@3@!$1$number@4@!
ltid4   01    ic_type@3@!$1$ic_num@1@!$1$group@4@!$1$number@4@!
ltid5   01    ic_type@3@!$1$ic_num@1@!$1$group@5@!$1$number@4@!
ltid6   01    ic_type@3@!$1$ic_num@1@!$1$group@6@!$1$number@4@!
ltid7   01    ic_type@3@!$1$ic_num@1@!$1$group@7@!$1$number@4@!
ltid8   01    ic_type@3@!$1$ic_num@1@!$1$group@8@!$1$number@4@!
me1     01    ic_num@1@!hier_level_id@2@(0)!$1$hier_level_id@2@(1)!$1$
me1     02    hier_level_id@2@(2)!
me10    01    ic_num@1@!hier_level_id@2@(0)!$1$hier_level_id@1@(1)!
me11    01    ic_num@1@!hier_level_id@3@(0)!$1$hier_level_id@1@(1)!
me12    01    tmod_type@3@!$1$ic_num@1@!hier_level_id@1@(0)!$1$
me12    02    hier_level_id@1@(1)!$1$hier_level_id@1@(2)!$1$
me12    03    hier_level_id@1@(3)!
me13    01    tmod_type@3@!$1$ic_num@1@!hier_level_id@2@(0)!$1$
me13    02    hier_level_id@1@(1)!$1$hier_level_id@1@(2)!$1$
me13    03    hier_level_id@1@(3)!
me14    01    tmod_type@3@!$1$ic_num@1@!hier_level_id@3@(0)!$1$
me14    02    hier_level_id@1@(1)!$1$hier_level_id@1@(2)!$1$
me14    03    hier_level_id@1@(3)!
```

Table 4A-3. PARSE RULES (RULES)

INSTANCE KEY: rule

****

rulid	lineno	rule
me15	01	tmod_type@3@!1ic_num@1@!hier_level_id@4@(0)!1
me15	02	hier_level_id@1@(1)!1hier_level_id@1@(2)!1
me15	03	hier_level_id@1@(3)!
me16	01	tmod_type@3@!1ic_num@1@!hier_level_id@1@(0)!1
me16	02	hier_level_id@2@(1)!1hier_level_id@1@(2)!1
me16	03	hier_level_id@1@(3)!
me17	01	tmod_type@3@!1ic_num@1@!hier_level_id@2@(0)!1
me17	02	hier_level_id@2@(1)!1hier_level_id@1@(2)!1
me17	03	hier_level_id@1@(3)!
me18	01	tmod_type@3@!1ic_num@1@!hier_level_id@3@(0)!1
me18	02	hier_level_id@2@(1)!1hier_level_id@1@(2)!1
me18	03	hier_level_id@1@(3)!
me19	01	tmod_type@3@!1ic_num@1@!hier_level_id@4@(0)!1
me19	02	hier_level_id@2@(1)!1hier_level_id@1@(2)!1
me19	03	hier_level_id@1@(3)!
me2	01	ic_num@1@!hier_level_id@2@(0)!1hier_level_id@2@(1)!
me2	02	hier_level_id@2@(2)!
me20	01	ic_num@1@!hier_level_id@1@(0)!1
me20	02	hier_level_id@3@(1)!1hier_level_id@1@(2)!
me21	01	ic_num@1@!frm_type@1@!1hier_level_id@2@(0)!1
me21	02	hier_level_id@3@(1)!
me23	01	ic_num@1@!hier_level_id@2@(0)!hier_level_id@2@(1)!
me23	02	hier_level_id@2@(2)!
me3	01	ic_num@1@!hier_level_id@3@(0)!1hier_level_id@1@(1)!1
me3	02	hier_level_id@1@(2)!1hier_level_id@2@(3)!1
me3	03	hier_level_id@2@(4)!
me4	01	ic_num@1@!hier_level_id@4@(0)!1hier_level_id@1@(1)!1
me4	02	hier_level_id@1@(2)!1hier_level_id@1@(3)!
me5	01	ic_num@1@!hier_level_id@3@(0)!1hier_level_id@2@(1)!1
me5	02	hier_level_id@2@(2)!
me6	01	ic_num@1@!hier_level_id@3@(0)!1hier_level_id@2@(1)!
me6	02	hier_level_id@2@(2)!
me7	01	ic_num@1@!hier_level_id@1@(0)!hier_level_id@1@(1)!
me7	02	hier_level_id@1@(2)!hier_level_id@1@(3)!1
me7	03	hier_level_id@1@(4)!hier_level_id@1@(5)!
me8	01	ic_num@1@!hier_level_id@1@(0)!1hier_level_id@3@(1)!1
me8	02	hier_level_id@1@(2)!1hier_level_id@1@(3)!
me9	01	ic_num@1@!hier_level_id@1@(0)!1hier_level_id@1@(1)!
rew01	01	ic_type@4@!1ic_num@1@!1rmt_unit@1@!
rew02	01	ic_type@4@!1ic_num@1@!1rmt_unit@2@!
rew12	01	ic_type@4@!1ic_num@1@!1load_div@2@!
rew14	01	ic_type@4@!1ic_num@1@!1load_div@4@!
rew41	01	ic_type@4@!1ic_num@1@!

Table 4A-3. PARSE RULES (RULES)

```
INSTANCE KEY: rule
*****************************************************************************
rulid lineno rule
rice1   01    ic_num@1@!hier_level_id@3@(0)!$1$hier_level_id@2@(1)!
rice1   02    $1$hier_level_id@3@(2)!
rice2   01    ic_num@1@!group@3@!$1$
rice2   02    hier_level_id@3@(0)!$1$hier_level_id@2@(1)!
rice2   03    $1$hier_level_id@3@(2)!
rice3   01    ic_num@1@!group@5@!$1$
rice3   02    hier_level_id@3@(0)!$1$hier_level_id@2@(1)!
rice3   03    $1$hier_level_id@3@(2)!
rice4   01    ic_type@3@!$1$ic_num@1@!$1$hier_level_id@3@(0)!
rice4   02    $1$hier_level_id@2@(1)!$1$hier_level_id@3@(2)!
rice5   01    ic_type@3@!$1$ic_num@1@!$1$group@3@!$1$hier_level_id@3@(0)!
rice5   02    $1$hier_level_id@2@(1)!$1$hier_level_id@3@(2)!
rice6   01    ic_type@3@!$1$ic_num@1@!$1$group@5@!$1$hier_level_id@3@(0)!
rice6   02    $1$hier_level_id@2@(1)!$1$hier_level_id@3@(2)!
rspa0   01    ic_type@3@!$1$ic_num@1@!$1$hier_level_id@3@(0)!$1$hier_ind@1@!
rspa0   02    hier_level_id@1@(1)!$1$hier_level_id@2@(2)!$1$
rspa0   03    hier_level_id@4@(3)!
rulca   01    ic_num@1@!rmt_unit@1@!hier_level_id@3@(0)!$1$
rulca   02    hier_level_id@1@(1)!$1$hier_level_id@2@(2)!$1$
rulca   03    hier_level_id@2@(3)!
rulcb   01    ic_type@3@!$1$ic_num@1@!$1$
rulcb   02    rmt_unit@1@!$1$hier_level_id@3@(0)!
rulcb   03    $1$hier_level_id@1@(1)!$1$
rulcb   04    hier_level_id@2@(2)!$1$hier_level_id@2@(3)!
rule1   01    hier_level_id@1@(0)!ic_num@1@!hier_level_id@3@(1)!$1$
rule1   02    hier_level_id@1@(2)!hier_level_id@1@(3)!hier_level_id@1@(4)!$1$
rule1   03    hier_level_id@1@(5)!hier_level_id@1@(6)!
rule2   01    hier_level_id@1@(0)!ic_num@1@!hier_level_id@3@(1)!$1$
rule2   02    hier_level_id@1@(2)!hier_level_id@2@(3)!$1$hier_level_id@2@(4)!
rule3   01    ic_num@1@!hier_level_id@2@(0)!$1$hier_level_id@1@(1)!
rule3   02    hier_level_id@1@(2)!hier_level_id@1@(3)!$1$
rule3   03    hier_level_id@1@(4)!hier_level_id@2@(5)!
rule4   01    ic_num@1@!hier_level_id@2@(0)!$1$hier_level_id@1@(1)!
rule4   02    $1$hier_level_id@2@(2)!$1$hier_level_id@2@(3)!
rule6   01    ic_num@1@!hier_level_id@3@(0)!$1$hier_level_id@1@(1)!$1$
rule6   02    hier_level_id@2@(2)!$1$hier_level_id@3@(3)!
rule7   01    rly_rack@8@!$1$unit@4@!
rule8   01    npa@3@!$1$nxx@3@!$1$line@4@!
rule9   01    nxx@3@!$1$line@4@!
rul10   01    exidval@50@!
rul11   01    ic_type@3@!$1$ic_num@2@!
rul12   01    clli#location@8@!clli#ctl_grp@3@!
rul14   01    cable@10@!
rul21   01    clli#location@8@!$1$rly_rack@8@!$1$unit@3@!
rul22   01    unit@6@!
```

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Table 4A-3. PARSE RULES (RULES)

```
INSTANCE KEY: rule
***************************************************************************
rulid lineno rule
rul23   01   rly_rack@9@!$1$unit@3@!
rul24   01   ic_type@4@!$1$ic_num@1@!$1$group_id@18@!
rul25   01   ic_type@3@!$1$ic_num@1@!$1$group_id@18@!
rul30   01   ic_num@1@!hier_level_id@3@(0)!$1$
rul30   02   hier_level_id@2@(1)!$1$hier_level_id@2@(2)!
rul33   01   clli#location@8@!frm_nam@3@!
rul34   01   frm_nam@3@!
rul35   01   exidval@50@!
rul36   01   ic_num@1@!rmt_unit@1@!hier_level_id@2@(0)!$1$
rul36   02   hier_level_id@1@(1)!$1$hier_level_id@2@(2)!$1$
rul36   03   hier_level_id@2@(3)!
rul37   01   ic_num@1@!hier_level_id@3@(0)!$1$hier_level_id@1@(1)!
rul37   02   $1$hier_level_id@2@(2)!$1$hier_level_id@2@(3)!
rul38   01   ic_num@1@!hier_level_id@2@(0)!hier_level_id@1@(1)!$1$
rul38   02   hier_level_id@1@(2)!$1$hier_level_id@2@(3)!
rul38   03   hier_level_id@1@(4)!hier_level_id@1@(5)!
rul39   01   ic_type@3@!$1$ic_num@1@!$1$rmt_unit@2@!
rul40   01   ic_type@3@!$1$ic_num@1@!$1$rmt_unit@1@!
rul41   01   ic_type@3@!$1$ic_num@1@!$1$load_div@4@!
rul42   01   ic_type@3@!$1$ic_num@1@!$1$load_div@2@!
rul43   01   ic_num@1@!rmt_unit@1@!hier_level_id@3@(0)!$1$hier_level_id@1@(1)
rul43   02   !$1$hier_level_id@2@(2)!$1$hier_level_id@2@(3)!
rul44   01   rly_rack@5@!$1$unit@4@!
rul45   01   rly_rack@6@!$1$unit@4@!
rul46   01   rly_rack@7@!$1$unit@4@!
rul47   01   tre_name@2@!$1$unit@5@!
rul50   01   ic_num@1@!hier_level_id@2@(0)!$1$
rul50   02   hier_level_id@1@(1)!$1$hier_level_id@2@(2)!$1$
rul50   03   hier_level_id@1@(3)!
rul51   01   ic_num@1@!rmt_unit@1@!hier_level_id@2@(0)!$1$
rul51   02   hier_level_id@1@(1)!$1$hier_level_id@2@(2)!$1$
rul51   03   hier_level_id@1@(3)!
rul52   01   ic_num@1@!rmt_unit@1@!hier_level_id@2@(0)!$1$
rul52   02   hier_level_id@1@(1)!$1$hier_level_id@2@(2)!
rul53   01   ic_num@1@!hier_level_id@2@(0)!$1$
rul53   02   hier_level_id@1@(1)!$1$hier_level_id@2@(2)!$1$
rul53   03   hier_level_id@2@(3)!
rul54   01   ic_num@1@!rmt_unit@1@!hier_level_id@2@(0)!$1$
rul54   02   hier_level_id@1@(1)!$1$hier_level_id@2@(2)!$1$
rul54   03   hier_level_id@2@(3)!
rul55   01   ic_num@1@!hier_level_id@3@(0)!$1$
rul55   02   hier_level_id@2@(1)!$1$hier_level_id@3@(2)!
rul61   01   ic_num@1@!hier_level_id@4@(0)!$1$hier_level_id@1@(1)!$1$
rul61   02   hier_level_id@2@(2)!$1$hier_level_id@2@(3)!
```

Table 4A-3. PARSE RULES (RULES)

```
INSTANCE KEY: rule
*******************************************************************************
rulid lineno rule
rul66   01   ic_num@1@!rmt_unit@1@!hier_level_id@3@(0)!$1$
rul66   02   hier_level_id@2@(1)!$1$hier_level_id@2@(2)!
rul70   01   ic_num@1@!hier_level_id@2@(0)!$1$
rul70   02   hier_level_id@1@(1)!hier_level_id@1@(2)!
rul70   03   hier_level_id@1@(3)!hier_level_id@1@(4)!
rul71   01   ic_num@1@!hier_level_id@2@(0)!
rul71   02   hier_level_id@1@(1)!$1$hier_level_id@1@(2)!$1$
rul71   03   hier_level_id@2@(3)!hier_level_id@1@(4)!hier_level_id@1@(5)!
rul80   01   ic_num@1@!hier_level_id@4@(0)!$1$hier_level_id@1@(1)!$1$
rul80   02   hier_level_id@1@(2)!
rul81   01   ic_type@4@!$1$ic_num@1@!$1$hier_level_id@4@(0)!
rul81   02   hier_level_id@1@(1)!$1$hier_level_id@1@(2)!
rul82   01   ic_num@1@!hier_level_id@5@(0)!$1$hier_level_id@1@(1)!$1$
rul82   02   hier_level_id@2@(2)!$1$hier_level_id@2@(3)!
rul83   01   ic_type@3@!$1$ic_num@1@!$1$hier_level_id@5@(0)!$1$
rul83   02   hier_level_id@1@(1)!$1$hier_level_id@2@(2)!$1$
rul83   03   hier_level_id@2@(3)!
rul84   01   ic_num@1@!hier_level_id@4@(0)!$1$
rul84   02   hier_level_id@1@(1)!$1$hier_level_id@2@(2)!
rul84   03   hier_level_id@2@(3)!
rul85   01   ic_type@4@!$1$ic_num@1@!$1$
rul85   02   hier_level_id@4@(0)!
rul85   03   hier_level_id@1@(1)!$1$hier_level_id@2@(2)!
rul85   04   hier_level_id@2@(3)!
rul86   01   ic_num@1@!hier_level_id@1@(0)!$1$
rul86   02   hier_level_id@2@(1)!$1$hier_level_id@1@(2)!
rul87   01   ic_type@4@!$1$ic_num@1@!$1$hier_level_id@1@(0)!$1$
rul87   02   hier_level_id@2@(1)!$1$hier_level_id@1@(2)!
r3122   01   hier_level_id@3@(0)!$1$hier_level_id@1@(1)!$1$
r3122   02   hier_level_id@2@(2)!$1$hier_level_id@2@(3)!
r34     01   hier_level_id@3@(0)!$1$hier_level_id@4@(1)!
r412    01   hier_level_id@4@(0)!$1$hier_level_id@1@(1)!$1$
r412    02   hier_level_id@2@(2)!
r4122   01   hier_level_id@4@(0)!$1$hier_level_id@1@(1)!$1$
r4122   02   hier_level_id@2@(2)!$1$hier_level_id@2@(3)!
r414    01   hier_level_id@4@(0)!$1$hier_level_id@1@(1)!$1$
r414    02   hier_level_id@4@(2)!
r422    01   ic_num@1@!hier_level_id@3@(0)!$1$
r422    02   hier_level_id@2@(1)!$1$hier_level_id@2@(2)!
r423    01   hier_level_id@4@(0)!$1$hier_level_id@2@(1)!$1$
r423    02   hier_level_id@3@(2)!
r5ea0   01   ic_num@1@!hier_level_id@3@(0)!$1$hier_level_id@1@(1)!$1$
r5ea0   02   hier_level_id@2@(2)!$1$hier_level_id@4@(3)!hier_ind@1@!
r5ed1   01   ic_num@1@!hier_level_id@3@(0)!$1$hier_level_id@1@(1)!$1$
r5ed1   02   hier_level_id@2@(2)!hier_ind@1@!
```

Table 4A-3. PARSE RULES (RULES)

INSTANCE KEY: rule

****

rulid	lineno	rule
r5ed2	01	ic_num@1@!hier_level_id@3@(0)!1hier_level_id@2@(1)!1
r5ed2	02	hier_level_id@2@(2)!hier_ind@1@!
r5ep1	01	ic_num@1@!hier_level_id@3@(0)!1
r5ep1	02	hier_level_id@1@(1)!hier_level_id@1@(2)!hier_level_id@1@(3)!1
r5ep1	03	hier_level_id@1@(4)!hier_level_id@1@(5)!
r5ep1	04	hier_ind@1@!
r5ep2	01	ic_num@1@!hier_level_id@3@(0)!1
r5ep2	02	hier_level_id@1@(1)!hier_level_id@2@(2)!1hier_level_id@2@(3)!
r5ep2	03	hier_ind@1@!
r5ep3	01	ic_num@1@!hier_level_id@3@(0)!1
r5ep3	02	hier_level_id@1@(1)!hier_level_id@2@(2)!1hier_level_id@4@(3)!
r5ep3	03	hier_ind@1@!
r5ep4	01	ic_num@1@!hier_level_id@3@(0)!1
r5ep4	02	hier_level_id@3@(1)!hier_level_id@1@(2)!hier_level_id@1@(3)!1
r5ep4	03	hier_level_id@1@(4)!hier_level_id@1@(5)!
r5ep4	04	hier_ind@1@!
r5ep5	01	ic_num@1@!hier_level_id@3@(0)!1
r5ep5	02	hier_level_id@2@(1)!hier_level_id@2@(2)!1hier_level_id@4@(3)!
r5ep5	03	hier_ind@1@!
r5ep6	01	ic_num@1@!hier_level_id@3@(0)!1
r5ep6	02	hier_level_id@2@(1)!hier_level_id@2@(2)!1
r5ep6	03	hier_level_id@1@(3)!hier_level_id@2@(4)!hier_ind@1@!
r5122	01	hier_level_id@5@(0)!1hier_level_id@1@(1)!1
r5122	02	hier_level_id@2@(2)!1hier_level_id@2@(3)!
r514	01	hier_level_id@5@(0)!1hier_level_id@1@(1)!1
r514	02	hier_level_id@4@(2)!
slt1	01	cc_id@:@!1hier_level_id@.-@(0)!
slt2	01	cc_id@:@!1hier_level_id@.-@(0)!
slt2	02	1hier_level_id@.-@(1)!
slt3	01	cc_id@:@!1hier_level_id@.-@(0)!
slt3	02	1hier_level_id@.-@(1)!1hier_level_id@.-@(2)!
spca	01	ic_type@3@!1ic_num@1@!1
spca	02	hier_level_id@2@(0)!1hier_level_id@1@(1)!
spca	03	hier_level_id@1@(2)!hier_level_id@1@(3)!1
spca	04	hier_level_id@1@(4)!hier_level_id@2@(5)!
spc2	01	ic_type@3@!1ic_num@1@!1
spc2	02	hier_level_id@2@(0)!1hier_level_id@1@(1)!1
spc2	03	hier_level_id@1@(2)!1hier_level_id@2@(3)!
spc2	04	hier_level_id@1@(4)!hier_level_id@1@(5)!
spc3	01	ic_type@3@!1ic_num@1@!1
spc3	02	hier_level_id@3@(0)!1hier_level_id@1@(1)!1
spc3	03	hier_level_id@2@(2)!1hier_level_id@3@(3)!
spc4	01	ic_type@3@!1ic_num@1@!1
spc4	02	hier_level_id@3@(0)!1hier_ind@1@!
spc4	03	hier_level_id@1@(1)!hier_level_id@2@(2)!
spc4	04	1hier_level_id@2@(3)!

Table 4A-3. PARSE RULES (RULES)

```
INSTANCE KEY: rule
*******************************************************************************
rulid lineno rule
spc6    01    ic_type@3@!$1$ic_num@1@!$1$
spc6    02    hier_level_id@2@(0)!$1$hier_level_id@1@(1)!$1$
spc6    03    hier_level_id@2@(2)!$1$hier_level_id@2@(3)!
spc7    01    ic_type@3@!$1$ic_num@1@!$1$
spc7    02    hier_level_id@2@(0)!$1$hier_level_id@1@(1)!
spc7    03    hier_level_id@1@(2)!hier_level_id@1@(3)!
spc7    04    hier_level_id@1@(4)!
spc8    01    ic_type@3@!$1$ic_num@1@!$1$
spc8    02    rmt_unit@1@!$1$hier_level_id@2@(0)!
spc8    03    $1$hier_level_id@1@(1)!$1$
spc8    04    hier_level_id@2@(2)!$1$hier_level_id@2@(3)!
spc9    01    ic_type@4@!$1$ic_num@1@!$1$
spc9    02    hier_level_id@4@(0)!hier_level_id@1@(1)!$1$
spc9    03    hier_level_id@2@(2)!$1$hier_level_id@2@(3)!
spd1    01    ic_type@3@!$1$ic_num@1@!$1$hier_level_id@3@(0)!$1$hier_ind@1@!
spd1    02    hier_level_id@1@(1)!$1$hier_level_id@2@(2)!
spd2    01    ic_type@3@!$1$ic_num@1@!$1$hier_level_id@3@(0)!$1$hier_ind@1@!
spd2    02    hier_level_id@2@(1)!$1$hier_level_id@2@(2)!
sp10    01    ic_type@3@!$1$ic_num@1@!$1$
sp10    02    hier_level_id@3@(0)!$1$
sp10    03    hier_level_id@2@(1)!$1$hier_level_id@2@(2)!
sp11    01    ic_type@3@!$1$ic_num@1@!$1$
sp11    02    hier_level_id@3@(0)!$1$
sp11    03    hier_level_id@2@(1)!$1$hier_level_id@3@(2)!
sp12    01    ic_type@3@!$1$ic_num@1@!$1$
sp12    02    rmt_unit@1@!$1$hier_ind@2@!hier_level_id@2@(0)!
sp12    03    $1$hier_level_id@1@(1)!$1$
sp12    04    hier_level_id@2@(2)!$1$hier_level_id@1@(3)!
sp13    01    ic_type@3@!$1$ic_num@1@!$1$
sp13    02    hier_ind@2@!hier_level_id@2@(0)!$1$
sp13    03    hier_level_id@1@(1)!$1$hier_level_id@2@(2)!
sp13    04    $1$hier_level_id@1@(3)!
sp14    01    ic_type@3@!$1$ic_num@1@!$1$
sp14    02    hier_ind@1@!hier_level_id@2@(0)!$1$
sp14    03    hier_level_id@1@(1)!$1$hier_level_id@2@(2)!
sp14    04    $1$hier_level_id@2@(3)!
sp15    01    ic_type@3@!$1$ic_num@1@!$1$
sp15    02    rmt_unit@1@!$1$hier_ind@1@!hier_level_id@2@(0)!
sp15    03    $1$hier_level_id@1@(1)!$1$
sp15    04    hier_level_id@2@(2)!$1$hier_level_id@2@(3)!
sp16    01    ic_type@3@!$1$ic_num@1@!$1$
sp16    02    rmt_unit@1@!$1$hier_ind@1@!hier_level_id@2@(0)!
sp16    03    $1$hier_level_id@1@(1)!$1$
sp16    04    hier_level_id@2@(2)!
```

Table 4A-3. PARSE RULES (RULES)

INSTANCE KEY: rule

rulid	lineno	rule
sp17	01	ic_type@3@!1ic_num@1@!1
sp17	02	rmt_unit@1@!1hier_level_id@3@(0)!
sp17	03	1hier_level_id@2@(1)!1
sp17	04	hier_level_id@2@(2)!
sp18	01	ic_type@3@!1ic_num@1@!1
sp18	02	rmt_unit@1@!1hier_ind@1@!hier_level_id@2@(0)!
sp18	03	1hier_level_id@2@(1)!1
sp18	04	hier_level_id@2@(2)!
sp19	01	ic_type@3@!1ic_num@1@!1hier_level_id@3@(0)!1hier_level_id
sp19	02	@1@(1)!1hier_level_id@2@(2)!1hier_level_id@2@(3)!
sp20	01	ic_type@3@!1ic_num@1@!1rmt_unit@1@!1hier_level_id@3@(0)
sp20	02	!1hier_level_id@1@(1)!1hier_level_id@2@(2)
sp20	03	!1hier_level_id@2@(3)!
sp22	01	ic_num@1@!hier_level_id@3@(0)!1
sp22	02	hier_level_id@3@(1)!1hier_level_id@2@(2)!1
sp22	03	hier_level_id@2@(3)!hier_ind@1@!
sp23	01	ic_type@3@!1ic_num@1@!1
sp23	02	hier_level_id@3@(0)!1hier_ind@1@!
sp23	03	hier_level_id@3@(1)!1hier_level_id@2@(2)!1
sp23	04	hier_level_id@2@(3)!
sp4g	01	ic_type@3@!1ic_num@1@!1
sp4g	02	hier_level_id@3@(0)!1hier_ind@1@!
sp4g	03	hier_level_id@1@(1)!hier_level_id@2@(2)!
sp4g	04	1hier_level_id@4@(3)!
sp4h	01	ic_type@3@!1ic_num@1@!1
sp4h	02	hier_level_id@3@(0)!1hier_ind@1@!
sp4h	03	hier_level_id@2@(1)!hier_level_id@2@(2)!
sp4h	04	1hier_level_id@4@(3)!
sp4i	01	ic_type@3@!1ic_num@1@!1
sp4i	02	hier_level_id@3@(0)!1hier_ind@1@!
sp4i	03	hier_level_id@2@(1)!hier_level_id@2@(2)!
sp4i	04	1hier_level_id@1@(3)!hier_level_id@2@(4)!
sp4l	01	ic_type@3@!1ic_num@1@!1
sp4l	02	hier_level_id@3@(0)!1hier_ind@1@!
sp4l	03	hier_level_id@1@(1)!
sp4l	04	hier_level_id@1@(2)!hier_level_id@1@(3)!
sp4l	05	1hier_level_id@1@(4)!hier_level_id@1@(5)!
sp5l	01	ic_type@3@!1ic_num@1@!1
sp5l	02	hier_level_id@3@(0)!1hier_ind@1@!
sp5l	03	hier_level_id@3@(1)!
sp5l	04	hier_level_id@1@(2)!hier_level_id@1@(3)!
sp5l	05	1hier_level_id@1@(4)!hier_level_id@1@(5)!
sqcl1	01	ic_type@3@!1ic_num@1@!1hier_level@1@!1
sqcl1	02	hier_level_id@3@(0)!1hier_ind@1@!
sqcl1	03	hier_level_id@1@(1)!hier_level_id@1@(2)!hier_level_id@1@(3)!

Table 4A-3. PARSE RULES (RULES)

```
INSTANCE KEY: rule
***************************************************************************
rulid lineno rule
swad     01    ic_type@3@!$1$ic_num@1@!
swad     02    hier_level_id@3@(0)!hier_ind@2@!
swbd     01    ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
swbd     02    hier_level_id@3@(0)!hier_ind@2@!
swccl    01    ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
swccl    02    hier_level_id@3@(0)!$1$hier_ind@1@!hier_level_id@1@(1)!
swccl    03    hier_level_id@1@(2)!
swcd     01    ic_type@3@!$1$ic_num@1@!$1$rmt_unit@1@!$1$hier_level@1@!$1$
swcd     02    hier_level_id@3@(0)!hier_ind@2@!
swcf     01    ic_type@3@!$1$ic_num@1@!$1$rmt_unit@1@!$1$hier_level@1@!$1$
swcf     02    hier_level_id@3@(0)!hier_ind@3@!
swcph    01    ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
swcph    02    hier_level_id@3@(0)!$1$hier_level_id@1@(1)!
swc10    01    ic_type@3@!$1$ic_num@1@!$1$rmt_unit@1@!$1$hier_level@1@!$1$
swc10    02    hier_level_id@2@(0)!$1$hier_level_id@1@(1)!
swc11    01    ic_type@3@!$1$ic_num@1@!$1$rmt_unit@1@!$1$hier_level@1@!$1$
swc11    02    hier_level_id@2@(0)!$1$hier_level_id@1@(1)!$1$
swc11    03    hier_level_id@2@(2)!
swc12    01    ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
swc12    02    hier_level_id@2@(0)!
swc13    01    ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
swc13    02    hier_level_id@2@(0)!$1$hier_level_id@1@(1)!
swc14    01    ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
swc14    02    hier_level_id@2@(0)!$1$hier_level_id@1@(1)!$1$
swc14    03    hier_level_id@2@(2)!
swc15    01    ic_type@3@!$1$ic_num@1@!$1$rmt_unit@1@!$1$hier_level@1@!$1$
swc15    02    hier_level_id@3@(0)!$1$hier_level_id@1@(1)!
swc16    01    ic_type@3@!$1$ic_num@1@!$1$rmt_unit@1@!$1$hier_level@1@!$1$
swc16    02    hier_level_id@3@(0)!$1$hier_level_id@1@(1)!
swc16    03    $1$hier_level_id@2@(2)!
swc22    01    ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
swc22    02    hier_level_id@2@(0)!$1$hier_level_id@1@(1)!$1$
swc23    01    ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
swc23    02    hier_ind@1@!hier_level_id@3@(0)!
swc24    01    ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
swc24    02    hier_level_id@3@(0)!$1$hier_ind@1@!
swc24    03    hier_level_id@2@(1)!
swc25    01    ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
swc25    02    hier_level_id@3@(0)!$1$hier_ind@1@!
swc25    03    hier_level_id@2@(1)!hier_level_id@2@(2)!
sweac    01    ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
sweac    02    hier_level_id@3@(0)!$1$hier_ind@1@!
sweac    03    hier_level_id@1@(1)!$1$hier_level_id@2@(2)!
swea3    01    ic_type@3@!$1$ic_num@1@!hier_level_id@3@(0)!$1$
swea3    02    hier_level_id@1@(1)!$1$hier_level_id@2@(2)!hier_ind@1@!
```

Table 4A-3. PARSE RULES (RULES)

```
INSTANCE KEY: rule
*********************************************************************************
rulid lineno rule
swec1   01   ic_type@3@!$1$ic_num@1@!hier_level_id@3@(0)!$1$
swec1   02   hier_level_id@1@(1)!hier_level_id@1@(2)!hier_ind@1@!
swec1   01   ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
swec1   02   hier_level_id@2@(0)!
swec2   01   ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
swec2   02   hier_level_id@2@(0)!$1$hier_level_id@1@(1)!
swec2   03   hier_level_id@1@(2)!hier_level_id@1@(3)!
swec3   01   ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$hier_level_id@2@(0)!
swec3   02   $1$hier_level_id@1@(1)!$1$hier_level_id@1@(2)!$1$
swec3   03   hier_level_id@2@(3)!
swec4   01   ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$hier_level_id@2@(0)!
swec4   02   $1$hier_level_id@1@(1)!
swec5   01   ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
swec5   02   hier_level_id@3@(0)!
swec6   01   ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
swec6   02   hier_level_id@3@(0)!$1$hier_ind@1@!
swec6   03   hier_level_id@1@(1)!
swec7   01   ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
swec7   02   hier_level_id@3@(0)!$1$hier_ind@1@!
swec7   03   hier_level_id@1@(1)!hier_level_id@2@(2)!
swec8   01   ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
swec8   02   hier_level_id@3@(0)!$1$hier_level_id@1@(1)!$1$
swec8   03   hier_level_id@2@(2)!
swec9   01   ic_type@3@!$1$ic_num@1@!$1$rmt_unit@1@!$1$hier_level@1@!$1$
swec9   02   hier_level_id@2@(0)!
swed    01   ic_type@3@!$1$ic_num@1@!rmt_unit@1@!
swed    02   hier_level_id@3@(0)!hier_ind@2@!
swef    01   ic_type@3@!$1$ic_num@1@!rmt_unit@1@!
swef    02   hier_level_id@3@(0)!hier_ind@3@!
sweph   01   ic_type@3@!$1$ic_num@1@!hier_level_id@3@(0)!$1$
sweph   02   hier_level_id@1@(1)!
sweq1   01   ic_type@3@!$1$ic_num@1@!hier_level_id@2@(0)!$1$
sweq1   02   hier_level_id@1@(1)!hier_level_id@1@(2)!hier_level_id@1@(3)!
sweq2   01   ic_type@3@!$1$ic_num@1@!hier_level_id@2@(0)!
sweq2   02   hier_level_id@1@(1)!$1$hier_level_id@1@(2)!$1$
sweq2   03   hier_level_id@2@(3)!
sweq3   01   ic_type@3@!$1$ic_num@1@!hier_level_id@3@(0)!$1$
sweq3   02   hier_level_id@1@(1)!$1$hier_level_id@2@(2)!
sweq4   01   ic_type@3@!$1$ic_num@1@!hier_level_id@3@(0)!$1$
sweq4   02   hier_level_id@1@(1)!
sweq4   03   hier_level_id@1@(2)!hier_level_id@1@(3)!hier_ind@1@!
sweq5   01   ic_type@3@!$1$ic_num@1@!hier_level_id@2@(0)!$1$
sweq5   02   hier_level_id@1@(1)!
sweq6   01   ic_type@3@!$1$ic_num@1@!hier_level_id@3@(0)!$1$
sweq6   02   hier_level_id@1@(1)!hier_ind@1@!
sweq7   01   ic_type@3@!$1$ic_num@1@!hier_level_id@2@(0)!$1$
```

Table 4A-3. PARSE RULES (RULES)

INSTANCE KEY: rule
****

rulid	lineno	rule
sweq8	01	ic_type@3@!1ic_num@1@!hier_level_id@2@(0)!1
sweq9	01	ic_type@3@!1ic_num@1@!hier_level_id@2@(0)!
sweq9	02	hier_level_id@1@(1)!
swe10	01	ic_type@3@!1ic_num@1@!
swe10	02	hier_level_id@3@(0)!
swe11	01	ic_type@3@!1ic_num@1@!hier_level_id@2@(0)!1
swe11	02	hier_level_id@1@(1)!1hier_level_id@2@(2)!
swe12	01	ic_type@3@!1ic_num@1@!hier_level_id@3@(0)!1
swe12	02	hier_level_id@1@(1)!
swe12	03	hier_level_id@2@(2)!hier_ind@1@!
swe14	01	ic_type@3@!1ic_num@1@!rmt_unit@1@!hier_level_id@3@(0)!1
swe14	02	hier_level_id@1@(1)!
swe15	01	ic_type@3@!1ic_num@1@!rmt_unit@1@!
swe15	02	hier_level_id@2@(0)!1hier_level_id@1@(1)!1
swe15	03	hier_level_id@2@(2)!
swe16	01	ic_type@3@!1ic_num@1@!rmt_unit@1@!
swe16	02	hier_level_id@2@(0)!
swe17	01	ic_type@3@!1ic_num@1@!rmt_unit@1@!
swe17	02	hier_level_id@2@(0)!1hier_level_id@1@(1)!
swe18	01	ic_type@3@!1ic_num@1@!
swe18	02	hier_level_id@3@(0)!
swe19	01	ic_type@3@!1ic_num@1@!rmt_unit@1@!hier_level_id@3@(0)!1
swe19	02	hier_level_id@1@(1)!1hier_level_id@2@(2)!
swe20	01	ic_type@3@!1ic_num@1@!1rmt_unit@1@!1hier_level@1@!1
swe20	02	hier_ind@1@!hier_level_id@2@(0)!
swe21	01	ic_type@3@!1ic_num@1@!1rmt_unit@1@!1hier_level@1@!1
swe21	02	hier_ind@1@!hier_level_id@2@(0)!1
swe21	03	hier_level_id@1@(1)!
swe22	01	ic_type@3@!1ic_num@1@!1rmt_unit@1@!1hier_level@1@!1
swe22	02	hier_ind@1@!hier_level_id@2@(0)!1
swe22	03	hier_level_id@1@(1)!
swe23	01	ic_type@3@!1ic_num@1@!1rmt_unit@1@!1hier_level@1@!1
swe23	02	hier_ind@1@!hier_level_id@2@(0)!1
swe23	03	hier_level_id@1@(1)!1hier_level_id@2@(2)!
swe24	01	ic_type@3@!1ic_num@1@!1rmt_unit@1@!1hier_level@1@!1
swe24	02	hier_ind@2@!hier_level_id@2@(0)!1
swe24	03	hier_level_id@1@(1)!
swe25	01	ic_type@3@!1ic_num@1@!1hier_level@1@!1
swe25	02	hier_ind@1@!hier_level_id@2@(0)!
swe26	01	ic_type@3@!1ic_num@1@!1hier_level@1@!1
swe26	02	hier_ind@1@!hier_level_id@2@(0)!1
swe26	03	hier_level_id@1@(1)!
swe27	01	ic_type@3@!1ic_num@1@!1hier_level@1@!1
swe27	02	hier_ind@1@!hier_level_id@2@(0)!1
swe27	03	hier_level_id@1@(1)!1hier_level_id@2@(2)!

Table 4A-3. PARSE RULES (RULES)

```
INSTANCE KEY: rule
******************************************************************************
rulid lineno rule
swe28   01   ic_type@3@!$1$ic_num@1@!$1$hier_level@1@!$1$
swe28   02   hier_ind@2@!hier_level_id@2@(0)!$1$
swe28   03   hier_level_id@1@(1)!
swe29   01   ic_type@3@!$1$ic_num@1@!
swe29   02   hier_level_id@2@(0)!hier_ind@1@!
swe30   01   ic_type@3@!$1$ic_num@1@!
swe30   02   hier_level_id@2@(0)!$1$hier_level_id@1@(1)!hier_ind@1@!
swe31   01   ic_type@3@!$1$ic_num@1@!
swe31   02   hier_level_id@2@(0)!$1$hier_level_id@1@(1)!
swe31   03   $1$hier_level_id@2@(2)!hier_ind@1@!
swe32   01   ic_type@3@!$1$ic_num@1@!rmt_unit@1@!
swe32   02   hier_level_id@2@(0)!hier_ind@1@!
swe33   01   ic_type@3@!$1$ic_num@1@!
swe33   02   hier_level_id@2@(0)!$1$hier_level_id@1@(1)!hier_ind@2@!
swe34   01   ic_type@3@!$1$ic_num@1@!rmt_unit@1@!
swe34   02   hier_level_id@2@(0)!$1$hier_level_id@1@(1)!hier_ind@1@!
swe35   01   ic_type@3@!$1$ic_num@1@!rmt_unit@1@!
swe35   02   hier_level_id@2@(0)!$1$hier_level_id@1@(1)!hier_ind@1@!
swe36   01   ic_type@3@!$1$ic_num@1@!rmt_unit@1@!
swe36   02   hier_level_id@2@(0)!$1$hier_level_id@1@(1)!
swe36   03   $1$hier_level_id@2@(2)!hier_ind@1@!
swe37   01   ic_type@3@!$1$ic_num@1@!rmt_unit@1@!
swe37   02   hier_level_id@2@(0)!$1$hier_level_id@1@(1)!hier_ind@2@!
swe38   01   ic_type@3@!$1$ic_num@1@!rmt_unit@1@!
swe38   02   hier_level_id@2@(0)!$1$hier_level_id@2@(1)!hier_ind@1@!
swe40   01   ic_type@3@!$1$ic_num@1@!$1$
swe40   02   hier_level@1@!$1$hier_level_id@3@(0)!
swe41   01   ic_type@3@!$1$ic_num@1@!$1$
swe41   02   hier_level@1@!$1$hier_level_id@3@(0)!$1$hier_level_id@2@(1)!
swe42   01   ic_type@3@!$1$ic_num@1@!hier_level_id@3@(0)!
swe43   01   ic_type@3@!$1$ic_num@1@!hier_level_id@3@(0)!
swe43   02   $1$hier_level_id@2@(1)!
swe44   01   ic_type@3@!$1$ic_num@1@!$1$rmt_unit@1@!$1$
swe44   02   hier_level@1@!$1$hier_level_id@3@(0)!
swe45   01   ic_type@3@!$1$ic_num@1@!$1$rmt_unit@1@!$1$
swe45   02   hier_level@1@!$1$hier_level_id@3@(0)!$1$hier_level_id@2@(1)!
swe46   01   ic_type@3@!$1$ic_num@1@!rmt_unit@1@!hier_level_id@3@(0)!
swe47   01   ic_type@3@!$1$ic_num@1@!rmt_unit@1@!hier_level_id@3@(0)!
swe47   02   $1$hier_level_id@2@(1)!
swe50   01   ic_type@4@!$1$ic_num@1@!$1$hier_level@1@!$1$
swe50   02   hier_level_id@4@(0)!
swe51   01   ic_type@4@!$1$ic_num@1@!$1$hier_level@1@!$1$
swe51   02   hier_level_id@4@(0)!hier_level_id@1@(1)!
swe52   01   ic_type@4@!$1$ic_num@1@!hier_level_id@4@(0)!
swe53   01   ic_type@4@!$1$ic_num@1@!hier_level_id@4@(0)!$1$
swe53   02   hier_level_id@1@(1)!
```

Table 4A-3. PARSE RULES (RULES)

INSTANCE KEY: rule

****

rulid	lineno	rule
swe60	01	ic_type@3@!1ic_num@1@!1hier_level@1@!1
swe60	02	hier_level_id@2@(0)!1hier_level_id@1@(1)!
swe60	03	hier_level_id@1@(2)!
swe61	01	ic_type@3@!1ic_num@1@!hier_level_id@2@(0)!1
swe61	02	hier_level_id@1@(1)!hier_level_id@1@(2)!
swe62	01	ic_type@3@!1ic_num@1@!1hier_level@1@!1
swe62	02	hier_level_id@2@(0)!
swe63	01	ic_type@3@!1ic_num@1@!1hier_level@1@!1
swe63	02	hier_level_id@2@(0)!1hier_level_id@1@(1)!
swe64	01	ic_type@3@!1ic_num@1@!1hier_level@1@!1
swe64	02	hier_level_id@2@(0)!1hier_level_id@1@(1)!
swe64	03	1hier_level_id@1@(2)!1hier_level_id@2@(3)!
swe65	01	ic_type@3@!1ic_num@1@!hier_level_id@2@(0)!
swe66	01	ic_type@3@!1ic_num@1@!hier_level_id@2@(0)!
swe66	02	hier_level_id@1@(1)!
swe67	01	ic_type@3@!1ic_num@1@!hier_level_id@2@(0)!
swe67	02	hier_level_id@1@(1)!1hier_level_id@1@(2)!
swe67	03	1hier_level_id@2@(3)!
swe68	01	ic_type@3@!1ic_num@1@!hier_level_id@2@(0)!1
swe68	02	hier_level_id@1@(1)!
swe69	01	ic_type@3@!1ic_num@1@!
swe69	02	hier_level_id@3@(0)!hier_ind@1@!
swe70	01	ic_num@1@!rmt_unit@1@!hier_level_id@2@(0)!1
swe70	02	hier_level_id@2@(1)!1hier_level_id@2@(2)!
swe71	01	ic_type@3@!1ic_num@1@!1rmt_unit@1@!1hier_level@1@!1
swe71	02	hier_ind@1@!hier_level_id@2@(0)!1hier_level_id@2@(1)!
swe72	01	ic_type@3@!1ic_num@1@!hier_level_id@3@(0)!1
swe72	02	hier_level_id@3@(1)!hier_ind@1@!
swe73	01	ic_type@3@!1ic_num@1@!1hier_level@1@!1
swe73	02	hier_level_id@3@(0)!1hier_ind@1@(0)!
swe73	03	hier_level_id@3@(1)!
swe74	01	ic_type@3@!1ic_num@1@!hier_level_id@3@(0)!1
swe74	02	hier_level_id@3@(1)!
swe74	03	hier_level_id@1@(2)!hier_level_id@1@(3)!hier_ind@1@!
swe75	01	ic_type@3@!1ic_num@1@!1hier_level@1@!1
swe75	02	hier_level_id@3@(0)!1hier_ind@1@!
swe75	03	hier_level_id@3@(1)!hier_level_id@1@(2)!hier_level_id@1@(3)!
swe76	01	ic_type@3@!1ic_num@1@!hier_level_id@3@(0)!1
swe76	02	hier_level_id@2@(1)!hier_ind@1@!
swe77	01	ic_type@3@!1ic_num@1@!hier_level_id@3@(0)!1
swe77	02	hier_level_id@2@(1)!
swe77	03	hier_level_id@2@(2)!hier_ind@1@!
tn1	01	npa@3@!nxx@3@!line@4@!
tn2	01	nxx@3@!line@4@!
tn3	01	npa@3@!1nxx@3@!line@4@!
tn4	01	npa@3@!nxx@3@!1line@4@!

Table 4A-3. PARSE RULES (RULES)

```
INSTANCE KEY: rule
*****************************************************************************
rulid lineno rule
tre     01    exidval@50@!
tre1    01    tre_name@9@!$1$unit@6@!
tre2    01    tre_name@5@!$1$unit@6@!
tre3    01    tre_name@4@!$1$unit@6@!
tre4    01    rly_rack@6@!$1$unit@4@!
tre5    01    rly_rack@7@!$1$unit@4@!
tre6    01    tre_name@2@!$1$unit@6@!
tre7    01    tre_name@3@!$1$unit@6@!
tre8    01    tre_name@7@!$1$unit@6@!
tre9    01    rly_rack@11@!$1$unit@4@!
tr10    01    rly_rack@7@!$1$unit@3@!
tr11    01    rly_rack@2@!unit@3@!
tr12    01    tre_name@8@!$1$unit@4@!
tr20    01    rly_rack@10@!$1$unit@4@!
tr21    01    rly_rack@9@!$1$unit@4@!
tr23    01    rly_rack@8@!$1$unit@4@!
tr25    01    rly_rack@12@!$1$unit@4@!
tr26    01    tre_name@6@!$1$unit@4@!
tr30    01    rly_rack@5@!$1$unit@4@!
-----------------------------------------------------------------------------
```

Table 4A-4. PARSE RULES (EXIDR)

```
INSTANCE KEY: exidr
*****************************************************************************
rulid lineno rule
bw1      01   bw_id!
cc       01   cc_id!
ccp1     01   cc_id!@:@hier_level_id(0)!
ccp2     01   cc_id!@:@hier_level_id(0)!
ccp2     02   @-@hier_level_id(1)!
ccp3     01   cc_id!@:@hier_level_id(0)!
ccp3     02   @-@hier_level_id(1)!@-@hier_level_id(2)!
ccp4     01   cc_id!@:@hier_level_id(0)!
ccp4     02   @-@hier_level_id(1)!@-@hier_level_id(2)!@-@hier_level_id(3)!
chn1     01   cr_id!@:@hier_level_id(0)!
chn2     01   cr_id!@:@hier_level_id(0)!
chn2     02   @-@hier_level_id(1)!
chn3     01   cr_id!@:@hier_level_id(0)!
chn3     02   @-@hier_level_id(1)!@-@hier_level_id(2)!
chn4     01   cr_id!@:@hier_level_id(0)!
chn4     02   @-@hier_level_id(1)!@-@hier_level_id(2)!
chn4     03   @-@hier_level_id(3)!
chn5     01   cr_id!@:@hier_level_id(0)!
chn5     02   @-@hier_level_id(1)!@-@hier_level_id(2)!
chn5     03   @-@hier_level_id(3)!@-@hier_level_id(4)!
chn6     01   cr_id!@:@hier_level_id(0)!
chn6     02   @-@hier_level_id(1)!@-@hier_level_id(2)!
chn6     03   @-@hier_level_id(3)!@-@hier_level_id(4)!
chn6     04   @-@hier_level_id(5)!
chn7     01   cr_id!@:@
crv1     01   cc_id!@:@vig!@-@hier_level_id(0)!
crv2     01   ic_type!@.@ic_num!@.@rmt_unit!@.@hier_level_id(0)!@-@
crv2     02   hier_level_id(1)!@-@hier_level_id(2)!
crv2     03   hier_level_id(3)!
ds1a     01   ic_type!@.@ic_num!@.@hier_level_id(0)!@sc-@
ds1a     02   hier_level_id(1)!
ds1c     01   ic_type!@.@ic_num!@.@rmt_unit!@.@hier_level_id(0)!@sr-@
ds1c     02   hier_level_id(1)!
ds1e     01   ic_type!@.@ic_num!@.@hier_level_id(0)!@sm-@
ds1e     02   hier_level_id(1)!
ds1f     01   ic_type!@.@ic_num!@.@rmt_unit!@.@hier_level_id(0)!@smr-@
ds1f     02   hier_level_id(1)!
ds1h     01   ic_type!@.@ic_num!@.@hier_level_id(0)!@-@
ds1h     02   hier_level_id(1)!@-@hier_level_id(2)!
eew12    01   ic_type!@.@ic_num!@.@load_div!
eew41    01   ic_type!@.@ic_num!
eice1    01   ic_type!@.@ic_num!@.@
eice1    02   hier_level_id(0)!@-@hier_level_id(1)!@-@
eice1    03   hier_level_id(2)!
```

Table 4A-4. PARSE RULES (EXIDR)

```
INSTANCE KEY: exidr
****************************************************************************
rulid lineno rule
eice2   01   ic_type!@.@ic_num!@.@group!@-@
eice2   02   hier_level_id(0)!@-@hier_level_id(1)!@-@
eice2   03   hier_level_id(2)!
exir1   01   ic_type!@.@ic_num!@.@hier_level_id(1)!@-@hier_level_id(0)!
exir1   02   hier_level_id(2)!hier_level_id(3)!hier_level_id(4)!@-@
exir1   03   hier_level_id(5)!hier_level_id(6)!
exir2   01   ic_type!@.@ic_num!@.@hier_level_id(1)!@-@hier_level_id(0)!
exir2   02   hier_level_id(2)!hier_level_id(3)!@-@hier_level_id(4)!
exir3   01   ic_type!@.@ic_num!@.@hier_level_id(0)!@-@hier_level_id(1)!
exir3   02   hier_level_id(2)!hier_level_id(3)!@-@hier_level_id(4)!
exir3   03   hier_level_id(5)!
exir4   01   ic_type!@.@ic_num!@.@
exir4   02   hier_level_id(0)!@-@hier_level_id(1)!@-@
exir4   03   hier_level_id(2)!@-@hier_level_id(3)!
exir5   01   ic_type!@.@ic_num!@.@hier_level_id(0)!@-@hier_level_id(1)!@-@
exir5   02   hier_level_id(2)!
exir6   01   ic_type!@.@ic_num!@.@hier_level_id(0)!@-@hier_level_id(1)!@-@
exir6   02   hier_level_id(2)!@-@hier_level_id(3)!
exir7   01   rly_rack!@-@unit!
exir9   01   npa!@.@nxx!@.@line!
exi10   01   exidval!
exi11   01   ic_type!@.@ic_num!
exi12   01   clli#location!clli#ctl_grp!
exi14   01   cable!
exi21   01   clli#location!@.@rly_rack!@.@unit!
exi22   01   unit!
exi23   01   cable!@-@pair!
exi24   01   cable!@-@x_pair!
exi25   01   ic_type!@.@ic_num!@.@group_id!
exi33   01   clli#location!frm_nam!
exi34   01   frm_nam!
exi35   01   exidval!
exi36   01   ic_type!@.@ic_num!@.@rmt_unit!@.@hier_level_id(0)!@-@
exi36   02   hier_level_id(1)!@-@hier_level_id(2)!@-@
exi36   03   hier_level_id(3)!
exi38   01   ic_type!@.@ic_num!@.@hier_level_id(0)!@-@hier_level_id(1)!@-@
exi38   02   hier_level_id(2)!@-@hier_level_id(3)!
exi38   03   hier_level_id(4)!hier_level_id(5)!
exi40   01   ic_type!@.@ic_num!@.@rmt_unit!
exi42   01   ic_type!@.@ic_num!@.@load_div!
exi50   01   ic_type!@.@ic_num!@.pe@hier_level_id(0)!@-@
exi50   02   hier_level_id(1)!@-@hier_level_id(2)!@-@hier_level_id(3)!
exi51   01   ic_type!@.@ic_num!@.@rmt_unit!@.pe@hier_level_id(0)!@-@
exi51   02   hier_level_id(1)!@-@hier_level_id(2)!@-@hier_level_id(3)!
```

Table 4A-4. PARSE RULES (EXIDR)

```
INSTANCE KEY: exidr
******************************************************************************
rulid lineno rule
exi52   01    ic_type!@.@ic_num!@.@rmt_unit!@.s@hier_level_id(0)!
exi52   02    @-@hier_level_id(1)!@-@hier_level_id(2)!
exi53   01    ic_type!@.@ic_num!@.l@hier_level_id(0)!@-@
exi53   02    hier_level_id(1)!@-@hier_level_id(2)!@-@hier_level_id(3)!
exi54   01    ic_type!@.@ic_num!@.@rmt_unit!@.l@hier_level_id(0)!@-@
exi54   02    hier_level_id(1)!@-@hier_level_id(2)!@-@hier_level_id(3)!
exi55   01    ic_type!@.@ic_num!@.@hier_level_id(0)!@-@hier_level_id(1)!@-@
exi55   02    hier_level_id(2)!
exi60   01    ic_type!@.@ic_num!@.@hier_level_id(0)!hier_level_id(1)!@-@
exi60   02    hier_level_id(2)!@-@hier_level_id(3)!
exi66   01    ic_type!@.@ic_num!@.@rmt_unit!@.@hier_level_id(0)!@-@
exi66   02    hier_level_id(1)!@-@hier_level_id(2)!
exi70   01    ic_type!@.@ic_num!@.@hier_level_id(0)!@-@
exi70   02    hier_level_id(1)!hier_level_id(2)!
exi70   03    hier_level_id(3)!hier_level_id(4)!
exi71   01    ic_type!@.@ic_num!@.@hier_level_id(0)!@-@
exi71   02    hier_level_id(1)!@-@hier_level_id(2)!@-@
exi71   03    hier_level_id(3)!hier_level_id(4)!hier_level_id(5)!
exi80   01    ic_type!@.@ic_num!@.@hier_level_id(0)!hier_level_id(1)!@-@
exi80   02    hier_level_id(2)!
exi84   01    ic_type!@.@ic_num!@.@hier_level_id(0)!
exi84   02    hier_level_id(1)!@-@hier_level_id(2)!hier_level_id(3)!
exi86   01    ic_type!@.@ic_num!@.@hier_level_id(0)!@-@
exi86   02    hier_level_id(1)!@-@hier_level_id(2)!
e3122   01    hier_level_id(0)!@-@hier_level_id(1)!@-@
e3122   02    hier_level_id(2)!@-@hier_level_id(3)!
e34     01    hier_level_id(0)!@-@hier_level_id(1)!
e412    01    hier_level_id(0)!@-@hier_level_id(1)!@-@
e412    02    hier_level_id(2)!
e4122   01    hier_level_id(0)!@-@hier_level_id(1)!@-@
e4122   02    hier_level_id(2)!@-@hier_level_id(3)!
e414    01    hier_level_id(0)!@-@hier_level_id(1)!@-@
e414    02    hier_level_id(2)!
e422    01    hier_level_id(0)!@-@hier_level_id(1)!@-@
e422    02    hier_level_id(2)!
e423    01    hier_level_id(0)!@-@hier_level_id(1)!@-@
e423    02    hier_level_id(2)!
e5ea0   01    ic_type!@.@ic_num!@.@hier_level_id(0)!@-@hier_ind!
e5ea0   02    hier_level_id(1)!@-@hier_level_id(2)!@-@hier_level_id(3)!
e5ed1   01    ic_type!@.@ic_num!@.@hier_level_id(0)!@-@hier_ind!
e5ed1   02    hier_level_id(1)!@-@hier_level_id(2)!
e5ep1   01    ic_type!@.@ic_num!@.@hier_level_id(0)!@-@hier_ind!
e5ep1   02    hier_level_id(1)!hier_level_id(2)!hier_level_id(3)!@-@
e5ep1   03    hier_level_id(4)!hier_level_id(5)!
```

Table 4A-4. PARSE RULES (EXIDR)

INSTANCE KEY: exidr

rulid	lineno	rule
e5ep2	01	ic_type!@.@ic_num!@.@hier_level_id(0)!@-@hier_ind!
e5ep2	02	hier_level_id(1)!hier_level_id(2)!@-@hier_level_id(3)!
e5ep3	01	ic_type!@.@ic_num!@.@hier_level_id(0)!@-@hier_ind!
e5ep3	02	hier_level_id(1)!hier_level_id(2)!@-@hier_level_id(3)!
e5ep4	01	ic_type!@.@ic_num!@.@hier_level_id(0)!@-@hier_ind!
e5ep4	02	hier_level_id(1)!hier_level_id(2)!@-@
e5ep4	03	hier_level_id(3)!hier_level_id(4)!
e5el1	01	ic_type!@.@ic_num!@.@
e5el1	02	hier_level_id(0)!@-@hier_ind!
e5el1	03	hier_level_id(1)!@-@hier_level_id(2)!@-@
e5el1	04	hier_level_id(3)!
e5122	01	hier_level_id(0)!@-@hier_level_id(1)!@-@
e5122	02	hier_level_id(2)!@-@hier_level_id(3)!
e514	01	hier_level_id(0)!@-@hier_level_id(1)!@-@
e514	02	hier_level_id(2)!
lprt	01	hier_cat!tre_name!@-@unit!
ltg1	01	ic_type!@.@ic_num!@.@group!
ltid1	01	ic_type!@.@ic_num!@.@group!@.@number!
me1	01	ic_type!@.@ic_num!@.@hier_level_id(0)!@-@
me1	02	hier_level_id(1)!@-@hier_level_id(2)!
me12	01	tmod_type!@.@ic_type!@.@ic_num!@.@hier_level_id(0)!@-@
me12	02	hier_level_id(1)!@-@hier_level_id(2)!@-@hier_level_id(3)!
me2	01	ic_type!@.@ic_num!@.@hier_level_id(0)!@-@
me2	02	hier_level_id(1)!hier_level_id(2)!
me21	01	ic_type!@.@ic_num!@.@frm_type!@-@hier_level_id(0)!@-@
me21	02	hier_level_id(1)!
me23	01	ic_type!@.@ic_num!@.@hier_level_id(0)!
me23	02	hier_level_id(1)!hier_level_id(2)!
me3	01	ic_type!@.@ic_num!@.@hier_level_id(0)!@-@
me3	02	hier_level_id(1)!@-@hier_level_id(2)!@-@hier_level_id(3)!@-@
me3	03	hier_level_id(4)!
me4	01	ic_type!@.@ic_num!@.@hier_level_id(0)!@-@
me4	02	hier_level_id(1)!@-@hier_level_id(2)!@-@hier_level_id(3)!
me5	01	ic_type!@.@ic_num!@.@hier_level_id(0)!@-@
me5	02	hier_level_id(1)!@-@hier_level_id(2)!
me7	01	ic_type!@.@ic_num!@.@hier_level_id(0)!
me7	02	hier_level_id(1)!hier_level_id(2)!hier_level_id(3)!@-@
me7	03	hier_level_id(4)!hier_level_id(5)!
me9	01	ic_type!@.@ic_num!@.@hier_level_id(0)!@-@
me9	02	hier_level_id(1)!
slt1	01	cc_id!@:@hier_level_id(0)!
slt2	01	cc_id!@:@hier_level_id(0)!
slt2	02	@-@hier_level_id(1)!
slt3	01	cc_id!@:@hier_level_id(0)!
slt3	02	@-@hier_level_id(1)!@-@hier_level_id(2)!

Table 4A-4. PARSE RULES (EXIDR)

```
INSTANCE KEY: exidr
****************************************************************************
rulid lineno rule
sqcl1   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!@-@
sqcl1   02   hier_ind!hier_level_id(1)!hier_level_id(2)!hier_level_id(3)!
swad    01   ic_type!@.@ic_num!@.1.@
swad    02   hier_level_id(0)!hier_ind!
swbd    01   ic_type!@.@ic_num!@.@hier_level!@.@
swbd    02   hier_level_id(0)!hier_ind!
swccl   01   ic_type!@.@ic_num!@.3.@hier_level_id(0)!@-@hier_ind!
swccl   02   hier_level_id(1)!hier_level_id(2)!
swcd    01   ic_type!@.@ic_num!@.@rmt_unit!@.@hier_level!@.@
swcd    02   hier_level_id(0)!hier_ind!
swc10   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!
swc11   01   ic_type!@.@ic_num!@.@rmt_unit!@.@hier_level!@.@hier_level_id(0)!
swc11   02   @-@hier_level_id(1)!@-@hier_level_id(2)!
swc12   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!
swc13   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!
swc13   02   @-@hier_level_id(1)!
swc14   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!
swc14   02   @-@hier_level_id(1)!@-@hier_level_id(2)!
swc16   01   ic_type!@.@ic_num!@.@rmt_unit!@.@hier_level!@.@hier_level_id(0)!
swc22   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!
swc22   02   @-@hier_level_id(1)!@-@hier_level_id(2)!
swc23   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_ind!hier_level_id(0)!
swc81   01   ic_type!@.@ic_num!@.@rmt_unit!@.@hier_level!@.@hier_ind!
swc81   02   hier_level_id(0)!
sweac   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!@-@
sweac   02   hier_ind!hier_level_id(1)!@-@hier_level_id(2)!
swea3   01   ic_type!@.@ic_num!@.3.@hier_level_id(0)!@-@hier_ind!
swea3   02   hier_level_id(1)!@-@hier_level_id(2)!
sweca   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!@-@
sweca   02   hier_ind!hier_level_id(1)!hier_level_id(2)!hier_level_id(3)!
swecl   01   ic_type!@.@ic_num!@.3.@hier_level_id(0)!@-@hier_ind!
swecl   02   hier_level_id(1)!hier_level_id(2)!
swec1   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!@-@
swec1   02   hier_level_id(1)!hier_level_id(2)!hier_level_id(3)!
swec2   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!@-@
swec2   02   hier_level_id(1)!@-@hier_level_id(2)!@-@hier_level_id(3)!
swec3   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!@-@
swec3   02   hier_level_id(1)!@-@hier_level_id(2)!
swec4   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!@-@
swec4   02   hier_ind!hier_level_id(1)!hier_level_id(2)!
swec5   01   ic_type!@.@ic_num!@.@rmt_unit!@.@hier_level!@.@hier_level_id(0)!
swec5   02   @-@hier_level_id(1)!
swec6   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!@-@
swec6   02   hier_ind!hier_level_id(1)!
swec7   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!
swec8   01   ic_type!@.@ic_num!@.@rmt_unit!@.@hier_level!@.@hier_level_id(0)!
```

Table 4A-4. PARSE RULES (EXIDR)

```
INSTANCE KEY: exidr
*****************************************************************************
rulid lineno rule
swec9   01    ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!
swec9   02    @-@hier_level_id(1)!
swed    01    ic_type!@.@ic_num!@.@rmt_unit!@.1.@
swed    02    hier_level_id(0)!hier_ind!
sweph   01    ic_type!@.@ic_num!@.2.@hier_level_id(0)!@-@
sweph   02    hier_level_id(1)!
sweq1   01    ic_type!@.@ic_num!@.4.@hier_level_id(0)!@-@hier_level_id(1)!
sweq1   02    hier_level_id(2)!hier_level_id(3)!
sweq2   01    ic_type!@.@ic_num!@.4.@hier_level_id(0)!@-@hier_level_id(1)!@-@
sweq2   02    hier_level_id(2)!@-@hier_level_id(3)!
sweq3   01    ic_type!@.@ic_num!@.3.@hier_level_id(0)!@-@
sweq3   02    hier_level_id(1)!@-@hier_level_id(2)!
sweq4   01    ic_type!@.@ic_num!@.4.@hier_level_id(0)!@-@
sweq4   02    hier_ind!hier_level_id(1)!hier_level_id(2)!
sweq4   03    hier_level_id(3)!
sweq5   01    ic_type!@.@ic_num!@.3.@hier_level_id(0)!@-@
sweq5   02    hier_level_id(1)!
sweq6   01    ic_type!@.@ic_num!@.2.@hier_level_id(0)!@-@hier_ind!
sweq6   02    hier_level_id(1)!
sweq7   01    ic_type!@.@ic_num!@.1.@hier_level_id(0)!
sweq8   01    ic_type!@.@ic_num!@.2.@hier_level_id(0)!
sweq9   01    ic_type!@.@ic_num!@.2.@hier_level_id(0)!@-@hier_level_id(1)!
swe10   01    ic_type!@.@ic_num!@.1.@hier_ind!
swe11   01    ic_type!@.@ic_num!@.4.@hier_level_id(0)!@-@
swe11   02    hier_level_id(1)!@-@hier_level_id(2)!
swe12   01    ic_type!@.@ic_num!@.3.@hier_level_id(0)!@-@hier_ind!
swe12   02    hier_level_id(1)!hier_level_id(2)!
swe15   01    ic_type!@.@ic_num!@.@rmt_unit!@.4.@hier_level_id(0)!@-@
swe15   02    hier_level_id(1)!@-@hier_level_id(2)!
swe16   01    ic_type!@.@ic_num!@.@rmt_unit!@.2.@hier_level_id(0)!
swe17   01    ic_type!@.@ic_num!@.@rmt_unit!@.3.@hier_level_id(0)!@-@
swe17   02    hier_level_id(1)!
swe18   01    ic_type!@.@ic_num!@.1.@hier_level_id(0)!
swe20   01    ic_type!@.@ic_num!@.@rmt_unit!@.@hier_level!@.@
swe20   02    hier_ind!hier_level_id(0)!
swe21   01    ic_type!@.@ic_num!@.@rmt_unit!@.@hier_level!@.@
swe21   02    hier_ind!hier_level_id(0)!
swe21   03    @-@hier_level_id(1)!
swe22   01    ic_type!@.@ic_num!@.@rmt_unit!@.@hier_level!@.@
swe22   02    hier_ind!hier_level_id(0)!
swe22   03    @-@hier_level_id(1)!
swe23   01    ic_type!@.@ic_num!@.@rmt_unit!@.@hier_level!@.@
swe23   02    hier_ind!hier_level_id(0)!
swe23   03    @-@hier_level_id(1)!@-@hier_level_id(2)!
```

Table 4A-4. PARSE RULES (EXIDR)

INSTANCE KEY: exidr

```
******************************************************************************
rulid lineno rule
swe25   01    ic_type!@.@ic_num!@.@hier_level!@.@
swe25   02    hier_ind!hier_level_id(0)!
swe26   01    ic_type!@.@ic_num!@.@hier_level!@.@
swe26   02    hier_ind!hier_level_id(0)!
swe26   03    @-@hier_level_id(1)!
swe27   01    ic_type!@.@ic_num!@.@hier_level!@.@
swe27   02    hier_ind!hier_level_id(0)!
swe27   03    @-@hier_level_id(1)!@-@hier_level_id(2)!
swe29   01    ic_type!@.@ic_num!@.1.@hier_ind!
swe29   02    hier_level_id(0)!
swe30   01    ic_type!@.@ic_num!@.2.@hier_ind!
swe30   02    hier_level_id(0)!@-@hier_level_id(1)!
swe31   01    ic_type!@.@ic_num!@.3.@hier_ind!
swe31   02    hier_level_id(0)!@-@hier_level_id(1)!
swe31   03    @-@hier_level_id(2)!
swe32   01    ic_type!@.@ic_num!@.@rmt_unit!@.1.@hier_ind!
swe32   02    hier_level_id(0)!
swe34   01    ic_type!@.@ic_num!@.@rmt_unit!@.2.@hier_ind!
swe34   02    hier_level_id(0)!@-@hier_level_id(1)!
swe35   01    ic_type!@.@ic_num!@.@rmt_unit!@.3.@hier_ind!
swe35   02    hier_level_id(0)!@-@hier_level_id(1)!
swe36   01    ic_type!@.@ic_num!@.@rmt_unit!@.3.@hier_ind!
swe36   02    hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
swe40   01    ic_type!@.@ic_num!@.@hier_level!@.@
swe40   02    hier_level_id(0)!
swe41   01    ic_type!@.@ic_num!@.@hier_level!@.@
swe41   02    hier_level_id(0)!@-@hier_level_id(1)!
swe42   01    ic_type!@.@ic_num!@.1.@hier_level_id(0)!
swe43   01    ic_type!@.@ic_num!@.2.@hier_level_id(0)!
swe43   02    @-@hier_level_id(1)!
swe44   01    ic_type!@.@ic_num!@.@rmt_unit!@.@hier_level!@.@
swe44   02    hier_level_id(0)!
swe45   01    ic_type!@.@ic_num!@.@rmt_unit!@.@hier_level!@.@
swe45   02    hier_level_id(0)!@-@hier_level_id(1)!
swe46   01    ic_type!@.@ic_num!@.@rmt_unit!@.1.@hier_level_id(0)!
swe47   01    ic_type!@.@ic_num!@.@rmt_unit!@.2.@hier_level_id(0)!
swe47   02    @-@hier_level_id(1)!
swe50   01    ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!
swe51   01    ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!
swe51   02    hier_level_id(1)!
swe52   01    ic_type!@.@ic_num!@.1.@hier_level_id(0)!
swe53   01    ic_type!@.@ic_num!@.2.@hier_level_id(0)!
swe53   02    hier_level_id(1)!
swe60   01    ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!
swe60   02    @-@hier_level_id(1)!hier_level_id(2)!
```

Table 4A-4. PARSE RULES (EXIDR)

```
INSTANCE KEY: exidr
*************************************************************************************
rulid lineno rule
swe61   01   ic_type!@.@ic_num!@.3.@hier_level_id(0)!
swe61   02   @-@hier_level_id(1)!hier_level_id(2)!
swe62   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!
swe63   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!
swe63   02   @-@hier_level_id(1)!
swe64   01   ic_type!@.@ic_num!@.@hier_level!@.@hier_level_id(0)!
swe64   02   @-@hier_level_id(1)!@-@hier_level_id(2)!
swe64   03   @-@hier_level_id(3)!
swe65   01   ic_type!@.@ic_num!@.1.@hier_level_id(0)!
swe66   01   ic_type!@.@ic_num!@.2.@hier_level_id(0)!@-@hier_level_id(1)!
swe67   01   ic_type!@.@ic_num!@.4.@hier_level_id(0)!@-@hier_level_id(1)!
swe67   02   @-@hier_level_id(2)!@-@hier_level_id(3)!
swe68   01   ic_type!@.@ic_num!@.2.@hier_level_id(0)!@-@
swe68   02   hier_level_id(1)!
swe69   01   ic_type!@.@ic_num!@.1.@hier_ind!
swe69   02   hier_level_id(0)!
swe70   01   ic_type!@.@ic_num!@.@rmt_unit!@.s@hier_level_id(0)!@-@
swe70   02   hier_level_id(1)!@-@hier_level_id(2)!
tre     01   exidval!
tre1    01   tre_name!@-@unit!
tr11    01   rly_rack!unit!
xew01   01   ic_type!@.@ic_num!@.@rmt_unit!
xew02   01   ic_type!@.@ic_num!@.@rmt_unit!
-------------------------------------------------------------------------------------
```

Table 4A-5. OTHER FMT CULTURE

```
INSTANCE KEY: bw
****************************************************************************
seqno dlct
 001   bw1
----------------------------------------------------------------------------


INSTANCE KEY: cc
****************************************************************************
seqno dlct
 001   cc1
----------------------------------------------------------------------------


INSTANCE KEY: ccpt
****************************************************************************
seqno dlct
 001   ccp1
 002   ccp2
 003   ccp3
 004   ccp4
----------------------------------------------------------------------------


INSTANCE KEY: chan
****************************************************************************
seqno dlct
 001   chn1
 002   chn2
 003   chn3
 004   chn4
 005   chn5
 006   chn6
 007   chn7
 008   5esm
 009   5esg
 010   chla
 011   5ess
 012   dms2
 013   ewsd
 014   5esa
 015   axe
----------------------------------------------------------------------------
```

Table 4A-5. OTHER FMT CULTURE (cont.)

```
INSTANCE KEY: crv
*****************************************************************************
seqno dlct
 001  crv1
 002  5esm
 003  5esg
 004  crv2
 005  crv3
 006  5esa
 007  ewd2
 008  crv6
-----------------------------------------------------------------------------

INSTANCE KEY: slot
*****************************************************************************
seqno dlct
 001  slt1
 002  slt2
 003  slt3
-----------------------------------------------------------------------------

INSTANCE KEY: sweq
*****************************************************************************
seqno dlct
 001  swe1
 002  swe2
 003  se31
 004  se3s
 005  se3i
 006  se3c
 007  swe4
 008  swe5
 009  swe6
 012  seph
 013  secl
 014  se81
 015  se8s
 016  se8i
 017  se8c
 018  swe9
 019  se10
 020  se11
 021  se12
 022  se13
 023  se14
```

Table 4A-5. OTHER FMT CULTURE (cont.)

```
INSTANCE KEY: sweq
******************************************************************************
seqno dlct
 024  swc1
 025  swc2
 026  swc3
 027  swc4
 028  swc5
 029  swc6
 030  swc7
 031  swc8
 032  swc9
 033  sc10
 034  sc11
 035  sc12
 036  dmle
 037  dmpe
 038  dmsl
 039  dml1
 040  dml2
 041  dml3
 042  dxle
 043  dxpe
 044  d4le
 045  ewsd
 046  ewsl
 047  axe
 048  axel
 049  swl2
 050  swl3
 051  swl4
 052  dco
 053  dcol
 054  dcor
 055  dcrl
 056  2es
 057  2esl
 058  2es2
 059  2es3
 060  3es
 061  3esl
 062  dmc3
 063  dmc4
 064  5esm
 065  5esg
```

Table 4A-5. OTHER FMT CULTURE (cont.)

INSTANCE KEY: sweq
****

seqno	dlct
067	sw10
068	d10u
069	d171
070	d172
071	se91
072	se41
075	se8m
076	se8g
077	swed
078	swad
079	se8a
080	se8k
081	5esa
082	5esk
083	ewdd
084	dmc5
085	dmc6
086	dmc7
087	dmc8
088	dmc9
089	dm10
090	see1
091	5dn2
092	5dn3

INSTANCE KEY: swpt
****

seqno	dlct
001	1es
004	5esp
005	dms
006	5esi
007	5esc
008	5esl
009	5ess
010	dms1
011	5ep1
012	dms2
013	rss
014	dmpe
015	dmp1
016	dmle
017	dml1

Table 4A-5. OTHER FMT CULTURE (cont.)

```
INSTANCE KEY: swpt
*****************************************************************************
seqno dlct
 018  dmsl
 019  ewsd
 020  axe
 021  dco
 022  dcor
 023  2es
 024  2er
 025  3es
 026  5esm
 027  5esg
 030  dm1u
 031  fcl
 032  5e91
 035  5edm
 036  5edg
 037  ds1c
 038  ds1a
 039  5eds
 040  ewdl
 041  5esa
 042  5esk
 043  5eda
 044  ewdd
 045  dms3
 046  dms4
 047  5ese
 048  ds1e
 049  ds1f
 050  5dn0
 051  ds1h
-----------------------------------------------------------------------------
INSTANCE KEY: tre
*****************************************************************************
seqno dlct
 001  ru
 002  tu
 003  tul
 004  tre
 005  ru2
 006  tr10
 007  tr11
 009  tr12
 010  tr20
 011  tr21
 012  tr22
 013  tr23
 014  tr24
```

Table 4A-5. OTHER FMT CULTURE (cont.)

```
INSTANCE KEY: tre
*************************************************************************
seqno dlct
 015  tr25
 016  tr26
 017  lprt
 018  utre
-------------------------------------------------------------------------

INSTANCE KEY: bl
*************************************************************************
seqno dlct
 001  ru
 002  un
 003  bl
-------------------------------------------------------------------------
INSTANCE KEY: ca
*************************************************************************
seqno dlct
 001  ca
-------------------------------------------------------------------------

INSTANCE KEY: clct
*************************************************************************
seqno dlct
 001  clct
-------------------------------------------------------------------------

INSTANCE KEY: cp
*************************************************************************
seqno dlct
 001  cp
 002  xp
-------------------------------------------------------------------------

INSTANCE KEY: ctx
*************************************************************************
seqno dlct
 001  ctx
-------------------------------------------------------------------------

INSTANCE KEY: dtn
*************************************************************************
seqno dlct
 001  tn
-------------------------------------------------------------------------
```

Table 4A-5. OTHER FMT CULTURE (cont.)

```
INSTANCE KEY: frm
**************************************************************************
seqno dlct
 001  frm
 002  clli
--------------------------------------------------------------------------



INSTANCE KEY: hml
**************************************************************************
seqno dlct
 001  hml
--------------------------------------------------------------------------



INSTANCE KEY: ic
**************************************************************************
seqno dlct
 001  ctn
 002  clli
 003  exk
--------------------------------------------------------------------------



INSTANCE KEY: ice
**************************************************************************
seqno dlct
 001  sse
 002  ice3
 003  ice2
--------------------------------------------------------------------------



INSTANCE KEY: if
**************************************************************************
seqno dlct
 001  cp
--------------------------------------------------------------------------
```

Table 4A-5. OTHER FMT CULTURE (cont.)

```
INSTANCE KEY: invo
*******************************************************************************
seqno dlct
 001  invo
-------------------------------------------------------------------------------

INSTANCE KEY: ldiv
*******************************************************************************
seqno dlct
 001  ldiv
 002  ldv1
-------------------------------------------------------------------------------

INSTANCE KEY: me
*******************************************************************************
seqno dlct
 001  me
 002  me1
 003  me2
 004  me3
 005  me4
 006  me5
 007  me6
 008  me7
 009  me8
 010  me9
 011  me10
 012  me11
 013  me12
 014  me13
 015  me14
 016  me15
 017  me16
 018  me17
 019  me18
 020  me19
 021  me20
 022  me21
 023  me23
-------------------------------------------------------------------------------
```

Table 4A-5. OTHER FMT CULTURE (cont.)

```
INSTANCE KEY: nxx
********************************************************************************
seqno dlct
 001  nxx
--------------------------------------------------------------------------------


INSTANCE KEY: ow
********************************************************************************
seqno dlct
 001  wo
--------------------------------------------------------------------------------


INSTANCE KEY: owt
********************************************************************************
seqno dlct
 001  ar
--------------------------------------------------------------------------------


INSTANCE KEY: rsv
********************************************************************************
seqno dlct
 001  tn
--------------------------------------------------------------------------------


INSTANCE KEY: rsvg
********************************************************************************
seqno dlct
 001  rsvg
--------------------------------------------------------------------------------
```

Table 4A-5. OTHER FMT CULTURE (cont.)

```
INSTANCE KEY: ru
*****************************************************************************
seqno dlct
 001  ctn
 002  rmt1
 003  rmt2
-----------------------------------------------------------------------------


INSTANCE KEY: sfg
*****************************************************************************
seqno dlct
 001  sfg
-----------------------------------------------------------------------------


INSTANCE KEY: tie
*****************************************************************************
seqno dlct
 001  ca
-----------------------------------------------------------------------------


INSTANCE KEY: tn
*****************************************************************************
seqno dlct
 001  tn
-----------------------------------------------------------------------------


INSTANCE KEY: tnl
*****************************************************************************
seqno dlct
 001  tnl
-----------------------------------------------------------------------------
```

Table 4A-5. OTHER FMT CULTURE

```
INSTANCE KEY: clg
*****************************************************************************
seqno dlct
 001  clg
-----------------------------------------------------------------------------

INSTANCE KEY: ltg
*****************************************************************************
seqno dlct
 001  ltg
-----------------------------------------------------------------------------

INSTANCE KEY: ltid
*****************************************************************************
seqno dlct
 001  ltid
-----------------------------------------------------------------------------

INSTANCE KEY: tkca
*****************************************************************************
seqno dlct
 001  tkca
-----------------------------------------------------------------------------

INSTANCE KEY: tkp
*****************************************************************************
seqno dlct
 001  tkp
-----------------------------------------------------------------------------
```

Table 4A-5. COMMON LANG FMT CULTURE

```
INSTANCE KEY: bw
**************************************************************************
seqno dlct
 001  bw1
--------------------------------------------------------------------------


INSTANCE KEY: cc
**************************************************************************
seqno dlct
 001  cc1
--------------------------------------------------------------------------


INSTANCE KEY: ccpt
**************************************************************************
seqno dlct
 001  ccp1
 002  ccp2
 003  ccp3
 004  ccp4
--------------------------------------------------------------------------


INSTANCE KEY: chan
**************************************************************************
seqno dlct
 001  chn1
 002  chn2
 003  chn3
 004  chn4
 005  chn5
 006  chn6
 007  chn7
 008  5esm
 009  5esg
 010  chla
 011  5ess
 012  dms2
 013  ewsd
 014  5esa
 015  axe
--------------------------------------------------------------------------
```

Table 4A-5. COMMON LANG FMT CULTURE (cont.)

```
INSTANCE KEY: crv
*******************************************************************************
seqno dlct
 001  crv1
 002  5esm
 003  5esg
 004  crv2
 005  crv3
 006  5esa
 007  ewd2
 008  crv6
-------------------------------------------------------------------------------


INSTANCE KEY: slot
*******************************************************************************
seqno dlct
 001  slt1
 002  slt2
 003  slt3
-------------------------------------------------------------------------------


INSTANCE KEY: sweq
*******************************************************************************
seqno dlct
 001  swe1
 002  swe2
 003  se3l
 004  se3s
 005  se3i
 006  se3c
 007  swe4
 008  swe5
 009  swe6
 012  seph
 013  secl
 014  se8l
 015  se8s
 016  se8i
 017  se8c
```

Table 4A-5. COMMON LANG FMT CULTURE (cont.)

```
INSTANCE KEY: sweq
*****************************************************************************************
seqno dlct
 018  swe9
 019  se10
 020  se11
 021  se12
 022  se13
 023  se14
 024  swc1
 025  swc2
 026  swc3
 027  swc4
 028  swc5
 029  swc6
 030  swc7
 031  swc8
 032  swc9
 033  sc10
 034  sc11
 035  sc12
 036  dmle
 037  dmpe
 038  dmsl
 039  dml1
 040  dml2
 041  dml3
 042  dxle
 043  dxpe
 044  d4le
 045  ewsd
 046  ews1
 047  axe
 048  axe1
 049  sw12
 050  sw13
 051  sw14
 052  dco
 053  dco1
 054  dcor
 055  dcr1
 056  2es
 057  2es1
 058  2es2
 059  2es3
```

Table 4A-5. COMMON LANG FMT CULTURE (cont.)

```
INSTANCE KEY: sweq
*************************************************************************
seqno dlct
------------------------------------------------------------------------
 060  3es
 061  3esl
 062  dmc3
 063  dmc4
 064  5esm
 065  5esg
 067  sw10
 068  d10u
 069  d171
 070  d172
 071  se91
 072  se41
 075  se8m
 076  se8g
 077  swed
 078  swad
 079  se8a
 080  se8k
 081  5esa
 082  5esk
 083  ewdd
 084  dmc5
 085  dmc6
 086  dmc7
 087  dmc8
 088  dmc9
 089  dm10
 090  seel
 091  5dn2
 092  5dn3

INSTANCE KEY: swpt
*************************************************************************
seqno dlct
 001  1es
 004  5esp
 005  dms
 006  5esi
 007  5esc
 008  5esl
 009  5ess
 010  dms1
 011  5epl
 012  dms2
```

Table 4A-5. COMMON LANG FMT CULTURE (cont.)

```
INSTANCE KEY: swpt
********************************************************************************
seqno dlce10
 013  rss
 014  dmpe
 015  dmp1
 016  dmle
 017  dml1
 018  dmsl
 019  ewsd
 020  axe
 021  dco
 022  dcor
 023  2es
 024  2er
 025  3es
 026  5esm
 027  5esg
 030  dmlu
 031  fcl
 032  5e91
 035  5edm
 036  5edg
 037  ds1c
 038  ds1a
 039  5eds
 040  ewd1
 041  5esa
 042  5esk
 043  5eda
 044  ewdd
 045  dms3
 046  dms4
 047  5ese
 048  ds1e
 049  ds1f
 050  5dn0
 051  ds1h
--------------------------------------------------------------------------------
```

Table 4A-5. COMMON LANG FMT CULTURE (cont.)

```
INSTANCE KEY: tre
****************************************************************************
seqno dlct
 001  ru
 002  tu
 003  tul
 004  tre
 005  ru2
 006  tr10
 007  tr11
 009  tr12
 010  tr20
 011  tr21
 012  tr22
 013  tr23
 014  tr24
 015  tr25
 016  tr26
 017  lprt
 018  utre
----------------------------------------------------------------------------

INSTANCE KEY: bl
****************************************************************************
seqno dlct
 001  ru
 002  un
 003  bl
----------------------------------------------------------------------------

INSTANCE KEY: ca
****************************************************************************
seqno dlct
 001  ca
----------------------------------------------------------------------------

INSTANCE KEY: clct
****************************************************************************
seqno dlct
 001  clct
----------------------------------------------------------------------------

INSTANCE KEY: cp
****************************************************************************
seqno dlct
 001  cp
----------------------------------------------------------------------------
```

Table 4A-5. COMMON LANG FMT CULTURE (cont.)

```
INSTANCE KEY: ctx
*****************************************************************************
seqno dlct
 001  ctx
-----------------------------------------------------------------------------

INSTANCE KEY: dtn
*****************************************************************************
seqno dlct
 001  tn
-----------------------------------------------------------------------------

INSTANCE KEY: frm
*****************************************************************************
seqno dlct
 001  clli
 002  frm
-----------------------------------------------------------------------------

INSTANCE KEY: hml
*****************************************************************************
seqno dlct
 001  hml
-----------------------------------------------------------------------------

INSTANCE KEY: ic
*****************************************************************************
seqno dlct
 001  clli
-----------------------------------------------------------------------------

INSTANCE KEY: ice
*****************************************************************************
seqno dlct
 001  sse
 002  ice3
 003  ice2
-----------------------------------------------------------------------------
```

Table 4A-5. COMMON LANG FMT CULTURE (cont.)

```
INSTANCE KEY: if
******************************************************************************
seqno dlct
 001  cp
------------------------------------------------------------------------------

INSTANCE KEY: invo
******************************************************************************
seqno dlct
 001  invo
------------------------------------------------------------------------------

INSTANCE KEY: ldiv
******************************************************************************
seqno dlct
 001  ldiv
 002  ldv1
------------------------------------------------------------------------------

INSTANCE KEY: me
******************************************************************************
seqno dlct
 001  me
 002  me1
 003  me2
 004  me3
 005  me4
 006  me5
 007  me6
 008  me7
 009  me8
 010  me9
 011  me10
 012  me11
 013  me12
 014  me13
 015  me14
 016  me15
 017  me16
 018  me17
 019  me18
 020  me19
 021  me20
 022  me21
 023  me23
------------------------------------------------------------------------------
```

Table 4A-5. COMMON LANG FMT CULTURE (cont.)

```
INSTANCE KEY: nxx
*****************************************************************************
seqno dlct
 001   nxx
-----------------------------------------------------------------------------


INSTANCE KEY: ow
*****************************************************************************
seqno dlct
 001   wo
-----------------------------------------------------------------------------


INSTANCE KEY: owt
*****************************************************************************
seqno dlct
 001   ar
-----------------------------------------------------------------------------


INSTANCE KEY: rsv
*****************************************************************************
seqno dlct
 001   tn
-----------------------------------------------------------------------------


INSTANCE KEY: rsvg
*****************************************************************************
seqno dlct
 001   rsvg
-----------------------------------------------------------------------------
```

Table 4A-5. COMMON LANG FMT CULTURE (cont.)

```
INSTANCE KEY: ru
*************************************************************************
seqno dlct
 001   clli
 002   rmt1
 003   rmt2
-------------------------------------------------------------------------


INSTANCE KEY: sfg
*************************************************************************
seqno dlct
 001   sfg
-------------------------------------------------------------------------


INSTANCE KEY: tie
*************************************************************************
seqno dlct
 001   ca
-------------------------------------------------------------------------


INSTANCE KEY: tn
*************************************************************************
seqno dlct
 001   tn
-------------------------------------------------------------------------


INSTANCE KEY: tnl
*************************************************************************
seqno dlct
 001   tnl
-------------------------------------------------------------------------
```

Table 4A-5. COMMON LANG FMT CULTURE

```
INSTANCE KEY: clg
*******************************************************************************
seqno dlct
 001  clg
-------------------------------------------------------------------------------

INSTANCE KEY: ltg
*******************************************************************************
seqno dlct
 001  ltg
-------------------------------------------------------------------------------

INSTANCE KEY: ltid
*******************************************************************************
seqno dlct
 001  ltid
-------------------------------------------------------------------------------

INSTANCE KEY: tkca
*******************************************************************************
seqno dlct
 001  tkca
-------------------------------------------------------------------------------

INSTANCE KEY: tkp
*******************************************************************************
seqno dlct
 001  tkp
-------------------------------------------------------------------------------
```

Table 4A-5. USO FMT CULTURE

```
INSTANCE KEY: bw
****************************************************************************
seqno dlct
 001  bw1
----------------------------------------------------------------------------
INSTANCE KEY: cc
****************************************************************************
seqno dlct
 001  cc1
----------------------------------------------------------------------------
INSTANCE KEY: ccpt
****************************************************************************
seqno dlct
 001  ccp1
 002  ccp2
 003  ccp3
 004  ccp4
----------------------------------------------------------------------------
INSTANCE KEY: chan
****************************************************************************
seqno dlct
 001  chn1
 002  chn2
 003  chn3
 004  chn4
 005  chn5
 006  chn6
 007  chn7
 008  5esm
 009  5esg
 010  chla
 011  5ess
 012  dms2
 013  ewsd
 014  5esa
 015  axe
----------------------------------------------------------------------------
INSTANCE KEY: crv
****************************************************************************
seqno dlct
 001  crv1
 002  5esm
 003  5esg
 004  crv2
 005  crv3
 006  5esa
 007  ewd2
 008  crv6
----------------------------------------------------------------------------
```

Table 4A-5. USO FMT CULTURE (cont.)

```
INSTANCE KEY: slot
*****************************************************************************
seqno dlct
 001  slt1
 002  slt2
 003  slt3
-----------------------------------------------------------------------------
```

```
INSTANCE KEY: sweq
*****************************************************************************
seqno dlct
 001  swe1
 002  swe2
 003  se3l
 004  se3s
 005  se3i
 006  se3c
 007  swe4
 008  swe5
 009  swe6
 012  seph
 013  secl
 014  se8l
 015  se8s
 016  se8i
 017  se8c
 018  swe9
 019  se10
 020  se11
 021  se12
 022  se13
 023  se14
 024  swc1
 025  swc2
 026  swc3
 027  swc4
 028  swc5
 029  swc6
 030  swc7
 031  swc8
 032  swc9
```

Table 4A-5. USO FMT CULTURE (cont.)

```
INSTANCE KEY: sweq
*****************************************************************************
seqno dlct
 033   sc10
 034   sc11
 035   sc12
 036   dmle
 037   dmpe
 038   dmsl
 039   dml1
 040   dml2
 041   dml3
 042   dxle
 043   dxpe
 044   d4le
 045   ewsd
 046   ewsl
 047   axe
 048   axel
 049   sw12
 050   sw13
 051   sw14
 052   dco
 053   dcol
 054   dcor
 055   dcrl
 056   2es
 057   2esl
 058   2es2
 059   2es3
 060   3es
 061   3esl
 062   dmc3
 063   dmc4
 064   5esm
 065   5esg
 067   sw10
 068   d10u
 069   d171
 070   d172
 071   se91
 072   se41
 075   se8m
 076   se8g
 077   swed
 078   swad
 079   se8a
```

Table 4A-5. USO FMT CULTURE (cont.)

```
INSTANCE KEY: sweq
*************************************************************************
seqno dlct
 080  se8k
 081  5esa
 082  5esk
 083  ewdd
 084  dmc5
 085  dmc6
 086  dmc7
 087  dmc8
 088  dmc9
 089  dm10
 090  see1
 091  5dn2
 092  5dn3
-------------------------------------------------------------------------
INSTANCE KEY: swpt
*************************************************************************
seqno dlct
 001  1es
 004  5esp
 005  dms
 006  5esi
 007  5esc
 008  5esl
 009  5ess
 010  dms1
 011  5ep1
 012  dms2
 013  rss
 014  dmpe
 015  dmp1
 016  dmle
 017  dml1
 018  dmsl
 019  ewsd
 020  axe
 021  dco
 022  dcor
 023  2es
 024  2er
 025  3es
 026  5esm
 027  5esg
 030  dmlu
-------------------------------------------------------------------------
```

Table 4A-5. USO FMT CULTURE (cont.)

```
INSTANCE KEY: swpt
***************************************************************************
seqno dlct
 031  fcl
 032  5e91
 035  5edm
 036  5edg
 037  ds1c
 038  ds1a
 039  5eds
 040  ewd1
 041  5esa
 042  5esk
 043  5eda
 044  ewdd
 045  dms3
 046  dms4
 047  5ese
 048  ds1e
 049  ds1f
 050  5dn0
 051  ds1h
------------------------------------------------------------------------------
INSTANCE KEY: tre
***************************************************************************
seqno dlct
 001  tu
 002  tu1
 003  ru
 004  tre
 005  ru2
 006  tr10
 007  tr11
 009  tr12
 010  tr20
 011  tr21
 012  tr22
 013  tr23
 014  tr24
 015  tr25
 016  tr26
 017  lprt
 018  utre
---------------------------------------------------------------------------
```

Table 4A-5. USO FMT CULTURE (cont.)

```
INSTANCE KEY: bl
*****************************************************************************
seqno dlct
 001  ru
 002  un
 003  bl
-----------------------------------------------------------------------------

INSTANCE KEY: ca
*****************************************************************************
seqno dlct
 001  ca
-----------------------------------------------------------------------------

INSTANCE KEY: clct
*****************************************************************************
seqno dlct
 001  clct
-----------------------------------------------------------------------------

INSTANCE KEY: cp
*****************************************************************************
seqno dlct
 001  cp
 002  xp
-----------------------------------------------------------------------------

INSTANCE KEY: ctx
*****************************************************************************
seqno dlct
 001  ctx
-----------------------------------------------------------------------------

INSTANCE KEY: dtn
*****************************************************************************
seqno dlct
 001  tn
-----------------------------------------------------------------------------

INSTANCE KEY: frm
*****************************************************************************
seqno dlct
 001  frm
 002  clli
-----------------------------------------------------------------------------
```

Table 4A-5. USO FMT CULTURE (cont.)

```
INSTANCE KEY: hml
*************************************************************************
seqno dlct
 001  hml
-------------------------------------------------------------------------


INSTANCE KEY: ic
*************************************************************************
seqno dlct
 001  exk
-------------------------------------------------------------------------


INSTANCE KEY: ice
*************************************************************************
seqno dlct
 001  sse
 002  ice3
 003  ice2
-------------------------------------------------------------------------

INSTANCE KEY: if
*************************************************************************
seqno dlct
 001  cp
-------------------------------------------------------------------------


INSTANCE KEY: invo
*************************************************************************
seqno dlct
 001  invo
-------------------------------------------------------------------------
```

Table 4A-5. USO FMT CULTURE (cont.)

```
INSTANCE KEY: ldiv
*****************************************************************************
seqno dlct
 001  ldiv
 002  ldv1
-----------------------------------------------------------------------------
```

```
INSTANCE KEY: me
*****************************************************************************
seqno dlct
 001  me
 002  me1
 003  me2
 004  me3
 005  me4
 006  me5
 007  me6
 008  me7
 009  me8
 010  me9
 011  me10
 012  me11
 013  me12
 014  me13
 015  me14
 016  me15
 017  me16
 018  me17
 019  me18
 020  me19
 021  me20
 022  me21
 023  me23
-----------------------------------------------------------------------------
```

```
INSTANCE KEY: nxx
*****************************************************************************
seqno dlct
 001  nxx
-----------------------------------------------------------------------------
```

Table 4A-5. USO FMT CULTURE (cont.)

```
INSTANCE KEY: ow
**********************************************************************
seqno dlct
 001  wo
----------------------------------------------------------------------

INSTANCE KEY: owt
**********************************************************************
seqno dlct
 001  ar
----------------------------------------------------------------------

INSTANCE KEY: rsv
**********************************************************************
seqno dlct
 001  tn
----------------------------------------------------------------------

INSTANCE KEY: rsvg
**********************************************************************
seqno dlct
 001  rsvg
----------------------------------------------------------------------

INSTANCE KEY: ru
**********************************************************************
seqno dlct
 001  rmt1
 002  rmt2
----------------------------------------------------------------------

INSTANCE KEY: sfg
**********************************************************************
seqno dlct
 001  sfg
----------------------------------------------------------------------

INSTANCE KEY: tie
**********************************************************************
seqno dlct
 001  ca
----------------------------------------------------------------------
```

Table 4A-5. USO FMT CULTURE

```
INSTANCE KEY: tn
**********************************************************************
seqno dlct
 001   tn
----------------------------------------------------------------------

INSTANCE KEY: tnl
**********************************************************************
seqno dlct
 001   tnl
----------------------------------------------------------------------

INSTANCE KEY: clg
**********************************************************************
seqno dlct
 001   clg
----------------------------------------------------------------------

INSTANCE KEY: ltg
**********************************************************************
seqno dlct
 001   ltg
----------------------------------------------------------------------

INSTANCE KEY: ltid
**********************************************************************
seqno dlct
 001   ltid
----------------------------------------------------------------------

INSTANCE KEY: tkca
**********************************************************************
seqno dlct
 001   tkca
----------------------------------------------------------------------

INSTANCE KEY: tkp
**********************************************************************
seqno dlct
 001   tkp
----------------------------------------------------------------------
```

Table 4A-6. FMT USAGE

INSTANCE KEY: foms
****

node_type	dlct	fmt_id
bl	bl	bl2
bl	ru	bl1
bl	un	clct1
bw	bw1	bw1
ca	ca	ca1
cc	cc1	cc1
ccpt	ccp1	ccp1
ccpt	ccp2	ccp2
ccpt	ccp3	ccp3
ccpt	ccp4	ccp4
chan	axe	axe
chan	chla	dms4
chan	chn1	chn1
chan	chn2	chn2
chan	chn3	chn3
chan	chn4	chn4
chan	chn5	chn5
chan	chn6	chn6
chan	chn7	chn7
chan	dms2	dms4
chan	ewsd	ewsd
chan	5esa	swt10
chan	5esg	swt10
chan	5esm	swt10
chan	5ess	swt10
clct	clct	clct1
clg	clg	clct1
cp	cp	cp1
cp	xp	xp1
crv	crv1	crv1
crv	crv2	crv2
crv	crv3	crv2
crv	crv6	crv2
crv	5esa	swt10
crv	5esg	swt10
crv	5esm	swt10
ctx	ctx	hml2
dtn	tn	tn2
frm	clli	frm1
frm	frm	frm2
hml	hml	clct1
ic	ctn	ic1
ice	ice2	ice2
ice	ice3	ice2
ice	sse	ice1

Table 4A-6. FMT USAGE

```
INSTANCE KEY: foms
*****************************************************************************************
node_type dlct fmt_id
  if      cp    cp1
  invo    invo  clct1
  ldiv    ldiv  clct1
  ldiv    ldv1  clct1
  ltg     ltg   ltg1
  ltid    ltid  ltid2
  me      me    clct1
  me      me1   me31
  me      me10  me39
  me      me11  me39
  me      me12  me42
  me      me13  me42
  me      me14  me42
  me      me15  me42
  me      me16  me42
  me      me17  me42
  me      me18  me42
  me      me19  me42
  me      me2   me32
  me      me20  me35
  me      me21  me51
  me      me23  me53
  me      me3   me33
  me      me4   me34
  me      me5   me35
  me      me6   me32
  me      me7   me37
  me      me8   me34
  me      me9   me39
  nxx     nxx   nxx1
  ow      wo    clct1
  owt     ar    clct1
  rsv     tn    clct1
  rsvg    rsvg  clct1
  ru      rmt1  rmt3
  ru      rmt2  rmt3
  sfg     sfg   sfg1
  slot    slt1  slt1
  slot    slt2  slt2
  slot    slt3  slt3
  swpt    axe   axe
  swpt    dco   dco1
  swpt    dcor  dcr1
  swpt    dmle  dmx1
  swpt    dml1  dmx2
  swpt    dmpe  dmx1
```

Table 4A-6. FMT USAGE

INSTANCE KEY: foms

****

node_type	dlct	fmt_id
swpt	dmp1	dmx2
swpt	dms	dms1
swpt	dms1	dmx3
swpt	dms2	dms4
swpt	dms3	dms1
swpt	dms4	dms4
swpt	dm1u	dmx3
swpt	ds1a	ds1a
swpt	ds1c	ds1c
swpt	ewsd	ewsd
swpt	fcl	swpt6
swpt	rss	swt15
swpt	1es	swpt1
swpt	2er	2er
swpt	2es	2es1
swpt	3es	3es1
swpt	5dn0	swt24
swpt	5esa	swt10
swpt	5esc	swt10
swpt	5ese	swt22
swpt	5esg	swt10
swpt	5esi	swt10
swpt	5esk	swt19
swpt	5esl	swt12
swpt	5esm	swt10
swpt	5esp	swpt6
swpt	5ess	swt10
swpt	5e91	swt12
tie	ca	ca1
tkca	tkca	ca1
tkp	tkp	cp1
tn	tn	tn2
tnl	tnl	clct1
tre	lprt	ppsn
tre	ru	bl1
tre	ru2	bl1

Table 4A-6. FMT USAGE

INSTANCE KEY: foms

node_type	dlct	fmt_id
tre	tre	clct1
tre	tr10	bl1
tre	tr11	tr11
tre	tr12	bl2
tre	tr20	bl1
tre	tr21	bl1
tre	tr22	bl1
tre	tr23	bl1
tre	tr24	bl1
tre	tr25	bl1
tre	tr26	bl2
tre	tu	tre2
tre	tu1	tre3
tre	utre	clct1

Table 4A-6. FMT USAGE

INSTANCE KEY: query

****

node_type	dlct	fmt_id
bl	bl	bl2
bl	ru	bl1
bl	un	clct1
bw	bw1	bw1
ca	ca	ca1
cc	cc1	cc1
ccpt	ccp1	ccp1
ccpt	ccp2	ccp2
ccpt	ccp3	ccp3
ccpt	ccp4	ccp4
chan	axe	axe
chan	chla	dms4
chan	chn1	chn1
chan	chn2	chn2
chan	chn3	chn3
chan	chn4	chn4
chan	chn5	chn5
chan	chn6	chn6
chan	chn7	chn7a
chan	dms2	dms4
chan	ewsd	ewsd
chan	5esa	swt10
chan	5esg	swt10
chan	5esm	swt10
chan	5ess	swt10
clct	clct	clct1
clg	clg	clct1
cp	cp	cp1
cp	xp	xp1
crv	crv1	crv1
crv	crv2	crv2
crv	crv3	crv2
crv	crv6	crv2
crv	ewd2	ewd3
crv	5esa	swt10
crv	5esg	swt10
crv	5esm	swt10
ctx	ctx	clct1
dtn	tn	tn2
frm	clli	frm1
frm	frm	frm2
hml	hml	hml1
ic	clli	ic2
ic	ctn	ic3
ic	exk	ic4
ice	ice2	ice2

Table 4A-6. FMT USAGE

```
INSTANCE KEY: query
*****************************************************************************************
node_type dlct fmt_id
  ice     ice3  ice2
  ice     sse   ice1
  if      cp    cp1
  invo    invo  clct1
  ldiv    ldiv  clct1
  ldiv    ldv1  clct1
  ltg     ltg   ltg1
  ltid    ltid  ltid1
  me      me    clct1
  me      me1   me31
  me      me10  me39
  me      me11  me39
  me      me12  me42
  me      me13  me42
  me      me14  me42
  me      me15  me42
  me      me16  me42
  me      me17  me42
  me      me18  me42
  me      me19  me42
  me      me2   me32
  me      me20  me35
  me      me21  me51
  me      me23  me53
  me      me3   me33
  me      me4   me34
  me      me5   me35
  me      me6   me32
  me      me7   me37
  me      me8   me34
  me      me9   me39
  nxx     nxx   nxx1
  ow      wo    clct1
  owt     ar    clct1
  rsv     tn    clct1
  rsvg    rsvg  clct1
  ru      clli  ic2
  ru      ctn   ic3
  ru      exk   clct1
  ru      rmt1  rmt2
  ru      rmt2  rmt2
  sfg     sfg   clct1
  slot    slt1  slt1
  slot    slt2  slt2
  slot    slt3  slt3
  sweq    axe   eqp27
```

Table 4A-6. FMT USAGE

```
INSTANCE KEY: query
*******************************************************************************
node_type dlct fmt_id
  sweq    axel  eqp28
  sweq    dco   eqp30
  sweq    dcor  eqp32
  sweq    dcol  eqp31
  sweq    dcrl  eqp33
  sweq    dl71  eqp80
  sweq    dmc3  eqp23
  sweq    dmc4  eqp19
  sweq    dmc5  eqpq8
  sweq    dmc6  eqp35
  sweq    dmc7  eqp11
  sweq    dmc8  eqp16
  sweq    dmc9  eqp17
  sweq    dmle  eqp18
  sweq    dml1  eqp19
  sweq    dml2  eqp20
  sweq    dml3  eqp21
  sweq    dmpe  eqp18
  sweq    dmsl  eqp18
  sweq    dm10  eqp15
  sweq    dxle  eqp22
  sweq    dxpe  eqp22
  sweq    d10u  eqp18
  sweq    d4le  eqp23
  sweq    ewdd  eqp25
  sweq    ewsd  eqp25
  sweq    ewsl  eqp26
  sweq    sc10  eqpq5
  sweq    sc11  eqp15
  sweq    sc12  eqpq2
  sweq    secl  eqpcl
  sweq    seel  eqpq6
  sweq    seph  eqpph
  sweq    se10  eqp17
  sweq    se11  eqpq3
  sweq    se12  eqp15
  sweq    se13  eqpq8
  sweq    se14  eqp16
  sweq    se18  eqp10
  sweq    se3c  eqp12
  sweq    se3i  eqp12
  sweq    se3l  eqpq4
  sweq    se3s  eqp12
  sweq    se4l  eqpq4
  sweq    se8a  eqpq6
```

Table 4A-6. FMT USAGE

```
INSTANCE KEY: query
*****************************************************************************************
node_type dlct fmt_id
  sweq     se8c  eqpq6
  sweq     se8g  eqpq6
  sweq     se8i  eqpq6
  sweq     se8k  eqpq6
  sweq     se8l  eqpq6
  sweq     se8m  eqpq6
  sweq     se8s  eqpq6
  sweq     se9l  eqpq6
  sweq     swad  swbd
  sweq     swc1  eqpq7
  sweq     swc2  eqpq1
  sweq     swc4  eqpq9
  sweq     swc5  eqp10
  sweq     swc6  eqpq6
  sweq     swc7  eqp12
  sweq     swc8  eqpq3
  sweq     swc9  eqp16
  sweq     swed  swcd
  sweq     swe1  eqpq1
  sweq     swe2  eqpq2
  sweq     swe4  eqp35
  sweq     swe5  eqpq7
  sweq     swe6  eqpq9
  sweq     swe9  eqp11
  sweq     sw10  eqpq5
  sweq     sw12  eqpq8
  sweq     sw13  eqp35
  sweq     sw14  eqp11
  sweq     2es   eqp60
  sweq     2es1  eqp61
  sweq     2es2  eqp62
  sweq     2es3  eqp63
  sweq     3es   eqp60
  sweq     3es1  eqp64
  sweq     5dn2  eqpq6
  sweq     5dn3  eqp65
  sweq     5esa  eqp12
  sweq     5esg  eqp12
  sweq     5esk  eqp12
  swpt     axe   axe
  swpt     dco   dco1
  swpt     dcor  dcr1
  swpt     dmle  dmx1
  swpt     dml1  dmx2
  swpt     dmpe  dmx1
```

Table 4A-6. FMT USAGE

INSTANCE KEY: query

****

node_type	dlct	fmt_id
swpt	dmp1	dmx2
swpt	dms	dms1
swpt	dms1	dmx3
swpt	dms2	dms6
swpt	dms3	dms1
swpt	dms4	dms6
swpt	dmlu	dmx3
swpt	ds1a	ds1a
swpt	ds1c	ds1c
swpt	ds1e	swc23
swpt	ds1f	swc17
swpt	ds1h	axe
swpt	ewdd	ewdd
swpt	ewd1	ewd1
swpt	ewsd	ewsd
swpt	fcl	swpt6
swpt	rss	swt15
swpt	1es	swpt1
swpt	2er	2er
swpt	2es	2es1
swpt	3es	3es1
swpt	5dn0	swt24
swpt	5eda	5ed1
swpt	5edg	5ed1
swpt	5edm	5ed1
swpt	5eds	5ed1
swpt	5esa	swt10
swpt	5esc	swt10
swpt	5ese	swt22
swpt	5esg	swt10
swpt	5esi	swt10
swpt	5esk	swt19
swpt	5esl	swt12
swpt	5esm	swt10
swpt	5esp	swpt6
swpt	5ess	swt10
swpt	5e91	swt12
tie	ca	ca1
tkca	tkca	ca1
tkp	tkp	cp1
tn	tn	tn2

Table 4A-6. FMT USAGE

INSTANCE KEY: query

****

node_type	dlct	fmt_id
tnl	tnl	clct1
tre	lprt	ppsn
tre	ru	bl1
tre	ru2	bl1
tre	tre	clct1
tre	tr10	bl1
tre	tr11	tr11
tre	tr12	bl2
tre	tr20	bl1
tre	tr21	bl1
tre	tr22	bl1
tre	tr23	bl1
tre	tr24	bl1
tre	tr25	bl1
tre	tr26	bl2
tre	tu	tre2
tre	tu1	tre3
tre	utre	clct1

Table 4A-6. FMT USAGE

```
INSTANCE KEY: rpt
******************************************************************************
node_type dlct fmt_id
  sweq    axe   swc37
  sweq    axe1  swc38
  sweq    dco   swc42
  sweq    dcor  swc44
  sweq    dco1  swc43
  sweq    dcr1  swc45
  sweq    d171  swc81
  sweq    dmc3  swc25
  sweq    dmc4  swc16
  sweq    dmc5  swe22
  sweq    dmc6  swc10
  sweq    dmc7  swc11
  sweq    dmc8  swe18
  sweq    dmc9  swe19
  sweq    dmle  swc19
  sweq    dml1  swc16
  sweq    dml2  swc13
  sweq    dml3  swc28
  sweq    dmpe  swc18
  sweq    dmsl  swc14
  sweq    dm10  swe20
  sweq    dxle  swc26
  sweq    dxpe  swc27
  sweq    d10u  swc82
  sweq    d4le  swc25
  sweq    ewdd  swc29
  sweq    ewsd  swc31
  sweq    ews1  swc32
  sweq    sc10  swe19
  sweq    sc11  swe20
  sweq    sc12  swc12
  sweq    secl  swrcl
  sweq    seel  sweel
  sweq    seph  swrph
  sweq    se10  swe17
  sweq    se11  sweq3
  sweq    se12  swe15
  sweq    se13  swe22
  sweq    se14  swe16
  sweq    se18  swe10
  sweq    se3c  swe12
  sweq    se3i  swe12
  sweq    se31  sweq4
  sweq    se3s  swe12
  sweq    se41  sweca
```

Table 4A-6. FMT USAGE

INSTANCE KEY: rpt

node_type	dlct	fmt_id
sweq	se8a	swec6
sweq	se8c	sweq6
sweq	se8g	sweq6
sweq	se8i	sweq6
sweq	se8k	swecc
sweq	se8l	sweq6
sweq	se8m	sweq6
sweq	se8s	sweq6
sweq	se9l	swec6
sweq	swad	swsd
sweq	swc1	swec1
sweq	swc2	swec2
sweq	swc3	swec3
sweq	swc4	swec4
sweq	swc5	swec5
sweq	swc6	swec6
sweq	swc7	swec7
sweq	swc8	swec8
sweq	swc9	swe18
sweq	swed	swrd
sweq	swe1	sweq1
sweq	swe2	sweq2
sweq	swe4	swc10
sweq	swe5	sweq7
sweq	swe6	swc65
sweq	swe9	swc11
sweq	sw10	swe19
sweq	sw12	swe22
sweq	sw13	swc10
sweq	sw14	swc11
sweq	2es	swc64
sweq	2es1	swc65
sweq	2es2	swc66
sweq	2es3	swc67
sweq	3es	swc64
sweq	3es1	swc68
sweq	5dn2	swe25
sweq	5dn3	swe26
sweq	5esa	swec7
sweq	5esg	swec9
sweq	5esk	swecb

Table 4A-6. FMT USAGE

INSTANCE KEY: soac

****

node_type	dlct	fmt_id
bl	bl	bl2
bl	ru	bl1
bl	un	clct1
bw	bw1	bw1
ca	ca	ca1
cc	cc1	cc1
ccpt	ccp1	ccp1
ccpt	ccp2	ccp2
ccpt	ccp3	ccp3
ccpt	ccp4	ccp4
chan	axe	axe
chan	chla	dms5
chan	chn1	chn1
chan	chn2	chn2
chan	chn3	chn3
chan	chn4	chn4
chan	chn5	chn5
chan	chn6	chn6
chan	chn7	chn7
chan	dms2	dms5
chan	ewsd	ewsd
chan	5esa	swt18
chan	5esg	swt18
chan	5esm	swt17
chan	5ess	swt14
clct	clct	clct1
clg	clg	clct1
cp	cp	cp1
cp	xp	xp1
crv	crv1	crv1
crv	crv2	crv3
crv	crv3	crv3
crv	crv6	crv3
crv	ewd2	ewsd
crv	5esa	swt18
crv	5esg	swt18
crv	5esm	swt17
ctx	ctx	hml2
dtn	tn	tn2
frm	clli	frm1
frm	frm	frm2
hml	hml	hml2
ic	exk	ic4
ice	ice2	ice1
ice	ice3	ice1
ice	sse	ice1

Table 4A-6. FMT USAGE

INSTANCE KEY: soac
****

node_type	dlct	fmt_id
if	cp	cp1
invo	invo	clct1
ldiv	ldiv	clct1
ldiv	ldv1	clct1
ltg	ltg	ltg1
ltid	ltid	ltid3
me	me	clct1
me	me1	me1
me	me10	me9
me	me11	me9
me	me12	me12
me	me13	me12
me	me14	me12
me	me15	me12
me	me16	me12
me	me17	me12
me	me18	me12
me	me19	me12
me	me2	me2
me	me20	me20
me	me21	me21
me	me23	me20
me	me3	me3
me	me4	me4
me	me5	me5
me	me6	me6
me	me7	me7
me	me8	me8
me	me9	me9
nxx	nxx	nxx1
ow	wo	clct1
owt	ar	clct1
rsv	tn	clct1
rsvg	rsvg	clct1
ru	exk	clct1
ru	rmt1	rmt1
ru	rmt2	rmt1
sfg	sfg	sfg1
slot	slt1	slt1
slot	slt2	slt2
slot	slt3	slt3
swpt	axe	axe
swpt	dco	dco
swpt	dcor	dcor
swpt	dmle	dmle
swpt	dml1	dmle

Table 4A-6. FMT USAGE

INSTANCE KEY: soac

****

node_type	dlct	fmt_id
swpt	dmpe	dmpe
swpt	dmp1	dmpe
swpt	dms	dms
swpt	dms1	dms1
swpt	dms1	dms2
swpt	dms2	dms5
swpt	dms3	dms
swpt	dms4	dms5
swpt	dm1u	dmx1
swpt	ewsd	ewsd
swpt	fcl	swpt2
swpt	rss	swt15
swpt	1es	swpt1
swpt	2er	2er
swpt	2es	2es
swpt	3es	3es
swpt	5dn0	swt26
swpt	5esa	swt18
swpt	5esc	swt16
swpt	5ese	swt23
swpt	5esg	swt18
swpt	5esi	swt11
swpt	5esk	swt20
swpt	5esl	swt13
swpt	5esm	swt17
swpt	5esp	swpt8
swpt	5ess	swt14
swpt	5e91	swt13
tie	ca	ca1
tkca	tkca	ca1
tkp	tkp	cp1
tn	tn	tn2
tnl	tnl	clct1
tre	lprt	tre3
tre	ru	bl1
tre	ru2	bl1
tre	tre	clct1
tre	tr10	bl1
tre	tr11	tr11
tre	tr12	bl2
tre	tr20	bl1
tre	tr21	bl1
tre	tr22	bl1
tre	tr23	bl1
tre	tr24	bl1
tre	tr25	bl1

Table 4A-6. FMT USAGE

```
INSTANCE KEY: soac
*****************************************************************************
node_type dlct fmt_id
  tre      tr26  bl2
  tre      tu    tre2
  tre      tul   tre3
  tre      utre  clctl
-----------------------------------------------------------------------------
```

Table 4A-6. FMT USAGE

```
INSTANCE KEY: ulbb
********************************************************************************
node_type dlct fmt_id
  bl        bl    bl2
  bl        ru    bl1
  bl        un    clct1
  bw        bw1   bw1
  ca        ca    ca1
  cc        cc1   cc1
  ccpt      ccp1  ccp1a
  ccpt      ccp2  ccp2a
  ccpt      ccp3  ccp3a
  ccpt      ccp4  ccp4a
  chan      axe   axe
  chan      ch1a  dms4
  chan      chn1  chn1a
  chan      chn2  chn2a
  chan      chn3  chn3a
  chan      chn4  chn4a
  chan      chn5  chn5a
  chan      chn6  chn6a
  chan      chn7  chn7a
  chan      dms2  dms4
  chan      ewsd  ewsd
  chan      5esa  swt10
  chan      5esg  swt10
  chan      5esm  swt10
  chan      5ess  swt10
  clct      clct  clct1
  clg       clg   clct1
  cp        cp    cp1
  cp        xp    xp1
  crv       crv1  crv1a
  crv       crv2  crv2
  crv       crv3  crv2
  crv       crv6  crv2
  crv       ewd2  ewd3
  crv       5esa  swt10
  crv       5esg  swt10
  crv       5esm  swt10
  ctx       ctx   clct1
  dtn       tn    tn2
  frm       clli  frm1
  frm       frm   frm2
  hml       hml   hml1
  ic        clli  ic2
  ic        ctn   ic3
  ic        exk   ic4
  ice       ice2  ice2
```

Table 4A-6. FMT USAGE

INSTANCE KEY: ulbb

****

node_type	dlct	fmt_id
ice	ice3	ice2
ice	sse	ice1
if	cp	cp1
invo	invo	clct1
ldiv	ldiv	clct1
ldiv	ldv1	clct1
ltg	ltg	ltg1
ltid	ltid	ltid1
me	me	clct1
me	me1	me31
me	me10	me39
me	me11	me39
me	me12	me42
me	me13	me42
me	me14	me42
me	me15	me42
me	me16	me42
me	me17	me42
me	me18	me42
me	me19	me42
me	me2	me32
me	me20	me35
me	me21	me51
me	me23	me53
me	me3	me33
me	me4	me34
me	me5	me35
me	me6	me32
me	me7	me37
me	me8	me34
me	me9	me39
nxx	nxx	nxx1
ow	wo	clct1
owt	ar	clct1
rsv	tn	clct1
rsvg	rsvg	clct1
ru	clli	ic2
ru	ctn	ic3
ru	exk	clct1
ru	rmt1	rmt2
ru	rmt2	rmt2
sfg	sfg	clct1
slot	slt1	slt1a
slot	slt2	slt2a
slot	slt3	slt3a
sweq	axe	swc35

Table 4A-6. FMT USAGE

INSTANCE KEY: ulbb

****

node_type	dlct	fmt_id
sweq	axel	swc36
sweq	dco	swc35
sweq	dcor	swc40
sweq	dcol	swc36
sweq	dcrl	swc41
sweq	dl71	swc80
sweq	dmc3	swc22
sweq	dmc4	swc15
sweq	dmc5	sweq8
sweq	dmc6	swe23
sweq	dmc7	swe11
sweq	dmc8	swe16
sweq	dmc9	sweq5
sweq	dmle	swc17
sweq	dml1	swc15
sweq	dml2	swc21
sweq	dml3	swc24
sweq	dmpe	swc17
sweq	dmsl	swc20
sweq	dm10	swe15
sweq	dxle	swc23
sweq	dxpe	swc23
sweq	d10u	swc17
sweq	d4le	swc22
sweq	ewdd	swc29
sweq	ewsd	swc29
sweq	ewsl	swc30
sweq	sc10	sweq5
sweq	sc11	swe21
sweq	sc12	sweq2
sweq	secl	swecl
sweq	seel	sweq6
sweq	seph	sweph
sweq	se10	swe17
sweq	se11	sweq3
sweq	se12	swe15
sweq	se13	sweq8
sweq	se14	swe16
sweq	se18	swe10
sweq	se3c	swe12
sweq	se3i	swe12
sweq	se3l	sweq4
sweq	se3s	swe12
sweq	se4l	sweq4
sweq	se8a	sweq6

Table 4A-6. FMT USAGE

INSTANCE KEY: ulbb

****

node_type	dlct	fmt_id
sweq	se8c	sweq6
sweq	se8g	sweq6
sweq	se8i	sweq6
sweq	se8k	sweq6
sweq	se8l	sweq6
sweq	se8m	sweq6
sweq	se8s	sweq6
sweq	se9l	sweq6
sweq	swad	swad
sweq	swc1	sweq7
sweq	swc2	sweq1
sweq	swc4	sweq9
sweq	swc5	swe10
sweq	swc6	sweq6
sweq	swc7	swe12
sweq	swc8	sweq3
sweq	swc9	swe16
sweq	swed	swed
sweq	swe1	sweq1
sweq	swe2	sweq2
sweq	swe4	swe23
sweq	swe5	sweq7
sweq	swe6	sweq9
sweq	swe9	swe11
sweq	sw10	sweq5
sweq	sw12	sweq8
sweq	sw13	swe23
sweq	sw14	swe11
sweq	2es	swc60
sweq	2es1	swc61
sweq	2es2	swc62
sweq	2es3	swc63
sweq	3es	swc60
sweq	3es1	swc69
sweq	5dn2	sweq6
sweq	5dn3	swe24
sweq	5esa	swe12
sweq	5esg	swe12
sweq	5esk	swe12
swpt	axe	axe
swpt	dco	dco1
swpt	dcor	dcr1
swpt	dmle	dmx1
swpt	dml1	dmx2
swpt	dmpe	dmx1
swpt	dmp1	dmx2

Table 4A-6. FMT USAGE

```
INSTANCE KEY: ulbb
*****************************************************************************
node_type dlct fmt_id
  swpt    dms    dms1
  swpt    dms1   dmx3
  swpt    dms2   dms6
  swpt    dms3   dms1
  swpt    dms4   dms6
  swpt    dm1u   dmx3
  swpt    ds1a   ds1a
  swpt    ds1c   ds1c
  swpt    ds1e   swc23
  swpt    ds1f   swc17
  swpt    ds1h   axe
  swpt    ewdd   ewdd
  swpt    ewd1   ewd1
  swpt    ewsd   ewsd
  swpt    fcl    swpt6
  swpt    rss    swt15
  swpt    1es    swpt1
  swpt    2er    2er
  swpt    2es    2es1
  swpt    3es    3es1
  swpt    5dn0   swt24
  swpt    5eda   5ed1
  swpt    5edg   5ed1
  swpt    5edm   5ed1
  swpt    5eds   5ed1
  swpt    5esa   swt10
  swpt    5esc   swt10
  swpt    5ese   swt22
  swpt    5esg   swt10
  swpt    5esi   swt10
  swpt    5esk   swt19
  swpt    5esl   swt12
  swpt    5esm   swt10
  swpt    5esp   swpt6
  swpt    5ess   swt10
  swpt    5e91   swt12
  tie     ca     ca1
  tkca    tkca   ca1
  tkp     tkp    cp1
  tn      tn     tn2
```

Table 4A-6. FMT USAGE

```
INSTANCE KEY: ulbb
*******************************************************************************
node_type dlct fmt_id
  tnl     tnl   clct1
  tre     lprt  ppsn
  tre     ru    bl1
  tre     ru2   bl1
  tre     tre   clct1
  tre     tr10  bl1
  tre     tr11  tr11
  tre     tr12  bl2
  tre     tr20  bl1
  tre     tr21  bl1
  tre     tr22  bl1
  tre     tr23  bl1
  tre     tr24  bl1
  tre     tr25  bl1
  tre     tr26  bl2
  tre     tu    tre2
  tre     tu1   tre3
  tre     utre  clct1
-------------------------------------------------------------------------------
```

Table 4A-7. FMT RULES

INSTANCE KEY: rule

fmt_id	lineno	rule
axe	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@
axe	02	hier_level_id(2)!
bl1	01	rly_rack!@-@unit!
bl2	01	tre_name!@-@unit!
bw1	01	bw_id!
ca1	01	cable!
ccp1	01	hier_level_id(0)!
ccp1a	01	cc_id!@:@hier_level_id(0)!
ccp2	01	hier_level_id(0)!@-@hier_level_id(1)!
ccp2a	01	cc_id!@:@hier_level_id(0)!@-@hier_level_id(1)!
ccp3	01	hier_level_id(0)!@-@hier_level_id(1)!@-@
ccp3	02	hier_level_id(2)!
ccp3a	01	cc_id!@:@hier_level_id(0)!@-@hier_level_id(1)!@-@
ccp3a	02	hier_level_id(2)!
ccp4	01	hier_level_id(0)!@-@hier_level_id(1)!@-@
ccp4	02	hier_level_id(2)!@-@hier_level_id(3)!
ccp4a	01	cc_id!@:@hier_level_id(0)!@-@hier_level_id(1)!@-@
ccp4a	02	hier_level_id(2)!@-@hier_level_id(3)!
cc1	01	cc_id!
chn1	01	hier_level_id(0)!
chn1a	01	cr_id!@:@hier_level_id(0)!
chn2	01	hier_level_id(0)!@-@hier_level_id(1)!
chn2a	01	cr_id!@:@hier_level_id(0)!@-@hier_level_id(1)!
chn3	01	hier_level_id(0)!@-@hier_level_id(1)!@-@
chn3	02	hier_level_id(2)!
chn3a	01	cr_id!@:@hier_level_id(0)!@-@hier_level_id(1)!@-@
chn3a	02	hier_level_id(2)!
chn4	01	hier_level_id(0)!@-@hier_level_id(1)!@-@
chn4	02	hier_level_id(2)!@-@hier_level_id(3)!
chn4a	01	cr_id!@:@hier_level_id(0)!@-@hier_level_id(1)!@-@
chn4a	02	hier_level_id(2)!@-@hier_level_id(3)!
chn5	01	hier_level_id(0)!@-@hier_level_id(1)!@-@
chn5	02	hier_level_id(2)!@-@hier_level_id(3)!@-@hier_level_id(4)!
chn5a	01	cr_id!@:@hier_level_id(0)!@-@hier_level_id(1)!@-@
chn5a	02	hier_level_id(2)!@-@hier_level_id(3)!@-@hier_level_id(4)!
chn6	01	hier_level_id(0)!@-@hier_level_id(1)!@-@
chn6	02	hier_level_id(2)!@-@hier_level_id(3)!@-@hier_level_id(4)!@-@
chn6	03	hier_level_id(5)!
chn6a	01	cr_id!@:@hier_level_id(0)!@-@hier_level_id(1)!@-@
chn6a	02	hier_level_id(2)!@-@hier_level_id(3)!@-@hier_level_id(4)!@-@
chn6a	03	hier_level_id(5)!
chn7	01	@supchnl@
chn7a	01	cr_id!@:@
clct1	01	exidval!
cp1	01	cable!@-@pair!

Table 4A-7. FMT RULES

```
INSTANCE KEY: rule
******************************************************************************
fmt_id lineno rule
 crv1     01    vig!@-@hier_level_id(0)!
 crv1a    01    cc_id!@:@vig!@-@hier_level_id(0)!
 crv2     01    ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!@-@
 crv2     02    hier_level_id(2)!hier_level_id(3)!
 crv3     01    @Z@rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!@-@
 crv3     02    hier_level_id(2)!@-@hier_level_id(3)!
 dco      01    @AA@hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
 dcor     01    @Z@rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!@-@
 dcor     02    hier_level_id(2)!
 dco1     01    ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
 dcr1     01    ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!@-@
 dcr1     02    hier_level_id(2)!
 dmle     01    @L-@hier_level_id(0)!@-@hier_level_id(1)!@-@
 dmle     02    hier_level_id(2)!@-@hier_level_id(3)!
 dmpe     01    @PE-@hier_level_id(0)!@-@hier_level_id(1)!@-@
 dmpe     02    hier_level_id(2)!@-@hier_level_id(3)!
 dms      01    @AA@hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!@-@
 dms      02    hier_level_id(3)!
 dmsl     01    @L-@hier_level_id(0)!@-@hier_level_id(1)!@-@
 dmsl     02    hier_level_id(2)!
 dms1     01    ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@
 dms1     02    hier_level_id(2)!@-@hier_level_id(3)!
 dms2     01    @AA@hier_level_id(1)!@-@hier_level_id(2)!@-@hier_level_id(3)!@-@
 dms2     02    hier_level_id(4)!
 dms4     01    ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!@-@
 dms4     02    hier_level_id(2)!@-@hier_level_id(3)!
 dms5     01    @Z@rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!@-@
 dms5     02    hier_level_id(2)!@-@hier_level_id(3)!
 dms6     01    ic_num!rmt_unit!hier_level_id(0)!@-@
 dms6     02    hier_level_id(1)!@-@hier_level_id(2)!@-@hier_level_id(3)!
 dmxl     01    @S-@hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
 dmx1     01    ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@
 dmx1     02    hier_level_id(2)!@-@hier_level_id(3)!
 dmx2     01    ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!@-@
 dmx2     02    hier_level_id(2)!@-@hier_level_id(3)!
 dmx3     01    ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!@-@
 dmx3     02    hier_level_id(2)!
 ds1a     01    ic_num!hier_level_id(0)!@-@hier_level_id(1)!
 ds1c     01    ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!
 eqpcl    01    ic_type!@.@ic_num!hier_level_id(0)!
 eqpcl    02    @-@hier_level_id(1)!hier_level_id(2)!hier_ind!
 eqpph    01    ic_type!@.@ic_num!hier_level_id(0)!
 eqpph    02    @-@hier_level_id(1)!
 eqpql    01    ic_type!@.@ic_num!hier_level_id(0)!@-@hier_level_id(1)!
 eqpql    02    hier_level_id(2)!hier_level_id(3)!
```

Table 4A-7. FMT RULES

```
INSTANCE KEY: rule
*****************************************************************************
fmt_id lineno rule
 eqpq2   01    ic_type!@.@ic_num!hier_level_id(0)!hier_level_id(1)!
 eqpq2   02    @-@hier_level_id(2)!@-@hier_level_id(3)!
 eqpq3   01    ic_type!@.@ic_num!hier_level_id(0)!@-@hier_level_id(1)!
 eqpq3   02    @-@hier_level_id(2)!
 eqpq4   01    ic_type!@.@ic_num!hier_level_id(0)!
 eqpq4   02    @-@hier_level_id(1)!hier_level_id(2)!hier_level_id(3)!hier_ind!
 eqpq5   01    ic_type!@.@ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!
 eqpq6   01    ic_type!@.@ic_num!hier_level_id(0)!
 eqpq6   02    @-@hier_level_id(1)!hier_ind!
 eqpq7   01    ic_type!@.@ic_num!hier_level_id(0)!
 eqpq8   01    ic_type!@.@ic_num!hier_level_id(0)!
 eqpq9   01    ic_type!@.@ic_num!hier_level_id(0)!hier_level_id(1)!
 eqp10   01    ic_type!@.@ic_num!hier_level_id(0)!
 eqp11   01    ic_type!@.@ic_num!hier_level_id(0)!@-@hier_level_id(1)!
 eqp11   02    @-@hier_level_id(2)!
 eqp12   01    ic_type!@.@ic_num!hier_level_id(0)!
 eqp12   02    @-@hier_level_id(1)!hier_level_id(2)!hier_ind!
 eqp15   01    ic_type!@.@ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!
 eqp15   02    @-@hier_level_id(2)!
 eqp16   01    ic_type!@.@ic_num!rmt_unit!hier_level_id(0)!
 eqp17   01    ic_type!@.@ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!
 eqp18   01    ic_type!@.@ic_num!rmt_unit!hier_level_id(0)!
 eqp18   02    @-@hier_level_id(1)!hier_ind!
 eqp19   01    ic_type!@.@ic_num!rmt_unit!hier_level_id(0)!hier_ind!
 eqp20   01    ic_type!@.@ic_num!rmt_unit!hier_level_id(0)!
 eqp20   02    @-@hier_level_id(1)!@-@hier_level_id(2)!hier_ind!
 eqp21   01    ic_type!@.@ic_num!hier_level_id(0)!
 eqp21   02    @-@hier_level_id(1)!@-@hier_level_id(2)!hier_ind!
 eqp22   01    ic_type!@.@ic_num!hier_level_id(0)!
 eqp22   02    @-@hier_level_id(1)!hier_ind!
 eqp23   01    ic_type!@.@ic_num!hier_level_id(0)!hier_ind!
 eqp25   01    ic_type!@.@ic_num!hier_level_id(0)!
 eqp26   01    ic_type!@.@ic_num!hier_level_id(0)!@-@hier_level_id(1)!
 eqp27   01    ic_type!@.@ic_num!hier_level_id(0)!
 eqp28   01    ic_type!@.@ic_num!hier_level_id(0)!@-@hier_level_id(1)!
 eqp30   01    ic_type!@.@ic_num!hier_level_id(0)!
 eqp31   01    ic_type!@.@ic_num!hier_level_id(0)!@-@hier_level_id(1)!
 eqp32   01    ic_type!@.@ic_num!rmt_unit!hier_level_id(0)!
 eqp33   01    ic_type!@.@ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!
 eqp35   01    ic_type!@.@ic_num!hier_level_id(0)!@-@hier_level_id(1)!
 eqp60   01    ic_type!@.@ic_num!hier_level_id(0)!
 eqp61   01    ic_type!@.@ic_num!hier_level_id(0)!hier_level_id(1)!
 eqp62   01    ic_type!@.@ic_num!hier_level_id(0)!hier_level_id(1)!
 eqp62   02    @-@hier_level_id(2)!@-@hier_level_id(3)!
```

Table 4A-7. FMT RULES

INSTANCE KEY: rule

****

fmt_id	lineno	rule
eqp63	01	ic_type!@.@ic_num!hier_level_id(0)!@-@hier_level_id(1)!
eqp63	02	hier_level_id(2)!
eqp64	01	ic_type!@.@ic_num!hier_level_id(0)!@-@hier_level_id(1)!
eqp65	01	ic_type!@.@ic_num!hier_level_id(0)!
eqp65	02	@-@hier_level_id(1)!@-@hier_level_id(2)!hier_ind!
eqp80	01	ic_type!@.@ic_num!rmt_unit!hier_level_id(0)!hier_ind!
ewdd	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@
ewdd	02	hier_level_id(2)!
ewd1	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@
ewd1	02	hier_level_id(2)!
ewd3	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@
ewd3	02	hier_level_id(2)!hier_level_id(3)!
ewsd	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@
ewsd	02	hier_level_id(2)!@-@hier_level_id(3)!
frm1	01	clli#location!frm_nam!
frm2	01	frm_nam!
hml1	01	exidval!
hml2	01	group_id!
ice1	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@
ice1	02	hier_level_id(2)!
ice2	01	ic_num!group!@-@hier_level_id(0)!@-@hier_level_id(1)!@-@
ice2	02	hier_level_id(2)!
ic1	01	ic_num!
ic2	01	clli#location!clli#ctl_grp!
ic3	01	ic_type!@.@ic_num!
ic4	01	exidval!
ldiv	01	load_div!
ld1	01	load_div!
ltg1	01	ic_type!@.@ic_num!@.@group!
ltid1	01	ic_type!@.@ic_num!@.@group!@.@number!
ltid2	01	group!@.@number!
ltid3	01	group!@ @number!
me1	01	hier_level_id(0)!hier_level_id(1)!hier_level_id(2)!
me12	01	tmod_type@-@hier_level_id(0)!hier_level_id(1)!hier_level_id(2)!
me12	02	hier_level_id(3)!
me2	01	hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
me20	01	hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
me21	01	frm_type!hier_level_id(0)!hier_level_id(1)!
me3	01	hier_level_id(0)!hier_level_id(1)!hier_level_id(2)!
me3	02	hier_level_id(3)!hier_level_id(4)!
me31	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
me32	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
me33	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
me33	02	@-@hier_level_id(3)!@-@hier_level_id(4)!

Table 4A-7. FMT RULES

INSTANCE KEY: rule

****

fmt_id	lineno	rule
me34	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
me34	02	@-@hier_level_id(3)!
me35	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
me37	01	ic_num!hier_level_id(0)!hier_level_id(1)!hier_level_id(2)!
me37	02	hier_level_id(3)!@-@hier_level_id(4)!hier_level_id(5)!
me39	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!
me4	01	hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
me4	02	@-@hier_level_id(3)!
me42	01	tmod_type!@-@ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@
me42	02	hier_level_id(2)!@-@hier_level_id(3)!
me5	01	hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
me51	01	ic_num!frm_type!@-@hier_level_id(0)!@-@hier_level_id(1)!
me53	01	ic_num!hier_level_id(0)!hier_level_id(1)!hier_level_id(2)!
me6	01	hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
me7	01	hier_level_id(0)!hier_level_id(1)!hier_level_id(2)!
me7	02	hier_level_id(3)!@-@hier_level_id(4)!hier_level_id(5)!
me8	01	hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
me8	02	@-@hier_level_id(3)!
me9	01	hier_level_id(0)!@-@hier_level_id(1)!
nxx1	01	exidval!
ppsn	01	hier_cat!tre_name!@-@unit!
rmt1	01	ic_type!@.@rmt_unit!
rmt2	01	ic_type!@.@ic_num!@.@rmt_unit!
rmt3	01	rmt_unit!
sfg1	01	group_id!
slt1	01	hier_level_id(0)!
slt1a	01	cc_id!@:@hier_level_id(0)!
slt2	01	hier_level_id(0)!@-@hier_level_id(1)!
slt2a	01	cc_id!@:@hier_level_id(0)!@-@hier_level_id(1)!
slt3	01	hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
slt3a	01	cc_id!@:@hier_level_id(0)!@-@hier_level_id(1)!
slt3a	02	@-@hier_level_id(2)!
swad	01	ic_num!hier_level_id(0)!hier_ind!
swbd	01	ic_type!@.@ic_num!hier_level_id(0)!hier_ind!
swcd	01	ic_type!@.@ic_num!rmt_unit!hier_level_id(0)!hier_ind!
swc10	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-??-??@
swc11	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
swc11	02	@-??@
swc12	01	ic_num!hier_level_id(0)!hier_level_id(1)!@-@hier_level_id(2)!
swc12	02	@-@hier_level_id(3)!@??@
swc13	01	ic_num!rmt_unit!hier_level_id(0)!@-@
swc13	02	hier_level_id(1)!@-@hier_level_id(2)!@-??@hier_ind!
swc14	01	ic_num!rmt_unit!hier_level_id(0)!@-@
swc14	02	hier_level_id(1)!@-??@hier_ind!
swc15	01	ic_num!rmt_unit!hier_level_id(0)!hier_ind!

Table 4A-7. FMT RULES

```
INSTANCE KEY: rule
*******************************************************************************
fmt_id lineno rule
 swc16   01   ic_num!rmt_unit!hier_level_id(0)!@-?-??-??@hier_ind!
 swc17   01   ic_num!rmt_unit!hier_level_id(0)!
 swc17   02   @-@hier_level_id(1)!hier_ind!
 swc18   01   ic_num!rmt_unit!hier_level_id(0)!
 swc18   02   @-@hier_level_id(1)!@-??-?@hier_ind!
 swc19   01   ic_num!rmt_unit!hier_level_id(0)!@-@
 swc19   02   hier_level_id(1)!@-??-??@hier_ind!
 swc20   01   ic_num!rmt_unit!hier_level_id(0)!
 swc20   02   @-@hier_level_id(1)!hier_ind!
 swc21   01   ic_num!rmt_unit!hier_level_id(0)!
 swc21   02   @-@hier_level_id(1)!@-@hier_level_id(2)!hier_ind!
 swc22   01   ic_num!hier_level_id(0)!hier_ind!
 swc23   01   ic_num!hier_level_id(0)!@-@
 swc23   02   hier_level_id(1)!hier_ind!
 swc24   01   ic_num!hier_level_id(0)!@-@
 swc24   02   hier_level_id(1)!@-@hier_level_id(2)!hier_ind!
 swc25   01   ic_num!hier_level_id(0)!@-?-??-??@hier_ind!
 swc26   01   ic_num!hier_level_id(0)!@-@
 swc26   02   hier_level_id(1)!@-??-??@hier_ind!
 swc27   01   ic_num!hier_level_id(0)!@-@
 swc27   02   hier_level_id(1)!@-??-?@hier_ind!
 swc28   01   ic_num!hier_level_id(0)!@-@
 swc28   02   hier_level_id(1)!@-@hier_level_id(2)!@-??@hier_ind!
 swc29   01   ic_num!hier_level_id(0)!
 swc30   01   ic_num!hier_level_id(0)!@-@hier_level_id(1)!
 swc31   01   ic_num!hier_level_id(0)!@-?-??-??@
 swc32   01   ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-??-??@
 swc35   01   ic_num!hier_level_id(0)!
 swc36   01   ic_num!hier_level_id(0)!@-@hier_level_id(1)!
 swc37   01   ic_num!hier_level_id(0)!@-??-???@
 swc38   01   ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-???@
 swc40   01   ic_num!rmt_unit!hier_level_id(0)!
 swc41   01   ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!
 swc42   01   ic_num!hier_level_id(0)!@-??-??@
 swc43   01   ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-??@
 swc44   01   ic_num!rmt_unit!hier_level_id(0)!@-??-??@
 swc45   01   ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!@-??@
 swc60   01   ic_num!hier_level_id(0)!
 swc61   01   ic_num!hier_level_id(0)!hier_level_id(1)!
 swc62   01   ic_num!hier_level_id(0)!hier_level_id(1)!
 swc62   02   @-@hier_level_id(2)!@-@hier_level_id(3)!
 swc63   01   ic_num!hier_level_id(0)!@-@hier_level_id(1)!
 swc63   02   hier_level_id(2)!
 swc64   01   ic_num!hier_level_id(0)!@-????@
 swc65   01   ic_num!hier_level_id(0)!hier_level_id(1)!@-?-????@
```

Table 4A-7. FMT RULES

INSTANCE KEY: rule

****

fmt_id	lineno	rule
swc66	01	ic_num!hier_level_id(0)!hier_level_id(1)!
swc66	02	@-@hier_level_id(2)!@-@hier_level_id(3)!@??@
swc67	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!
swc67	02	hier_level_id(2)!@??@
swc68	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!@???@
swc69	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!
swc80	01	ic_num!rmt_unit!hier_level_id(0)!hier_ind!
swc81	01	ic_num!rmt_unit!hier_level_id(0)!@-?-??-?@hier_ind!
swc82	01	ic_num!rmt_unit!hier_level_id(0)!@-@
swc82	02	hier_level_id(1)!@-??@hier_ind!
sweca	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!
sweca	02	hier_level_id(2)!hier_level_id(3)!@-??@hier_ind!
swecb	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!
swecb	02	hier_level_id(2)!@-???@hier_ind!
swecc	01	ic_num!hier_level_id(0)!
swecc	02	@-@hier_level_id(1)!@??-???@hier_ind!
swecl	01	ic_num!hier_level_id(0)!
swecl	02	@-@hier_level_id(1)!hier_level_id(2)!hier_ind!
swec1	01	ic_num!hier_level_id(0)!@-???-???@
swec2	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
swec2	02	hier_level_id(3)!@-???@
swec4	01	ic_num!rmt_unit!hier_level_id(0)!@-????@
swec5	01	ic_num!hier_level_id(0)!@-???-??@
swec6	01	ic_num!hier_level_id(0)!
swec6	02	@-@hier_level_id(1)!@??-??@hier_ind!
swec7	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!
swec7	02	hier_level_id(2)!@-??@hier_ind!
swec8	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
swec8	02	@-???@
swec9	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
swec9	02	@-????@hier_ind!
swed	01	ic_num!rmt_unit!hier_level_id(0)!hier_ind!
sweel	01	ic_num!hier_level_id(0)!
sweel	02	@-@hier_level_id(1)!@-??-??@hier_ind!
sweph	01	ic_num!hier_level_id(0)!
sweph	02	@-@hier_level_id(1)!
sweq1	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
sweq1	02	hier_level_id(3)!
sweq2	01	ic_num!hier_level_id(0)!hier_level_id(1)!@-@hier_level_id(2)!
sweq2	02	@-@hier_level_id(3)!
sweq3	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
sweq4	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!
sweq4	02	hier_level_id(2)!hier_level_id(3)!hier_ind!
sweq5	01	ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!

Table 4A-7. FMT RULES

```
INSTANCE KEY: rule
*****************************************************************************************
fmt_id lineno rule
 sweq6   01   ic_num!hier_level_id(0)!
 sweq6   02   @-@hier_level_id(1)!hier_ind!
 sweq7   01   ic_num!hier_level_id(0)!
 sweq8   01   ic_num!hier_level_id(0)!
 sweq9   01   ic_num!hier_level_id(0)!hier_level_id(1)!
 swe10   01   ic_num!hier_level_id(0)!
 swe11   01   ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
 swe12   01   ic_num!hier_level_id(0)!@-@hier_level_id(1)!
 swe12   02   hier_level_id(2)!hier_ind!
 swe15   01   ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!
 swe15   02   @-@hier_level_id(2)!
 swe16   01   ic_num!rmt_unit!hier_level_id(0)!
 swe17   01   ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!
 swe18   01   ic_num!rmt_unit!hier_level_id(0)!@-?-??-??@
 swe19   01   ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!
 swe19   02   @-??-??@
 swe20   01   ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!
 swe20   02   @-@hier_level_id(2)!@-??@
 swe21   01   ic_num!rmt_unit!hier_level_id(0)!@-@hier_level_id(1)!
 swe21   02   @-@hier_level_id(2)!
 swe22   01   ic_num!hier_level_id(0)!@-?-??-??@
 swe23   01   ic_num!hier_level_id(0)!@-@hier_level_id(1)!
 swe24   01   ic_num!hier_level_id(0)!
 swe24   02   @-@hier_level_id(1)!@-@hier_level_id(2)!hier_ind!
 swe25   01   ic_num!hier_level_id(0)!
 swe25   02   @-@hier_level_id(1)!@-??-????@hier_ind!
 swe26   01   ic_num!hier_level_id(0)!
 swe26   02   @-@hier_level_id(1)!@-@hier_level_id(2)!@-????@hier_ind!
 swpt1   01   ic_num!hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
 swpt1   02   hier_level_id(3)!@-@hier_level_id(4)!hier_level_id(5)!
 swpt2   01   ic_num!hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
 swpt2   02   @-@hier_level_id(3)!
 swpt4   01   ic_num!hier_level_id(1)!@-@hier_level_id(2)!@-@hier_level_id(3)!
 swpt4   02   @-@hier_level_id(4)!
 swpt6   01   ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
 swpt6   02   @-@hier_level_id(3)!
 swpt8   01   ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
 swpt8   02   @-@hier_level_id(3)!
 swrcl   01   ic_num!hier_level_id(0)!
 swrcl   02   @-@hier_level_id(1)!hier_level_id(2)!@?-??@hier_ind!
 swrd    01   ic_num!rmt_unit!hier_level_id(0)!hier_ind!@-??@
 swrph   01   ic_num!hier_level_id(0)!
 swrph   02   @-@hier_level_id(1)!@-??-???@
 swsd    01   ic_num!hier_level_id(0)!hier_ind!@-??@
```

Table 4A-7. FMT RULES

INSTANCE KEY: rule
****

fmt_id	lineno	rule
swt10	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!
swt10	02	hier_level_id(2)!@-@hier_level_id(3)!hier_ind!
swt11	01	hier_attr!ic_num!
swt11	02	hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
swt11	03	@-@hier_level_id(3)!
swt12	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!
swt12	02	hier_level_id(2)!hier_level_id(3)!@-@hier_level_id(4)!
swt12	03	hier_level_id(5)!hier_ind!
swt13	01	@0@ic_num!hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
swt13	02	hier_level_id(3)!@-@hier_level_id(4)!hier_level_id(5)!
swt14	01	@9@ic_num!hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
swt14	02	@-@hier_level_id(3)!
swt15	01	ic_num!hier_level_id(0)!hier_level_id(1)!@-@hier_level_id(2)!
swt15	02	@-@hier_level_id(3)!hier_level_id(4)!hier_level_id(5)!
swt16	01	hier_attr!ic_num!
swt16	02	hier_level_id(0)!@-@hier_level_id(1)!@-@hier_level_id(2)!
swt16	03	@-@hier_level_id(3)!
swt17	01	@6@ic_num!hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
swt17	02	@-@hier_level_id(3)!
swt18	01	@5@ic_num!hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
swt18	02	@-@hier_level_id(3)!
swt19	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!
swt19	02	hier_level_id(2)!@-@hier_level_id(3)!
swt19	03	hier_level_id(4)!hier_ind!
swt20	01	@4@ic_num!hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
swt20	02	@-@hier_level_id(3)!hier_level_id(4)!
swt22	01	ic_num!hier_level_id(0)!@-@
swt22	02	hier_level_id(1)!@-@hier_level_id(2)!@-@
swt22	03	hier_level_id(3)!hier_ind!
swt23	01	@3@ic_num!hier_level_id(0)!@-@
swt23	02	hier_level_id(1)!@-@hier_level_id(2)!@-@
swt23	03	hier_level_id(3)!
swt24	01	ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@
swt24	02	hier_level_id(2)!@-@hier_level_id(3)!hier_ind!
swt26	01	@1@ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@
swt26	02	hier_level_id(2)!@-@hier_level_id(3)!
tn1	01	npa!nxx!line!
tn2	01	npa!@-@nxx!@-@line!
tre2	01	clei!@-@unit!
tre3	01	tre_name!@-@unit!
tr11	01	rly_rack!unit!
xp1	01	cable!@-@x_pair!

Table 4A-7. FMT RULES

```
INSTANCE KEY: rule
*********************************************************************************
fmt_id lineno rule
 2er     01   ic_num!hier_level_id(0)!hier_level_id(1)!@-@hier_level_id(2)!
 2er     02   @-@hier_level_id(3)!hier_level_id(4)!hier_level_id(5)!
 2es     01   hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
 2es     02   hier_level_id(3)!hier_level_id(4)!
 2es1    01   ic_num!hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
 2es1    02   hier_level_id(3)!hier_level_id(4)!
 3es     01   hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
 3es     02   hier_level_id(3)!hier_level_id(4)!
 3es1    01   ic_num!hier_level_id(0)!@-@hier_level_id(1)!hier_level_id(2)!
 3es1    02   hier_level_id(3)!hier_level_id(4)!
 5ed1    01   ic_num!hier_level_id(0)!@-@hier_level_id(1)!@-@
 5ed1    02   hier_level_id(2)!hier_ind!
-------------------------------------------------------------------------------
```

Table 4A-8. SWITCH SYSTEM INPUT TO OUTPUT

Node Type	Input Format	Output Format		
		USO	FOMS	ULBB
IC	11 Character CLLI code (piscnjmtcg0)			11 Character CLLI code
	Exchange Key (201699)	Exchange Key		Exchange Key
	IC Type and ID (5ES.5)		IC Type and ID	IC Type and ID
RU	11 Character CLLI code (piscnjmtrs1)			11 Character CLLI code
	IC Type, ID and RU ID (5ES.5.1)		IC Type, ID and RU ID	IC Type, ID and RU ID
CA/TKCA/TIE	Cable Name (10 Alphanumeric characters)	Cable Name	Cable Name	Cable Name
CTX	Group ID (18 alphanumeric characters)	Group ID	Group ID	Group ID
TN/DTN	TN/DTN (NPA.NXX.LINE)	TN/DTN	TN/DTN	TN/DTN
HML/SFG	Group ID (Up to 4 numerics)	Group ID	Group ID	Group ID
CP/TKP/IF	Cable Pair ID (up to 10 alphanumerics for cable 4 numerics for pair)	Cable Pair ID	Cable Pair ID	Cable Pair ID
FRM	11 Character CLLI code (piscnjmtf01)			11 Character CLLI code
	FXX (f01)		FXX	FXX
RSVG	Order ID			Order ID
TNL	SWITCH System generated sequence number			SWITCH System generated sequence number
LDIV	LDIV ID (up to two alphanumerics)			LDIV ID

Table 4A-8. SWITCH SYSTEM INPUT TO OUTPUT

Node Type	Input Format	Output Format		
		USO	FOMS	ULBB
NXX	NXX (NXX NPA)			NXX
RSV	Claiming Service ID			Claiming Service ID
SVC	USO & COMMON LANGUAGE Standards	USO & COMMON LANGUAGE Standards	USO & COMMON LANGUAGE Standards	USO & COMMON LANGUAGE Standards
ME	ME ID (up to 45 alphanumerics)	ME ID	ME ID	ME ID
ICE	ICE ID #AAA-BB-CCC (See figure 9)	ICE ID	ICE ID	ICE ID
BL/TRE	Unit # (ex. 0010)	CLEI,Unit #	Unit #	Unit #
BL/TRE	Relay Rack and unit # (ex. rr103.10.001)	CLEI,Unit #	Relay Rack and unit #	Relay Rack and unit #
BL/TRE	Type & Unit # (ex. 5areg-001)	CLEI,Unit #	Type & Unit #	Type & Unit #
LTIDs	Group.number	Group.number	Group.number	Group.number
Channels (CC)[2]	x-x-xx	x-x-xx	x-x-xx	x-x-xx
Channels #5ESS (IDCU - type M)	nxxx-xxx-xxM	6nxxx-xxx-xx	nxxx-xxx-xxM	nxxx-xxx-xxM
EWSD (DLU)	nxxxx-x-xx-xx	nxxxx-x-xx-xx		nxxxx-x-xx-xx
CRVs #5ESS (IDCU - type G)	nxxx-xxxx-xxxxG	5nxxx-xxxx-xxxx	nxxx-xxxx-xxxxG	nxxx-xxxx-xxxxG
CRVs (CCs)	x-nnnn	x-nnnn	x-nnnn	x-nnnn

2. This is just an example of a channel hierarchy for a DS3 carrier system. The first x is the DS3 #, the second x is the DS1 # and the final 2 xx are the DS0 #.
The Hierarchy will change based on the rate of the carrier system.

Table 4A-9a. SWITCH PORT INPUT AND OUTPUT FORMAT

ENTITY	SWITCH Input ID	USO Output ID	FOMS Output ID	ULBB Output ID
#1 ESS	nxx-xxx-xxx	nxx-xxx-xxx	nxx-xxx-xxx	nxx-xxx-xxx
#1 ESS (remote)	nxxx-x-xxxx	nxxx-x-xxxx	nxxx-x-xxxx	nxxx-x-xxxx
#2 ESS	nxx-xxxx	xx-xxxx	nxx-xxxx	nxx-xxxx
#2 ESS (remote)	nxxx-x-xxxx	nxxx-x-xxxx	nxxx-x-xxxx	nxxx-x-xxxx
#3 ESS	nxx-xxxx	xx-xxxx	nxx-xxxx	nxx-xxxx
#5ESS (analog 5e6-5e9.1)	nxxx-xxx-xxL	0nxxx-xxx-xx	nxxx-xxx-xxL	nxxx-xxx-xxL
#5ESS (analog 5e9.2)	nxxx-xxxxx-xxL	0nxxx-xxxxx-xx	nxxx-xxxxx-xxL	nxxx-xxxxx-xxL
#5ESS (AIU "E" DS0 - 5e11)	nxxx-xxx-xx-xxE	3nxxx-xxx-xx-xx	nxxx-xxx-xx-xxE	nxxx-xxx-xx-xxE
#5 ESS (DCLU DS0)	nxxx-xxx-xxS	9nxxx-xxx-xx	nxxx-xxx-xxS	nxxx-xxx-xxS
#5 ESS (DNU-S DS0 - 5e12)	nxxx-x-xx-xxxxA	1nxxx-x-xx-xxxx	nxxx-x-xx-xxxxA	nxxx-x-xx-xxxxA
#5 ESS (ISDN - 5e6-5e9.2)	nxxx-xxx-xxI	8nxxx-xxx-xx	nxxx-xxx-xxI	nxxx-xxx-xxI
#5 ESS (ISDN ISLU2 - 5e10)	nxxx-xxxx-xxxK	4nxxx-xxxx-xxx	nxxx-xxxx-xxxK	nxxx-xxxx-xxxK
#5 ESS (z-card)	nxxx-xxx-xxI	7nxxx-xxx-xx	nxxx-xxx-xxI	nxxx-xxx-xxI
#5ESS (ISDN-POE)	nxxx-x-xx-xxx	nxxx-x-xx-xxx	nxxx-x-xx-xxx	nxxx-x-xx-xxx
#5ESS (DCLU DS1)	nxxx-x-xxS			nxxx-x-xxS
#5ESS (IDCU "M" DS1)	nxxx-x-xxM			nxxx-x-xxM
#5ESS (IDCU "G" DS1 - 5e8-5e9.2)	nxxx-x-xxG			nxxx-x-xxG
#5ESS (IDCU "G" DS1 - 5e10)	nxxx-xx-xxG			nxxx-xx-xxG
#5ESS (IDCU "M" DS0)	nxxx-xxx-xxM	6nxxx-xxx-xx	nxxx-xxx-xxM	nxxx-xxx-xxM
#5ESS (IDCU "G" DS0 - 5e8-5e9.2)	nxxx-xxx-xxxxG	5nxxx-xxx-xxxx	nxxx-xxx-xxxxG	nxxx-xxx-xxxxG
#5ESS (IDCU "G" DS0 - 5e10)	nxxx-xxxx-xxxxG	5nxxx-xxxx-xxxx	nxxx-xxxx-xxxxG	nxxx-xxxx-xxxxG

x = ordinary swpt digits
n = host control group
a = special literal or alpha character

Table 4a-9a. SWITCH PORT INPUT AND OUTPUT FORMAT

ENTITY	SWITCH Input ID	USO Output ID	FOMS Output ID	ULBB Output ID
DMS-100 (host)	nxx-x-xx-xx nxxx-x-xx-xx	aaxx-x-xx-xx aaxxx-x-xx-xx	nxx-x-xx-xx nxxx-x-xx-xx	nxx-x-xx-xx nxxx-x-xx-xx
DMS-100 (remote)	nrxx-x-xx-xx nrxxx-x-xx-xx	zrxx-x-xx-xx zrxxx-x-xx-xx	nrxx-x-xx-xx nrxxx-x-xx-xx	nrxx-x-xx-xx nrxxx-x-xx-xx
DMS-100 (SMS DS1)	nxxx-xxx			nxxx-xxx
DMS-100 (SCM-100A DS1)	nxxx-xx			nxxx-xx
DMS-100 (SMS-R DS1)	nrxxx-xxx			nrxxx-xxx
DMS-10/300 (host)	nxx-x-xx-x	PE-xx-x-xx-x	nxx-x-xx-x	nxx-x-xx-x
DMS-10/300 (remote)	nrxx-x-xx-x	PE-xx-x-xx-x	nrxx-x-xx-x	nrxx-x-xx-x
DMS-10/400 (host)	nxx-x-xx-xx	L-xx-x-xx-xx	nxx-x-xx-xx	nxx-x-xx-xx
DMS-10/400 (IDLC)	nrxx-x-xx	L-xx-x-xx	nrxx-x-xx	nrxx-x-xx
DMS-10/400 (RSLE/RSLM)	nrxx-x-xx-xx	L-xx-x-xx-xx	nrxx-x-xx-xx	nrxx-x-xx-xx
EWSD (analog)	nxxxx-x-xx-xx	nxxxx-x-xx-xx	nxxxx-x-xx-xx	nxxxx-x-xx-xx
EWSD (DLU DS1)	nxxxx-x-x			nxxxx-x-x
EWSD (IDT TR-303 DS1)	nx-xx-x			nx-xx-x
AXE-10	nxxx-xx-xxx	nxxx-xx-xxx	nxxx-xx-xxx	nxxx-xx-xxx
AXE-10 (IDLC DS1)	nxxx-xx-x			nxxx-xx-x
DCO (host)	nxxx-xx-xx	aaxxx-xx-xx	nxxx-xx-xx	nxxx-xx-xx
DCO (remote)	nrxxx-xx-xx	zaxxx-xx-xx	nrxxx-xx-xx	nrxxx-xx-xx

x = ordinary swpt digits
n = host control group
r = remote control group
a = special literal or alpha character

Table 4A-9b. SWITCH EQUIPMENT GROUP INPUT FORMAT

ENTITY	Hierarchy Level	SWITCH Input
#1 ESS (host)	1	nxx
#1 ESS (host)	4	nxx-xxx
#1ESS (remote)	2	nxxx
#1 ESS (remote)	4	nxxx-x-xx
#2 ESS (host)	1	nxx
#2 ESS (host)	3	nxx-xx
#2 ESS (remote)	2	nxxx
#2 ESS (remote)	4	nxxx-x-xx
#3 ESS	1	nxx
#3 ESS	2	nxx-x
EWSD	1	nxxxx
EWSD	2	nxxxx-x
EWSD (IDT)	1	ewsd.nxxxx
AXE-10	1	nxxx
AXE-10	2	nxxx-xx
DCO	1	nxxx
DCO	2	nxxx-xx
DMS-10 (series 400)	1	nxx
DMS-10 (series 400)	2	nxx-xL
DMS-10 (400 IDLC)	3	nrxx-x
DMS-10 (series 300)	2	nxx-xPE
DMS-10 (300 IDLC)	3	nrxx-xPE
DMS-10 (RSLE/RSLM)	1	nrxxx
DMS-10 (RSLE/RSLM)	2	nrxx-xx
DMS-10 (RSLE/RSLM)	3	nrxx-x-xxx
#5 ESS (all)	1	nxxx
#5 ESS (analog 5e6-5e9.1)	2	nxxx-xL
#5 ESS (analog 5e6-5e9.1)	4	nxxx-xxxL

Table 4A-9b. SWITCH EQUIPMENT GROUP INPUT FORMAT

ENTITY	Hierarchy Level	SWITCH Input
#5 ESS (analog 5e9.2)	2	nxxx-xxxL
#5 ESS (analog 5e9.2)	4	nxxx-xxxxxL
#5 ESS (AIU 5e11)	2	nxxx-xxxE
#5 ESS (DNU-S 5e12)	2	nxxx-xA
#5 ESS (DNU-S 5e12)	3	nxxx-x-xxA
#5 ESS (IDLC)	2	nxxx-xS
#5 ESS (IDLC)	3	nxxx-xxxS
#5 ESS (IDCU type M)	2	nxxx-xM
#5 ESS (IDCU type M)	3	nxxx-xxxM
#5 ESS (IDCU type G - 5e8-5e9.2)	2	nxxx-xG
#5 ESS (IDCU type G - 5e8-5e9.2)	3	nxxx-xxxG
#5 ESS (IDCU type G - 5e10)	2	nxxx-xxG
#5 ESS (IDCU type G - 5e10)	3	nxxx-xxxxG
#5 ESS (ISDN - 5e6-5e9.2)	2	nxxx-xI
#5 ESS (ISDN - 5e6-5e9.2)	3	nxxx-xxxI
#5 ESS (ISDN ISLU2 - 5e10)	2	nxxx-xxK
#5 ESS (ISDN ISLU2 - 5e10)	3	nxxx-xxxxK
#5 ESS (pkt)	3	nxxx-x-xx
DMS-100 (host)	1	nxxxL
DMS-100 (host)	2	nxx nxxx
DMS-100 (host)	3	nxx-x nxxx-x
DMS-100 (host)	4	nxx-x-xx nxxx-x-xx
DMS-100 (remote)	1	nxxxr
DMS-100 (remote)	2	nrxx nrxxx
DMS-100 (remote)	3	nrxx-x nrxxx-x
DMS-100 (remote)	4	nrxx-x-xx nrxxx-x-xx
DMS-100 (SCM-100A DS1)	1	nxxxSC
DMS-100 (SMS DS1)	1	nxxxSM
DMS-100 (SMS-R DS1)	1	nrxxxSMR

Table 4A-10a. SWITCH SYSTEM CCPT INPUT TO OUTPUT

CC Model	CCPT Parse Key	Input Format	Output Format*
AN	mcu	x-xx	x-xx
	ds1	ce1-xx-xx	ce1-xx-xx
	ds3	ce1-xx-x	ce1-xx-x
	optc	ce1-x	ce1-x
ANONU	onu	x-xx	x-xx
	ods1	x-ds1-x	x-ds1-x
DDM2000	ds1	a-x-x	a-x-x
	optc	a-1	a-1
DISCS	mcu	x-xx	x-xx
	ou	x-xx	x-xx
	ds1	xx	xx
	ds1e	xx	xx
	oc3	olu(a,b)	oul(a,b)
DISONU	onu	xx	xx
FCTR	mcu	xx-xx-x	xx-xx-x
	ds1	lc1a-x-x	lc1a-x-x
	ds3	mc1c-xw	mc1c-xw
	ou	xx-xx	xx-xx
	optc	hc1a-xw	hc1a-xw
FCTRONU	onu	x-x	x-x
FDLC	mcu	a-xx-x	a-xx-x
	ds1	a-a	a-a
FLM1	ds1	lc1a-x-x	lc1a-x-x
	ds3	mc1m-xw	mc1c-xw
	optc	hc1a-xw	hc1a-xw
HFC2T	ds1	x-x	x-x
	rfds	rfdsx	rfdsx
	slc	x-x	x-x
	slu	x	x
	mlu	lcx-xx	lcx-xx

Table 4A-10a. SWITCH SYSTEM CCPT INPUT TO OUTPUT (Cont)

CC Model	CCPT Parse Key	Input Format	Output Format*
HMX	ds1	ds1ux-x	ds1ux-x
	cxmu	cxmuxa	cxmuxa
	misu	cux-x	cux-x
	hisu	cux-x	cux-x
IISC	all	xx-xx	xx-xx
LOC2	ou	x	x
	ds1	x-x	x-x
LOC2ONU	on8	x-x	x-x
	on16	x-x	x-x
	on32	x-x	x-x
	on48	xx-x	xx-x
LTSP	mcu	x-xx-x	x-xx-x
	ou	x-x	x-x
	hou	x-xx	x-xx
	optc	aaa-a	aaa-a
LTSPONU	on12	x-x	x-x
	on24	x-x	x-x
	on48	xx-x	xx-x
	on96	xx-x	xx-x
SDV2T	mcu	xx-x	xx-x
	ds1	x-x	x-x
	ou	olu-x-xx	olu-x-xx
SLC2T	mcu	x-xx-x	x-xx-x
	ds1	a-x-x	a-x-x
	ou	x-xx	x-xx
	optc	a-1	a-1
	onu	x-x	x-x
SLC96	mcu	a-xx-x	a-xx-x
	ds1	3a-x	3a-x
NEXT3	mcu	x-x	x-x
	bcu	xx-x-x xx-x-x-x	xx-x-x xx-x-x-x
	ou	odu-xx	odu-xx
	ds1	x	x
SSU16	mcu	xx-x	xx-x
	ds1	ds1-x	ds1-x
UMC	mcu	x-xx-x	x-xx-x
	ds3	x-xx	x-xx
UMC48	mcu	x-xx-x	x-xx-x
	ds3	x-xx	x-xx
USAM	mcu	xx-x	xx-x
	ou	cc-a	cc-a

* ULBB, FOMS and USO formats are identical

Table 4A-10b. SWITCH SYSTEM SLOT OUTPUT FORMATS

CC Model	CCPT Parse Key	Output Format*
AN	mcu	x-xx
	ds1	ce1-xx
	ds3	ce1-xx
	optc	ce1-x
ANONU	onu	x-xx
	ods1	x-ds1-x
DDM2000	ds1	a-x
	optc	a-1
DISCS	mcu	x-xx,xx
	ou	x-x
	ds1e	axx
	ds1	liu(x)
	olu	olu(a,b)
DISONU	onu	xx
FCTR	mcu	xx-xx
	ds1	lc1a-x
	ds3	mc1c-xw
	ou	xx-xx
optc	hc1a-xw	
FCTRONU	onu	x
FDLC	mcu	a-xx
	ds1	a-a
FLM1	ds1	lc1a-x
	ds3	mc1c-xw
	optc	hc1a-xw
HFC2T	ds1	x
	rfds	rfdsx
	slc	x
	slu	x
	mlu	lcx

Table 4A-10b. SWITCH SYSTEM SLOT OUTPUT FORMATS (Cont)

CC Model	CCPT Parse Key	Output Format*
HMX	ds1	ds1ux
	cxmu	cxmuxa
	misu	cux
	hisu	cux
IISC	all	xx
LOC2	ou	dfmx
	ds1	x
LOC2ONU	on8	x
	on16	x
	on32	x
	on48	xx
LTSP	mcu	x-xx
	ou	x-x
	hou	x-xx
	optc	aaa-a
LTSPONU	on12	x
	on24	x
	on48	xx
	on96	xx
SDV2T	mcu	xx
	ds1	x
	ou	olu-x-xx
SLC2T	mcu	x-xx
	ds1	a-x
	ou	x-xx
	optc	a-1
	onu	x
SLC96	mcu	a-xx
	ds1	3a
NEXT3	mcu	x
	bcu	xx-x xx-x-x
	ou	odu-xx
	ds1	x
SSU16	mcu	xx
	ds1	ds1-x
UMC	mcu	x-xx
	ds3	x-xx
UMC48	mcu	x-xx
	ds3	x-xx
USAM	mcu	xx
	ou	cc-a

* ULBB, FOMS and USO formats are identical

Table 4A-11. INV GROUP RULES

INSTANCE KEY: axe

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
alg		1	n	y	y	n	n	yyyyyyxxx-??-???	3	1
alg		2	y	y	n	n	y	yyyyyyxxx-xx-???	2	1
slc1		1	n	y	y	n	n	yyyyyyxxx-??-?	3	1
slc1		2	y	y	n	n	n	yyyyyyxxx-xx-?	2	1

INSTANCE KEY: 5es?5e6

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
alg	1	1	n	y	n	n	n	yyyyyyxxx-????-??	3	1
alg	1	2	y	y	y	n	n	yyyyyyxxx-xx??-??	1	1
alg	1	4	n	y	n	n	y	yyyyyyxxx-xxxx-??	1	1
dclu	s	1	n	y	n	n	n	yyyyyyxxx-??-??	3	1
dclu	s	2	y	n	y	n	y	yyyyyyxxx-xx-??	1	1
isdn	i	1	n	y	n	n	n	yyyyyyxxx-????-??	3	1
isdn	i	2	y	y	y	y	y	yyyyyyxxx-xx??-??	1	1
isdn	i	3	n	y	n	y	n	yyyyyyxxx-xxxx-??	2	1
isdnp		2	n	n	n	y	n	yyyyyyxxx-x-??-???	1	1
isdnp		3	y	n	y	y	y	yyyyyyxxx-x-xx-???	2	1
slc	s	1	n	y	n	n	n	yyyyyyxxx-????-??	3	1
slc	s	2	y	n	y	n	y	yyyyyyxxx-xx??-??	1	1

INSTANCE KEY: 5es?5e7

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
alg	1	1	n	y	n	n	n	yyyyyyxxx-????-??	3	1
alg	1	2	n	y	n	n	n	yyyyyyxxx-xx??-??	1	1
alg	1	4	y	y	y	n	y	yyyyyyxxx-xxxx-??	1	1
dclu	s	1	n	y	n	n	n	yyyyyyxxx-??-??	3	1
dclu	s	2	y	n	y	n	y	yyyyyyxxx-xx-??	1	1
isdn	i	1	n	y	n	n	n	yyyyyyxxx-????-??	3	1
isdn	i	2	n	y	n	y	n	yyyyyyxxx-xx??-??	1	1
isdn	i	3	y	y	y	y	y	yyyyyyxxx-xxxx-??	2	1
isdnp		2	n	n	n	y	n	yyyyyyxxx-x-??-???	1	1
isdnp		3	y	n	y	y	y	yyyyyyxxx-x-xx-???	2	1
slc	s	1	n	y	n	n	n	yyyyyyxxx-????-??	3	1
slc	s	3	y	n	y	n	y	yyyyyyxxx-xxxx-??	2	1

Table 4A-11. INV GROUP RULES

INSTANCE KEY: 5es?5e8

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
alg	l	1	n	y	n	n	n	yyyyyyyxxx-????-??	3	1
alg	l	2	n	y	n	n	n	yyyyyyyxxx-xx??-??	1	1
alg	l	4	y	y	y	n	y	yyyyyyyxxx-xxxx-??	1	1
dclu	s	1	n	y	n	n	n	yyyyyyyxxx-??-??	3	1
dclu	s	2	y	n	y	n	y	yyyyyyyxxx-xx-??	1	1
idcu	s	1	n	y	n	n	n	yyyyyyyxxx-??-??	3	1
idcu	s	2	y	n	y	n	y	yyyyyyyxxx-xx-??	1	1
idcul	s	1	n	y	n	n	n	yyyyyyyxxx-????-??	3	1
idcul	s	3	y	n	y	n	y	yyyyyyyxxx-xxxx-??	2	1
idcu2	s	1	n	y	n	n	n	yyyyyyyxxx-????-????	3	1
idcu2	s	3	y	n	y	n	y	yyyyyyyxxx-xxxx-????	2	1
isdn	i	1	n	y	n	n	n	yyyyyyyxxx-????-??	3	1
isdn	i	2	n	y	n	y	n	yyyyyyyxxx-xx??-??	1	1
isdn	i	3	y	y	y	y	y	yyyyyyyxxx-xxxx-??	2	1
isdnp		2	n	n	n	y	n	yyyyyyyxxx-x-??-???	1	1
isdnp		3	y	n	y	y	y	yyyyyyyxxx-x-xx-???	2	1
slc	s	1	n	y	n	n	n	yyyyyyyxxx-????-??	3	1
slc	s	3	y	n	y	n	y	yyyyyyyxxx-xxxx-??	2	1

INSTANCE KEY: 5es?5e9.1

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
alg	l	1	n	y	n	n	n	yyyyyyyxxx-????-??	3	1
alg	l	2	n	y	n	n	n	yyyyyyyxxx-xx??-??	1	1
alg	l	4	y	y	y	n	y	yyyyyyyxxx-xxxx-??	1	1
idcu	s	1	n	y	n	n	n	yyyyyyyxxx-??-??	3	1
idcu	s	2	y	n	y	n	y	yyyyyyyxxx-xx-??	1	1
idcul	s	1	n	y	n	n	n	yyyyyyyxxx-????-??	3	1
idcul	s	3	y	n	y	n	y	yyyyyyyxxx-xxxx-??	2	1
idcu2	s	1	n	y	n	n	n	yyyyyyyxxx-????-????	3	1
idcu2	s	3	y	n	y	n	y	yyyyyyyxxx-xxxx-????	2	1
isdn	i	1	n	y	n	n	n	yyyyyyyxxx-????-??	3	1
isdn	i	2	n	y	n	y	n	yyyyyyyxxx-xx??-??	1	1
isdn	i	3	y	y	y	y	y	yyyyyyyxxx-xxxx-??	2	1
isdnp		2	n	n	n	y	n	yyyyyyyxxx-x-??-???	1	1
isdnp		3	y	n	y	y	y	yyyyyyyxxx-x-xx-???	2	1
slc	s	1	n	y	n	n	n	yyyyyyyxxx-????-??	3	1
slc	s	3	y	n	y	n	y	yyyyyyyxxx-xxxx-??	2	1

Table 4A-11. INV GROUP RULES

INSTANCE KEY: 5es?5e9.2

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
alg	l	1	n	y	n	n	n	yyyyyyxxx-??????-??	3	1
alg	l	2	n	y	n	n	n	yyyyyyxxx-xxxx??-??	3	1
alg	l	4	y	y	y	n	y	yyyyyyxxx-xxxxxx-??	1	1
idcu	s	1	n	y	n	n	n	yyyyyyxxx-??-??	3	1
idcu	s	2	y	n	y	n	y	yyyyyyxxx-xx-??	1	1
idcu1	s	1	n	y	n	n	n	yyyyyyxxx-????-??	3	1
idcu1	s	3	y	n	y	n	y	yyyyyyxxx-xxxx-??	2	1
idcu2	s	1	n	y	n	n	n	yyyyyyxxx-????-????	3	1
idcu2	s	3	y	n	y	n	y	yyyyyyxxx-xxxx-????	2	1
isdn	i	1	n	y	n	n	n	yyyyyyxxx-????-??	3	1
isdn	i	2	n	y	n	y	n	yyyyyyxxx-xx??-??	1	1
isdn	i	3	y	y	y	y	y	yyyyyyxxx-xxxx-??	2	1
isdnp		2	n	n	n	y	n	yyyyyyxxx-x-??-???	1	1
isdnp		3	y	n	y	y	y	yyyyyyxxx-x-xx-???	2	1
slc	s	1	n	y	n	n	n	yyyyyyxxx-????-??	3	1
slc	s	3	y	n	y	n	y	yyyyyyxxx-xxxx-??	2	1

INSTANCE KEY: 5es?5e10

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
alg	l	1	n	y	n	n	n	yyyyyyxxx-??????-??	3	1
alg	l	2	n	y	n	n	n	yyyyyyxxx-xxxx??-??	3	1
alg	l	4	y	y	y	n	y	yyyyyyxxx-xxxxxx-??	1	1
dclu	s	1	n	y	n	n	n	yyyyyyxxx-??-??	3	1
dclu	s	2	y	n	y	n	y	yyyyyyxxx-xx-??	1	1
idcua	s	1	n	y	n	n	n	yyyyyyxxx-???-??	3	1
idcua	s	2	y	n	y	y	y	yyyyyyxxx-xxx-??	2	1
idcu3	s	1	n	y	n	n	n	yyyyyyxxx-?????-????	3	1
idcu3	s	3	y	n	y	n	y	yyyyyyxxx-xxxxx-????	2	1
isdn	i	1	n	y	n	n	n	yyyyyyxxx-????-??	3	1
isdn	i	2	n	y	n	y	n	yyyyyyxxx-xx??-??	1	1
isdn	i	3	y	y	y	y	y	yyyyyyxxx-xxxx-??	2	1
isdnp		2	n	n	n	y	n	yyyyyyxxx-x-??-???	1	1
isdnp		3	y	n	y	y	y	yyyyyyxxx-x-xx-???	2	1
islu2	i	1	n	y	n	n	n	yyyyyyxxx-?????-???	3	1
islu2	i	2	n	y	n	y	n	yyyyyyxxx-xxx??-???	2	1
islu2	i	3	y	y	y	y	y	yyyyyyxxx-xxxxx-???	2	1
slc	s	1	n	y	n	n	n	yyyyyyxxx-????-??	3	1
slc	s	3	y	n	y	n	y	yyyyyyxxx-xxxx-??	2	1

Table 4A-11. INV GROUP RULES

INSTANCE KEY: 5es?5el1

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
aiu	a	1	n	y	n	n	n	yyyyyyxxx-????-??-??	3	1
aiu	a	2	y	y	y	n	y	yyyyyyxxx-xxxx-??-??	3	1
alg	l	1	n	y	n	n	n	yyyyyyxxx-??????-??	3	1
alg	l	2	n	y	n	n	n	yyyyyyxxx-xxxx??-??	3	1
alg	l	4	y	y	y	n	y	yyyyyyxxx-xxxxxx-??	1	1
dclu	s	1	n	y	n	n	n	yyyyyyxxx-??-??	3	1
dclu	s	2	y	n	y	n	y	yyyyyyxxx-xx-??	1	1
idcua	s	1	n	y	n	n	n	yyyyyyxxx-???-??	3	1
idcua	s	2	y	n	y	y	y	yyyyyyxxx-xxx-??	2	1
idcu3	s	1	n	y	n	n	n	yyyyyyxxx-?????-????	3	1
idcu3	s	3	y	n	y	n	y	yyyyyyxxx-xxxxx-????	2	1
isdn	i	1	n	y	n	n	n	yyyyyyxxx-????-??	3	1
isdn	i	2	n	y	n	y	n	yyyyyyxxx-xx??-??	1	1
isdn	i	3	y	y	y	y	y	yyyyyyxxx-xxxx-??	2	1
isdnp		2	n	n	n	y	n	yyyyyyxxx-x-??-???	1	1
isdnp		3	y	n	y	y	y	yyyyyyxxx-x-xx-???	2	1
islu2	i	1	n	y	n	n	n	yyyyyyxxx-?????-???	3	1
islu2	i	2	n	y	n	y	n	yyyyyyxxx-xxx??-???	2	1
islu2	i	3	y	y	y	y	y	yyyyyyxxx-xxxxx-???	2	1
slc	s	1	n	y	n	n	n	yyyyyyxxx-????-??	3	1
slc	s	3	y	n	y	n	y	yyyyyyxxx-xxxx-??	2	1

INSTANCE KEY: 5es?5el2

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
aiu	l	1	n	y	n	n	n	yyyyyyxxx-????-??-??	3	1
aiu	l	2	y	y	y	n	y	yyyyyyxxx-xxxx-??-??	3	1
alg	l	1	n	y	n	n	n	yyyyyyxxx-??????-??	3	1
alg	l	2	n	y	n	n	n	yyyyyyxxx-xxxx??-??	3	1
alg	l	4	y	y	y	n	y	yyyyyyxxx-xxxxxx-??	1	1
dclu	s	1	n	y	n	n	n	yyyyyyxxx-??-??	3	1
dclu	s	2	y	n	y	n	y	yyyyyyxxx-xx-??	1	1
dnus	d	1	n	y	n	n	n	yyyyyyxxx-??-??-????	3	1
dnus	d	3	y	n	y	n	y	yyyyyyxxx-xx-xx-????	2	1
idcua	s	1	n	y	n	n	n	yyyyyyxxx-???-??	3	1
idcua	s	2	y	n	y	y	y	yyyyyyxxx-xxx-??	2	1
idcu3	s	1	n	y	n	n	n	yyyyyyxxx-?????-????	3	1
idcu3	s	3	y	n	y	n	y	yyyyyyxxx-xxxxx-????	2	1
isdn	i	1	n	y	n	n	n	yyyyyyxxx-????-??	3	1
isdn	i	2	n	y	n	y	n	yyyyyyxxx-xx??-??	1	1
isdn	i	3	y	y	y	y	y	yyyyyyxxx-xxxx-??	2	1
isdnp		2	n	n	n	y	n	yyyyyyxxx-x-??-???	1	1
isdnp		3	y	n	y	y	y	yyyyyyxxx-x-xx-???	2	1
islu2	i	1	n	y	n	n	n	yyyyyyxxx-?????-???	3	1
islu2	i	2	n	y	n	y	n	yyyyyyxxx-xxx??-???	2	1
islu2	i	3	y	y	y	y	y	yyyyyyxxx-xxxxx-???	2	1
slc	s	1	n	y	n	n	n	yyyyyyxxx-????-??	3	1
slc	s	3	y	n	y	n	y	yyyyyyxxx-xxxx-??	2	1

Table 4A-11. INV GROUP RULES

INSTANCE KEY: dmc

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
alg		1	n	y	n	n	n	yyyyyyxx-x-??-??	2	0
alg		3	y	y	y	n	y	yyyyyyxx-x-??-??	1	1
alg		4	n	y	n	n	n	yyyyyyxx-x-xx-??	2	1
algr		1	n	y	n	n	n	yyyyyyxxxx-x-??-??	2	0
algr		3	y	y	y	n	y	yyyyyyyyxx-x-??-??	1	1
algr		4	n	y	n	n	n	yyyyyyyyxx-x-xx-??	2	1
algr3		1	n	y	n	n	n	yyyyyyxxxxx-x-??-??	3	0
algr3		3	y	y	y	n	y	yyyyyyyyxxx-x-??-??	1	1
algr3		4	n	y	n	n	n	yyyyyyyyxxx-x-xx-??	2	1
alg3		1	n	y	n	n	n	yyyyyyxxx-x-??-??	2	0
alg3		3	y	y	y	n	y	yyyyyyxxx-x-??-??	1	1
alg3		4	n	y	n	n	n	yyyyyyxxx-x-xx-??	2	1
isdn		1	n	y	n	n	n	yyyyyyxx-x-??-??	2	0
isdn		3	y	y	y	n	y	yyyyyyxx-x-??-??	1	1
isdn		4	n	y	n	n	n	yyyyyyxx-x-xx-??	2	1
isdnr		1	n	y	n	n	n	yyyyyyxxxx-x-??-??	2	0
isdnr		3	y	y	y	n	y	yyyyyyyyxx-x-??-??	1	1
isdnr		4	n	y	n	n	n	yyyyyyyyxx-x-xx-??	2	1
isdnr3		1	n	y	n	n	n	yyyyyyxxxxx-x-??-??	3	0
isdnr3		3	y	y	y	n	y	yyyyyyyyxxx-x-??-??	1	1
isdnr3		4	n	y	n	n	n	yyyyyyyyxxx-x-xx-??	2	1
isdn3		1	n	y	n	n	n	yyyyyyxxx-x-??-??	3	0
isdn3		3	y	y	y	n	y	yyyyyyxxx-x-??-??	1	1
isdn3		4	n	y	n	n	n	yyyyyyxxx-x-xx-??	2	1
scm	s	1	y	y	y	n	n	yyyyyyxxx##-??	3	1
scmr	s	1	y	y	y	n	n	yyyyyyyyxxx##-??	3	1
smr	s	1	y	y	y	n	n	yyyyyyyyxxx###-??	3	1
slc		3	y	n	y	n	y	yyyyyyyyxx-x-??-??	1	1
slc3		3	y	n	y	n	y	yyyyyyyyxxx-x-??-??	1	1
1slc		3	y	n	y	n	y	yyyyyyyyxx-x-??-??	1	1
1slc3		3	y	n	y	n	y	yyyyyyyyxxx-x-??-??	1	1
2isdn		1	n	y	n	n	n	yyyyyyxx-x-??-??	2	0
2isdn		3	y	y	y	n	y	yyyyyyxx-x-??-??	1	1
2isdn		4	n	y	n	n	n	yyyyyyxx-x-xx-??	2	1
2isdnr		1	n	y	n	n	n	yyyyyyxxxx-x-??-??	2	0
2isdnr		3	y	y	y	n	y	yyyyyyyyxx-x-??-??	1	1
2isdnr		4	n	y	n	n	n	yyyyyyyyxx-x-xx-??	2	1
2isdnr3		1	n	y	n	n	n	yyyyyyxxxxx-x-??-??	3	0
2isdnr3		3	y	y	y	n	y	yyyyyyyyxxx-x-??-??	1	1
2isdnr3		4	n	y	n	n	n	yyyyyyyyxxx-x-xx-??	2	1
2isdn3		1	n	y	n	n	n	yyyyyyxxx-x-??-??	3	0
2isdn3		3	y	y	y	n	y	yyyyyyxxx-x-??-??	1	1
2isdn3		4	n	y	n	n	n	yyyyyyxxx-x-xx-??	2	1
2slc		3	y	n	y	n	y	yyyyyyyyxx-x-??-??	1	1
2slc3		3	y	n	y	n	y	yyyyyyyyxxx-x-??-??	1	1
3slc		3	y	n	y	n	y	yyyyyyyyxx-x-??-??	1	1
3slc		3	y	n	y	n	y	yyyyyyyyxxx-x-??-??	1	1

Table 4A-11. INV GROUP RULES

INSTANCE KEY: dmx

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
alg	a	2	y	y	y	n	y	yyyyyyxxxx-x-??-?	1	0
algr	a	2	y	y	y	n	y	yyyyyyyyxxxx-x-??-?	1	0
opsm		1	n	y	n	n	n	yyyyyyyyxxx-?-??-??	2	1
opsm		3	n	y	n	n	n	yyyyyyyyxxx-x-xx-??	2	1
opsm		2	y	y	y	n	y	yyyyyyyyxxx-x-??-??	1	1
rsle		1	n	y	n	n	n	yyyyyyyyxxx-?-??-??	2	1
rsle		3	n	y	n	n	n	yyyyyyyyxxx-x-xx-??	2	1
rsle		2	y	y	y	n	y	yyyyyyyyx##-x-??-??	1	0
rslm		1	n	y	n	n	n	yyyyyyyyxxx-?-??-??	2	1
rslm		3	n	y	n	n	n	yyyyyyyyxxx-x-xx-??	2	1
rslm		2	y	y	y	n	y	yyyyyyyyxxx-x-??-??	1	1
slc		3	y	n	n	n	y	yyyyyyyyxxx-x-??	1	1
1slc		3	y	n	n	n	y	yyyyyyyyxxxx-x-??-?	1	1
2slc		3	y	n	n	n	y	yyyyyyyyxxx-xx-??	2	1
400		1	n	y	n	n	n	yyyyyyxxx-?-??-??	2	1
400		2	y	y	y	n	y	yyyyyyx##-x-??-??	1	0
400		3	n	y	n	n	n	yyyyyyxxx-x-xx-??	2	1
400r		1	n	y	n	n	n	yyyyyyyyxxx-?-??-??	2	1
400r		2	y	y	y	n	y	yyyyyyyyx##-x-??-??	1	0
400r		3	n	y	n	n	n	yyyyyyyyxxx-x-xx-??	2	1

INSTANCE KEY: dco

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
alg		1	n	y	n	n	n	yyyyyyxxx-??-??	2	1
alg		2	y	y	y	n	y	yyyyyyxxx-xx-??	2	1
algr		1	n	y	n	n	n	yyyyyyyyxxx-??-??	2	1
algr		2	y	y	y	n	y	yyyyyyyyxxx-xx-??	2	1

INSTANCE KEY: dco?16.0

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
alg		1	y	y	y	n	y	yyyyyyxxx-??-??	2	1
alg		2	n	y	n	n	n	yyyyyyxxx-xx-??	2	1
algr		1	y	y	y	n	y	yyyyyyyyxxx-??-??	2	1
algr		2	n	y	n	n	n	yyyyyyyyxxx-xx-??	2	1

Table 4A-11. INV GROUP RULES

INSTANCE KEY: dco?17.0

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
alg		1	y	y	y	n	y	yyyyyyxxx-??-??	2	1
alg		2	n	y	n	n	n	yyyyyyxxx-xx-??	2	1
algr		1	y	y	y	n	y	yyyyyyyyxxx-??-??	2	1
algr		2	n	y	n	n	n	yyyyyyyyxxx-xx-??	2	1

INSTANCE KEY: dco?17.1

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
alg		1	y	y	y	n	y	yyyyyyxxx-??-??	2	1
alg		2	n	y	n	n	n	yyyyyyxxx-xx-??	2	1
algr		1	y	y	y	n	y	yyyyyyyyxxx-??-??	2	1
algr		2	n	y	n	n	n	yyyyyyyyxxx-xx-??	2	1

INSTANCE KEY: ewsd

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
alg		1	y	y	y	n	y	yyyyyyyxxxx?-??-??	4	1
alg		2	n	y	n	n	n	yyyyyyyxxxxx-??-??	1	1
slc1		1	y	y	y	n	y	yyyyyyyxxxx?-?	4	1
slc1		2	n	y	n	n	n	yyyyyyyxxxxx-?	1	1
slc2	d	1	y	y	y	n	n	yyyyyyyx-xx-x	1	0

INSTANCE KEY: les

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
alg		1	n	y	n	n	n	yyyyyyxx-???-???	2	1
alg		4	y	y	y	n	y	yyyyyyxx-xxx-???	1	1
algr		2	n	y	n	n	n	yyyyyyxxxx-?-????	1	1
algr		4	y	y	n	n	y	yyyyyyxxxx-x-xx??	2	1

INSTANCE KEY: 2es

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
alg		1	n	y	n	n	n	yyyyyyxx-????	2	1
alg		3	y	y	y	n	y	yyyyyy##-x#??	1	0
algr		2	n	y	n	n	n	yyyyyyxx-x-?-????	1	1
algr		4	y	y	n	n	y	yyyyyyxx-x-x-xx??	2	1

Table 4A-11. INV GROUP RULES

INSTANCE KEY: 3es

hier_cat	hier_func	hier_level	load	sprd	meas	isdn	alloc	id_format	num_char	increment_val
alg		1	n	y	n	n	n	yyyyyyxx-????	2	1
alg		2	y	y	y	n	y	yyyyyyxx-x???	1	1

Table 4A-12. INV SUPP GROUP RULES

INSTANCE KEY: dmx?alg?2

hier_id	primary_id	secondary_id
pe01-1	pe01-1	
pe01-2	pe01-2	
pe01-3	pe01-1	pe01-3
pe01-4	pe01-2	pe01-4
pe01-5	pe01-5	
pe01-6	pe01-6	
pe02-1	pe02-1	
pe02-2	pe02-2	
pe02-3	pe02-1	pe02-3
pe02-4	pe02-2	pe02-4
pe02-5	pe01-5	pe02-5
pe02-6	pe01-6	pe02-6
pe03-5	pe03-5	
pe03-6	pe03-6	
pe04-1	pe04-1	
pe04-2	pe04-2	
pe04-3	pe04-1	pe04-3
pe04-4	pe04-2	pe04-4
pe04-5	pe03-5	pe04-5
pe04-6	pe03-6	pe04-6
pe05-1	pe05-1	
pe05-2	pe05-2	
pe05-3	pe05-1	pe05-3
pe05-4	pe05-2	pe05-4
pe05-5	pe05-5	
pe05-6	pe05-6	
pe06-1	pe06-1	
pe06-2	pe06-2	
pe06-3	pe06-1	pe06-3
pe06-4	pe06-2	pe06-4
pe06-5	pe05-5	pe06-5
pe06-6	pe05-6	pe06-6
pe07-1	pe07-1	
pe07-2	pe07-2	
pe07-3	pe07-1	pe07-3
pe07-4	pe07-2	pe07-4
pe07-5	pe07-5	
pe07-6	pe07-6	
pe08-1	pe08-1	
pe08-2	pe08-2	
pe08-3	pe08-1	pe08-3
pe08-4	pe08-2	pe08-4
pe08-5	pe07-5	pe08-5
pe08-6	pe07-6	pe08-6

Table 4A-12. INV SUPP GROUP RULES

INSTANCE KEY: dmx?alg?2

hier_id	primary_id	secondary_id
pe09-1	pe09-1	
pe09-2	pe09-2	
pe09-3	pe09-1	pe09-3
pe09-4	pe09-2	pe09-4
pe09-5	pe09-5	
pe09-6	pe09-6	
pe10-1	pe10-1	
pe10-2	pe10-2	
pe10-3	pe10-1	pe10-3
pe10-4	pe10-2	pe10-4
pe10-5	pe09-5	pe10-5
pe10-6	pe09-6	pe10-6
pe11-1	pe11-1	
pe11-2	pe11-2	
pe11-3	pe11-1	pe11-3
pe11-4	pe11-2	pe11-4
pe11-5	pe11-5	
pe11-6	pe11-6	
pe12-1	pe12-1	
pe12-2	pe12-2	
pe12-3	pe12-1	pe12-3
pe12-4	pe12-2	pe12-4
pe12-5	pe11-5	pe12-5
pe12-6	pe11-6	pe12-6
pe13-1	pe13-1	
pe13-2	pe13-2	
pe13-3	pe13-1	pe13-3
pe13-4	pe13-2	pe13-4
pe13-5	pe13-5	
pe13-6	pe13-6	
pe14-1	pe14-1	
pe14-2	pe14-2	
pe14-3	pe14-1	pe14-3
pe14-4	pe14-2	pe14-4
pe14-5	pe13-5	pe14-5
pe14-6	pe13-6	pe14-6

Table 4A-12. INV SUPP GROUP RULES

INSTANCE KEY: dmx?alg?2

hier_id	primary_id	secondary_id
pe15-1	pe15-1	
pe15-2	pe15-2	
pe15-3	pe15-1	pe15-3
pe15-4	pe15-2	pe15-4
pe15-5	pe15-5	
pe15-6	pe15-6	
pe16-1	pe16-1	
pe16-2	pe16-2	
pe16-3	pe16-1	pe16-3
pe16-4	pe16-2	pe16-4
pe16-5	pe15-5	pe16-5
pe16-6	pe15-6	pe16-6
pe17-1	pe17-1	
pe17-2	pe17-2	
pe17-3	pe17-1	pe17-3
pe17-4	pe17-2	pe17-4
pe17-5	pe17-5	
pe17-6	pe17-6	
pe18-1	pe18-1	
pe18-2	pe18-2	
pe18-3	pe18-1	pe18-3
pe18-4	pe18-2	pe18-4
pe18-5	pe17-5	pe18-5
pe18-6	pe17-6	pe18-6
pe19-1	pe19-1	
pe19-2	pe19-2	
pe19-3	pe19-1	pe19-3
pe19-4	pe19-2	pe19-4
pe19-5	pe19-5	
pe19-6	pe19-6	

Table 4A-12. INV SUPP GROUP RULES

INSTANCE KEY: dmx?alg?2

hier_id	primary_id	secondary_id
pe20-1	pe20-1	
pe20-2	pe20-2	
pe20-3	pe20-1	pe20-3
pe20-4	pe20-2	pe20-4
pe20-5	pe19-5	pe20-5
pe20-6	pe19-6	pe20-6
pe21-1	pe21-1	
pe21-2	pe21-2	
pe21-3	pe21-1	pe21-3
pe21-4	pe21-2	pe21-4
pe21-5	pe21-5	
pe21-6	pe21-6	
pe22-1	pe22-1	
pe22-2	pe22-2	
pe22-3	pe22-1	pe22-3
pe22-4	pe22-2	pe22-4
pe22-5	pe21-5	pe22-5
pe22-6	pe21-6	pe22-6
pe23-1	pe23-1	
pe23-2	pe23-2	
pe23-3	pe23-1	pe23-3
pe23-4	pe23-2	pe23-4
pe23-5	pe23-5	
pe23-6	pe23-6	
pe24A-1	pe24-1	
pe24A-2	pe24-2	
pe24A-3	pe24-1	pe24-3
pe24A-4	pe24-2	pe24-4
pe24A-5	pe23-5	pe24-5
pe24A-6	pe23-6	pe24-6

Table 4A-12. INV SUPP GROUP RULES

INSTANCE KEY: dmx?algr?2

hier_id	primary_id	secondary_id
pe01-1	pe01-1	
pe01-2	pe01-2	
pe01-3	pe01-1	pe01-3
pe01-4	pe01-2	pe01-4
pe01-5	pe01-5	
pe01-6	pe01-6	
pe02-1	pe02-1	
pe02-2	pe02-2	
pe02-3	pe02-1	pe02-3
pe02-4	pe02-2	pe02-4
pe02-5	pe01-5	pe02-5
pe02-6	pe01-6	pe02-6
pe03-5	pe03-5	
pe03-6	pe03-6	
pe04-1	pe04-1	
pe04-2	pe04-2	
pe04-3	pe04-1	pe04-3
pe04-4	pe04-2	pe04-4
pe04-5	pe03-5	pe04-5
pe04-6	pe03-6	pe04-6
pe05-1	pe05-1	
pe05-2	pe05-2	
pe05-3	pe05-1	pe05-3
pe05-4	pe05-2	pe05-4
pe05-5	pe05-5	
pe05-6	pe05-6	
pe06-1	pe06-1	
pe06-2	pe06-2	
pe06-3	pe06-1	pe06-3
pe06-4	pe06-2	pe06-4
pe06-5	pe05-5	pe06-5
pe06-6	pe05-6	pe06-6
pe07-1	pe07-1	
pe07-2	pe07-2	
pe07-3	pe07-1	pe07-3
pe07-4	pe07-2	pe07-4
pe07-5	pe07-5	
pe07-6	pe07-6	
pe08-1	pe08-1	
pe08-2	pe08-2	
pe08-3	pe08-1	pe08-3
pe08-4	pe08-2	pe08-4
pe08-5	pe07-5	pe08-5
pe08-6	pe07-6	pe08-6

Table 4A-12. INV SUPP GROUP RULES

INSTANCE KEY: dmx?algr?2

hier_id	primary_id	secondary_id
pe09-1	pe09-1	
pe09-2	pe09-2	
pe09-3	pe09-1	pe09-3
pe09-4	pe09-2	pe09-4
pe09-5	pe09-5	
pe09-6	pe09-6	
pe10-1	pe10-1	
pe10-2	pe10-2	
pe10-3	pe10-1	pe10-3
pe10-4	pe10-2	pe10-4
pe10-5	pe09-5	pe10-5
pe10-6	pe09-6	pe10-6
pe11-1	pe11-1	
pe11-2	pe11-2	
pe11-3	pe11-1	pe11-3
pe11-4	pe11-2	pe11-4
pe11-5	pe11-5	
pe11-6	pe11-6	
pe12-1	pe12-1	
pe12-2	pe12-2	
pe12-3	pe12-1	pe12-3
pe12-4	pe12-2	pe12-4
pe12-5	pe11-5	pe12-5
pe12-6	pe11-6	pe12-6
pe13-1	pe13-1	
pe13-2	pe13-2	
pe13-3	pe13-1	pe13-3
pe13-4	pe13-2	pe13-4
pe13-5	pe13-5	
pe13-6	pe13-6	
pe14-1	pe14-1	
pe14-2	pe14-2	
pe14-3	pe14-1	pe14-3
pe14-4	pe14-2	pe14-4
pe14-5	pe13-5	pe14-5
pe14-6	pe13-6	pe14-6

Table 4A-12. INV SUPP GROUP RULES

INSTANCE KEY: dmx?algr?2

****

hier_id	primary_id	secondary_id
pe15-1	pe15-1	
pe15-2	pe15-2	
pe15-3	pe15-1	pe15-3
pe15-4	pe15-2	pe15-4
pe15-5	pe15-5	
pe15-6	pe15-6	
pe16-1	pe16-1	
pe16-2	pe16-2	
pe16-3	pe16-1	pe16-3
pe16-4	pe16-2	pe16-4
pe16-5	pe15-5	pe16-5
pe16-6	pe15-6	pe16-6
pe17-1	pe17-1	
pe17-2	pe17-2	
pe17-3	pe17-1	pe17-3
pe17-4	pe17-2	pe17-4
pe17-5	pe17-5	
pe17-6	pe17-6	
pe18-1	pe18-1	
pe18-2	pe18-2	
pe18-3	pe18-1	pe18-3
pe18-4	pe18-2	pe18-4
pe18-5	pe17-5	pe18-5
pe18-6	pe17-6	pe18-6
pe19-1	pe19-1	
pe19-2	pe19-2	
pe19-3	pe19-1	pe19-3
pe19-4	pe19-2	pe19-4
pe19-5	pe19-5	
pe19-6	pe19-6	
pe20-1	pe20-1	
pe20-2	pe20-2	
pe20-3	pe20-1	pe20-3
pe20-4	pe20-2	pe20-4
pe20-5	pe19-5	pe20-5
pe20-6	pe19-6	pe20-6

Table 4A-12. INV SUPP GROUP RULES

INSTANCE KEY: dmx?algr?2

hier_id	primary_id	secondary_id
pe21-1	pe21-1	
pe21-2	pe21-2	
pe21-3	pe21-1	pe21-3
pe21-4	pe21-2	pe21-4
pe21-5	pe21-5	
pe21-6	pe21-6	
pe22-1	pe22-1	
pe22-2	pe22-2	
pe22-3	pe22-1	pe22-3
pe22-4	pe22-2	pe22-4
pe22-5	pe21-5	pe22-5
pe22-6	pe21-6	pe22-6
pe23-1	pe23-1	
pe23-2	pe23-2	
pe23-3	pe23-1	pe23-3
pe23-4	pe23-2	pe23-4
pe23-5	pe23-5	
pe23-6	pe23-6	
pe24-1	pe24-1	
pe24-2	pe24-2	
pe24-3	pe24-1	pe24-3
pe24-4	pe24-2	pe24-4
pe24-5	pe23-5	pe24-5
pe24-6	pe23-6	pe24-6

Table 4A-12. INV SUPP GROUP RULES

INSTANCE KEY: dmx?400?2

hier_id	primary_id	secondary_id
1##-1	1##-1	
1##-2	1##-1	1##-2
1##-3	1##-3	
1##-4	1##-3	1##-4

INSTANCE KEY: dmx?400r?2

hier_id	primary_id	secondary_id
1##-1	1##-1	
1##-2	1##-1	1##-2
1##-3	1##-3	
1##-4	1##-3	1##-4

INSTANCE KEY: 2es?alg?3

Hier_id	primary_id	secondary_id
##-0#	##-0#	
##-1#	##-1#	
##-2#	##-2#	
##-3#	##-3#	
##-4#	##-0#	##-4#
##-5#	##-1#	##-5#
##-6#	##-2#	##-6#
##-7#	##-3#	##-7#

INSTANCE KEY: dmx?rsle?2

hier_id	primary_id	secondary_id
1##-1	1##-1	
1##-2	1##-1	1##-2
1##-3	1##-3	
1##-4	1##-3	1##-4

Table 4A-12. INV SUPP GROUP RULES

INSTANCE KEY: dmc?alg?1?bcs31?ic dmc.0

hier_id	primary_id	secondary_id
00-0	1025	
00-1	1025	
01-0	1033	
01-1	1033	
02-0	1026	
02-1	1026	
03-0	1025	
03-1	1025	

INSTANCE KEY: dmc?alg?1?dflt?ic dmc.0

hier_id	primary_id	secondary_id
00-0	1025	
00-1	1025	
01-0	1033	
01-1	1033	
02-0	1026	
02-1	1026	
03-0	1025	
03-1	1025	

INSTANCE KEY: dmc?alg3?1?dflt?ic dmc.0

hier_id	primary_id
secondary_id	
000-0	1025
000-1	1025
001-0	1033
001-1	1033
002-0	1026
002-1	1026
003-0	1025
003-1	1025

Table 4A-12. INV SUPP GROUP RULES

INSTANCE KEY: dmc?algr?1?bcs31?ic dmc.0

hier_id	primary_id	secondary_id
9.00-0	r044	
9.00-1	r044	
9.01-0	r025	
9.01-1	r025	
9.02-0	r006	
9.02-1	r006	
9.03-0	r004	
9.03-1	r004	

INSTANCE KEY: dmc?algr?1?dflt?ic dmc.0

hier_id	primary_id	secondary_id
9.00-0	r044	
9.00-1	r044	
9.01-0	r025	
9.01-1	r025	
9.02-0	r006	
9.02-1	r006	
9.03-0	r004	
9.03-1	r004	

INSTANCE KEY: dmc?algr3?1?dflt?ic dmc.0

hier_id	primary_id	secondary_id
9.000-0	r044	
9.000-1	r044	
9.001-0	r025	
9.001-1	r025	
9.002-0	r006	
9.002-1	r006	
9.003-0	r004	
9.003-1	r004	

INSTANCE KEY: dmc?isdn?1?bcs31?ic dmc.0

hier_id	primary_id	secondary_id
00-0	1025	
00-1	1025	
01-0	1033	
01-1	1033	
02-0	1026	
02-1	1026	
03-0	1025	
03-1	1025	

INSTANCE KEY: dmc?isdn?1?dflt?ic dmc.0

hier_id	primary_id	secondary_id
00-0	1025	
00-1	1025	
01-0	1033	
01-1	1033	
02-0	1026	
02-1	1026	
03-0	1025	
03-1	1025	

INSTANCE KEY: dmc?isdn3?1?dflt?ic dmc.0

hier_id	primary_id
secondary_id	
000-0	1025
000-1	1025
001-0	1033
001-1	1033
002-0	1026
002-1	1026
003-0	1025
003-1	1025

INSTANCE KEY: dmc?isdnr?1?bcs31?ic dmc.0

hier_id	primary_id	secondary_id
9.00-0	r044	
9.00-1	r044	
9.01-0	r025	
9.01-1	r025	
9.02-0	r006	
9.02-1	r006	
9.03-0	r004	
9.03-1	r004	

Table 4A-12. INV SUPP GROUP RULES

INSTANCE KEY: dmc?isdnr?1?dflt?ic dmc.0

hier_id	primary_id	secondary_id
9.00-0	r044	
9.00-1	r044	
9.01-0	r025	
9.01-1	r025	
9.02-0	r006	
9.02-1	r006	
9.03-0	r004	
9.03-1	r004	

INSTANCE KEY: dmc?isdnr3?1?dflt?ic dmc.0

hier_id	primary_id	secondary_id
9.000-0	r044	
9.000-1	r044	
9.001-0	r025	
9.001-1	r025	
9.002-0	r006	
9.002-1	r006	
9.003-0	r004	
9.003-1	r004	

INSTANCE KEY: dmc?2isdn?1?bcs31?ic dmc.0

hier_id	primary_id	secondary_id
00-0	1025	
00-1	1025	
01-0	1033	
01-1	1033	
02-0	1026	
02-1	1026	
03-0	1025	
03-1	1025	

Table 4A-12. INV SUPP GROUP RULES

INSTANCE KEY: dmc?2isdn?1?dflt?ic dmc.0

hier_id	primary_id	secondary_id
00-0	1025	
00-1	1025	
01-0	1033	
01-1	1033	
02-0	1026	
02-1	1026	
03-0	1025	
03-1	1025	

INSTANCE KEY: dmc?2isdn3?1?dflt?ic dmc.0

hier_id	primary_id	secondary_id
000-0	1025	
000-1	1025	
001-0	1033	
001-1	1033	
002-0	1026	
002-1	1026	
003-0	1025	
003-1	1025	

Table 4A-12. INV SUPP GROUP RULES

INSTANCE KEY: dmc?2isdnr?1?bcs31?ic dmc.0

hier_id	primary_id	secondary_id
9.00-0	r044	
9.00-1	r044	
9.01-0	r025	
9.01-1	r025	
9.02-0	r006	
9.02-1	r006	
9.03-0	r004	
9.03-1	r004	

INSTANCE KEY: dmc?2isdnr?1?dflt?ic dmc.0

hier_id	primary_id	secondary_id
9.00-0	r044	
9.00-1	r044	
9.01-0	r025	
9.01-1	r025	
9.02-0	r006	
9.02-1	r006	
9.03-0	r004	
9.03-1	r004	

INSTANCE KEY: dmc?2isdnr3?1?dflt?ic dmc.0

hier_id	primary_id	secondary_id
9.000-0	r044	
9.000-1	r044	
9.001-0	r025	
9.001-1	r025	
9.002-0	r006	
9.002-1	r006	
9.003-0	r004	
9.003-1	r004	

Table 4A-12. INV SUPP GROUP RULES

INSTANCE KEY: ewsd?slc2?1?dflt?ic ewsd.0

hier_id	primary_id	secondary_id
0-01-0	5010	
0-01-1	5010	
0-01-2	5010	
0-01-3	5020	
0-01-4	5020	
0-02-0	5020	
0-02-1	5020	
0-02-2	5020	
0-02-3	5010	
0-02-4	5010	
0-03-0	5030	
0-03-1	5030	
0-03-2	5030	
0-03-3	5040	
0-03-4	5040	
0-04-0	5040	
0-04-1	5040	
0-04-2	5040	
0-04-3	5030	
0-04-4	5030	

Table 4A-13. INV SLOT RULES

```
INSTANCE KEY: an
********************************************************************************
ccpt_prse_key rmv_lvl supp
    ds1           1       n
    ds3           1       n
    mcu           0       n
    optc          0       n
--------------------------------------------------------------------------------

INSTANCE KEY: anonu
********************************************************************************
ccpt_prse_key rmv_lvl supp
    ods1          0       n
    onu           0       n
--------------------------------------------------------------------------------

INSTANCE KEY: dcs
********************************************************************************
ccpt_prse_key rmv_lvl supp
    dcs           0       n
--------------------------------------------------------------------------------

INSTANCE KEY: ddm2000
********************************************************************************
ccpt_prse_key rmv_lvl supp
    ds1           1       n
    optc          0       n
--------------------------------------------------------------------------------

INSTANCE KEY: discs
********************************************************************************
ccpt_prse_key rmv_lvl supp
    ds1           0       y
    ds1e          0       y
    mcu           0       y
    oc3           0       n
    ou            0       n
--------------------------------------------------------------------------------

INSTANCE KEY: disonu
********************************************************************************
ccpt_prse_key rmv_lvl supp
    onu           0       y
--------------------------------------------------------------------------------
```

Table 4A-13. INV SLOT RULES (Cont)

```
INSTANCE KEY: fctr
*****************************************************************************
ccpt_prse_key rmv_lvl supp
    ds1          1       n
    ds3          0       n
    mcu          1       n
    optc         0       n
    ou           0       n
-----------------------------------------------------------------------------

INSTANCE KEY: fctronu
*****************************************************************************
ccpt_prse_key rmv_lvl supp
    onu          1       n
-----------------------------------------------------------------------------

INSTANCE KEY: fdlc
*****************************************************************************
ccpt_prse_key rmv_lvl supp
    ds1          0       n
    mcu          1       n
-----------------------------------------------------------------------------

INSTANCE KEY: flm1
*****************************************************************************
ccpt_prse_key rmv_lvl supp
    ds1          1       n
    optc         0       n
-----------------------------------------------------------------------------

INSTANCE KEY: hfc2t
*****************************************************************************
ccpt_prse_key rmv_lvl supp
    ds1          1       n
    mlu          1       n
    rfds         0       n
    slc          1       n
    slu          0       y
-----------------------------------------------------------------------------

INSTANCE KEY: hmx
*****************************************************************************
ccpt_prse_key rmv_lvl supp
    cxmu         0       n
    ds1          1       n
    hisu         1       n
    misu         1       n
-----------------------------------------------------------------------------
```

Table 4A-13. INV SLOT RULES (Cont)

```
INSTANCE KEY: iisc
*****************************************************************************
ccpt_prse_key rmv_lvl supp
    cu            1      n
    ds1           1      n
    ds2           1      n
-----------------------------------------------------------------------------

INSTANCE KEY: loc2
*****************************************************************************
ccpt_prse_key rmv_lvl supp
    ds1           1      n
    ou            0      y
-----------------------------------------------------------------------------

INSTANCE KEY: loc2onu
*****************************************************************************
ccpt_prse_key rmv_lvl supp
    on16          1      n
    on32          1      n
    on48          1      n
    on8           1      n
-----------------------------------------------------------------------------

INSTANCE KEY: ltsp
*****************************************************************************
ccpt_prse_key rmv_lvl supp
    hou           0      n
    mcu           1      n
    optc          0      n
    ou            0      n
-----------------------------------------------------------------------------

INSTANCE KEY: ltsponu
*****************************************************************************
ccpt_prse_key rmv_lvl supp
    on12          1      n
    on24          1      n
    on48          1      n
    on96          1      n
-----------------------------------------------------------------------------
```

Table 4A-13. INV SLOT RULES (Cont)

```
INSTANCE KEY: next3
*************************************************************************************
ccpt_prse_key rmv_lvl supp
    mcu          1      n
    bcu          1      n
    ds1          0      n
    ou           0      n
-------------------------------------------------------------------------------------

INSTANCE KEY: sdv2t
*************************************************************************************
ccpt_prse_key rmv_lvl supp
    mcu          1      n
    ou           0      n
    ds1          1      n
-------------------------------------------------------------------------------------

INSTANCE KEY: slconu
*************************************************************************************
ccpt_prse_key rmv_lvl supp
    onu          1      n
-------------------------------------------------------------------------------------

INSTANCE KEY: slc2t
*************************************************************************************
ccpt_prse_key rmv_lvl supp
    ds1          1      n
    mcu          1      n
    optc         0      n
    ou           0      n
-------------------------------------------------------------------------------------

INSTANCE KEY: slc96
*************************************************************************************
ccpt_prse_key rmv_lvl supp
    ds1          1      n
    mcu          1      n
-------------------------------------------------------------------------------------
```

Table 4A-13. INV SLOT RULES (Cont)

```
INSTANCE KEY: ssu16
************************************************************************************
ccpt_prse_key rmv_lvl supp
    ds1           0      n
    mcu           1      n
------------------------------------------------------------------------------------

INSTANCE KEY: umc
************************************************************************************
ccpt_prse_key rmv_lvl supp
    ds3           0      n
    mcu           1      n
------------------------------------------------------------------------------------

INSTANCE KEY: umc48
************************************************************************************
ccpt_prse_key rmv_lvl supp
    ds3           0      n
    mcu           1      n
------------------------------------------------------------------------------------

INSTANCE KEY: usam
************************************************************************************
ccpt_prse_key rmv_lvl supp
    mcu           1      n
    ou            0      n
------------------------------------------------------------------------------------
```

Table 4A-14. INV SUPP SLOT RULES

INSTANCE KEY: discs
****

ccpt_prse_key	ccpt_suffix	slot_suffix
ds1	:1	:liu1
ds1	:2	:liu1
ds1	:3	:liu1
ds1	:4	:liu1
ds1	:5	:liu2
ds1	:6	:liu2
ds1	:7	:liu2
ds1	:8	:liu2
ds1	:9	:liu3
ds1	:10	:liu3
ds1	:11	:liu3
ds1	:12	:liu3
ds1	:13	:liu4
ds1	:14	:liu4
ds1	:15	:liu4
ds1	:16	:liu4
ds1	:17	:liu5
ds1	:18	:liu5
ds1	:19	:liu5
ds1	:20	:liu5
ds1	:21	:liu6
ds1	:22	:liu6
ds1	:23	:liu6
ds1	:24	:liu6
ds1	:25	:liu7
ds1	:26	:liu7
ds1	:27	:liu7
ds1	:28	:liu7
ds1e	:1	:a1
ds1e	:2	:a1
ds1e	:3	:a1
ds1e	:4	:a1
ds1e	:5	:a5
ds1e	:6	:a5
ds1e	:7	:a5
ds1e	:8	:a5
ds1e	:9	:a9
ds1e	:10	:a9
ds1e	:11	:a9
ds1e	:12	:a9
ds1e	:13	:a13
ds1e	:14	:a13
ds1e	:15	:a13

Table 4A-14. INV SUPP SLOT RULES

```
INSTANCE KEY: discs
*****************************************************************************
ccpt_prse_key ccpt_suffix     slot_suffix
    ds1e       :16             :a13
    ds1e       :17             :a17
    ds1e       :18             :a17
    ds1e       :19             :a17
    ds1e       :20             :a17
    ds1e       :21             :a21
    ds1e       :22             :a21
    ds1e       :23             :a21
    ds1e       :24             :a21
    ds1e       :25             :a25
    ds1e       :26             :a25
    ds1e       :27             :a25
    ds1e       :28             :a25
    ds1e       :29             :b1
    ds1e       :30             :b1
    ds1e       :31             :b1
    ds1e       :32             :b1
    ds1e       :33             :b5
    ds1e       :34             :b5
    ds1e       :35             :b5
    ds1e       :36             :b5
    ds1e       :37             :b9
    ds1e       :38             :b9
    ds1e       :39             :b9
    ds1e       :40             :b9
    ds1e       :41             :b13
    ds1e       :42             :b13
    ds1e       :43             :b13
    ds1e       :44             :b13
    ds1e       :45             :b17
    ds1e       :46             :b17
    ds1e       :47             :b17
    ds1e       :48             :b17
    ds1e       :49             :b21
    ds1e       :50             :b21
    ds1e       :51             :b21
    ds1e       :52             :b21
    ds1e       :53             :b25
    ds1e       :54             :b25
    ds1e       :55             :b25
    ds1e       :56             :b25
```

Table 4A-14. INV SUPP SLOT RULES

INSTANCE KEY: discs

****

ccpt_prse_key	ccpt_suffix	slot_suffix
ds1e	:57	:c1
ds1e	:58	:c1
ds1e	:59	:c1
ds1e	:60	:c1
ds1e	:61	:c5
ds1e	:62	:c5
ds1e	:63	:c5
ds1e	:64	:c5
ds1e	:65	:c9
ds1e	:66	:c9
ds1e	:67	:c9
ds1e	:68	:c9
ds1e	:69	:c13
ds1e	:70	:c13
ds1e	:71	:c13
ds1e	:72	:c13
ds1e	:73	:c17
ds1e	:74	:c17
ds1e	:75	:c17
ds1e	:76	:c17
ds1e	:77	:c21
ds1e	:78	:c21
ds1e	:79	:c21
ds1e	:80	:c21
ds1e	:81	:c25
ds1e	:82	:c25
ds1e	:83	:c25
ds1e	:84	:c25
mcu	-1	-1,2
mcu	-2	-1,2
mcu	-3	-3,4
mcu	-4	-3,4
mcu	-5	-5,6
mcu	-6	-5,6
mcu	-7	-7,8
mcu	-8	-7,8
mcu	-9	-9,10
mcu	-10	-9,10
mcu	-11	-11,12
mcu	-12	-11,12

Table 4A-14. INV SUPP SLOT RULES

INSTANCE KEY: discs

****

ccpt_prse_key	ccpt_suffix	slot_suffix
mcu	-13	-13,14
mcu	-14	-13,14
mcu	-15	-15,16
mcu	-16	-15,16
mcu	-17	-17,18
mcu	-18	-17,18
mcu	-19	-19,20
mcu	-20	-19,20
mcu	-21	-21,22
mcu	-22	-21,22
mcu	-23	-23,24
mcu	-24	-23,24
mcu	-25	-25,26
mcu	-26	-25,26
mcu	-27	-27,28
mcu	-28	-27,28
mcu	-29	-29,30
mcu	-30	-29,30
mcu	-31	-31,32
mcu	-32	-31,32
mcu	-33	-33,34
mcu	-34	-33,34
mcu	-35	-35,36
mcu	-36	-35,36
mcu	-37	-37,38
mcu	-38	-37,38
mcu	-39	-39,40
mcu	-40	-39,40
mcu	-41	-41,42
mcu	-42	-41,42
mcu	-43	-43,44
mcu	-44	-43,44
mcu	-45	-45,46
mcu	-46	-45,46
mcu	-47	-47,48
mcu	-48	-47,48
mcu	-49	-49,50
mcu	-50	-49,50
mcu	-51	-51,52
mcu	-52	-51,52
mcu	-53	-53,54
mcu	-54	-53,54

Table 4A-14. INV SUPP SLOT RULES

INSTANCE KEY: discs

ccpt_prse_key	ccpt_suffix	slot_suffix
mcu	-55	-55,56
mcu	-56	-55,56
mcu	-57	-57,58
mcu	-58	-57,58
mcu	-59	-59,60
mcu	-60	-59,60
mcu	-61	-61,62
mcu	-62	-61,62
mcu	-63	-63,64
mcu	-64	-63,64
mcu	-65	-65,66
mcu	-66	-65,66
mcu	-67	-67,68
mcu	-68	-67,68
mcu	-69	-69,70
mcu	-70	-69,70
mcu	-71	-71,72
mcu	-72	-71,72
mcu	-73	-73,74
mcu	-74	-73,74
mcu	-75	-75,76
mcu	-76	-75,76
mcu	-77	-77,78
mcu	-78	-77,78
mcu	-79	-79,80
mcu	-80	-79,80
mcu	-81	-81,82
mcu	-82	-81,82
mcu	-83	-83,84
mcu	-84	-83,84
mcu	-85	-85,86
mcu	-86	-85,86
mcu	-87	-87,88
mcu	-88	-87,88
mcu	-89	-89,90
mcu	-90	-89,90
mcu	-91	-91,92
mcu	-92	-91,92
mcu	-93	-93,94
mcu	-94	-93,94
mcu	-95	-95,96
mcu	-96	-95,96

Table 4A-14. INV SUPP SLOT RULES

```
INSTANCE KEY: disonu
*****************************************************************************
ccpt_prse_key ccpt_suffix     slot_suffix
    onu         :1              :1,2
    onu         :2              :1,2
    onu         :3              :3,4
    onu         :4              :3,4
    onu         :5              :5,6
    onu         :6              :5,6
    onu         :7              :7,8
    onu         :8              :7,8
    onu         :9              :9,10
    onu         :10             :9,10
    onu         :11             :11,12
    onu         :12             :11,12
-----------------------------------------------------------------------------


INSTANCE KEY: hfc2t
*****************************************************************************
ccpt_prse_key ccpt_suffix     slot_suffix
    slu         :1              :1
    slu         :2              :1
-----------------------------------------------------------------------------


INSTANCE KEY: loc2
*****************************************************************************
ccpt_prse_key ccpt_suffix     slot_suffix
    ou          :1              :dfm1
    ou          :2              :dfm2
    ou          :3              :dfm3
    ou          :4              :dfm4
    ou          :5              :dfm5
-----------------------------------------------------------------------------
```

SWITCH System DLBB Functional Product Specification

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5. INVENTORY CONTRACTS

This section provides requirements for those contracts that directly update or maintain the SWITCH system inventory data. These contracts do not depend on whether the updates deal with line or trunk side inventory; they will be generic. These contracts are used to update the inventory and are not based on the inventory's specific use such as ISDN, MADN (Multiple Appearance Directory Number), etc. Inventory contracts do not use assignment logic. Changes that are made as a result of engineering work orders, service order assignments, or bulk data loads are covered in other sections of this document.

This section will provide information on contracts used to update switching machines, unit types, group types, assembly types and Load/Usage data. The following are the contracts to be discussed:

- Intelligent Controllers/Remote Units
  - — UPDIC - Update switching machines
- Carrier Controllers
  - — UPDCC - Update Carrier Controllers
- Units
  - — UPDSPT - Update Switch Ports
  - — UPDCLK - Update Cable Links
  - — UPDTRM - Update Telephone Numbers
  - — UPDCND - Update Conditioning Equipment (BL)
  - — UPDMSC - Update Miscellaneous Equipment
  - — UPDTRE - Update Transmission Equipment
  - — UPDICE - Update IC Equipment
  - — UPDLTI - Update LTID numbers and groups
  - — UPDFRT - Update Frame Termination Data
  - — UPDEXI - Update External IDs of NUs
  - — UPDCHU - Update Channels/Call Reference Values
- Groups
  - — UPDCTX - Update Centrex groups
  - — UPDEQP - Update IC equipment groups
  - — UPDGRP - Update Simulated Facility/Hunt Groups
  - — UPDFRM - Update Frames

— UPDTNL - Update Telephone Number Lists

— UPDISD - Update Collections and Collection Groups

- Assemblies

— UPDCKT - Update Service/Circuit Assemblies

— UPDASM - Update Assemblies

- Reservations

— UPDRSV - Update Reservations

- Load/Usage Data

— UPDLD - Update Load Division

— UPDLBL - Update Load Balance

— UPDLF - Update Load Factors

— UPDTHE - Update Theoretical Usage Data

- Administrative Contracts

— UPDALC - Update Bulk Allocation Data

— UPDIVO - Update Inventory Orders

5.1 Overview

Inventory contracts are the processes that update the SWITCH system database by adding, changing, or removing most database objects (SCHs work orders, and service orders are some of the objects that are not updated by inventory). These processes must be performed in a logical order when recording an office's inventory in the SWITCH system database.

Inventory contracts only process on the root view (e.g., current view) of inventory. When inventory is updated and there is a future view of that inventory and its relationships (e.g., pending in a circuit), a process known as rework is called to modify, if necessary, that future view of the inventory and its relationships. Rework revalidates the compatibility of the new current view of the inventory with the needs of the future view. If an incompatibility now exists, rework calls the processes necessary (e.g., component selection) that will rectify the future view. If rework cannot reflect a correct future view an RMA will be issued.

There will be a check on inventory as it is updated to see if it is inventory complete. An inventory item is "inventory complete" if it contains the required attributes to allow its inclusion as SWITCH system inventory. These attributes describe the item (e.g., item ID, item type, etc.) and are required to derive the inventory category (see Table 4-1). All items will be checked for inventory completeness when added to or modified in the SWITCH system. If the item is not inventory complete the inventory process will log an error.

Inventory category is used when an inventory item is updated in the database (added or changed). The item's attributes and relationships (e.g., external ids, frame locations, equipment frame locations) must be validated. Reference data is called to determine which database structures (i.e., inventory category) are appropriate for the inventory item whose name is given on the input contract. This includes both relationships and the item's feature attributes. For each database structure returned from reference data, the input values are validated and required attributes (inventory complete) checked for existence.

Logical sequencing of the inventory contracts is important. For example, a logical sequencing of building an IC and its associated data and other inventory objects is as shown in Table 5-9 (see Section 5.17). Steps 10 and 20 must be done before step 30, 60,70, and 80. Step 30 must be done before step 50 and so on. Updating reference data is recommended to be done after the inventory exists.

Inventory contracts have a defined commit strategy when processing ranges of items. A commit point is when a defined number of objects in the range have processed successfully and a write is done to the database. Certain errors (e.g., invalid attribute) will cause the process to stop and rollback to the last commit point encountered. Other errors (e.g., inventory item already exists when doing an add of a range of items) will be flagged, but the process will continue.

When processing a range of items, the *inv ranges* table will be built that stores the high and low of the range and the appropriate range parsing rules used to process the range. "Inv ranges" may contain many ranges if breaks appear in the sequence of the range (i.e., 1-100 followed by 125-200 will contain two ranges in the table). This table is updated when objects are added or removed in the range(s), and also whenever objects are being accessed for a change.

The term "user", as used in the following discussions, refers to human interactions or system interactions. Inventory updates are discussed below.

5.2 Intelligent Controllers

The intelligent controller/switching machine has relationships to all items, remote units, frames, and groups with which it is associated. Intelligent controllers are vendor specific and as such, possess different characteristics and features that must be retained in the SWITCH system. Some of the controller attributes include its ID, type (e.g., 5ESS IC, DMC IC, etc.) and its software generic.

Intelligent controllers have various relationships to other database objects. The IC must first be created before any other database objects can be related to it. Once the IC exists, other database objects to be related to the IC can be created using inventory contracts that apply to them. Some of these relationships are a control relationship for switch ports and telephone numbers controlled by the IC. Administrative groups (i.e., centrex, hunt, etc.) also have a control relationship with the IC. Remote Units are hardware extensions of an

IC, not a separate IC, that are located at a site different from the main body of the IC and have a hosts/hosted by relationship to the IC. IC equipment groups (i.e., load and spread groups) are considered a factor of the IC and thus have a factor relationship to the IC.

The inventory processes are able to add, modify, and remove inventory records for Intelligent Controllers and Remote Units. There is a contract to update Intelligent Controllers and Remote Units (UPDIC). The following are variations of the processes the contract can perform:

- Add IC
- Modify IC
- Remove IC
- Add Remote Unit to an IC
- Modify Remote Unit in IC
- Remove Remote Unit from IC

The actual contract format and descriptions of the contract sections and aggregates are in the SWITCH system Contracts Directory, BR 752-106-040.

The request portion of the contract is to update data about an intelligent controller. The request will be to add or delete ICs, change data about an existing IC, add or delete a Remote Unit for an IC or change data about an existing Remote Unit in an IC.

The response portion of the contract is an acknowledgment that the update was scheduled for deferred processing plus the deferred update itself.

5.2.1 Add Intelligent Controller/Remote Unit

The UPDIC contract will allow ICs, their attributes, and relationships to be added to the SWITCH system. The intelligent controller created must be unique in identity and cannot currently exist in the SWITCH system. Range processing is not applicable.

To add an intelligent controller/remote unit into the SWITCH system, the common requirements are:

- The function of the contract is add.
- The minimum required attributes to add an intelligent controller or remote unit, are those that will uniquely identify the object to the data base. This is also its external id. ICs can have three different formats of external IDs. These formats are controller type and number, exchange key, and eleven character CLLI code. The controller type and number (e.g., 1ES.1 IC) is required for SWITCH reference data support and FOMS support. Exchange key is required if the MARCH system is to be supported and the CLLI code is required to support TIDE. Remotes can have two different formats of

external IDs. The control group format is the IC type, the IC number (i.e., control group number) and the RU number (i.e., control group number of the RU) and is required. CLLI code is required to support TIDE. Exchange Key is not an ID for remotes. For more information about external IDs, see Appendix 4A.

- Using the external id, the database is checked to ensure that the object to be added does not currently exist in the SWITCH system. If the object does exist, an error will be returned stating that the object cannot be added because it currently exists.
- If the object to be added is determined to be new, the input data must be validated against rules for the addition of intelligent controllers or remote units.

  The controller type is checked for proper format and value (e.g., 1ES, 5ES, RSS, RLCM, etc.). The CLLI code is checked to ensure that it is a valid format. The exchange key is checked to ensure that is of valid format. If an invalid format or location is encountered, the object is rejected from the add process. For remote units, the IC that is the host of the remote must be inventoried prior to the remote.
- Reference data will be used to edit and validate the attribute tags and their respective input values. These attribute tags and values are defined in Sections 4.3 and 4.4.
- Once the data passes edit and validation, the intelligent controller/remote unit can be added to the SWITCH system database.
- Once all the above steps are completed, the object is considered to be added in the data base.

5.2.2 Modify Intelligent Controller/Remote Unit

The UPDIC contract will permit the user to modify an IC/remote unit that has already been created in the SWITCH system database. UPDIC will permit the user to modify the object's attributes and relationships. Modifying inventory data encompasses the following types of activities:

- Adding data values for attributes that did not have values prior to the update. These attributes can be:
  1. Attributes that describe the inventory item itself (e.g., remarks, generic, etc. capacity)
  2. Relationships that the inventory item can have (e.g., hosted by).
- Removing data values for existing attributes.

The common requirements to modify intelligent controllers/remote units are:

- The function of the contract is change.

- Retrieve the object's external id information from the contract. With the external id, retrieve the object from the data base.
- Determine action code of change; in, out, or modify. The function of the contract is change.
- Retrieve the network unit's external id information from the contract. With the external id, retrieve the network unit from the data base.
- Obtain any parse rules, using the same procedure as the add network unit function.
- Determine action code of change; in, out, or modify.
  - — The action code is used to input attribute tags and values for the network unit. Using the in action code, populate the appropriate database structures for each input aggregate. Like the add network unit contract, reference data is used to retrieve information about appropriate attributes. Reference data is used to edit and validate the attribute tags and values, as it was done for add network unit.
  - — The action code is used to remove relationships. Using input contracts, the attributes required to uniquely identify the relationship to be removed are defined. Edits and validations will be done to check if the network unit can still remain in the data base when the attributes are removed. Also any relationships will be checked to ensure that the removal of an attribute will not leave the data base in an incorrect state. An incorrect state could be the existence of a component edge to a nonexistent assembly.
  - — An action code of will be used when an attribute value that is currently existing against a tag is to be removed and replaced with another value. Reference data is again be used to retrieve information about the appropriate attribute values. Edits and validations will be performed against the new attribute values.
- After the appropriate action code is processed any relationships is updated.
- The data base processing will retrieve the object from the data base, modify the object's record, and modify the object's relationships. The modification of the relationships is either an out action, replacement action, in action, or modify action.

5.2.3 Remove Intelligent Controller/Remote Unit

UPDIC will permit the user to remove intelligent controllers/remote units from the SWITCH system. Common requirements to remove intelligent controller/remote units are:

- The function of the contract is remove.
- Before any IC/remote can be removed, it must be checked to verify that there are no controlled by relationships (e.g., switch ports, TNs or administrative groups) or factor of relationships to any equipment groups or host relationships to an RU if an IC. These

database objects should have been previously removed from the database. If any related database objects still exist, the request errors.

- Any reference data that deals with the intelligent controller/remote unit should be modified to remove any reference to the controller. This will not be done automatically as part of the UPDIC contract.

5.3 Carrier Controllers

A Carrier Controller is a network element that uses some software control in order to provide service to customers using carrier facilities. Access to the Carrier Controller is provided through ports that require plugs to become operational. A Carrier Controller can either have TSI (Time Slot Interchange) or not have TSI. If it has TSI, a port can be cross-connected to any timeslot (at the same data rate). For non-TSI Controllers, cross-connects are fixed when the network element is installed. TSI can be either static, in which the cross-connects are made for the life of the customers service, or dynamic, in which the cross-connects are only in place for the life of a call. Static TSI requires the assignment of channels. Dynamic TSI requires the assignment of call reference values (CRVs).

The Carrier Controller (CC) has relationships to all Carrier Controller Ports (CCPTs), Slots, Channels, and CRVs with which it is associated. Carrier controllers are vendor specific and as such, possess different characteristics and features that must be retained in the SWITCH system. Some of the controller attributes include its identification (ID), type (e.g., remote terminal (RT, Central Office terminal (COT)) and its software generic.

Carrier controllers have various relationships to other database objects. The CC must first be created before any other database objects can be related to it. Once the CC exists, other database objects which need to be related to the CC can be created using inventory contracts that apply to them. One of these relationships is a control relationship for CCPTs, Channels, and CRVs. Slots will have a factor of relationship to the CC.

The inventory processes are able to add, modify, and remove inventory records for Carrier Controllers. There is a contract to update Carrier Controllers (UPDCC). The following are variations of the processes this contract can perform:

- Add CC
- Modify CC
- Remove CC

The request portion of the contract is to update data about a carrier controller. The request will be to add, delete CCs, or change data about an existing CC.

The response portion of the contract is an acknowledgment that the update was scheduled for deferred processing plus the deferred update itself.

5.3.1 Add Carrier Controller

The UPDCC contract will allow CCs, their attributes, and relationships to be added to the SWITCH system. The carrier controller created must be unique in identity and cannot currently exist in the SWITCH system. Range processing is not applicable.

To add a carrier controller into the SWITCH system, the requirements are:

- The function of the contract is add.
- The minimum required attributes to add a carrier controller are: CC name, CC model, CC Type, and TSI indicator. The CC external ID uniquely identifies the object in the data base and can have up to 55 alpha-numerics and some special characters, including space, _, -, ., (,), #, ', ", +, =, [,], <, >, and &.
- Using the external ID, the database is checked to ensure that the object to be added does not currently exist in the SWITCH system. If the object does exist, an error will be returned stating that the object cannot be added because it currently exists.
- If the object to be added is determined to be new, the input data must be validated against rules for the addition of carrier controllers.
- Reference data will be used to edit and validate the attribute tags and their respective input values. These attribute tags and values are defined in Chapter 4 of this document.
- Once the data passes edit and validation, the carrier controller can be added to the SWITCH system database.
- The available Drop Rates (assignment rates) that the carrier controller can support are then derived from the *CC Drop Rate* table (see table 5-15).
- Once all the above steps are completed, the object is considered to be added in the data base.

5.3.2 Modify Carrier Controller

The UPDCC contract will permit the user to modify a CC that has already been created in the SWITCH system database. UPDCC will permit the user to modify the object's attributes. Modifying inventory data encompasses the following types of activities:

- Adding data values for attributes that did not have values prior to the update.
- Modifying existing attributes.
- Removing data values for existing attributes.

The requirements to modify carrier controllers/remote units are:

- The function of the contract is change.

- Retrieve the object's external ID information from the contract. With the external ID, retrieve the object from the data base.
- Perform any modifications to the CC attributes.

5.3.3 Remove Carrier Controller

UPDCC will permit the user to remove carrier controllers from the SWITCH system. Requirements to remove carrier controller/remote units are:

- The function of the contract is remove.
- Before any CC can be removed, it must be checked to verify that there are no controlled by relationships (e.g., CCPTs, CRVs) or factor of relationships to any Slots. These database objects should have been previously removed from the database. If any related database objects still exist, the request errors.
- Any reference data that deals with the carrier controller should be manually modified to remove any reference to the controller. This will not be done automatically as part of the UPDCC contract.

5.4 Network Units

There will be several contracts to update network units (e.g., UPDSPT, UPDTRE, etc.). They are all processed in the same manner which is described below. Any specific processing based on the type of network unit will be pointed out. The specific contract names that apply to network unit types are listed in the beginning of Section 5.

The following are functions the contracts can perform.

- Add
- Modify
- Remove

The actual contract formats and descriptions of the contract sections and aggregates are in the SWITCH system Contracts Directory, BR 752-106-040.[1] The request portion of the contract is to update data about a network unit(s). The request will be to add or remove a network unit(s) or to modify data about an existing network unit(s).

The response portion of the contract is two responses, one an acknowledgment that the update was scheduled for deferred processing, the other the deferred update itself.

1. UPDNTU will be used to represent all the specific network unit contracts.

5.4.1 Add Network Units

The overall process of adding a network unit is table driven to a great extent. Reference data is accessed to determine the attributes appropriate for a network unit. The UPDNTU contract will allow units, their attributes, and relationships to be added to the SWITCH system. The contract will allow a range of network units to be input (external id high and low with parse rules), all having similar attributes. The attributes that can be added are listed in Section 4, by network unit type.

To add a network unit into the SWITCH system, the requirements are:

- The function of the contract is add.
- The minimum required attributes to add a network unit are those that will uniquely identify the network unit to the data base and inventory processing (i.e., inventory completeness). This is its external id and those attributes required to derive inventory category. The attributes that make up the external id are discussed in Appendix 4A for all network units. The network unit's inventory category informs the inventory application how to process on this unit.
- Using the external ID, the database is checked to ensure that the network unit to be added does not currently exist in the database. If the network unit does exist, an error will be returned stating that the unit cannot be added due to current existence.
- If the network unit to be added is determined to be new, the input data must be validated against rules for the addition of that type of network unit. Specific validations that are type based, are listed below:
  - **For switch ports** - The intelligent controller (and optionally Remote Unit) associated with this switch port must exist. If the intelligent controller (and optionally Remote Unit) does not exist, the switch port cannot be added.

    Once it is determined that the controller exists, the intelligent controller type (e.g., 5ESS IC) is used to check the switch port ID for proper format. The ID format is retrieved from reference data about the intelligent controller type and possibly specific reference data for the intelligent controller. The ID format must be a valid format for that IC type. If an invalid format is encountered, the switch port is rejected from the add process.
  - **For cable links** - First the cable group associated with the cable link is checked to see if it currently exists. If the cable group currently exists, the factorization relationship between the cable and its links will be updated during the add process. If the cable group does not currently exist, it will be created in the data base.

    Once it is determined that the cable exists or is to be created, the frame termination format is verified, if appropriate.

    For trunk pairs, it is validated that the next location is present in the tkp penalty score nl table.

— **For transmission equipment** - The CLEI code is checked for proper format (10 alphanumeric characters).

— **For LTIDs** - First the LTID group associated with the LTID number is checked to see if it currently exists. If the LTID group currently exists, the factorization relationship between the LTID group and LTIDs will be updated during the add process. If the LTID group does not currently exist, it will be created in the data base.

— **For CCPTs** - The Carrier Controller associated with this CCPT must exist. If the carrier controller does not exist, the CCPT cannot be added.

- Once the external id is validated, the external id high end is obtained. If there is no external id high end or it is the same as the low end external id, only one network unit is being added. If there is an external id high end and it differs from the low end, a range of network units is being added and the parse rules are required from the input or the parse rules for network units, by type, can be retrieved from reference data (e.g., inv parse rules table). It does not matter if a single NTU or a range of NTUs are being added, the "inv Ranges" table will be built and the parse rule used (from "inv parse rules") is a required piece of data stored for the range.

  There are no defined parse rules for miscellaneous equipment. To add ranges of MEs, the user must define the parse rules in reference data and use a parse key on input. The parse key maps to a parse rule that defines how the IDs in the range are to be incremented.

- Reference data is used to edit and validate the attribute tags and their respective input values. The attribute tags (e.g., frame and zone, etc.) will be checked against reference data to ensure that they are legal. If the tag is legal it will be stored along with the input value the tag is to be given. All attribute tags will be checked in this manner. Once all the input tags are validated, any derived attribute tags and values (e.g., asgn cap field, etc.) are populated.

  Once all the input attribute tags are validated, the values for each respective tag are validated. Reference data is checked for each value to ensure that the value is legal. If the attribute tag has no input value, the dictionary is checked to see if this attribute is required to make the unit being added inventory complete. As was stated before if all the attributes required for inventory completeness are not provided on input, or cannot be derived, the unit cannot be added.

- Once all input tags and values are validated, any derived values can be computed. These values must also pass validation checks as above.

- Once the data passes edit and validation, the network unit can be added to the SWITCH system database. For each network unit in a range, the above process will be repeated. If one network unit in the range fails, the inventory process will back up to the last commit point in the process. A commit point is a point in the process where database changes are committed (sent) to the database.

— **For telephone numbers** - If the client specific TN Suppression feature is activated for the wire center, the UPDTRM (Update Network Unit/Update Terminating Equipment) contract ignores the following telephone number attributes if they are on input:

— Telephone Number Type

— Assignment Limitations

— Selectable

— Intercept Value

— Release Date

— Release Date Override

— Transfer Calls

— Non Published Indicator

— Assignment Category on Disconnect

— Central Office Administrative Type (CATY) code

- Any relationship attributes must be updated upon the addition of the network unit. Some specific relationship attributes based on type are as follows:

— **For switch ports** - The controls/controlled by relationship to the IC (and to the RU for remote switch ports) is established. The factorization relationship between the switch port and the lowest level Equipment Group must be updated. The Hierarchy Counts for all affected equipment groups must be updated. Some of these relationship attributes are input by the user, others are derived by the SWITCH system.

— **For cable links** - The factorization relationship between a cable group and the cable link(s) must be updated to reflect the addition of the link(s).

— **For LTIDs** - The factorization relationship between the LTID group and the LTID number(s) must be updated to reflect the addition of the number(s).

— **For telephone numbers** - The factorization relationship to an NXX group is created to reflect the addition of the telephone number. If the NXX group did not currently exist, it will be created when the telephone numbers are created.

— **For CCPTs** -

1. The controls/controlled by relationship to the CC is established.

2. Unlike switch ports that are related to equipment groups in a separate inventory process, CCPTs will be related to Slots during the same transaction in which they are added. UPDCCP will add CCPTs, and use reference data and some input constraints to derive the Slot data item(s) to be added in relation to the

CCPTs. Optionally, the maximum number of ports to be built for any given slot over the range of CCPTs in the input, can be specified using the ADM NTU work session. A full complement of ports must be built for each slot.

The ADM NTU work session has separate data entry areas for attributes that are specific to the port and attributes that are related to the slot. Some of the attributes input for the slot will be inherited and stored with the slot's associated CCPTs. This is done to shorten processing time for both the assignment engine and reports.

The slot IDs are derived from a reference data table **inv slot rules** which has specific instances for a given CC model. The row keys are the CCPT parse key and point to the ID derivation rules for the slot based on the ID of the CCPT. Sometimes, the Slot ID cannot be directly derived from the CCPT ID and a supplemental table, *inv supp slot rules*, will be used to provide a mapping from the CCPT ID(s) to the slot ID(s).

Thus, an 'is_contained_by' relationship will be built between the CCPTs and their respective slots upon adding the CCPTs.

- Once all the above steps are completed the network unit is considered to be added in the database.

The Mini-Bridge Lifter Inventory Count Table keeps track of the total number of mini-bridge lifters in a wire center. When mini-bridge lifters are added to a wire center, the user should update the mini-bridge lifter count in the Mini-Bridge Lifter Inventory Count Table (see table 5-1). This is done via the UPD REF work session. Mini bridge lifters are not inventoried objects in the SWITCH data base.

5.4.1.1 Interaction With Other SWITCH System Processes

Previously, UPDNTU could not be invoked if other processes were already running. In processing of Dial, Area, and Frame Transfers, the wait to process an UPDNTU can be quite long. In order to expedite the processing of contracts, a new capability is available. This capability allows the Dial, Area, and Frame Transfer processing to "time share" with regular processing of a contract. This functionality is applicable to the add portion of UPDNTU; it does not apply when UPDNTU is used to modify or delete network units.

For example, if DTR processes are running, they are put in a special wire center, "$LNG". While running in the $LNG wire center, these processes will actually process in the real target wire center but will co-operate with other contracts which queue up for the target wire center.

Each DTR process will process through a commit interval, and if, at the end of the commit interval another updater contract is queued for the target wire center, the DTR process will wait while the other contract does some work.

The other contract processor will work through a commit interval and then allow the DTR process to have a turn. This will continue until one or the other contracts have been fully worked. At that time, if there is still DTR processing to be done, the DTR contract processor will have full access to the target wire center (until another contract is queued).

Thus an incoming UPDNTU contract will have to wait only for one commit interval to be completed before having access to the target wire center.

5.4.2 Modify Network Units

The UPDNTU contract will permit the user to modify network units which have already been created in the SWITCH system data base. Modifying inventory data encompasses the following types of activities:

- Adding data values for attributes that did not have values prior to the update. These attributes can be:
  1. Attributes that describe the inventory item itself (e.g., remarks, limitations, assignment capacity)
  2. Relationship attributes that the inventory item can have (e.g., frame locations, etc.)
  3. Attributes that identify other inventory items to which this particular item has relationships (e.g., controller relationship for the switch port)
- Replacing an existing data value of an attribute. If the data attribute being replaced can occur more than once (e.g., frame and zone), the contract input must identify the particular occurrence of the attribute being replaced.
- Removing data values for existing attributes.

Not all data attributes that can be associated with a network unit can be changed by inventory update requests. Some attributes and relationships are established and maintained by the service provisioning and work order processes.

The common requirements to modify an existing network unit are:

- The function of the contract is change.
- Retrieve the network unit's external id information from the contract. With the external id, retrieve the network unit from the data base.
- Obtain any parse rules, from the inv ranges table associated with the network unit.
- Determine action code of change; in, out, or modify.
  — The action code is used to input attribute tags and values for the network unit. Using the in action code, populate the appropriate data base structures for each input aggregate. Information about appropriate attributes is retrieved from

reference data. Reference data is used to edit and validate the attribute tags and values, as it was done for add network unit.

— The action code is used to remove relationships attributes and their values. Using input contracts, the attributes required to uniquely identify the relationship to be removed are defined. Edits and validations will be done to check if the network unit can still remain in the data base when the attributes are removed. Also any relationships will be checked to ensure that the removal of an attribute will not leave the data base in an incorrect state. An incorrect state could be the existence of a component edge to a nonexistent assembly.

— An action code of will be used when an attribute value that is currently existing against a tag is to be removed and replaced with another value. Reference data is again used to retrieve information about the appropriate attribute values. Edits and validations will be performed against the new attribute values.

- If an attribute to be changed is a slot attribute and is inherited down to the associated CCPTs, the attribute (upon validation) will be changed for the slot and changed for all associated CCPTs.

- If an attribute to be processed (in, out, or modify) has multiple occurrences, the particular occurrence to be processed must be identified by the user.

- The data base processing will retrieve the network unit from the data base, modify the network unit body, and modify the network unit edges of the root node. Rework is then triggered for all pending activity on the node except the addition of controlled-by edges from TN nodes to IC or Remote Unit.[2] In addition, for TN nodes where a controlled by edge is being removed, the edge is removed from **all** hidden instances.

  The modification of the edges is either an out action, in action, or modify action. Each network unit in a range of network units will be processed as described above. If the process fails when dealing with a network unit in a range, the process will roll back to the last commit point.

  — **For telephone numbers** - If the client specific TN Suppression feature is activated for the wire center, the UPDTRM (Update Network Unit/Update Terminating Equipment) contract ignores the following telephone number attributes if they are on input:

  — Telephone Number Type

  — Assignment Limitations

  — Selectable

2. Addition of cntld-by edges from TN nodes to IC nodes should not invalidate any other assignments that the TN is pending in, therefore every instance of the TN node in the database is updated to have the edge and rework is not called.

— Intercept Value

— Release Date

— Release Date Override

— Transfer Calls

— Non Published Indicator

— Assignment Category on Disconnect

— Central Office Administrative Type (CATY) code

When UPDNTU changes the assignment limitation type of a network unit which is in (or pending in) a circuit, UPDNTU sends a message to DCOR indicating that the network unit is in (or pending in) a circuit.

The Mini-Bridge Lifter In Use Table (see Table 5-2) keeps track of the number of mini-bridge lifters currently in use. When the user, via the UPD/ADM NTU work session, changes the Mini-Bridge Lifter value (mini_bg_lft) for the physical appearance of a cable pair from allowed ("a" - assignment is permitted but none are installed at the moment) or null to equipped ("e" - a Mini-Bridge Lifter is installed on the physical appearance), the In Use count in the table is incremented. When the value is changed from "e" to "a" or null, the In Use count is decremented.

5.4.3 Remove Network Units

The UPDNTU contract will permit the user to remove network units and their attributes from the database. Any units associated with pending orders or working circuits cannot be removed. A range of network units may be removed at one time. Common requirements to remove network units are:

- The function of the contract is remove.
- Before any unit can be removed, it must be checked to verify that the value of the assignment use is zero and there are no pending views associated with it.
- If the unit is part of an assembly, the network unit cannot be deleted. If a delete is attempted with a network unit that is part of an assembly, an error message will be sent stating that the network unit is part of an assembly.
- For a bulk removal of units from the SWITCH system, each unit is checked as above (assignment use and component of assembly). If one unit fails the checks in the range of units specified, the removal process is backed up to the last commit point and the user is notified of an error.
- Any relationships that were affected by the network unit(s) removal must be updated. Some are as follows:

— **For switch ports** - The controlled by relationship between an intelligent controller and the switch port(s), and the lowest level Equipment Group and the switch port must be updated to reflect the removal of the port(s). The hierarchy counts for all affected equipment groups must be updated.

— **For cable links** - The factorization relationship between a cable group and the cable link(s) must be updated to reflect the removal of the link(s). If all cable links in a cable group are removed, the cable group is removed as well.

— **For LTIDs** - The factorization relationship between the LTID group and the LTID number(s) must be updated to reflect the removal of the number(s). If all LTID numbers in an LTID group are removed, the LTID group is removed as well.

— **For telephone numbers** - The factorization relationships to NXX groups must be updated. If all the telephone numbers in a NXX group are removed, the NXX group is removed as well.

— **For CCPTs** -

1. The controlled by relationship between a carrier controller and the CCPT(s) must be removed.

The 'contains' relationship between the CCPT and the slot must be updated to reflect the removal of the CCPT(s). Removal of CCPTs is an all or nothing procedure if there are multiple CCPTs associated to a slot. Either all the ports must be removed or if some are not capable of being removed, none of the CCPTs will be removed until all are capable. If all CCPTs are capable of being removed the slot node will be removed as well as the CCPTs.

- Any attributes that were affected by the network unit(s) removal must be updated.

— **For telephone numbers** - If the client specific TN Suppression feature is activated for the wire center, the UPDTRM (Update Network Unit/Update Terminating Equipment) contract ignores the following telephone number attributes if they are on input:

— Telephone Number Type

— Assignment Limitations

— Selectable

— Intercept Value

— Release Date

— Release Date Override

— Transfer Calls

— Non Published Indicator

— Assignment Category on Disconnect

— Central Office Administrative Type (CATY) code

When a mini-bridge lifter is removed from a building, the user should use the UPD REF work session to decrement the count in the Mini-Bridge Lifter Inventory Count Table (see Table 5-1).

5.5 Frame Termination Data

There is an inventory contract (UPDFRT) that allows the addition, modification, or removal of frame termination data, including LOIS, for a variety of network units. The intent of the contract is for it to be generic enough to handle various frame capacity constraints (i.e., block sizes, verticals, etc.) as defined by the user. Reference data will be used to define the capacity constraints (see Table 5 -3). UPDFRT will use this reference data to validate the input data before adding LOIS in the database. UPDNTU will no longer be used to input or modify LOIS information for ranges. UPDNTU can still be used for adding frame, zone information, and LOIS information for single unit processes.

UPDFRT and UPDNTU will also create or modify the "inv frame layout" table. This is a summary table used to support switch port overlay and report frame layout processes. This table (5-4) is created for each ntu type and frame ID. The table contains by ntu range LOIS Information for the range, protector frame information if appropriate, termination numbering direction, and other frame termination information to support the above processes.

UPDFRT gives the ability to add LOIS data to single network units or for a range of units. The SWITCH system also provides the ability to modify LOIS data that exists in the database for a network unit or a range of units.

Some network units can be multiply terminated, and thus can have multiple LOIS data. There will be a physical appearance edge for each occurrence of LOIS data. UPDFRT will allow for the user to enter multiple termination data for a network unit when the unit's frame data is being added or modified. Since there can be multiple occurrences of a physical appearance edge, the user must identify the specific edge when modifying the LOIS data for the network unit. The specific edge will be identified by the ID of the network unit and a specific frame and zone.

The SWITCH system will provide the ability to remove LOIS data from network units. The network unit can still exist in the database because LOIS data is not required by the SWITCH system for the network unit to exist in the database.

5.5.1 Inventory Process

UPDFRT is not a contract that adds, modifies, or removes inventory, but rather is a contract that modifies data (frame termination) about an existing network unit(s). UPDFRT will allow the addition, modification, and removal of frame termination data (i.e., frame zone, LOIS, protector frame, etc.) in the SWITCH system database for single or ranges of network units.

To add frame termination data in the SWITCH system, the common requirements are:

- The action of the contract is in.
- If LOIS data is to be input, full LOIS is required for single units. Protector frame information must also be input in full LOIS format for single units.

  If a range of network units is used, LOIS can be input in a variety of forms. For COSMIC or CODs-2 frame types, the LOIS is input up to the block designation; the row and column will be calculated by the contract over the range of units. Protector frame information for COSMIC frames must be input with connector and vertical, with the pair number being calculated.

  If a range of network units is used for DSX Frames, frame termination data can be input in one of two formats: the COMMON LANGUAGE Frame Format of "C" or "X". The frame termination data for both formats will be entered up to the panel designation and the contract will derive the block "X" and terminal ID based on capacity constraints. For the DSX frame, the capacity constraint codes will match the format identifier.

  For ranges of network units, the capacity constraint of the frame for the range is also required (i.e., how many units can be terminated on the block). The size of the input range cannot exceed the capacity of the input block designation. If there are multiple occurrences of frame termination data for the units in the range, this capacity data is required for each occurrence of frame termination data over the range to be added. The multiple occurrences can be added all at the same time, or use repeated executions of the contract.

  In order to update the Frame Termination Data, the user must enter the capacity and the directionality codes. The capacity and directionality codes will be used to derive the incrementation rules for wiring the block.

  The capacity code (CAP) is a 1 character field that identifies the capacity of the block. The valid values are:

  - 1 - 50 pairs
  - 2 - 64 pairs
  - 3 - 64 pairs
  - 4 - 100 pairs

- 5 - 128 pairs
- 9 - 200 pairs

The capacity code is a key to a reference data table that defines the capacity information for that code (see example Table 5-3). This reference data table will be delivered with default values for the capacity input that equate to the terminal arrangement constraints provided by the MELD tape. The terminal arrangement constraints provided by the MELD tape describe the capacity constraints of the frame. This way, if new capacity constraints are defined in the future, the user can modify this table to handle those capacity needs.

The directionality (also known as the calculation character) identifies where the rows and columns are placed. For 50, 64, and 100 2-wire block pairs, the directionality identifies whether the rows and columns calculated are where the terminals are placed horizontally (default method) or vertically on the block (character = h or v). The directionality for 4-wire 50, 64, and 100 block pairs is o (odd).

The directionality for 128 block pairs must accommodate two arrangements. The most common arrangement is to wire horizontally across the block from left to right, and then return to the left and start across the next row. This leads to 4 by 32 blocks, where 4 is the number of rows and 32 is the number of columns. The second arrangement allows the wiring of 128 block pairs in a different manner. The wiring is done left to right across the first 16 columns and 4 rows of a 4 by 32 block. Then the wiring is continued, left to right, from the 17th column to the 32nd column for all 4 rows. Since the supporting reference data is a linear incrementation and cannot double back to the first row, UPDFRT processing cannot do the incrementation from row 4, column 16 to row 1, column 17. Therefore, the range of network units, 128 in all, is broken down into two sequential ranges of 64. Each range will be input using the UPDFRT work session, as a separate contract. The directionality value is used to access the reference data that will calculate the frame termination data for a given section of the block. The valid values for directionality for 128 block pairs are:

- L - left side of the block for 2-wire network units (columns 1-16, rows 1- 4)
- R - right side of the block for 2-wire network units (columns 17-32, rows 1 -4)
- A - left side of the block for 4-wire network units (columns 1-16, rows 1- 4)
- B - right side of the block for 4-wire network units (columns 17-32, rows 1 -4)

As part of the range processing information, the start terminal number is optional on input. The start terminal number identifies where on the block the row and column calculations for COSMIC LOIS should begin.

Conventional and ESS modular frames must be input with full LOIS. For every unit in the range, the full LOIS is stored as the LOIS for the unit; there are no calculations done either for storage or output. The way the conventional LOIS data is input is the way the LOIS data will be output. There will be no manipulation of the LOIS data for output (i.e., vertical and side will be output as it is input). There will be no capacity constraint processing for these frame types.

The input is validated that the frame exists, the network unit type is valid, and the range does not exceed the capacity constraints.

- Once the input data passes validation, the frame termination data can be added for the network unit(s). If a network unit range is input, and LOIS data is input, the process will calculate the rows and columns for COSMIC or CODs-2 frames or just accept the input LOIS for other frame types. If the block designated is already partially filled, the start terminal number will identify the starting point for LOIS calculations. Also the trough for COSMIC frames will be calculated depending on the module input. If the module identification is 1, the character "L" will be inserted. If the module identification is other than 1, the row is used to determine the character to be inserted; "U" for rows 1 or 2, "L" for rows 3 or 4.

To remove frame termination data from the SWITCH system the common requirements are:

- The action of the contract is out.
- Before an appearance of frame termination data can be removed, a check must be performed to ensure that the frame termination is not active in a working or pending assembly. If the frame termination is active it cannot be removed. If the frame termination is involved in a pending-out circuit, it is still currently working and cannot be removed. If the frame termination is involved in a pending-in circuit, it can be removed and rework is called. An error message will alert the user that the frame termination is active if a removal of it is attempted. If a range of units is being processed, the process should skip over the units that error and continue to the end of the range.
- If a range (or single) of network units is to be processed, the input data should contain the frame and zone information. Frame and zone information will provide the identification of which frame termination is to be removed. Each appearance processed will be validated as above.

  Multiple occurrences can be processed at the same time as long as the LOIS information to identify the appearances is supplied on input.
- If the removal request passes validations, the frame termination occurrence will be removed. Associated protector information, if present, will be removed for each frame termination occurrence removed.

If the network unit(s) is to be removed with the contract UPDNTU, all frame termination occurrences will also be removed by UPDNTU.

To modify existing frame termination occurrences, the common requirements are:

- The action of the contract is modify.

- The minimum input data required is the type of network unit and the ID of the network unit. If there is a range of units to be processed, the type of network unit, the low ID, and High ID of the range are required.
- There are two variations of the change activities that can be processed:
  - — Modify parts of existing occurrences of frame termination data
  - — Replace existing data values for all of the frame termination data

  The data input must minimally include frame and zone to identify the frame termination occurrence to be modified. More than one occurrence can be modified at one time, as long as each occurrence is identified properly. A range of units may be processed by specifying the frame termination occurrence to be modified, minimally identified by frame and zone. Modify changes individual attributes.

  To replace frame termination data an action code of "rpl" will be used. The replace action removes all attributes that existed for that frame termination occurrence (i.e., frame zone, LOIS, etc.) and replaces it with the input data. The input data therefore must include all frame termination data that will replace the existing data. More than one occurrence can be replaced at one time, as long as each occurrence is identified properly. A range of units may be processed by specifying the frame termination occurrence to be replaced.
- The frame termination data will be validated as stated previously when adding frame data.
- Once the data to be processed passes validations the contract will modify or replace the data.

5.6 Updating External IDs of NUs

A network unit is known to the SWITCH system user community by its external ID (EXID). The SWITCH systems stored the network's EXID in a specific format, called the canonical form, and uses formatting rules stored in reference data tables to convert different forms of the EXID to the canonical form on input, and to reformat the EXID on output. Appendix 4A contains a detailed discussion of use of these reference data tables to define canonical forms, input formats and output formats.

Changes to the content of existing NUs stored in the SWITCH system data base can not be accomplished by changing input parse rules or output format rules. The change of external ID contract (UPDEXI), however, can be used to change the content of canonical forms of NUs stored in the SWITCH system data base.

The UPDEXI contract will change the canonical form of the EXID of an NU or range of NUs. The EXIDs of bridge lifters, cable pairs, intelligent controller equipment, intraoffice facilities, miscellaneous equipment, switch ports, transmission equipment, carrier controller ports, channels, Call Reference Values, and trunk pairs can be changed by the UPDEXI contract. Telephone numbers (TNs), data telephone numbers (DTNs), and logical termination identifiers (LTIDs) are excluded from contract processing.

5.6.1 Inventory Process

UPDEXI modifies data about existing NUs -- specifically, the canonical forms of the NUs respective EXIDs. To change the external ID of a network unit, the following information is required:

- A range of existing NUs -- low EXID and high EXID
- The new EXID of the first NU node
- The parse key for the new EXID -- this must be an existing parse key
- The new hierarchy categories of the NUs, if the NUs are switch ports
- The slot to CC port relationships will not be changed by either increasing the number of ports per slot or increasing the number of slots. However, if the EXID of a CCPT is changed, the EXIDs of the associated slot nodes may also require change. The slot nodes will be automatically updated for CC port changes.
- When changing EXIDs of the CC ports, all ports for a slot(s) must be specified by range. Partially changing the CC ports in a slot is not allowed.
- Channels can have two forms of external IDs: one for the CC relationship and one for the IC relationship. Changing external IDs for channels will only be performed on the IC form of the EXID. The CC form of the channel name cannot be built in error by the user. If the EXID of a channel in the CC form is built in error, it can be assumed that it is a reference data error and not a user error. Change EXID processing will not be the vehicle to fix this type of error.
- CRVs can have two forms of external IDs: one for the CC relationship and one for the IC relationship. Changing external IDs for either of these relationships will be done one form at a time. Both forms will not be simultaneously changed.

UPDEXI will perform processing only for NUs which meet certain criteria:

- The EXIDs in the "to range" can not exist in the data base
- NUs in the existing range can not be pending in a work order

UPDEXI is an "all or nothing" contract. The contract can process on a range of NUs. Either all the NUs in the "from" range will change EXID, or none of them will. Thus, all data validations will be performed before change processing begins.

Contract processing will occur as follows:

- All EXIDs in the "to range" will be checked for existence. If any of the IDs in the "to range" exist, processing will halt; no changes will occur.
- All EXIDs in the "from range" will be checked to insure that none of them are in a pending work order. If any of the NUs are involved in a pending work order, no changes will occur. The EXIDs of NUs in the "from range" which are in pending work orders will be written to an output device.
- The next EXID from the "to range" will be created, by incrementing the last "to ID".
- The next node in the "from range" will be accessed. If there is a missing node (i.e., the sequence of IDs is 100-1, 100-2, 100-4 with 100-3 missing), processing will return to step three. Thus, gaps in the "from" range will be maintained in the "to range".
- The contract will access the EIX data base and update the appropriate internal ID/ external ID mapping.
- The contract will replace the EXIDVAL field on the EX edge of the node with the new value.
- If the NUs being changed are switch ports, the new hierarchy category replaces the existing one.
- Summary data tables will be changed. For the *inv ranges* table instances, changes will occur to the following fields:

  — range_low_id

  — range_high_id

  For both *inv frame layout* and *inv frame layout noncosmic* table instances, changes will occur to the following fields:

  — ntu_low_id

  — ntu_high_id
- If the NU is a cable/tie/trunk pair, the cable/tie cable/trunk cable node will be updated. If only some of the pairs in the cable change EXID, a new cable node will be created, and the appropriate pairs will be moved to the new cable.
- If the NU is involved in a pending service order, the NU will be placed on the rework list. Rework will create the appropriate output to down stream systems.

5.7 Administrative Groups

Due to the nature of administrative groups and their given capabilities, each group type (excluding SCHs which are created and removed by provisioning) that is supported in the SWITCH system, will be discussed separately. Although there is commonality in the inventory processes, there is also processing that is specific to each group type.

5.7.1 Centrex Groups

An update Centrex group contract (UPDCTX) with the following functions will be provided:

- Add Group
- Modify Group Attributes
- Change Group Name
- Remove Group

The actual contract format and descriptions of the contract sections and aggregates are in the SWITCH system Contracts Directory, BR 752-106-040.

The request portion of the contract is to update data about a Centrex group. The request may be to add or remove a Centrex group or to modify data (including the group name) about an existing Centrex group.

The response portion of the contract is two responses, one an acknowledgment that the update was scheduled for deferred processing, the other the deferred update itself.

5.7.1.1 Add Centrex Groups

The UPDCTX contract will permit the addition of Centrex Groups, their attributes, and the telephone numbers to be used by the group. The Centrex Group created must be unique within an intelligent controller and not previously exist in the SWITCH system. The attributes that can be added for Centrex Groups are in Section 4.20.2.

There are three types of Centrex groups; Regular, Combined and Multi- Variety Package (MVP). A Regular Centrex group "owns" one or more blocks of telephone numbers. The administrative data for that group applies to the entire block. A Combined Centrex group shares the same set of TNs with one or more associated groups that belong to the same family. Each Combined group in the family may have different administrative data. A MVP Centrex group does not have TNs pre-allocated to it. If the LNP - Centrex Administration feature is activated, imported telephone numbers are allowed to be created and associated to Regular or Combined Centrex groups. For all types of Centrex groups, circuits are associated to only one group at a time.

To add a Centrex group into the SWITCH system, the requirements are:

- The function of the contract is add.
- The minimum required attributes to add a Centrex group are those that will uniquely identify the Centrex group to the data base. This is its external id and the attributes that derive inventory category. The attributes that make up the external id are the

intelligent controller relationship and Centrex group identifier. For more information about Centrex group external IDs, see Appendix 4A.

- Using the external id, the database is checked to ensure that the Centrex group to be added does not currently exist in SWITCH system. If the Centrex group does exist, an error will be returned stating that the group cannot be added due to current existence.

- If the Centrex group to be added is determined to be new, the input data must be validated against rules for the addition of Centrex groups. First the intelligent controller associated with this Centrex group must exist. If the intelligent controller does not exist the Centrex group cannot be added.

  Once the IC has been determined to exist, the Centrex identifier is formatted according to the rules for that IC; either stripping or keeping leading zeroes (see Table 6-8a, ctx-zero- suppression parameter).

- Reference data is used to edit and validate the attribute tags and their respective input values. The attribute tag (e.g., PIC, etc.) will be checked against reference data to ensure that it is a legal tag. If the tag is legal it will be stored along with the input value the tag is given. All attribute tags will be checked in this manner.

  Once all the input attribute tags are validated, the values for each respective tag are validated. The reference data is checked for each value to ensure that the value is legal. As was stated before if all the attributes required for inventory completeness are not provided on input or cannot be derived the group cannot be added.

- Once the data passes edit and validation, the Centrex group can be added to the SWITCH system database.

  If the client specific TN Suppression feature is activated for the wire center, the UPDCTX contract ignores the following attributes if they are given on input:

  — telephone number(s)

  — telephone number type

  — telephone number aging period

  — intercept type

  — related Centrex groups

- Any relationships must be updated upon the addition of the Centrex group. The group is controlled by the intelligent controller it belongs to. When Regular or Combined Centrex groups are created, the TN type for the TNs identified for the group is changed to "Q" and the intercept value is set to the value entered for the group. When a Regular group or the first Combined Group in a family is added, a TN Group database object is created with a use relationship to the Centrex group (groups in a Combined family). When a Combined group is added to an existing family, a use relationship is established between the new group and the existing TN Group. All TNs identified in the TN Block for the group are given membership relationships to the TN Group.

The creation of an MVP type Centrex group does not create any TN Group.

Existing circuits that contain TNs which are members of the group will *not* be associated with the Centrex group until provisioning requests come through to associate them.

If the client specific TN Suppression feature is activated for the wire center, the UPDCTX contract creates a Centrex group but does not build a TN Group. The TN type and intercept value for the TNs in the Centrex group are not changed.

- Creation of a Centrex group results in creation of a Spread Count table (see Table 5-5). for that group (see Section 6 for a discussion of Spreading). Since circuits are not yet associated to the group, the counts in this table remain null until provisioning requests arrive.
- Once all the above steps are completed, the Centrex group is considered to be added in the data base.

If appropriate, users should create an instance of the Recent Change USOC Table (see Table 5-6) for each Centrex group added to the database. This table includes default translations data (i.e., CAT, LCC, CCFs, and Incomplete flag) differentiated by Recent Change USOC to be used for services when they are assigned. This translations data is then sent to the MARCH system. If appropriate, users may also wish to create an instance of the Reverse Spread List Table (see Table 6-26) and/or the Denied Assignments Spread List Table (see Table 6-28) for each Centrex group added.

5.7.1.2 Modify Centrex Groups

The UPDCTX contract permits the user to change the attributes of a Centrex group which has previously been created in the SWITCH system data base or to change the name of the group. Modifying inventory data encompasses the following types of activities:

- Adding data values for attributes that did not have values prior to the update. These attributes can be:
  1. Attributes that describe the group itself (e.g., IDP, KEY,)
  2. Default translations data which can apply to circuits provisioned for this group (e.g., Route Index, PIC)
  3. Relationships to other inventory items (e.g., telephone numbers)
- Replacing an existing data value of an attribute. If the data attribute being replaced can occur more than once (e.g., telephone number or IDP), it will require identifying the particular occurrence of the attribute being replaced. If the LNP-Centrex

Administration feature is activated, spare imported telephone numbers will be removed from the database at the same time they are removed from the Centrex Group.

- Removing data values for existing attributes.
- Changing the name of the group. The IC that the group belongs to cannot be changed, only the group name portion of the external id. When a group name is being changed, no other changes to group attributes is permitted in that request.

Not all data attributes that can be associated with a Centrex group can be changed by inventory update requests. The association of services to the Centrex group is established and maintained by the service provisioning and work order processes, not by inventory.

The common requirements to modify an existing Centrex group are:

- The function of the contract is change.
- Retrieve the Centrex group's external id information from the contract. With the external id, retrieve the Centrex group from the data base. If it does not already exist, the contract will error.
- Obtain any parse rules, using the same procedure as the add Centrex group function.
- Determine action code of change; in, out, or modify.
  - — The <u>in</u> action code is used to input attribute tags and values for the Centrex group. Using the in action code, populate the appropriate database structures for each input aggregate. Like the add Centrex group contract, information about appropriate attributes is retrieved from reference data. Reference data is used to edit and validate the attribute tags and values, as was done for add Centrex group.
  - — The <u>out</u> action code is used to remove relationships. Using input contracts, the attributes required to uniquely identify the TN membership to be removed are defined. The removal of TNs does not affect the association of services using those TNs to the Centrex group, therefore, the Spread Count Table does not need to be updated.
  - — An action code of <u>modify</u> is used when an attribute value that is currently existing against a tag is to be removed and replaced with another value. Information about the appropriate attribute values is again retrieved from reference data. Edits and validations are performed against the new attribute values.
- If an attribute to be processed (in, out, or modify) has multiple occurrences (TNs, IDPs), the particular occurrence to be processed must be identified by the user.
- The data base processing retrieves the Centrex group from the data base, modifies the Centrex group, and modifies the Centrex group external id (only done when the name is changed).

If the client specific TN Suppression feature is activated for the wire center, the UPDCTX contract ignores the following attributes if they are given on input:

— telephone number(s)

— telephone number type

— telephone number aging period

— intercept type

— related Centrex groups

5.7.1.3 Remove Centrex Groups

The UPDCTX contract permits the user to remove Centrex Groups and their descriptive characteristics from the SWITCH system. Any Centrex Groups associated with pending orders or working services cannot be removed.

Common requirements to remove Centrex groups are:

- The function of the contract is remove.
- Before any Centrex group can be removed, it must be checked to verify that there are no pending or working services associated with it.
- For Regular Centrex groups, the TN membership relationships to the TN Group used by that Centrex group are removed, the TN type for each TN is set to the value defined for the deleted group, the TN Group is removed and the use relationship between the Centrex group and the TN Group is removed. For Combined Centrex groups, only the Centrex group and its use relationship to the TN Group is removed, unless the deleted group is the last one in the family in which case all of the above functionality is also done. TNs are not members of MVP Centrex groups so only the Centrex group itself is removed. The Spread Count table for the deleted group is removed.

  If the client specific TN Suppression feature is activated for the wire center, a TN Group and its corresponding member relationships to a TN and the use relationship to the Centrex group do not exist. Only the Centrex group is removed.

5.7.2 Simulated Facility Groups

There is a contract to update Simulated Facility Groups (UPDGRP). This contract is defined in the SWITCH system Contracts Directory, BR 752-106-040. The following are functions the contract can perform:

- Add
- Modify

- Remove

The request portion of the contract is to update a Simulated Facility Group (SFG). The request may be to add or delete a SFG or to change data about an existing SFG.

The response portion of the contract is an acknowledgment that the update was scheduled for deferred processing plus the deferred update itself.

For inventory to process correctly on the SFG, the inventory category must be derived for the group. For SFGs there is only one inventory category, sfg. The inventory category defines the inventory rules that must be followed during the processing. For SFGs, the inventory category will be derived from the type (e.g., SFG) of the inventory.

SFGs can be added in ranges. The IDs are incremented according to the reference data table, inv parse rules.

The relationship between services and SFGs is created during the service provisioning processes. UPDCKT allows a service to be related to a SFG with an inventory process. Because UPDCKT does not provide output to downstream systems, it should be used only to rectify the SWITCH system database with the real world.

5.7.2.1 Add Simulated Facility Groups

The update group contract allows SFGs, their attributes, and relationships to be added to the SWITCH system. The SFG created must be unique in identity and cannot currently exist in the SWITCH system.

To add SFGs into the SWITCH system, the common requirements are:

- First check the inv-sfg parameter in the IC instance of the WC parms table (see Table 6-8a) to ensure that SFGs can be added for the IC.
- The function of the contract is add.
- The minimum required attributes to add a SFG are those that will uniquely identify the SFG to the database. These attributes make up the external ID. For a SFG, the SWITCH system ID stored in the database can be up to 10 characters long.
- Using the external ID the database is checked to ensure that the SFG to be added does not currently exist in the SWITCH system. If the SFG does exist, an error is returned stating that the group cannot be added because it currently exists.
- If the SFG to be added is determined to be new, the input id format must be validated by the ID parser for the addition of SFG.
- Once the external ID is validated, the external ID high end is obtained. If there is no high end, only one SFG is being added and there is no need to retrieve the ID parse rules. If there is a high end and it differs from the low end, a range of SFGs is being added and the parse rules are retrieved from the reference data table, inv parse rules.

Each SFG in the range is processed as a single group would be. If a SFG in the range errors during processing, the process backs up to the last commit point and errors.

- Reference data is used to edit and validate the attribute tags and their respective input values.
- Once the data passes edit and validation, the SFG can be added to the SWITCH system database.
- Once all the above steps are completed, the SFG is considered to be added in the database.

5.7.2.2 Modify Simulated Facility Groups

The update group contract permits the user to modify SFGs that have already been created in the SWITCH system database. UPDGRP permits the user to modify the SFG's attributes and relationships created by inventory processes. Modifying SFG data encompasses the following types of activities:

- Adding data values for attributes that did not have values prior to the update.
- Replacing an existing data value of an attribute.
- Removing data values for existing attributes.

Not all data attributes that can be associated with a SFG can be changed by inventory update requests. Some attributes and relationships are established and maintained by the service provisioning and work order processes.

The common requirements to modify SFGs are:

- The function of the contract is change.
- Determine action code of change; in, out, or modify. [3]
- Retrieve the SFG's external id information from the contract. With the external id, retrieve the SFG from the database.

  If operating on a range of SFGs, obtain any parse rules for the ID.
- The only attributes that can be modified by UPDGRP, for SFGs, are assignment limitations and remarks.
- The database processing retrieves the SFG from the database and modifies the SFG's body.

3. For more details on action codes see Section 5.2.2.

5.7.2.3 Remove Simulated Facility Groups

UPDGRP permits the user to remove SFGs from SWITCH system. Any SFGs associated with pending or working assemblies (e.g., Services) cannot be removed. Common requirements to remove SFGs are:

- The function of the contract is delete.
- If the SFG is associated to a pending or working service (e.g., selection indicator is "n"), it cannot be removed; all service associations must be removed first. An error message will be generated stating that the SFG is associated to working/pending services.
- If the SFG is spare (e.g., selection indicator is "y"), the SFG can be removed.
- Ranges of SFGs can be removed by parsing the IDs in the range as processing each group individually. If one group in the range fails, the process errors and backs up to the last commit point.

5.7.3 Multi-Line Hunt Groups

There is a contract to update HMLs (UPDGRP). The following are functions the contract can perform:

- Add
- Modify
- Remove

The request portion of the contract is to update a HML. The request may be to add or delete a HML or a range of HMLs or to change data about an existing HML or a range of HMLs.

The response portion of the contract is an acknowledgement that the update was scheduled for deferred processing plus the deferred update itself. There is no response reaction.

For inventory to process correctly on the HML, the inventory category must be derived for the group. For HMLs there is only one inventory category, hml. The inventory category defines the inventory rules that must be followed in the processing. For HMLs the inventory category is derived from the type (e.g., HML) of the inventory.

HMLs can be added in ranges. The IDs are incremented according to the reference data table, inv parse rules. The summary data, "inv ranges," will be created. This data is used for modifications to reports on inventory.

The relationship between services and HMLs will be created during the service provisioning processes. UPDCKT allows a service to be related to a HML with an inventory process. UPDCKT does not provide output to downstream systems. It should be used only to rectify the SWITCH system database with the real world (current functionality).

5.7.3.1 Add HMLs

The UPDGRP contract will allow HMLs, their attributes, and relationships (control to an IC) to be added to the SWITCH system. The HML created must be unique in identity and cannot currently exist in the SWITCH system.

To add HMLs into SWITCH system, the common requirements are:

- The function of the contract is add.
- The minimum required attributes to add a HML are those that uniquely identify the HML to the database. These attributes make up the canonical form (SWITCH system database form) of the external id. For a HML, the canonical form of the external ID can be up to 10 characters long.

  Leading zeros on HML IDs will be suppressed when stored in the database. This functionality will be provided by the ID parser processes. Thus HML group ID 0001, 001, 01, or 1 will be stored as 1. The group can be accessed with or without using leading zeros. On output, just the group ID with no leading zeros is provided.
- If the HML to be added is determined to be new, the input id format must be validated by the ID parser for the addition of HML.
- Using the external ID, the database is checked to ensure that the HML to be added does not currently exist in the SWITCH system. If the HML does exist, an error is returned stating that the group cannot be added because it currently exists.
- Once the external ID is validated, the external ID high end of the range is obtained. If there is no high end, only one HML is being added, but there still exists a need to retrieve the ID parse rules from the reference data table "inv parse rules." If there is a high end and it differs from the low end, a range of HMLs is being added and again the parse rules are retrieved. It does not matter if a single HML or a range of HMLs are being added, the "inv ranges" table is built and the parse rule used (from "inv parse rules") stored for the range.

  Each HML in the range is processed as a single group would be. If a HML in the range errors during processing, the process backs up to the last commit point and errors.
- Reference data is used to edit and validate the attribute tags and their respective input values. The valid attributes that can be input through UPDGRP inventory processes are: user name, remarks (permanent and temporary), spread indicator, and assignment limitations. Also, when an HML group is first provisioned (i.e., first service associated to the group), a spread count table for the HML is created which indicates the first line assigned against the group.

- Once the data passes edit and validation, the HML can be added to the SWITCH system database.

5.7.3.2 Modify HMLs

The UPDGRP contract permits the user to modify HMLs that have already been created in the SWITCH system database. UPDGRP permits the user to modify the HML's attributes and relationships created by inventory processes. Modifying HML data encompasses the following types of activities:

- Adding data values for attributes that did not have values prior to the update.
- Replacing an existing data value of an attribute.
- Removing data values for existing attributes.

Not all data attributes that can be associated with a HML can be changed by UPDGRP requests. Some attributes and relationships are established and maintained by the service provisioning and work order processes.

The common requirements to modify HMLs are:

- The function of the contract is change.
- Determine action code of change; in, out, or modify. [4]
- Retrieve the HML's external id information from the contract. With the external id, retrieve the HML from the database.

  Obtain any parse rules for the ID.
- The only attributes that can be modified by UPDGRP, for HMLs, are assignment limitations, spread indicator, and remarks.
- The database processing retrieves the HML from the database, and modifies the HML record.

5.7.3.3 Remove HMLs

UPDGRP permits the user to remove HMLs from the SWITCH system. Any HMLs associated with pending or working assemblies (e.g., services) cannot be removed. Common requirements to remove HMLs are:

- The function of the contract is delete.

4. For more details on action codes see Section 5.2.2.

- If the HML is associated to a pending or working service (e.g., selection indicator is "n"), it cannot be removed; all service associations must be removed first. An error message is generated stating that the HML is associated to working/pending services.
- If the HML is spare (e.g., selection indicator is "y"), the HML can be removed.
- A range of HMLs can be removed by processing each group in the range individually and then incrementing the ID to determine the next group in the range. If one group in the range fails, the process errors and backs up to the last commit point.

5.8 IC Equipment Groups

There is a contract to update equipment groups (UPDEQP). The following are functions that contract can perform:

- Add
- Modify
- Change Levels
- Remove

The actual contract format and descriptions of the contract sections and aggregates are in the SWITCH system Contracts Directory, BR 752-106-040.

The request portion of the contract is used to update data about an Equipment Group(s). The request is to add or remove an Equipment Group(s) or to modify data about an existing group(s).

The response portion of the contract is two responses, one an acknowledgement that the update was scheduled for deferred processing, the other the deferred update itself.

5.8.1 Add Equipment Groups

The overall process of adding Equipment Groups is table driven to a great extent. Reference Data is used to determine the attributes appropriate for an Equipment Group. The update Equipment Group contract (UPDEQP) allows groups, their attributes, and relationships to be added to SWITCH system. The contract allows a range of switch ports to be input (external id low and high with parse rules), all within the same Rule Category (e.g, Analog vs. ISDN vs. DLC) as determined from the Inventory Group Rules Table (Table 4-11). The attributes that can be added for equipment groups are in Section 4.12.3.

To add an Equipment Group into the SWITCH system, the requirements are:

- The function of the contract is add.

- The minimum required attributes to add an Equipment Group are those that will uniquely identify the Equipment Group to the data base. This is its external id, type, and hierarchy category (e.g., ISDN, Analog, etc.). The attributes that make up the external id are the intelligent controller relationship, and Equipment Group identifier. These attributes are derived from the input switch port range. For more information about equipment group external IDs, see Appendix 4A.

- The low and high end of the switch port range are obtained. If the low or high end switch port does not exist, the contract will be rejected. However, not all switch ports included in the range have to exist. If the switch port range includes switch ports from more than one rule category (Analog, ISDN, DLC, etc.), the process will return an error.

- The input data must be validated against rules for the addition of equipment groups for the equipment groups to be added. The Inventory Group Rules Table is checked to determine the equipment hierarchy levels at which equipment groups are needed for that type (or specific instance) of intelligent controller. The type of Equipment Group (load, spread, measurement, alloc, isdn or combination) that is needed at each level is also obtained.

- Reference data is used to edit and validate the attribute tags and their respective input values. The attribute tag (e.g., HRCY LVL, etc.) is checked against the reference data to ensure that it is a legal tag. If the tag is legal it is stored along with the input value the tag is to be given. All attribute tags are checked in this manner. Once all the input tags are validated, any derived attribute tags and values (e.g., hierarchy counts, equipment group ID etc.) can be populated.

  As was stated before, if all the attributes required for inventory completeness are not provided on input, or cannot be derived, the group cannot be added.

- Using the external id, the database is checked to ensure that the Equipment Group to be added does not currently exist in the SWITCH system. If the Equipment Group does exist, an error will be returned stating that the group cannot be added due to current existence.

- Once the data passes edit and validation, the Equipment Group can be added to the SWITCH system database.

- Any relationships are updated upon the addition of the Equipment Group. The factorization relationship between an intelligent controller and the Equipment Group at the highest hierarchy level must be created. The factorization relationship between each Equipment Group and the Equipment Group in the next highest level is created. The factorization relationship between the switch port and the lowest level Equipment Group is created. The membership to the Load Division for the equipment groups of type load are created.

- For switch ports representing 5ESS Packet OEs (POEs), a poe indication is placed on the factorization relationship to the lowest level equipment group (Protocol Handler) and the maximum number of D channel packet users is set to 128 in this equipment group.This attribute is only relevant when the client specific feature, 5ESS ISDN Protocol Handler D Channel User Limitations (5ess ph dpkt user limit), is enabled.

- Hierarchy counts of how many groups exist below this group in the hierarchy are calculated for each Equipment Group and stored in fsum edges. The hierarchy counts are kept separately for each Host/RU and Functional Category (i.e., Analog, Digital, SLC, Default).
- Once all the above steps are completed the Equipment Group(s) is considered to be added in the data base.

5.8.1.1 Interaction With Other SWITCH System Processes

Previously, UPD EQGRP could not be invoked if other processes were already running. In processing of Dial, Area, and Frame Transfers, the wait to process an UPD EQGRP can be quite long. In order to expedite the processing of contracts, a new capability is available. This capability allows the Dial, Area, and Frame Transfer processing to "time share" with regular processing of a contract. This functionality is applicable to the add portion of UPD EQGRP; it does not apply when UPD EQGRP is used to modify or delete equipment groups.

For example, if DTR processes are running, they are put in a special wire center, $LNG". While running in the $LNG wire center, these processes will actually process in the real target wire center but will co-operate with other contracts which queue up for the target wire center.

Each DTR process will process through a commit interval, and if, at the end of the commit interval another updater contract is queued for the target wire center, the DTR process will wait while the other contract does some work.

The other contract processor will work through a commit interval and then allow the DTR process to have a turn. This will continue until one or the other contracts have been fully worked. At that time, if there is still DTR processing to be done, the DTR contract processor will have full access to the target wire center (until another contract is queued).

Thus an incoming UPD EQGRP contract will have to wait only for one commit interval to be completed before having access to the target wire center.

5.8.2 Modify Equipment Groups

The UPDEQP contract permits the user to modify equipment groups which have already been created in the SWITCH system data base or to change a range of swpts with an existing hierarchy category by rebuilding their equipment groups to reflect the levels in the

Inventory Group Rules Table. Modifying inventory data encompasses the following types of activities:

- Adding data values for attributes that did not have values prior to the update. These attributes can be:
  1. Attributes that describe the inventory item itself (e.g., remarks, capacity)
  2. Relationships that the inventory item can have (e.g., switch ports that are factors of the group)
- Replacing an existing data value of an attribute.
- Removing data values for existing attributes.

The common requirements to modify an existing Equipment Group are:

- The function of the contract is change.
- Retrieve the Equipment Group's external id information from the contract. With the external id, retrieve the Equipment Group from the data base.
- If no Equipment Group external id is found, retrieve the hierarchy category attribute from the contract. Retrieve all switch ports from the database by the hierarchy category.
- Obtain any parse rules, using the same procedure as the add Equipment Group function.
- Determine action code of change; in, out, or modify.
  - The in action code is used to input attribute tags and values for the Equipment Group. Using the in action code, populate the appropriate database structures for each input aggregate. Like the add Equipment Group contract, reference data is used to retrieve information about appropriate attributes. Reference data is used to edit and validate the attribute tags and values, as it was done for add Equipment Group.
  - The out action code is used to remove attributes. Using input contracts, the attributes required to uniquely identify the relationship to be removed are defined. Any relationships are checked to ensure that the removal of an attribute will not leave the data base in an incorrect state.
  - An action code of modify is used when an attribute value that is currently existing against a tag is to be removed and replaced with another value. Reference data will again be used to retrieve information about the appropriate attribute values. Edits and validations are performed against the new attribute values.
- The data base processing retrieves the Equipment Group from the data base, modifies the Equipment Group body, and modifies member relationships. The modification of the relationships is either an out action, in action, or modify action.

- The UPDEQP contract is required when switch ports are added to an intelligent controller. The addition of the switch port in inventory (See Section 5.2.1) does not automatically result in it being include in an Equipment Group. When switch ports are added, the UPDEQP contract picks up all new switch ports within the range defined on the contract and will create the factorization relationships to the appropriate equipment groups. The Hierarchy Counts within each Equipment Group data base record are updated to reflect the addition of switch ports.

5.8.2.1 Changes to an IC Hierarchy

When a new switching generic is loaded onto an IC, there may be impacts to the IC hierarchy. There are two areas of impact: adding a new hierarchy category and changes to an existing hierarchy.

To add a new hierarchy category means defining the logical levels of the IC hierarchy in the SWITCH system and, possibly, a new switch port id format (e.g. AAA-B-CC-D). UPDEXI can be used to change the hierarchy category and, if necessary, the external IDs of the switch ports. Note that if a change of generic involves a new switch port format, the "add a new hierarchy procedure" should be followed, even if the hierarchy category change occurs in an existing area of the IC.

To add a new hierarchy category (e.g. ISDN), the following steps should be followed:

1. Update equipment id parse rules and format tables, if a new switch port id format is introduced.
2. Manually update the Inventory Group Rules Table (and the Supplemental Group Rules Table, if necessary). Modify the existing table instance to define equipment groups and spread, load, measurement, allocation and ISDN levels for the new hierarchy category.
3. Update the Inventory Parse Rules Table.
4. Update the switch equipment group parse rules and formatting tables, if a new switch equipment group has been defined.
5. Manually update the Measurement Group Table. (The SWITCH system uses this table to convert traffic data from TIDE format measurement group id's to valid SWITCH system equipment group id's).
6. Add the new switch ports to the SWITCH system inventory using the UPDNTU inventory contract (if the switch ports are added before the cut to the new generic, availability date should be used to prevent their selection by the assignment process).
7. Run UPDEQP to create the switch equipment groups and to set the group indicators (load, spread, etc.) as defined in the Inventory Group Rules Table. Using the "add"

function of UPDEQP, the switch port range and hierarchy category must be entered by the user, if the new hierarchy category is in a new area of the IC.

8. Run UPDLF, with a definition of load factor 1 and possibly a minimum step size, to calculate load factors for the load groups in the new hierarchy category. Since no switch ports have yet been assigned, all load groups will be in load factor 1.
9. If needed, reallocate to assign the administrative constraints.

A new switching generic may require changes to the levels within an existing hierarchy category, including the following:

- redefine equipment groups - add, modify, or delete equipment groups or equipment group levels in a hierarchy category.
- change spread level(s) - add, change or delete a spread level, using existing equipment groups or creating new ones.
- change load level - move the load level to a new or existing equipment group. Only one load level should be defined. The load level should be at or below the measurement level.
- change measurement level - move the measurement level to a new or existing equipment group. Only one measurement level should be defined. The measurement level should be at or above the load level.
- change allocation level - move the allocation level to a new or existing equipment group. The allocation level should be at or below the load level.

To change an existing hierarchy category, these steps should be followed:

1. Manually update the Inventory Group Rules Table (and Supplemental Group Rules Table, if necessary) to reflect the inventoried levels of the IC hierarchy (the level(s) at which spread, load measurement and bulk allocation calculations are taken). It is recommended that the table for the new generic be the default table, and the old table made a generic specific table instance (using the ADMREF inventory contract or through TSO). [5]
2. Manually update the Inventory Parse Rules Table, if new equipment groups have been defined.
3. If a new level is being added to the logical model of the hierarchy, the Equipment Group Parse and Formatting Tables must be updated. (This should not apply to the 5ESS since parse and format tables for all possible levels of this IC will be provided in the default table).

5. This is true for all tables that require changes because of a switching generic change. For additional information, see the SWITCH System Reference Data Administration Guide.

4. Manually update the Measurement Group reference data table, if the measurement level is being changed. (The SWITCH system uses this table to convert traffic data from TIDE format measurement group id's to valid SWITCH system equipment group id's).

5. If the spread level is changing, reference data tables may need to be updated manually.

   — If the top spread level is changed in an IC in which reverse spreading in done, the Reverse Spread Table must be manually updated.

   — For any change in spread level, the Deny Spread Table and Spread Penalty Score Tables (if level is a scoring condition) should be reviewed.

6. Manually remove any load group exclusions using the UPDLBL inventory contract (UPDEQP option).

7. With the UPDEQP inventory contract, update the database to reflect the parameters in the Inventory Group Rules Table.

   The change option for UPDEQP allows the user to input only the IC and the hierarchy category. UPDEQP will find all switch ports in the IC in the requested hierarchy category. (This will insure that a hierarchy category cannot have a split configuration). To accommodate this feature, hierarchy category will be a FAST'able attribute on the switch port body. Hierarchy category will also be a display-only field on the UPD NTU work session.

   Load division is an optional entry when the load level is being moved. If entered, the name given will be the new name of the load division. If not entered, the old name will be reused. For a change in load level or measurement level, the user must enter the appropriate service type (ccs, pps), engineered capacity and normalization factor.

   UPDEQP will

   — turn off group indicators (load, spread, etc.) as appropriate

   — create new switch equipment groups, if necessary, and turn on group indicators

   — delete switch equipment groups from the hierarchy if the equipment level has been removed from the Inventory Group Rules Table (provided that no switch ports still belong to the switch equipment group)

   — modify factor_of edges, fsum edges and capacity edges to reflect the new model of the hierarchy

     UPDEQP will remove the capacity edge from equipment groups that are no longer at the load level, if the level is not a measurement level. If the equipment group is at a measurement level, the load related attributes will be made NULL (estimated usage, pending-in, pending-out, etc.).

     For equipment groups that are being made load groups, UPDEQP will create a capacity edge (if the edge is not already there for measurement). The capacity edge will be populated with the user inputs of service type (ccs, pps), engineered capacity and normalization factor.

— repoint pending change edges so that pending orders will update the correct spread summary and load summary counts when they complete.

8. If there has been a change to the spread level(s), run the Spread Summary Recalculation Tool to update the spread summary count table. This tool reinitializes summary tables for centrex, multiline hunt, and series completion hunt groups. Spread Summary Recalculation has been updated to handle multiple appearance directory number (MADN) groups.

9. If the load level has changed, use the UPDTHE inventory contract to invoke theoretical load recalculation.

   Theoretical load recalculation (with UPDTHE) is used to recalculate estimated, pending-in and pending-out usage. This contract may also be used when significant adjustments have been made to the CCS/PPS Adjustment Tables. In this situation, pending change edges will also be updated to reflect the new CCS/PPS values.

10. After recalculation of theoretical usage, copy the theoretical value to estimated with UPDTHE.

11. If the load level has moved and is not the same as the measurement level, measurement data must be loaded into the SWITCH system. The most recent measurement data may be reloaded (rerun the TIDE tape), or new measurement data retrieved from TIDE. If the measurement level has changed, new measurement data is required from TIDE. (Measurement data is automatically prorated down to the load group, if needed).

12. Use UPDLBL to update estimated usage with measured data if the load level has changed. This step is optional for change of measurement level.

13. If the load level has moved, use UPDLF to update the load factors. This is optional for change of measurement level, but must be done if estimated use has been updated.

14. Manually add back load group exclusions, if needed (with UPDLBL).

15. If the allocation level has changed, reallocate switch ports (optional).

   Spread, load, measurement and allocation levels may be moved independently or in any combination. A summary of the steps required for each level to be changed can be found in Table 2.

5.8.3 Remove Equipment Groups

The UPDEQP contract ("change" action) results in the addition, modification and removal of equipment groups as appropriate within the range of switch ports identified.

Equipment groups can also be removed using the delete action for the UPDEQP contract. This action will delete all equipment groups as appropriate within the range of switch ports identified. All of the switch ports identified must be spare (i.e., non-working, non-pending). If any switch ports encountered are not spare the process will error and roll back to the last commit point.

Once all equipment groups are removed, switch ports may then be deleted from the database.

5.8.4 Load Group Exclusions

One attribute that gets special treatment by UPDEQP is the load group exclusion attribute.

When an exclusion value is added to an equipment group(s), the UPDEQP contract processor must ensure that the equipment group is of type load. If an exclusion already exists on the load group, it will be replaced by the new one specified (treated as a change, see below). The input exclusion value must be added to all the fsumedgs for the load group. It must also be added to all the fsumedgs of equipment groups below the load group and to the appropriate fsum edges of the equipment groups above the load group. Additionally, switch ports in the load group(s) to which the exclusion is being added, must inherit the exclusion attribute.

When an exclusion is removed from one or more equipment groups of type load, it must be removed from the fsumedgs of the load group. It must also be removed from all the fsumedgs of equipment groups below the load group and the appropriate fsumedgs above the load group. Note that the exclusion value can only be removed from an equipment group above the load group if no other load group below it has that same exclusion value. Additionally, switch ports in the load group must have their inherited exclusion attribute removed.

When an exclusion value is changed on one or more equipment groups, processing will occur as if a removal and subsequent addition of an exclusion took place.

Load group exclusions also impact the UPDEQP contract processor as a result of additions, changes, and deletions to the IC hierarchy. These changes are made using the UPD EQGRP work session. Since the load group exclusion feature affects all equipment groups up and down the IC hierarchy, changes to the IC hierarchy affects the propagation of the exclusion value. For example if a load group has an exclusion and a new spread level is created below the load level, then the exclusion value would have to be added to the equipment groups at this new spread level.

Due to the complexity involved in propagating load group exclusions in the IC hierarchy when the hierarchy is changing (specifically when the load or spread levels change or deletions occur in the equipment group hierarchy), restrictions have been imposed on the methods and procedures the user must follow. All load group exclusions must be removed before invoking the UPD EQPGRP work session to change or delete equipment groups in the IC hierarchy. The load group exclusions must be manually re-input after changes to the hierarchy have been completed (if still applicable). If not removed, the UPDEQP contract processor will error when it encounters an exclusion on an equipment group that is being changed or deleted.

When equipment groups are being added, or switch ports are being added to existing equipment groups, the UPDEQP contract processor will ensure that load group exclusion values in existence are propagated appropriately to equipment groups above and below the load group. Additionally, in the switch port addition scenario, if the load group already exists and has an exclusion, the new switch ports must inherit the exclusion attribute.

5.9 Collections and Collection Groups

Collections and Collection Groups are built/updated/deleted via the UPDISD contract. Collections and Collection Groups are built after switch ports have been added to the database (via the UPDNTU contract) and equipment groups created (via the UPDEQP contract). Collections are built, updated or deleted based on DPIDB, PSU shelf and ISLU or IDCU input from the UPD ISDN work session[6]. Timeslot counts in a particular collection can be modified from the UPD COLL work session. Both result in invoking a UPDISD contract.

When invoked as a result of the UPD ISDN work session, the functions applicable to the UPDISD contract are:

- Add
- Remove

When invoked as a result of the UPD COLL work session, the function applicable to the UPDISD contract is:

- Change

5.9.1 ISLU Collections and Collection Groups

This section describes the processing which occurs when adding/deleting DPIDBs between an ISLU and PSU shelf or when modifying timeslot counts in an ISLU collection or data in an ISLU collection group.

6. IDCU input is allowed only if the client-specific feature, tr303 dle isdn, is enabled.

5.9.1.1 Add ISLU Collections and Collection Groups

Collections and Collection Groups are built or updated based on user input of DPIDB, ISLU and shelf information (both as a result of the "add" function). Individual collections may also be built as the result of the addition of a previously unequipped LGC. Adding a DPIDB can have one of two results. If a DPIDB is added for the first time between an ISLU and a shelf, sixteen collections (assuming the ISLU is fully equipped with 16 LGCs), and one collection group will automatically be created. Each LGC in the ISLU half to which the DPIDB allocates timeslots (as determined by the INV DPIDB Map Table - Table 5-7) will be allocated four timeslots. The number of timeslots reserved for ODB in the DPIDB will be stored in the collection group. If this is not the first DPIDB to be added between the ISLU and the shelf, then no new collections or a collection group will be created. In this case, the collection allocated timeslot counts for the collections to which the DPIDB contributes timeslots will be increased by four timeslots per DPIDB, and the number of timeslots reserved for ODB in the collection group will be increased by the number of ODB reserved timeslots in the DPIDBs being added.

Input to the contract for adding or updating collections includes the ic, icid, switch module, and islu. The Inventory DPIDB Map Table (see Table 5-7), maps numeric and alpha DPIDB ids to their appropriate service group and set of LGCs. If collections already exist (due to other DPIDBs which have already been added between the ISLU and shelf), then the collection timeslots engineered attribute must be increased by four (see Section 4.19 for attributes maintained with collections and collection groups). The maximum B and D timeslots counts must also be increased by four. The DPIDB array appearing in the collection group must be updated with the numeric DPIDB id and the number of timeslots reserved for ODB.

If collections do not exist, then UPDISD must build collections for all LGCs in that ISLU which exist in the database. The collection group must also be created. The collection indicator in both the collection group and collection must be set to null. The timeslots engineered as well as the maximum B and D timeslot counts must be set to four. All other timeslot counts must be initialized to null and the DPIDB array must be updated with the numeric id of the DPIDB being added. The collection hyperedge must be created between the collection, shelf and LGC nodes. The collection group hyperedge must be built between the ISLU and shelf nodes, and the collection to collection group edges must be created.

Whenever an LGC or range of LGCs are specified as being added, the UPDISD contract processor must determine the service group (0 or 1) that the LGC belongs to from the inventory DPIDB map table. Then using the inventory ranges table, a search must be made for all collections that have been previously built between this service group and all shelves. [7]Once a collection has been found between an existing LGC in this service group (and shelf), it can be used as a template to build the new collection to that shelf. A hyperedge must be created between the collection, LGC specified, and shelf being processed. The timeslots engineered count must be copied from the existing collection to the new collection. The maximum B and D timeslot counts must be set to ts_engineered (and not copied). All other timeslot counts must be initialized to null. The DPIDB array from the existing collection must be copied. Finally, the inventory ranges table must be updated with the new collection id. This process must be repeated for each shelf that has had timeslots allocated as a result of prior DPIDB input.

5.9.1.2 Modify ISLU Collection and Collection Group Data

Certain collection and collection group data can be manually updated by the user. User input must identify the ic, icid, switch module, islu, and shelf involved. If an update to data associated to a single collection is desired LGC may also be entered.

Updates to collection data are only allowed to remarks, order history info, individual D timeslot alloc counts on a PH basis, the timeslots restricted, the maximum B and D timeslot counts. Note that B timeslot counts, timeslots engineered count and DPIDB ids are not updatable by the user when the "change" function is utilized in this contract. UPDISD will calculate the timeslots allocated attribute and the PH summary counts for B and D timeslot usage. UPDISD must also ensure that the sum of the allocated and restricted timeslots do not exceed the timeslots engineered counts.

Collection group data updatable via the UPDISD contract includes: ODB timeslots reserved per DPIDB, engineered CCS for ODB, estimated ODB CCS load, remarks, and order history information.

5.9.1.3 Remove ISLU Collections and Collection Groups

If a DPIDB is specified as being deleted (no shelf id is required), the UPDISD contract processor must first determine the involved collections and collection group. The inventory DPIDB map table is used to find the applicable range of LGCs. The timeslots engineered counts of these collections must be decremented by four (as long as there are at least four un-allocated and un-restricted timeslots). There will be no update to the maximum D and B timeslot counts when deleting a DPIDB (this must be done manually if necessary). The DPIDB array maintained in the collection group must be updated to reflect the removal of the DPIDB. If ODB reserved timeslots existed in the DPIDB removed, the number of timeslots reserved for ODB and the Engineered CCS for ODB must be adjusted to reflect the removal of these timeslot reservations. The value to decrement the Engineered CCS for ODB should be obtained by multiplying the number of timeslots removed by the value maintained in the WC parms IC level table as odb-ccs-dpidb-ts (see table 6-8a). If

7. When DPIDBs are added between an ISLU and shelf and collections do not already exist, collections are created for all LGCs that exist in the database. The collection group is built whenever any collections are created. There may have been many DPIDBs added, to the same or different shelves, when an ISLU was not fully equipped. Thus when LGCs are added, collections must be built between these LGCs and all the shelves that have already had timeslots allocated to them.

the subtraction of CCS from the Engineered CCS for ODB results in a negative value, the value should be set to 0. When the last DPIDB between an ISLU and PSU shelf is removed, then the collections and the collection group must be deleted.

Whenever an LGC or range of LGCs are specified to be deleted, the UPDISD contract processor must determine all collections to which that LGC belongs. For each collection to be deleted, a check must first be made for timeslots currently allocated from the collection. If there are no timeslots currently allocated, the collection can be deleted, along with its hyperedge. The inventory ranges table must be updated to reflect each deletion.

5.9.2 IDCU Collections and Collection Groups

This section describes the processing which occurs when adding/deleting DPIDBs between an IDCU and PSU shelf or when modifying timeslot counts in an IDCU collection or data in an IDCU collection group.[8]

5.9.2.1 Add IDCU Collections and Collection Groups

Collections and Collection Groups are built or updated based on user input of DPIDB, IDCU and PSU shelf information (both as a result of the "add" function). Individual collections may also be built as the result of the addition of a carrier group (BW) to the IDCU. Adding a DPIDB can have one of two results. If a DPIDB is added for the first time between an IDCU and a PSU shelf, one collection group will automatically be created as well as one collection for each BW which terminates on the IDCU (with a management type of dynamic). The collection group will be engineered with 32 timeslots to the PSU shelf specified. The number of timeslots reserved for ODB in the DPIDB will be stored in the collection group. If this is not the first DPIDB to be added between the IDCU and the PSU shelf, then no new collections or a collection group will be created. In this case, the collection group will be updated with additional timeslots for each subsequent DPIDB added and the number of timeslots reserved for ODB in the collection group will be increased by the number of ODB reserved timeslots in the DPIDBs being added.

Input to the contract for adding a DPIDB includes the ic, icid, switch module, idcu, DPIDB, and shelf. If this is the first DPIDB being added between the IDCU and the PSU shelf, then UPDISD must create the collection group with a collection indicator of "idcu" (see Section 4.19 for attributes maintained for collections and collection groups). The engineered timeslot count is set to 32. The number of ODB reserved timeslots is maintained and the ODB capacity computed. The value to increment the ODB capacity should be obtained by multiplying the number of timeslots reserved by the value maintained in the WC parms IC level table as odb-ccs-dpidb-ts (see table 6-8a). The maximum number of D timeslots is set to the number of engineered timeslots minus the odb reserved timeslots. The maximum

8. This processing will only be allowed if the client-specific feature, tr303 dle isdn, is enabled.

number of B timeslots is set to zero. All other timeslot counts must be initialized to null and the DPIDB array must be updated with the id of the DPIDB being added. Additionally, the UPDISD contract must create collections for each BW which terminates on the IDCU (for dynamic BWs only). The collection indicator must be set to "idcu". The collection hyperedge must be created between the collection, shelf and BW nodes. The collection group hyperedge must be built between the IDCU and shelf nodes, and the collection to collection group edges must be created.

If this is an addition of a subsequent DPIDB (i.e., a collection group already exists between the IDCU and PSU shelf specified), then the collection group engineered timeslots attribute must be increased by 32. The maximum D timeslots count must also be increased by 32 minus any timeslots reserved for ODB for this DPIDB. The DPIDB array appearing in the collection group must be updated with the DPIDB id and the number of timeslots reserved for ODB.

Whenever a carrier group (BW) is specified as being added, the UPDISD contract processor must build new collection(s) between the BW and each PSU shelf to which the IDCU (which terminates the BW specified) has DPIDBs engineered. A hyperedge must be created between the collection, BW specified, and shelf being processed. All timeslot counts must be initialized to null.

5.9.2.2 Modify IDCU Collection and Collection Group Data

Certain collection and collection group data can be manually updated by the user. User input must identify the ic, icid, switch module, idcu, and shelf involved. If an update to data associated to a single collection is desired, carrier group must also be entered.

Updates to collection data are only allowed to individual D timeslot alloc counts on a PH basis. Note that B timeslot counts are not updatable by the user when the "change" function is utilized in this contract.

Collection group data updatable via the UPDISD contract includes: ODB timeslots reserved per DPIDB, engineered CCS for ODB, estimated ODB CCS load, timeslots restricted, maximum allowed timeslots for D and PPB, remarks, and order history information. The WSIISD contract processor will calculate the D&PPB engineered timeslot counts (engineered timeslots minus ODB reserved timeslots) and the assignable D and B timeslot counts.

5.9.2.3 Remove IDCU Collections and Collection Groups

If a DPIDB is specified as being deleted (no shelf id is required), the UPDISD contract processor must first determine the involved collections and collection group. The timeslots engineered counts of the collection group must be decremented by 32. The DPIDB array maintained in the collection group must be updated to reflect the removal of the DPIDB. If

ODB reserved timeslots existed in the DPIDB removed, the number of timeslots reserved for ODB and the Engineered CCS for ODB must be adjusted to reflect the removal of these timeslot reservations. The value to decrement the Engineered CCS for ODB should be obtained by multiplying the number of timeslots removed by the value maintained in the WC parms IC level table as odb-ccs-dpidb-ts (see table 6-8a). If the subtraction of CCS from the Engineered CCS for ODB results in a negative value, the value should be set to 0. The maximum D timeslot count must be decremented by 32 minus the number of ODB reserved timeslots for the DPIDB being deleted. When the last DPIDB between an IDCU and PSU shelf is removed, then the collections and the collection group must be deleted as long as no timeslots are still allocated to that shelf.

Whenever a carrier group is specified to be deleted, the UPDISD contract processor must determine all collections to which that BW belongs. For each collection to be deleted, a check must first be made for timeslots currently allocated from the collection. If there are no timeslots currently allocated, the collection can be deleted, along with its hyperedge.

5.10 Frames

There will be a contract to update frames (UPDFRM). The functions this contract can perform are:

- Add
- Modify
- Remove

The request portion of the contract is to update data about a frame. The request may be to add or remove a frame or to modify an existing frame.

The response portion of the contract is two responses, one an acknowledgement that the update was scheduled for deferred processing, the other the deferred update itself.

There is no range processing provided for frames.

5.10.1 Add Frames

The overall process of adding a frame is table driven to a great extent. Reference data is called to determine the attributes appropriate for a frame. The contract UPDFRM will allow frames, their attributes, and relationships to be added to the SWITCH system.

To add a frame the SWITCH system, the requirements are:

- The function of the contract is add.

- To identify the frame uniquely in the database the external ID is required. The attributes that make up the external ID are the equipment group type (frm), frame name (e.g. fxx), or an 11 character CLLI code.
- Using the external ID, the database is checked to ensure that the frame to be added does not currently exist in the SWITCH system. If the frame does exist, the SWITCH system returns an error to the user stating that the frame cannot be added because it currently exists.
- If the frame to be added is determined to be new, the input data must be validated against rules for addition of frames. It does not make sense to allow a frame to be built in the database using the external ID attributes only. Therefore, all attributes for frames must be provided when adding frames to the database.
- Reference data is used to edit and validate the attribute tags and their respective input values. The attribute tag (e.g., first_mod, etc.) is checked against reference data to ensure that it is a legal tag. If the tag is legal, it is stored along with the input value the tag is to be given. All attribute tags will be checked in this manner.

  Once all the tags are validated, the values for each tag are validated. Reference data is once again checked to ensure that the value associated with the tag is legal. If all the attributes for frames are not provided on input the add procedure fails.
- Once all the validation is completed successfully, the frame is added to the database.

Even though the frame has now been added to the database, there is one more step that must be completed. Any reference data that includes frames as part of the data must be updated to include the newly added frame.

5.10.2 Modify Frames

The UPDFRM contract permits the user to modify frames that already exist in the database. Modifying frames means that the user is replacing an existing data value with a new value. The requirements to modify an existing frame are:

- The function of the contract is change.
- Using the external ID of the frame, retrieve the frame from the database.
- For frames the only action code for a change function is modify.
  - The modify action code is used when an attribute value that is currently existing against a tag is to be removed and replaced with another value. Reference data is again be used to retrieve information about the appropriate attribute values. Edits and validations are performed against the new attribute values.

5.10.3 Remove Frames

The UPDFRM contract permits the user to remove frame records from the inventory. The function of the contract is remove. The inventory record is retrieved using its external ID, checked to ensure no network units (working, pending, or spare) are terminated on the frame, and removed. The frame cannot be removed if there are any network units that are terminated on it.

5.11 TN Lists

An inventoried telephone number can be put on a TN list. TN lists are used in the SWITCH system to provide the capability to preassign telephone numbers through other up-front systems (e.g., PREMIS), or manually specify telephone numbers by terminal input through the ULBB. Telephone numbers get preassigned in up-front systems by TN lists that are sent to these systems by the SWITCH system. Telephone numbers may also get preassigned by a list which the NAC uses to distribute telephone numbers to the business office or marketing. These preassigned telephone numbers are on the provisioning request when the SWITCH system receives the request.

The SWITCH system generates lists of telephone numbers for eventual preassignment by another system (e.g., PREMIS). Contracts initiated from the ULBB provide the functionality of:

- creating a TN list
- changing list attributes
- removing telephone numbers from the list
- reviewing the list
- removing the list.

UPDTNL is the inventory contract which creates/changes/deletes TN lists in the SWITCH system. This contract may be initiated from the ULBB or from the WMC (Work Manager Consolidation) System. If the client specific TN Suppression feature is activated for the wire center, the UPDTNL contract is not allowed. An error message is produced to indicate that this contract cannot be processed when the TN Suppression feature is active.

When a telephone number is put on a list, the telephone number becomes unavailable for automatic selection. This telephone number is eventually preassigned on a provisioning request. If the provisioning request is canceled, the telephone number is made available for selection. It may subsequently be selected for another list or provisioning request. Since the cancellation may not be transmitted back to marketing or the business office, telephone numbers on a canceled provisioning request do not get put back on the list.

5.11.1 PREMIS Lists

The SWITCH system allows for the external use of contracts. The following contract originator identifiers may be used:

- WMC1 - to support a direct PREMIS interface
- NEGS - to support other service negotiation type systems

From WMC, the SWITCH system DLBB can be accessed using contracts to:

1. build a TN list, using UPDTNL
2. inquire about a list, using WSITNL
3. remove a TN list, using UPDTNL

The above processes, and other additional list processes (e.g., modifying a list), can be accomplished through the ULBB.

5.11.2 Other Lists

Other TN lists can be created for use in single-line, hunting, Centrex, or for emergency assignments. The NAC uses these lists. The UPDTNL contract initiates these lists from the ULBB. Since the ULBB can also initiate lists for PREMIS, the following required and optional input parameters are a universal set of all parameters with indications of which parameters are for which kind of list. No indication implies the parameter is used for all lists. The following input is:

- Required
  - — wire center
  - — Centrex group ID
    Required when creating a TN list for a Centrex group.
  - — Quantity of telephone numbers to be selected for the list. Valid values are 1 to 999.
- Optional
  - — One or several NXXs
    A maximum of ten NXXs may be entered. Telephone numbers selected may be from one, some, or all of the specified NXXs.

    When only one intelligent controller exists in the wire center, no NXX needs to be input. TNs may be selected from any of the NXX(s) in the wire center.

    Input NXX(s) is not necessary when creating a telephone number list for a Centrex group.

— Telephone Number Type (1 alphabetic)
Defaults to X if no telephone number type is entered.

If a request is for Centrex, the required telephone number type is Q.

— Telephone Number Range
If the NXX is split among intelligent controllers within a wire center, either the telephone number range or intelligent controller type and ID must be input.

— intelligent controller type (4 alphanumerics) and ID (1 alphanumerics)
These parameters are required if the request is for a Centrex group, since the NXX is optional when building a TN list for Centrex.
These parameters are required if the input NXX(s) can be administered by more than one intelligent controller within the wire center.

— minimum number of consecutive telephone numbers to skip within a hundreds block of telephone numbers (1 numeric)
Valid values are 2 to 9.

— hunt block size (1 numeric)
Valid values are 2 to 5.
Hunt block size is the number of consecutive spare telephone numbers desired for a hunting block of telephone numbers. If hunt block size is input, the skip option is ignored. Hunt block size is optional for PREMIS lists.

— minimum number of consecutive telephone numbers desired (1 - 2 numerics)
Valid values are 2 to 99.

— department requesting the list (1 - 3 alphanumerics)

— initials of the person assigning the list (1 - 3 alphanumerics)

— rate zone (1 - 3 alphanumerics)
Rate zone is a defined geographic division of a geographic area used to establish flat rate service.

- The following required input parameters for PREMIS lists are stored with the TN list for informational purposes only:

— PREMIS wire center (1 - 8 alphanumerics)

— Terminating Traffic Area (TTA) (1 - 3 alphanumerics)
The rate zone maps to the PREMIS TTA. Only telephone numbers from the same rate zone are chosen for a specific list. PREMIS uses the PREMIS wire center and TTA when retrieving telephone numbers from lists.

— PREMIS number list ID (1 - 12 alphanumerics)

Processing searches the SWITCH system database for the telephone numbers with the input attributes.

5.11.3 Validations

When the request to build a TN list is initiated from either WMC or the ULBB, certain validations are done before the list is built in the SWITCH system. Validations on the input data verify that all required entries are complete and of the correct type. For example, a TN list initiated from the WMC cannot request telephone number type Q. If a request includes a Centrex group ID, the telephone number type defaults to Q. This restriction does not apply to the ULBB.

Prior to building a list, additional validations on the input parameters, are done to ensure that all telephone numbers on the list are from the same rate zone and intelligent controller. With intra-wire center portability, an input NXX can belong to multiple intelligent controllers. When an NXX is associated with multiple intelligent controllers, validations require that the user input the intelligent controller they wish to have stored with the list. When input NXXs potentially belong to different intelligent controllers, validation ensures that the input NXXs have at least one common intelligent controller. The common intelligent controller(s) are stored with the list.

If an input NXX is split across more than one intelligent controller (e.g., half of the telephone numbers in the NXX have control edges to one intelligent controller and the other half of the telephone numbers in the NXX have control edges to another intelligent controller), the contract processor returns a message indicating that for the specific NXX entered, either an intelligent controller or a telephone number range must be input.

These validations use the reference data table, ic nxx (see Table 6-11). This table is also used to retrieve the intelligent controller type and ID to store in the TN list. When input NXXs share different intelligent controllers, the type and ID of the common intelligent controllers(s) are stored in the TN list. The same reference data table is used to retrieve the rate zone which is also stored in the TN list.

When any of these validations fail, an informational message is returned by the contract processor indicating that the input must be changed before the TN list can be built.

5.11.4 List Processing

UPDTNL passes the validated input (e.g., NXX(s), telephone number type - when the request is for Centrex, number of telephone numbers requested) to the telephone number selection algorithms. Given the NXX(s) or ranges and the number of telephone numbers requested, the selection algorithms choose the hundreds group from which to choose telephone numbers. This hundreds group is the hundreds group with the least number of available telephone numbers that contain at least one telephone number of the desired telephone number type.

Selectable telephone numbers are those that are not part of a service, have no assignment limitations, are not already members of a group and have their selectable attributes set to Y.

When the skip and hunt block size options are missing from input, telephone number selection chooses telephone numbers from the hundreds group in the following order:

- between two telephone numbers that are each part of a service.
- at the end/beginning of a series of assignable telephone numbers.
- within a series of assignable telephone numbers.

Processing chooses telephone numbers differently when the skip option is input. The skip option indicates the minimum number of consecutive telephone numbers to skip within a hundreds block of telephone numbers. When the skip option equals two, processing only chooses telephone numbers of the desired type from the hundreds group that are between two telephone numbers that are each part of a service. When the skip option equals three, processing chooses from the hundreds group:

- telephone numbers of the desired type that are either between two telephone numbers that are each part of a service
- or exactly two consecutive assignable telephone numbers that are between two telephone numbers that are each part of a service, where at least one is the desired type.

This process continues as the skip option increases. The highest possible value for the skip option is 9.

When the hunt block size option is input, processing searches the hundreds group for that number of consecutive assignable telephone numbers of the desired type that are between two telephone numbers that are each part of a service.

When not all of the telephone numbers requested can be found in the hundreds group, processing chooses the next hundreds group. This is the hundreds group which has the next least number of available telephone numbers. Processing continues to choose hundreds groups to satisfy the number of telephone numbers requested for the list. When not enough telephone numbers are found in all the hundreds groups, processing chooses another thousandths group. The process of choosing hundreds groups continues in this thousandths group and may continue to additional thousandths groups. If necessary, the process continues through the next NXX(s), until as many telephone numbers as possible are found to satisfy the number of telephone numbers requested for the list.

5.11.5 Modifying A TN List

UPDTNL allows modification of a telephone number list. This modification includes changing attributes within the TNL group and removing telephone numbers from the list.

5.11.6 Sequence Number

When a telephone number list is created in the SWITCH system, processing associates a sequence number (1-999) with the list. The sequence number is a code that is unique by wire center. In the SWITCH system, the sequence number is a mapping of the internal ID of the TNL group to a numeric. This sequence number is used for administrative and tracking purposes. This sequence number is displayed on inquiries and reports for TN lists. It is the way by which the TN list can be retrieved, once the list has been built.

5.12 Assemblies

Assemblies (i.e., PASM, MASM, TASM, PSSV) can be created/modified/deleted in the SWITCH system from the ULBB. The ULBB validates that only assemblies with an assembly category of PASM can contain channels, CRVs, and CC ports. Assemblies do not have external IDs. UPDASM is the inventory contract that does this. Inventory contracts do not generate frame output, therefore, no FOMS output exists for UPDASM. UPDCKT is another inventory contract that can process on assemblies.

5.12.1 Creation

UPDASM creates assemblies from the ULBB. When creating an assembly, the user specifies wire center, function code of add, and user name. When creating IDLCs, the user may input a range of network unit IDs. The user may also specify all assembly attributes needed for assembly processing (i.e., retention, OSP disconnect, specific functionality, nu_selectable scale, and assembly category). However, the ULBB work session may derive these attributes from user name, which was input.

Inventory category is a derived attribute of the assembly which determines the allowable and required relationships of input attribute to database mappings. Inventory category is derived from the specific functionality and assembly category attributes.

UPDASM builds the assembly body of type 'asm' and each network unit in the assembly has a component edge to the assembly. Upon creation, processing sets the current system date as the aging date in the assembly body.

When building a temporary assembly (TASM), UPDASM verifies that full connectivity has been specified (all physical network units are connected) for the assembly, if the specific functionality of the assembly is DIP. Since a telephone number is not considered a physical network unit, a telephone number cannot be a component of a DIP. UPDASM ensures that a TASM, that is not a DIP, does not have a telephone number.

When creating a TASM, UPDASM matches the value of the OSP disconnect attribute in the assembly with the value of the OSP disconnect attribute in the cable pair when there is only one cable pair in the assembly. When the assembly contains more than one cable pair, no validations are done to ensure all values of the OSP disconnect attributes among the cable pairs are the same. After adding the last cable pair into the TASM, the value of the OSP disconnect attribute of the first cable pair processing finds is put in the value of the OSP disconnect attribute in the assembly body.

UPDASM sets the origin point on the composition edge between the assembly and the cable pair when the assembly contains a cable pair and at least one of the following: CC port, CRV, or channel. UPDASM sets the adjacent point on the composition edge between the assembly and the CC port when the assembly contains a CC port and at least one channel.

UPDASM may build NEP (Network Element Provisioning) edges (see Section 6) for network units controlled by a CC which has its TSI indicator set to y. UPDASM uses the same rules as the assignment engine when building NEP edges.

5.12.2 Modification/Deletion

UPDASM modifies/deletes assemblies from the ULBB. The work session initialization process retrieves the network units that are part of the assembly. The required input for the UPDASM is:

- wire center
- function code, whether change/delete
- network unit ID, or range of network unit IDs (range is used for IDLCs)
- user name - when a network unit is a component of more than one assembly, user name uniquely identifies the assembly

The response to the initialization from the DLBB is used to pre-populate the ULBB screen with information about the network units. This response, with the user changes incorporated, becomes input to the UPDASM inventory contract.

The user specifies additional individual network units, any remarks they want associated with the assembly and any remarks they want associated with each network unit of the assembly. If the assembly is to have connectivity, the user specifies all connectivity for an assembly. UPDASM does no validation on this connectivity, except check that the physical appearances used are valid ones. However, if all of the network units being put into the assembly are also in a circuit or other assembly (the user input must match that of the circuit/assembly), the assembly made by UPDASM reflects the connectivity that is currently in the circuit/assembly. UPDASM validates that all of the network units being put into an assembly are either spare or contained in the same circuit/assembly.

When modifying an assembly, UPDASM can replace network units in the assembly either by network unit type and ID or range of network unit IDs. UPDASM can change attributes in the assembly body (e.g., remarks) and change remarks of any network units that are components of the assembly. UPDASM deletes assemblies by network unit type and ID or range of network unit IDs.

When removing one cable pair from a TASM and assuming the TASM has at least one remaining cable pair, the value of the OSP disconnect attribute of the first remaining cable pair processing finds is put into the value of the OSP disconnect attribute in the assembly.

5.12.3 Range Processing

Network units can be assembled in ranges. When a range of network unit IDs is input, range processing adds assemblies as long as each component to be processed can be incremented through the range. Counts of components in the range is done prior to processing so that the number of network units of each type in the assembly is the same. Processing skips any non-existent components. Network unit IDs are incremented for all components when any one network unit is non-existent.

Change/delete assembly range processing may be done as long as one network unit ID within the assembly can be incremented. Any component that is non-existent, or not a component of an assembly, is skipped. Network unit IDs are bumped when there is no relationship to an assembly.

5.13 Circuit/Service Assemblies

There is a contract to update circuit/service assemblies (UPDCKT). The following are variations of processes the contract can perform:

- Add
- Modify
- Remove

The actual contract format and descriptions of the contract sections and aggregates are in the SWITCH system Contracts Directory, BR 752-106-040.

The request portion of the contract is to update data about a circuit/service assembly. The request is to add or remove a circuit/service assembly or to modify data about an existing circuit/service assembly (i.e., components of the circuit/service or attributes about the circuit/service).

The response portion of the contract is two responses, one an acknowledgement that the update was scheduled for deferred processing, the other the deferred update itself.

This contract is used to rectify what appears in the real world to what should appear in the SWITCH system database. This contract is not intended to be used for manual assignment or flow through assignment of new orders.

5.13.1 Add Circuit/Service Assemblies

The overall process of adding a circuit/service is table driven to a great extent. The update circuit contract allows a circuit/service, its attributes, and relationships to be added to the SWITCH system. The attributes that can be added for circuits/services are in Section 4.26 and 4.27.

To add a circuit/service into the SWITCH system, the requirements are:

- The function of the contract (UPDCKT) is add.
- The minimum required attributes to add a circuit/service are those that will uniquely identify the circuit/service to the data base (i.e., inventory completeness). This is its external id. The attributes that make up the external id are discussed in Appendix 6A.
- Using the external id, the database is checked to ensure that the circuit/service to be added does not currently exist in the SWITCH system in any time view (i.e., pending states). If the circuit/service does exist, an error is returned stating that the circuit/service cannot be added due to current existence.
- If the circuit/service to be added is determined to be new, the input data must be validated against rules for the addition of circuits/services. The components associated with this circuit/service must exist. If the components do not exist the circuit/service cannot be added.
- Reference data is used to edit and validate the attribute tags and their respective input values. The attribute tags (e.g., CEC attributes, etc.) are checked against the dictionary to ensure that they are legal tags. If a tag is legal it is stored along with the input value the tag is to be given. All attribute tags are checked in this manner. If any previously defined attribute tag are found to have illegal values, the add procedure fails. Once all the input tags are validated, any derived attribute tags and values can be populated using data in the dictionary.

  Once all the input attribute tags are validated, the values for each respective tag are validated. Reference data is checked for each value to ensure that the value is legal. If the attribute tag did not have a value on input, the dictionary is checked to see if there is a value. If there is a value the attribute tag is given that default. If the attribute tag has no input value and there is no default value, the dictionary is checked to see if this attribute is required to make the unit being added inventory complete (i.e., external id attributes). If all the attributes required for inventory completeness are not provided on input, or cannot be derived, or do not have valid default values, the circuit/service cannot be added.
- Once all input tags and values are validated, any derived values can be computed. These values must also pass validation checks as above.

  Connectivity attributes may be specified by the user on input or assignment processing can be called to determine the connectivity as described in Section 6.

- Once the data passes edit and validation, the circuit can be added to the SWITCH system database.
- Any relationships must be updated upon the addition of the circuit/service. For example, the composition relationship between a circuit and its components must be updated to reflect the addition of the circuit/service. Some of these relationships can be input by the user (e.g, connectivity), others are derived by the SWITCH system.

  For telephone numbers - If the client specific TN Suppression feature is activated for the wire center, the UPDCKT contract ignores the following telephone number attributes if they appear on input:

  — Assignment Limitations

  — Intercept Value

  For LRNs - If the client specific feature: IC/RU and LRN Selection is on, an LRN will be selected for an add or a change of a service/circuit when an *INVU* or *RTNN* is input but no *LRN* is input.
- Once all the above steps are completed the circuit/service is considered to be added in the database.

5.13.2 Modify Circuit/Service Assemblies

The UPDCKT contract permits the user to modify circuits/services which have already been created in the SWITCH system database. This modifying action is provided only to correct the database to reflect what is currently existing in the real world. Modifying circuit/service data encompasses the following types of activities:

- Adding data values for attributes that did not have values prior to the update. These attributes can be:
  1. Attributes that describe the circuit/service itself (e.g., remarks, CEC data, etc.,)
  2. Relational attributes that the circuit/service can have (e.g., external IDs, connectivity)
  3. Attributes that identify other inventory items to which this particular circuit/service has relationships (e.g., composition relationships)
- Replacing an existing data value of an attribute.
- Removing data values for existing attributes.

Not all data attributes that can be associated with a circuit/service can be changed by inventory update requests. Some attributes and relationships are established and maintained by the service provisioning and work order processes.

The common requirements to modify an existing circuit/service are:

- The function of the contract is change.
- Retrieve the circuit's/service's external id information from the contract. With the external id, retrieve the circuit/service from the data base.
- Determine action code of change; in, out, or modify.
  - — The in action code is used to input attribute tags and values for the circuit/service. Using the in action code, populate the appropriate GRIT structures for each input aggregate. Like the add circuit contract, reference data is used to retrieve information about appropriate attributes. Reference data is used to edit and validate the attribute tags and values, as it was done for add switch port.

    The in action code is also used when the component that is associated with the circuit/service in the database is not the component associated with the circuit/ service in the real world. The correct component is in'ed to replace the incorrect component, which is out'ed.
  - — The out action code is used to remove relationships. Using input contracts, the attributes required to uniquely identify the relationship to be removed are defined. Any relationships are checked to ensure that the removal of an attribute will not leave the data base in an incorrect state. An incorrect state could be the existence of a component edge to a nonexistent assembly.
  - — An action code of modify is used when an attribute value that is currently existing against a tag is to be removed and replaced with another value. Reference data is again used to retrieve information about the appropriate attribute values. Edits and validations are performed against the new attribute values.
- If an attribute to be processed (in, out, or modify) has multiple occurrences, the particular occurrence to be processed must be identified by the user.
- The data base processing retrieves the circuit/service from the data base, modify the circuit/service body, and modify the circuit/service edges. The modification of the edges is either an out action, in action, or modify action.

  For telephone numbers - If the client specific TN Suppression feature is activated for the wire center, the UPDCKT contract ignores the following telephone number attributes if they appear on input:

  — Assignment Limitations

  — Intercept Value

5.13.3 Remove Circuit/Service Assemblies

The update circuit assembly contract permits the user to remove circuits/services, their attributes, and their relationships from the SWITCH system. Any circuits/services associated with pending orders cannot be removed. Common requirements to remove circuits/services are:

- The function of the contract is remove.
- Before any circuit/service can be removed, it must be checked to verify that there are no pending views associated with it.
- Any relational attributes that are affected by the circuit's/service's removal must be updated. For example, the composition relationship between the circuit/service and a switch port must be updated to reflect the removal of the circuit/service.

  For telephone numbers - If the client specific TN Suppression feature is activated for the wire center, the UPDCKT contract ignores the following telephone number attributes if they appear on input:

  — Assignment Limitations

  — Intercept Value

5.14 Reservations

UPDRSV is the SWITCH system inventory contract which creates/modifies/deletes reservations within the SWITCH system database. UPDRSV is initiated from the ULBB. UPDRSV does not create connectivity relationships for reservations. Therefore, no output is sent to FOMS when reservations are created/modified/deleted.

Prior to initiating an UPDRSV contract, either the WSIVAL or WSIRSV contract validates/retrieves information about network units or an existing reservation from the SWITCH system database. If the client specific TN Suppression feature is activated for the wire center, the UPDRSV contract is not allowed. An error message is produced to indicate that this contract cannot be processed when the TN Suppression feature is activated.

5.14.1 Adding Reservations

Any network unit (excluding cable pairs and tie pairs) can be made a component of the reservation. No validation is done on the due date, order ID or any of the remarks. These are stored in the respective nodes of the database as informational data.

UPDRSV creates an assembly node, of type reservation, in the SWITCH system database. UPDRSV builds component relationships from the network units within the reservation to this node. A component relationship is built for each network unit in the reservation. This includes telephone numbers and data terminal numbers if they are part of the reservation. UPDRSV creates an external ID edge for the reservation, which is the reservation ID. The reservation ID is the primary service ID which will appear on the claiming provisioning request.

For multi-line reservations, UPDRSV builds the reservation group node. This node is used to associate circuit reservations together for a particular provisioning request. When a reservation is created, an associated reservation group is created. Other reservations can be linked to the reservation group by giving the external ID of the reservation group when they are created. The external ID of a reservation group is claiming service order ID but the external ID is not required.

UPDRSV will reserve network units regardless of their availability. If a network unit is part of a circuit at the time a reservation is built, it is presumed a change/disconnect request will make the network unit available in time for the claiming provisioning request.

5.14.2 Modifying Reservations

Reservations can be changed throughout the life of the reservation. When modifying a reservation, network units may be added, replaced, or removed from the reservation. When modifying a reservation group, the user may modify the anticipated order ID, anticipated due date, reservation remarks and reservation group remarks. The user may modify the reservation ID, only if the reservation has not been claimed by a provisioning request.

If the reservation has been claimed by a provisioning request, the user is still allowed to modify the reservation (i.e., change network units/remarks). Notification is produced, by the ULBB, which cautions the user that the changes they are requesting will take effect immediately. This gives the user the opportunity to cancel the request for a change to the reservation.

5.14.3 Removing Reservations

The capability to delete a reservation is necessary in case a reservation exists which has not been claimed. When deleting a reservation, UPDRSV removes each reservation node(s), all component relationships from the network units to the reservation, and the external ID edge of the reservation. When removing the last or all reservations associated to the reservation group, UPDRSV removes the reservation group node, the associated edge(s) from each circuit reservation to the reservation group, and the external ID of the reservation group when it exists. In addition, reservations which have been claimed, may be deleted. This deletion causes the assembly node of type reservation and the component edges to each of the network units to be deleted. The network units that were in the reservation remain components of the pending provisioning request by which they were claimed.

5.15 Access Identifier/Assignment Limitation Generation

AID Generation is a process used by SWITCH to generate assignment limitations for CC ports and to generate Access Identifiers (AIDs) for channels and CC ports. The UPD NTU work session can also be used to generate AIDs for CC ports and channels.

AIDs are used, along with a Target ID (TID) stored with the CC, to uniquely identify the channel or the CC port of the CC. AIDs are used by downstream systems (e.g., SOAC) in commands to address channels and CC ports for several reasons, including making and breaking cross connects and optioning equipment. The format of the AID is dependent on several factors including the vendor. In the SWITCH system, AIDs are attributes of channels and CC ports. The SWITCH system generates these AIDs for CC ports at inventory time and for channels at Capacity Activation time taking into account the relevant factors. To accomplish this, a CC Port Rules Table (Table 5-16) and a Channel AID Rules Table (Table 10-4) are used to define the rules needed to generate AIDs. When a CC port or a channel is provisioned, the associated AID will be output to SOAC and from there to the appropriate downstream systems. The same process that generates AIDs also generates assignment limitations. This process is called by UPD NTU when establishing AIDs and/or assignment limitations for CC ports. The AID Generation process is also called by BLD CAO when creating channels and automatically placing AIDs on the channels (See Section 10 for BLD CAO and Channel AID Rules Tables).

5.15.1 Carrier Controller Ports

This section discusses the generation of AIDs and assignment limitations for CC ports. The UPD NTU inventory contract will call the AID generation process so that AIDs and/or assignment limitations can be generated or validated. UPD NTU will pass the CC model (required), AID format (required), along with a low AID (if it is the first CC port processed) or the last AID generated (if it is not the first CC port processed). The AID generation process will use the data passed to it by UPD NTU as well as data in the CC Port AID Rules Table to generate and pass back the appropriate AID and/or assignment limitation. UPD NTU will place the returned AID and/or assignment limitation and place it on the "current" port. UPD NTU will call the AID generation process for every CC port processed. It may be appropriate that the AID generation process passes back neither an AID or assignment limitation. In this case, UPD NTU adds nothing.

It is necessary to place assignment restrictions on some CC ports. The CC ports that get assignment restrictions are based on many of the same factors that are used in the AID generation for CC ports. The same AID format name, along with the CC model, are used as keys to the AID CC Port Rules Table, where the placement of assignment limitations is defined.

AIDs for channels are generated during Capacity Activation. The CC model, assignment rate, and AID format are used as keys for the AID Channel Rules Table to derive the appropriate AID.

5.15.2 Data Base Information

AIDs for CC ports are stored on the external edge (ex edge) from the CC port node. AIDs for channels are stored on the ex edge from the channel node. If the channel is between an IC and a CC then there are two external names and therefore two ex edges from the channel. One edge will point to the IC and the other edge will point to the CC. AIDs in this case will only be associated with the CC. (AIDs are not used to make cross-connects at the IC.) Therefore, the AID will only be on the ex edge pointing to the CC.

If the channel is between two CCs (e.g., an RT and a COT), then the channel will have one external name and therefore one ex edge. [9]Even though there is only one external name there may be two AIDs. An AID on a channel only applies to the channel as it relates to a particular CC. If both CCs use AIDs, then it is likely that there are two different AIDs for that channel. For example, a channel between an RT and a COT can have the AID, "RT-1-2-3", relating to the RT and another AID, "COT-1-2-3", relating to the COT. To accommodate two AIDs on a channel with only one name there is one ex edge; a hyper edge pointing to the channel node and both CCs. The hyper ex edge has an idx and an idy, each containing the internal id of one of the CCs. In addition, there is an aidx and an aidy on the same ex hyper edge. Aidx contains the AID for the CC having the internal id in idx and aidy contains the AID for the CC having the internal id in idy. If only one AID is generated for a channel as specified by the user, then the hyper edge is still used but only one AID appears on the edge.

Proprietary carrier circuits are those circuits where the vendor provisions the network units (i.e., channels) and make the necessary cross connections. Since the vendor is doing the cross connections there is no need for AIDs on these types of channels. The most common case of proprietary circuits is Fiber In The Loop (FITL).

When electronic cross-connections are made between two network units, the SWITCH system data base shows the connections through "Network Element Provisioning" (nep) edges. This hyper edge connects the circuit node and both objects that are being cross-connected together. The AIDs on these nep edges are stored in the same aidx and aidy fashion as described above for channels.

The AID format name is one of the keys into the AID rules tables for both CC ports and channels. The AID format name used to derive the AIDs for CC ports is stored in the body of the related CC slot. Since there can be two AID format names used for channels, both are stored in the body of the bandwidth node. The format name used for the origin CC is

9. The channel name will consist of the carrier circuit ID plus the channel hierarchy name, e.g., (carrier circuit):1-2-3.

stored in the field orig_afn and the AID format name used for the destination CC is stored in the field dest_afn.

5.15.3 Reference Data

Since the AID values are dependent on a number of factors, different AID generation rules are needed for each unique combination of these factors. These rules are embedded in the AID CC Port Rules Table (see Table 5-16) and the AID Channel Rules Table (see Table 10-4). While these two tables are very similar, the AID Channel Rules Table has Assignment Rate (AR) as a second row key that is not in the CC Port AID Rules Table. In addition, the assignment limitation field only appears in the AID CC Port Rules Table.

5.15.3.1 AID CC Port Rules Table

The instance key for the AID CC Port Rules Table is the CC model. The row key is the AID format name. The following fields are used in this table, together they are considered a row (see Table 5-16 for the table format):

- Low AID (lo_aid)
- High AID (hi_aid)
- Increment rule (incrmnt_rule)
- Number in series (#_in_series)
- No AID list (no_aid)
- Don't increment list (dont_incrmnt)
- Assignment Limitation list (asg_lim)

The definition for these fields appear in the Field Definition section, below.

5.15.3.2 AID Channel Rules Table

The instance key for the AID CC Channel Rules Table is the CC model. The row keys are the AID format name and the Assignment Rate (AR). The following fields are used in this table, together they are considered a row (see Table 10-4 for the table format):

- Low AID (lo_aid)
- High AID (hi_aid)
- Increment rule (incrmnt_rule)
- Number in series list (#_in_series)

- No AID list (no_aid)
- Don't increment list (dont_incrmnt)

The definition for these fields appear in the Field Definition section, below.

5.15.4 Field Definitions

Since all of the fields, except for Assignment Limitation, appear in both tables, they are described once below. Numerics in the no_aid, dont_incrmnt, and asg_lim fields can be entered as individual numbers separated by commas (e.g., 1,2,7,8,9), as ranges with a dash (e.g., 1-4), or as a mixture of the two (1,3,7-9).

5.15.4.1 Low AID

The low AID (lo_aid) value indicates the lowest AID value possible for this AID format. If no low AID is entered by the user as part of the Inventory work session or Capacity Activation, then the low AID as specified in this field is used in AID generation. If no AIDs are generated for this AID format (e.g., this row in the table only used for assignment limitations) then an underscore (_) should be inserted in the table for this field.

5.15.4.2 High AID

The high AID (hi_aid) value indicates the highest AID value possible for this AID format. If no AIDs are generated for this AID format (i.e., this row in the table only used for assignment limitations) then an underscore (_) should be inserted in the table for this field.

5.15.4.3 Increment Rule

The increment rule (incrmnt_rule) follows the same format as used in the inventory parse rules table. Each AID is broken up into individual elements. A variable is considered to be one element. A constant as well as a delimiter are also considered to be individual elements. For each element the following definitions must be supplied: the number of characters in the element (if it is a variable length element, the maximum and minimum character lengths are specified, separated by a #), and the amount to increment the element. These two values are separated by a comma. Each element definition is separated by an exclamation point. For example, the AID format that has a lo_aid = RT-1-1-1 and a hi_aid = RT-9-56-4 could have the following increment rule:

!2,0!1,0!1,1!1,0!2#1,1!1,0!1,1

See Figure 5-1 for a mapping of an AID to a sample increment rule. If no AIDs are generated for this AID format (i.e., this row in the table only used for assignment limitations) then an underscore (_) should be inserted in the table for this field.

5.15.4.4 Number In Series

Some AID formats require special actions on the CC ports or channels. Some of the CC ports or channels may get an assignment limitation rather than an AID. There may be other cases when the AID should not be incremented when processing a CC port or channel. These actions may occur repeatedly over a certain number of CC ports or channels. That number of CC ports or channels will be the number in series (#_in_series). If for example, for every four CC ports the second and third CC port should not get an AID, then the number in series should be set to four. If every other CC port should not get an AID, then the number in series should equal two.

If there are no special actions required, (i.e., no assignment limitations, no network units that would cause AIDs not to increment, and no network units that would not get an AID) any numeric can be entered in this field. For CC ports it may make most sense to the user if the number of ports per slot was used for the "number in series". For channels, the number of channels derived from the next highest level channel (e.g., 24 for DS-0 channels) could be used. [10]

5.15.4.5 No AID

There may be network units that are processed that should not get an AID. Many times the CC ports that do not get an AID are the same CC ports that do get an assignment limitation. But this is not always the case. There are times when there should be no AID and no assignment limitation on the same CC ports (e.g., some non-TSI CC ports). The position numbers as they relate to the "number in series" should be entered for those CC ports or channels that should not get an AID. For example, if the "number in series" is equal to four and out of every four CC ports, ports two and four should not get an AID, then "2,4" should be entered in the no_aid field.

If all network units should get an AID then an underscore (_) should be inserted in the table for this field.

10. The possibility of having a special non-numeric character (e.g., *) for this case was discussed but it was felt for ease of processing a numeric should always be present in this field.

5.15.4.6 Don't Increment

As each CC port or channel is processed, the AID value is incremented as described in the incrmnt_rule field. Even if the "no_aid" field has specified that no AID value should be added to the CC port or channel, the AID value is normally be incremented as the CC port or channel is processed. For example, if there are four CC ports in the series and they should be incremented by one with each CC port processed, even though the "no_aid" field has specified that the second CC port should not get an AID, the AID value should still be normally incremented as the second CC port is processed. In this way, the first CC port might get an AID value of 1-1, the second CC port would not get any AID, as specified with no_aid = 2, but the third CC port would still get an AID value of 1-3 since the AID value was still incremented when the second CC port was processed. But there may be some cases when the AID value should not get incremented. If for example, in the above example, the third CC port processed should have gotten an AID value of 1-2, not 1-3, then, when the second CC port was processed, the AID value should not have been incremented. To accomplish this the dont_incrmnt field should be set to 2. This field specifies which CC ports or channels should not cause the AID value to be incremented as that CC port or channel is processed.

If no such actions are required for this format, an underscore (_) should be inserted in the table for this field.

5.15.4.7 Assignment Limitation

This field is only used in the AID CC Port Rules Table. If an assignment limitation (NA for non-assignable) is to be added to network units, then the position(s) in the series, where this should take place should be added in the asg_lim field. For example, if for every four CC ports, the second and third CC ports should get an assignment limitation, then asg_lim field should equal "2,3".

If no assignment limitations are needed for this format, an underscore (_) should be inserted in the table for this field.

5.15.4.8 Example

See Figure 5-2 for various types of CC port AID formats along the AID rules. See Figure 5-3 for a sample CC Port AID Rules Table that corresponds to the AIDs in Figure 5-2.

5.15.5 Processing

The AID generation process is used in both Inventory for CC ports and Capacity Activation for channels. For CC ports, the keys for the AID CC Port Rules Table are the CC model of the CC and the AID format name. For channels, the keys for the AID Channel Rules Table are the CC model, an AID format name, and the assignment rate. In addition, a low AID can be input to the process for the processing of CC ports and channels. If no low AID is explicitly given, then the default low AID as defined in the AID CC Port Rules Table or AID Channel Rules Table is used.

When generating AIDs, the CC ports or channels must be processed in a specific order so that the correct AID can be generated. The range of CC ports, as input by the user, defines the order that the CC ports are processed, progressing from the low CC port to the high CC port. It is assumed that the first CC port in the given range will always begin with the first CC port in a slot.

The sequence of channels to be processed for AIDs is not as straight forward. Unlike CC ports, channels are organized in a hierarchical manner. In other words, there may be one channel related to other "lower level" channels. Each of these "lower level" channels, in turn, can be related to other yet "lower level" channels. This tree type of structure can be several levels deep. For AID generation, each level must be processed independently. Within each level, the channels will be processed from low to high channel ID as assigned by the Capacity Activation process. In addition, if these channels belong to a carrier circuit having two endpoint CCs that should both get AIDs, then the user must specify an AID format name for both the origin and destination CCs. This will result in two AIDs being generated for each channel, when AIDs are indicated in the Channel Rules Table. These AIDs will be placed on the portion of the ex hyper edge pointing to the appropriate CC, as described in the Data Base section, above.

If the channels in a carrier circuit should get an AID for only one of the end point CCs, then the user should enter only one AID format name with an indication of the CC that the AIDs are related to. This will cause only one AID name to be generated, when appropriate, for each channel. This AID will be placed on the portion of the ex edge pointing to the appropriate CC.

If the channels belong to a carrier circuit that has a CC and an IC as end points and the channels should get AIDs, then one AID format name must be entered related to the CC. These AIDs will be place on the regular ex edge pointing to the CC.

If no AID format names are given, then no AIDs will be generated.

For each, the user would be able to specify up to two different AIDs for a specified assignment rate (e.g., DS0, DS1). All channels in a carrier circuit will be processed through the AID generation process when at least one AID format name is entered. There will be no means to process a subset of the channels in a carrier circuit. In addition, once AIDs are generated for channels as part of Capacity Activation, then AIDs cannot be generated again for the same channels on the same carrier circuit. If AIDs *must* be changed, then the carrier circuit must be removed and then created again with the new AIDs or the AIDs must be changed on each individual channel using UPD NTU.

When generating AIDs, the specific AID format rules must be known to the AID generation process (i.e., the specific "row" of the AID rules table). The low AID for the range of network units being processed must also be known. As the individual network units are being processed, the AID generation process must keep track of the "current number in the series". The first network unit processed in the range will be associated with a "current number in the series" equal to one. The AID generation process must also keep track of the "current AID". The first AID processed will be the "current AID" and will be equal to the low AID as given by the user. If no low AID was input by the user, then the lo_aid as defined in the table will be used as the low AID.

The AID generation process for CC ports will do the following:

1. Check the asg_lim field
   - — If the "current number in the series" equals any number in the asg_lim field, add an assignment limitation of "wth" to the network unit.
2. Check the no_aid field
   - — If the "current number in the series" equals any number in the no_aid field, do not add an AID to the current network unit
   - — If the "current number in the series" does *not* equal any number in the no_aid field, add the current AID to the current network unit
3. Check the dont_incrmnt field
   - — If the "current number in the series" equals any number in the dont_incrmnt field, then do not increment the current AID
   - — If the "current number in the series" does *not* equal any number in the dont_incrmnt field, then increment the "current AID" by following the rules in the incrmnt_rule field.
4. Check the #_in_series field
   - — If the "current number in the series" does *not* equal the #_in_series in the table, then increment the "current number in the series" by one
   - — If the "current number in the series" does equal the #_in_series, then reset the "current number in the series" to one
5. Get the next network unit in the range
6. Repeat steps 1 through 5 until the last network unit in the range is processed.

The AID generation process for channels will do the following:

1. Check the no_aid field
   - — If the "current number in the series" equals any number in the no_aid field, do *not* add an AID to the current network unit

— If the "current number in the series" does *not* equal any number in the no_aid field, add the current AID to the current network unit

2. Check the dont_incrmnt field

   — If the "current number in the series" equals any number in the dont_incrmnt field, then do not increment the current AID

   — If the "current number in the series" does *not* equal any number in the dont_incrmnt field, then increment the "current AID" by following the rules in the incrmnt_rule field.

3. Check the #_in_series field

   — If the "current number in the series" does *not* equal the #_in_series in the table, then increment the "current number in the series" by one

   — If the "current number in the series" does equal the #_in_series, then reset the "current number in the series" to one

4. Get the next network unit in the range

5. Repeat steps 1 through 4 until the last network unit in the range is processed.

5.15.6 Inventory

The inventory work session, Update Network Unit (UPD NTU) will allow users to add, change, or delete AIDs for channels or CC ports. These AID values will placed on (or removed) from the ex edges from the channel or CC port nodes as described in the Data Base section, above. The AIDs on any existing NEP edges, which are created for working circuits, will not be changed. The primary reason for allowing an inventory work session to change an AID is for those cases when the AID generation process could not produce an accurate AID. If an AID on a pending network unit is changed, the rework process will update the NEP edge with the newly changed AIDs. Although a discrepancy between AIDs on NEP edges vs. AIDs on ex edges may cause a problem on changes or removals, it is felt that the potential for this happening is small enough not to warrant the added complexity of having inventory change data on NEP edges.

5.16 Load/Usage Data

Load/Usage Data Contracts are used to modify load/usage data on equipment groups. UPDLF is a contract to update the load factors for load divisions. UPDLD is a contract that modifies the minimum and maximum acceptance values for usage data input. UPDLBL is a contract that is used to update the actual and adjusted usage data for equipment groups.

5.16.1 Update Load Factor

The update load factor contract (UPDLF) calculates load factors for one or all load divisions in an intelligent controller. A load factor is a number from one to ten and represents the estimated usage of a load group relative to other groups in that load division. The load factor correlates to an actual range of CCS or PPS values (i.e., low and high end values) and is an attribute considered in the switch port selection process. A switch port that belongs to a load group with a low load factor is given a lower penalty score than one with a higher load factor.

The load factor calculation process computes a set of CCS/PPS values for a load division that maps to a set of load factors. This data is stored in a summary data table, the Load Factor Summary table (see Table 5-8). An instance of this summary data exists for every IC. Within the summary data, entries exist for each load division in the IC. A load group is given a load factor if its estimated usage is at or below the high end CCS/PPS value associated with that load factor.

5.16.1.1 Load Factor Calculation Process

The automatic calculation of load factors for one or all load divisions in an intelligent controller allows for user control of the lowest and highest load factors (load factors 1 and 9) and the "size" of the steps in between. In the following discussions, if not explicitly mentioned, all references to CCS also apply to PPS.

The following describes the SWITCH system automatic load factor calculation process incorporating the SWITCH system user options.

The total load (CCS or PPS) in the load group to be used in the load factor calculation is referred to as the total usage (TU). The TU of the load group is the sum of fractions of the estimated usage (EU), pending-in usage (PIU) and pending-out usage (POU). [11]That is,

TU (per load group) = EU*(x) + PIU*(y) - POU*(z)

where $0 <= x, y, z <= 1$

- In the SWITCH system, x and y are both 1 and z is 0. The total usage to be considered for load factor calculation is due to working and pending-in lines.

  After the TU is computed for all load groups, they are sorted in ascending order and the TU for each summed to calculate a total usage for the load division.

- The user is able to predefine what CCS value constitutes the load factor 1 boundary (high end of range). Thus, in those ICs where load is not significant until a certain

11. The TU of the load group will be normalized if the load group has a different capacity than the standard capacity for load groups in that load division.

percentage of engineered capacity is reached (e.g., 25 percent of engineered capacity), all load groups which have not reached that point yet will be a load factor of 1.

The user is able to predefine what CCS value (or function of engineered capacity) constitutes the high end value for load factor 9. Currently this load factor represents those load groups which are almost at engineered capacity, but automatic switch port assignments are still possible (i.e. engineered capacity - .1). The SWITCH system allows the user to vary this definition of load factor 9. This setting is restricted at the high end by the engineered capacity and at the low end by the value that was optionally defined for load factor 1. If not defined, the default for the high end of the range for load factor 9 will be (engineered capacity - .1).

Load factor 10 is given to any load group whose TU is greater than the high end value defined for load factor 9. Thus, at a minimum, it swill possible to have only three load factors (1, 9, and 10).

- A minimum step size (x), is provided to determine the minimum difference in CCS values between load factors. This is an optional value, defined on a load division basis. If a step size of 5 CCS is defined by the user, a subsequent load factor will not be defined unless it is 5 CCS higher than the value for the prior load factor. (This implies that the load factor values have already been computed, discussed in the next step.) For example, assume the normal load factor calculation results in a load factor 1 high end value of 63 CCS, a load factor 2 high end value of 65 CCS, and a load factor 3 high end value of 70 CCS. Since the CCS difference is only 2 between load factors 1 and 2, the load factor 2 value is assigned to be that of the next load factor, which in this case is 70 CCS. It is possible that applying the minimum step size to computed load factor values will result in some load factors not being defined. If this occurs, they are created by adding the minimum step size to the last defined load factor high end value and continuing until load factor 8 is defined. Note that this minimum step size will not apply to CCS values for load factors 9 and 10.

  The use of the minimum step size prevents load factor CCS values which are very close to each other, which in turn prevents the need for constant recalculation of load factor values.

- Percentages of the total usage of all load groups in the load division must be obtained at prespecified points. These points are 10, 20, 30, 40, 50, 60, 70, and 80 percent of the total. These points are referred to as {P1, P2, ...Pn} where n is an integer between 1 and 8.

- Starting with the load group with the lowest TU value, a comparison to P1 is made. If the TU is equal to or greater than P1, this TU value becomes the CCS value associated to load factor 1 (assuming it is not user defined). If the TU is less than P1, the TU of the next load group in the sorted list is added to the prior one. As soon as P1 is reached or exceeded, the last TU value in the summation becomes the actual CCS value for the corresponding load factor. It is possible that the sum exceeds multiple Pn's. When this happens, the actual CCS value will apply to multiple load factors. This process is continued until all Pn's (up to P8) are exceeded. If a minimum step size has been specified, each of these load factors should be re-evaluated to determine if they meet the criteria.

- If load factor 9 has not been user defined, it is computed by subtracting one-tenth from the engineered design capacity. Load groups with a TU above this value are given a load factor of 10. (A load factor of 10 represents a load group near, at or over engineered capacity.) A load factor of 10 is given a penalty score of 99 which prohibits the SWITCH system from *automatically* selecting a switch port in this load group. It is possible however, that even though a load group has reached engineered capacity, an assignment may still be desired in this group. The penalty score could then be lowered.
- Once all load factors (1-9) are associated to CCS values, a comparison between the TU of each load group and these values can be made. If the TU is less than or equal to a CCS value, it is given the corresponding load factor. If a CCS value applies to multiple load factors, the load group is given the lower load factor. Thus there may be cases where no load groups have a particular load factor. As mentioned previously, those with a TU above the CCS value of load factor 9 are given a load factor of 10.

5.16.1.2 Manual Specification of Load Factors

The SWITCH system allows the user to manually define the CCS/PPS values associated with load factors 1-9. (A load factor of 10 is given to any load group if its CCS is above the value specified for load factor 9). The CCS/PPS values can be entered manually and are submitted via the update load factor contract to the DLBB. The Load Factor Summary table is updated accordingly.

5.16.1.3 Preview of Load Factors

The SWITCH system allows the user to preview the load factors before the Load Factor Summary Table is updated. This preview displays load factors for a load division on a work session screen. The data presented includes the low and high CCS/PPS values calculated for each load factor. The Calculation for the preview is done by the WSILF contract.

Whenever a preview is requested, two different views are presented to the user. One view uses the estimated usage in the load factor calculations in the same manner as described in the "Load Factor Calculation Process" section, above. A second view shows load factors which are calculated using the same method described above, except that theoretical usage is substituted for estimated usage. Once the load factors are displayed on the screen the user can choose to update the Load Factor Summary Table using the load factors calculated from estimated usage. The user is not able to directly update the Load Factor Summary table with the load factors calculated from theoretical usage.

5.16.2 Update Load Balance

The update load balance contract (UPDLBL) is used to modify estimated usage data for a load group due to input of actual measured usage data. This is done on a load division basis. All load groups within a load division are updated. UPDLBL also updates measured usage values for individual measurement groups. The process of the contract is as follows:

- The function of the contract is change.
- The required attributes are an IC ID and a load division ID.
- The IC ID and load division ID are validated to ensure that they exist. If they exist all appropriate equipment groups are retrieved.
- The measured data input from TIDE is validated against maximum and minimum acceptance data stored for the load division. It is then populated against each equipment group and the estimated usage data is modified. The new estimated value for the load groups is the sum of:

  a. The smaller of the current estimated working and the new measured usage values,

  b. a user defined adjustment factor times the absolute difference between the current estimated working and the new measured usage values, and

  c. the pending in usage.

  The equipment groups are then updated for the new estimated usage data.

5.16.3 Calculate Theoretical Usage

Theoretical usage is usage data that is calculated solely from the CCS/PPS Adjustment Tables (see Table 6-41). The users have the ability to request the calculation of Theoretical Usage for all Load Groups in a Load Division or for an entire IC. This is done through the UPDTHE contract. Within a Load Group the following types of services are examined as part of the calculation:

- Working
- Pending-Out (Load Pending Remove)
- Pending-In (Load Pending Add)

The calculation of Theoretical Usage for each load group in the specified Load Division or IC is done in the following steps.

1. Zero out Load Group's values for Theoretical, Pending-In, and Pending-Out Usage.
2. Obtain the appropriate CEC data from the Design edge of each Primary Service node in the specified load group. The CEC attributes required for the calculation are:

— grade of service

— type of service

— class of service

— category

— co-side termination

— estimated CCS load

— estimated PPS load

— pulsing

— directionality

— custom calling features

— bearer services

— central office administrative type

— WATS band

— assignable line USOC

3. Using the CEC values, determine the associated Usage Category from the Usage Category Map Table (see Table 6-43). If a Usage Category cannot be determined, the 1FBUS usage category is used.

4. Using the Usage Category from step two, determine the CCS/PPS value from the CCS/PPS Adjustment Tables (see Table 6-44). If a CCS/PPS value cannot be determined and a default value does not exist, then a value of 4.0 ccs for switch ports and a value 10.0 pps for packet switch ports is used.

5. If the service is working, add the CCS/PPS value to Theoretical Usage.

   If the service is pending-out, add the CCS/PPS value to Pending-Out Usage. In addition, change the CCS value in the "current pending delete" (pnd_del) attribute to the "new" CCS/PPS value. This attribute is on the pending change edge on the delta node.

   If the service is pending-in, add the CCS/PPS value to Pending-In Usage. In addition, change the CCS value in the "current pending add" (pnd_add) attribute to the "new" CCS/PPS value. This attribute is on the pending change edge on the delta node.

6. Repeat steps two through five for all services in a given load group.

Steps two through five, including the default values, represent the same processing used by the Assignment Engine when changing the usage data during the assignment process. This includes all the default values mentioned above.

5.16.4 Copy Theoretical to Estimated

The UPDTHE contract provides the capability to copy the Theoretical Usage value (on the CAPEDG edge on the SWEQ node) to the Estimated Usage field (also on the CAPEDG edge on the SWEQ node) for selected load groups. In addition, the date of the copy is kept on the CAPEDG edge for each load group and in the body of the Load Division node (LDIV). The user is able to execute this transaction on either a load division or an IC basis.

5.16.5 Update Load Divisions

There is a contract to update certain information pertaining to load divisions (UPDLD). The data that can be updated is used in the processing of input data either from TIDE interfaces or the ULBB.

The update process is as follows:

- The function of the contract is change.
- The external ID from the contract input is used to retrieve the load division from the database.
- The input attributes are then validated and updated. These attributes are described in Section 4.14.1 and are:
  - — Adjustment Factor
  - — Algorithm
  - — Maximum Measurement
  - — Minimum Measurement
  - — Minimum Hours
  - — Remarks
- Once validated and updated, these attributes can be used in the processing of usage data from TIDE or the ULBB (e.g., UPDLBL).

5.17 Inventory Orders

The BCCs require an efficient means to track and manage multi-step inventory activities. By tying all the steps together under the heading of inventory order, additions, changes, and removals can be tracked and reported at any stage of order completion.

An Inventory Order is a method to coordinate and track single or multiple inventory activities. These inventory activities are defined as a series of steps that, once completed, result in additions and updates to the inventory database. Inventory Orders are unique in identity and are comprised of user defined steps.

The order consists of:

- multiple steps that are user-defined, based on defaults from reference data for "typical" inventory orders.
- log-type history for order-related activity pertaining to the order performed in any work sessions used to complete the steps contained in the inventory order.

The log is updated automatically for nine inventory work sessions, and may also be updated manually. The status for each step is updated manually in 1.6.5. The order exists in the database until it is completed at which time the history log is printed at a designated destination and the order record removed.

5.17.1 Establish an Inventory Order

There is a contract defined that is used to establish and administer inventory orders (UPDIVO). To establish an inventory order the input required is order ID that is user defined and can be up to 12 alpha-numeric characters. Also required is a database type (e.g., swpt, IC, cp, etc.) and an action of add. The database type and action are used to retrieve the appropriate default steps for the order. These steps can be subsequently edited. For example, a node type of IC, an IC type (e.g., 5ESS), and an action of add, brings back steps to add the IC, its swpts, equipment groups, tns, administrative groups, reference data that must be created or modified, and possibly other database objects.

Default steps reside in reference data tables named "inv order steps" (see example Table 5-9). The instance keys for theses tables are defined as:

User Name - IC, OE, CP, TP, POE, BL, TRE, etc.

ORDACT - the order action (add, change, delete) for the user name above.

IC Type (Optional) - There may be different steps for the varieties of IC types (e.g., Ericcson ICs require ICE). Other required database types may also differ between IC types (e.g., 5ESS requires collections, DMS100 does not).

Once the input is validated (i.e., inventory order ID is unique), the inventory order node is created and xfiles are allocated. The internal IDs of the xfiles are stored on a statedge off the order node. Default steps are returned from reference data based on the node type, action, and possibly IC type. Once these steps are edited by the user, they are added to the order and the xfile that stores the step information is populated.

5.17.2 Modify an Inventory Order

Modifying an inventory order is the ability to modify any data about the order, with the exception of order ID, type, and action. Some of the data that can be modified is the status, range information, work center, remarks, etc. Steps can be removed or added from this work session.

Modifying an inventory order using UPDIVO allows only the remarks and status to be changed. When changing the status of a step, a remark and userid may be added for that step.

The input to modify an inventory order is the order ID. The order is checked for existence, and if it does not exist, an error is returned. If the order exists the work session is prepopulated with the information stored for that order. The steps can then be modified or removed depending on the permissions of the work session.

5.17.3 Complete an Inventory Order

Completing an inventory order is a manual process. All steps must have a status of "c" (i.e., complete), otherwise a warning message is given stating that not all steps are complete. An override option is provided to allow the order to be completed, without all the steps having a status of "c."

The input to complete an inventory order is the order ID. The order is checked to ensure it exists and all steps are complete (i.e., status of "c"). A warning message and override option is provided if all steps are not complete. The history xfile and the order, its edges, and xfiles are removed.

5.17.4 Delete an Inventory Order

To delete an inventory order, the order ID is required input. The WSIIVO input and data response contracts are used to check that the order exists and that there has been no activity on any of the steps. If there has been some activity, the WSIIVO data response contract provides a warning message to state that the order has some steps that have been processed. An override option is provided to allow the order to be deleted. The order, its edges, and xfiles are then removed.

5.17.5 History Initialization and Reporting

Upon successful completion of a step (i.e., an inventory work session referencing that order ID and stepID), the DLBB uses some of the contract information to update the history record for that step in the history xfile associated with the order.

With the order ID, the order is retrieved. The ID of the history xfile is obtained from the statedge. A history entry is then written into the xfile for the step.

History entries are written in the chronological sequence in which they are received. They are not written in the sequence of the steps defined for the order.

There are three options used by the WSIIVO data response contract to report on an inventory order and/or its steps: report current status of an inventory order, report inventory order history, report on stepID history. The report is brought back to the inventory order work session screens.

Reporting on the current status of the inventory order returns all inventory order data that is current for each step (i.e., its status, other attributes, and remarks). This data allows the user to review the steps that have been processed, completed, or not processed on at all. The input for this request is the proper option discussed above on the data request screen and the inventory order ID.

5.18 Bulk Allocation

Bulk Allocation is a process to redefine the inventoried administrative constraints of existing switch ports. A contract UPDALC is provided so that users can identify the target percentage for each administrative constraint (called the Distribution Profile) and the estimated CCS to use for each administrative constraint (called the Usage Profile) that is to be used during the Bulk Allocation process. The new UPDALC Contract Processor allocates the administrative constraints for all Allocatable switch ports using the Allocation Algorithm. It also replaces the previously saved allocation Profiles.

5.18.1 Bulk Allocation Reference Data

There are five Reference Data Tables that are used by the Bulk Allocation feature.

1. Allocation Controls Table (table 5-10)
2. Allocation Exclusions Table (table 5-11)
3. Allocation Restrictions Table (table 5-12)
4. Allocation Pattern Mask Table (table 5-13)
5. Allocation Pattern Order Table (table 5-14)

In addition, the Inventory Group Rules Table, accommodates the equipment level for Allocation.

5.18.1.1 Allocation Controls Table

The purpose of the Allocation Controls Table is to define various parameters that control the Bulk Allocation process (see Table 5-10). The instance key for this table consists of IC Type, IC Generic and IC ID, all of which are optional.

The BCC may set inclusion/exclusion weights for each of the components used in the Allocation Algorithm. A weight of zero removes the component from the Allocation Algorithm; a non-zero weight includes the component. It will be useful, particularly in some IC Types, to set the weights for the Essential and Signaling components to zero. For example, in the 5ESS or a 1ESS when an Allocation Pattern is to be used, it may not be worth the processing time to distribute based upon Essential and Signaling values since the pattern may completely undo the balance achieved on these measures. The components are:

1. Allocation Group Distribution Balance
2. Load Group Usage Balance
3. Frame/Zone Distribution Balance
4. ESL Distribution Balance
5. SIG Distribution Balance

The BCC may also identify a Default Estimated CCS to use when calculating the Usage Profile for those administrative constraints that have no workers or if the calculation cannot be performed for some other reason. In addition, the table identifies the maximum number of Steps performed in each Allocation Cycle. It is not recommended that the BCC change this value since it may have significant, non-obvious ramifications on the performance of the Allocation Algorithm.

Bellcore will deliver a global instance of this table.

5.18.1.2 Allocation Exclusions Table

The purpose of the Allocation Exclusions Table is to define the conditions under which switch ports are excluded from the Allocation process (see Tables 5-11). The instance key to this table consists of IC Type, IC Generic and IC ID. IC Type is the only required part of the instance key.

Currently, the inventoried admin_const of the switch port and the fact that the switch port is a component of an assembly of a particular category are the two conditions which can exclude a switch port from the Allocation process. This information is used early in the Allocation process to minimize the scope of switch ports that are considered for allocation.

Bellcore will deliver a global instance of this table for each IC Type.

5.18.1.3 Allocation Restrictions Table

The Allocation Restrictions Table identifies the valid administrative constraint set that can be used for each switch port based upon the inventoried Card Type of that switch port (see Tables 5-12). The instance key to this table consists of IC Type, IC Generic and IC ID. IC Type is the only required part of the instance key. There are only a few IC Types that restrict the allowable administrative constraints based upon Card Type.

The Allocation process uses the information from this table to validate any proposed changes to the administrative constraint. If the proposed change is not expressly prohibited by this table, it is considered valid. If the card_type of the candidate switch port is not listed in the table (even if other card_types are), it is considered to have no restrictions and so any change is valid.

Although card type is currently the only condition known to restrict the allowable set of valid administrative constraints, the existing inventoried administrative constraints may also be used if appropriate.

Bellcore will deliver a global instance for the DMS10, DCO and DMS100 IC Types. The other IC Types do not have any known restrictions.

5.18.1.4 Allocation Pattern Mask Table

The Allocation Pattern Mask Table identifies a specific pattern that is to be applied as the final step in the Allocation process. This is currently only used for 1AESS (with 4-to-1 concentration ratio) and 5ESS IC Types (see Tables 5-13). The instance key consists of IC Type, IC Generic, IC ID, Hier Func and LD. IC Type is the only required part of the instance key.

This table identifies the switch port mask pattern to use when applying administrative constraints.

Bellcore will deliver a global instance of this table for 5ESS and 1AESS IC Types. The instance of this table for the 1AESS IC Type will only be used for 1AESS ICs with a 4-to-1 concentration ratio.

5.18.1.5 Allocation Pattern Order Table

The Allocation Pattern Order Table identifies the order in which administrative constraints should be placed for allocation, using the pattern mask that is provided in the Allocation Pattern Mask Table. The instance key consists of IC Type, IC Generic, IC ID, Hier Func and LD. All of the instance keys are optional. Bellcore will deliver 1 global instance for this table with no instance key.

5.18.2 Bulk Allocation DLBB Processing

There are four main functions that are performed by the Allocation Inventory Contract Processors:

1. retrieving the Last Saved Distribution and Usage Profiles for the Load Division (using the WSIALC contract),
2. calculating actual Distribution and Usage Profiles (using the WSIALC contract),
3. allocating administrative constraints (using the UPDALC contract), and
4. replacing the Last Saved Distribution and Usage Profiles for the Load Division (using the UPDALC contract).

5.18.2.1 WSIALC Contract Processor

The WSIALC Contract Processor retrieves the Last Saved Distribution and Usage Profiles for the Load Division (from the x-file off the Load Division) when requested by the ALLOC SWPT Work Session. The Load Division is either input directly or derived from an individual or range of Allocation Groups.

The WSIALC Contract Processor calculates the actual Distribution and, optionally, Usage Profiles when requested by the ALLOC SWPT Work Session. The scope for the calculation can be a Load Division or an individual or range of Allocation Groups. The scope of the calculated and the Last Saved Profiles do not have to be the same or even from the same IC.

The same Work Session request contract can accomplish the retrieval of the Last Saved and the calculation of the actual Distribution and Usage Profiles.

- Distribution Profile Calculation - The WSIALC Contract Processor counts the number of switch ports for each value of the *dsgn_class* [12]that are either working in a circuit, pended to work in a circuit or in a Pseudo-service. The count only includes switch ports that belong to Allocation Groups that are included in the scope of the calculation. When the weights from the Allocation Controls Table are non-zero, the counts also include each value of Essential and Signaling that is found. WSIALC also counts the number of switch ports with each *inventoried admin_const* and, when the weights are non-zero, for each value of Essential and Signaling that are found, that are in a reservation and those pended for a Wire Assembly order. [13]These two counts are added and then divided by the total number of switch ports to produce a percentage for each administrative constraint, Essential and Signaling value combination. This is the Distribution Profile of switch ports that are *Not Available for Allocation* (which is referred to as the Non-Allocatable Distribution).

The Distribution Profile of switch ports that are *Available for Allocation* (which is referred to as the Allocatable Distribution) is calculated in a similar manner, however it only uses the *inventoried admin_const* from the switch port body. Switch ports that are components of non-pending assemblies and completely spare, unattached switch ports are counted. The counts are divided by the total number of switch ports to produce the analogous set of percentages as for the Non-Allocatable switch ports.

- Usage Profile Calculation - The Usage Profile is calculated when the weight for the Usage component in the Allocation Controls Table is non-zero. The WSIALC Contract Processor will count the number of switch ports that are working in a circuit or pending to work in a circuit for randomly selected Load Groups.

  The Estimated CCS and the pending added CCS is obtained for each of the selected Load Groups and normalized if necessary. A set of equations are set up, one for each selected Load Group, that shows the number of working and pending switch ports in each first choice administrative constraint. The system of resulting equations is solved to determine the Average Estimated CCS for each administrative constraint using a Linear Regression least squares solution.

  If the Load Groups are too well-balanced (i.e., their Estimated CCS and their administrative constraint distributions are too similar), the Default CCS from the Allocation Controls Table is used for each administrative constraint.

5.18.2.2 UPDALC Contract Processor

The primary function of the UPDALC Contract Processor is to perform Bulk Allocation. Saving the Profile data is a function that may be performed following the rest of Bulk Allocation or it may be an independent function performed on its own.

Performance of Bulk Allocation involves several steps:

12. This attribute contains the "first choice" administrative constraint that the assignment category for the service would have preferred. It may or may not match the admin_const on the switch port body. The first choice administrative constraint is calculated by obtaining the administrative constraint Penalty Scoring Table for the assignment category of the service and using the minimum penalty Administrative constraint from that Table.

13. It is necessary to use the inventoried administrative constraint for these switch ports because they have no dsgn_class.

1. creating a working copy of the switch ports to be allocated,
2. considering proposed changes to the administrative constraint of randomly chosen switch ports,
3. applying the changes and
4. saving the Profile data.

The UPDALC Contract provides the following information:

1. the scope of the Bulk Allocation (a Load Division, a single Allocation Group or a range of Allocation Groups),
2. the Distribution Profile,
3. the Usage Profile, if the weight for the Usage component was non-zero in the Allocation Controls Table,
4. an indication whether the Allocation is to be done, and
5. an indication whether the Profiles are to be saved and, if so, the Load Division to use.

- Create the Working Copy - The first thing that is done is to identify all Allocation Groups that are involved in the Bulk Allocation. This is either obtained directly (when a single or range of Allocation Groups is provided) or indirectly (when a Load Division is identified) from the UPDALC Contract. If the user specifies Load Factors, only those Allocation Groups that are (factors of) Load Groups with the proper Load Factors are included.

  Allocatable switch ports in the involved Allocation Groups are put into a "working copy". To be "Allocatable" at this stage of the process, a switch port

  — cannot be a component of a circuit,

  — cannot have any pending views,

  — cannot be a component of a reservation,

  — must have an asgn_cap > 0, and

  — cannot be disqualified by meeting any of the criteria in the Allocation Exclusion Table. [14]

- Consider Changes to Administrative Constraints - One of the Allocatable switch ports is randomly chosen from the "working copy" and a random change to the inventoried administrative constraint [15]is considered. The proposed change is evaluated to determine if it is a valid (i.e., it satisfies all of the conditions provided in the Allocation Restriction Table) and desirable (it has a good probability of bringing the overall

14. Switch ports can be excluded based upon inventoried administrative constraint and/or being a component of an assembly of a particular category (e.g., TASM, PASM, MASM).

distribution closer to the Distribution Profile) change. If the proposed change is valid and desirable, the current administrative constraint for that switch port in the "working copy" is updated. If it is not, then the administrative constraint is left as it was.

Changes continue to be considered until the maximum number of changes have been considered. This maximum is controlled by the user in the Maximum Number of Steps Per Cycle parameter found in the Allocation Controls Table.

- Apply Allocation - After the entire process has been completed the "working copy" is compared to the original set of administrative constraints. If it is not better, a message is sent to DCOR indicating that the process was not successful in improving the Allocation. Assuming that it is better and that no applicable Allocation Pattern Mask Table instance exists, the "working copy" is applied as is to the switch port data base.

  When an applicable Allocation Pattern Mask Table instance exists, the data in this table and the Allocation Pattern Mask Table will be used to first massage the "working copy" into the acceptable pattern and then that massaged version is applied to the switch ports. First, a count is made of the number of newly allocated switch ports for each administrative constraint in each Allocation Group. These administrative constraints are ordered according to the sequence provided in the Allocation Pattern Order Table (see Table 5-14). [16]Any administrative constraints that are not explicitly identified in the Table are grouped together as the final set of administrative constraints. This ordered list of administrative constraints is directly applied to the Allocatable switch ports using the Allocation Pattern Mask Table. Switch ports that are not Allocatable are just ignored by the process and the pattern picked up at the next Allocatable switch port.

  When a Pattern is used, some of the value obtained from the Allocation Algorithm is lost. However, most of the value remains. Allocation Group Distribution balancing, Load Group Usage balancing and, probably, the Frame and Zone Distribution balancing are unaffected by the shuffling of the final allocations to match the pattern. It is very likely that all switch ports from the same Allocation Group reside on the same Frame and Zone so interchanging them among themselves will have no effect. The Essential and Signaling Distribution balancing is completely overturned when a pattern is used unless all switch ports in the Allocation Group have the same Essential and Signaling values.

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15. When calculating the Distribution and Usage Profiles, it is important to use the "first choice" administrative constraint because that is how the switch port is actually being used. This provides users with the best information to help them define the Profiles to use in Bulk Allocation. However, Bulk Allocation is attempting to distribute the *inventoried* administrative constraints to match the given Profiles and so compares the inventoried administrative constraint to the ideal.

16. The sequence is intended to identify the administrative constraints in descending order of estimated usage. The intention is to distribute the administrative constraints with the highest usage to switch ports that the vendor has identified as having the lowest probability of blocking. The switch port pattern is obtained from vendor documentation. The order of the administrative constraints is under user control.

- Save Profile Data - When directed by the user to save the data, the process replaces the Last Saved Distribution and Usage Profiles for the Load Division with the values that were used in the Allocation.

  The user has the option to direct that the data be saved even when they have not requested that Bulk Allocation be performed. They also have the option to not have the data saved even when they have requested Bulk Allocation. The two requests are completely independent.

5.19 Inquiry of Vanity Telephone Numbers

The inquiry for assignment of telephone numbers offers the BCCs a manually initiated way of providing input and obtaining telephone numbers based on the given input. This inquiry will have choices of the most-requested known patterns including a choice to input a word. Once a pattern is chosen, processing will search for those available telephone numbers which satisfy the given input.

5.19.1 Inquiry Processing

WSIVAN is the immediate contract processor which will search for the available telephone numbers that satisfy the given input. If a telephone number type is input, processing searches for those available telephone numbers that match the input telephone number type.

If the option to "select true spare telephone number(s) only" is input, the search must *exclude* those telephone numbers that have any of the following:

- component edge to a service,
- component edge to an assembly,
- component edge to a reservation,
- assignment limitation(s),
- are pending,
- are of type Q (i.e., Centrex),
- membership edge to a TNL group,
- selection indicator equal to N.

If the option to "exclude those telephone numbers on a telephone number list" is input, the search must *exclude* those telephone numbers that have any of the following:

- component edge to a service,
- component edge to an assembly,

- component edge to a reservation,
- assignment limitation(s),
- are pending,
- are of type Q (i.e., Centrex),
- membership edge to a TNL group.

If neither option to "select true spares only" or to "exclude those telephone numbers on a telephone number list" is input, the search must *exclude* those telephone numbers that have any of the following:

- component edge to a service,
- component edge to an assembly,
- component edge to a reservation,
- assignment limitation(s),
- are pending,
- are of type Q (i.e., Centrex).

When neither of these options is chosen, the response may include telephone numbers that are on a list or have not been released (i.e., they are still being aged).

Processing will search the given input (i.e., IC, or NXX(s)). When no search restriction is input, processing searches all NPANXXs for all ICs within the wire center.

When a line count is input processing must keep a count of the number of telephone numbers found. When the line count is reached, processing returns the telephone numbers found. When the line count is not reached, processing should return those telephone numbers found, with an indication that the line count was not reached. When no line count is input, processing will return up to 100 available telephone numbers which satisfy the selected choice(s).

When processing finds a telephone number which matches the input criteria, attributes of the telephone number must be retrieved so that they may be included in the response back to the ULBB.

5.19.2 Inquiry Response

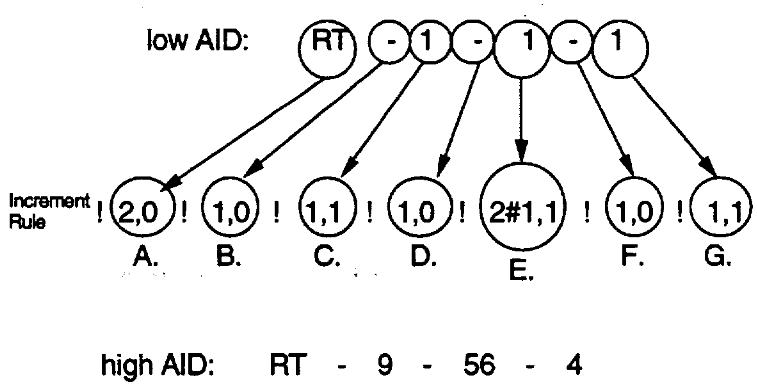
The following attributes are returned for each telephone number included in the response:

- telephone number type - an alphabetic character A through Z.
- release date - date on which the telephone number becomes available for assignment.
- telephone number list ID - the ID of the list which contains the telephone number.

- disconnect assignment category - the assignment category of the service which the telephone number had before it was disconnected.
- disconnect CATY - the CATY code of the service which the telephone number had before it was disconnected.
- permanent remark - any remark associated with the telephone number.

During this same work session, a deferred inventory contract can be submitted. This contract will update the assignment limitation type(s) and assignment limitation value(s) for each included telephone number. In addition, these telephone numbers may receive a new telephone number type and permanent remark, if the user chose to do so. A separate contract will be submitted for each returned telephone number that the user has chosen to include.

It is possible that since the WSIVAN contract processor received the telephone number, another request (e.g., UPDCKT) took the telephone number returned by WSIVAN. To notify the user that this has happened, the inventory contract will send a message to DCOR, if the telephone number is in a service or pending into a service



A. (2,0) Two character field, don't increment (RT)
B. (1.0) One character field, don't increment (-)
C. (1,1) One character field, increment by one (1-9)
D. (1,0) One character field, don't increment (-)
E. (2#1,1) Variable field length of 1 to 2, increment by one (1-56)
F. (1,0) One character field, don't increment (-)
G. (1,1) One character field, increment by one

Figure 5-1. AID Increment Rule Example

Model = acme

AID format name	AID	PORT	SLOT	RULE
A	RT-1-1-1	1-1-1	1-1	RT-1-1-1 to RT-9-56-4 Increment by 1 number in series = 4
	RT-1-1-2	1-1-2		
	RT-1-1-3	1-1-3		
	RT-1-1-4	1-1-4		
B	RT-1-2-1	1-2-1	1-2	RT-1-1-1 to RT-9-56-2 user low AID: RT-1-2-1 increment by 1 # in series = 2 asg lim = 2 no aid = 2
	ASG LIM	1-2-2		
	RT-1-2-3	1-2-3		
	ASG LIM	1-2-4		
C	RT-1-3	1-3-1	1-3	RT-1-1 to RT-9-56 user low AID: RT-1-3 Increment by 1 # in series = 4 asg lim: 2-4 no aid = 2-4 don't inc = 2-4
	ASG LIM	1-3-2		
	ASG LIM	1-3-3		
	ASG LIM	1-3-4		
D	RT-1-4-1	1-4-1	1-4	RT-1-1-1 to RT-9-56-4 user low AID: RT-1-4-1 increment by 1 # in series =4 asg lim = 3-4 no aid = 3-4
	RT-1-4-2	1-4-2		
	ASG LIM	1-4-3		
	ASG LIM	1-4-4		

Figure 5-2. CC Port AID Example

TABLE: aid cc port rules table
Instance Key: acme
****
Row Key: (aid format name, assignment rate)

lo_aid
hi_aid
#_in_series
no_aid
dont_incrmnt
asg_lim
A
RT-1-1-1
RT-9-56-4
!2,0!1,0!1,1!1,0!2#1,1!1,0!1,1
4
-
-
-
B
RT-1-1-1
RT-9-56-4
!2,0!1,0!1,1!1,0!2#1,1!1,0!1,1
2
2
-
2
C
RT-1-1-1
RT-9-56-4
!2,0!1,0!1,1!1,0!2#1,1
4
2-4
2-4
2-4
D
RT-1-1-1
RT-9-56-4
!2,0!1,0!1,1!1,0!2#1,1!1,0!1,1
4
3-4
-
3-4

Figure 5-3. AID Rules Table Example

TABLE APPENDIX 5

INVENTORY TABLES

Table 5-1. mini bl inv

Instance Key= none	
CLLI	TOTAL IN BLDG
piscnjpy	150
piscnjr1	275
piscnjr2	100

Table 5-2. mini bl use

Instance Key= none	
CLLI	IN USE
piscnjpy	100
piscnjr1	250
piscnjr2	30

Note: This table is summary data, not reference data.

Table 5-3. frame block capacity

CAP_ID	TERM_DIR	ALGORITHM VALUE
1	H	50
1	V	50
2	H	64
2	V	64
3	H	64
3	V	64
4	H	100
4	V	100
5	H	128
5	V	128

Table 5-4. inv frame layout

Instance Key = cp;fr f26

zone	mod	shelf	block	ntu_low_id	ntu_high_id	ntu_parse_rules	ntu_abs_low	ntu_abs_high
009	08	03	10	8-101	8-200	!10#1,0!1,0!4#1,1	a-1	9999999999-9999
005	02	01	06	5-001	5-100	!10#1,0!1,0!4#1,1	a-1	9999999999-9999

Note: This table is summary data, not reference data.

Table 5-5. spread count

EXAMPLE

INSTANCE KEYS: ictype.icid;group id

remote_id	hier_func	hier_level	eqpt_grp_id	sum_count
	a	1	5001	10
	a	2	5001-0	3
	a	2	5001-1	3
	a	2	5001-2	4
	a	4	5001-01	2
	a	4	5001-02	1
	a	4	5001-10	3
	a	4	5001-20	2
	a	4	5001-21	2
01	a	1	5002	2
01	a	2	5002-0	2
01	a	4	5002-01	2

Note: this table is summary data, not reference data.

Table 5-6. centrex rcu

INSTANCE KEY: IC ID, Centrex Group ID

Centrex Group ID	RCU	LCC	CAT	CCF1	CCF2	CCF3	CCF4	CCF5	CCF6	INCMP
ictype.icid.Centrex ID	rxra	cx1	12	cwt	esl	cta				
	ct1	cx2	30	chd	esl	cta				
	isdn	cdb	13	cwt	esl					
	ltq1	bts	14	chd	esl					
	ltq3	csv	14	cwt	esl	cta				
	ltq4	csd	14	chd	esl	cta				

Table 5-7. inv dpidb map

ALPHA_NUM	NUM	SVC_GRP_PRSE_KEY	LGC LOW	LGC HIGH
a	11	sg0	00	07
b	10	sg1	08	15
c	9	sg0	00	07
d	8	sg1	08	15
e	7	sg0	00	07
f	6	sg1	08	15
g	5	sg0	00	07
h	4	sg1	08	15
i	3	sg0	00	07
j	2	sg1	08	15
10	10	sg1	08	15
11	11	sg0	00	07
02	2	sg1	08	15
03	3	sg0	00	07
04	4	sg1	08	15
05	5	sg0	00	07
06	6	sg1	08	15
07	7	sg0	00	07
08	8	sg1	08	15
09	9	sg0	00	07

Table 5-8. load factor summary

Instance = IC Type/IC Id				
Load Factor Summary Table				
Load Div Id	Svc Type	Range (Low)	Range (High)	Load Factor
5es.0.00	ccs	0.0	106.8	1
5es.0.00	ccs	106.9	118.2	2
5es.0.00	ccs	118.3	127.0	3
5es.0.00	ccs	127.1	132.6	4
5es.0.00	ccs	132.7	137.8	5
5es.0.00	ccs	137.9	144.2	6
5es.0.00	ccs	144.3	151.8	7
5es.0.00	ccs	151.9	160.4	8
5es.0.00	ccs	160.5	229.9	9
5es.0.00	ccs	230.0	99999.9	10

Note: This is summary data, not reference data.

Table 5-9. inv order steps

(Instance key = IC;add;5ess)

STEP ID	WKCTR	FCN	Type	Range LO	Range HI	RMK	STAT
10	NAC	ADD	IC			Add IC	N
20	NAC	ADD	IC			Add RU Repeat for each RU	N
30	NAC	ADD	SWPT			Repeat for each hier.	N
40	FFORCE	ADD	SWPT			Add Frame data Repeat each frame block	N
50	NAC	ADD	EQPT			Add eqpt. groups Repeat for each hier.	N
60	NAC	ADD	CTX			Add CTX GRPs Repeat for each grp.	N
70	NAC	ADD	SFG			Add SFGs	N
80	NAC	ADD	HML			ADD HMLs	N
90	LAC	ADD	FRM			Add new Frame	N
100	Appl ADM	CHG				Update IC Priority	N
110	Appl ADM	CHG				Update IC NXX	N
120	Appl ADM	CHG				Update IC Frame Map	N
130	Appl ADM	ADD				Create Frame System Priority tbl	N
140	Appl ADM	ADD				Create Reverse Spread	N
150	Appl ADM	ADD				Create Deny Spread	N
160	Appl ADM	ADD				Create ccs adjustment	N
170	Appl ADM	ADD				Create ccs adjustment ISDN	N
180	Appl ADM	ADD				Create ccs adjustment WATS	N
190	Appl ADM	ADD				Create pps adjustment ISDN	N
200	Appl ADM	ADD				Create Reuse table	N
210	Appl ADM	ADD				Create CEC Exclusion table	N
220	Appl ADM	ADD				Create Centrex RCU	N
230	Appl ADM	ADD				Create Dip Definition	N
240	NAC	ADD				Run UPDLF	N
250	NAC	ADD	CLCT			Add B-type CLCTs	N
260	NAC	ADD	CLCT			Add D-type CLCTs	N

Table 5-10. allocation control

Instance = ictype;generic;icid	
Alloc Grp Dist Weight	1.0
Usage Dist Weight	1.0
Frame Zone Dist Weight	0.0
Essentiality Dist Weight	1.0
Signaling Dist Weight	.3
Max# Steps per Cycle	5000
Default CCS	2.0

Table 5-11a. allocation excl - 1A ESS

Instance = 1ES
Excluded When
am=2rp,2bp,1c,note,test

Table 5-11b. allocation excl - 2ESS

Instance = 2ES
Excluded When
am=t1,t2,t3,note,test

Table 5-11c. allocation excl - 5ESS

Instance = 5ES
Excluded When
am=dch,dch2,dchc
am=idch,idch2,idchc
am=ppb,ppb2,ppbc
am=ippb,ippbc
am=odb,odb2,odbc
am=iodb,iodbc
am=note,test

Table 5-11d. allocation excl - AXE
(Global Reference Data name = allocation excl)

Instance = AXE
Excluded When
ac=pasm
am=idlc,note,test

Table 5-11e. allocation excl - DCO

Instance = DCO
Excluded When
am=idlc,note,test

Table 5-11f. allocation excl - DMS100

Instance = DMC
Excluded When
am=iu,it,iusp,itsp,dch,ppb,idlc,data
am=note,test

Table 5-11g. allocation excl - DMS10

Instance = DMX
Excluded When
am=idlc,note,test,iu

Table 5-11h. allocation excl - EWSD
(Global Reference Data name = allocation excl)

Instance = EWSD
Excluded When
am=2rp,2bp,1c,note,test

Table 5-11i. allocation excl - 3ESS
(Global Reference Data name = allocation excl)

Instance = 3ES
Excluded When
am=note,test

Table 5-12a. allocation restriction - AXE

Instance = AXE	
When	Valid Admin Consts
ct=lsm/em	1b,1r,hb,pb,note,test,data,2rp,4rp,8rp,2bp,4bp,8bp
ct=esm/em	idlc

Table 5-12b. allocation restriction - DCO

Instance = DCO	
When	Valid Admin Funcs
ct=817540	1b,1r,hb,pb,note,test
ct=817543	1b,1r,hb,pb,note,test
ct=817541	2rp,4rp,8rp,2bp,4bp,8bp
ct=817544	2rp,4rp,2bp,4bp
ct=817545	1c

Table 5-12c. allocation restriction - DMS100

Instance = DMC	
When	Valid Admin Consts
ct=A	1b,1r,hb,pb,2rp,4rp,8rp,2bp,4bp,8bp
ct=A2X	1b,1r,hb,pb,2rp,4rp,8rp,2bp,4bp,8bp
ct=B	1c,1b,1r,hb,pb,2rp,4rp,8rp,2bp,4bp,8bp
ct=B2X	1c,1b,1r,hb,pb,2rp,4rp,8rp,2bp,4bp,8bp
ct=C	1b,hb,pb,madn
ct=C2X	1b,hb,pb,madn
ct=D	1b,hb,pb,1r,data
ct=D2X	1b,hb,pb,1r,data
ct=E	1b,hb,pb,1r
ct=U	iu,it,iusp,itsp,dch,ppb,ekts
ct=S/T	iu,it,iusp,itsp,dch,ppb,ekts

Table 5-12d. allocation restriction - DMS10

Instance = DMX	
When	Valid Admin Funcs
ct=nt2t00	1b,1r,hb,pb
ct=nt2t01	2rp,4rp,8rp,2bp,4bp,8bp
ct=nt2t02	2rp,4rp,8rp,2bp,4bp,8bp
ct=nt2t03	1b,1r,hb,pb
ct=nt2t04	1c
ct=nt2t05	8rp,8bp
ct=nt2t07	2rp,4rp.8rp,2bp,4bp,8bp
ct=nt2t08	2rp,4rp,8rp,2bp,4bp.8bp
ct=nt2t09	8rp,8bp
ct=nt2t43	1b,1r,hb,pb,2rp,4rp,8rp,2bp,4bp,8bp
ct=nt2t44	1b,1r,hb,pb,2rp,4rp,8rp,2bp,4bp,8bp
ct=nt2t445	1c
ct=nt2t69	1b,1r,hb,pb
ct=nt6x17	1b,1r,hb,pb,2rp,4rp,8rp,2bp,4bp,8bp
ct+nt6x18aa	1b,1r,hb,pb,1c,2rp,4rp,8rp,2bp,4bp,8bp
ct=nt6x18ab	1c
ct=nt6x21ac	madn
ct=nt6x71ab	data
ct=nt6x71ba	data
ct=ntbx27aa	iu

Table 5-13a. allocation pattern mask - 1AESS

Instance = Analog.1AESS*	
Seq No	Swpt mask
001	-000
002	-100
003	-200
004	-300
005	-004
006	-104
007	-204
008	-304
009	-008
010	-108
011	-208
012	-308
013	-012
014	-112
015	-212
016	-312
017	-001
018	-101
019	-201
020	-301
021	-005
022	-105
023	-205
024	-305
025	-009
026	-109
027	-209
028	-309
029	-013
030	-113
031	-213
032	-313

*NOTE: Instance Keys are Hier Func, IC Type, IC Generic, IC ID, LD
(all but 1st two are Optional)

Table 5-13a. allocation pattern mask (cont.) - 1AESS

Instance = Analog.1AESS	
Seq No	Swpt mask
033	-002
034	-102
035	-202
036	-302
037	-006
038	-106
039	-206
040	-306
041	-010
042	-110
043	-210
044	-310
045	-014
046	-114
047	-214
048	-314
049	-003
050	-103
051	-203
052	-303
053	-007
054	-107
055	-207
056	-307
057	-011
058	-111
059	-211
060	-311
061	-015
062	-115
063	-215
064	-315

*NOTE: Instance Keys are Hier Func, IC Type, IC Generic, IC ID, LD
(all but 1st two are Optional)

Table 5-13b. allocation pattern mask - 5ESS

Instance = Analog,5ESS*	
Seq No	Swpt mask
001	-00
002	-10
003	-40
004	-50
005	-20
006	-30
007	-60
008	-70
001	-01
002	-11
003	-41
004	-51
005	-21
006	-31
007	-61
008	-71
001	-02
002	-12
003	-42
004	-52
005	-22
006	-32
007	-62
008	-72
001	-03
002	-13
003	-43
004	-53
005	-23
006	-33
007	-63
008	-73

*NOTE: Instance Keys are Hier Func, IC Type, IC Generic, IC ID, LD
(all but 1st two are Optional)

Table 5-14a. allocation pattern order - 1AESS

Instance = Analog, 1AESS*	
Seq No	AdminCon
010	hb
020	1c
030	pb
040	1b
050	1r
060	2rp
070	2bp

*NOTE: Instance Keys are Hier Func, IC Type, IC Generic, IC ID, LD
(all but 1st two are Optional)

Table 5-14b. allocation pattern order - 5ESS

Instance = Analog,5ESS*	
Seq No	AdminCon
010	hb
020	pb
030	1c
040	1b
050	1r
060	2rp
070	2bp
080	4rp
090	4bp
100	8rp
110	8bp

*NOTE: Instance Keys are Hier Func, IC Type, IC Generic, IC ID, LD
(all but 1st two are Optional)

Table 5-15. CC Drop Rate Table
(Global Reference Data name = cc drop rate)

cc_model	drop_rate_1	drop_rate_2	drop_rate_3	drop_rate_4	drop_rate_5	drop_rate_6	drop_rate_7
an	dso	ds1	ds3				
ddm2000	ds1						
discs	dso	ds1					
fctr	dso	ds1	ds3				
fdlc	ds0						
flm1	ds1	ds3					
iisc	dso						
ltsp	dso	ds1					
slc2t	dso	ds1					
slc96	dso						
ssu16	ds0						
umc	dso	ds1					
umc48	dso	ds1					
usam	ds0						

Table 5-16a. AID CC Port Rules Table

(Global Reference Data name = aid ccpt rules)

Instance: loc2onu

Row key:aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

quad
dfm-1-onu-1-bp-1
dfm-5-onu-16-bp-48
!3,0!1,0!1,1!1,0!3,0!1,0!2#1,1!1,0!2,0!1,0!2#1,1
4
–
–
–

dual
dfm-1-onu-1-bp-1
dfm-5-onu-16-bp-48
!3,0!1,0!1,1!1,0!3,0!1,0!2#1,1!1,0!2,0!1,0!2#1,1
4
2,4
–
2,4

dual4
dfm-1-onu-1-bp-1
dfm-5-onu-16-bp-48
!3,0!1,0!1,1!1,0!3,0!1,0!2#1,1!1,0!2,0!1,0!2#1,1
4
2,4
–
–

Instance: loc2onu (cont'd)

single
dfm-1-onu-1-bp-1
dfm-5-onu-16-bp-48
!3,0!1,0!1,1!1,0!3,0!1,0!2#1,1!1,0!2,0!1,0!2#1,1
4
2,3,4
_
3,4

dds
dfm-1-onu-1-bp-1
dfm-5-onu-16-bp-48
!3,0!1,0!1,1!1,0!3,0!1,0!2#1,1!1,0!2,0!1,0!2#1,1
4
1,2,4
_
1,2

Table 5-16b. AID CC Port Rules Table
(Global Reference Data Name = aid ccpt rules)

Instance key: loc2

Row key:aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

quad
oft-1-dg-1
oft-4-dg-4
!3,0!1,0!1,1!1,0!2,0!1,0!1,1
4
_
_
_

Table 5-16c. AID CC Port Rules Table

(Global Reference Data Name = aid ccpt rules)

Instance: ltsp

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

rtquad
rt1-1-1-1
rt15-9-56-4
!2,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
4
–
–
–

rtequad
rte1-1-1-1
rte15-9-56-4
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
4
–
–
–

rtwquad
rtw1-1-1-1
rtw15-9-56-4
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
4
–
–
–

Instance: ltsp (cont'd)

cotquad
cot-1-1-1
cot-9-56-4
!3,0!1,0!1,1!1,0!2#1,1!1,0!1,1
4
–
–
–

Instance: ltsp (cont'd)

rtdual
rt1-1-1-1
rt15-9-56-2
!2,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
4
2,4
2,4
–

rtedual
rte1-1-1-1
rte15-9-56-2
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
4
2,4
2,4
–

rtwdual
rtw1-1-1-1
rtw15-9-56-2
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
4
2,4
2,4
–

cotdual
cot-1-1-1
cot-9-56-2
!3,0!1,0!1,1!1,0!2#1,1!1,0!1,1
4
2,4
2,4
–

Instance: ltsp (cont'd)

rtds1
rt1-1-1
rt15-9-56
!2,0!2#1,1!1,0!1,1!1,0!2#1,1
4
2-4
2-4
3,4

rteds1
rte1-1-1
rte15-9-56
!3,0!2#1,1!1,0!1,1!1,0!2#1,1
4
2-4
2-4
3,4

rtwds1
rtw1-1-1
rtw15-9-56
!3,0!2#1,1!1,0!1,1!1,0!2#1,1
4
2-4
2-4
3,4

cotds1
cot-1-1
cot-9-56
!3,0!1,0!1,1!1,0!2#1,1
4
2-4
2-4
3,4

Instance: ltsp (cont'd)

rtsingle
rt1-1-1-1
rt15-9-56-1
!2,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
4
2-4
2-4
3,4

rtesingle
rte1-1-1-1
rte15-9-56-1
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
4
2-4
2-4
3,4

rtwsingle
rtw1-1-1-1
rtw15-9-56-1
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
4
2-4
2-4
3,4

cotsingle
cot-1-1-1
cot-9-56-1
!3,0!1,0!1,1!1,0!2#1,1!1,0!1,1
4
2-4
2-4
3,4

Instance: ltsp (cont'd)

rtou
rt1-1-oluh1
rt15-9-oluh6
!2,0!2#1,1!1,0!1,1!1,0!4,0!1,1
1
–
–
–

rteou
rte1-1-oluh1
rte15-9-oluh6
!3,0!2#1,1!1,0!1,1!1,0!4,0!1,1
1
–
–
–

rtwou
rtw1-1-oluh1
rtw15-9-oluh6
!3,0!2#1,1!1,0!1,1!1,0!4,0!1,1
1
–
–
–

cotou
cot-1-oluh1
cot-9-oluh6
!3,0!1,0!1,1!1,0!4,0!1,1
1
–
–
–

Instance: ltsp (cont'd)

rthou
rt1-1-oluh1
rt15-9-oluh16
!2,0!2#1,1!1,0!1,1!1,0!4,0!2#1,1
1
–
–
–

rtehou
rte1-1-oluh1
rte15-9-oluh16
!3,0!2#1,1!1,0!1,1!1,0!4,0!2#1,1
1
–
–
–

rtwhou
rtw1-1-oluh1
rtw15-9-oluh16
!3,0!2#1,1!1,0!1,1!1,0!4,0!2#1,1
1
–
–
–

cothou
cot-1-oluh1
cot-9-oluh16
!3,0!1,0!1,1!1,0!4,0!2#1,1
1
–
–
–

Table 5-16d. AID CC Port Rules Table
(Global Reference Data Name = aid ccpt rules)

Instance: ltsponu

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

rtquad
rt1-1-onu1-1-1
rt15-9-onu16-24-4
!2,0!2#1,1!1,0!1,1!1,0!3,0!2#1,1!1,0!2#1,1!1,0!1,1
4
–
–
–

rtequad
rte1-1-onu1-1-1
rte15-9-onu16-24-4
!3,0!2#1,1!1,0!1,1!1,0!3,0!2#1,1!1,0!2#1,1!1,0!1,1
4
–
–
–

rtwquad
rtw1-1-onu1-1-1
rtw15-9-onu16-24-4
!3,0!2#1,1!1,0!1,1!1,0!3,0!2#1,1!1,0!2#1,1!1,0!1,1
4
–
–
–

Instance: ltsponu(cont'd)

cotquad
cot-1-onu1-1-1
cot-9-onu16-24-4
!3,0!1,0!1,1!1,0!3,0!2#1,1!1,0!2#1,1!1,0!1,1
4
–
–
–

rtdual
rt1-1-onu1-1-1
rt15-9-onu16-24-2
!2,0!2#1,1!1,0!1,1!1,0!3,0!2#1,1!1,0!2#1,1!1,0!1,1
4
2,4
2,4
–

rtedual
rte1-1-onu1-1-1
rte15-9-onu16-24-2
!3,0!2#1,1!1,0!1,1!1,0!3,0!2#1,1!1,0!2#1,1!1,0!1,1
4
2,4
2,4
–

rtwdual
rtw1-1-onu1-1-1
rtw15-9-onu16-24-2
!3,0!2#1,1!1,0!1,1!1,0!3,0!2#1,1!1,0!2#1,1!1,0!1,1
4
2,4
2,4
–

cotdual
cot-1-onu1-1-1
cot-9-onu16-24-2
!3,0!1,0!1,1!1,0!3,0!2#1,1!1,0!2#1,1!1,0!1,1
4
2,4
2,4
–

Instance: ltsponu (cont'd)

rtds1
rt1-1-onu1-1
rt15-9-onu16-24
!2,0!2#1,1!1,0!1,1!1,0!3,0!2#1,1!1,0!2#1,1
4
2-4
2-4
3,4

rteds1
rte1-1-onu1-1
rte15-9-onu16-24
!3,0!2#1,1!1,0!1,1!1,0!3,0!2#1,1!1,0!2#1,1
4
2-4
2-4
3,4

rtwds1
rtw1-1-onu1-1
rtw15-9-onu16-24
!3,0!2#1,1!1,0!1,1!1,0!3,0!2#1,1!1,0!2#1,1
4
2-4
2-4
3,4

cotds1
cot-1-onu1-1
cot-9-onu16-24
!3,0!1,0!1,1!1,0!3,0!2#1,1!1,0!2#1,1
4
2-4
2-4
3,4

Instance: ltsponu (cont'd)

rtsingle
rt1-1-onu1-1-1
rt15-9-onu16-24-1
!2,0!2#1,1!1,0!1,1!1,0!3,0!2#1,1!1,0!2#1,1!1,0!1,1
4
2-4
2-4
3,4

rtesingle
rte1-1-onu1-1-1
rte15-9-onu16-24-1
!3,0!2#1,1!1,0!1,1!1,0!3,0!2#1,1!1,0!2#1,1!1,0!1,1
4
2-4
2-4
3,4

rtwsingle
rtw1-1-onu1-1-1
rtw15-9-onu16-24-1
!3,0!2#1,1!1,0!1,1!1,0!3,0!2#1,1!1,0!2#1,1!1,0!1,1
4
2-4
2-4
3,4

cotsingle
cot-1-onu1-1-1
cot-9-onu16-24-1
!3,0!1,0!1,1!1,0!3,0!2#1,1!1,0!2#1,1!1,0!1,1
4
2-4
2-4
3,4

Table 5-16e. AID CC Port Rules Table
(Global Reference Data name = aid ccpt rules)

Instance key: slc2t

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

quad
drop-1-1-1
drop-8-24-4
!4,0!1,0!1,1!1,0!2#1,1!1,0!1,1
4
–
–
–

dual
drop-1-1-1
drop-8-24-4
!4,0!1,0!1,1!1,0!2#1,1!1,0!1,1
4
3,4
–
3,4

single
drop-1-1-1
drop-8-24-4
!4,0!1,0!1,1!1,0!2#1,1!1,0!1,1
4
2,3,4
–
2,3,4

Instance key: slc2t

single4w
drop-1-1-1
drop-8-24-4
!4,0!1,0!1,1!1,0!2#1,1!1,0!1,1
4
2,3,4
–
3,4

ds1
c-1-1
c-7-4
!1,0!1,0!1,1!1,0!1,1
4
–
–
–

optc
m
m
!1,0
1
–
–
–

Table 5-16f. AID CC Port Rules Table
(Global Reference Data name = aid ccpt rules)

Instance key: slconu

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

quad
dtdp-1-1-1-1
dtdp-8-23-6-4
!4,0!1,0!1,1!1,0!2#1,2!1,0!1,1!1,0!1,1
4
_
_
_

dual
dtdp-1-1-1-1
dtdp-8-23-6-4
!4,0!1,0!1,1!1,0!2#1,2!1,0!1,1!1,0!1,1
4
3,4
_
3,4

single
dtdp-1-1-1-1
dtdp-8-23-6-4
!4,0!1,0!1,1!1,0!2#1,2!1,0!1,1!1,0!1,1
4
2,3,4
_
2,3,4

Instance key: slconu

single4w
dtdp-1-1-1-1
dtdp-8-23-6-4
!4,0!1,0!1,1!1,0!2#1,2!1,0!1,1!1,0!1,1
4
2,3,4
-
3,4

Table 5-16g. AID CC Port Rules Table
(Global Reference Data name = aid ccpt rules)

Instance key: ddm2000

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

ds1
c-1-1
c-7-4
!1,0!1,0!1,1!1,0!1,1
4
–
–
–

optc
m
m
!1,0
1
–
–
–

Table 5-16h. AID CC Port Rules Table
(Global Reference Data name = aid ccpt rules)

Instance key: slc96

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

isdn
-
-
-
4
1-4
-
2-4

Table 5-16i. AID CC Port Rules Table
(Global Reference Data name = aid ccpt rules)

Instance key: an

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

rt
RT1-1-1
RT1-7-96
!3,0!1,0!1,1!1,0!2#1,1
1
–
–
–

cot
CO1-1-1
CO1-7-96
!3,0!1,0!1,1!1,0!2#1,1
1
–
–
–

Instance key: an

ds1
1-CE1-1-1
1-CE1-18-14
!1,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1
1
–
–
–

ds3
1-CE1-3-1
1-CE1-17-3
!1,0!1,0!3,0!1,0!2#1,2!1,0!2#1,1
1
–
–
–
optc
1-CE1-1
1-CE1-9
!1,0!1,0!3,0!1,0!1,2
1
–
–
–

Table 5-16j. AID CC Port Rules Table
(Global Reference Data name = aid ccpt rules)
Instance key: anonu

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

rt
RG1-FST1-1
RG2-FST7-48
!2,0!1,1!1,0!3,0!1,1!1,0!2#1,1
1
_
_
_

ds1
RG1-FST1-DS1-1
RG2-FST7-DS1-6
!2,0!1,1!1,0!3,0!1,1!1,0!3,0!1,0!1,1
1
_
_
_

Table 5-16k. AID CC Port Rules Table
(Global Reference Data name = aid ccpt rules)

Instance Key: discs

Row key:aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

dcu
sh1-1
sh7-96
!2,0!1,1!1,0!2#1,1
2
-
-
-

scu
sh1-1
sh7-96
!2,0!1,1!1,0!2#1,1
2
2
-
2

scu4w
sh1-1
sh7-96
!2,0!1,1!1,0!2#1,1
2
2
-
-

ou
ocs1-oiu1
ocs7-oiu8
!3,0!1,1!1,0!3,0!1,1
1
-
-
-

ds1
1
28
!2#1,1
4
-
-
-

Instance: discs

ds1e
1
84
!2#1,1
4
-
-
-

Table 5-16l. AID CC Port Rules Table
(Global Reference Data name = aid ccpt rules)

Instance Key: disonu

Row key:aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

dcu
ocs1-oiu1-onu1-1
ocs7-oiu8-onu1-12
!3,0!1,1!1,0!3,0!1,1!1,0!3,0!1,0!1,0!2#1,1
2
-
-
-

scu
ocs1-oiu1-onu1-1
ocs7-oiu8-onu1-12
!3,0!1,1!1,0!3,0!1,1!1,0!3,0!1,0!1,0!2#1,1
2
2
-
2

scu4w
ocs1-oiu1-onu1-1
ocs7-oiu8-onu1-12
!3,0!1,1!1,0!3,0!1,1!1,0!3,0!1,0!1,0!2#1,1
2
2
-
-

Table 5-16m. AID CC Port Rules Table
(Global Reference Data Name = aid ccpt rules)

Instance: iisc

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

spm1
SP-1
SP-96
!2,0!1,0!2#1,1
4
3,4
–
3,4

spm2
SP-1
SP-192
!2,0!1,0!3#1,1
4
3,4
–
3,4

mpm1
MP-1
MP-96
!2,0!1,0!2#1,1
4
3,4
–
3,4

Instance: iisc (cont'd)

mpm2
MP-1
MP-192
!2,0!1,0!3#1,1
4
3,4
–
3,4

uvgm1
UVG-1
UVG-96
!3,0!1,0!2#1,1
4
3,4
–
3,4

uvgm2
UVG-1
UVG-192
!3,0!1,0!3#1,1
4
3,4
–
3,4

Instance: iisc (cont'd)

2wcsm1
2WCS-1
2WCS-96
!4,0!1,0!2#1,1
4
3,4
_
3,4

2wcsm2
2WCS-1
2WCS-192
!4,0!1,0!3#1,1
4
3,4
_
3,4

2wcfm1
2WCF-1
2WCF-96
!4,0!1,0!2#1,1
4
3,4
_
3,4

2wcfm2
2WCF-1
2WCF-192
!4,0!1,0!3#1,1
4
3,4
_
3,4

Instance: iisc (cont'd)

ebsm1
EBS-1
EBS-96
!3,0!1,0!2#1,1
4
3,4
-
3,4

ebsm2
EBS-1
EBS-192
!3,0!1,0!3#1,1
4
3,4
-
3,4

Instance: iisc (cont'd)

didcsm1
DIDCS-1
DIDCS-96
!5,0!1,0!2#1,1
4
3,4
–
3,4

didcsm2
DIDCS-1
DIDCS-192
!5,0!1,0!3#1,1
4
3,4
–
3,4

didcfm1
DIDCF-1
DIDCF-96
!5,0!1,0!2#1,1
4
3,4
–
3,4

didcfm2
DIDCF-1
DIDCF-192
!5,0!1,0!3#1,1
4
3,4
–
3,4

Instance: iisc (cont'd)

4pm1
4P-1
4P-96
!2,0!1,0!2#1,1
4
–
–
–

4pm2
4P-1
4P-192
!2,0!1,0!3#1,1
4
–
–
–

Instance: iisc (cont'd)

coinm1
COIN-1
COIN-96
!4,0!1,0!2#1,1
4
2,3,4
_
2,3,4

coinm2
COIN-1
COIN-192
!4,0!1,0!3#1,1
4
2,3,4
_
2,3,4

4w0m1
4W0-1
4W0-96
!3,0!1,0!2#1,1
4
2,3,4
_
3,4

4w0m2
4W0-1
4W0-192
!3,0!1,0!3#1,1
4
2,3,4
_
3,4

4w1m1
4W1-1
4W1-96
!3,0!1,0!2#1,1
4
2,3,4
_
3,4

Instance: iisc (cont'd)

4w1m2
4W1-1
4W1-192
!3,0!1,0!3#1,1
4
2,3,4
–
3,4

4w2m1
4W2-1
4W2-96
!3,0!1,0!2#1,1
4
2,3,4
–
3,4

4w2m2
4W2-1
4W2-192
!3,0!1,0!3#1,1
4
2,3,4
–
3,4

4wetom1
4WETO-1
4WETO-96
!5,0!1,0!2#1,1
4
2,3,4
–
3,4

4wetom2
4WETO-1
4WETO-192
!5,0!1,0!3#1,1
4
2,3,4
–
3,4

Instance: iisc (cont'd)

4wdxm1
4WDX-1
4WDX-96
!4,0!1,0!2#1,1
4
2,3,4
_
3,4

4wdxm2
4WDX-1
4WDX-192
!4,0!1,0!3#1,1
4
2,3,4
_
3,4

ocudp2m1
OCUDP2-1
OCUDP2-96
!6,0!1,0!2#1,1
4
2,3,4
_
3,4

ocudp2m2
OCUDP2-1
OCUDP2-192
!6,0!1,0!3#1,1
4
2,3,4
_
3,4

Instance: iisc (cont'd)

dsodp2m1
DSODP2-1
DSODP2-96
!6,0!1,0!2#1,1
4
2,3,4
–
3,4

dsodp2m2
DSODP2-1
DSODP2-192
!6,0!1,0!3#1,1
4
2,3,4
–
3,4

ds1
DS1LT-1
DS1LT-5
!5,0!1,0!1,1
1
–
–
–

ds2
DS2-1
DS2-2
!3,0!1,0!1,1
1
–
–
–

Table 5-16n. AID CC Port Rules Table
(Global Reference Data Name = aid ccpt rules)

Instance key: hmx

Row key:aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

ds1
ds1u1-1
ds1u7-4
!4,0!1,1!1,0!1,1
28
_
_
_

misu
cu1-1
cu8-4
!2,0!1,1!1,0!1,1
32
-
-
-

single
-
-
-
2
-
-
2

Instance key: hmx

dual
-
-
-
2
-
-
-

coin
cu1-1
cu8-4
!2,0!1,1!1,0!1,1
4
-
-
3,4

Table 5-16o. AID CC Port Rules Table
(Global Reference Data Name = aid ccpt rules)

Instance key: hfc2t

Row key:aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

quad
-
-
-
4
-
-
-

dual
-
-
-
4
-
-
3,4

single
-
-
-
4
-
-
2-4

Table 5-16p. AID CC Port Rules Table
(Global Reference Data name = aid ccpt rules)

Instance key: fctr

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

quad
nbs-1-1-1
nbs-10-48-4
!3,0!1,0!2#1,1!1,0!2#1,1!1,0!1,1
4
–
–
–

dual
nbs-1-1-1
nbs-10-48-4
!3,0!1,0!2#1,1!1,0!2#1,1!1,0!1,1
4
3,4
–
3,4

single
nbs-1-1-1
nbs-10-48-4
!3,0!1,0!2#1,1!1,0!2#1,1!1,0!1,1
4
2,3,4
–
2,3,4

Instance: fctr (cont'd)

single4w
nbs-1-1-1
nbs-10-48-4
!3,0!1,0!2#1,1!1,0!2#1,1!1,0!1,1
4
2,3,4
–
3,4

ds1
5-1-1
5-7-4
!1,0!1,0!1,1!1,0!1,1
4
–
–
–

ds3
4
5
!1,1
1
–
–
–

optc
1w
2w
!1,1!1,0
1
–
–
–

Table 5-16q. AID CC Port Rules Table
(Global Reference Data name = aid ccpt rules)

Instance key: fctronu

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

quad
oas-1-1-1-1
oas-10-24-6-4
!3,0!1,0!2#1,1!1,0!2#1,1!1,0!1,1!1,0!1,1
4
_
_
_

dual
oas-1-1-1-1
oas-10-24-6-4
!3,0!1,0!2#1,1!1,0!2#1,1!1,0!1,1!1,0!1,1
4
3,4
_
3,4

single
oas-1-1-1-1
oas-10-24-6-4
!3,0!1,0!2#1,1!1,0!2#1,1!1,0!1,1!1,0!1,1
4
2,3,4
_
2,3,4

Instance: fctronu

single4w
oas-1-1-1-1
oas-10-24-6-4
!3,0!1,0!2#1,1!1,0!2#1,1!1,0!1,1!1,0!1,1
4
2,3,4
_
3,4

Table 5-16r. AID CC Port Rules Table
(Global Reference Data name = aid ccpt rules)

Instance key: flm1

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

ds1
3-1-1
5-7-4
!1,1!1,0!1,1!1,0!1,1
4
–
–
–

ds3
3
5
!1,1
1
–
–
–

optc
1w
2w
!1,1!1,0
1
–
–
–

Instance key: fdlc

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

isdn
-
-
-
4
1-4
-
2-4

Table 5-16s. AID CC Port Rules Table
(Global Reference Data name = aid ccpt rules)

Instance key: sdv2t

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

quad
onuvtnb-1-1-1-1-1
onuvtnb-2-20-4-12-4
!7,0!1,0!1,0!1,0!2#1,0!1,0!1,0!1,0!2#1,1!1,0!1,1
4
-
-
-

dual
onuvtnb-1-1-1-1-1
onuvtnb-2-20-4-12-4
!7,0!1,0!1,0!1,0!2#1,0!1,0!1,0!1,0!2#1,1!1,0!1,1
4
3,4
-
3,4

single
onuvtnb-1-1-1-1-1
onuvtnb-2-20-4-12-4
!7,0!1,0!1,0!1,0!2#1,0!1,0!1,0!1,0!2#1,1!1,0!1,1
4
2-4
-
2-4

single4w
onuvtnb-1-1-1-1-1
onuvtnb-2-20-4-12-4
!7,0!1,0!1,0!1,0!2#1,0!1,0!1,0!1,0!2#1,1!1,0!1,1
4
2-4
-
3,4

Table 5-16t. AID CC Port Rules Table
(Global Reference Data name = aid ccpt rules)

Instance key: next3

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

hextiu
alt-1-1
alt-64-24
!3,0!1,0!2#1,1!1,0!2#1,1
6
-
-
-

dualbiu
alt-1-1-1
alt-64-16-16
!3,0!1,0!2#1,1!1,0!2#1,1!1,0!2#1,1
2
-
-
-

singlebiu
alt-1-1-1
alt-64-16-16
!3,0!1,0!2#1,1!1,0!2#1,1!1,0!2#1,1
2
2
-
2

singlessu
alt-1-1-1-1
alt-64-16-8-4
!3,0!1,0!2#1,1!1,0!2#1,1!1,0!1,1!1,0!1,1
4
2,4
-
2,4

Instance key: next3

dualssu
alt-1-1-1-1
alt-64-16-8-4
!3,0!1,0!2#1,1!1,0!2#1,1!1,0!1,1!1,0!1,1
4
-
-
-

Table 5-16u. AID CC Port Rules Table
(Global Reference Data name = aid ccpt rules)

Instance key: ssu16

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

singlessu
-
-
-
2
-
-
2

dualssu
-
-
-
2
-
-
-

Table 5-16v. AID CC Port Rules Table
(Global Reference Data name = aid ccpt rules)

Instance key: usam

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

hex
alt-1-1
alt-64-96
!3,0!1,0!2#1,1!1,0!2#1,1
6
-
-
-

Table 5-16w. AID CC Port Rules Table
(Global Reference Data Name = aid ccpt rules)

Instance: umc

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

rthex
rst1-1-1-1
rst15-8-22-6
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
6
–
–
–

rttriad
rst1-1-1-1
rst15-8-22-3
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
6
2,4,6
2,4,6
–

rt2wdual
rst1-1-1-1
rst15-8-22-2
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
6
2,3,4,6
2,3,4,6
2,3,4,6

Instance: umc (cont'd)

rt4wdual
rst1-1-1-1
rst15-8-22-2
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
6
2,3,4,6
2,3,4,6
3,4

rt2wsngl
rst1-1-1-1
rst15-8-22-1
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
6
2-6
2-6
2-6

rt4wsngl
rst1-1-1-1
rst15-8-22-1
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
6
2-6
2-6
3-6

rtds1
rst1-1-1
rst15-8-22
!3,0!2#1,1!1,0!1,1!1,0!2#1,1
6
1,3,4,5,6
1,3,4,5,6
1,3,4,6

Instance: umc (cont'd)

cothex
let-1-1-1
let-8-22-6
!3,0!1,0!1,1!1,0!2#1,1!1,0!1,1
6
–
–
–

cottriad
let-1-1-1
let-8-22-3
!3,0!1,0!1,1!1,0!2#1,1!1,0!1,1
6
2,4,6
2,4,6
–

cot2wdual
let-1-1-1
let-8-22-2
!3,0!1,0!1,1!1,0!2#1,1!1,0!1,1
6
2,3,4,6
2,3,4,6
2,3,4,6

cot4wdual
let-1-1-1
let-8-22-2
!3,0!1,0!1,1!1,0!2#1,1!1,0!1,1
6
2,3,4,6
2,3,4,6
3,4

Instance: umc (cont'd)

cot2wsngl
let-1-1-1
let-8-22-1
!3,0!1,0!1,1!1,0!2#1,1!1,0!1,1
6
2-6
2-6
2-6

cot4wsngl
let-1-1-1
let-8-22-1
!3,0!1,0!1,1!1,0!2#1,1!1,0!1,1
6
2-6
2-6
3-6

cotds1
let-1-1
let-8-22
!3,0!1,0!1,1!1,0!2#1,1!1,0!1,1
6
1,3,4,5,6
1,3,4,5,6
1,3,4,6

Table 5-16x. AID CC Port Rules Table

(Global Reference Data Name = aid ccpt rules)

Instance: umc48

Row key: aid_format
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment
asgn_limitation

rthex
rst1-1-1-1
rst15-1-10-6
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
6
–
–
–

rttriad
rst1-1-1-1
rst15-1-10-3
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
6
2,4,6
2,4,6
–

rt2wdual
rst1-1-1-1
rst15-1-10-2
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
6
2,3,4,6
2,3,4,6
2,3,4,6

Instance: umc48 (cont'd)

rt4wdual
rst1-1-1-1
rst15-1-10-2
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
6
2,3,4,6
2,3,4,6
3,4

rt2wsngl
rst1-1-1-1
rst15-1-10-1
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
6
2-6
2-6
2-6

rt4wsngl
rst1-1-1-1
rst15-1-10-1
!3,0!2#1,1!1,0!1,1!1,0!2#1,1!1,0!1,1
6
2-6
2-6
3-6

rtds1
rst1-1-1
rst15-1-10
!3,0!2#1,1!1,0!1,1!1,0!2#1,1
6
1,3,4,5,6
1,3,4,5,6
1,3,4,6

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Admin Group Exclusion	6-78	admin group excl
Assignment Category CC Rule Set - AN	6-63.and	asgn category rules cc
Assignment Category CC Rule Set - ANONU	6-63.ano	asgn category rules cc
Assignment Category CC Rule Set - DDM2000	6-63.dm2	asgn category rules cc
Assignment Category CC Rule Set - DFLT	6-63.dft	asgn category rules cc
Assignment Category CC Rule Set - DISCS	6-63.dis	asgn category rules cc
Assignment Category CC Rule Set - EDSX	6-63.eds	asgn category rules cc
Assignment Category CC Rule Set - FCTR	6-63.fct	asgn category rules cc
Assignment Category CC Rule Set - FCTRONU	6-63.fco	asgn category rules cc
Assignment Category CC Rule Set - FDLC	6-63.fdl	asgn category rules cc
Assignment Category CC Rule Set - FLM 150	6-63.flm	asgn category rules cc
Assignment Category CC Rule Set - HFC2T	6-63.hfc	asgn category rules cc
Assignment Category CC Rule Set - HMX	6-63.hmx	asgn category rules cc
Assignment Category CC Rule Set - LOC2	6-63.lc2	asgn category rules cc
Assignment Category CC Rule Set - NEXT3	6-63.nxt	asgn category rules cc
Assignment Category CC Rule Set - SDV2T	6-63.sdv	asgn category rules cc
Assignment Category CC Rule Set - SLC2T	6-63.s2t	asgn category rules cc
Assignment Category CC Rule Set - SLC96	6-63.s96	asgn category rules cc
Assignment Category CC Rule Set - SLCONU	6-63.slo	asgn category rules cc
Assignment Category CC Rule Set - SSU16	6-63.s16	asgn category rules cc
Assignment Category CC Rule Set - USAM	6-63.usm	asgn category rules cc
Assignment Category Rule Set - 1ESS	6-04.1e	asgn category rules
Assignment Category Rule Set - 2ESS	6-04.2e	asgn category rules
Assignment Category Rule Set - 3ESS	6-04.3e	asgn category rules
Assignment Category Rule Set - 5ESS	6-04.5e	asgn category rules
Assignment Category Rule Set - AXE	6-04.ax	asgn category rules
Assignment Category Rule Set - DCO	6-04.do	asgn category rules
Assignment Category Rule Set - DMS10	6-04.dx	asgn category rules
Assignment Category Rule Set - DMS100	6-04.dc	asgn category rules
Assignment Category Rule Set - EWSD	6-04.ew	asgn category rules

Alphabetical Listing of Tables - Section 6		
Table Name	Table Number	Database Name
CRV Evaluation Rule Set - Automatic Assignment/DMS100	6-82.dc	crv rule set
Channel Evaluation Rule Set - Automatic Assignment/5ESS	6-80.5e	chan rule set
Channel Evaluation Rule Set - Automatic Assignment/AXE	6-80.ax	chan rule set
Channel Evaluation Rule Set - Automatic Assignment/DMS100	6-80.dc	chan rule set
Control Pending - Automatic Assignment - SWPT	6-32.sw	swpt pending frame control
Control Pending - Automatic Assignment - TKP	6-32.tk	tkp pending frame control
Control Pending - Automatic Assignment - TRE	6-32.tr	tre pending frame control
Custom Assignment Rules	6-89	custom asgn rules
DDR Transformation	6-67	ddr transformation
DIP Determination	6-09	dip definition
Denied Spread List	6-28	deny spread
Determine Card Type Score - PBXT/SLCONU	6-75.pb.slo	ccpt penalty score ct
Determine Admin Constraint Score - PBXT/NEXT3	6-76.pb.nxt	ccpt penalty score am
Determine Admin Constraint Score - PBXT/SSU16	6-76.pb.s16	ccpt penalty score am
Determine Admin Constraint Score - PL4W/NEXT3	6-76.p4.nxt	ccpt penalty score am
Determine Admin Constraint Score - PL4W/SSU16	6-76.p4.s16	ccpt penalty score am
Determine Admin Constraint Score - PLDATA/NEXT3	6-76.pd.nxt	ccpt penalty score am
Determine Admin Constraint Score - PLDATA/SSU16	6-76.pd.s16	ccpt penalty score am
Determine Admin Constraint Score - PLVOICE/NEXT3	6-76.pv.nxt	ccpt penalty score am
Determine Admin Constraint Score - PLVOICE/SSU16	6-76.pv.s16	ccpt penalty score am
Determine Administrative Constraint Score - BUS/1ESS	6-14.bs.1e	swpt penalty score am
Determine Administrative Constraint Score - BUS/2ESS	6-14.bs.2e	swpt penalty score am
Determine Administrative Constraint Score - BUS/3ESS	6-14.bs.3e	swpt penalty score am
Determine Administrative Constraint Score - BUS/5ESS	6-14.bs.5e	swpt penalty score am
Determine Administrative Constraint Score - BUS/AXE	6-14.bs.ax	swpt penalty score am
Determine Administrative Constraint Score - BUS/DCO	6-14.bs.do	swpt penalty score am
Determine Administrative Constraint Score - BUS/DMS10	6-14.bs.dx	swpt penalty score am
Determine Administrative Constraint Score - BUS/DMS100	6-14.bs.dc	swpt penalty score am
Determine Administrative Constraint Score - BUS/EWSD	6-14.bs.ew	swpt penalty score am
Determine Administrative Constraint Score - BUSNT/1ESS	6-14.bt.1e	swpt penalty score am
Determine Administrative Constraint Score - BUSNT/2ESS	6-14.bt.2e	swpt penalty score am

Alphabetical Listing of Tables - Section 6		
Table Name	Table Number	Database Name
Determine Administrative Constraint Score - ISDNT/5ESS/5E6	6-14.it.5e.600	swpt penalty score am
Determine Administrative Constraint Score - ISDNT/5ESS/5E7	6-14.it.5e.700	swpt penalty score am
Determine Administrative Constraint Score - ISDNT/5ESS/5E8	6-14.it.5e.800	swpt penalty score am
Determine Administrative Constraint Score - ISDNT/DMS100	6-14.it.dc	swpt penalty score am
Determine Administrative Constraint Score - ISDNU/5ESS	6-14.iu.5e	swpt penalty score am
Determine Administrative Constraint Score - ISDNU/5ESS/5E5	6-14.iu.5e.500	swpt penalty score am
Determine Administrative Constraint Score - ISDNU/5ESS/5E6	6-14.iu.5e.600	swpt penalty score am
Determine Administrative Constraint Score - ISDNU/5ESS/5E7	6-14.iu.5e.700	swpt penalty score am
Determine Administrative Constraint Score - ISDNU/5ESS/5E8	6-14.iu.5e.800	swpt penalty score am
Determine Administrative Constraint Score - ISDNU/DMS10	6-14.iu.dx	swpt penalty score am
Determine Administrative Constraint Score - ISDNU/DMS100	6-14.iu.dc	swpt penalty score am
Determine Administrative Constraint Score - ISDNU/EWSD	6-14.iu.ew	swpt penalty score am
Determine Administrative Constraint Score - MADN/DMS10	6-14.mn.dx	swpt penalty score am
Determine Administrative Constraint Score - MADN/DMS100	6-14.mn.dc	swpt penalty score am
Determine Administrative Constraint Score - PBXT/2ESS	6-14.pb.2e	swpt penalty score am
Determine Administrative Constraint Score - PBXT/3ESS	6-14.pb.3e	swpt penalty score am
Determine Administrative Constraint Score - PBXT/DFLT	6-76.pb.dft	ccpt penalty score am
Determine Administrative Constraint Score - PBXT/FCTR	6-76.pb.fct	ccpt penalty score am
Determine Administrative Constraint Score - PBXT/FCTRONU	6-76.pb.fco	ccpt penalty score am
Determine Administrative Constraint Score - PBXT/FDLC	6-76.pb.fdl	ccpt penalty score am
Determine Administrative Constraint Score - PBXT/SLC2T	6-76.pb.s2t	ccpt penalty score am
Determine Administrative Constraint Score - PBXT/SLC96	6-76.pb.s96	ccpt penalty score am
Determine Administrative Constraint Score - PBXT/SLCONU	6-76.pb.slo	ccpt penalty score am
Determine Administrative Constraint Score - PL4W/SDV2T	6-76.p4.sdv	ccpt penalty score am
Determine Administrative Constraint Score - PL4W/SLC2T	6-76.p4.s2t	ccpt penalty score am
Determine Administrative Constraint Score - PL4W/SLC96	6-76.p4.s96	ccpt penalty score am
Determine Administrative Constraint Score - PL4W/SLCONU	6-76.p4.slo	ccpt penalty score am
Determine Administrative Constraint Score - PLDATA/SLC2T	6-76.pd.s2t	ccpt penalty score am
Determine Administrative Constraint Score - PLDATA/SLC96	6-76.pd.s96	ccpt penaalty score am
Determine Administrative Constraint Score - PLDATA/SLCONU	6-76.pd.slo	ccpt penalty score am
Determine Administrative Constraint Score - PLHIC/FCL	6-14.hc.fl	swpt penalty score am

Alphabetical Listing of Tables - Section 6		
Table Name	Table Number	Database Name
Determine Administrative Constraint Score - PLVOICE/SLC2T	6-76.pv.s2t	ccpt penalty score am
Determine Administrative Constraint Score - PLVOICE/SLC96	6-76.pv.s96	ccpt penalty score am
Determine Administrative Constraint Score - PLVOICE/SLCONU	6-76.pv.slo	ccpt penalty score am
Determine Administrative Constraint Score - PPSNDOV/1ESS	6-14.sv.1e	swpt penalty score am
Determine Administrative Constraint Score - PPSNDOV/2ESS	6-14.sv.2e	swpt penalty score am
Determine Administrative Constraint Score - PPSNDOV/3ESS	6-14.sv.3e	swpt penalty score am
Determine Administrative Constraint Score - PPSNDOV/5ESS	6-14.sv.5e	swpt penalty score am
Determine Administrative Constraint Score - PPSNDOV/AXE	6-14.sv.ax	swpt penalty score am
Determine Administrative Constraint Score - PPSNDOV/DCO	6-14.sv.do	swpt penalty score am
Determine Administrative Constraint Score - PPSNDOV/DMS10	6-14.sv.dx	swpt penalty score am
Determine Administrative Constraint Score - PPSNDOV/DMS100	6-14.sv.dc	swpt penalty score am
Determine Administrative Constraint Score - PPSNDOV/EWSD	6-14.sv.ew	swpt penalty score am
Determine Administrative Constraint Score - PPSNDUP/1ESS	6-14.su.1e	swpt penalty score am
Determine Administrative Constraint Score - PPSNDUP/2ESS	6-14.su.2e	swpt penalty score am
Determine Administrative Constraint Score - PPSNDUP/3ESS	6-14.su.3e	swpt penalty score am
Determine Administrative Constraint Score - PPSNDUP/5ESS	6-14.su.5e	swpt penalty score am
Determine Administrative Constraint Score - PPSNDUP/AXE	6-14.su.ax	swpt penalty score am
Determine Administrative Constraint Score - PPSNDUP/DCO	6-14.su.do	swpt penalty score am
Determine Administrative Constraint Score - PPSNDUP/DMS10	6-14.su.dx	swpt penalty score am
Determine Administrative Constraint Score - PPSNDUP/DMS100	6-14.su.dc	swpt penalty score am
Determine Administrative Constraint Score - PPSNDUP/EWSD	6-14.su.ew	swpt penalty score am
Determine Administrative Constraint Score - RES1/1ESS	6-14.r1.1e	swpt penalty score am
Determine Administrative Constraint Score - RES1/2ESS	6-14.r1.2e	swpt penalty score am
Determine Administrative Constraint Score - RES1/3ESS	6-14.r1.3e	swpt penalty score am
Determine Administrative Constraint Score - RES1/5ESS	6-14.r1.5e	swpt penalty score am
Determine Administrative Constraint Score - RES1/AXE	6-14.r1.ax	swpt penalty score am
Determine Administrative Constraint Score - RES1/DCO	6-14.r1.do	swpt penalty score am
Determine Administrative Constraint Score - RES1/DMS10	6-14.r1.dx	swpt penalty score am
Determine Administrative Constraint Score - RES1/DMS100	6-14.r1.dc	swpt penalty score am
Determine Administrative Constraint Score - RES1/EWSD	6-14.r1.ew	swpt penalty score am
Determine Administrative Constraint Score - RESP/1ESS	6-14.rp.1e	swpt penalty score am

Alphabetical Listing of Tables - Section 6		
Table Name	Table Number	Database Name
Determine Administrative Constraint Score - RESP/2ESS	6-14.rp.2e	swpt penalty score am
Determine Administrative Constraint Score - RESP/3ESS	6-14.rp.3e	swpt penalty score am
Determine Administrative Constraint Score - RESP/5ESS	6-14.rp.5e	swpt penalty score am
Determine Administrative Constraint Score - RESP/AXE	6-14.rp.ax	swpt penalty score am
Determine Administrative Constraint Score - RESP/DCO	6-14.rp.do	swpt penalty score am
Determine Administrative Constraint Score - RESP/DMS10	6-14.rp.dx	swpt penalty score am
Determine Administrative Constraint Score - RESP/DMS100	6-14.rp.dc	swpt penalty score am
Determine Administrative Constraint Score - RESP/EWSD	6-14.rp.ew	swpt penalty score am
Determine Administrative Constraint Score - TRK/2ESS	6-14.tk.2e	swpt penalty score am
Determine Administrative Constraint Score - TRK/3ESS	6-14.tk.3e	swpt penalty score am
Determine Administrative Constraint Score - TRK/DMS10	6-14.tk.dx	swpt penalty score am
Determine Aging Interval	6-46	tn aging
Determine Assembly Age Score - SWPT DFLT	6-22.sw.df	swpt penalty score age
Determine Assembly Age Score - TRE DFLT	6-22.tr.df	tre penalty score age
Determine Assembly Category Score - SWPT DFLT	6-21.sw.df	swpt penalty score asm
Determine Assembly Category Score - TRE DFLT	6-21.tr.df	tre penalty score asm
Determine Band Score - DFLT/5ESS	6-50.df.5e	swpt penalty score bnd
Determine CCS Adjustment - 1FBUS	6-44.1fb	ccs adjustment
Determine CCS Adjustment - 1FRES	6-44.1fr	ccs adjustment
Determine CCS Adjustment - 1MBUS	6-44.1mb	ccs adjustment
Determine CCS Adjustment - 1MRES	6-44.1mr	ccs adjustment
Determine CCS Adjustment - COIN	6-44.coi	ccs adjustment
Determine CCS Adjustment - ISDN/5ESS	6-44.isn.5e	ccs adjustment isdn
Determine CCS Adjustment - ISDN/DMS10	6-44.isn.dx	ccs adjustment isdn
Determine CCS Adjustment - ISDN/DMS100	6-44.isn.dc	ccs adjustment isdn
Determine CCS Adjustment - ISDN/EWSD	6-44.isn.ew	ccs adjustment isdn
Determine CCS Adjustment - MFBUS	6-44.mfb	ccs adjustment
Determine CCS Adjustment - MFRES	6-44.mfr	ccs adjustment
Determine CCS Adjustment - MMBUS	6-44.mmb	ccs adjustment
Determine CCS Adjustment - MMRES	6-44.mmr	ccs adjustment
Determine CCS Adjustment - OBUS	6-44.obs	ccs adjustment

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Table Name	Table Number	Database Name
Determine Card Type Score - DFLT/DMS100	6-59.df.dc	swpt penalty score ct
Determine Card Type Score - ISDNT/DFLT	6-75.it.dft	ccpt penalty score ct
Determine Card Type Score - ISDNU/AN	6-75.iu.and	ccpt penalty score ct
Determine Card Type Score - ISDNU/ANONU	6-75.iu.ano	ccpt penalty score ct
Determine Card Type Score - ISDNU/DFLT	6-75.iu.dft	ccpt penalty score ct
Determine Card Type Score - ISDNU/DISCS	6-75iu.dis	ccpt penalty score ct
Determine Card Type Score - ISDNU/DISONU	6-75iu.dou	ccpt penalty score ct
Determine Card Type Score - ISDNU/FCTR	6-75.iu.fct	ccpt penalty score ct
Determine Card Type Score - ISDNU/FDLC	6-75.iu.fdl	ccpt penalty score ct
Determine Card Type Score - ISDNU/NEXT3	6-75.iu.nxt	ccpt penalty score ct
Determine Card Type Score - ISDNU/SDV2T	6-75.iu.sdv	ccpt penalty score ct
Determine Card Type Score - ISDNU/SLC2T	6-75.iu.s2t	ccpt penalty score ct
Determine Card Type Score - ISDNU/SLC96	6-75.iu.s96	ccpt penalty score ct
Determine Card Type Score - ISDNU/SLCONU	6-75.iu.slo	ccpt penalty score ct
Determine Card Type Score - ISDNU/USAM	6-75.iu.usm	ccpt penalty score ct
Determine Card Type Score - MADN/AN	6-75.mn.and	ccpt penalty score ct
Determine Card Type Score - MADN/ANONU	6-75.mn.ano	ccpt penalty score ct
Determine Card Type Score - MADN/DISCS	6-75.mn.dis	ccpt penalty score ct
Determine Card Type Score - MADN/DISONU	6-75.mn.dou	ccpt penalty score ct
Determine Card Type Score - MADN/FCTR	6-75.mn.fct	ccpt penalty score ct
Determine Card Type Score - MADN/FCTRONU	6-75.mn.fco	ccpt penalty score ct
Determine Card Type Score - MADN/FDLC	6-75.mn.fdl	ccpt penalty score ct
Determine Card Type Score - MADN/IISC	6-75.mn.isc	ccpt penalty score ct
Determine Card Type Score - MADN/LOC2ONU	6-75.mn.l2o	ccpt penalty score ct
Determine Card Type Score - MADN/LTSP	6-75.mn.ltp	ccpt penalty score ct
Determine Card Type Score - MADN/LTSPONU	6-75.mn.lto	ccpt penalty score ct
Determine Card Type Score - MADN/SDV2T	6-75.mn.sdv	ccpt penalty score ct
Determine Card Type Score - MADN/SLC2T	6-75.mn.s2t	ccpt penalty score ct
Determine Card Type Score - MADN/SLC96	6-75.mn.s96	ccpt penalty score ct
Determine Card Type Score - MADN/SLCONU	6-75.mn.slo	ccpt penalty score ct
Determine Card Type Score - MADN/UMC	6-75.mn.umc	ccpt penalty score ct

Alphabetical Listing of Tables - Section 6		
Table Name	Table Number	Database Name
Determine Card Type Score - PL4W/IISC	6-75.p4.isc	ccpt penalty score ct
Determine Card Type Score - PL4W/LOC2	6-75.p4.lc2	ccpt penalty score ct
Determine Card Type Score - PL4W/LOC2ONU	6-75.p4.l2o	ccpt penalty score ct
Determine Card Type Score - PL4W/LTSP	6-75.p4.ltp	ccpt penalty score ct
Determine Card Type Score - PL4W/LTSPONU	6-75.p4.lto	ccpt penalty score ct
Determine Card Type Score - PL4W/NEXT3	6-75.p4.nxt	ccpt penalty score ct
Determine Card Type Score - PL4W/SDV2T	6-75.p4.sdv	ccpt penalty score ct
Determine Card Type Score - PL4W/SLC2T	6-75.p4.s2t	ccpt penalty score ct
Determine Card Type Score - PL4W/SLC96	6-75.p4.s96	ccpt penalty score ct
Determine Card Type Score - PL4W/SLCONU	6-75.p4.slo	ccpt penalty score ct
Determine Card Type Score - PL4W/SSU16	6-75.p4.s16	ccpt penalty score ct
Determine Card Type Score - PL4W/UMC	6-75.p4.umc	ccpt penalty score ct
Determine Card Type Score - PL4W/UMC48	6-75.p4.u48	ccpt penalty score ct
Determine Card Type Score - PLALARM/DFLT	6-75.pa.dft	ccpt penalty score ct
Determine Card Type Score - PLALARM/UMC	6-75.pa.umc	ccpt penalty score ct
Determine Card Type Score - PLALARM/UMC48	6-75.pa.u48	ccpt penalty score ct
Determine Card Type Score - PLDATA/AN	6-75.pd.and	ccpt penalty score ct
Determine Card Type Score - PLDATA/ANONU	6-75.pd.ano	ccpt penalty score ct
Determine Card Type Score - PLDATA/DISCS	6-75.pd.dis	ccpt penalty score ct
Determine Card Type Score - PLDATA/DISONU	6-75.pd.dou	ccpt penalty score ct
Determine Card Type Score - PLDATA/FCTR	6-75.pd.fct	ccpt penalty score ct
Determine Card Type Score - PLDATA/FCTRONU	6-75.pd.fco	ccpt penalty score ct
Determine Card Type Score - PLDATA/FDLC	6-75.pd.fdl	ccpt penalty score ct
Determine Card Type Score - PLDATA/IISC	6-75.pd.isc	ccpt penalty score ct
Determine Card Type Score - PLDATA/LOC2ONU	6-75.pd.l2o	ccpt penalty score ct
Determine Card Type Score - PLDATA/LTSP	6-75.pd.ltp	ccpt penalty score ct
Determine Card Type Score - PLDATA/LTSPONU	6-75.pd.lto	ccpt penalty score ct
Determine Card Type Score - PLDATA/NEXT3	6-75.pd.nxt	ccpt penalty score ct
Determine Card Type Score - PLDATA/SDV2T	6-75.pd.sdv	ccpt penalty score ct
Determine Card Type Score - PLDATA/SLC2T	6-75.pd.s2t	ccpt penalty score ct
Determine Card Type Score - PLDATA/SLC96	6-75.pd.s96	ccpt penalty score ct

Alphabetical Listing of Tables - Section 6		
Table Name	Table Number	Database Name
Determine Card Type Score - PLDATA/SLCONU	6-75.pd.slo	ccpt penalty score ct
Determine Card Type Score - PLDATA/SSU16	6-75.pd.s16	ccpt penalty score ct
Determine Card Type Score - PLDATA/UMC	6-75.pd.umc	ccpt penalty score ct
Determine Card Type Score - PLDATA/UMC48	6-75.pd.u48	ccpt penalty score ct
Determine Card Type Score - PLVOICE/AN	6-75.pv.and	ccpt penalty score ct
Determine Card Type Score - PLVOICE/ANONU	6-75.pv.ano	ccpt penalty score ct
Determine Card Type Score - PLVOICE/DISCS	6-75.pv.dis	ccpt penalty score ct
Determine Card Type Score - PLVOICE/DISONU	6-75.pv.dou	ccpt penalty score ct
Determine Card Type Score - PLVOICE/FCTR	6-75.pv.fct	ccpt penalty score ct
Determine Card Type Score - PLVOICE/FCTRONU	6-75.pv.fco	ccpt penalty score ct
Determine Card Type Score - PLVOICE/FDLC	6-75.pv.fdl	ccpt penalty score ct
Determine Card Type Score - PLVOICE/IISC	6-75.pv.isc	ccpt penalty score ct
Determine Card Type Score - PLVOICE/LOC2ONU	6-75.pv.l2o	ccpt penalty score ct
Determine Card Type Score - PLVOICE/LTSP	6-75.pv.ltp	ccpt penalty score ct
Determine Card Type Score - PLVOICE/LTSPONU	6-75.pv.lto	ccpt penalty score ct
Determine Card Type Score - PLVOICE/NEXT3	6-75.pv.nxt	ccpt penalty score ct
Determine Card Type Score - PLVOICE/SDV2T	6-75.pv.sdv	ccpt penalty score ct
Determine Card Type Score - PLVOICE/SLC2T	6-75.pv.s2t	ccpt penalty score ct
Determine Card Type Score - PLVOICE/SLC96	6-75.pv.s96	ccpt penalty score ct
Determine Card Type Score - PLVOICE/SLCONU	6-75.pv.slo	ccpt penalty score ct
Determine Card Type Score - PLVOICE/SSU16	6-75.pv.s16	ccpt penalty score ct
Determine Card Type Score - PLVOICE/UMC	6-75.pv.umc	ccpt penalty score ct
Determine Card Type Score - PLVOICE/UMC48	6-75.pv.u48	ccpt penalty score ct
Determine Card Type Score - RES1/AN	6-75.r1.and	ccpt penalty score ct
Determine Card Type Score - RES1/ANONU	6-75.r1.ano	ccpt penalty score ct
Determine Card Type Score - RES1/DISCS	6-75.r1.dis	ccpt penalty score ct
Determine Card Type Score - RES1/DISONU	6-75.r1.dou	ccpt penalty score ct
Determine Card Type Score - RES1/FCTR	6-75.r1.fct	ccpt penalty score ct
Determine Card Type Score - RES1/FCTRONU	6-75.r1.fco	ccpt penalty score ct
Determine Card Type Score - RES1/FDLC	6-75.r1.fdl	ccpt penalty score ct
Determine Card Type Score - RES1/HFC2T	6-75.r1.hfc	ccpt penalty score ct

Alphabetical Listing of Tables - Section 6		
Table Name	Table Number	Database Name
Determine Card Type Score - RES1/HMX	6-75.r1.hmx	ccpt penalty score ct
Determine Card Type Score - RES1/IISC	6-75.r1.isc	ccpt penalty score ct
Determine Card Type Score - RES1/LOC2ONU	6-75.r1.l2o	ccpt penalty score ct
Determine Card Type Score - RES1/LTSP	6-75.r1.ltp	ccpt penalty score ct
Determine Card Type Score - RES1/LTSPONU	6-75.r1.lto	ccpt penalty score ct
Determine Card Type Score - RES1/NEXT3	6-75.r1.nxt	ccpt penalty score ct
Determine Card Type Score - RES1/SDV2T	6-75.r1.sdv	ccpt penalty score ct
Determine Card Type Score - RES1/SLC2T	6-75.r1.s2t	ccpt penalty score ct
Determine Card Type Score - RES1/SLC96	6-75.r1.s96	ccpt penalty score ct
Determine Card Type Score - RES1/SLCONU	6-75.r1.slo	ccpt penalty score ct
Determine Card Type Score - RES1/UMC	6-75.r1.umc	ccpt penalty score ct
Determine Card Type Score - RES1/UMC48	6-75.r1.u48	ccpt penalty score ct
Determine Card Type Score - RES1/USAM	6-75.r1.usm	ccpt penalty score ct
Determine Card Type Score - RESP/DFLT	6-75.rp.dft	ccpt penalty score ct
Determine Card Type Score - RESP/IISC	6-75.rp.isc	ccpt penalty score ct
Determine Card Type Score -PLALARM /DISCS	6-75.pa.dis	ccpt penalty score ct
Determine Card Type Score -PLALARM /DISONU	6-75.pa.dou	ccpt penalty score ct
Determine Carrier Circuit Cost Score - DFLT/DFLT	6-72.df.dft	ccpt penalty score ccost
Determine Channel Engineered Compatibility Score - 5ESS	6-81.df.5e	chan penalty score ec
Determine Channel Engineered Compatibility Score - AXE	6-81.df.ax	chan penalty score ec
Determine Channel Engineered Compatibility Score - DMS100	6-81.df.dc	chan penalty score ec
Determine Collection CCS Adjustment for ODB - 5ESS	6-44.oisd	ccs adjustment odb isdn
Determine Desirability Score - DFLT/DFLT	6-74.df.dft	ccpt penalty score de
Determine Directory Date	6-60	tn directory dates
Determine Encoding Protocol Score - DFLT/DFLT	6-23.df.df	swpt penalty score en
Determine Encoding Protocol Score - ISDNT/SLC2T	6-77.it.s2t	ccpt penalty score en
Determine Encoding Protocol Score - ISDNT/SLC96	6-77.it.s96	ccpt penalty score en
Determine Encoding Protocol Score - ISDNT/SLCONU	6-77.it.slo	ccpt penalty score en
Determine Encoding Protocol Score - ISDNU/SLC2T	6-77.iu.s2t	ccpt penalty score en
Determine Encoding Protocol Score - ISDNU/SLC96	6-77.iu.s96	ccpt penalty score en
Determine Encoding Protocol Score - ISDNU/SLCONU	6-77.iu.slo	ccpt penalty score en

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Table Name	Table Number	Database Name
Determine Essentiality Score - DFLT/5ESS	6-20.df.5e	swpt penalty score es
Determine Essentiality Score - DFLT/DFLT	6-20.df.df	swpt penalty score es
Determine Essentiality Score - DFLT/DMS100	6-20.df.dc	swpt penalty score es
Determine Inherited Features Score - COIN/1ESS	6-30.cn.1e	swpt penalty score if
Determine Inherited Features Score - COIN/2ESS	6-30.cn.2e	swpt penalty score if
Determine Inherited Features Score - COIN/DMX	6-30.cn.dx	swpt penalty score if
Determine Inherited Features Score - DATA/1ESS	6-30.da.1e	swpt penalty score if
Determine Inherited Features Score - DATA/2ESS	6-30.da.2e	swpt penalty score if
Determine Inherited Features Score - DATA/DMX	6-30.da.dx	swpt penalty score if
Determine Inherited Features Score - DFLT/1ESS	6-30.df.1e	swpt penalty score if
Determine Inherited Features Score - DFLT/2ESS	6-30.df.2e	swpt penalty score if
Determine Inherited Features Score - DFLT/DMX	6-30.df.dx	swpt penalty score if
Determine Jumper Length Score - SWPT DFLT	6-18.sw.df	swpt penalty score jump
Determine Jumper Length Score - TKP DFLT	6-18.tk.df	tkp penalty score jump
Determine Jumper Length Score - TRE DFLT	6-18.tr.df	tre penalty score jump
Determine LTID Group Index Score - DFLT/DFLT	6-51.df.df	ltid penalty score lgi
Determine Load Score - BUSNT/DFLT	6-15.bt.df	swpt penalty score ld
Determine Load Score - DFLT/DFLT	6-15.df.df	swpt penalty score ld
Determine Loaded Indicator Score - TKP DFLT/DFLT	6-55.df.df	tkp penalty score li
Determine Next Location Score - TKP DFLT/DFLT	6-54.df.df	tkp penalty score nl
Determine Number of Paths Score - DFLT/DFLT	6-73.df.dft	ccpt penalty score path
Determine PPS Adjustment - ISDN	6-44.pisd	pps adjustment isdn
Determine Party Fill Score - DFLT/DFLT	6-29.df.df	swpt penalty score pfil
Determine Signaling Score - BUSNT/1ESS	6-19.bt.1e	swpt penalty score sig
Determine Signaling Score - DFLT/1ESS	6-19.df.1e	swpt penalty score sig
Determine Signaling Score - DFLT/2ESS	6-19.df.2e	swpt penalty score sig
Determine Signaling Score - DFLT/3ESS	6-19.df.3e	swpt penalty score sig
Determine Signaling Score - DFLT/5ESS	6-19.df.5e	swpt penalty score sig
Determine Signaling Score - DFLT/AXE	6-19.df.ax	swpt penalty score sig
Determine Signaling Score - DFLT/DCO	6-19.df.do	swpt penalty score sig
Determine Signaling Score - DFLT/DMS10	6-19.df.dx	swpt penalty score sig

Alphabetical Listing of Tables - Section 6		
Table Name	Table Number	Database Name
Determine Signaling Score - DFLT/DMS100	6-19.df.dc	swpt penalty score sig
Determine Signaling Score - DFLT/EWSD	6-19.df.ew	swpt penalty score sig
Determine Spread Score - Extra Strict/DFLT	6-25.ex.df	swpt penalty score spread
Determine Spread Score - Standard/DFLT	6-25.st.df	swpt penalty score spread
Determine Spread Score - Standard/DMS100	6-25.st.dc	swpt penalty score spread
Determine Swpt Carrier Circuit Cost Penalty Score - DFLT/DFLT	6-65.df.df	swpt penalty score ccost
Determine Swpt Number of Paths Penalty Score - DFLT/DFLT	6-66.df.df	swpt penalty score path
Determine Swpt Utilization Factor Penalty Score - DFLT/DFLT	6-64.df.df	swpt penalty score util
Determine Telephone Number Type	6-10	tn type
Determine Utilization Factor Score - DFLT/DFLT	6-71.df.dft	ccpt penalty score util
Determine Zone Search - Over/Under Frame Configuration	6-49	frame zone search
Frame System Identification	6-17	frame system id
Frame System Prioritization For Bridge Lifter Selection	6-16.bl	frame system priority
Frame System Prioritization For Switch Port Selection - 1ESS	6-16.sw.1e	frame system priority
Frame System Prioritization For Switch Port Selection - 2ESS	6-16.sw.2e	frame system priority
Frame System Prioritization For Switch Port Selection - 3ESS	6-16.sw.3e	frame system priority
Frame System Prioritization For Switch Port Selection - 5ESS	6-16.sw.5e	frame system priority
Frame System Prioritization For Switch Port Selection - DMS100	6-16.sw.dc	frame system priority
Frame System Prioritization For TKP Selection	6-16.tk	frame system priority
Frame System Prioritization For TRE Selection	6-16.tr	frame system priority
Frame to IC Priority for IC Selection	6-03	ic frame map
Frame-to-Frame Connection Priority	6-41	frame connect priority
Glossary of Composition Rules	6-05	
Glossary of Network Unit Evaluation Rules	6-13	
IC/RU to LRN Map	6-91	ic ru lrn map
Imported TN IC/RU Map	6-90	imported tn ic ru map
Integration Exclusion Table - DFLT	6-61.dft	integration excl
Integration Exclusion Table - DISCS	6-61.dis	integration excl
Integration Exclusion Table - DISONU	6-61.dou	integration excl
Integration Exclusion Table - FCTR	6-61.fct	integration excl
Integration Exclusion Table - SLC2T	6-61.s2t	integration excl

Alphabetical Listing of Tables - Section 6

Table Name	Table Number	Database Name
Trunk Pair Weighting	6-57	tkp score weight
Wire Center Parameters - Frame Level	6-08.fr	wc parms
Wire Center Parameters - IC Level	6-08.ic	wc parms
Wire Center Parameters - WC Level	6-08.wc	wc parms

6. ASSIGNMENT PROCESSING

Assignment processing is used by many areas of the SWITCH system requiring selection or validation of facilities and equipment. These areas include flow-through assignment (Section 13), provisioning (Section 7), work orders (Section 9), capacity activation (Section 10), and inventory (Section 5). Assignment processing in the SWITCH system can be broken up into four areas of functionality:

- General Assignment Engine (Sections 6.1 - 6.17)
- Common Output (Section 6.18)
- Assembly (Section 6.19)
- Processing for Miscellaneous Services (Section 6.20)

The first three items listed above are common to several broad areas of the SWITCH system. That is, the same assignment functions described below for these three items can be used in several different areas of the SWITCH system (e.g., flow through, work orders, etc.).

Each contract that calls the assignment engine edits and validates the input and creates an assignment request of the correct granularity. The assignment engine supports both line and trunk side functionality.

The assignment engine consults the appropriate BCC-tunable parameters, BCC-tunable tables, and individual switch fabric profile(s) and assigns all required SWITCH system inventoried components for each assignment request.

When the assignment engine completes each request it calls Output Handling to generate an assignment request response, as defined by the contract being executed. Database commits (i.e., the process of making database changes permanent) take place at various points in the assignment process. A final database commit takes place after the completion of Output Handling.

The assignment engine can be broken into several logical processes [1](see Figure 6-1):

- Request Analysis
- Intelligent Controller Selection
- Route Analysis
- Composition Analysis
- Network Unit Selection
- Connectivity Process

1. The *order* in which the processing is performed may not precisely match the order of the functions as listed in this document.

- Database Update

6.1 Request Analysis

The input to request analysis includes: the order number, due date, service identifier or identifiers (see Appendix 6A for information on Service Termination Identification), design attributes (Central Office Equivalence Code or CEC), special processing tags (e.g., to indicate Dual service for F and T orders), [2]group identifiers, and any *preassigned components*. [3]For non-switched designed services originating in DLE equipment, a Destination is also included. Alternatively, in a DLE environment, an origination controller can be included instead of a cable pair. Optionally, users may prespecify a Route for any service that originates in DLE equipment when submitting a provisioning request from the Provisioning Work Session.

The CEC are a set of design attributes that describe the essence of the service being requested. These attributes are independent of tariffs, hardware or assignment algorithms. CEC attributes provide one of the important ways that independence between hardware and the SWITCH system algorithms is ensured. (see Appendix 6B for information on design attributes and values.)

Request analysis performs several basic functions (see Figure 6-2), it:

- Parses the varied inputs from each type of contract
- Processes the external identifiers (EXIDs).
  - — The EXIDs of any preassigned SWITCH system inventoried components are checked to ensure that they exist in the database. If they do not, an RMA results.
  - — For build requests a service with the requested EXID cannot currently exist. If one does, an RMA is issued. [4]
  - — For change/remove requests a service with the requested EXID must currently exist. If one does not, an RMA is issued.
  - — For sublet requests, the associated service must be suspended both ways in the proper time frame. [5]If the associated service is not suspended both ways an RMA is issued.

2. When the provisioning request contains an indication of LAC Assigned Foreign exchange service and Dual service for F and T order, the SWITCH system generates a RMA.
3. Preassigned components are SWITCH system inventoried circuit elements that are assigned by other systems (for example, F1 pair assigned by LFACS) and, for non-flow-through scenarios, those stipulated by terminal input. In addition, some network units can be preassigned on service orders (miscellaneous equipment, logical terminal identifiers and trunk pairs).
4. The exceptions to this are Related and Dual T orders which already exist, and when legs are added to an existing service. In these cases, no RMA is generated.

- Determines, for change requests, if the changes are SWITCH system assignment affecting.
- Acquires all necessary database objects. Database changes are not committed at this point.
  - — Creates required circuit, service and delta (pending) nodes.
  - — Creates certain Administrative Groups on receipt of a request to create that group (e.g., series completion hunt groups). Some types of Administrative Groups, such as Multi-line Hunt (HML), Centrex (CTX) and Simulated Facilities Groups (SFGs)[6] must be inventoried before the receipt of provisioning requests for those groups. The appropriate database records as well as a *spread count* table, see Table 5-5, are created when the administrative group is created.

    The administrative group concept allows the SWITCH system to administer lines which share a community-of-interest (e.g., common calling and traffic patterns) as a unit. Hunt groups and SFGs are examples of administrative groups. The SWITCH system supports multi-line hunt groups and series completion hunt groups. Relevant translation attributes for the hunt group (e.g., the hunt sequence and hunting arrangement) are stored with the group. Requests for lines in a hunt group follow normal selection rules with consideration given to spreading the lines equitably across the intelligent controller. Translation data relevant to lines in the group are stored with the service. The SWITCH system supports preassignment of SFGs.
  - — Creates associations between a service/circuit and an Administrative Group, if indicated on the provisioning request.
  - — Creates associations between a group and preassigned network units (Screening TN, Screening LEN).
  - — Removes associations between a service/circuit and an Administrative Group, if indicated on the provisioning request. [7]
  - — Removes groups no longer required (the type of group that is originally created via provisioning requests, e.g., series completion hunt groups) on completion of the request that removes the group and the last member of the group. [8]The appropriate database records as well as the *spread count* table are removed for the group.

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5. Other than this, Suspend/restore and sublet requests follow the standard change request processing described in this section.

6. Users have the option of inventorying SFGs.

7. For all requests except Related and Dual F and Ts, the association is removed when it is explicitly "outed" on the request. For Related and Dual Ts, the association is removed if it exists in the database and it is not explicitly recapped on the T request. Associations are removed on Related Fs when included on the order but they are never removed on Dual Fs.

   — Make groups (which must be inventoried before being provisioned) spare when they no longer have any services associated to them (e.g., inventoried SFGs, HML groups). All provisioning data is deleted from the group, but the ID and any permanent remarks are retained.

   — Retrieves the proper circuit view from the database. For circuits that have pending views, the appropriate view is determined based on the change/remove request's due date.

- Establishes and populates required translations edges
- Retrieves all preassigned and/or *prespecified* [9]components from the database
- When appropriate, generates input for the rest of the assignment process in a standard format

   — If request is not assignment affecting, just updates the database [10]

- Transforms the digital data rate CEC (ddr) to the assignment rate, using the *ddr transformation* table (see Table 6-67). [11]The assignment rate is used when determining and analyzing Routes and when selecting/validating channels when DLE equipment is involved.
- Transforms the night service tag received from SOAC (nsvy), which is followed by a telephone number, to a TN component with a usage of nsv.[12]If the data following the nsvy tag is not in TN format, an error will be produced.

6.2 Intelligent Controller Selection

Intelligent Controller selection is the functionality required to determine which (if any) intelligent controller, within a wire center that contains multiple intelligent controllers, should be used to provision a given service request. In a WC that contains a single

8. Groups are *not* removed with Dual F orders. It is not the purpose of a Dual F order to significantly change the service of a customer, only to change the customer's location. If major changes like this are required, a separate service order should be submitted or the database updated via inventory work sessions in the ULBB.
9. Components can be prespecified in the SWITCH system by: the reservation process, being assembled (which includes DIP/LIRA) to an assigned component, and, for change/correction and related/dual F and T scenarios, being previously assigned to the circuit in question.
10. Record Only Provisioning Requests (RORSO contracts), discussed in Section 13, are not assignment affecting.
11. If there is no ddr, the NULL value is used. If a ddr is included in the input but it is not found in the table, the process will RMA.
12. Night Service is a client-specific feature that is controlled through SOAC tables. The nsvy tag is used to differentiate this client-specific processing from the general processing that uses the nsv tag.

intelligent controller, the ability to support the service request is examined to the granularity of assignment category.

All service requests, including those for *traditionally* non-switched and non-locally switched services, are routed through the intelligent controller selection process. This allows an assignment category to be determined as well as each intelligent controller's capabilities to be reflected during the provisioning process.

The intelligent controller selection process can be broken into several logical components (see Figure 6-3):

- Determine the assignment category
- Identify the candidate intelligent controllers
- Quantify the impact of any preassigned and/or prespecified components
- Determine the intelligent controller

6.2.1 Assignment Category Determination

This process uses a BCC-tunable table (see Table 6-1) to map the CEC parameters to an *Assignment Category*. Assignment categories are a short mnemonic representation of the type of service being provisioned. This assignment category is first used as part of the Intelligent Controller selection process and then to determine the set of composition rules and scoring tables to use. Since the assignment category is such an integral part of the assignment process, when an assignment category cannot be determined an RMA is generated. [13]

6.2.2 Identify Intelligent Controller Candidates

This process identifies the intelligent controllers that can support the requested service. This determination is made based on:

- Intelligent Controller specified (e.g., exchange key (EXK) or 11 character CLLI code if present). If the client-specific LNP - Ad Hoc TN feature is activated and the EXK is specified on input, then ICs with that EXK will be considered along with ICs which have remote units matching that EXK. However, if the client-specific LNP - IC/RU and LRN Selection feature is activated, additional EXK processing is performed as described below[14].

13. The *asgn category map* table (Table 6-1) is set to provide default assignment categories, given that minimum attributes are provided. For example, central office termination must be provided or an assignment category cannot be determined.

14. See Section 4.10 for a discussion of LNP related features and definitions.

- Preassigned telephone number (if present), or data telephone number (if present) for ISDN case
- NXX code (if present) [15]
- Type of service being requested and
- F1 cable pair location (building and/or frame location).

If the client-specific LNP - IC/RU and LRN Selection feature is activated, then a preassigned imported TN will be used to search the *imported tn ic ru map* table (see Table 6-90) to determine candidate ICs. If there is no EXK on input, the *imported tn ic ru map* table will be searched in an attempt to find one or more rows that include the given TN. If the service is in a Multi-Line Hunt group and there is no associated TN, the TLI will be used. The search will start at the finest level of granularity, that is with npa, nxx, lo id, and hi id. If no matches are found at this granularity, the search will continue to the next level, which is npa and nxx. If no matches are found in these rows, the search will continue on to the next level, npa only. The ICs in the matching rows will be passed to the next step in IC selection. If a remote unit ID was in a matching row in the table, the assignment engine must determine the associated host IC ID and pass that to IC selection. If no matches are found in the table, an error will be produced.

If the client-specific LNP - IC/RU and LRN Selection feature is activated and there is an EXK on input, and an imported TN is on the request, the EXK will be used to find the host IC and all associated remotes whether or not the remotes have the same or different EXKs. The *imported tn ic ru map* table will still be searched in the same manner as described above, except that only rows that contain an ic-ru id that match the IC or remote unit IDs that were found using the EXK key, will be considered for selection.

The IC selection process uses reference data tables described below (Tables 6-2 and 6-3). When an IC is scheduled to be installed or upgraded (i.e., generic upgrade) in a wire center, certain reference data must be updated to allow the IC to be considered in the selection process for order activity. This table reference data can be created in advance of the IC cut date using a start date for the table equal to the cut date of the IC. Thus, orders can be processed using the reference data that reflects reality as of the due date of the order.

A BCC-tunable table (see Table 6-2), indicates whether an intelligent controller can serve the assignment category and, if so, it's relative priority. A numeric value (00-99) indicates that the intelligent controller can support the requested assignment category; the lower the number, the higher the priority. Two alphabetic entries are also used. MA is used to indicate that although the intelligent controller can support the assignment category, the

15. In those cases where the TN is not preassigned, an NXX code is identifiable either from the ULBB or from SOAC. From the ULBB, the user may enter the NXX code manually. From SOAC, the NXX code is determined from the TN, if it exists, on the same logical line of the provisioning request as the LD (Line Designation) FID. If no TN appears on the same logical line as LD, SOAC sends to the SWITCH system the NXX from the main account TN. SOAC passes this NXX to the SWITCH system as an NNX tag in the ACL aggregate where the value is the three numeric NXX code.

flow-through assignment process fails and manual resolution is necessary. [16]NS is used to indicate that the particular assignment category/intelligent controller combination is not supported. [17]Neither flow-through assignment nor manual provisioning work sessions can be used to resolve the request. If it is desired to build this service in the SWITCH system database, inventory work sessions must be used. The absence of a particular intelligent controller/assignment category pair from the table is also interpreted to mean that the intelligent controller/assignment category is not supported. The difference between this case and the "NS" case is the RMA message narrative.

The intelligent controllers must support the TN (if preassigned) or NXX on the service request. Prior to telephone number portability, a preassigned TN or NXX always limited intelligent controller selection to a single intelligent controller. With telephone number portability, multiple intelligent controllers can support a TN or NXX. Thus, additional data, namely the location of the F1 cable pair must be taken into account and the strength of the cable pair-intelligent controller relationship determined.

The list of intelligent controllers that can support the requested service and their relative priority is then passed on to the next logical process.

This process identifies the intelligent controller(s) that are compatible with the assigned loop or trunk cable pair(s) by determining the strength of the cable pair-intelligent controller relationship. It also quantifies the effect of any preassigned/prespecified switch ports.

If the assignment request does not contain a cable pair or any preassigned/prespecified switch ports, this process passes forward the information it received from the previous process, to the next process (Determine Intelligent Controller).

If the assignment request contains one or more preassigned/prespecified switch ports, the associated intelligent controller, or intelligent controllers, are shown as having an equivalent constraint.

- Manually preassigned or reserved switch ports **must** be used, if they pass validation. The request RMAs if these network units do not pass validation. Their associated intelligent controllers therefore have a strong constraint.
- Switch ports that were prespecified by an assembly, which the contract being executed **cannot** break, **must** be used, if they pass validation. The request RMAs if these network units do not pass validation. Their associated intelligent controllers therefore have a strong constraint.

16. It is possible in this case to still obtain automatic assignments from a manual provisioning work session.

17. The reason for not supporting a particular assignment category/intelligent controller combination may be due to a BCC desire to block all activity in a particular IC for an assignment category, or the SWITCH system does not support a particular service in an IC, or the IC itself does not support the service.

- Switch ports that were prespecified by an assembly, which the contract being executed **can** break, do not have to be reused. Although it is desirable in these cases, from an operations view point, to reuse the prespecified components, it is certainly not mandatory. Their associated intelligent controllers therefore have a moderate constraint.

If the assignment request contains one or more cable pairs or trunk pairs, the strength of the cable pair/trunk pair-intelligent controller relationship is determined for each cable pair or trunk pair. A cable pair or trunk pair is considered to have a weak constraint to all intelligent controllers that it has access to, except in WCs that are comprised of multiple buildings (multiple host buildings and/or host and remotes). In the case where multiple central office buildings are part of the same WC, it is often more desirable to assign an intelligent controller located in the same building as the frame (MDF or RDF) on which the assigned cable pair or trunk pair is terminated.

A wire center based BCC-tunable table, the *ic frame map* table (see Table 6-3) indicates the desirability of selecting an intelligent controller based on the location of the F1 cable pair or trunk pair. The strength of the cable pair/trunk pair-intelligent controller relationship is indicated by a relative priority number; the lower the number the higher the priority (and the stronger the relationship). In the multiple building case, a lower number indicates that cable pairs or trunk pairs at that location have a moderate relationship with the intelligent controllers specified. Entries with a higher number indicate that cable pairs or trunk pairs at that location have a weak relationship with the intelligent controllers specified (i.e., that is, the intelligent controllers can be accessed from that location but they are not the most desirable).

Where Remote Units, and their corresponding remote frames (RDF), are installed, it is more desirable to assign at the Remote when possible. For cable pairs or trunk pairs terminated at RDFs or cable pairs not inventoried by LFACS or the SWITCH system, a building location (i.e., Remote location) [18]where LFACS has stopped assignment is shown as having a moderate relationship with the intelligent controller(s) available at the given RDF (i.e., the intelligent controller supporting the Remote). When this occurs, a lower number (higher priority) should be given to intelligent controllers available at the RDF location, and a higher number (lower priority) given to other intelligent controllers that can be accessed from the RDF.

Note that when all intelligent controllers have equal priority (i.e., single-building case or multiple-building case where the only intelligent controller(s) to be considered are those in the same building where the cable pair or trunk pair terminates), then the cable pair/trunk pair-intelligent controller relationship is considered to be a weak constraint. It is only when there are entries with different priorities that both moderate and weak constraints exist.

Based on the input from the two prior processes, the list of potential intelligent controllers can now be finalized in priority order based upon the strength of the constraints.

18. Remote location is sent to the SWITCH system in the RLOC tag.

1. If a single intelligent controller has a strong constraint, that intelligent controller has highest priority. If multiple intelligent controllers have strong constraints, an RMA is issued.

2. If there are multiple intelligent controllers with a moderate constraint, they are ordered based upon the priority obtained from the *ic priority* table (see Table 6-2).

3. If there are multiple intelligent controllers with a weak constraint, they are ordered based upon the priority obtained from the *ic priority* table (see Table 6-2).

The intelligent controller priority list along with: the order number, due date, circuit identifier(s), CEC, special processing tags, group identifiers and any preassigned and/or appropriate prespecified components, are forwarded to the composition analysis process.

6.3 Route Analysis

Route Analysis is performed for DLE legs. [19]Route Analysis determines the Origination Controller, the Destination (which may be a Building or a Controller) and all possible Routes from the Origination Controller to the Destination for the DLE leg.A Route consists of all the Controllers and Paths between those Controllers. The list of possible Routes must accommodate all network units that are pre-specified or are permanently assembled to pre-specified components. In addition, Route Analysis validates pre-existing or pre-specified Routes. See Figure 6-4 for an overview of the Route Analysis process.

Route analysis will also process data sent by TIRKS/FEPS used in provisioning two-wire design services on DLE. This data conveys to the SWITCH system whether four-wire facilities should be used in the central office for these two-wire services because the next segment of the circuit is carrier. When this occurs, a *transition* condition exists from two-wire to four-wire provisioning. Additionally, a user-entered override to this *transition* condition, permitted in the provisioning work sessions (see Section 7), must be updated appropriately when it exists in conjunction with the data received from TIRKS/FEPS.

6.3.1 Origination Controller Determination

If there is an Origination Controller in the input, that Controller is used as the Origination Controller. If there is no Origination Controller on the input, the CP, if present, is analyzed to determine if it is a DLE or copper CP. If the CP is DLE, [20]the Origination Controller is obtained from the assembly. If the CP is either not a component of an assembly or it is a

19. A DLE leg is defined as a leg of a single or multi-leg circuit that originates in a Digital Loop Electronics Carrier Controller. Each leg of a multi-leg circuit is determined independently; one may be DLE and another may be copper.

20. A DLE CP is a component of an assembly that identifies an Origination Controller.

component of an assembly that does not identify an Origination Controller (i.e., the pre-1.8 IDLC pasm model), the leg is non-DLE and Route Analysis is finished for that leg.

When the leg is DLE and there is a CP, the CC model attribute of the Origination Controller is used to obtain the correct instance of the *integration excl* table (see Table 6-61). If the card type attribute of the originating CC port [21] is present in the table, the last Path of the Route that will be chosen must be non-integrated.

6.3.2 Destination Determination

The Destination is determined for DLE legs using the following logic:

- for switched services, the Destination is the first priority IC determined by IC Selection.
- for non-switched, non-designed services, for both Service Orders and Work Orders,
  - — the nonadsr-default-dest parameter in the *wc parms* table (wc level, see Table 6-8wc) provides the building destination; there is no Destination Controller in this case.
- for non-switched, designed services, for Service Orders,
  - — the value in the CCDST tag in the RTG aggregate is the CC (usually a DCS or EDSX) that is the Destination Controller
  - — or the value in the BLDG tag in the RTG aggregate is the building destination; there is no Destination Controller in this case
  - — if neither CCDST or BLDG are present, the process will RMA.
- for non-switched, designed services, for Work Orders,
  - — the Destination on the existing Route for the service is used, if present
  - — or the int-route-wo-adsr parameter in the *wc parms* table (wc level, see Table 6-8wc) provides a choice between a building destination (int-route-wo-adsr=N) or a CC destination (int-route-wo-adsr=Y), utilizing
    - the wo-adsr-default-dest parameter in the *wc parms* table (wc level, see Table 6-8wc) to provide a building destination, or
    - the wo-adsr-dflt-ccdest parameter in the *wc parms* table (wc level, see Table 6-8wc) to provide a CC destination.

21. The originating CC port is a component of the assembly with the CP and is controlled by the Origination Controller.

6.3.3 Route Validation

An existing or pre-specified Route between the Origination Controller and the Destination must be validated. In all cases, an existing Route that does not pass validation will be discarded but a pre-specified Route that fails will cause an RMA. When a leg is removed or changes from DLE to non-DLE, the existing Route for that leg is removed. The Route must accommodate pre-specified components. The Origination Controller and Destination for the existing or pre-specified Route must match those determined by Route Analysis.

When the management type of the Carrier Groups in the Path is "proprietary" or "non-managed", capacity is NOT checked for that Path, otherwise there must be capacity (for the given assignment rate). If a Path contains a SCID (SONET Circuit Id), the next Path in the Route cannot have the same SCID. [22]If an IC is identified as an *Intermediate Controller* on the pre-specified Route, the process will RMA UNLESS the circuit was Totally Constrained (all network units are pre-specified) and submitted from the UPD CKT Work Session. Use of hair-pin and side-door arrangements in the IC (e.g., RT integrated into an IC and non-integrated back to a COT or an RT integrated into an IC and integrated out to a DCS) are *not supported flow-through.* Users must use the UPD CKT Work Session to create Totally Constrained circuits that have hair-pin or side-door connections. The Route for such circuits will be validated for the existence and capacity (at the correct assignment rate) of a Path between the IC and the Destination or between the Destination and the IC.

For non-carrier assignment categories, [23]there must be a Path between two Controllers in a pre-specified Route when one of the Controllers is *not* the Destination. For non-carrier assignment categories, if one of the Controllers is the Destination and there is no Path between them or if an integrated connection cannot be used, [24]the *cc ic connect map* table (see Table 6-62) will be accessed to ensure that connections between the two Controllers are possible. If the entries do not exist in the table, the process will RMA.

6.3.4 Route Determination

If a Route has not been pre-specified or an existing Route is no longer valid, a list is compiled of all possible Routes from the Origination Controller to the Destination. Network unit selection (of DLC variety switch ports and/or CC ports) directs which of the potential Routes will be used (see Sections 6.7.2 and 6.8.2). If during network unit

22. This restriction is necessary in order to accommodate vendor implementations where all channels within a certain higher rate channel must either be dropped out or pass through the Add-Drop Multiplexer (ADM).

23. Carrier circuits (i.e., carrier and mptcar assignment categories) must have a fully pre-specified Route with fully pre-specified components. If no Paths exist between two Controllers in the Route, ports must be specified at each Controller. It is assumed that these connections are valid.

24. An integrated connection would not be able to be used if users specified so in the Provisioning Work Sessions or if condition was identified in the *integration excl* table (see Table 6-61).

selection, a dynamic path is considered (i.e., CRV to be selected), a check is made that all remaining paths (if they exist) in the route are proprietary. If any are not proprietary, the dynamic path will no longer be considered for an assignment.

All potential Routes must accommodate all pre-specified or permanently pre-assembled components.

If a new service is switched and there are no Routes in the final list of potential Routes, the Route Determination process will be restarted for all legs in the circuit using the next priority IC as the Destination. However, for a changed service, the failure to find a potential Route will NOT force a change in the IC Destination. Instead, Route Analysis will RMA.

The process will also error if:

- the provisioning request was received from UPD CKT and there are multiple Routes on the final list,
- the circuit is Constrained and there are multiple Routes on the final list,
- there are no Routes on the final list and there are no more ICs in the priority list (switched service) or
- there are no Routes on the final list (non-switched service).

For other DLE legs in the circuit that share the same Origination Controller and Destination, the same list of potential Routes is used.

The process of determining Routes is different depending on whether the Destination is a Controller or a Building.

6.3.4.1 Destination Controller

Starting at the Origination Controller, all managed/non-proprietary Paths that have capacity at the correct assignment rate will be explored. All non-managed or proprietary Paths will also be explored but capacity is not checked. When there are no more Paths from the Origination Controller to be explored, the adjacent Controllers are checked to see if any of them are the Destination.[25]

If an adjacent Controller is the Destination, there is an integrated connection between the Origination Controller and the Destination Controller. Unless an integrated connection cannot be used, [26]it will be added to the list of potential Routes. The *cc ic connect map*

25. In the case where an origination controller is the destination controller (short loop case with no FITL), support is provided only if there is an integrated route into the IC.

26. An integrated connection would not be able to be used if users specified so in the Provisioning Work Sessions or if condition was identified in the *integration excl* table (see Table 6-61).

table (see Table 6-62) will be accessed to determine whether there is also a non-integrated connection. If there is, the non-integrated Route is added to the list of potential Routes.

For those *adjacent Controllers that do not match the Destination,* all managed/non-proprietary Paths that have capacity at the correct assignment rate and that do not have the same SCID as the previous Path will be explored. All non-managed or proprietary Paths will also be explored, screening for duplicate SCIDs, but capacity is not checked. When there are no more Paths from the adjacent Controller to be explored, the next adjacent Controllers are checked to see if any of them are the Destination and potential Routes added to the list as described above.

When an adjacent Controller is reached that is not the Destination but that has no more Paths, it is called a *Blocking Point.* The *cc ic connect map* table (see Table 6-62) will be accessed to determine whether connections between the Blocking Point and the Destination are possible. If connections are possible, this Route is added to the list of potential Routes. However, if connections are not possible, the Blocking Point and all Paths to it are dropped from further consideration.

6.3.4.2 Destination Building

When the Destination is a building rather than a Controller, the above process is modified slightly. As when a Destination is a Controller, Route Determination starts at the Origination Controller and explores all Paths (managed/non-proprietary Paths must have capacity at the correct assignment rate, non-managed or proprietary Paths do not). When there are no more Paths from this Controller to be explored, the adjacent Controllers in the list are compared to the Destination. And this is where the difference appears.

If the adjacent Controller is an IC, it (and all Paths to it) is dropped from further consideration.

Comparison of each adjacent Controller (Carrier Controller) to the Destination uses the building attribute in the body of the Controller to compare to the input Building Destination. If the Controller is in the same building, and the assignment rate of the service is found in the list of drop rates in the Controller body, the Route to this Controller is entered into the list of potential Routes. If the assignment rate is not found in the list, then this Controller (and all Paths to it) is removed from further consideration.

If the end Controller is not in the same building (i.e, the location does not match the Destination), all Paths from it are explored as described in the section above (checking assignment rate capacity as appropriate and checking for non-consecutive SCIDs). If there are no Paths, then this Controller (and all Paths to it) is removed from further consideration.

At no time is the *cc ic connect map* table (see Table 6-62) accessed.

6.3.5 Two-Wire Transition Determination

Two-wire voice and data grade design services typically go inter-office on other carrier systems. Another type of two-wire service, PBX DID, typically accesses the trunk side of the IC on a carrier circuit. When provisioning these two-wire services, it is desirable to utilize four-wire facilities in the central office. In order for the SWITCH system to make this determination, data will be sent by the TIRKS/FEPS system in the design case to provide information on the type of facility in the next segment of the circuit. This data will appear behind the NXFAC tag in the RTG aggregate. In the PBX DID case, a control fact will be used to provide similar information. Additionally, a user-entered override can be entered to direct the assignment of two-wire facilities in certain cases (override to the NXFAC data or the control fact).

Route analysis will process this data from TIRKS/FEPS and from any user-entered override for service orders as follows:

- the value of the NXFAC tag in the RTG aggregate must be updated in the database only for non-switched services. Data received for switched services must be ignored.
- if the NXFAC value received differs from a previously stored value in the database, any user-entered override to two-wire transition processing which can be entered on the provisioning work sessions must be removed.
- if a RTG aggregate appears without NXFAC data, any existing NXFAC data or user-entered override must be removed
- if a RTG aggregate does not appear, any NXFAC data or user-entered override must remain in the database

Route analysis will obtain this data for non-switched, design services for work orders from:

- the wo-default-nxfac in the *wc parms* table (see Table 6-8wc)

6.4 Composition Analysis

Composition Analysis determines the design of the circuit. It identifies the type and number of SWITCH system inventoried components required to fulfill each service request. Certain network units (switch ports and CC ports for example) have different flavors, or *varieties* and Composition Analysis identifies which variety or varieties are appropriate for the circuit design. It also determines, at a high level, whether components that have been preassigned and/or prespecified are adequate. Both of these determinations are driven by BCC-tunable tables that reflect the assignment characteristics of each wire center, and its resident intelligent controllers and Carrier Controllers.

This process contains several logical parts (see Figure 6-5): composition rule derivation, composition rule execution and DIP determination.

Non-DLE legs retrieve only one set of composition rules and all network units that are validated/selected become components of the service and/or circuit. Processing for DLE legs involves the following important differences from processing for non-DLE legs:

- more than one set of composition rules is retrieved for a circuit to control selection/validation of network units
  - — the rules (see Tables 6-4 and 6-63) are retrieved iteratively, once for each Controller in the Route, starting at the Destination Controller [27]
  - — all necessary network units are selected/validated for each Path (or non-integrated connection) before moving to the next Path
  - — selection/validation of network units includes scoring on Route-related attributes (if there is more than one potential Route). Selection of network units determines the Path that is used. Routes for that leg that do not include the selected Path are discarded.
  - — the process is complete for a DLE leg when composition rules have been fired for the Origination Controller
- switch port composition rules enable selection of a DLC variety switch port as an *interim step* toward selecting the desired network unit (i.e., a channel or CRV) when the Path is integrated. The selected switch port is *not* made a component of the circuit. The channel or CRV that is subsequently selected is assigned to the circuit. This interim selection of a DLC variety switch port permits consideration of load and spread at the IC as well as considering Route-related scoring attributes.
- switch port composition rules enable selection of a regular switch port when the connection is non-integrated. A regular CC port that is controlled by the adjacent Controller is also selected. The selected switch port and CC port *are* made components of the circuit.
- CC port composition rules enable selection of a DLC variety CC port as an *interim step* toward selecting the desired network unit (i.e., a channel) when the Path is integrated. The selected CC port is *not* made a component of the circuit. The channel that is subsequently selected is assigned to the circuit.
- CC port composition rules enable selection of a regular CC port when the connection is non-integrated. A regular CC port that is controlled by the adjacent Controller is also selected. The selected CC ports *are* made components of the circuit.
- when a channel is needed for an assignment request between two CCs and no DLC variety CC port is present, Composition Analysis will enable the selection of a super

27. When the Destination is a Building, rules for the null IC are used. There are no rules for Buildings. The **noswpt** rule with the dle=ccpt control fact says to fire CC port rules at the adjacent Controller. If there is more than one adjacent Controller, the one that is least loaded, is used. If more than one has the same level of load, the adjacent Controller that has the lowest internal id is used.

channel as an *interim step* toward selecting the desired network unit (i.e., channel). The selected super channel is *not* made part of the circuit.

- For determining the necessity of transitioning to a four-wire assignment method when provisioning a two-wire service, NXFAC data from TIRKS/FEPS will be mapped via the *nxfac map* table (see Table 6-88). Any user-entered override to this data will also be considered. This data determines whether a two-wire or four-wire assignment method should be used during CC port selection.[28]

If there are multiple potential Routes per DLE leg, a fixed preference is used:

1. Integrated Paths that are not managed
2. Integrated Paths that have available capacity
3. Integrated Paths that will only have available capacity when pending disconnects complete
4. Non-integrated Paths

If there is still more than one Route once the Routes are sorted according to the preferences identified above, Network Unit Selection prunes the Routes by selecting Network Units from the list of potential Paths at each juncture.

If Network Unit Selection *does not return* a DLC variety switch port (or CC port), the next preferred set of Paths are tried. All assignments for the DLE leg are released and all potential Routes for that leg containing the failed Path are purged. Composition Analysis begins at the Destination and tries again.

6.4.1 Rule Derivation

A BCC-tunable table is used to derive the applicable composition rules and control facts. These composition rules and control facts are classified by intelligent controller or Carrier Controller [29]and assignment category. (See Tables 6-4 and 6-63). Composition rules and control facts can take into account individual CEC attributes and additional data contained in the service request.

The composition rules are classified by network unit type, with an additional class for logical connectivity. Control facts, as well as other data from the service request and circuit, if it already exists, (e.g., cable pair, CEC data), are interpreted and the number and

28. Data from the nxfac map table will be used when provisioning non-switched two-wire voice and data grade services. PBX DID services may also be transitioned to four-wire, but this determination is made usinghe dstcu=4w control fact in the assignment category rules tables (Tables 6-4) for particular ICs.Additionally, any user-entered override to either the NXFAC data or the control fact must be evaluated and has precedence.

29. The null IC is used when the destination is a Building.

type of network units required to support the service request is determined and passed to the assignment engine (during which reuse or selection may take place). When appropriate, a ranked set of alternate constructs for a given set of conditions is provided.

Once components have been selected or validated, the logical connectivity composition rules, when appropriate, are used by the connectivity process to determine whether connections need to be made between these components (see Section 6.15).

To support the different methods and procedures used to provision design (ADSR) service requests, the composition rules (any indicated switch port rule is always invoked) and logical connectivity rules [30]must be able to be inhibited. This is done using the design rule. If the dsgn1 rule is present in the table, it has a higher priority than the remaining composition and connectivity rules. It acts as an override to inhibit the component selection, with the exception of switch ports, and connectivity processes for the design service request being provisioned. In the latter, suppression of connectivity takes place only if target frame selection is not desired. [31]The total set of composition rules and control facts are predefined. (See Table 6-5 for the list of these rules and their definitions.) Note the BCC can modify which of the predefined composition rules to use and the values for the control facts (as illustrated by Tables 6-4 and 6-63) at site. Bellcore can assist in making these changes.

<u>Defining New Rules</u>

New rules can be optionally defined which will cause the assignment engine to use different predefined composition rules under different conditions, providing for user customization. This new rule must first be added to the *custom asgn rules* table (see Table 6-89) which will define the base rules invoked under particular conditions. The base rule is the predefined rule delivered in the default tables. The conditions, in the form of parameters from the CEC or a *wc parms* table parameter, identify when the base rule is used. The execution of the new rule is similar to an "if, then, else" statement, with the sequence number controlling the order of evaluation. This new rule can then be added to the *asgn category rules* table (Tables 6-4) to replace the existing base rule as delivered, or as an override in the *wc parms* table (see following discussion).

<u>Customizing Control Facts</u>

30. BCCs may choose to have the SWITCH system or another provisioning system (typically the TIRKS system) select intra-wire center facilities, bridge lifters and transmission equipment for design services. When the SWITCH system is not responsible for these assignments, the composition rules and the logical connectivity rules for design service requests (i.e. requests containing the ADSR tag) have to be inhibited in the SWITCH system. When the SWITCH system is responsible for these assignments, the appropriate composition rules are invoked and "special" logical connectivity takes place.

31. Intra-wire center facility selection to a target frame is determined during the connectivity process. An additional parameter is used to determine if target frame processing should occur even if the dsgn1 rule is present in the table (see Section 6.15.1.3).

Customizing control facts using the BCC-tunable *asgn category rules* table (Tables 6-4) has resulted in complex transition issues. As a result, control facts can be customized by adding parameters to the *wc parms* table either at the IC level (Table 6-8ic) or the WC level (Table 6-8wc) depending on the level at which the customized control fact applies. Once a BCC decides to use this method, the control fact can remain as delivered in the *asgn category rules* table or be modified to be "control fact"=;. A parameter of the form

— ae- "control fact name"- "asgcat", or

— ae- "control fact name"-dflt

should be added to the *wc parms* table in the appropriate instance. The rule derivation process, when encountering a control fact in the *asgn category rules* table will first search for a control fact parameter in the IC instance, and then in the WC instance of the *wc parms* table and use the value of the control fact if found there. A parameter in the "asgcat" form (for the assignment category being considered) is searched for first, followed by the default (dflt) form in each instance. If not found in either instance of the *wc parms* table, the control fact from the *asgn category rules* table is used if it is followed by an actual value.

6.4.1.1 Digital Bridging

Control facts of the form db=x, where x is the number of network units that can be digitally bridged, determine whether digital bridging is permitted in an intelligent controller. Digital bridging of switch ports, channels and CRVs [32]is needed to support bridged services that are provisioned on IDLC systems. [33]For digital bridging to be considered, the db control fact must be set with the switch port composition rule and at least one cable pair must be provisioned on IDLC.

There are differences among the different models of intelligent controllers in the services that can be digital bridged. In the 5ESS, EWSD and AXE intelligent controllers, only services which map to the RES1 and BUS assignment categories can be digitally bridged. In the DMS-100 IC, only services which map to the RES1 assignment category can be digitally bridged.

Additionally, there are differences in the maximum number of switch ports, CRVs and/or channels that can be digitally bridged. In the 5ESS IC, only two switch ports, channels and/ or CRVs can be digitally bridged (e.g., a main with one DPA). In the EWSD, up to 4 switch

32. Digital bridging replaces hard-wire bridging of cable pairs with software bridging of switch ports, channels and CRVs via translations. Services which require more than one cable pair that can be digitally bridged are multi-leg circuits and Dual F&T during the Dual service period. Digital bridging is supported only in the 5ESS, DMS-100, EWSD and AXE ICs. Digital bridging of party service is NOT supported.

33. In the pre-DLE IDLC model, the cable pair and the switch port will be part of a permanent assembly (PASM) with a switch port. In the DLE-model, the cable pair will be part of a permanent assembly (PASM) with a CC port. Channels or CRVs are selected on carrier circuits leading to the IC.

ports, channels and/or CRVs can be digitally bridged. In the DMS-100 IC, up to thirty-two switch ports, channels and/or CRVs can be digitally bridged, although realistically, up to four are expected.

6.4.1.2 Bridge Lifter Analysis

There are three types of bridge lifters available, standard or hard-wired bridge lifters (BLs), mini-bridge lifters (MBLs) and mated bridge lifters (MTBLs). Standard bridge lifters have physical appearances on the Main Distributing Frame and are jumpered to switch ports and cable pairs. Mini-bridge lifters are Plug-In units that are attached on the Protector Frame appearance of the cable pair. Mated bridge lifters are pairs of Regular bridge lifters that have been pre-wired on the frame in anticipation of assignments.

The individual BLFs (regular or mini) each support a single TID, and multiple ones are connected together (strapped) as needed for circuit provisioning. Mated BLs can actually be made up of individual ones that are left strapped together or a single piece of equipment that supports multiple TIDs. Network units that represent individual BLs have an assignment capacity of one. Mated BLFs are modeled as permanent assemblies (PASMs). For mated BLs, the assignment capacity of each BLF is equal to the number of BLs in the assembly (2 or 4).

Mini Bridge Lifters Mini Bridge Lifters are not inventoried in the SWITCH system. The information of whether a Mini Bridge Lifter is present is kept on the cable pair. When the cable pair has more than one physical appearance, all are checked to ensure that none of the appearances is prohibited for Mini-Bridge Lifters. If Mini Bridge Lifters are prohibited on any physical appearance, then the assignment process does not attempt to assign Mini-Bridge Lifters and the alternate rule is used (i.e., either select Regular or Mated BLs or RMA).

Two tables are used in the assignment of Mini-Bridge Lifters: the *mbl inventory* table (see Table 5-1) and the *mbl inuse count* table (see Table 5-2). The *mbl inventory* table contains a user-entered count of the number of bridge lifters that exist in the building. The *mbl inuse count* table is updated by the assignment process and contains a count of the number of Mini-Bridge Lifters that are installed on the protector frames in a building. When the rules indicate that a Mini-Bridge Lifter should be assigned, the assignment process must validate that the Mini-Bridge Lifter In Use Count for the building plus the number of Mini-Bridge Lifters to be assigned is less than or equal to the Mini-Bridge Lifter Inventory Count for the building. If it is, Mini-Bridge Lifters are assigned. If it is not less than or equal to the Inventory Count, the alternate rule is used (i.e., either select Regular or Mated BLs or RMA).

Mated Bridge Lifters The Assignment Engine uses the grade of service to determine which kind of Mated BL, (2-Paired or 4-Party,) is selected. When the grade of service > or = 3, the Assignment Engine looks for available 4-Party BLs. If none are found, then the Assignment Engine looks for available 2-Paired BLs. If the circuit needs more BLs than the PASM contains, the Assignment Engine keeps selecting another mated BL in the same manner until there are enough.

When the Assignment Engine is selecting Mated BLs and the grade of service < 3, the process looks for 2-Paired BLs. Again, if the circuit needs more BLs than the PASM contains, the process keeps selecting another BL in the same manner until there are enough.

The assignment of one BL causes the available capacity of the other BL(s) in the PASM to be set to N even if they are not "needed" in circuit. This does not affect the assigned use of the other BL(s), however.

6.4.2 Rule Execution

The composition rules are used to guide the interaction with component selection. The intelligence to determine which particular component to assign is a function of Component Selection.

When there are preassigned/prespecified components, they are compared to the circuit construct, or set of circuit constructs, indicated by the composition rules. [34]If they match one of the alternate circuit constructs, that construct is used.

- If too much has been preassigned and/or strongly prespecified, a request for manual assistance is generated.
- If too much has been moderately prespecified, the components not required by the composition rules are marked for non-use (if they are an assembly component) or deletion (if they are a component of the circuit).
- If too many components of a given type have been moderately prespecified, through both incoming assemblies and the current circuit configuration, the standard scheme gives preference to the components in the incoming assembly if the assembly is permanent. If the assembly is not permanent, reuse logic of Section 6.5 is followed.

Each required preassigned/prespecified component is then passed to Component Selection (see below) for validation.

- If a component passes validation, it is assigned to the circuit.
- If a component fails validation, and it was preassigned or strongly prespecified, a request for manual assistance is generated.
- If a component fails validation, and it was moderately prespecified, that component is marked for release.

34. If a circuit is totally constrained by the user, Composition Analysis is not performed. Individual network units are still validated by Component Selection. The same is true when a circuit is partially constrained by the user (same as totally constrained except the need for intra-wire center facilities is analyzed by Composition Analysis and they are selected when required).

If there are no preassigned/prespecified components or if after validation too little has been preassigned/prespecified, Composition Analysis calls Component Selection to select the components required to fulfill the circuit construct indicated by the composition rules.

When all required network units, as indicated by the circuit construct, have been validated/ selected, Composition Analysis calls the Connectivity process. (See Section 6.15)

Once all the required components, including intra-wire center facilities, have been selected, and their connectivity relationships established:

— if at least a switch port and a cable pair are being released, DIP determination is performed

— otherwise the request is passed on to Database Update. (See Section 6.17)

6.4.3 Generic Network Unit Validation

At the end of the selection process, prespecified, preassigned and selected network units are validated. For prespecified or preassigned network units (the Verification sub-process of Validation), the assignment limitation types of WTH (Withheld), WKG (Working) and NA (Not Assignable) exclude the network unit from being assigned. An RMA is generated for the request when a prespecified or preassigned network unit has either of these assignment limitations types associated with it. See each section on selection for specific validations that are performed for individual types of network units.

6.4.4 DIP Determination

DIP determination creates DIPs on remove and outward change requests. In the SWITCH system, a DIP is an assembly with an assembly category of TASM (temporary assembly). BCC-tunable reference data tables indicate when requests create TASMs with a specific functionality of DIP.

The *DIP definition* table (Table 6-9) is a wire center-based reference data table which lists the allowable network unit types that make up a DIP. Instances of the table may exist for each intelligent controller within the wire center. The table includes the number of each network unit type allowed within a DIP. There is also an entry in the table for inclusion of intra-wire center facilities when the circuit contains transmission equipment.

The *wc parms* table stores additional DIP creation parameters. DIP creation logic uses the intelligent controller and frame instances of this table. The following DIP creation parameters are in the intelligent controller instance of the *wc parms* table (Table 6-8ic):

- minimum load factor of the switch port
- maximum load factor of the switch port

- whether the cable pair is CT
- whether the cable pair is CF
- whether the cable pair is not CT or CF
- whether the network units are on different frames

The following DIP creation parameters are in the frame instance of the *wc parms* table (Table 6-8fr):

- whether to create DIPs on a particular frame (i.e., the working frame ID of the switch port)
- maximum jumper length

Since the purpose of creating DIPs is to reduce wiring, only that portion of the circuit that is physically wired together is compared against the tables for possible DIP creation. The decision whether to DIP the physically connected circuit is an all or nothing determination. (Either the whole circuit is DIPed, or it is not DIPed. There cannot be partial DIPs.)

When a DIP is created, processing records this information. The information is stored in the event log. (See Section 6.17.3).

6.5 Network Unit Reuse

DLE network units (CC ports, Channels and CRVs) that are already in a circuit are always considered for reuse. Switch ports and Trunk Pairs use various parameters and conditions to control when reuse is considered.

During Dial Transfer Overlay Assignment, ALL network units in a circuit must be reused except for the switch ports. An error condition is issued to the DTRASG contract processor if any network unit (other than a switch port) changes. See Section 16 for more details on Dial Transfer processing.

6.5.1 Switch Port Reuse Control

During Composition Analysis, reuse processing determines if switch ports that are *currently working in a circuit* can be reused. For complex circuits (those which contain multiple switch ports, or those which contain at least one switch port in addition to one or more cable pairs, and/or one or more bridge lifters, transmission equipment, or miscellaneous equipment), reusing the working switch port and as much of the circuit as possible is attempted first. A complex circuit might require frame work anyway, so reuse is attempted first to minimize possibly complex translations. Even if the circuit is not complex, the service itself might be complex. The *swpt cec excl* table (see Table 6-6), identifies complex services. When changing a complex circuit/service, if the new network unit is part of a modifiable or temporary assembly (MASM/TASM), the assembly is broken. An RMA is issued if the MASM cannot be broken.

For simple service/circuits, BCC-tunable tables control switch port reuse. Switch port reuse control does not apply to a new network unit (CP) that is part of a Permanent Assembly (PASM), a Pseudo-Service (PSSV) [35]or a Reservation (RSV).

The *swpt reuse control* table (see Table 6-7), which contains the values of the reuse parameters (CSR, CIA, and CVO), applies to Service Orders as well as Work Orders. The CSR parameter definition and values indicate preference to minimize translations or frame work:

- CSR: Conditional Switch Port Reuse Preference
  - CSR=E(exclude) - exclude reuse of the working switch port when the CP changed, attempt use of switch port assembled (MASM/TASM) to the new CP, if this fails select a new switch port
  - CSR=N(no) - attempt use of switch port assembled (MASM/TASM) to the new CP first, if this fails try reuse of the working switch port based on the CIA parameter, if this fails select a new switch port
  - CSR=Y(yes) - attempt reuse of the working switch port first, based on the value of the CIA parameter, if reuse of the working switch port is disabled or fails, use of a switch port assembled to the new network unit (CP), if any, is attempted next, if this fails, select a new switch port
  - CSR=R(reuse) - the switch port will be reused, if valid. If it is not valid, an RMA will be generated.
- CIA: Candidate for Intra-wire Center Facility Allowance
  - CIA=Y(yes) - attempt reuse of the working switch port even if it requires the assignment of intra-wire center facilities.
  - CIA=N(no) - do not reuse the working switch port if it requires the assignment of new intra-wire center facilities

  The CIA parameter does not apply when the CSR parameter has a value of "E" (exclude reuse). It will apply only if CSR=Y, or if CSR=N and reuse of the existing switch port, although not preferred, needs to be attempted.
- CVO: Critical Validations Only
  - CVO=Y(yes) - if the design data (cec) remains the same, switch port validations will be relaxed so that only critical validations (capacity, inventory availability, assignment limitations, assigned use vs. grade of service, load group exclusions, administrative group steering, TN-RSU mapping, and reverse, denied, and extra-

35. For information on assemblies, see Section 6.19.

strict spreading) will be performed. If the design data changes, all validations will be performed.

— CVO=N(no or null) - all validations will be performed whether the design data changes or not.

A building change does not necessarily force selection of a new switch port. As part of switch port validation, the logic is more sensitive to cases when switch port reuse could be a preferred choice (i.e., a building change does not necessarily cause a switch port change in the case of a Host/Remote unit). The Assignment Engine checks to see if the switch port that is being validated is in a Remote Unit. If the switch port is not in a Remote, the switch port is reused, if at least one cable pair is at the Host (e.g., In a Host/Remote situation, the switch port at the Host is reused, even if a CP is being added at the Remote Unit, as long as there is at least one cable pair at the Host). If the switch port is in a Remote and its building is different from the inward or existing CP building, switch port validation fails and a new switch port is assigned. That is, in multi-building cases, the buildings with Hosts are preferred.

6.5.1.1 Switch Port Pending Reuse Control

Pending reuse, which only applies to ACE and COR passes against pending-in circuits, refers to trying to reuse the pending switch port. For ACE and COR passes, a switch port that is DIP'd to the incoming CP is the first choice for assignment if it exists and is valid. The load factor of the DIP'd switch port must be less than the *dip-reuse-lflim* parameter in the IC instance of the *wc parms* table (see Table 6-8ic). However, if the client-specific Switch Port Reuse on ACEs feature is enabled, the reuse of switch ports on ACE passes is based on different criteria, as described below.

For COR passes, if the switch port DIP'd to the incoming cable pair is not assignable, the pending switch port is assigned if it is valid. The last choice on a COR pass is to select a new switch port, preserving the original DIP if it existed.

For ACE passes, if the switch port DIP'd to the incoming cable pair is not assignable, the *ace-new-prsv-dip* parameter in the wc instance of the *wc parms* table (see Table 6-8wc) controls the next step. When this parameter is set to "y", the original DIP (if it existed) between the switch port and the pending cable pair is preserved and a new switch port is assigned to the circuit. If there is no original DIP to preserve, the pending switch port is validated for reuse in the circuit. When this parameter is set to "n", the pending switch port is validated for reuse in the circuit. A new switch port is selected only if the pending switch port is invalid. In this latter case, the original DIP is preserved if it had been a DIP to begin with.

The client-specific Switch Port Reuse on ACEs feature is designed to provide the flexibility to control when a switch port should be reused on an ACE pass. If the feature is enabled, the switch port pending reuse processing of an ACE pass functions in a similar manner as the switch port reuse processing, described in Section 6.5.1. The process does not consider whether the original pending-in CP was in a DIP nor consider the *ace-new-prsv-dip* parameter. Instead, the process uses the user-tunable parameters of the *swpt cec excl* table and *swpt reuse control* table. The values of the CSR, CIA, and CVO parameters of the *swpt reuse control* table are obtained from the "ace" task. If the desire is to maximize the potential reuse of pending switch ports on an ACE pass, the parameters should be set to the following: CSR=R, CIA=Y, and CVO=Y.

6.5.1.2 Reuse with CREG

Standard switch port reuse control applies and takes priority when CREG [36]is involved. If CREGs become required, and reuse controls apply, non-CREG equipped switch ports may be reused. In such cases, the SWITCH system assigns transmission equipment instead. For example, if a DPA that requires gain (that could be provided by a CREG) is to be added to a "non-CREG" service, the SWITCH system may not assign a new CREG equipped switch port, but may apply transmission equipment to the DPA instead.

6.5.2 Trunk Pair Reuse

During composition analysis, reuse processing determines if the trunk pair *currently in a circuit* can be reused There are no reuse control parameters for trunk pairs like those for switch ports. Therefore, reusing the working trunk pair is attempted. However, for related F and T order, any trunk pairs involved in the existing circuit are disconnected; there is no attempt to reuse the trunk pair.

6.6 Telephone Number Selection

When a telephone number is required and a telephone number is not preassigned on the request, Composition Analysis calls Telephone Number Selection. If the client specific TN Suppression feature is activated for the wire center, a telephone number will not be selected, i.e.; the Assignment Engine will not do Telephone Number Selection processing and Tables 6-10, 6-11 (described below) do not exist.[37]

The Telephone Number Selection process contains two parts:

36. CREG (Concentrated Range Extenders with Gain) is a device that extends the office signaling and supervisory range beyond the normal office limit. It provides voice-frequency gain to maintain proper transmission levels on long loops.

37. The activation of the TN Suppression feature means that another Operation Support system (e.g., MediaCore/Customer_Number™) provides the telephone number administration functionality such as telephone number selection.

1. Determine telephone number type
2. Apply telephone number selection rules

6.6.1 Determine Telephone Number Type

A BCC-tunable intelligent controller-based table (see Table 6-10) maps the assignment category to telephone number type. Group ID parameters are included in the mapping when appropriate because this same table is used in the validation (See Section 6.6.3) process. Once processing determines the telephone number type for a request, a telephone number is selected using the telephone number selection rules.

6.6.2 Apply Telephone Number Selection Rules

Telephone numbers are selectable if *all* of the following are true:

- The telephone number is not a component of a service.
- The selectable attribute of the telephone number is Y.
- The telephone number has no assignment limitations.
- The telephone number is not on a list.
- The telephone number is not an ad hoc TN.

If an NXX has been provided on input, from the ULBB or SOAC, it is used for selection. Otherwise, telephone number selection checks Table 6-11. The intelligent controller selection process determines the intelligent controller that satisfies the request. Table 6-11 maps this intelligent controller to the NXX codes that can support the service request. If the complete NXX is not available, additional data in Table 6-11 identifies the range(s) that is available.

Based on the NXXs identified as being available to support the service request, the desirable NXX is determined. Processing chooses the NXX with the least number of selectable telephone numbers that contains at least one telephone number of the desired telephone number type.

Telephone number selection processing does *not* select any telephone numbers involved in pending activity. The telephone number also needs to be aged a certain length of time before it can be selected again. This aging process begins at the completion of the disconnect. (See Section 6.17.7)

Knowing the number of selectable telephone numbers of the desired type, within the NXX, processing determines the desirable hundreds group. A three-stage filter is used to determine the desirable hundreds group.

— The NXX (ten-thousands (10,000) group) with the least number of assignable telephone numbers is found

— The one-thousands (1,000) group within that NXX that has the least number of assignable telephone numbers is found

— The one-hundreds (100) group within that one-thousandth group that has the least number of assignable telephone numbers is found

Once the hundreds group is selected, processing chooses a telephone number of the proper type within the hundreds group. Instead of randomly selecting a telephone number from within the indicated hundreds group, an attempt is made to preserve sequential blocks of assignable telephone numbers. Each telephone number within the chosen hundreds group is listed identifying their telephone number type. The order of preference is as follows:

1. If an assignable telephone number, of the proper type, exists between two telephone numbers that are each part of a service.
2. If an assignable telephone number, of the proper type, exists at the end of a series of assignable telephone numbers.
3. If an assignable telephone number, of the proper type, exists at the beginning of a series of assignable telephone numbers.
4. If an assignable telephone number, of the proper type, exists within a series of assignable telephone numbers.

When a telephone number cannot be found in the hundreds group, the hundreds group with the next smallest number of selectable numbers is analyzed. Choosing hundreds groups continues in this manner until a selectable telephone number of the desired type is found. If none is found, another thousandths group is chosen. If necessary, the process continues through the next NXX(s), until a telephone number is found that satisfies the request or all of the possible NXX(s) have been searched. If no telephone number is found, the request RMAs.

6.6.3 Create Ad Hoc Telephone Numbers

If the input indicates that the preassigned TN is imported and the client-specific LNP - Ad Hoc TN feature is activated, then the following actions will take place:

— If the preassigned TN is not present in the inventory, a TN will be built related to the IC identified.

— If the preassigned TN is present in the inventory but it has a regular (i.e., non-ad hoc) association with an IC other than the one identified by the input EXK, then an ad hoc association will created to the IC identified.

6.6.4 Validation

When a telephone number is required, and a telephone number is preassigned on the request, Composition Analysis calls Telephone Number Validation. Telephone Number Validation determines whether the telephone number is compatible with the service request:

- Telephone number belongs to the intelligent controller that processing previously determined satisfies the provisioning request.
- Telephone number type and service request are compatible. Only telephone numbers of type Q are allowed for Centrex.

  If the client specific TN Suppression feature is activated for the wire center, this validation is not done.
- Telephone number assigned is available to that Centrex group, if the request is for Centrex.

  If the client specific TN Suppression feature is activated for the wire center, this validation is not done.
- Telephone number does not have specific assignment limitations (e.g., withheld is not allowed but restricted is allowed).

  If the client specific TN Suppression feature is activated for the wire center, this validation is not done.
- Telephone number is assignable. Processing checks whether the telephone number is a component of a service or not.
  - When the telephone number is *not* a component of a service, processing checks the selectable attribute in the telephone number node body. If the selectable attribute is Y, the telephone number is assigned. If the selectable attribute is N, processing checks the release date of the telephone number.

    If the release date of the telephone number is less than or equal to the due date of the build request, the telephone number is assigned. If the release date of the telephone number is greater than the due date of the build request, processing checks the telephone number reuse parameter. [38]

    When the difference in days between the due date of the telephone number and the due date of the build request is less than or equal to the telephone number reuse parameter, the telephone number is assigned. When the difference between the

38. The telephone number reuse parameter indicates the number of working days after disconnect that a telephone number can be reused without causing the new connect order to RMA. Telephone number reuse is a parameter (tn-reuse) in the wire center instance of the *wc parms* table (see Table 6-8wc).

order due date of the telephone number and the due date of the build request is greater than the telephone number reuse parameter, the request RMAs.

If the client specific TN Suppression feature is activated for the wire center, the selectable attribute is not checked and no release date processing is done.

— When the telephone number is a component of a service, telephone number validation processing checks the category of service to ensure that the simultaneous use of the telephone number is valid.

1. on an inward request, telephone number validation checks the category of service on the design edge. If the existing service is ISDN or MADN (category of I or M) and the new service is also ISDN or MADN (category of I or M), the telephone number is assigned. If the client specific feature, TN Sharing across Analog and ISDN Services (tn sharing for isdn analog) is enabled, if the existing service is analog (category of V or R) and the new service is ISDN (category of I), then the telephone number is assigned. Additionally if this client specific feature is enabled, if the existing service is ISDN (on one or more ISDN call appearances) and the new service is analog, then the telephone number is assigned.)

2. on a change request, composition analysis sends the service ID for which the telephone number was previously associated to telephone number validation which allows telephone numbers to change services (or change category of service) on the same circuit only.

Validation determines whether the telephone number is available for assignment in the correct time frame. When the above validation checks are passed, validation checks the tn-pending-in-rma parameter in the wire center instance of the *wc parms* table, Table 6-8wc. When the parameter is Y, validation checks the next pending view of the telephone number. If processing does not find the telephone number pending in a view, which is future to the due date of the request, validation continues. If processing finds the telephone number pending in a view, which is future to the due date of the request, the request RMAs.

When the telephone number is involved in pending out activity, validation should ensure that the order due date of the provisioning request with the preassigned telephone number is the same as or after the due date of the provisioning request that is pending disconnect. If the telephone number is available, it is returned to the composition analysis process. The values of the attribute of the telephone number are set during the Database Update Process (see Section 6.17.7.4). If the telephone number is not available, the request RMAs.

If the client-specific LNP - Ad Hoc TN feature is activated, the following validations will take place:

— If the input indicates that the preassigned TN is imported, and is present in the inventory, then the TN cannot already have a regular (i.e., non-ad hoc) association to the IC identified.

— If an ad hoc TN is to be deleted, the input must indicate that the TN is imported.

— If a regular (i.e., non-ad hoc) inventoried TN is to come out of the service, the input cannot indicate that it is imported.

If the client-specific LNP - TN Administration feature is activated the following validations will take place:

— If the input indicates that the TN, which was exported, is now being returned to the donor IC, then the inventoried TN must contain an exported indication (assignment limitation type of "rst" and value of "exp"). Additionally, the release date must be null and the TN must be marked as selectable.

6.6.5 Telephone Number Lists

An inventoried telephone number can be put on a telephone number list. Telephone number lists are used in the SWITCH system to provide the capability of preassigning telephone numbers by other up-front systems (e.g., PREMIS), or manually specifying telephone numbers by terminal input through the ULBB. See Section 5.8.

The SWITCH system generates lists of telephone numbers for eventual preassignment. When a telephone number is put on a list, the telephone number becomes unavailable for automatic selection. This telephone number is eventually preassigned on a provisioning request. If the provisioning request is canceled, the telephone number is made available for selection. It may subsequently be selected for another list or provisioning request. Telephone numbers on a canceled provisioning request do not get put back on the list.

If the client specific TN Suppression feature is activated for the wire center, the SWITCH system does not generate any telephone number lists.

6.7 Switch Port Selection

When Composition Analysis has determined that one or more switch ports need to be selected, it calls Switch Port Selection to select each required switch port. Based on selection attributes (see Sections 6.7.1 and 6.7.2), a filtering process identifies the "best" candidate pool (see Section 6.7.3). When candidates are found, a random selection and scoring process (see Sections 6.7.4 - 6.7.6) is used to identify the "best of the best". This "best of the best" is then validated (see Section 6.7.7). Figures 6-6a and 6-6b show the flow of this process.

Selection of a switch port within an assignment category can use different criteria depending on the type, or *variety* of switch port that must be considered to support the service. Variety can also be used to produce different scores for the same selection criteria. Table 6-12 *(swpt rule set)* demonstrates the use of *variety* to allow different criteria to be considered. Table 6-13 explains the terminology used in Table 6-12. The criteria that is considered relevant during selection can be modified at a BCC site.

All existing switch port composition rules for digital ICs will include a DLC variety to allow for a different set of selection criteria to be used. This variety will be used when provisioning a DLE leg and an integrated Path exists. For cases where the connection is non-integrated or the leg is non-DLE, other defined varieties (such as CREG or DEF) are used to distinguish the relevant selection criteria when needed.

Due to major differences in how DLC and other switch port varieties are handled, the following sections will discuss them separately.

The "no switch port" composition rule for a DLE leg implies that the final portion of the Route to the Destination must be a non-integrated connection. So even if there is an integrated Path possible, it is not used. Only non-integrated connections are considered. Even though no switch port is required, a CC port controlled by the adjacent Controller is required for a DLE leg. The CC port composition rules of the adjacent Controller are followed to select an acceptable CC port.

6.7.1 Selection Attributes - Non-DLC Varieties

Switch ports have many attributes, several of these attributes have been identified as potentially able to influence switch port selection. These attributes are:

- Administrative Constraint
- Load Factor
- Frame Location
- Signaling
- Essentiality
- Assembly Involvement
- Encoding Protocol
- Spreading
- Party Fill
- Inherited Features
- Band
- Card Type

The values of these attributes are used in both the filtering and scoring aspects of selection. Which attributes are used and how they are to be evaluated are determined by rules that are a function of the assignment category, intelligent controller and variety.

6.7.1.1 Administrative Constraint

Administrative constraint scoring permits the maintenance of a *class of service* spread and the consideration of the *cost* of different switch ports. For those intelligent controllers where most of the switch ports have the same capabilities but are given different administrative constraint values only in order to enforce a class of service balance, the penalty for using a switch port with a different constraint can be set quite low. For those intelligent controllers where the switch ports actually have different capabilities, the penalty for using a switch port with greater functionality can be set commensurate to the cost differential.

There are several administrative constraint evaluation rules available. They determine the score from the administrative constraint scoring tables. Table 6-14 provides the penalty scoring used by the administrative constraint rules. They are organized by assignment category and type of intelligent controller (intelligent controller type can be differentiated by IC software release level and/or overridden for a particular intelligent controller when that is desirable).

The rules available are:

- am1 - Determine administrative score based on the administrative constraint and any indicated conditions.
- am2 - Determine administrative score based on the administrative constraint and any indicated conditions, plus invoke collection processing. See Section 6.7.3.3.

6.7.1.2 Load Factor

Load factor scoring is used to help maintain a balanced load on the switch fabric. In most cases, switch ports in lightly loaded load groups are favored over those in higher loaded load groups. When switch ports are used as a "placeholder" for translation purposes only (e.g., remote call forwarding), load is irrelevant and therefore those in higher loaded load groups are actually preferable.

There is a load factor evaluation rule (ld1) available that is based solely on load factor. It reads the score from a load factor scoring table.

Table 6-15 illustrates a load factor scoring table where low load factors are given low penalty scores. It is designed to be used for all intelligent controllers, but can be overridden at appropriate lower levels. In the case where a translation only service is being provisioned, an instance of this table (i.e., for the BUSNT assignment category, Table 6-15a) can be used which gives high load factors low penalty scores.

6.7.1.3 Frame Location and Jumper Length

For WCs that contain multiple frames, or a multi-zoned single frame, the frame location of the assignable switch ports is an important consideration.

Based on the intelligent controller and the input frame locations (normally either the cable pair's physical locations or the trunk pair's physical locations) passed in from composition analysis, the BCC-tunable *frame system priority* table (see Table 6-16) [39]indicates the preferred frame system for switch port selection.

- If there is a single input location, the preferred frame system indicated for that location is used.
- If there are multiple input locations, the rank column is used to identify which input location has precedence, one being the best rank, ninety-nine the worst.
- If there is no input location, the rank column is used to identify the most desirable location, the location that has a rank of one.

The table supports having first, second and third preferences for frame systems (see Section 6.7.3.2 for information on frame system looping during selection). For the majority of intelligent controllers, only one preference is required. Having the two additional preferences provides the flexibility to deal with:

- Remote frame systems where it is desirable to assign host switch ports when there are no remote switch ports available at the site in question. Having a third preference extends the capability to remote-on-remote-on-host applications.
- Non-traditional frame system applications where not all of the switch ports associated with a particular intelligent controller appear on the preferred frame system.

Once the preferred frame system has been determined, an additional BCC-tunable table is used to identify the frames which make up that frame system. (See the *frame system id* Table 6-17.)

When one of the input locations is a frame/zone within the identified preferred frame system, that frame/zone becomes the *target* frame/zone for switch port selection.

If there is a target frame zone, the selection process does jumper minimization. Jumper length is measured by the number of iterations required to select the switch port. An iteration includes the set of zones that are logically the same distance away from the target frame and zone of the cable pair.

The determine frame zone process obtains the frame type of the target frame from the database. Using this frame type, the determine frame zone process searches for a frame

39. Tables that perform the same function for different network unit types have been grouped with the same table number for ease of presentation and understanding. Each table example is discussed in the appropriate section.

instance of the global BCC-tunable reference data table, *frame zone search* (see Table 6-49). This table defines the sequence of zones to search based on iterations. It is generally only used for CODS frames.

When an instance of the *frame zone search* table is not found, a tunable parameter (i.e., jmpr-zone-per-iter) in the frame instance of the *wc parms* table (see Table 6-8fr) defines the number of zones included in each iteration. For COSMIC frames, the first iteration includes only the home frame zone. For ESS Modular and Conventional frames, the first iteration includes the home frame zone and one zone to the right. Each iteration after the first will expand the search area X zones to the left and X zones to the right of the previously searched zones (where X is the value found in the jmpr-zone-per-iter parameter of the *wc parms* table).

There is a jumper length score evaluation rule (jump1) available, which is based solely on zone iteration.

Table 6-18 illustrates a jumper length scoring table used by the rule. It is designed to be used for all intelligent controller/frame combinations, but can be overridden at appropriate lower levels.

6.7.1.4 Signaling

Signaling scoring is used to provide flexibility in the way loop and ground start is administered.

- If switch ports can support one and only one type of signaling (whether this is a physical or administrative constraint), the table can be structured to enforce that.
- If there is a high cost (either hardware or staff) encountered when a switch port designated to support one signaling type is used to support another, the table can be set up to impose high penalties.
- If there is a negligible cost (hardware and staff) encountered when a switch port designated to support one signaling type is used to support another, the table can be set up to impose low penalties.

There is a signaling score evaluation rule (sig1) available that is based solely on the signaling attribute. The rule reads the score from the *swpt penalty score sig* table shown in Table 6-19.

6.7.1.5 Essentiality

Essentiality scoring allows the way essential service is provided to be taken into account during the selection process. For those ICs where specific switch ports have a physical attribute of essential, a relatively high penalty can be applied. For those ICs where essentiality is just a translation item, a relatively low penalty can be applied.

There is an essentiality score evaluation rule (esl1) available, which is based solely on the essentiality attribute.

Table 6-20 illustrates an essentiality scoring table used by the rule.

6.7.1.6 Assembly Involvement

Assembly involvement allows the desirability of dynamically breaking a temporary assembly to be taken into account during switch port selection. Other types of assemblies cannot be broken by the assignment process, therefore they are reflected with a dash in the table.

There are two evaluation rules (asm1 and age1) that are used to determine the assembly involvement score. Tables 6-21 and 6-22 illustrate these tables.

The tables can take into account both the selectability scale, which is set by the type of assembly (DIP, CF-DIP, CT-DIP), and how many months the assembly has existed without being reused. The age is based on the assembly's creation month.

When a temporary wired assembly (i.e., a DIP) is dynamically broken, processing records this information. The information is stored in the event log. (See Section 6.17.3.)

6.7.1.7 Encoding Protocol

This attribute is used to indicate which encoding protocol(s) a switch port can support. Currently the switch ports associated with the types of intelligent controllers supported by the SWITCH system can only handle a single encoding protocol.

For ICs that support multiple encoding protocols (i.e., AMI and 2B1Q), the encoding protocol evaluation rule (en1) must be exercised. The scoring table indicates that an exact match on encoding protocol is required.

Table 6-23 illustrates an encoding protocol scoring table used by the rule.

6.7.1.8 Spreading

Spreading is used to enforce an equitable distribution of assignments for an administrative group across the available spread groups in the IC. [40]The sprd1 evaluation rule indicates that spreading can be a scorable attribute. There are several types of spreading: Reverse,

40. The spread levels are defined in the *inv group rules* table. (See Table 4A-11 in Appendix 4A).

Deny, Standard and Extra-Strict. Users control which type of spreading is invoked for each type of administrative group (e.g., Centrex, hunting) using the *spread typing* table (See Table 6-24).

Reverse spreading limits switch port selection for an administrative group to a predefined set of top level spread groups. Deny spreading prohibits switch port selection for an administrative group from a predefined list of spread groups which can be at any spread level. Standard spreading is used when the goal is to distribute the assignments evenly across all spread groups. Extra-Strict spreading ensures that the number of assignments for an administrative group does not exceed a maximum number for any spread group. The maximum value is different for each spread level.

Table 6-25 illustrates the *swpt penalty score spread* tables. This table is user-modifiable and may be specified based upon IC type, IC Generic, IC ID, and spread type. The conditional column (condition) can be used to differentiate by spread level if that is required. A *spread count* table, see Table 5-5, is automatically maintained for each administrative group. This table contains the number of switch ports, CRVs and/or channels which have been assigned (either pending or working) in each of the spread groups, for each of the hierarchy types (analog, ISDN, IDLC) and each host/remote unit.

When equipment groups have an exclusion (see Section 4.18.3) and Standard, Reverse, or Denied Spreading is to be done for an administrative group, spreading calculations are adjusted to only consider the portion of the intelligent controller that can receive assignments for that administrative group. For service order activity, the spreading calculations are adjusted to remove excluded equipment groups.

Standard Spreading can be done in conjunction with other types of spreading and/or with load group exclusions. All kinds of spreading are considered during filtering for switch port selection. Reverse, Denied and Extra-Strict Spreading are considered when validating a pre-assigned switch port.

Reverse Spreading - For those administrative groups where Reverse spreading is being done, the spread groups that are listed in the *reverse spread* table is used as an include filter. (See Table 6-26.) If no *reverse spread* table exists for the administrative group (i.e, administration is to be done automatically), the following functionality is performed. The actual number of top level Spread Groups in the *spread count* table is compared to the maximum recommended number from the *reverse spread auto control* table (see Table 6-27). If the actual number of groups is less than the maximum recommended number, Reverse Spread filtering is ignored and the process does Standard Spreading in order to pick a switch port from a new top level spread group. If the actual number is greater than or equal to the maximum recommended number, the top level Spread Groups from the *spread count* table is used as the Reverse Spread filter. However if no switch port is able to be selected, a second iteration of switch port selection is performed without Reverse Spreading.

Deny Spreading - For those administrative groups where Deny spreading is being done the spread groups that are listed in the *deny spread* table is used as an exclude filter. (See Table 6-28.)

Standard Spreading - For those administrative groups where Standard spreading is being done, Standard spreading seeks to equally distribute all assignments for an administrative group across the set of spread groups of the proper type (e.g., ISDN or analog) at each level in the appropriate Host/Remote location. The number of assignments for the administrative group that are in each spread group are compared to a target average. The target average is calculated based upon the number of proper spread groups at each equipment level in the intelligent controller for the Host/Remote. The comparison between the actual value and the target average is used to determine a penalty score for switch port selection processing. This comparison is intended to be more forgiving when the target average is small and less forgiving when the target is large.

When load group exclusions exist, the excluded groups are *not* included in the calculation of target averages. When an exclusion is specified as an override for work order steering, the calculation of the target averages *only* considers the excluded groups.

Spread processing identifies spread groups that have penalty scores higher than the threshold value specified for the relaxation level (see Section 6.7.3) in use for that iteration of switch port selection. The identified spread groups are used as an exclusion filter so that switch ports in those spread groups are not included in the set of candidate switch ports. Candidate switch ports are then scored, using the worst penalty score of any of the spread groups to which the switch port belongs. When an assignment involves multiple administrative groups (e.g., both a hunt group and a centrex group), the highest score for any involved group is used.

Extra-Strict Spreading - For those administrative groups where Extra-Strict spreading is being done, a straight comparison between the Actual Spread Counts obtained from the *spread count* table and the explicit Target obtained from the *swpt penalty score spread* table is done. Those equipment groups that exceed the target are filtered out when creating the pool of candidate switch ports.

6.7.1.9 Party Fill

This attribute is used to determine the selectability of the switch port based on the switch port assignment use and any conditions indicated in the associated scoring tables.

There are party fill evaluation rules (i.e., pfil1 and pfil2) available. (See Table 6-13, for a description of these rules.) These rules determine the score from the party fill scoring tables. Table 6-29 illustrates the *swpt penalty score pfil* tables. See Section 6.20.3, for more information on switch port selection for party service.

6.7.1.10 Inherited Features

Inherited feature scoring allows particular inherited features to be taken into account during the selection process. Scoring on this attribute determines the acceptability of switch ports with an inherited feature when the service does or does not require it (See Table 6-30). An evaluation rule (if1) is available to determine inherited features scoring.

CREG [41]is the only inherited feature scored. [42]Switch ports equipped with CREG have their inherited feature attribute set to "X". The swptb composition rule (see Table 6-4) and associated control fact are used to determine whether or not CREG equipped switch ports are considered for selection.

6.7.1.11 Band

Band Scoring applies to ISDN On Demand B Packet service POE assignments in the 5ESS IC. Band scoring is required for these selections, but does not apply to other switch port selection processing. An evaluation rule (band1) is available to determine Band scoring. Table 6-50 illustrates the swpt penalty score bnd table.

6.7.1.12 Card Type

Scoring on switch port card type is used for DMS-100 ICs to allow the accurate assignment of certain services which can be supported only on certain types of line equipment cards. Card type is also used as a selection criteria for the carrier and mptcar assignment categories in all intelligent controller types.

An evaluation rule (ct1) is available to determine card type scoring. Table 6-59 illustrates the *swpt penalty score ct* table.

6.7.2 Selection Attributes - DLC Variety

DLC variety switch ports have fewer scorable attributes than non-DLC switch ports. The scorable attributes that influence DLC variety switch port selection are:

- Load Factor
- Spreading

41. CREG (Concentrated Range Extenders with Gain) is a device that extends the office signaling and supervisory range beyond the normal office limit. It provides voice-frequency gain to maintain proper transmission levels on long loops.

42. Since CREGs are available only on the 1ESS and 2ESS, instances of inherited feature scoring tables (Table 6-30) are not required for other ICs.

- Carrier Group Utilization Factor
- Carrier Circuit Cost
- Number of Paths in Route
- Route Utilization Factor

Load Factor, Spreading and TN to RSU mapping operate in the same manner as for non-DLC variety switch ports. Please refer to Sections 6.7.1.2, 6.7.1.8, and 6.7.3.1 for further information on these scorable attributes.

6.7.2.1 Carrier Group Utilization Factor

The initial filtering of switch ports considers the Path id but does not include Carrier Group id. When a switch port becomes a candidate and is being scored, the Carrier Group to which the switch port is "associated" (through the carrier circuit of which the port is a component) is accessed to retrieve its utilization factor. If the individual utilization factor results in an unacceptable score (i.e., 99 or -), the Carrier Group id is added to the exclusion list so other switch ports "associated" to the same Carrier Group will not be scored.

The util1 evaluation rule is available to determine that the Carrier Group Utilization Factor should be scored. Table 6-64 illustrates the penalty scoring that is used by this rule.

6.7.2.2 Carrier Circuit Cost

Carrier Circuit Cost scoring permits the relative cost of carrier circuits to be considered when selecting DLC variety switch ports. When possible, it is probably better to fill a less expensive carrier circuit than use a more expensive carrier circuit. The ccost evaluation rule is available to determine that Carrier Circuit Cost should be scored. Table 6-65 illustrates the penalty scoring that is used by this rule.

6.7.2.3 Number of Paths in Route

If there is more than one possible Route, the number of Paths in each Route is compared in order to prefer shorter Routes when the path1 evaluation rule exists. Table 6-66 illustrates the penalty scoring that is used by this rule.

6.7.2.4 Route Utilization Factor

If there is more than one possible Route, the Routes are compared based upon the overall utilization of the Paths on each Route. This comparison is done by obtaining the best

Utilization Factor (i.e., the lowest) of all Carrier Groups within each Path. Then, to judge the relative goodness of the entire Route, the worst of the utilization factors for all Paths in the Route is obtained. In other words, the utilization level of the Route is judged by the most used Path.

All of the switch ports in the Route will have the same score for the Route utilization factor. If the Route utilization factor results in an unacceptable score (i.e., 99 or -), the Bandwidth id for that switch port is added to the exclusion list so other switch ports "belonging" to the same Bandwidth will not be scored again. Scoring of the Carrier Group utilization factor and the Route utilization factor uses the same scoring table (see Table 6-64) and the same evaluation rule (util1).

6.7.3 Filtering

Prior to scoring on the relevant attributes identified in Table 6-12, switch ports must possess the following traits in order to be considered available for assignment: [43]

- must have an availability date on or before the due date of the order activity,
- cannot contain any assignment limitations,
- cannot be a member of an excluded load group, unless being steered to when specified as an override on work orders, or on service orders when a CTX or HML group must be steered to customer-purchased equipment [44]
- must have available capacity,
- cannot be used by any groups (i.e. do not have requires edges to HMLs or SFGs),
- must be consistent with TN to RSU mapping, if appropriate,
- if the client-specific LNP - IC/RU and LRN Selection feature is activated, must be consistent with the selected IC and its associated remote units found in the IC selection step using the *imported tn ic ru map* table (see Table 6-90). Switch ports may be considered from:

  — the selected IC and all its RUs

43. This assumes no overrides are input to the assignment process either from ULBB input (load group exclusion for steering work orders), or from participation in a Centrex or HML group which is being steered to customer purchased equipment (load group exclusion for steering service requests), or from composition rules (e.g., which impose constraints on the switch ports which can be considered. An example is considering only defective switch ports when the swptD rule is invoked.)

44. Provisioning requests in CTX or HML groups can be directed to switch ports in customer-owned equipment. The load groups for this equipment must be marked with a load group exclusion. The *admin group excl* table contains those CTX or HML groups that should be steered to switch ports containing the load group exclusion value (see Table 6-78).

— the selected IC and some of its RUs

— not the selected IC but some or all of its RUs

- if the feature just discussed is not activated and only the client-specific LNP-Ad Hoc TN feature is activated, the switch port where EXK is provided on input must appear on that IC or remote unit with the same EXK.

DLC variety switch ports have the following additional constraints:

- must be a part of one of the potential Paths identified by Route Analysis,
- cannot have a disconnect date that is before the due date of the provisioning request,
- must have a dynamic indicator of dynamic or mixed if the dyn_only control fact was present,
- must have a dynamic indicator of static or mixed if the dyn_excl control fact was present,
- cannot be on the exclusion list (neither can its Carrier Group be on the exclusion list),
- must have the assignment rate in the list of spare assignable rates for the switch port (or in the list of disconnecting assignment rates if there is no spare capacity in any of the potential Paths),
- must be consistent with TN to RSU mapping, if appropriate,
- if the client-specific LNP - IC/RU and LRN Selection feature is activated, must be consistent with the selected IC and its associated remote units found in the IC selection step using the *imported tn ic ru map* table (see Table 6-90). DLC switch ports may be considered from:

— the selected IC and all its RUs

— the selected IC and some of its RUs

— not the selected IC but some or all of its RUs

- if the feature just discussed is not activated and only the client-specific LNP-Ad Hoc TN feature is activated, the switch port where EXK is provided on input must appear on that IC or remote unit with the same EXK.

Relaxation filtering is used to find a pool of candidate switch ports that are available for selection. When steering to a particular "set" of switch ports is desired, either due to an override specified on a work order, or due to the need to provision customer requests on customer-purchased equipment, the pool of switch ports will be determined by those containing the appropriate load group exclusion values. In the latter case, particular CTX or HML groups are steered to switch ports containing load group exclusions if specified in Table 6-78.

Conceptually, this process first looks for switch ports with a perfect score for all applicable scorable attributes. (Selection attributes are calculated as described in Sections 6.7.1 and 6.7.2) If none are found, the criteria for these attributes are gradually relaxed to take higher and higher penalty scores.

A BCC-tunable table contains the allowed value for every applicable attribute at each level of relaxation. (See Table 6-31.) Although this table is BCC-tunable, the design intent is for this table to remain constant. Tuning should be done by adjusting the scores in the attribute evaluation tables.

The allowable score for each attribute must either remain the same or ascend. This convention permits the performance of this process to be controlled. Instead of actually sequentially stepping through the *swpt relaxation* table, a binary search is employed. If the level being examined has more switch ports than the appropriate range, [45]the next lower binary search level is examined. If the level being examined has less switch ports than the appropriate range, the next higher binary search level is examined. When a level that contains a quantity of switch ports within the appropriate range is found, that level is used as the candidate pool for selection. If all relaxation levels are determined to be above or below the desired range, the level closest to the range on the low side is used. If all levels are above the range, level one is used. If all levels are below the range, the highest level (e.g., 15) is used.

6.7.3.1 TN to RSU Swpt Mapping

TN range to Remote Unit (RU) mapping allows the BCC to control the automatic assignment of switch ports for specified TN ranges to specific Remote Units. Switch port assignments for assignment requests containing TNs within the designated ranges will be restricted to the set of RUs identified as assignable for the TN range. If a switch port assignment cannot be made in one of the specified RUs, the assignment request will RMA.

The Remote Switch Port Assignment by TN Range feature is enabled/disabled on a wire center basis by the "tn-remote-opt" parameter of the wire center level instance of the *wc parms* table (Table 6-8wc). The default value for this parameter is "n" to indicate that the default state of this feature is off. For offices where this special processing is desired, the value of the "tn-remote-opt" parameter should be locally changed to "y" to indicate that this feature should be enabled for the wire center.

User specification of TN ranges which should be assigned only to specific RUs are entered into the *tn remote map* table (Table 6-79). This table allows users to locally specify that a TN range is to be associated to up to 5 RUs.

When the client-specific LNP - IC/RU and LRN Selection feature is turned on, the *tn remote map* table processing will be bypassed.

45. The acceptable range is between 22 and 100 without pending and between 100 and 200 with pending.

6.7.3.2 Looping

If there are no switch ports available even at the highest level of relaxation (greatest penalty), looping on frame systems and pending is possible for non-DLC variety switch ports. Each loop uses the *swpt relaxation* table and employs the same binary search scheme.

As indicated in Section 6.7.1.3, a BCC-tunable table indicates whether it is desirable to select switch ports on alternative frame systems. (See Table 6-16.) When alternative frame systems are available there are four possible frame *states*:

- Home frame
- Other frames within the home frame system
- Alternative frame system 1
- Alternative frame system 2

There are three [46]assignable pending states:

- No pending
- Pending out (pending disconnect)
- Pending in (pending connect)

These frame states and pending states interact. The combination of a frame state and a pending state are called a *Super State*. Looping can be enabled for the twelve possible super states. A BCC-tunable table indicates in which order the allowable super states should be processed. (See Table 6-32sw.)

If at the end of all allowable loops no switch ports can be found, composition analysis is notified that a switch port could not be selected.

6.7.3.3 Filtering and Collection Processing - DSLs and POEs

Provisioning ISDN service requests on the 5ESS IC requires collection processing[47]. When selecting a non-DLC variety switch port (i.e., a switch port in an ISLU, known as a DSL), the "am2" administrative constraint scoring rule indicates that collection processing is necessary. The "am1" administrative constraint scoring rule indicates that collection processing is not necessary.When the "am2" rule is used, the value of *variety* distinguishes whether a DSL or a POE is being selected (according to the swptC rule).

46. A fourth possible pending state exists; namely pending out and in. Network units in this state are not considered for selection.

47. See Section 4.19 for a discussion of collections and collection groups.

Provisioning an ISDN service request in an ISLU results in, at a minimum the selection of one DSL (Digital Subscriber Line Card) and one D channel POE. A D channel POE is required for signaling and is also used for D packet service, if requested. Additionally, a B channel POE is required for EACH B packet service requested (i.e., X.25 service on the B1 and/or B2 channel also referred to as permanent packet service on the B channel). Therefore, the switch port selection process is invoked multiple times, once for a DSL and one or more times for required POEs.

During selection of a DSL, the filtering process works as described in Section 6.7.3.[48]During selection of a POE however, additional collection attributes must be taken into account during filtering, namely timeslot allocations, availability of ODB CCS capacity and D channel user limits if the client specific feature, 5ESS ISDN Protocol Handler D Channel User Limitations (5ess ph dpkt user limit), is enabled. During POE selection an attempt is made to pack quarter timeslots for D service.

Since multiple switch ports are needed to support ISDN (i.e., a DSL and one or more POEs), it is possible that during the switch port selection process for a POE, it is determined that the DSL, potentially selected, is not appropriate and the process attempts to select another DSL.

During the process of filtering and scoring for a candidate DSL, the collections and collection groups which have quarter timeslots and whole timeslots available have already been determined. The following additional processing is involved for POEs:

- If the variety = DPOE, then the acceptable collections (from the LGC to the PSU shelf) and collection groups (from the ISLU to the PSU shelf) to which the candidate DSL (potentially selected for this request) belongs, are examined for quarter timeslot availability and whole timeslot availability.[49] If there are no quarter or whole timeslots available (quarter timeslots are preferred in order to pack timeslots) or no POEs are found after scoring, selection of another candidate DSL is attempted (up to 10 attempts made.)[50]
- If the variety = DPOE, and the client specific feature 5ESS ISDN Protocol Handler D Channel User Limitations (5ess ph dpkt user limit) is enabled, a check is also made to ensure that the number of D channel packet users in a PH will not be exceeeded by this POE assignment.[51]
- If the variety = DPOE, a check is made that this assignment will not result in exceeding the 32 timeslot allocation limit to this PH.

48. Collection process during DSL selection involves checking adequate timeslot capacity during the scoring phase, discussed in Section 6.7.4.

49. Acceptable collections include all collections if ISDN packet Channel Selection is not involved. If ISDN packet Channel Selection is involved, only collections with sufficient capacity to support all packet assignments are considered acceptable.

50. The actual number of DSL re-selection attempts is controlled by the value of the max-dsl-attempts field of the *swpt sel option* table. The default value for max-dsl-attempts is 10.

- If the variety = BPOE, then collections to which the candidate DSL belongs to are examined for available whole timeslots. The POEs in these collections are then put through relaxation filtering. If none are available, selection of another DSL is attempted (up to 10 DSL re-selections are attempted including re-selections for D channel assignment).
- If the variety = ODB, then collections to which the candidate DSL belongs to are examined for the required ODB CCS capacity. The POEs in these collections are then put through relaxation filtering. If none are available, selection of another DSL is attempted (up to 10 DSL re-selections are attempted including re-selections for D channel or Permanent Packet B assignment).

6.7.3.4 Filtering and Collection Processing - DS1s/CRVs and POEs

Provisioning an ISDN service request on the 5ESS IDCU may or may not invoke collection processing. Collection processing can occur only if IDCU Collections and Collection Groups exist.[52]

When the route analysis process has determined that assignment can be made on integrated facilities into the IC, and the *dyn_only* control fact indicates that only CRVs can be used (not channels), a search for an ICARRIER variety switch port is made. An ICARRIER switch port combines selection of a DLC variety switch port with the need to perform collection processing. The selection of a DLC variety switch port is needed in order to select a CRV. The DLC variety switchport is a DS1 port which terminates on the IDCU.

Collection processing is performed to ensure that adequate timeslot capacity exists between an IDCU and a PSU shelf when a whole timeslot is needed or between a TR-303 RT (which terminates on the IDCU) and the PSU shelf if only a quarter timeslot is needed.

During selection of a DS1 switch port (for the purpose of selecting a CRV), the filtering process works as described in Section 6.7.3.[53]During selection of a POE however, additional collection attributes must be taken into account during filtering, namely timeslot allocations, availability of ODB CCS capacity and D channel user limits if the client

51. In order for accurate administration of D channel packet user limits especially after ISDN circuits are converted from COSMOS, a MDPK database preparation and re-synchronization tool must be run. One phase of this tool uses an extract of the 5ESS IC called the DSLEQUIP discussed as part of the ISDN Collection Audit in Section 18.3.

52. Building of IDCU Collections and Collection Groups is allowed if the client specific feature, tr303 dle isdn, is enabled. Additionally, integrated facilities must be built in the SWITCH system on the DLE platform. Automatic assignment of POEs is provided under these conditions. Otherwise, manual pre-specification of POEs is needed. See Section 6.20.4.1 for more discussion of ISDN on the DLE platform.

53. Collection process during DS1/CRV selection involves checking adequate timeslot capacity during the scoring phase, discussed in Section 6.7.4.

specific feature, 5ESS ISDN Protocol Handler D Channel User Limitations (5ess ph dpkt user limit), is enabled. During POE selection an attempt is made to pack quarter timeslots for D service.

Since multiple switch ports are needed to support ISDN (i.e., a CRV and one or more POEs), it is possible that during the switch port selection process for a POE, it is determined that the DS1, potentially selected for the purpose of selecting a CRV, is not appropriate and the process attempts to select another DS1.

During the process of filtering and scoring for a candidate DS1, the collections and collection groups which have quarter timeslots and whole timeslots available have already been determined. The following additional processing is also involved for POEs:

- If the variety = DPOE, then the acceptable collections (from the carrier group to the PSU shelf) and collection groups (from the IDCU to the PSU shelf) to which the candidate DS1 (potentially selected for this request) belongs, are examined for quarter timeslot and whole timeslot availability. [54] If there are no quarter or whole timeslots available (quarter timeslots are preferred in order to pack timeslots) or no POEs are found after scoring, selection of another candidate DS1 is attempted (up to 10 attempts made.)[55]
- If the variety = DPOE, and the client specific feature 5ESS ISDN Protocol Handler D Channel User Limitations (5ess ph dpkt user limit) is enabled, a check is also made to ensure that the number of D channel packet users in a PH will not be exceeeded by this POE assignment.[56]
- If the variety = DPOE, a check is made that this assignment will not result in exceeding the 32 timeslot allocation limit to this PH.
- If the variety = BPOE, then collection groups from the IDCU to which the candidate DS1 belongs to are filtered for available whole timeslots. The POEs in these collections are then put through relaxation filtering. If none are available, selection of another DS1 is attempted (up to 10 DS1 re-selections are attempted including re-selections for D channel assignment).
- If the variety = ODB, then collection groups to which the candidate DS1 belongs to are filtered for the required ODB CCS capacity. The POEs in these collections are

54. Acceptable collections include all collections if ISDN packet Channel Selection is not involved. If ISDN packet Channel Selection is involved, only collections with sufficient capacity to support all packet assignments are considered acceptable.

55. The actual number of DS1 re-selection attempts is controlled by the value of the max-ds1-attempts field of the *swpt sel option* table. The default value for max-ds1-attempts is 10.

56. In order for accurate administration of D channel packet user limits especially after ISDN circuits are converted from COSMOS, a MDPK database preparation and re-synchronization tool must be run. One phase of this tool uses an extract of the 5ESS IC called the DSLEQUIP discussed as part of the ISDN Collection Audit in Section 18.3.

then put through relaxation filtering. If none are available, selection of another DS1 is attempted (up to 10 DS1 re-selections are attempted including re-selections for D channel or Permanent Packet B assignment).

6.7.4 Scoring

At this point, relaxation filtering has provided the best possible pool of candidate switch ports. It is desirable to pick the best (lowest total penalty score) switch port from this pool.

From the pool of candidate switch ports passed in from filtering, one is randomly chosen. If a super state involving pending is being processed, the due date interval is checked before any scoring calculations are done. This check is based on BCC-tunable tables that define the acceptable due date interval. These tables are organized by the assignment type being processed and take into account the pending assignment type. (See Tables 6-33 and 6-34.)

- If the due dates are not compatible, the due date fail count is incremented.
  - If the due date fail count equals 100, no more switch ports are randomly selected at this level.
    1. If there are any switch ports on the good list (see Section 6.7.6), the list is used in the normal fashion, even though it contains less than desirable number of switch ports.
    2. If the good list is empty, the next relaxation level is used to obtain a larger candidate pool.
  - If the due date fail count is less than 100, another switch port is randomly selected and the due date compatibility process is again employed.
- If the due dates are compatible, or a pending super state was *not* involved, then the switch port is scored for each appropriate attribute. A penalty for each appropriate attribute is determined. The same table (see Table 6-12) that was used by filtering to determine the appropriate attributes and scoring rules is employed by scoring with spreading taken into account when appropriate.

6.7.4.1 Scoring and Collection Processing - DSLs and POEs

During the selection of a DSL in a 5ESS IC, normal filtering occurs and a pool of candidate switch ports is created. Due to the presence of the "am2" rule, additional collection processing is required. In particular, when *variety* indicates DSL selection, only DSLs in collections with adequate timeslot and ODB CCS resources to reach the packet network are scored (from the pool of candidates). [57]This is accomplished as follows:

- Based on the type and number of POEs required to support the request, a check is made that the collections to which the DSL belongs, has adequate timeslot capacity to reach the packet network.
- Since every request for ISDN service requires a D POE, the DSL must belong to collections where there is at least a quarter timeslot available (if no quarters, available, then must check for an unallocated whole timeslot). For every B POE needed, a whole timeslot must also be available and for every ODB POE needed, sufficient ODB CCS must exist for the collection. Additionally, checks must be made that any B or D timeslot limits [58]have not been reached.
- If ISDN packet Channel Selection is not involved, the required collection capacity (timeslots and ODB CCS) may exist across multiple collections. If ISDN packet Channel Selection is involved (CSEL=Y at the pipe level) then all required collection capacity must be available from the same collection and all POEs selected from the same PH.
- If adequate D and PPB timeslot capacity is not available, the candidate pool is reduced to exclude other DSLs in that LGC from further consideration and another switch port is randomly chosen.
- If adequate ODB CCS capacity is not available, the candidate pool is reduced to exclude other DSLs in that ISLU from further consideration and another switch port is randomly chosen.
- If adequate collection capacity is available, then the DSL is scored for each appropriate attribute.
- If adequate timeslot capacity is available and any applicable PH limits are not exceeded, the POE is scored for each appropriate attribute.

6.7.4.2 Scoring and Collection Processing - DS1s/CRVs and POEs

During the selection of a DS1 in a 5ESS IC, normal filtering occurs and a pool of candidate switch ports is created. If the client specific feature, tr303 dle isdn, is enabled, additional collection processing is required. In particular, when *variety* is ICARRIER, only DS1s in

57. An exception to this occurs if a DSL in a RISLU is encountered. If a DSL is not part of a collection, the process assumes that the DSL is in a RISLU (no tracking of timeslots between RISLUs and the PSU are performed, therefore no collections should exist between the two). At this point, an RMA is generated which identifies the DSL which would have been selected. The user must manually select all necessary packet switch ports. POEs which are used for provisioning ISDN in a RISLU must contain an assignment limitation of "RST" with value of "RSL". This assignment limitation will allow the validation process to accept the manual assignment of POEs to DSLs in a RISLU.

58. Maximum B and D timeslots, are determined by engineering personnel. ODB timeslot reservations also limit the number of timeslots which can be allocated for D or PPB usage.

collections with adequate timeslot and ODB CCS resources to reach the packet network are scored (from the pool of candidates). This is accomplished as follows:

- Based on the type and number of POEs required to support the request, a check is made that the collection groups (and collections) to which the DS1 (via the carrier group or IDCU) belongs, has adequate timeslot capacity to reach the packet network.
- Since every request for ISDN service requires a D POE, the DS1 must belong to collections (via the carrier group) where there is at least a quarter timeslot available (if no quarters, available, then must check for an unallocated whole timeslot in the collection group). For every B POE needed, a whole timeslot must also be available and for every ODB POE needed, sufficient ODB CCS must exist for the collection. Additionally, checks must be made that any B or D timeslot limits [59]have not been reached.
- If ISDN packet Channel Selection is not involved, the required collection capacity (timeslots and ODB CCS) may exist across multiple collections. If ISDN packet Channel Selection is involved (CSEL=Y at the pipe level) then all required collection capacity must be available from the same collection and all POEs selected from the same PH.
- If adequate D and PPB timeslot capacity is not available, the candidate pool is reduced to exclude other DS1s in that carrier group from further consideration and another switch port is randomly chosen.
- If adequate ODB CCS capacity is not available, the candidate pool is reduced to exclude other DS1s in that carrier group from further consideration and another switch port is randomly chosen.
- If adequate collection capacity is available, then the DS1 is scored for each appropriate attribute, for the purpose of selecting a CRV.
- If adequate timeslot capacity is available and any applicable PH limits are not exceeded, the POE is scored for each appropriate attribute.

6.7.5 Weight Scores

Obviously, some attributes may be more important than others. Therefore, a comparison function is required that weights the attribute scores. To support this, an intelligent controller based BCC-tunable table (see Table 6-35) of weighting factors is provided for each attribute by *Assignment Type* (Note: not assignment category).

59. Maximum B and D timeslots, are determined by engineering personnel. ODB timeslot reservations also limit the number of timeslots which can be allocated for D or PPB usage.

Each attribute has a score of 0 to 99 from the process above, which is then multiplied by a weighting factor of 1 to 100, as indicated in the *swpt weight* table. The weighted scores are then added to determine the total score or penalty.

6.7.6 Compare

Once the total penalty score has been determined, this process is invoked.

- If the switch port has a perfect score (zero penalty), it is forwarded to the validation process.
- If the switch port has a score that is greater than zero, it is added to the good list and the good list count is incremented.
  - — If the good list count is less than twenty-two and there are switch ports left in the candidate pool, another switch port is randomly selected and the scoring process gone through again.
  - — If the good list count equals twenty-two, [60]or if the candidate pool has been exhausted, the good list is ordered and the switch port with the lowest total weighted penalty passed to validation.
    1. If the switch port passes validation, selection is successful, the switch port's ID is returned to Composition Analysis.
    2. If the best does not pass validation, then the next best in the sample is sent to validation. This is done until a switch port passes validation or the whole good list has been exhausted.
       - — If the good list is exhausted, an attempt is still made to remain in the *super state* to select a switch port. At this point, the process resorts to a sequential search of the *swpt relaxation* table (using filtering and scoring as just described). If a switch port can still not be selected, looping through the super state(s) continues.

6.7.7 Validation

Validation is made up of two sub-processes:

- Verification
- Final Database Acceptance Checking

60. A sample size of twenty-two was chosen to maximize performance while still providing a very high probability that one of the best in the pool is chosen.

Depending on the calling process validation can be invoked to do both or just final acceptance checking.

6.7.7.1 Verification

Verification is used when components have been prespecified or, under certain circumstances, preassigned. It is not used when called from selection, since the scoring tables have already been checked. Verification uses the same set of scoring tables as the component selection processes to determine whether the component is compatible with the service request. There is no comparison with the universe of assignable components to determine if the "best" assignment has been made.

Additionally, a check is made against the load group exclusion scoring table, *(swpt penalty score excl,* see Table 4-3), discussed in Section 4.18.3. This ensures that the switch port being validated is not in a load group which has a "severe" exclusion. Prespecified or preassigned switch ports are validated if they are in load groups with a "moderate" exclusion (or no exclusion). When a switch port is prespecified for a request in a CTX or HML group a check of the *admin group excl* table (Table 6-78) is made to see if this group is being steered to customer-owned equipment. If an entry exists, the switch port which is prespecified must have a load group exclusion with a value equal to the entry for this group in the table.

Additionally, when a prespecified switch port is a component of a DIP, verification checks a parameter, dip-reuse-lflim, in the intelligent controller instance of the *wc parms* table. (See Table 6-8ic.) This parameter indicates that the switch port can be reused as long as the load factor of the switch port is less than or equal to the value of the parameter.

When a DIP is reused in its entirety, processing records this information. The information is stored in the event log. (See Section 6.17.3).

When verifying Dial Transfer Overlay assignments specified by the ASGDTR contract processor, Table 6-86 *(swpt rule set overlay)* will be used instead of Table 6-12. If Table 6-86 does not exist, assignments will fail. Table 6-86 has the same format as Table 6-12 but specifies a subset of the rules to be used for Overlay assignment verification. Fewer rules are needed due to the special nature of DTR Overlay assignments and using fewer rules provides better DTR Assignment performance. See Section 16 for more information on Dial Transfer processing.

Typically in the verification process, switch ports with assignment limitations are kept in the circuit. These were manually prespecified in the first place (normal selection does not select a switch port with an assignment limitation except in the BUSNT case when defectives are preferred) and it is desirable to have them remain in the circuit. One exception to this case is explained in Section 6.4.3, Generic Network Unit Validation. Another exception to this case is if a defective switch port is to remain in the circuit, it must map to the BUSNT assignment category. Otherwise, it is not validated and another switch port is selected.

If the client-specific LNP - Ad Hoc TN feature is activated and the service contains an ad hoc TN, the switchport prespecified must appear on the IC or remote unit identified by the EXK. Alternatively, if the client-specific LNP - IC/RU and LRN Selection feature is activated and the service contains an ad hoc TN, the switchport prespecified must appear on the IC or remote unit determined from the *imported tn ic ru map* table.

If the component is compatible it is passed on to final database acceptance checking.

6.7.7.2 Final Database Acceptance Checking

Final acceptance checking of the database is always used. It is used to check that the availability date is on or after the due date of the order activity. Final acceptance checking also determines whether the component currently has available capacity in the proper time frame. Although available capacity was checked when the selection process began, this protection is required since multiple processes may be running concurrently against the same inventory.

6.7.8 LRN Selection

If the client-specific LNP - IC/RU and LRN Selection feature is activated and an imported TN appears on input with no LRN, then an LRN will be selected. This will be done by matching the ID of the IC or remote unit (RU), where the switch port, channel, or CRV (discussed in a later section) was assigned, against the IDs in the *ic ru lrn map* table (see Table 6-91). If the assignment was made at a host IC, its ID will be used to search the table. If multiple matches are found in the table, the row with the highest priority (i.e., the lowest priority number) will be chosen and the LRN in that row will be selected for the service. If the switch port, channel, or CRV assignment was made at an RU, its ID will be used to search the table in the same manner. If no match is found using the RU ID, the ID of the associated host will be used to search the table. In either case an LRN with a priority of 99 will not be automatically selected. If no matches with a priority below 99 are found, an error will be produced.

A row containing a dash in the priority field will not be processed. That is, the IC/RU and LRN combination will not be selected nor will it be validated.

If the no switch port rule is invoked for the request (i.e., no switch port, channel, or CRV selection is to be done), the selected host IC ID will be used to search the *ic ru lrn map* table.

The selected LRN will be used to derive the Control Group (CEG) for the service (needed by the MARCH system since LNP TNs can no longer be used to make this determination). The CEG will be derived by taking the first 7 characters of the LRN.

If a service has an LRN or it appears on input, it will be validated that it has an entry in the *ic ru lrn map* table for the IC/RU that was selected. A priority of 99 or lower will allow the LRN to be validated.

If the prespecified LRN is not found in the *ic ru lrn map* table with the selected IC/RU (at any priority) an RMA will be produced.

When the assignment engine determines that an existing circuit/service needs to be validated, the current LRN will be validated against the *ic ru lrn map* table. If the LRN is still valid it will be kept with the circuit. If it is no longer valid a new LRN will be assigned as described above.

When an LRN has changed for a working circuit/service due to either a work order or a service order, the SWITCH System will issue a notifier indicating this change

6.8 CC Port Selection

When Composition Analysis has determined that one or more CC ports need to be selected, it calls CC Port Selection to select each required CC port. Based on selection attributes (see Sections 6.8.1 and 6.8.2), a filtering process identifies the "best" candidate pool (see Section 6.8.3). When candidates are found, a random selection and scoring process (see Sections 6.8.4 and 6.8.5) is used to identify the "best of the best". This "best of the best" is then validated (see Section 6.8.6). Figures 6-6a and 6-6b show the flow of this process.

CC ports can be categorized into two basic *varieties*, DLC and no variety. These varieties are used to identify the different sets of selection criteria that are used under different conditions (see Table 6-68 for the selection criteria to be used for each variety, Table 6-13 explains the terminology used in Table 6-68). Variety can also be used to produce different scores for the same selection criteria. The composition rules determine the variety of CC port that is to be selected.

All CC port composition rules set CC port variety to:

— DLC when the Path(s) in the preferred set is integrated or

— no variety when the connection is non-integrated.

Due to major differences in how DLC and the no variety are handled, the following sections will discuss them separately.

6.8.1 Selection Attributes - Non-DLC Varieties

CC ports have many attributes, several of which have been identified as potentially able to influence CC port selection. These attributes are:

- Administrative Constraint

- Desirability
- Card Type
- Encoding Protocol

The values of these attributes are used in both the filtering and scoring aspects of selection. Which attributes are used and how they are to be evaluated are determined by rules that are a function of the assignment category and intelligent controller.

6.8.1.1 Administrative Constraint

Administrative constraints on CC ports permit the determination of whether a CC port on a slot functions as a station-end or office-end. It is an attribute of a CC port that is used to select/validate a CC port on a slot that functionally can support the required service.

One administrative constraint rule (am1) is used for CC port selection. This rule scores on the administrative constraint and any indicated conditions. Table 6-76 illustrates the penalty scoring that is used by this rule.

6.8.1.2 Desirability

Scoring on desirability permits the preference of CC ports in slots that are equipped or pending equipped. Desirability will be "Y" on all CC ports on a slot when the slot is equipped or pending equipped; otherwise it is "null". CC ports in slots that are equipped or pending equipped are favored over non-equipped slots to make use of existing, in place, facilities.

The desirability evaluation rule (de1) scores on desirability and any indicated conditions. Table 6-74 illustrates the penalty scoring that is used by this rule.

6.8.1.3 Card Type

For purposes of SWITCH System processing, each CC port channel unit is categorized according to a card type, which broadly defines the functions supported by the channel unit. Examples of SWITCH System Card types are: POTS, COIN, UVG, 2WS (2-wire specials), etc. The card type attribute of a slot on a CC must be defined in order for a CC port on that slot to be selected or validated. Card type scoring is used to select/validate a CC port on a slot that functionally can support the required service.

The card type evaluation rule (ct1) scores on the card type and any indicated conditions. Table 6-75 illustrates the penalty scoring that is used by this rule.

6.8.1.4 Encoding Protocol

This attribute is used to indicate which encoding protocol a CC port can support. Currently, it is used for provisioning ISDN CC ports using either the AMI or 2B1Q encoding protocols. The encoding protocol rule (en1) is used to score on the encoding protocol attribute when necessary (e.g., AT&T SLC-2000). The rule scores on the encoding protocol and any indicated conditions. Table 6-77 illustrates the penalty scoring that is used by this rule.

6.8.2 Selection Attributes - DLC Variety

DLC variety CC ports have different scorable attributes than non-DLC CC ports. The scorable attributes that influence DLC variety CC port selection are as follows:

- Carrier Group Utilization Factor
- Carrier Circuit Cost
- Number of Paths in Route
- Route Utilization Factor

6.8.2.1 Carrier Group Utilization Factor

The scoring of utilization factors is similar to DSL selection with Collections. The initial filtering of CC ports considers the Path id but does not include the Carrier Group id. When a CC port becomes a candidate and is being scored, the Carrier Group to which the CC port is "associated" (through the carrier circuit of which the port is a component) is accessed to retrieve its utilization factor. If the individual utilization factor results in an unacceptable score (i.e., 99 or -), the Carrier Group id is added to the exclusion list so other CC ports "associated" to the same Carrier Group will not be scored.

The util1 evaluation rule is available to determine that the Carrier Group Utilization Factor should be scored. Table 6-71 illustrates the penalty scoring that is used by this rule.

6.8.2.2 Carrier Circuit Cost

Carrier Circuit Cost scoring permits the relative cost of carrier circuits to be considered when selecting DLC variety CC ports. When possible, it is probably better to fill a less expensive carrier circuit than use a more expensive carrier circuit. The ccost evaluation rule is available to determine that Carrier Circuit Cost should be scored. Table 6-72 provides the *ccpt penalty score ccost* table.

6.8.2.3 Number of Paths in Route

If there is more than one possible Route, the number of Paths in each Route is compared in order to prefer shorter Routes when the path1 evaluation rule exists. Table 6-73 illustrates the penalty scoring that is used by this rule.

6.8.2.4 Route Utilization Factor

If there is more than one possible Route, the Routes are compared based upon the overall utilization of the Paths on each Route. This comparison is done by obtaining the best Utilization Factor (i.e., the lowest) of all Carrier Groups within each Path. Then, to judge the relative goodness of the entire Route, the worst of the utilization factors for all Paths in the Route is obtained. In other words, the utilization level of the Route is judged by the most used Path.

All of the CC ports in the Route will have the same score for the Route utilization factor. If the Route utilization factor results in an unacceptable score (i.e., 99 or -), the Bandwidth id for that switch port is added to the exclusion list so other switch ports "belonging" to the same Bandwidth will not be scored again. Scoring of the Carrier Group utilization factor and the Route utilization factor uses the same scoring table (see Table 6-71) and the same evaluation rule (util1).

6.8.3 Filtering

Prior to scoring on the relevant attributes identified in Table 6-68, CC ports must possess the following traits in order to be considered available for assignment:

- must have an availability date on or before the due date of the order activity,
- cannot contain any assignment limitations,
- must have available capacity, and
- if the CC port is a component of a pasm (with selectability of 0), the adjacent point on the composition edge must equal the next adjacent Controller.

DLC variety CC ports have the following additional constraints:

- must be a part of one of the potential Paths identified by Route Analysis,
- cannot have a disconnect date that is before the due date of the provisioning request,
- cannot be on the exclusion list (neither can its Carrier Group be on the exclusion list),
- must have the assignment rate in the list of spare assignable rates for the CC port (or in the list of disconnecting assignment rates if there is no spare capacity in any of the potential Paths)

Selection/validation of CC ports also will be filtered on the value of the ADSR attribute of the slot. When the value of the ADSR attribute is null, the CC port may be used for either designed or non-designed services. On assignment of the first CC port of a slot, the ADSR attribute is set to "Y" or "N", depending on whether the assigned service is ADSR or not. On subsequent assignment of an ADSR service, CC ports with the ADSR attribute set to "N" may not be used. Conversely, on subsequent assignment of a non-ADSR service, CC ports with the ADSR attribute set to "Y" may not be used. A mix of designed and non-designed services cannot coexist on the same slot. When the last circuit on a slot disconnects, the ADSR value will be set back to null.

Relaxation filtering is used to find a pool of candidate CC ports that are available for selection. The process works the same as for switch ports. Refer to Section 6.8.3 for a thorough discussion of filtering.

A BCC-tunable table contains the allowed value for every applicable attribute at each level of relaxation. (See Table 6-69.) Although this table is BCC-tunable, the design intent is for this table to remain constant. Tuning should be done by adjusting the scores in the attribute evaluation tables. The allowable score for each attribute must either remain the same or ascend to permit binary searching.

6.8.4 Scoring

At this point, relaxation filtering has provided the best possible pool of candidate CC ports. It is desirable to pick the best (lowest total penalty score) CC port from this pool.

From the pool of candidate CC ports passed in from filtering, one is randomly chosen. A penalty for each appropriate attribute is determined. The same table (see Table 6-68) that was used by filtering to determine the appropriate attributes and scoring rules is employed by scoring. Obviously, some attributes may be more important than others. Therefore, a comparison function is required that weights the attribute scores. To support this, a carrier controller based BCC-tunable table (see Table 6-70) of weighting factors is provided for each attribute by *Assignment Type* (Note: not assignment category).

Each attribute has a score of 0 to 99 from the process above, which is then multiplied by a weighting factor of 1 to 100, as indicated in the weighting factor table. The weighted scores are then added to determine the total score or penalty.

6.8.5 Compare

Once the total penalty score has been determined, this process is invoked.

- If the CC port has a perfect score (zero penalty), it is forwarded to the validation process.

- If the CC port has a score that is greater than zero, it is added to the good list and the good list count is incremented.
  - — If the good list count is less than twenty-two and there are CC ports left in the candidate pool, another CC port is randomly selected and the scoring process gone through again.
  - — If the good list count equals twenty-two, [61]or if the candidate pool has been exhausted, the good list is ordered and the CC port with the lowest total weighted penalty passed to validation.
    1. If the CC port passes validation, selection is successful, the CC port's ID is returned to Composition Analysis.
    2. If the best does not pass validation, then the next best in the sample is sent to validation. This is done until a CC port passes validation or the whole good list has been exhausted.

6.8.6 Validation

Validation is made up of two sub-processes:

- Verification
- Final Database Acceptance Checking

Depending on the calling process, validation can be invoked to do both or just final acceptance checking.

6.8.6.1 Verification

Verification is used when components have been prespecified or, under certain circumstances, preassigned. It is not used when called from Selection, since the scoring tables have already been checked. Verification uses the same set of scoring tables as the component selection processes to determine whether the component is compatible with the service request. There is no comparison with the universe of assignable components to determine if the "best" assignment has been made.

Typically in the verification process, CC ports with assignment limitations are kept in the circuit. These were manually prespecified in the first place (normal selection does not select a CC port with an assignment limitation) and it is desirable to have them remain in the circuit.

61. A sample size of twenty-two was chosen to maximize performance while still providing a very high probability that one of the best in the pool is chosen.

If the component is compatible it is passed on to final database acceptance checking.

6.8.6.2 Final Database Acceptance Checking

Final acceptance checking of the database is always used. It is used to check that the availability date is on or after the due date of the order activity. Final acceptance checking also determines whether the component currently has available capacity in the proper time frame. Although available capacity was checked when the selection process began, this protection is required since multiple processes may be running concurrently against the same inventory.

6.9 Channel Selection

When Composition Analysis has determined that one or more channels need to be selected, it calls Channel Selection to select each required channel.

Channels can be categorized into two basic *types*, super channels and channels. Super channel selection is used when no DLC variety switch ports or CC ports can be found. Super channel selection is used as an interim step in selecting a channel that will become a component of the service/circuit. In this case, after a super channel is successfully found regular channel selection will be called. Super channel Selection is described in Section 6.9.1. The selection process for channels starts in sections 6.9.2.

When selecting a channel that will be controlled by an IC, the process will first attempt to retrieve the *chan rule set* (see Table 6-80) to determine whether channels have any scorable attributes. [62]If an instance for the IC is found, channels are scored. If no instance is found, channels are not scored on any attribute. The absence of an instance of the table is *not* an RMA condition.

Channels that are only controlled by CCs have no scorable attributes and retrieval of a Reference Data Table is not attempted.

When the ec2 rule is present in the *chan rule set* (Table 6-80), a two-phase approach will be used when there is spare capacity. For performance reasons, the process will first attempt to select a channel with a "perfect" Engineered Compatibility that is activated by the previously selected switch port. If no "perfect" channels exist on the selected circuit, a "perfect" channel that is on any carrier circuit in the Carrier Group will be selected. If no "perfect" channels exist, channels with less-than-perfect but still acceptable Engineered Compatibilities will be selected. When there is only disconnect capacity, the ec2 rule will immediately open the candidate pool to all channels in the Carrier Group that have acceptable Engineered Compatibilities.

62. The only possible scorable attribute for channels is Engineered Compatibility.

When the ec1 rule is present in the *chan rule set* (see Table 6-80), the process immediately opens the candidate pool to all channels that are on any carrier circuits in the Carrier Group. The initial step of looking within the selected circuit is not done.

6.9.1 Super Channel Selection

Super Channel Selection will only be called when a channel is needed between two CCs and no DLC variety CC ports or switch ports can be found. No scoring will be done on these super channels.

A super channel must possess the following traits in order to be considered available for assignment:

- must be controlled by appropriate two CCs
- must have available capacity in super channel (i.e., no channels in this super channel's hierarchy have been assigned)
- must have a valid carrier availability date, if one exists
- must have a valid carrier disconnect availability date, if one exists
- must have the assignment rate in the list of spare assignable rates for the super channel (or in the list of disconnecting assignment rates if there is no spare capacity in any of the potential Paths
- it must not be on the exclusion list.

If a super channel is found it should be returned to Composition Analysis. If no super channels are found another attempt will be made using the same criteria except the avail_cap ="y" should not be included. If a super channel is found it will be returned to Composition Analysis. If no super channel is found, an error will be produced.

6.9.2 Channel Selection Attributes

Channels have few attributes, only one of which has been identified as potentially able to influence channel selection. The scorable attribute is Engineered Compatibility. Engineered Compatibility refers to the predetermination of the general category of service for which the channel is expected to be assigned. Pre-determining the expected category of service permits more efficient recent change administration in some types of intelligent controllers.

The value of Engineered Compatibility is used in filtering.

6.9.3 Channel Filtering

When the two-phase approach is being used (i.e., the ec2 rule was in the *chan rule set*, Table 6-80), channels must possess the following traits in order to be considered available for assignment:

- must be activated by the previously selected switch port,
- cannot contain any assignment limitations,
- must have available capacity,
- cannot be a component of a working or pended circuit,
- cannot be a component of a pasm,
- must be of the correct assignment rate,
- cannot be on the exclusion list (neither can its Carrier Group be on the exclusion list), and
- must have an Engineered Compatibility value that yields a 0 score.

The first channel that is chosen is selected and sent to Composition Analysis. Further validation is not necessary.

If no "perfect" channel is found in the first phase of the two-phase process or if the one-phase approach is being used to begin with (i.e., ec1 rule), a FAST call is made to find all channels that are in the Carrier Group that was identified by the selected switch port, still looking for a "perfect" Engineered Compatibility. The first one that is chosen is validated to ensure that its switch port does not have an assignment limitation. If the channel passes validation, it is selected and sent to Composition Analysis. If the channel fails validation, it's carrier circuit id is placed on an exclusion list and the FAST call tried again. If channel selection is being done as a result of Super Channel Selection, then the super channel is put on the exclusion list.

If no "perfect" channels exist in the Carrier Group, channels are FASTed for the all of the above conditions except that the score for the Engineered Compatibility attribute is relaxed to the next level. [63]The first channel that is considered from the candidate pool is validated. If no channels were retrieved by the FAST call, the Engineered Compatibility attribute is again relaxed, if possible, and another FAST call made. This continues until a channel is validated or there are no more relaxation levels to try.

If no channel can be selected at this point, [64]the Carrier Group is added to the exclusion list.

63. Since there is only one scorable attribute, no Relaxation or Weighting Tables are required. The *chan penalty score ec* table (see Table 6-81) is used to identify the break points for relaxation.

64. This might occur if more than one channel needs to be selected for a circuit and the capacity was exhausted by the previous selection or if all switch ports with acceptable channels have assignment limitations.

Regardless of whether the ec1 or ec2 rule is operating, when there is only capacity available due to pending disconnects, the one-phase approach is used. A FAST call is made to find all channels that are in the Carrier Group that was identified by the selected switch port and that are components of a circuit that is pended to be disconnected. These channels must have an acceptable Engineered Compatibility but it does not have to be perfect. [65]When a channel is chosen, the due date of the pending disconnect is compared to the due date of the provisioning request. If the pending disconnect is due before the provisioning request, the channel is selected, if not, it must be discarded and another chosen for consideration.

6.9.3.1 When Channels Are Not Scored

When there is more than one channel at the assignment rate directly above the desired channel, a top-down approach is used. The goal is to select a channel in a branch of the channel hierarchy that is already used for assignment at the desired rate. In this way, higher assignment rate channels are saved as long as possible for future high capacity service requests.

The algorithm that is used is called partial fill selection. Channels are FASTed to find a channel at the rate directly above the target assignment rate that:

— is unavailable itself for assignment,

— is not a component of a circuit,

— is not on the exclusion list,

— does not have an assignment limitation, and

— has some spare channels at the target assignment rate.

If a parent channel is found, the first channel below it at the proper assignment rate that is not already a component of a circuit is selected. The selected channel must be validated.

When either there is only one channel at the parent rate or no parent channel was found using the partial fill selection algorithm described above, a hierarchical selection is performed. Channels are FASTed to find a channel at the highest assignment rate in the channel hierarchy that:

— is not a component of a circuit or pended to be a component of a carrier circuit,

— is not a component of a pasm,

— is not on the exclusion list,

65. Because the likelihood of finding a channel that is due to be disconnected before the due date of the provisioning request is already low, it is impractical to go through the number of iterations that would be required to see if there was a "perfect" channel on the selected circuit first and then go through the relaxation levels for all channels in the Carrier Group.

— does not have an assignment limitation, and

— has some spare channels at the target assignment rate.

The first available channel at the next lower hierarchy level is then selected that meets the same criteria as stated above. Selection of channels continues in this manner until a channel with the target assignment rate is selected. When selected, that channel is then sent to Composition Analysis. Further validation is not necessary.

If no channel can be selected at this point, [66]the switch port or CC port that was sent from Composition Analysis is added to the exclusion list.

When there is only capacity available due to pending disconnects, channels are FASTed to find a channel at the target assignment rate in the correct carrier circuit that is a component of a circuit that is pended to be disconnected. It cannot be on the exclusion list or have an assignment limitation. The due date of the pending disconnect is compared to the due date of the provisioning request. If the pending disconnect is due before the provisioning request, it is selected, if not, it must be discarded and another chosen for consideration.

6.9.4 Channel Validation

Prespecified or preassembled channels must be validated to ensure that the following data is correct:

- assignment rate
- in the correct Carrier Group
- assignment limitation is not "working", "withheld" or "na"
- available capacity = y in proper time-view, and
- is not a component of a circuit in proper time-view or of a carrier circuit in any time-view.

Prespecified, preassembled and selected channels [67]must be validated to ensure that each parent and grandparent channel:

— is not a component of a pasm or circuit

— does not have an assignment limitation

— is not on the exclusion list and

— has some spare channels at the target assignment rate.

66. This might occur if more than one channel needs to be selected for a circuit and the capacity was exhausted by the previous selection.

67. Selected channels must be validated when channels are being scored and the selected channel is not activated by the previously selected switch port.

Prespecified, preassembled and selected channels are also validated to ensure:

- the carrier availability date on the switch port, CC port, or super channel, if present, is earlier than or equal to the due date of the service
- the carrier disconnect date, if present, is later than the due date of the service, and
- the switch port and/or CC port have no assignment limitation or Load Group exclusion.

If the client-specific LNP - Ad Hoc TN feature is activated and the service contains an ad hoc TN, the channel prespecified must appear on the IC or remote unit identified by the EXK. Alternatively, if the client-specific LNP - IC/RU and LRN Selection feature is activated and the service contains an ad hoc TN, the channel prespecified must appear on the IC or remote unit determined from the *imported tn ic ru map* table.

Final database acceptance checking ensures that the channel is available as of the due date of the provisioning request. Although available capacity was checked when the selection process began, this protection is required since multiple processes may be running concurrently against the same inventory.

6.9.5 LRN Selection

If the client-specific LNP - IC/RU and LRN Selection feature is activated and an imported TN appears on input, then an LRN will be selected or validated based on the channel selected. The process of selecting an LRN when a channel has been selected is the same as when a switch port has been selected. See section 6.7.8 for details.

6.10 CRV Selection

CRV Selection will first attempt to retrieve the *crv rule set* (see Table 6-82) to determine whether CRVs have any scorable attributes. [68]If an instance for the IC is found, CRVs are scored. If no instance is found, CRVs are not scored on any attribute. The absence of an instance of the table is *not* an RMA condition.

6.10.1 Selection Attributes

CRVs have few attributes, only one of which has been identified as potentially able to influence CRV selection. The scorable attribute is Engineered Compatibility. Engineered Compatibility refers to the predetermination of the general category of service for which

68. The only possible scorable attribute for CRVs is engineered compatibility.

the CRV is expected to be assigned. Pre-determining the expected category of service permits more efficient recent change administration in some types of intelligent controllers.

The value of Engineered Compatibility is used in filtering.

6.10.2 Filtering

CRVs must possess the following traits in order to be considered available for assignment:

- cannot contain any assignment limitations,
- must have available capacity,
- must be a factor of the correct Carrier Group,
- cannot be a component of a working or pended circuit, and
- cannot be on the exclusion list (neither can its Carrier Group be on the exclusion list).

In addition when scoring for Engineered Compatibility, CRVs must have Engineered Compatibility values that yield a 0 penalty score. The first CRV that is chosen from this pool is selected. Further validation is not required.

If no "perfect" CRVs exist, CRVs with Engineered Compatibility values that yield the next score are identified. [69]The first CRV that is picked from the candidate pool is selected. If no CRVs were retrieved by the FAST call, the Engineered Compatibility attribute is again relaxed, if possible, and another FAST call made. This continues until a CRV is selected or there are no more relaxation levels to try. If no CRV can ultimately be selected, CRV Selection informs the Assignment Engine.

When there is only capacity available due to pending disconnects, CRVs are FASTed for the same attributes as above with the additional restriction that they must also be a component of a circuit that is pending disconnect. Any acceptable value of Engineered Compatibility is used and only one candidate pool is prepared. [70]The due date of the pending disconnect is compared to the due date of the provisioning request. If the pending disconnect is before the provisioning request, it is selected, if not, it must be discarded and another chosen for consideration. The first CRV with an acceptable pending disconnect date is selected.

In either case, since the first CRV that is picked from the candidate pool is selected, there is no need for a Comparison step. If no CRV can ultimately be selected, CRV Selection informs the Assignment Engine.

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69. Since there is only one scorable attribute, no Relaxation or Weighting Tables are required. The *crv penalty score ec* (see Table 6-83) is used to identify the break points for relaxation.

70. Because the likelihood of finding a CRV that is due to be disconnected before the due date of the provisioning request is already low, it is impractical to go through the number of iterations that would be required to see if there was a "perfect" channel first and then go through the relaxation levels.

If CRVs are not to be scored, the filters other than Engineered Compatibility are still applied. The first CRV picked from the pool is selected. When there is only capacity available due to pending disconnects, the due date of the pending disconnect for the picked CRV is compared to the due date of the provisioning request. If the pending disconnect is before the provisioning request, that CRV is selected, if not, it must be discarded and another chosen for consideration. The first CRV with an acceptable pending disconnect date is selected.

6.10.3 Validation

When a CRV is preassembled or prespecified, it must be validated to ensure that the CRV is a factor of a Carrier Group that is on the Route. If Engineered Compatibility is scored, the CRV must have an acceptable Engineered Compatibility.

If the client-specific LNP - Ad Hoc TN feature is activated and the service contains an ad hoc TN, the CRV prespecified must appear on the IC or remote unit identified by the EXK. Alternatively, if the client-specific LNP - IC/RU and LRN Selection feature is activated and the service contains an ad hoc TN, the CRV prespecified must appear on the IC or remote unit determined from the *imported tn ic ru map* table.

Final database acceptance checking ensures that the CRV is available as of the due date of the provisioning request. Although available capacity was checked when the selection process began, this protection is required since multiple processes may be running concurrently against the same inventory.

6.10.4 LRN Selection

If the client-specific LNP - IC/RU and LRN Selection feature is activated and an imported TN appears on input, then an LRN will be selected or validated based on the CRV selected. The process of selecting an LRN when a CRV has been selected is the same as when a switch port has been selected. See section 6.7.8 for details.

6.11 Bridge Lifter Selection

When composition analysis has determined, based on the composition rules, that bridge lifters need to be selected, it calls this process.

For an initial assignment that requires Bridge Lifters, the Assignment Engine follows the bls control fact from the *asgn category rules* table (see Table 6-4), to determine the order in which Composition Rules should be tried. For example, bls= minia, mateda, bla, means use the rule supplied for mini bridge lifters first, then the rule supplied for mated bridge lifters second, and then bridge lifters last. [71]Only one of the rules will be used to select *all* of the BLs that are required for the circuit.

6.11.1 Selection Attributes

Frame location is the only attribute that can be used for selection. A BCC-tunable table indicates the preferred frame system for BLF selection. (See Table 6-16f.)

Based on the input location(s) from composition analysis (typically the cable pairs'), this table is used to determine the frame system where it is desirable for bridge lifters to be selected. [72]

- If there is a single input location, the preferred frame system indicated for that location is used.
- If there are multiple input locations, the rank column is used to identify which input location has precedence, one being the best rank, ninety-nine the worst.

The table supports having first, second, and third preferences. (See Section 6.11.2.1 for information on using these preferences for looping during selection.)

An additional table (see Table 6-17) indicates the frames that comprise the frame system.

When one of the input locations is a frame/zone within the identified preferred frame system, that frame/zone becomes the *target* frame/zone for BLF selection.

If there is a target frame zone, the selection process does jumper minimization. Jumper length is measured in number of iterations. An iteration is a set of zones that are logically the same distance away from the frame and zone of the cable pair. The determine frame zone process gets the frame type from the database. Using this frame type, the determine frame zone process searches for a frame instance of the global BCC-tunable reference data table, *frame zone search* (see Table 6-49). This table defines the sequence of zones to search based on iterations. When no instance of the *frame zones search* table is found, a tunable parameter (i.e., jmpr-zone-per-iter) set in the frame instance of the *wc parms* table (see Table 6-8fr) defines the number of zones in an iteration during the selection of a bridge lifter.

6.11.2 Filtering

Bridge lifter selection uses just filtering. This filtering is based on having the required available capacity and uses the frame location iterations described above. When filtering

71. See the Glossary of Composition Rules, Table 6-5, for a description of each of these rules.

72. Note: Composition rules take intelligent controller into account, therefore it is not necessary to repeat that flexibility at this level.

has identified the best candidate pool, one BLF from that pool is selected and forwarded to the validation process.

- If it passes validation it is selected.
- If the first selected BLF does not pass validation, another is selected from the same pool and forwarded to the validation process. This continues until one of the selected BLFs pass validation or the pool has been exhausted.
- If the candidate pool is exhausted, filtering finds the next best pool of candidates.

The selection and validation process is started again. This continues until a BLF passes validation or there are no more candidates left.

6.11.2.1 Looping

If there are no BLFs available even at the highest iteration level on the target frame, looping is possible on frame systems and pending.

The interaction between frame states and pending states is fixed:

1. looping on the rest of the most preferred frame system
2. the second preferred frame system (when allowed)
3. the third preferred frame system (when allowed)
4. pending out (when allowed)
5. pending in (when allowed)

A BCC-tunable table indicates by network unit type whether selecting network units which have pending out and/or in activity is allowed (see Table 6-32). When units with pending activity have been selected, the due date interval is examined during validation.

If at the end of all allowable loops a BLF cannot be found, Composition Analysis is notified that a BLF could not be selected.

6.11.3 Validation

Validation for bridge lifters entails only final acceptance checking.

6.11.3.1 Final Database Acceptance Checking

Final acceptance checking of the database determines whether the component currently has available capacity, or can have the necessary capacity based on due date compatibility.

When the selection of components with pending activity has been allowed, BCC-tunable tables are used to define the acceptable due date interval. These tables are organized by pending activity type and assignment type. (See Tables 6-33 and 6-34.)

If the bridge lifter has assignment limitations of types WTH or WKG, the bridge lifter cannot be assigned a new one should be selected. Both of these assignment limitation types exclude the bridge lifter from being assigned.

6.12 Transmission Equipment Selection

When composition analysis has determined that transmission equipment need to be selected, it calls transmission equipment selection to select each required transmission equipment. Based on selection attributes (see Section 6.12.1), a filtering process identifies the "best" candidate pool (see Section 6.12.2). When candidates are found, a random selection and scoring process (see Sections 6.12.3 - 6.12.5) is used to identify the "best of the best". This "best of the best" is then validated (see Section 6.12.6).

6.12.1 Selection Attributes

Transmission equipment have many attributes, three of these attributes have currently been identified as potentially able to influence transmission equipment selection. These attributes are:

- Specific Functionality
- Frame Location
- Assembly Involvement

The values of these attributes are used in both the filtering and scoring aspects of selection. The values are determined by rules that are a function of the assignment category and intelligent controller. The rules to be used are shown in Table 6-36. The rules are summarized in Table 6-13 and described below. Note the BCC can modify which rules are used and the tables that are used by each rule at site.

6.12.1.1 Specific Functionality

Specific functionality reflects the capabilities provided by the transmission equipment plug-in. It is a user definable attribute of up to 14 characters in length. The default values currently defined are: RE (Range Extension) and RE1 (Range Extension with gain). (See Table 6-37.)

6.12.1.2 Frame Location and Jumper Length

For WCs that contain multiple frames, or a multi-zoned single frame, the frame location of the assignable transmission equipment is an important consideration.

Based on the intelligent controller and the input frame locations (normally the cable pair's physical locations) passed in from composition analysis, a BCC-tunable table (see Table 6-16) indicates the preferred frame system for transmission equipment selection.

- If there is a single input location the preferred frame system indicated for that location is used.
- If there are multiple input locations the rank column is used to identify which input location has precedence, one being the best rank, ninety-nine the worst.
- If there is no input location the rank column is used to identify the most desirable location, the location that has a rank of one.

The table supports having first, second and third preferences for frame systems. (See Section 6.12.2.1 for information on how these preferences are taken into account during selection.) For the majority of wire centers, only one preference is required. Having the two additional preferences provides the flexibility to deal with:

- Remote frame systems where it is desirable to assign transmission equipment at the host site when there are none available at the remote site in question. Having a third preference extends the capability to remote-on-remote-on-host applications.
- Non-traditional frame system applications where not all of the transmission equipment appears on the preferred frame system.

Once the preferred frame system has been determined, an additional BCC-tunable table is used to identify the frames which make up that frame system. (See Table 6-17.)

When one of the input locations is a frame/zone within the identified preferred frame system, that frame/zone becomes the *target* frame/zone for transmission equipment selection.

If there is a target frame zone, the selection process does jumper minimization. Jumper length is measured in number of iterations. An iteration is a set of zones that are logically the same distance away from the frame and zone of the cable pair. The determine frame zone process gets the frame type from the database. Using the frame type, the determine frame zone process searches for a frame instance of the global BCC-tunable reference data table, frame zone search (see Table 6-49). This table defines the sequence of zones to search based on iterations. When an instance of the *frame zone search* table is not found, a tunable parameter (i.e., jmpr-zone-per-iter) set in the frame instance of the *wc parms* table (Table 6-8fr) defines the number of zones in an iteration during the selection of transmission equipment.

With a target frame/zone, transmission equipment selection can use the following looping scheme:

1. Transmission equipment on the target frame, with iteration scores taken into account
2. Transmission equipment on all other frames within the most preferred frame system
3. Transmission equipment on frames within the second preferential frame system
4. Transmission equipment on frames within the third preferential frame system

For those assignment requests where a frame location is not passed in from composition analysis, or none of the frame locations are within the identified preferred frame system, there is not a target frame/zone. Just the last three stages are employed.

One jumper length score evaluation rule (jump1) is available, it is based solely on zone iteration.

Table 6-18 illustrates a jumper length scoring table used by the rule. It is designed to be used for all intelligent controller/frame combinations, but can be overridden at appropriate lower levels.

6.12.1.3 Assembly Involvement

Assembly involvement allows the desirability of dynamically breaking a temporary assembly to be taken into account during transmission equipment selection. Other types of assemblies cannot be broken by the assignment process, therefore they are reflected with a dash in the table.

There are two evaluation rules (asm1 and age1) that are used to determine the assembly involvement score. Tables 6-21b and 6-22b illustrate these tables.

The tables can take into account both the selectability scale, which is determined by the type of assembly (DIP, CF-DIP, CT-DIP) and how many months the assembly has existed without being reused. The age is based on the assembly's creation month.

6.12.2 Filtering

As the first step in transmission equipment selection, relaxation filtering is used to find a pool of candidate transmission equipment for selection.

A BCC-tunable table (see Table 6-36) is used to determine the appropriate attributes and scoring rules.

Conceptually, this process first looks for transmission equipment with a perfect score for all applicable selection attributes. (Selection attributes are calculated as described in

Section 6.12.1.) If none are found the criteria for these attributes are gradually relaxed to take higher and higher penalty scores.

A BCC-tunable table contains the allowed value for every applicable attribute at each level of relaxation. (See Table 6-38.) Although this table is BCC-tunable, the design intent is for this table to remain constant. Tuning should be done by adjusting the scores in the attribute evaluation tables.

The allowable score for each attribute must either remain the same or ascend. This convention permits the performance of this process to be improved. Instead of actually sequentially stepping through the relaxation table, a binary search is employed. If the level being examined has more transmission equipment than the appropriate range, [73]the next lower binary search level is examined. If the level being examined has less transmission equipment than the appropriate range, the next higher binary search level is examined. When a level that contains a quantity of transmission equipment within the appropriate range is found, that level is used as the candidate pool for selection. If all relaxation levels are determined to be above or below the desired range, the level closest to the range on the low side is used. If all levels are above the range, level one is used.

6.12.2.1 Looping

If there are no transmission equipment available, even at the highest level of relaxation (greatest penalty), looping is possible on frame systems and pending. Each loop uses the relaxation table and employs the same binary search scheme.

As indicated in Section 6.12.1.2, a BCC-tunable table indicates whether it is desirable to select transmission equipment on alternative frame systems. (See Table 6-16g.) When alternative frame systems are available the are four possible frame *states*:

1. Home frame
2. Other frames within the home frame system
3. Alternative frame system 1
4. Alternative frame system 2

There are three assignable pending *states*:

1. No pending
2. Pending out
3. Pending in

73. The range being between 22 and 100 without pending and between 100 and 200 with pending.

These frame states and pending states interact. The combination of a frame state and a pending state is called a *Super State*. Looping can be enabled for the twelve possible super states.

A BCC-tunable table indicates in which order the allowable super states should be processed. (See Table 6-32tr.)

If at the end of all allowable loops no transmission equipment can be found, composition analysis is notified that transmission equipment could not be selected.

6.12.3 Scoring

At this point, relaxation filtering has provided the best possible pool of candidate transmission equipment. It is desirable to pick the best (lowest total penalty score) transmission equipment from this pool.

From the pool of candidate transmission equipment passed in from filtering, one is randomly chosen.

If a super state involving pending is being processed, the due date interval is checked before any scoring calculations are done. This check is based on BCC-tunable tables that define the acceptable due date interval. These tables are organized by the assignment type being processed and take into account the pending assignment type. (See Tables 6-33 and 6-34.)

- If the due dates are not compatible, the due date fail count is incremented.
  - — If the due date fail count equals 100, no more transmission equipment are randomly selected at this level.
    1. If there are any transmission equipment on the good list (see Section 6.12.5), the list is used in the normal fashion, even though it contains less than desirable number of transmission equipment.
    2. If the good list is empty, the next relaxation level is used to obtain a larger candidate pool.
  - — If the due date fail count is less than 100, another unit of transmission equipment is randomly selected and the due date compatibility process is again employed.
- If the due dates are compatible, then that transmission equipment is scored for each appropriate attribute. A penalty for each appropriate attribute is determined. The same table (see Table 6-36) that was used by filtering to determine the appropriate attributes and scoring rules is employed by scoring.

6.12.4 Weight Scores

Obviously, some attributes may be more important than others. Therefore, a comparison function is required that weights the attribute scores. To support this, a table (see Table 6-39) of weighting factors is provided for each attribute by *Assignment Type* (Note: not assignment category).

Each attribute has a score of 0 to 99 from the process above, which is then multiplied by a weighting factor of 10 to 100, as indicated in the *tre score weight* table. The weighted scores are then added to determine the total score or penalty.

6.12.5 Compare

Once the total penalty score has been determined this process is invoked.

- If the transmission equipment has a perfect score (zero penalty), it is forwarded to the validation process.
- If the transmission equipment has a score that is greater than zero, it is added to the good list and the good list count is incremented.
  - If the good list count is less than twenty-two and there are transmission equipment left in the candidate pool, another transmission equipment is randomly selected and the scoring process gone through again.
  - If the good list count equals twenty-two, [74] or if the candidate pool has been exhausted, the good list is ordered and the transmission equipment with the lowest penalty passed to validation.
    1. If the transmission equipment passes validation, selection is successful, the transmission equipment's ID is returned to composition analysis.
    2. If the best does not pass validation, then the next best in the sample is sent to validation. This is done until a transmission equipment passes validation or the whole good list has been exhausted.
       - If the good list is exhausted, composition analysis is notified that a transmission equipment could not be selected.

6.12.6 Validation

Validation is made up of two sub-processes:

74. A sample size of twenty-two was chosen to maximize performance while still providing a very high probability that one of the best in the pool is chosen.

- Verification
- Final Database Acceptance Checking

Depending on the calling process validation can be invoked to do both or just final acceptance checking.

6.12.6.1 Verification

Verification is used when components have been prespecified or, under certain circumstances, preassigned. It is not used when called from selection, since the scoring tables have already been checked. Verification uses the same set of scoring tables as the component selection processes to determine whether the component is compatible with the service request. (There is no comparison with the universe of assignable components to determine if the "best" assignment has been made.) If the component is compatible it is passed on to final acceptance checking.

6.12.6.2 Final Database Acceptance Checking

Final acceptance checking of the database is always used. It determines whether the component currently has available capacity in the proper time frame. Although available capacity was checked when the selection process began, this protection is required since multiple processes may be running concurrently against the same inventory.

6.13 Trunk Pair Selection

When composition analysis has determined that a trunk pair needs to be selected, it calls trunk pair selection to select an outgoing trunk pair for LAC assigned foreign exchange service. A request for LAC assigned foreign exchange service contains the design data PFS (Pseudo Foreign Serving Office). For assignment changes (ACEs), correction passes, and change orders which are flow through and maintenance change tickets (MCTs) and where the end location (Foreign Serving Office or the office where the service is switched) value has not changed (from the previous service order pass or the existing circuit), composition analysis will pass the next location of the trunk pair selected in the previous pass or in the existing circuit as an override (to maintain the same wire center route previously established). In addition, because trunk pairs will be selected only from those trunk pairs whose control location indicator is "Y" (Yes), composition analysis will pass this information to the trunk pair selection process as an override.

Based on selection attributes (see Section 6.13.1), a filtering process identifies the "best" candidate pool (see Section 6.13.2). When candidates are found, a random selection and scoring process (see Sections 6.13.3 - 6.13.5) is used to identify the "best of the best". This "best of the best" is then validated (see Section 6.13.6).

6.13.1 Selection Attributes

Trunk pairs have many attributes, four of these attributes have currently been identified as potentially able to influence trunk pair selection. These attributes are:

- Control Location Indicator
- Next Location
- Frame Location
- Loaded Indicator

The values of these attributes are used in both the filtering and scoring aspects of selection. The values are determined by rules that are a function of the assignment category and intelligent controller. The rules to be used are shown in Table 6-53. The rules are summarized in Table 6-13 and described below. Note the BCC can modify which rule are used and the tables that are used by each rule at site.

6.13.1.1 Control Location Indicator

Trunk pairs are selected only from those trunk pairs whose control location indicator is "Y" (Yes). The current wire center can only select those trunk pairs for which the office controls assignment. Composition analysis passes this information to the trunk pair selection process as an override.

6.13.1.2 Next Location

Next location allows the desirability of different routes to be taken into account during trunk pair selection. A route is defined by the FSO or switching office for the service (end location), or the final destination, and the next wire center (next location) in the route, or the termination of the trunk pair to be selected. A direct route from the current wire center to the FSO is more desirable than a route which passes through an intermediate office. When the route is direct, the end location and the next location values (NPANXX) are equal. Each possible route from the current wire center to the target wire center or end location is taken into account.

There is a next location evaluation rule available, which is based on next location value and end location value. The rule reads the score from the wire center based, BCC-tunable next location scoring table shown in Table 6-54. The table shown is only an example.

If a *tkp penalty score nl* table does not exist in the current wire center, an RMA is generated. In addition, if the table does not contain a route to the destination wire center, or FSO, (i.e., there is no line in the table with the end location value specified by the design attribute PFS, or FSO), an RMA is generated.

6.13.1.3 Frame Location and Jumper Length

For WCs that contain multiple frames, or a multi-zoned single frame, the frame location of the assignable trunk pair is an important consideration.

Based on the intelligent controller and the input frame locations (normally either the cable pair's physical locations or the incoming trunk pair's physical locations) passed in from composition analysis, a BCC-tunable table (see Table 6-16) indicates the preferred frame system for trunk pair selection.

- If there is a single input location the preferred frame system indicated for that location is used.
- If there are multiple input locations the rank column is used to identify which input location has precedence, one being the best rank, ninety-nine the worst.
- If there is no input location the rank column is used to identify the most desirable location, the location that has a rank of one.

The table supports having first, second and third preferences for frame systems. (See Section 6.13.2.1 for information on how these preferences are taken into account during selection.) For the majority of wire centers, only one preference is required. Having the two additional preferences provides the flexibility to deal with:

- Remote frame systems where it is desirable to assign trunk pairs at the host site when there are none available at the remote site in question. Having a third preference extends the capability to remote-on-remote-on-host applications.
- Non-traditional frame system applications where not all of the trunk pairs appear on the preferred frame system.

Once the preferred frame system has been determined, an additional BCC-tunable table is used to identify the frames which make up that frame system. (See Table 6-17.)

When one of the input locations is a frame/zone within the identified preferred frame system, that frame/zone becomes the *target* frame/zone for trunk pair selection.

If there is a target frame zone, the selection process does jumper minimization. Jumper length is measured in number of iterations. An iteration is a set of zones that are logically the same distance away from the frame and zone of the cable pair. The determine frame zone process gets the frame type from the database. Using the frame type, the determine frame zone process searches for a frame instance of the global BCC-tunable reference data table, *frame zone search* (see Table 6-49). This table defines the sequence of zones to search based on iterations. When an instance of the *frame zone search* table is not found, a tunable parameter (i.e., jmpr-zone-per-iter) set in the frame instance of the *wc parms* table (Table 6-8fr) defines the number of zones in an iteration during the selection of trunk pairs.

With a target frame/zone, trunk pair selection can use the following looping scheme:

1. Trunk pairs on the target frame, with iteration scores taken into account
2. Trunk pairs on all other frames within the most preferred frame system
3. Trunk pairs on frames within the second preferential frame system
4. Trunk pairs on frames within the third preferential frame system

For those assignment requests where a frame location is not passed in from composition analysis, or none of the frame locations are within the identified preferred frame system, there is not a target frame/zone. Just the last three stages are employed.

One jumper length score evaluation rule (jump1) is available, it is based solely on zone iteration.

Table 6-18 illustrates a jumper length scoring table used by the rule. It is designed to be used for all intelligent controller/frame combinations, but can be overridden at appropriate lower levels.

6.13.1.4 Loaded Indicator

A trunk pair may either be loaded or non-loaded. Loading is a means of improving an electrical signal for voice-grade services through the use of a load coil. Other services such as MADN P-phone, ISDN (Integrated Services Digital Network), Wideband, Digital Data, and Program Audio, however, require non-loaded trunk pairs. For those services which do not require non-loaded trunk pairs, loaded trunk pair assignments are preferred over non-loaded in order to reserve non-loaded trunk pairs for those services which require them.

There is a loaded indicator evaluation rule available, which is based on the loaded indicator and the category and signaling of the service. The rule reads the score from the *tkp penalty score li* table shown in Table 6-55.

6.13.2 Filtering

As the first step in trunk pair selection, relaxation filtering is used to find a pool of candidate trunk pair for selection.

A BCC-tunable table (see Table 6-53) is used to determine the appropriate attributes and scoring rules.

Conceptually, this process first looks for trunk pairs with a perfect score for all applicable selection attributes. (Selection attributes are calculated as described in Section 6.13.1.) If none are found the criteria for these attributes are gradually relaxed to take higher and higher penalty scores.

A BCC-tunable table contains the allowed value for every applicable attribute at each level of relaxation. (See Table 6-56.) Although this table is BCC-tunable, the design intent is for this table to remain constant. Tuning should be done by adjusting the scores in the attribute evaluation tables.

The allowable score for each attribute must either remain the same or ascend. This convention permits the performance of this process to be improved. Instead of actually sequentially stepping through the *tkp relaxation* table, a binary search is employed. If the level being examined has more trunk pairs than the appropriate range, [75]the next lower binary search level is examined. If the level being examined has less trunk pairs than the appropriate range, the next higher binary search level is examined. When a level that contains a quantity of trunk pairs within the appropriate range is found, that level is used as the candidate pool for selection. If all relaxation levels are determined to be above or below the desired range, the level closest to the range on the low side is used. If all levels are above the range, level one is used.

6.13.2.1 Looping

If there are no trunk pairs available, even at the highest level of relaxation (greatest penalty), looping is possible on frame systems and pending. Each loop uses the *tkp relaxation* table and employs the same binary search scheme.

As indicated in Section 6.13.1.2, a BCC-tunable table indicates whether it is desirable to select trunk pairs on alternative frame systems. (See Table 6-16h.) When alternative frame systems are available the are four possible frame *states*:

1. Home frame
2. Other frames within the home frame system
3. Alternative frame system 1
4. Alternative frame system 2

There are three assignable pending *states*:

1. No pending
2. Pending out
3. Pending in

75. The range being between 22 and 100 without pending and between 100 and 200 with pending.

These frame states and pending states interact. The combination of a frame state and a pending state is called a *Super State*. Looping can be enabled for the twelve possible super states.

A BCC-tunable table indicates in which order the allowable super states should be processed. (See Table 6-32tk.)

If at the end of all allowable loops no trunk pairs can be found, composition analysis is notified that a trunk pair could not be selected.

6.13.3 Scoring

At this point, relaxation filtering has provided the best possible pool of candidate trunk pairs. It is desirable to pick the best (lowest total penalty score) trunk pair from this pool.

From the pool of candidate trunk pairs passed in from filtering, one is randomly chosen.

If a super state involving pending is being processed, the due date interval is checked before any scoring calculations are done. This check is based on BCC-tunable tables that define the acceptable due date interval. These tables are organized by the assignment type being processed and take into account the pending assignment type. (See Tables 6-33 and 6-34.)

- If the due dates are not compatible, the due date fail count is incremented.
  - — If the due date fail count equals 100, no more trunk pairs are randomly selected at this level.
    1. If there are any trunk pairs on the good list (see Section 6.13.5), the list is used in the normal fashion, even though it contains less than desirable number of trunk pairs.
    2. If the good list is empty, the next relaxation level is used to obtain a larger candidate pool.
  - — If the due date fail count is less than 100, another trunk pair is randomly selected and the due date compatibility process is again employed.
- If the due dates are compatible, then that trunk pair is scored for each appropriate attribute.
  - — A penalty for each appropriate attribute is determined. The same table (see Table 6-53) that was used by filtering to determine the appropriate attributes and scoring rules is employed by scoring.

6.13.4 Weight Scores

Obviously, some attributes may be more important than others. Therefore, a comparison function is required that weights the attribute scores. To support this, a table (see Table 6-57) of weighting factors is provided for each attribute by *Assignment Type* (Note: not assignment category).

Each attribute has a score of 0 to 99 from the process above, which is then multiplied by a weighting factor of 10 to 100, as indicated in the *tkp score weight* table. The weighted scores are then added to determine the total score or penalty.

6.13.5 Compare

Once the total penalty score has been determined this process is invoked.

- If the trunk pair has a perfect score (zero penalty), it is forwarded to the validation process.
- If the trunk pair has a score that is greater than zero, it is added to the good list and the good list count is incremented.
  - — If the good list count is less than twenty-two and there are trunk pairs left in the candidate pool, another trunk pair is randomly selected and the scoring process gone through again.
  - — If the good list count equals twenty-two, [76]or if the candidate pool has been exhausted, the good list is ordered and the trunk pair with the lowest penalty passed to validation.
    1. If the trunk pair passes validation, selection is successful, the trunk pair's ID is returned to composition analysis.
    2. If the best does not pass validation, then the next best in the sample is sent to validation. This is done until a trunk pair passes validation or the whole good list has been exhausted.
       - — If the good list is exhausted, composition analysis is notified that a trunk pair could not be selected.

6.13.6 Validation

Validation is made up of two sub-processes:

76. A sample size of twenty-two was chosen to maximize performance while still providing a very high probability that one of the best in the pool is chosen.

- Verification
- Final Database Acceptance Checking

Depending on the calling process validation can be invoked to do both or just final acceptance checking.

6.13.6.1 Verification

Verification is used when components have been prespecified or, under certain circumstances, preassigned. It is not used when called from selection, since the scoring tables have already been checked. Verification uses the same set of scoring tables as the component selection processes to determine whether the component is compatible with the service request. (There is no comparison with the universe of assignable components to determine if the "best" assignment has been made.) If the component is compatible it is passed on to final acceptance checking.

6.13.6.2 Final Database Acceptance Checking

Final acceptance checking of the database is always used. It determines whether the component currently has available capacity in the proper time frame. Although available capacity was checked when the selection process began, this protection is required since multiple processes may be running concurrently against the same inventory.

If the component has the necessary capacity, the outgoing trunk pair which has been assigned assumes the lowest TID of the incoming legs containing cable pairs or trunk pairs.

6.14 LTID Selection

The Nortel DMS-100 IC supports two different architectures for the assignment of ISDN services. The older architecture, often referred to as the ISDN “cross-threaded” architecture requires that Logical Terminal Identifiers (LTIDs) be assigned. A newer architecture, the Generic Services Framework (GSF) non-cross-threaded architecture, does not require (or allow) LTIDs to be assigned.

In either case, when composition analysis has determined, based on the composition rules, that LTID processing is required, the following is involved.

For an initial assignment that requires LTIDs be assigned, the Assignment Engine follows the ltida rule from the *asgn category rules* Table (see Table 6-4). See the Glossary of Composition Rules, Table 6-5, for a description of the ltida rule.

Selection invokes LTID processing following selection of other required network units. LTID selection operates at the ISDN secondary service level, rather than at the ISDN Pipe level, where other network unit selections are made.

6.14.1 Selection Attributes

When LTID processing has been invoked, selection assigns an LTID for each ISDN secondary service of an ISDN pipe which carries an SD value of CS, PSD, or PSB. Selection *does not* assign an LTID for each ISDN secondary service of an ISDN pipe which carries an SD value of null. [77] LTIDs are selected for ISDN secondary services using processing optimized to efficiently select network units when only one attribute is involved in scoring. LTID selection scores on a single attribute, LTID Group Index code. The *ltid penalty score lgi* table appears as Table 6-51. In order to be assignable, LTIDs must not have any assignment restrictions and must not be pending.

Network unit selection optimized for single attribute scoring differs from multi-attribute selection processing in that:

- Relaxation processing is not used.
- Attribute score weighting is not used.
- The levels of the single attribute being scored are sequentially relaxed, starting with the lowest sequence number appearing in the table.
- A pool size of 1 to 10 network units is used.

Following the identification of a pool of LTIDs, an LTID is randomly selected for validation. If it passes validation, it is selected. If the first selected LTID does not pass validation, another is selected from the same pool and forwarded to the validation process. This continues until one of the selected LTIDs pass validation or the pool has been exhausted.

If the candidate pool is exhausted, the next best pool of candidates is identified. The selection and validation process is started again. This continues until an LTID passes validation or there are no more candidates left.

6.14.2 Validation

Validation for LTIDs entails only final acceptance checking.

77. In fact, the use of the SD attribute is made to determine that LTIDs are not required, even though LTID processing is invoked. In this case, a null value of SD implies provisioning of an ISDN service in a GSF architecture environment and assignment of an LTID is not required.

6.14.2.1 Final Database Acceptance Checking

Final acceptance checking of the database is always used. It determines whether the component currently has available capacity in the proper time frame. Although available capacity was checked when the selection process began, this protection is required since multiple processes may be running concurrently against the same inventory.

6.15 Connectivity

Connectivity is the process that determines both the order in which a circuit's components should be connected and whether intra-wire center facilities (tie pairs) are required to make those connections. This includes evaluating the existing connection order for change requests. As indicated in Section 6.4.1, the connectivity process can be suppressed for ADSR services by having the dsgn1 rule invoked for any IC/assignment category combinations deemed to be appropriate. However, if target frame assignment is desired, a separate parameter is used so that connectivity takes place to allow intra-wire center facilities to be assigned to a target frame (discussed in Section 6.15.1.3).

Connectivity and target frame processing will not be performed by the SWITCH system for DS1 or higher rate services. This will remain the responsibility of the TIRKS system.

When composition analysis determines that connectivity is required, the request is routed to this process. Composition analysis uses the connectivity rules, as illustrated in Table 6-4, to make this determination.

There are several connectivity rules available:

- defconn - which is the default connectivity rule for two-wire circuits
- 4wconn - which is the standard connectivity rule for four-wire circuits
- noconn - which is used for circuits that do not have physical connections, where typically only translations are required

Note the BCC can modify which of the predefined connectivity rules to use (as illustrated by Table 6-4) at site. However, a special *FAST Turn-around* Rule Release is required from Bellcore to change or add to the rules themselves.

The connectivity process is made up of two sub-processes (see Figure 6-7):

- Logical Connectivity
- Physical Connectivity

Logical connectivity is the ordering of components in a circuit to enable that circuit to work properly. This is done without regard to the physical appearance (frame and zone) of the components. This process also determines if the SWITCH system should select intra-wire center facilities to a target frame for design (ADSR) services.

Physical connectivity performs two functions.

- It determines the frame and zone appearance for each component that is to be physically wired. [78]
- It then determines whether intra-wire center facilities are needed to connect each set of adjacent components. [79]

If the "noconn" rule is indicated only the wired frame appearance determination portion of physical connectivity is invoked. (Logical connectivity and the intra-wire center facility need portions of physical connectivity are not invoked.) If any other connectivity rule is indicated, the whole connectivity process is normally invoked, the exception being constrained assignments.

When constrained assignments are used they also limit which portions of connectivity are invoked. Totally constrained assignments dictate the logical connectivity and all the components for a circuit, including intra-wire center facilities. Therefore, only the wired frame appearance determination portion of physical connectivity is invoked. Partially constrained assignments dictate the logical connectivity and the components for a circuit, excluding intra-wire center facilities. Therefore, all of physical connectivity is invoked.

6.15.1 Logical Connectivity

Once all required components for a given circuit have been selected, the logical method of connecting those components must be determined. How this logical connectivity should be determined is driven by the connectivity rule specified in Table 6-4 (as noted above).

A circuit's logical connectivity is modeled as being constructed of a common leg and/or one or more local legs. The common leg consists of those shared components that provide access to the intelligent controller. The local legs consist of the components needed to support a particular TID (circuit Termination IDentifier). Each of these legs may contain 1 to n components that must be ordered in a logical connectivity sequence. The process of ordering the components in each leg is referred to as *linear connectivity*. Once all of the individual legs have been ordered, the method of joining the legs together must be determined. This joining process is referred to as *non-linear connectivity*.

Additionally this process determines if intra-wire center facilities should be selected to a target frame. A BCC may desire the SWITCH system to provision design circuits, including the selection of intra-wire center facilities to a frame containing equipment not inventoried in the SWITCH system.

78. This determination is necessary when a component is multiply-terminated (has a wiring appearance on multiple frames).

79. The need for intra-wire center facilities to a target frame is determined by the logical connectivity process; the physical connectivity process determines the need between SWITCH system inventoried network units.

6.15.1.1 Linear Connectivity

Linear connectivity is the first step in the establishment of logical connectivity. This process considers each leg (both common and local) of a circuit individually. It determines the logical ordering of the components in that leg. The components of a leg all have the same TID (Termination Identifier) on the component edge. The common leg has no TID.

To achieve the desired ordering, a "connectivity weight" is assigned to each component. These weights are obtained from the BCC-tunable *linear connect weight* table, (see Table 6-40). All network units must be entered in this table. The weights indicated in this table take network unit type, and relevant network unit attributes into account. An attribute such as the specific functionality of a network unit allows different weights to be given to the same network unit depending on its functionality. Most network units have a weight greater than zero although zero is also valid. [80]The *linear connect weight* table is built on the premise that there is a logical component ordering, which applies to most circuits. This ordering can be thought of as starting with the intelligent controller and progressing through equipment located in the central office out to the loop (ending at the cable pair, trunk pair or ccport). For circuit legs that do not have the full complement of component types represented, the ordering still holds for those present. New network unit types and kinds of miscellaneous equipment (ME) can be supported by specifying a weight in relation to the existing weights. The weights are stored in a table and assigned each time they are needed, as opposed to being maintained in each network unit. Thus weight changes can be easily accomplished.

Using these weights, the linear connectivity process orders (in descending sequence) all components associated with a leg. This results in the corresponding components appearing in the proper transmission sequence.

Both logical connectivity rules, the default two wire (defconn) rule and the standard four wire (4wconn) rule, use this table.

Once linear connectivity has been determined for all legs of the circuit, the method of joining the legs (the determination of non-linear connectivity) must be made.

6.15.1.2 Non-Linear Connectivity

Non-linear connectivity determines how the legs (both common and local) of a circuit are to be joined. If there is only a single leg, by definition no joining is required and the circuit is forwarded to the next stage, physical connectivity. When there are multiple legs, the legs

80. If an entry exists with a weight greater than zero, the connectivity process will work accordingly as long as that network unit has a physical appearance on a zoned frame. If no physical appearance edge exists or one exists to a frame that is not zoned (i.e., to a DSX frame), no connectivity processing is performed for that network unit. if the entry has a weight of zero, then no check for a physical appearance edge is made and no connectivity processing is performed for that network unit.

are joined at what is commonly known as the bridge or branch point of the circuit. There may be more than one branch point in a circuit.

The scheme for two wire branching is a function of the components of each leg. This scheme is:

- If bridge lifters exist in a leg, they must be branch points. That is, all local legs containing bridge lifters must be connected to each other at their bridge lifters.
- If a common leg or a leg with a trunk pair whose control location indicator is "Y" (yes) exists, then:
  - — If all the local legs have already been connected to each other (the bridge lifter case), the common leg or the leg with the trunk pair whose control location indicator is "Y" must be connected to only one local leg.

    The branch point component in the common leg or the leg with the trunk pair whose control location indicator is "Y" is the component with the lowest linear connectivity weight. The branched component in the local leg is the one with the highest linear connectivity weight.
  - — If all the local legs have not been connected to each other, then all those not already connected to one another have to be connected to the common leg or the leg with the trunk pair whose control location indicator is "Y". Additionally as in the case above, for all the local legs (if any) that have already been connected to each other (the bridge lifter case), the common leg or the leg with the trunk pair whose control location indicator is "Y" must be connected to only one local leg.

    The branch point component in the common leg or the leg with the trunk pair whose control location indicator is "Y" is the component with the lowest linear connectivity weight. The branched component in the local leg is the one with the highest linear connectivity weight.
- If bridge lifters do not exist in any leg and there is no common leg or leg with a trunk pair whose control location indicator is "Y", the local legs must be connected to each other at the component with the highest connectivity weight in each leg. [81]

The four wire branching scheme is similar to the two wire one, with the exception of the bridge lifter portion. Bridge lifters are not used for four wire circuits. In addition, trunk pairs cannot be automatically assigned for four wire circuits, but must be assigned using constrained assignment. Additional logic handles the two cable pairs or CC ports per TID connections.

- If a common leg exists, then the common leg must be connected to each local leg. The branch point component in the common leg is the component with the lowest linear

81. Note that there may only be one component in a leg, as in a private line or burglar alarm where a cable pair or CC port is assigned in each local leg.

connectivity weight. The branched component in the local leg is the one with the highest linear connectivity weight.

- If there is no common leg, the local legs must be connected to each other at the component with the highest connectivity weight in each leg. If there are exactly two local legs that each contain only cable pairs or CC ports, then the component marked transmit in one leg is connected to the component marked receive in the other, and vice versa.

Once logical connectivity has been performed the logical circuit construct is passed to the physical connectivity process.

6.15.1.3 Intra-Wire Center Selection to a Target Frame

Intra-wire center facility selection to a target frame for ADSR circuits is controlled by parameters in a wire center instance of a BCC-tunable table, the *wc parms* table (see Table 6-8wc). This table contains a parameter to determine if target frame selection is desired (with two types of connectivity possible) and the frame name (required) and zone (optional) to be used by the intra-wire center facility selection process.

This table is checked even if the dsgn1 rule is in effect, which normally suppresses the connectivity process altogether. Depending on the setting of the if-to-target parameter, connectivity, and selection of facilities to a target frame takes place. The values of this parameter are:

- N - no target frame assignment desired in this wire center
- Y - target frame assignment desired and connectivity is as follows:
  - — For non-switched design circuits, each local leg requires an intra-wire center facility to a target frame. This frame is identified by the target frame parameter and optional target zone parameter in the table. Equipment on the target frame (which is assigned by the TIRKS system and not maintained in the SWITCH system) is connected to each leg. Therefore intra-wire center facilities are needed between the network unit with the highest connectivity weight (in each leg) and the target frame. Thus the target frame acts as a "branch point" to which all legs must be connected.
  - — For switched design circuits, it is assumed that another wire center is involved (i.e., are foreign exchange). Therefore intra-wire center facilities are needed between the network unit with the highest connectivity weight in the common leg (e.g., the switch port) and the target frame.
- B - target frame assignment desired and connectivity is as follows:
  - — For non-switched design circuits, same connectivity as if parameter set to Y.

— For switched design circuits, intra-wire center facilities are needed between the switch port and the target frame and between and any other network units and the target frame (that is, the target frame acts as a "branch point"). If BLs and TREs exist in the circuit, then intra-wire center facilities are needed between the BL branch point and the target frame, and between the switch port and the target frame.

Note that at this point in the process only the *need* for intra-wire center facilities to a target frame is determined; the actual selection takes place in the intra-wire center facility selection process.

A parameter for remarks is also provided in the *wc parms* table. If remarks data is present in the table, it is placed in the circuit body if the service being processed is ADSR. (This occurs independent of the setting of the if-to-target indicator and is totally dependent on the existence of ADSR for the circuit). That is, even if intra-wire center facilities are not to be selected to a target frame but remarks data is present in the table, they are associated to the circuit.

6.15.2 Physical Connectivity

Physical connectivity performs two functions, it determines the physical frame appearance to be wired and then whether intra-wire center facilities are required. This process is not rule driven, rather wire center based BCC-tunable tables are used to control the process. For those wire centers that contain a single frame and no intra-wire center facilities, this process does not have a determination to make.

As noted in the introduction to connectivity (see Section 6.15), when constrained assignments are used they provide the logical circuit construct, thereby influencing physical connectivity.

When connectivity relationships exist, either from the current circuit configuration or incoming assemblies, they also influence this process. To minimize frame work, physical connectivity maintains the existing connectivity relationships between components that are not impacted by the request being processed. The connectivity relationship between two components is only re-evaluated if either of the components is impacted by the request being processed. A connectivity relationship between two components is considered to be impacted if:

- either of the two components was removed or replaced
- a new component was positioned between the two connected components, by logical connectivity

When physical connectivity is not restricted by either constrained assignments or existing connectivity relationships, it considers all possible physical appearances for each component in making the wired frame appearance determination.

6.15.2.1 Wired Frame Appearance Determination

In the component selection process, the target frame or search starting point was dependent on the location passed in from composition analysis. Even though a frame appearance was taken into account during selection, it is desirable to evaluate the other physical appearances for each component once all other components have been selected.

The logical circuit construct and a wire center based BCC-tunable table, the *frame connect priority* table (see Table 6-41), are used to evaluate each component's physical frame appearances.

In the table, each allowable frame-to-frame connection has an associated ranking, where the lower the number, the higher the desirability of using that frame-to-frame connection.[82] For example, if two logically adjacent components appear on the same frame, generally this direct connection has first priority. This ranking can reflect the desirability of using a particular frame system, the number of intra-wire center facilities needed to connect frames and the availability of intra-wire center facilities between frames.

Using the values derived from the table, all possible physical appearance combinations for each logically adjacent component pair are evaluated. This evaluation is performed beginning with the component that has the highest connectivity weight and its logically adjacent component, and then for each additional adjacent pair on every leg. Each logically adjacent pair is evaluated independently, this allows multiple physical locations of the same component to be selected for wiring. [83] Once the physical frame appearance for wiring has been determined:

- If a fully constrained assignment or a request using the "noconn" rule was being processed, the request is returned to composition analysis
- Else the request is forwarded to the intra-wire center facility need determination process

6.15.2.2 Intra-Wire Center Facility Need

After the logical connectivity and the wired frame appearance have been determined for all components selected up to this point, the need for intra-wire center facilities can be determined.

This process examines the physical locations for each pair of adjacent components. For build requests there are two conditions that can exist for each pair:

82. Note that this table does not imply a direct route between the frames; it only ranks the desirability of choosing a particular frame appearance for each component in the pair under consideration.

83. For example; the component in question appears on both frame A and B, the adjacent component in one leg is on frame A and the adjacent component in another leg is on frame B. If it is desirable the first leg can be wired on frame A and the other leg wired on frame B.

1. the selected physical locations of the components are on the same frame.
2. the selected physical locations of the components are not on the same frame.

When the selected locations are on the same frame, although it is possible to use a jumper to directly connect them, it is not always desirable. If the distance between the two components exceeds a BCC-tunable length, beyond which direct jumpers are not practical, then intra-wire center facilities are needed. The maximum acceptable jumper length (in zones) is a value in the frame instance of the *wc parms* table (see Table 6-8fr). [84]This parameter is the "tp-max-jmpr-lngth".

For each adjacent pair of components where the maximum acceptable jumper length has been exceeded, this process invokes the intra-wire center facility selection process.

When the selected locations are not on the same frame, first it must be determined whether a SWITCH system administered path exists between the frames in question. A path implies a way to get from one component's selected location to the other. Intra-wire center facilities may be assigned by the SWITCH system to connect them as a result. The path does not necessarily have to be a direct route, since intermediate connection points may exist.

A wire center-based BCC tunable table, the *tp routes* table (see Table 6-42), lists all SWITCH system administered frame-to-frame connection paths. This table also ranks the alternate routes when they exist for a particular path. An entry in this table implies that intra-wire center facilities are needed, and in most cases, will be selected by the SWITCH system.[85] If intra-wire center facilities for a given path exist and are to be selected by the SWITCH system, a value of 01-09 must exist in the priority column for the entries representing a path (and its indirect routes). For the special case, where an entry exists in the table, but intra-wire center facilities are not inventoried in the wire center, a priority of 99 should be used.[86]

- For each adjacent pair of components where the path to connect their selected locations exists and a priority of 01-09 exists, this process invokes the intra-wire center facility selection process. For a priority of 99, do not invoke the intra-wire center facility selection process
- For any adjacent pair where the path to connect their selected locations does not exist, this process does not invoke the intra-wire center facility selection process. (This is not considered an error condition.)

84. A conventional frame may or may not be zoned; in the latter case, the SWITCH system should consider this as a one zone frame, like COSMOS does.

85. If intra-wire center facilities for a given path exist, but are not to be selected by the SWITCH system, an entry for that path should not exist in this table.

86. This special case allows the SWITCH system to process in other areas such as switch port reuse as if intra-wire center facilities were inventoried in the wire center (i.e., use of the CIA and CSR parameters) and to allow the physical connectivity process to successfully process the assignment even though intra-wire center facilities are not really inventoried.

For change requests an additional condition must be taken into account. As noted in the introduction to this section, when a connectivity relationship exists and it is not impacted by the request being processed, that relationship is not re-evaluated. Only the impacted relationships are evaluated. If the impacted relationship included an intra-wire center facility, it is often desirable to reuse that intra-wire center facility and connect it to the new component. When the new component and the existing intra-wire center facility are on the same frame, the distance between them is checked. If the distance exceeds a BCC-tunable length, then a new intra-wire center facility is needed. The maximum distance for intra-wire center facility reuse (in zones) is determined by the "tp-reuse-distance" parameter in the frame instance of the *wc parms* table (see Table 6-8fr).

6.16 Intra-Wire Center Facility Selection

When the connectivity process has determined, based on the circuit configuration, that intra-wire center facilities in a SWITCH system administered path need to be selected (see Section 6.15.2.2), it calls this process. This process determines the appropriate route, within the path, and selects the necessary intra-wire center facilities.

Intra-wire center facility selection uses filtering. No consideration is given to the kind of intra-wire center facilities required to support the requested service. (Such kinds include: two, four, or six wire and shielded/non-shielded.)

6.16.1 Selection Attributes

As noted above, only a single kind of intra-wire center facility is supported. The frame appearances of the end points become the only attribute required for selection. [87]Based on the locations passed in from connectivity, the *tp routes* table (Table 6-42) is used to determine the best route within the required path. (The route with a rank of one.) This table contains all the assignable routes, whether direct or indirect, for all frame-to-frame paths. Each route within each path is ranked, one being the most preferred and nine being the least. In most cases, the most preferred route is the direct route, that is, no intermediate frames are involved. All assignable routes should be entered into the table, thus allowing alternative routes to be attempted if selection is unsuccessful in selecting intra-wire center facilities for the route under consideration.

87. When the frame type is cods2over, the determine frame zone process uses the *frame zone search* table (see Table 6-49) to search the superzone (home and adjacent modules) of each end point to select an inter-wire center facility.

6.16.2 Filtering

Based on the route, determined as indicated above, and the locations of the components being connected, the frame/zone to frame/zone combination to start filtering can be calculated.

Information in the frame nodes defines the frame system types (i.e., COSMIC, COSMIC II, ESS Modular, and conventional frames). These frame system types are used to develop the particular frame/zones that constitute an intra-wire center facility assignment iteration.

When filtering has identified a candidate pool, one intra-wire center facility from that pool is selected and forwarded to the validation process.

- If it passes validation it is selected.
- If the first selected intra-wire center facility does not pass validation, another is selected from the same pool and forwarded to the validation process. This continues until one of the selected intra-wire center facilities passes validation or the pool has been exhausted.
- If the candidate pool is exhausted, filtering finds the next pool of candidates.

The selection and validation process is started again. This continues until an intra-wire center facility passes validation or there are no more candidates left.

This process is exercised for each intermediate step in the route. An intra-wire center facility must be selected for each intermediate step to complete the selection for that route.

6.16.2.1 Looping

If there are no intra-wire center facilities available, looping is possible on varying start/end zones, pending intra-wire center facilities, and alternate routes.

Looping is done on varying (i.e., increasing/decreasing) the zones of the locations of the components being connected. The zone is varied for each of the locations of the components being connected. The distance by which the zone can be varied is set in a BCC-tunable parameter located in the frame instance of the *wc parms* table. (See Table 6-8fr). The parameter is the "tp-max-jmpr-lngth". This parameter is used for locations which are on different frames (i.e., inter-frame).

When the frame of the two locations is the same (i.e., intra-frame), an additional parameter in the frame instance of the *wc parms* table (Table 6-8fr), "tp-intra-zone-max", is used to determine the zone width which is used when selecting an intra-frame intra-wire center facility. When the "tp-intra-zone-max" parameter is not specified in the table, the average difference in zones is calculated. Processing compares this calculated average to another parameter, "tp-max-jmpr-lngth", in the frame instance of the *wc parms* table. Processing uses the *smaller* of these two numbers to determine how much to vary the zones of the locations of the components being connected.

If no intra-wire center facilities are available after varying the zones of the locations of the components being connected, looping on pending is attempted (when allowed). Looping on pending out (when allowed), then pending in (when allowed) and finally alternative routes (when allowed). Within all of these (pending out, pending in and alternative routes), the varying zones process discussed above is also exercised.

A BCC-tunable table indicates by network unit type whether selecting network units which have pending out and/or in activity is allowed (see Table 6-32).

When units with pending activity have been selected, the due date interval is examined during validation.

If at the end of all allowable loops an intra-wire center facility cannot be found, composition analysis is notified that an intra-wire center facility for the required path could not be selected.

6.16.3 Validation

Validation for intra-wire center facilities entails only final acceptance checking.

6.16.3.1 Final Database Acceptance Checking

Final acceptance checking of the database determines whether the component currently has available capacity, or can have the necessary capacity based on due date compatibility.

When the selection of components with pending activity has been allowed, BCC-tunable tables are used to define the acceptable due date interval. These tables are organized by pending activity type and assignment type. (See Tables 6-33 and 6-34.)

6.17 Database Update

The database update process performs several basic functions (see Figure 6-8):

6.17.1 Break Assembly Processing

If any of the incoming network units selected are involved in an assembly which the contract being executed should break (e.g.,DIP), that assembly must be prepared to be broken. This process establishes the required relationship between the units of the assembly and the pending node. On completion of the assignment request, the assembly is broken.

6.17.1.1 Reservation Processing

If the incoming network units are components of a reservation, this process establishes the required relationship between the units of the reservation and the pending node. On completion (or cancellation) of the assignment request the reservation is deleted. When the last circuit reservation is deleted, the reservation group is also deleted.

6.17.2 Create Assembly Processing

When composition analysis indicates that a DIP should be created (see 6.4.4), this process establishes the required relationship between the network units and an assembly node. On completion of the assignment request the assembly is created.

6.17.3 Event Log Updating

The event log provides a mechanism to store events that occur during processing and allow queries on these events. The event log is used to count the number of DIP, CT-DIP, and CF-DIP assemblies that are created, reused, broken or stolen. It is also used to count the number of IDLC, CT-IDLC, and CF-IDLC assemblies that are created or reused. The following information is logged during database update by the assignment/assembly engines:

- order number
- service order, work order, or wire assembly order
- assignment type for work orders (e.g., cpt)
- CT-DIP, CF-DIP, or DIP
- CT-IDLC, CF-IDLC, or IDLC
- action: created, reused, broken or stolen
- activity: inward or outward
- internal ID of the intelligent controller

Processing uses the following definitions to determine the information to log:

- Inward activity is any activity with an incoming cable pair and an incoming or reused switch port.

- Outward activity is any activity with an outgoing cable pair and an outgoing or reused switch port.
- During the switch port selection process, a DIP may be dynamically broken so that the switch port can be used. This switch port is said to be "stolen". A DIP is "stolen" when the switch port in the DIP is reused, rather than the cable pair in the DIP.
- An IDLC is "created" if it is "out" on a given order.
- An IDLC is "reused" if it is "in" on a given order.

6.17.4 Load Group Updating

Usage adjustments to load groups are necessary for build and remove request processing and may be necessary as a result of change request processing. The usage adjustment is an estimated CCS value (or PPS value). It represents the incremental (or decremental) load placed on the load group due to the service being added (or removed). When CRVs or channels are assigned, the switch port that is a component of the **carrier circuit** that the CRV or channel rides on is used to identify the load group to update. Determination of the estimated CCS value is the same whether CRVs, channels or switch ports are assigned.

Analogous to the use of CEC attributes in the facility selection process, CEC attributes are used to determine the usage adjustment. This process:

- Determines the appropriate usage category
- Derives and implements the appropriate CCS and PPS usage adjustment rules

6.17.4.1 Usage Category Determination

This process uses a BCC-tunable table (see Table 6-43) to map relevant CEC attributes to a *Usage Category*. Services which have similar usage and calling characteristics are expected to generate similar load map to a particular usage category. The CEC attributes which are relevant in this category determination are:

- grade of service
- type of service
- class of service
- category
- co-side termination

If a usage category cannot be determined, the 1FBUS usage category is used as a default and a notifier generated to the user.

6.17.4.2 Determine Estimated CCS or PPS

Once a usage category is determined, additional CEC attributes, called usage modifiers enable the process to determine an actual CCS or PPS value.

The CEC attributes which are relevant as usage modifiers are:

- estimated CCS load (from CEC)
- estimated PPS load (from CEC)
- pulsing
- directionality
- custom calling features
- bearer services
- central office administrative type
- WATS band
- assignable line USOC

For each usage category, a set of IC based BCC-tunable tables enable the process to consider the appropriate usage modifiers for the provisioning request and determine the estimated CCS or PPS value (see Tables 6-44). If a match in the table cannot be found, and a default entry (e.g., all *'s) does not exist, the process assumes a default value of 4.0 ccs for switch port assignments and a default value of 10.0 pps for packet switch port assignments. When this occurs, a notifier is issued to the user.

Once the usage adjustment is determined, the appropriate usage attributes in the load group must be updated. For build and inward change requests [88]the pending-in usage attribute of the load group is adjusted by this CCS or PPS value. Upon completion, this usage is moved from the pending-in usage to the estimated usage and the theoretical usage attributes. For remove and outward change requests the pending-out usage attribute of the load group is adjusted by this CCS or PPS value. Upon completion, this usage is removed from the pending-out usage and both the estimated usage and the theoretical usage attributes are decremented.

6.17.5 Spread Count Updating

When the request involves an administrative group for which spread statistics are maintained, the *spread count* table (See Table 5-5), may have to be updated. The *spread*

88. Inward change requests which result in a new switch port assignment result in a load group usage update. If a switch port is reused, no usage update is made.

count table does not have to be updated when change request processing results in switch port/CRV/channel reuse.

For build requests and change requests that result in the selection of a new switch port, the *spread count* table is incremented at request establishment. If the request is canceled, the counts are decremented. When the request is completed, the counts are not affected (since they already include the assignment).

For remove requests and change requests that result in the removal of a switch port, the *spread count* table is decremented at request completion. If a remove request is canceled, the counts are not affected (since they do not yet reflect the deletion).

When CRVs or channels are assigned, the switch port that is a component of the **carrier circuit** that the CRV or channel rides on is used to identify the spread group to update.

6.17.6 Collection Updating

When the request involves the selection of a DSL (in the ISLU case) or a CRV (in the IDCU case), and one or more POEs in a 5ESS IC, the collection groups and/or collection timeslot counts and ODB CCS totals must be updated. [89]If a D POE is assigned in a collection where its PH had partial timeslot availability, then the PH timeslot counts for D service must be updated. If a D POE is assigned in a collection where its PH did not have partial timeslot availability, then a whole timeslot must be allocated to that PH resulting in four new quarter timeslots (of which one is used by this request). If B POE is assigned, a whole timeslot must be allocated and the B counts must be updated. IF ODB service is assigned, the estimated ODB CCS value must be updated.

Timeslot counts maintained for D service are maintained in units corresponding to quarter timeslots, whereas those maintained for B service are in units of whole timeslots. In order to determine how many units are provided as a result of allocating a whole timeslot, the *poe am data* table unit allocation column is used (see Table 6-45). This table specifies the correct units depending on the administrative constraint of the POE being assigned. For example, if a D POE assignment is made and requires the allocation of a whole timeslot, four units of quarter timeslots are available.

Collection capacity for ODB service is maintained as CCS. When ODB service is assigned, the estimated ODB CCS value for the collection must be incremented by the appropriate amount. The amount of ODB CCS to be added to the collection ODB estimated CCS value on assignment, and subtracted from this value on disconnect, is specified in a user tunable table, the *ccs adjustment odb isdn* table (Table 6-44oisd).

In certain cases, it may be possible to return timeslots to the allocation pool during disconnect activity. When a B service disconnects (i.e., B POE released) a whole timeslot

89. In the case where a collection does not exist between a DSL and POE, such as a RISLU (no tracking of timeslots is made for RISLU assignments), no updates can be made.

can be returned to the spare pool (i.e., timeslots allocated can be decremented). When a D service disconnects (i.e., D POE released), a quarter timeslot becomes available. [90]Since the SWITCH system is not maintaining actual timeslot assignments, it must assume a worst case scenario. That is, each quarter timeslot is utilizing a different (whole) timeslot. Only when the number of quarter timeslots in use is less than the number of whole timeslots needed in the worst case scenario, can the SWITCH system free up a timeslot as a result of a D POE disconnect. For example, if the number of quarter timeslots allocated is twelve (which implies three whole timeslots had been allocated at some point assuming units of allocation is four) and the number of quarters in use is two (implying only two whole timeslots could be in use as a worst case), then one whole timeslot can be returned to the spare pool.

6.17.7 Network Unit Updating

When incoming network units are made components of a circuit/service, various attributes within the network unit are updated. For example, the assignment use is incremented, and the available capacity is set. Component edges are built from each network unit (except telephone numbers/data telephone numbers) to the circuit. Connectivity relationships are built between network units which require them. Component edges are also built between switch ports, CRVs, channels, CC ports, cable pairs and primary services.

Nothing is updated for non-managed Carrier Groups/Paths because no network units are selected or validated.

6.17.7.1 CRVs

When CRVs are assigned, the assigned, assembled and non-selectable capacities in the Carrier Group are updated. The *usage category map* table (see Table 6-43) and the *ccs adjustment* table (see Table 6-44) [91]are used to determine the appropriate CCS to use.

If this update makes the assigned capacity equal or exceed the engineered capacity, ds0 is removed from the list of assignable rates in the Carrier Group and in the CC ports and switch ports for all carrier circuits in the Carrier Group. If there are no other Carrier Groups in the Path that have ds0 capacity left, it is also removed from the list of assignable rates in the Path.

When CRVs are pended to be removed from a circuit (either through change or disconnect activity), the same amount of CCS is added to the disconnecting capacity fields and pended to be removed from the assigned, assembled and non-selectable capacity fields in the Carrier Group. If it is not already present,

90. Timeslots are returned, and ODB CCS is decremented at the time of completion of the disconnect.

91. The instance key for this table is the IC that is the Destination Controller for the Route.

— ds0 is added to the list of disconnecting assignment rates in the Carrier Group and Path and the CC ports and switch ports for all carrier circuits in the Carrier Group

— ds0 is pended to be added to the list of assignable rates for the Carrier Group and Path

When a removal of a CRV completes, other CRVs in the Carrier Group must be evaluated to determine whether ds0 can be removed from the list of disconnecting assignment rates for the Carrier Group and the CC ports and switch ports for all carrier circuits in the Carrier Group. If there are no other disconnects pending, it can be removed and then the Path is evaluated to determine whether it can be removed from the list of disconnecting assignment rates for the Path. If there are other disconnects pending, it cannot be removed.

The utilization factor for the Carrier Group will be updated whenever CRV assignments are pended or removals completed. The assigned capacity is divided by the engineered capacity for the assignment rate, multiplied by 10 and rounded up (utilization factors are 1-11).

6.17.7.2 Channels

When channels are assigned, the assigned, assembled and non-selectable capacity counts are incremented by 1 for that assignment rate in the parent channel and all channels in the hierarchy. 36 CCS is updated for that assignment rate in the assigned, assembled and non-selectable capacity fields in the Carrier Group. [92]If these updates make the non-selectable capacity equal or exceed the engineered capacity for a given assignment rate, that assignment rate should be removed from the list of spare assignable rates for the channel. This comparison is made at each channel in the hierarchy. If the assignment rate is removed from the list for the superchannel, it is also removed from the CC ports and switch ports that are components of the carrier circuit.

If the Carrier Group assigned capacity equals or exceeds the engineered capacity, that assignment rate is removed from the list of assignable rates in the Carrier Group. If there are no other Carrier Groups in the Path with that assignable rate, it is removed from the list of assignable rates in the Path.

When channels are pended to be removed from a circuit (either through change or disconnect activity), the assigned, assembled and non-selectable capacity counts are decremented by 1 for that assignment rate in the parent channel and all channels in the hierarchy through the use of pending change edges. 36 CCS is decremented in the assigned, assembled and non-selectable capacity fields in the Carrier Group. If it is not already present, that assignment rate is added to the list of disconnecting assignment rates in the parent channels, superchannel, Carrier Group, Path, and in the CC ports and switch ports that are components of the carrier circuit.

92. The assignment rate arrays in the Carrier Group are kept in terms of CCS and in the channels are kept in terms of counts of the number of channels to facilitate user reports.

When a removal of a channel completes, other channels must be evaluated to determine whether the assignment rate must be removed from the list of disconnecting assignment rates. This evaluation must be done at each level in the channel hierarchy (up through the Path) until a level is found where the assignment rate must remain on the list (in other words, another channel is pended to be removed). If no channels at this assignment rate in the circuit are pending to be removed, the assignment rate will be removed from the list of disconnecting assignment rates in the superchannel and the CC ports and switch ports that are components of the carrier circuit. If no other carrier circuits in the Carrier Group have pending disconnects for this assignment rate, it is removed from the Carrier Group list. Likewise, if no other Carrier Groups in the Path have pending disconnects for this assignment rate, it will be removed from the Path list.

The Carrier Group utilization factor will be updated whenever channel assignments are pended or removals completed. The assigned capacity is divided by the engineered capacity for the assignment rate, multiplied by 10 and rounded up (utilization factors are 1-11).

6.17.7.3 CC Port and Slot Updating

When CC ports are assigned or disconnected, various attributes of the CC port and slot are updated. On new connects, ADSR is set to "Y" (designed) or "N" (non-designed) on assignment of the first CC port on a slot (pre-completion). This value will be propagated to all time views of the slot node and to all time views of all CC ports that are on the slot. Desirability will be set to "Y" and propagated to all time views of all CC ports on the slot. The equipped attribute will be set to "Y" on assignment of the first CC port on a slot. Also, on each new connect, the number of working circuits will be increased by 1. Finally, for designed services, the HECIG will be sent from the TIRKS System via SOAC after completion of the first circuit in the TIRKS System. The HECIG will be a tag and value in the UPDCCP inventory transaction and update the HECIG attribute of the slot node. The HECIG will propagate across all time views of the slot.

On disconnects, the number of working circuits will be decreased by 1. When the number of working circuits becomes zero, the *lip determination* table (Table 6-84) is used to determine whether the plug is to be left in place or removed (see Section 6.18.5 for a further discussion of Leave in Place processing). If the plug is to be left in place, equipped will remain "Y" at completion. In addition, ADSR will be null, desirability will remain "Y", and the HECIG (if present) will remain populated. In some cases, [93]The TIRKS System will call for later removal of the plug and the UPDCCP inventory transaction will be sent from the TIRKS System via SOAC with EQPED tag = N. This will cause the equipped attribute

93. A Leave in Place (LIP) value is determined on disconnect of the last circuit on a slot. When LIP = T, the plug will be left in place temporarily after all circuits are disconnected. The TIRKS System IAD (Inventory Availability Date) processing will indicate when the plug is to be removed.

on the slot to be set to "N", the HECIG will be set to null and desirability = null will be propagated to all CC ports on the slot.

If the plug is to be removed, equipped will be set to "N" at completion. In addition, ADSR and the HECIG will be set to null. Finally, desirability = null will be propagated to all CC ports on the slot.

6.17.7.4 Telephone Number Updating

For telephone numbers/data telephone numbers, the component edge is built from the network unit to the service. In addition, several telephone number attributes are set as described below. However, if the client specific TN Suppression feature is activated for the wire center, the setting of the telephone number attributes does not occur and Tables 6-46, 6-60 (discussed below) do not exist. In the case of imported and exported TNs, if the client specific LNP - Ad Hoc feature is activated without the LNP - TN Administration feature, the setting of the telephone number attributes also does not occur.

The following attributes are set for remove and outward change requests:

- The value of the telephone number intercept attribute as determined by the tag TC (Transfer Calls) which may be on the provisioning request from SOAC. The intercept attribute is set to DTC (Disconnect Transfer Calls), or CTC (Change Transfer Calls), or DNT (Disconnect No Transfer), or CNT (Change No Transfer) based on the following rules:

  a. D request:

     — If TC = Y on request, then the intercept value is set to DTC.
     else, the intercept value is set to DNT.

  b. Unrelated F request:

     — If TC = N, then the intercept value is set to DNT.
     else, the intercept value is set to DTC.

  c. C request:

     — If TC = N, then the intercept value is set to CNT.
     else, the intercept value is set to CTC.

  d. Related (non-Dual) F request:

     — If TC = N, then the intercept value is set to CNT.

     — If TC = Y, then the intercept value is set to CTC.

     — If TC is not present, the intercept value is set to CNT.

  e. Dual F request:

— The intercept value is not set.

- The transfer calls attribute is Y when the value of the tag TC = Y.
- The assignment category and CATY [94]code of the disconnected service when either/ both were used to age the telephone number.
- The release date of the telephone number as determined by BCC-tunable rules. These rules are based on assignment category and design data. See Table 6-46 for the rules which are used to determine the release date. [95]This release date calculation is based on calendar days, not working days. The directory date, obtained from Table 6-60, may be used as the release date if it is later than the calculated release date.

  If the TCP (Transfer of Calls for a Specific Period) tag was on the request from SOAC and the TCP tag value was "perm"(i.e., permanently age the telephone number), then release date calculation is not done and the release date override attribute is not set.

  If the input indicates that the TN is imported and disconnected (i.e., not working elsewhere) and the client-specific LNP - TN Administration feature is activated, the TN will be aged using the assignment category and CATY code and standard TN aging algorithms.
- The release date override attribute is set if overrides (e.g., the value of the Transfer of Calls for a Specific Period, TCP, when it is on the provisioning request), not rules, were used to determine the release date. [96]
- The assignment limitation type of temporary (TMP) and the assignment limitation value of temporarily reserved (TRS) if the RTNS (Reserve Telephone Number Seasonal) tag was on the request from SOAC.
- The assignment limitation type of withheld (WTH) and the assignment limitation value of permanent telephone number aging (PRM) if the TCP tag was on the request from SOAC and the TCP tag value was "perm".

If the client-specific LNP - Ad Hoc TN feature is activated and an ad hoc TN is to be removed from a service:

— If the ad hoc TN is not in any other service (e.g. ISDN) and not in any other group (e.g. HML), the TN will be removed if the client-specific LNP - TN Administration feature is not activated.

94. CATY is Central Office Administrative Type. It is a one to five alpha numeric code. It is in the SOAC USOC table. CATY comes to the SWITCH system from SOAC as a CEC attribute. If no CATY code is sent from SOAC, default aging values based on assignment category exist to age telephone numbers.

95. This is not done for Related or Dual F orders.

96. When TCP is present on the request, processing compares the date following TCP and the calculated release date. The later date is used as the release date of the telephone number.

If the client-specific LNP - Ad Hoc TN feature is activated and a TN is to be removed from a service and that TN has both a regular (i.e., non-ad hoc) and an ad hoc association to two ICs the following action takes place:

— If that TN is not in any other service (e.g. ISDN) and not in any other group (e.g. HML), the ad hoc association is to be removed if the client-specific LNP-TN Administration feature is not activated.

If the client-specific LNP - TN Administration feature is activated and an ad hoc TN is to be removed from a service the following actions take place:

— If the input indicates that the TN will be working elsewhere (i.e., ported out), then upon disconnect completion the TN will be removed from inventory.

— If the input indicates that the TN is to exported, and the ad_hoc field is not set in the data base for a TN, in addition to standard outward action processing, the TN will be given an assignment limitation type of "rst" and a value of "exp". A release date will not be generated for the TN.

The following attributes are set for build and inward change requests:

- The selectable attribute is set to N.
- The Non Pub Indicator is set to indicate whether the telephone number is published or not.
- The following attributes are left blank: release date, release date override, assignment category, CATY code and intercept.

If the input indicates that the TN is returning to the donor IC (i.e., had been exported) and the client-specific LNP - TN Administration feature is activated, an assignment limitation type of "rst" and value of "exp" will be removed if it exists.

6.17.7.5 Mini-Bridge Lifter Updating

Additional updates are made for bridge lifters. If a cable pair has more than one phyapedg with a protected frame termination (prot_term) value that matches the working appearance, the assignment process ensures that they are all updated with the same mini_bg_lft value (i.e., 'a' for allowed or 'e' for equipped). If the prot_term value of the working appearance is null, it is considered to be unique from all other prot_terms, even other null ones.

If the composition rules determine that a Mini-Bridge Lifter is *not* assigned or is removed and the working phyapedg has a mini_bg_lft value of "e"(i.e., equipped), the value should be changed to "a" (available). If a Mini_Bridge Lifter is required, the assignment process ensures that the mini_bg_lft value is "e" (if it was already "e", it is not changed and no pending change edge is created, see below).

The assignment process ensures that the pending change edge is updated to reflect an increment of 1 for each mini_bg_lft that is assigned (i.e., value changes to "e") and to reflect a decrement of 1 for each mini_bg_lft that is unassigned (i.e., value changes from "e"). The pending change edge and the Mini-Bridge Lifter In Use Count (discussed in the following paragraphs) are only touched when the assignment process "changes" the mini_bg_lft attribute value. For example, if the value was previously "e" (equipped), and the assignment request requires a Mini-Bridge Lifter, the Mini-Bridge Lifter is assigned but no change is made to the attribute value. The pending change edge does not include the Mini-Bridge Lifter increment and the In Use Count is not incremented either, because no change to the mini_bg_lft attribute was required.

For pending builds when a Mini-Bridge Lifter is assigned (when there wasn't one previously), the *mbl inuse count* table (see Table 5.2) for the appropriate building should be incremented by 1 for each mini_bg_lft that is assigned. Cancellations of pending builds decrement the count. Pending changes that cause a Mini-Bridge Lifter to be assigned (when there wasn't one previously), increment the count. Cancellations of pending changes that caused a Mini-Bridge Lifter to be assigned (when there wasn't one previously), decrement the count.

Completions of removals (when a Mini-Bridge Lifter was removed) decrement the count. Completions of changes that remove a Mini-Bridge Lifter decrement the count.

6.17.8 Network Element Provisioning Updates

Once all the necessary network units are selected/validated for a DLE leg for the Path under consideration, the need for a Network Element Provisioning (NEP) edge is determined. When the TSI indicator at a CC is set to "y", a NEP edge is built between the network unit that has just been selected/validated for that CC and the network unit selected/validated for a previous Path that is controlled by the same CC. [97]In this case, a channel and CC port, a channel and channel, or a CRV and CC port will be components of a NEP edge.

Network units which are selected/validated on a proprietary carrier group are never made components of a NEP edge. When the TSI indicator at a CC is set to "y" and a network unit is selected/validated on a proprietary carrier group, it is not considered as a component of a NEP edge. Instead, the prior network unit for that CC is saved. When a network unit at an adjacent CC, whose TSI indicator is set to "y", is selected/validated, a NEP edge will be built between that network unit and the saved network unit (at the previous CC). Typically when this occurs, a CC port and a CC port (controlled by different CCs) will be made

97. There are cases when more than one network unit will be selected/validated for a CC for a Path. An example is 3 DS0 ISDN where up to three channels (one for each bearer service) can be selected/validated. Up to three NEP edges are needed in this case, one between each of the three channels and one CC port. In order to distinguish the use of these NEP edges, the bearer service will be placed on the comp_usage edge between the channel and the service to be used when building NEP aggregates on output (see Section 6.18).

components of a NEP edge. Similar processing occurs when a NEP edge is built for components of different CCs separated by a non-managed Path.

6.18 Common Output

After all facilities have been selected and connected and the database has been updated the SWITCH system sends data to outside systems, namely SOAC and FOMS. In particular, the extraction process retrieves network unit and other database constructs in preparation for the building of contracts by the output process. The extracted data is organized by circuit, if it is going to FOMS, and by TID, if the destination is SOAC. To provide certain data, some special processing is needed. This special processing is discussed here.

6.18.1 Working Frame Processing

The working frame data for a switch port or cable pair is typically extracted from the connectivity edge, which is a hyper-edge between the Circuit and two network units. But there are times when the connectivity edge is not built (e.g., the TIRKS system is responsible for the assignment of necessary facilities, including IFs to a target frame, for a designed service). In these cases, special processing is done in the output process so that appropriate working frame data can be sent to SOAC and FOMS. In these cases the extractor goes through the following process for each network unit associated with the circuit being processed. [98]

1. Look for a connectivity edge between the network unit node and the circuit node.
2. If a connectivity edge is found (e.g., standard connectivity exists), stop special working frame processing of this circuit.
3. If no connectivity edge is found look for a physical appearance edge from the network unit node that points to a frame node.
4. If no physical appearance edges are found, stop special working frame processing of this circuit.
5. If only one physical appearance edge is found for the network unit node, consider the frame pointed at by that edge as the working frame.
6. If there is more than one physical appearance edge for the network unit node, gather the external frame ID from the frame node pointed to by each physical appearance edge. Compare this list of frame IDs against the list of frame IDs found in the *adsr frame priority* table (see Table 6-47). Assign the associated rank number from the table to each frame in the "list".

98. Although the extractor examines all network units, the only entities expected to have related working frame data extracted during this special processing are cable pairs, CC ports and switch ports.

7. If a Frame does not appear in the table give that frame a rank of 99.
8. Choose the frame from the physical appearance edge with the lowest rank number as the "working frame".
9. If multiple frames have equal lowest numbers, choose the first frame in the list gathered from the physical appearance edges as the working frame (i.e., the choice is arbitrary).
10. For the identified working frame: copy the external frame ID, the frame zone, and the frame termination (LOIS), from the physical appearance edge and place in the extracted data file marking this information as the working frame. (The external frame ID is actually extracted from the frame node which is pointed at by the physical appearance edge.)

6.18.2 Route Edge Processing

In support of DLE, all response contracts will be aggregated by controllers. Sequence numbers will be provided to allow downstream systems to order facility assignments. [99]A route edge will exist for each termination ID (TID) of a service and will contain the IDs of the controllers (CCs and ICs) from the destination to the origin which contain network units supporting the service. The extraction process will extract a route edge per TID (termination ID) and use this data to calculate sequence numbers which will be placed in the response contract to SOAC.

Special processing to determine sequence numbers is required in the DUAL T case. When a DUAL T is received, the network units at both the F & T location are working and the SWITCH system database reflects this overlapping service. Thus there will be two route edges for each TID (null or non-null, depending if the leg being moved is a main or DPA). In this case, the extraction process will, when starting to number CCs, arbitrarily select one route and continue numbering the CCs if they are encountered on this route edge, and subsequently use the second route edge if CCs exist which are not already accounted for from the first route edge. If a CC exists on both route edges, its second occurrence will be ignored. Thus CCs which contain network units to support the service at the F and the T location will be numbered according to their first appearance on an arbitrarily selected route edge with numbering starting from one route edge only (number not reset if the CC is found on the second route edge) and not necessarily relative to their position on a route edge from the IC.

99. Sequence numbers will not appear in response contracts for services provisioned on non-DLE facilities.

6.18.3 NEP Edge Processing

The extraction process will retrieve data from the NEP edge placed by the assignment engine to allow the output process to build a NEP aggregate in the response contract to SOAC. This process must provide sufficient information to enable the output process to know whether to build aggregates denoting cross-connect or CRV associations. For each NEP edge which exists for each component belonging to a circuit (there can be more than one), the output process will build either association aggregates if a CRV is a component of a circuit, or cross-connect aggregates otherwise. A work instruction will also be generated for each of these aggregates. This work instruction will convey to the remote administration system whether a cross-connect or CRV association should be placed, removed, reused of left-in. A "place" work instruction will occur if the network units assigned to circuit/service are to be cross-connected or associated to provision the service. A "remove" work instruction will occur if the service is disconnecting and the cross-connect or CRV associations is to be taken out. A "reuse" work instruction will occur if a cross-connect or CRV association exists either due to the existing service being processed (e.g., a change order against the service is received) or is left-in after a prior removal and remains the same after a new inward activity. A "leave" work instruction will occur if a cross-connect or CRV association is to remain after a service is disconnected (this instruction will result only if the cross-connect or CRV association was made prior to service activation using a permanent assembly in the database).

Derivation of this work instruction is on a per TID (termination ID) basis. An additional attribute will be determined by the output process to establish a network element update. This attribute will convey to a remote administration system, the appropriate signaling option that must be set at the time of placing a cross-connect(s) or CRV association. This signaling option must be set according to the interface standard at the IC or carrier device at the destination of the DLE assignment. Thus it is set differently if the interface is TR-303, TR-008, or TR-057. The output process will determine this attribute based on the network unit assigned at the first device encountered in the central office (i.e., the destination device). If a CRV is part of the service, the attribute must be set to TR303. If a channel ONLY is found at the first device (i.e., channel into a IC or DCS), then this attribute must be set to TR008, otherwise it must be set to TR057. The latter case will occur when a switch port is assigned at an IC or there is a CC port assigned at a CC for a non-switched service.

6.18.3.1 Special Considerations

In cases where the proper data items cannot be generated by the output process to convey the work needed at a network element, a manual indication will be placed in the response contract to SOAC. There are two cases where this will occur:

- DUAL F response

- Party reassociation

This manual indication implies that updates to the network elements must be handled manually by the appropriate remote administration systems.

Other special output considerations for F&T orders are covered in the F and T Service section (6.20.1).

6.18.4 RXA Determination Process

The SWITCH system must determine for SOAC the remote administration system(s) involved for each circuit termination on an order. This involves determining whether one or both of the tags, RXAI and RXAO should be set to Y:

- RXAO = Y (SOAC/NSDB involvement)
- RXAI = Y (SOAC/ILAS involvement)

SWITCH must also determine for NSDB, whether OPS/INE must be told to update network elements. This involves determining the value of the RXA tag:

- RXA = O (OPS/INE)
- RXA = I (ILAS, NSDB doesn't care)
- RXA = M (manual)
- RXA = B (both ILAS and OPS/INE)

Additionally, SWITCH must be able to determine the RXA value based on whether the service is designed or non-designed. Certain BCCs may want the option to have design circuits updated by one remote administration system and non-design circuits by another.

The SWITCH system will determine the value of the RXA tag which will appear in the response contract for use by the downstream systems to determine the updates needed in the network elements for the service request. These updates include optioning of plugs and either cross-connects or CRV associations. The value of the RXA tag will be determined during the output process from the *rxa derivation* table (see Table 6-85) which will have entries by TID (target ID) and by design (ADSR) or non-design. The output process will determine via the network unit the CC to which that network unit belongs. The TID for that CC can then be obtained and the existence (or not) of ADSR on the design edge of the service can be obtained to find a match in the table. If no TID can be found, the default entry in the table should be used. [100]After all RXA values are determined for the service request, the RXAO and RXAI tags can be determined by the output process. The following rules apply:

- If RXA=O or B encountered, then set RXAO=Y

100.If no TID exists for the CC, there should not be a NEP edge built in the database.

- If RXA=I or B encountered, then set RXAI=Y

6.18.5 Plug Work Instructions

Plug Work Instructions (PWI) will be generated by the SWITCH System on pending new connects to indicate to downstream systems whether to order a new plug or not. PWI=PLACE will be sent when the slot is not equipped and a plug must be ordered. PWI=REUSE will indicate that the slot is equipped and a plug need not be ordered.

Plug Work Instructions also will be generated by the SWITCH System on pending disconnects to indicate to downstream systems whether to remove the plug or leave in place when there will be no working circuits left on the plug. When all circuits on a slot are to be disconnected, i.e., # working circuits is going to 0, Leave in Place (LIP) processing is done by the SWITCH System. It is used by output processing to derive the PWI output to SOAC and FOMS.

The SWITCH System determines when the last CC port on a slot is being disconnected and the # working circuits is 0 in the pending slot node. Leave in Place processing uses the *lip determination* table (Table 6-84) to determine the LIP value. The value of LIP returned depends on whether or not the service is ADSR and the card type of the slot. The value of LIP is used by Output processing to derive the PWI output to SOAC and FOMS. LIP may have 3 values:

1. LIP=Y - The plug will be left in the slot after all circuits on the slot are disconnected. PWI=LEAVE will be generated and downstream systems will not remove the plug, but leave it in place.
2. LIP=N - The plug will be removed from the slot after all circuits on the slot are disconnected. PWI=REMOVE will be generated and downstream systems will initiate pulling the plug. Also, TIRKS will cancel IAD (Inventory Availability Date) processing. TIRKS would not send MSGP for plug removal to SOAC.
3. LIP=T - The plug will be left in place temporarily after all circuits are disconnected. Generally, only ADSR services should have an LIP of "T". PWI=TLEAVE will be generated and TIRKS will call for plug removal via IAD processing. At that time, TIRKS will send MSGP for plug removal to SOAC. SOAC will send an inventory contract, UPDCCP, to the SWITCH System with EQPED tag = N. (Note that work order processes will never generate PWI=TLEAVE, but will generate PWI=REMOVE when LIP=T.)

Finally, when there is an add over disconnect, PWI=AOD may be generated. The add over disconnect case occurs when a CC port on a slot is selected for a new connect prior to completion of a previous disconnect order on the same slot. PWI=AOD is generated only when the disconnect order was for the last circuit on the slot and LIP=N.

6.18.6 Night Service

Night Service, which is a client specific feature, involves a TN usage of "nsv". When nsv is indicated in the database for a TN, then output processing should produce an nsvy tag followed by the TN.

6.19 Assembly Processing

Assemblies are collections of network units where not all the network units are of the same type. If applicable, assemblies reflect physical wiring and are known as wired assemblies. Assemblies can be created by the inventory assembly creation process (Section 5.9), [101]the Dedicated Inside Plant (DIP) determination process (Section 6.3.4), or the wire assembly (WAO) work order (Section 9.7). Assignment processing's handling of assemblies is not dependent upon the process that was used to create the assembly, but rather on the assembly category contained in the assembly construct. The assembly category determines assignment processing's interaction with assemblies.

6.19.1 Service Order and Work Order Processing on Assemblies

In the SWITCH system, the following four assembly categories are defined: Permanent Assemblies (PASMs), Modifiable Assemblies (MASMs), Temporary Assemblies (TASMs), and Pseudo Services (PSSVs).

6.19.1.1 Permanent Assembly (PASM)

If a network unit in a PASM is preassigned on a request or manually specified through the ULBB, (e.g., pair gain cable pair), processing validates the preassigned network unit. If the preassigned network unit satisfies the request, processing validates the other network unit(s) (e.g., derived switch port) in the PASM. See Section 6.5.6 as an example of network unit validation for switch ports. If the other network unit(s) satisfies the request, the network units in the PASM are made components of the circuit. If additional network units are necessary to satisfy the service request, they are added to the circuit.

If a disconnect order, an F or D, disconnects a circuit which contains a PASM, processing removes all of the components from the circuit and the PASM remains with all of its components.

101.During the UPD ASM work session, the ULBB validates that only Permanent Assemblies created during the inventory assembly creation process may contain channels, CRVs, and CC Ports.

6.19.1.2 Modifiable Assembly (MASM)

If a network unit in a MASM is preassigned on a new connect (this includes an N or T order) or manually specified through the ULBB, processing validates the preassigned network unit. The request RMAs if the preassigned network unit (e.g., cable pair or telephone number) does not satisfy the request. If more than one network unit is preassigned, (i.e., both the cable pair and the telephone number), they both must satisfy the request or an RMA is produced. If the preassigned network unit(s) satisfies the request, processing validates the other network units in the MASM. If the other network units do not satisfy the request, processing chooses replacement network units for those in the MASM to satisfy the request. If the other network unit(s) satisfies the request, the network units in the MASM are made components of the circuit/service. Additional network units may be added to the circuit, if they are required to satisfy the service. The MASM is modified to reflect the final configuration of the circuit. If the MASM contained a telephone number, the telephone number, not being a physical network unit, is not made part of the circuit. It is made a component of the service.

If a network unit in a MASM is preassigned on a change order (i.e., network unit is "IN" for an MCT), the request RMAs.

If a network unit in a MASM is preassigned on a change order (i.e., network unit is "OUT" for an MCT), processing should remove the "OUT" network unit from the circuit, replace it with the "IN" network unit and validate that the other network units work with the new network unit. If these network units do not satisfy the request, replacement network units are found. If no network units can be found, an RMA is generated. If the other network units work with the new network unit or replacement network units can be found to satisfy the request, the assembly is modified to reflect the circuit. If the MASM had a telephone number, the telephone number remains a component of the MASM and service. If the MASM did not originally have a telephone number as a component, no new telephone number is added to the MASM. If the change order changes the telephone number, the old telephone number is removed from the service and MASM. The old telephone number is aged. The new telephone number replaces the old telephone number in the service and MASM.

If a disconnect order, an F or D, disconnects a circuit which contains a MASM, processing should remove all of the components from the circuit. The circuit is removed from the database. The MASM continues to exist with the potential that this MASM assembly will be utilized again on a subsequent circuit. A telephone number that was previously associated with the MASM, if any, remains associated with the MASM.

6.19.1.3 Temporary Assembly (TASM)

For assignment processing's interaction with DIP creation, see Section 6.4.4.

- Reuse - reuse of a TASM refers to assigning components, that are assembled together, to a circuit. The assembly was previously built and is now being reused in its entirety. Processing reuses a TASM if all components of the assembly are compatible with the service request. TASM reuse can occur on new connect or change orders. If needed, these components are validated. If they pass validation, they are reused. Since there is no validation of MEs, any ME that is a component of a TASM is reused. If the TASM is broken for other reasons, the ME is not reused.

  In the SWITCH system, BCC-tunable tables control switch port reuse for service orders (Section 6.5.1) as well as work orders (Section 9). The reuse parameters indicate if use of a TASM will be attempted.

  Specifically, when a network unit in a TASM is preassigned on a provisioning request or manually specified through the ULBB, processing validates the preassigned network unit. Then the process proceeds as follows:

  1. N or T order processing:

     The request RMAs if the preassigned network unit does not satisfy the service request. If the preassigned network unit satisfies the request, processing checks the remaining, (i.e., prespecified), network units in the TASM to see if these network units are needed for the request. If the prespecified network units are not needed for the request, the assembly is broken and processing chooses other network units, if they are necessary, to satisfy the request. If the prespecified network units in the TASM are needed for the request, processing validates these network units. If the prespecified network units do not pass validation, processing breaks the assembly, and chooses other network units to satisfy the request. If the prespecified network units pass validation, the network units in the TASM are reused in order to satisfy the request.

  2. C order processing - provisioning requests:

     When a network unit in a TASM is preassigned on a C order, processing is similar to N or T order processing, if the "IN" cable pair is in a TASM. Processing should assign the remaining network units according to the following hierarchy:

     a. attempt to use the other network units in the TASM (i.e., the prespecified ones)

     b. attempt to reuse the other components that were in the circuit. In this case, the TASM is broken

     c. assign new components to satisfy the request

     In the case where the "IN" switch port is in a TASM, (e.g., an ACE), the switch port must be used. The request should RMA if the switch port does not satisfy the request. Processing should attempt to use as many of the other network units in the TASM as possible. The SWITCH system should not assign the cable pair that is in the TASM. The previously assigned cable pair should be reused. Therefore, if there is a cable pair in the TASM, the TASM should be broken. If the other network units in the TASM cannot be used, processing should choose other network units to satisfy the request.

3. Change processing - Work Orders

   See Section 9 for complete information on TASM reuse for work order change processing.

- Break - processing may dynamically break TASMs when not all of the components of the assembly are necessary to satisfy the request.

  Assignment processing retrieves TASMs, based on preassigned component(s). That is, an N or T order includes a network unit(s) that is a component of a TASM or the "IN" network unit(s) on a change order is part of a TASM. Processing validates the preassigned component(s). If none of the preassigned component(s) satisfy the request, the request RMAs. If one of the preassigned component(s) satisfies the request, reuse logic determines if the other components in the TASM are needed for the request. If the other components are not needed for the request, processing breaks the assembly. Processing chooses additional network units, if they are necessary, to satisfy the request. If the other components are needed for the request, processing validates these components. If the other components do not pass validation, processing breaks the assembly. The components of the assembly that can satisfy the service request are reused. Those that cannot are made available for component selection.

6.19.1.4 Pseudo-Service (PSSV)

On a new connect, an N or T order, processing adds all components of the PSSV to the circuit. Processing may add additional network units to the circuit in order to satisfy the request. These additional network units are not made components of the assembly. The assembly is not modified. If it is not possible to add all of the components of the PSSV to the circuit, an RMA is generated. If *only* the ME is preassigned on the new connect, the request RMAs.

On a disconnect, an F or D order, processing removes all network units within the PSSV from the circuit. These network units remain components of the PSSV. The PSSV remains in the database upon disconnect in order that it may be utilized for a subsequent service.

Change order processing that involves PSSVs differs based on whether the change is a work order, flow through provisioning request from SOAC, or a provisioning request initiated from the ULBB. A change order, which occurs when the network unit that is a component of the PSSV is the "IN" network unit on the request, can have the following possibilities happen:

1. A work order RMAs in the SWITCH system when the "IN" network unit is a component of the PSSV. Processing cannot determine that the service attached to the PSSV should be put into the circuit.
2. A provisioning change order that flows through from SOAC or that is initiated from the ULBB should add all components of the PSSV to the circuit in the SWITCH system when the "IN" network unit is a component of a PSSV. A change order that adds a leg to a circuit would process similarly when the "IN" network unit is a component of a PSSV.

A change order, which occurs when the network unit that is a component of the PSSV in a working circuit is the "OUT" network unit on the request, should process as follows:

1. A work order does a one-for-one replacement. The network unit in the assembly and circuit is replaced by the new network unit. The circuit is modified. The assembly is redefined with the new network unit as a component. Intra-wire center facilities may be assigned to the circuit, if they are necessary for connectivity.
2. A provisioning change order that flows through from SOAC or that is initiated from the ULBB removes all of the components of the PSSV from the circuit. A change order that removes a leg from a circuit in which that "OUT" network unit is a component of a PSSV, processes comparably and removes all of the components of the PSSV from the circuit. No RMA is necessary.

For all change processing, if the *only* preassigned network unit is the ME of a PSSV, the request RMAs.

6.19.2 Assembly Engine

The SWITCH system assembly engine can create, change or break an assembly. The engine is called by the ASGWAO work order contract processor for wired assemblies. Change processing for assemblies only supports one-for-one switch port exchange for dial transfer overlay. The assembly engine has been designed to reuse much of the code for assignment processing. It has six functional areas

- Request Analysis
- Assignment Category Determination
- Composition Analysis
- Network Unit Selection/Validation
- Connectivity
- Database Update

The assembly engine allows four input options for creation of assemblies:

a. Input all the network unit types and ids, including intra-wire center facilities, along with the logical and physical connectivity ("tc" option), [102]or

b. Input all the network unit types and ids, excluding intra-wire center facilities, and the logical connectivity ("pc" option), [103]or

c. Input a subset of network unit ids and allow the SWITCH system to determine if additional components are needed based on the intelligent controller and assignment category ("null" option), or [104]

d. Input all the network unit types and ids, excluding tie pairs, and allow the SWITCH system to determine the logical and physical connectivity ("conn" option). [105]

"Circuit-like" assemblies (MASMs and TASMs) may use any of the creation options. "Non-circuit-like" assemblies, such as PASMs and PSSVs, may be created only by entering all the network unit ids (option 1, 2 or 4 above).

In circuit-like assembly (MASM or TASM) creation, if a preassigned network unit is also in a non-circuit-like assembly (PASM or PSSV), the network units in the PASM or PSSV are included in the MASM or TASM. If a preassigned network unit in the MASM or TASM is also in another circuit-like assembly, an error is generated.

In creating a non-circuit-like (PASM or PSSV) assembly, if a preassigned network unit is also in a circuit-like assembly (MASM or TASM), the PASM or PSSV cannot be built. An error is issued.

Only facilities without pending edges and not currently in assemblies are considered for *selection* by the assembly engine.

Components that are *preassigned* on the assembly request may be pending out (the assembly engine checks the due date compatibility) or may be part of another assembly (if the assembly is of another assembly category).

All attributes are scored upon identically for assembly and assignment processing except for assembly involvement and jumper length. A network unit that is a component of an assembly is not considered for *selection* by the assembly engine. An upper bound jumper

102.If the logical and physical connectivity, and components for an assembly, including intra-wire center facilities, are dictated on input, the assembly request is analogous to the totally constrained circuit. The difference is that the totally constrained indicator is not kept with the assembly body in the database and therefore does not affect further processing on the assembly.

103.A request that gives the logical connectivity and components for an assembly, excluding intra-wire center facilities, is analogous to the partially constrained circuit. The difference is that the partially constrained indicator is not kept with the assembly body in the database and therefore does not affect further processing on the assembly.

104.Trunk pairs cannot be selected by the assembly engine. Therefore, to be included in an assembly on creation or change to the assembly, a trunk pair must be prespecified.

105.Option 4 (conn option) can only be used for assemblies with straight linear connectivity (i.e. no legs).

length override may be entered by the user to limit the search for network units. If a network unit cannot be found within the maximum jumper length, the assembly is not created.

If no maximum jumper length override has been specified, and it has been determined that tie pairs are required, one of two alternatives occur. If the tie pair override in the input contract is set to "y", the intra-wire center facility selection process is invoked. If the tie pair override has been set to "n", the assembly is not created.

The processing performed on an assembly request depends on the function (create, change, or break) and input option (pc, tc, null or conn) of the request. A break assembly request requires request analysis and database update. A change assembly request requires request analysis, network unit validation (final database acceptance checking only), physical connectivity, and database update.

Create assembly processing varies according to the type of input:

1. "tc" option - request analysis, network unit validation (final database acceptance checking only), physical connectivity (wired frame appearance only), database update.

2. "pc" option - request analysis, network unit validation (final database acceptance checking only), physical connectivity, database update.

3. "null" option - request analysis, composition analysis, network unit selection/ validation, logical and physical connectivity, database update.

   Assignment category determination is done only for this option. If an assignment category cannot be determined, an error is issued.

   Composition analysis is also used only for the "null" create option. This process works the same for the assembly engine as it does for the assignment engine except that if too much has been prespecified, the assembly is not created and an error is issued.

   Verification of preassigned network units is used only for this option.

   Composition analysis passes the request to the connectivity process along with the connectivity rules, as illustrated in Table 6-4.

4. "conn" option - request analysis, network unit validation (final database acceptance checking only), logical and physical connectivity, database update.

   Option 4 uses the default connectivity rule (defconn).

6.20 Miscellaneous Services

6.20.1 F and T Service

There are three types of F and T service, Related, Unrelated and DUAL. For Related service the TN is to be reused in the new location. For switched service with non-portable TNs this means that a customer is moving within the same Wire Center within the same IC and therefore central office assignments may be considered for reuse. The old location (specified on the F order) will be disconnected prior to the connection at the new location (specified on the T order), i.e., there is no overlap of service.

For Unrelated service the customer will use a *new* TN at the new location which implies that all of the central office assignments can be released when the F order is worked. Unrelated Fs are processed as if they were Disconnects and Unrelated Ts are processed as if they were New Connects.

DUAL service occurs when the customer is moving within the same Wire Center, they desire to keep the same TN, AND they wish the new location (specified on the T order) to be activated before the old location (specified on the F order) is disconnected, [106]in other words, both locations will be part of the same circuit for some period of overlapping service. This requires that both the Cable Pair(s) from the old location and the Cable Pair(s) from the new location must be bridged together for the period of overlapping service. Once the F completes, [107]there is no longer any DUAL service. DUAL service is identified by the presence of a DUAL FID on both the T and F service orders.

6.20.1.1 Related F Processing

When the existing CP resides in a *CC that has TSI,* the CP and its assembled CC Port will be made spare (retaining the pasm), and channels/CRVs and any non-origination CC Ports [108]will be retained in the circuit for potential reuse.

When the existing CP resides in a *CC that does not have TSI,* the CP and its assembled CC Port and channel/CRV will be made spare (retaining the pasm) and any other channels, CRVs and non-origination CC Ports are retained in the circuit for potential reuse.

106.For DUAL service, the T order has a due date *before* the F. The circuit for the DUAL service period will include the old location main leg and all the old dpa legs as well as the new main leg and all the new dpa legs. The service and features for the DUAL service period will be only those that were explicitly listed on the T order.

107.The DUAL F order identifies the old main leg and any old dpa legs. The SWITCH system processing removes the old main leg and any old dpa legs *that were not previously included on the T order.*

108.Non-origination CC Ports are controlled by a CC that is not the Origination Controller as identified in the Route edge.

When the existing CP is non-DLE, the CP will be made spare, creating a DIP with the switch port if appropriate.

If the client-specific LNP-Ad Hoc TN Feature is activated and a circuit on an F order that appears related (absence of NRID tag on input) contains the POUT tag, then the F order will be processed as unrelated. If the POUT tag is absent, the F order will be processed as related.

6.20.1.2 Related T Processing

Processing for the Related T order is dependent upon the location of the T CP as well as the location of the F CP. Reuse of channels/CRVs/CC Ports [109]will always be attempted. Reuse of switch ports will depend on the reuse parameters that are in the *switch port reuse control* table (see Table 6-7). The *cia* parameter is irrelevant when DLE components are involved. Only the *csr* parameter is used.

The *related-t-prsv-dip* parameter in the *wc parms* table is irrelevant when DLE CPs are involved in either the F or the T location.

When the *T CP is DLE:*

- potential Routes are determined by Route Analysis,
- the new CP and its pasm'd network units are made components of the circuit, and
- the other channels/CRVs/non-origination CC Ports/switch ports in the circuit will be validated for reuse, otherwise new network units will be selected. [110]

When the *T CP is non-DLE* but the *F CP had been DLE,* the channels/CRVs/non-origination CC Ports in the circuit will be validated for reuse and will fail and new network units will be selected.

When both the *T and the F CPs are non-DLE,* the old switch port is considered for reuse, breaking the DIP that was created by the F processing, if necessary. If the old switch port is not able to be reused, a new switch port will be selected.

If the Related T order is received for a circuit that does not exist in the SWITCH System database, it is considered to be Unrelated and is processed as though it were a New Connect.

Processing for the Related T will remove any secondary services that are in the circuit but that are not included in the T order. An Unexpected response will be sent to SOAC for the secondary service that is being removed. If translations about them exist in the IC they will

109.The CC Ports referred to here are the CC Ports that are controlled by a COT CC, not the CC Ports that are in the pasm with the CP. Only circuits with DLE CPs that are not integrated into the IC will contain COT CC Ports. Such circuits will also contain switch ports.

110.Existing components might not validate if the T service differs significantly from the F service or if the new Route is different from the old Route.

be removed. If translations about them do not exist in the IC, the request to remove them will be rejected.

If the client-specific LNP-Ad Hoc TN Feature is activated and a circuit on a T order that appears related (absence of NRID tag on input) contains a TN that doesn't exist in the database, then the T order will be processed as unrelated. If the TN exists, the T order will be processed as related.

6.20.1.3 Related T Out of Sequence

If the *relt-out-of-seq-rma* parameter in the *wc parms* table is set to "y", the process will RMA when a Related T order is received if the existing circuit contains CPs that are not included in the T order. Otherwise (the *relt-out-of-seq-rma* parameter is not set to "y"), the CPs that are in the circuit but not included on the T order will be removed from the circuit.[111] The rest of the processing follows as described in the section above.

6.20.1.4 DUAL T Processing

Processing for the DUAL T order is dependent upon the location of the T CP as well as the location of the F CP. The reuse parameters that are in the *switch port reuse control* table do not apply for non-simple services and DUAL service is certainly non-simple. When reuse is possible (i.e., the F and T CPs reside in the same CC and that CC has TSI), it will be attempted. Otherwise (when reuse is not possible) and at least one of the CPs is DLE or IDLC, digital bridging will be attempted. The *dualt-reu-only* parameter in the *wc parms* table is only used if there are no DLE or IDLC legs in the circuit.

When the T CP resides in the *same CC* as the F CP:

- the old Route is retrieved, marked with a tid separator and retained,
- potential Routes are determined by Route Analysis,

111. When the out of sequence Related-non-Dual T is processed, the initial response to FOMS is appropriate (the TN is said to be reused, the old CP is out, the new CP is in and the switch port is reused or new, depending on which was assigned). When the associated F is processed and places the orders back in the proper sequence, FOMS output is generated to create a Temporary Assembly, if appropriate. The T is reworked and the output to FOMS is essentially as before except that the Temporary Assembly may be broken (if it was just created with the F and if the switch port is to be reused). This may be confusing to the frame users if they aren't aware of this case.

When the out of sequence Dual F is received, the initial response to FOMS shows the switch port is left in the circuit and the Cable Pair is made spare (just as it is for a Related-Non-Dual F). When the associated T is processed and places the orders back in the proper sequence, the response to FOMS for the T shows the switch port as reused, the new CP is in, the old CP is reused and other equipment is reused or out as appropriate. The F is reworked and the response to FOMS for the F shows the old CP is out, as before.

- the new CP and its pasm'd network units are made components of the circuit,
- the CPs that are not mentioned on the DUAL T order are marked with tid separators,
- all existing components that contain the tid of the CP to be removed are also marked with tid separators,
- the switch port, if present in the circuit, will be validated for reuse, [112]and
- new components, if needed, will be selected according to the composition rules. Digital bridging will be attempted if 2 or more channels/CRVs (into the IC) or a switch port and one or more channels/CRVs (into the IC) are needed in the circuit.

When the T CP resides in a *different CC* from the F CP (or the F CP was non-DLE):

- the old Route is retrieved, marked with a tid separator and retained,
- potential Routes are determined by Route Analysis,
- the new CP and its pasm'd network units are made components of the circuit,
- the CPs that are not mentioned on the DUAL T order are marked with tid separators,
- all existing components that contain the tid of the CP to be removed are also marked with tid separators,
- the switch port, if present in the circuit, will be validated for reuse, and
- new components, if needed, will be selected according to the composition rules. Digital bridging will be attempted.

When the *T CP is non-DLE* but the *F CP had been DLE:*

- the old Route is retrieved, marked with a tid separator and retained,
- the CPs that are not mentioned on the DUAL T order are marked with tid separators,
- all existing components that contain the tid of the CP to be removed are also marked with tid separators,
- the switch port, if present in the circuit, will be validated for reuse, and
- new network units will be selected according to the composition rules. Digital bridging will be attempted.

When both the *T and F CPs are non-DLE:* the CPs that are not mentioned on the DUAL T order are marked with tid separators,

- all existing components that contain the tid of the CP to be removed are also marked with tid separators,

112.A switch port will be present if the last portion of the Route into the IC is non-integrated. Since the F and T service is expected to be the same for DUAL service, there is no known reason why existing components would not be valid.

- the switch port, if present in the circuit, will be validated for reuse, and
- new components, if needed, will be selected according to the composition rules. Digital bridging will be attempted if either of the CPs are IDLC.

Processing for DUAL Ts will "mark" any secondary services that are in the circuit but that are not included in the T contract. The DUAL T will RMA if a secondary service has an NRID tag in the contract. Secondary services that are in the DUAL T contract and that are *not* Unrelated (they do not have an NRID=Y tag) will not be marked.

6.20.1.5 DUAL F Processing

All CPs and other network units marked with a tid separator are removed. Any other unneeded components are also removed. Any Route edge that contains a tid separator is removed. Processing for the DUAL F will also remove any marked secondary services.

6.20.1.6 DUAL F Out of Sequence

If the *dualf-remove-cps* parameter in the *wc parms* table is set to "y" and no CPs in the circuit are marked with a tid separator, the process will remove all CPs mentioned on the DUAL F order, all pasm'd and non-pasm'd components and the route edge. All secondary services that are on the circuit will also be removed.

Otherwise (the *dualf-remove-cps* parameter is not set to "y"), only components, secondary services and Routes that are marked with tid separators will be removed from the circuit. Since the DUAL T processing places the tid separators, processing a DUAL F order prior to processing the DUAL T will result in nothing being removed from the circuit.

6.20.1.7 F & T with Suspend/Sublet

See Section 6.20.2 for general suspend/sublet processing with DLE. This section discusses the interactions of suspend/sublet service and F and T order processing.

Related F and T orders for suspend with sublet or sublet services are processed but DUAL F and T orders RMA.

A Related F for a *sublet service* is processed as if it were Unrelated. There is no NRID tag (which is the normal indicator that the service is Unrelated) but the processing follows Unrelated anyway. Unrelated F processing is the same as disconnect processing. The sublet will be disconnected upon completion of the F order.

A Related F for a *suspend service that has a sublet* is processed as if it were Unrelated. The suspended service will be disconnected upon completion of the F order. The ICCHG=N Tag is sent to MAS in the translation message since MAS had already disconnected the circuit when the circuit was suspended or sublet, depending on the *mas involvement* table settings (see Table 13-1). As is done whenever the suspended service disconnects, the sublet will become a regular service (non-sublet).

A Related F for a *suspend service that does not have a sublet* is processed normally (as a Related F).

A Related T for a service that is to be *sublet in the T location* is processed as if it were Unrelated if no existing circuit is found in the database. If an existing circuit is found, special two-pass processing is performed. When the service is to be sublet in the T location, the contract will contain a SUBL tag. The first pass will remove the circuit/service in the T's time view. The second pass will then process the T order reusing the delta view created during the first pass. The T order will be treated as Unrelated because no circuit will be found in the database.

Although T orders are generally not written for services that will be suspended, they will be processed as either Related or Unrelated, depending on the presence/absence of the NRID tag and the presence/absence of a circuit in the database. A T order for a service that is to be *suspended in the T location* will RMA if there already is a sublet at that location. It will be processed if there is no sublet at that location.

6.20.1.8 Switch Port Reuse for F and T Orders

Composition analysis for DUAL T orders uses the user-modifiable value, "dual-t-reu-only", found in the intelligent controller instance of the *wc parms* table (See Table 6-8ic), to determine if switch port "reuse only" is required. If switch port "reuse only" is required, the old switch port must be validated for assignment. If it fails, an RMA is issued. If switch port "reuse only" is not required, the existing switch port is still validated for reuse. If it is not valid, the switch port DIP'd to the T cable pair is validated. If that switch port is not valid, a new switch port is selected.

If there is no Cable Pair activity (i.e., there are no OUT CPs on the F and there were no IN CPs on the T), [113]the old switch port should be reused regardless of the values in the *swpt reuse control* table.

If the IN Cable Pair on the T is part of an assembly that cannot be modified by provisioning requests (i.e., a Permanent Assembly such as IDLC or a Pseudo-Service such as meter reading or apartment door answering service) and if that assembly contains a switch port, that switch port must be validated for assignment. If it fails, an RMA is issued.

If the Cable Pair is part of a Modifiable Assembly (e.g., Dormitory service) or a Temporary Assembly (e.g., DIP) or no assembly, the switch port assignment process should access the *swpt reuse control* table (see Table 6-7) and/or Table 6-8ic, Table 6-8wc to obtain the

113. Such would be the case with Foreign Exchange service at the FSO end.

control options for Service Order processing. If no switch port is obtained after all possible choices are tried, the process RMAs.

If the switch port changes when processing a DUAL F and T order, MAS is informed of the removal of the existing switch port. When processing the DUAL T order, the SWITCH system sends back to SOAC the new switch port. When processing the corresponding DUAL F order, the old switch port is sent to SOAC. If the T order cannot be found, the "before view" of the DUAL F is sent to SOAC, along with a new tag-value pair, "INC=TORD", indicating that the T order could not be found. This could happen if the DUAL F is processed before the DUAL T, or if the DUAL T has already completed when the DUAL F is processed.

For Related-non-Dual T orders, the assignment process uses the *swpt reuse control* table (see Table 6-7) to control the switch port assignment process. At some point, Composition Analysis may attempt to reuse the switch port disconnected on the Related F order. If this switch port is pending-in a DIP, another parameter, "related-t-prsv-dip" (found in the wire center instance of the *wc parms* table 6-8wc), is checked. If "preserve dip" is required, reuse of the old switch port is not attempted and the assignment process attempts to assign another switch port to provide the service. If "preserve dip" is not required, or the old switch port is not pending-in a dip, the old switch port is passed to the validation process. If it passes validation, the old switch port is used. It it fails validation, the assignment process attempts to assign another switch port to provide the service.

6.20.1.9 DIP Creation for Related F Orders

When processing a Related F order for a simple service/circuit[114], Composition Analysis will retrieve the *csr* parameter from the *swpt reuse control* table (see Table 6-7) and the *related-t-prsv-dip* and the *related-f-remove-tps* parameters from the *wc parms* table (see Table 6-08.wc).

Composition Analysis will create a DIP with the switch port and the out cable pair when one of the following conditions exist:

— *csr=n*

— *csr=y* and the *related-t-prsv-dip=y*

— csr=e.

When processing a Related F order for a simple service/circuit, Composition Analysis will NOT create a DIP with the switch port and the out cable pair, even if the DIP creation rules allow, when one of the following conditions exist:

114.A simple service/circuit is one with design attributes *not* defined in the swpt cec excl table (Table 6-6), does not have more than one switch port or cable pair and does not have any miscellaneous equipment, transmission equipment or bridge lifters.

— *csr=y* and the *related-t-prsv-dip=n*

— *csr=r.*

When processing a Related F order for a simple service/circuit and a DIP is NOT created Composition Analysis will:

— when *csr=y* or *csr=r,* keep channels and CRVs in the circuit for potential reuse when processing the Related T order. The frame output will show these components as "reused"

— when *csr=n* or *csr=e*, remove channels and CRVs from the circuit. They will not be available for potential reuse when processing the Related T order. The frame output will show these components as "out'd"

— remove tie pairs from the circuit if the *related-f-remove-tps=y* parameter is in the wc parms table. The frame output will show these components as "out'd"

— keep tie pairs from the circuit if the *related-f-remove-tps=y* parameter is **not** in the wc parms table (i.e., either the *related-f-remove-tps* parameter is not present or it is set to "n"). The frame output will show these components as "reused". They will be considered for reuse when the Related T is processed.

6.20.1.10 Removing Dangling F Orders

The following processing should take place only when the client specific, *remove dangling f* feature is turned on.

When processing a PRE or COR pass for a Related F order for a complex[115], non-constrained circuit that has no "extra cable pairs" (i.e., cable pairs that are in the circuit but are not in the F order), Composition Analysis must remove all equipment in the circuit. Reuse will no longer be possible for such circuits.

When processing a completion for a Related F order the PCNSO Contract Processor will provide a notifier for Dangling F circuits[116] that contain equipment. The notifier will

115.A complex service is defined by having design attributes defined in the *swpt cec excl* table. A complex circuit contains more than one switch port or cable pair and/or any number of miscellaneous equipment, transmission equipment or bridge lifters. Any other service/circuit is considered simple

116. A Dangling F circuit is defined as having no cable pair (or no miscellaneous equipment that has a valid spec func and has a side code that is identified as *derived* in the *ssc sf side map* table) left in the circuit once the completion is processed and there is no earlier or later pending service order activity for the circuit. The foreign end of a Remote Call Forwarding service is not considered dangling, regardless of whether there is any equipment in the circuit. A cable pair would be present if the Related F was not removing an off-premise extension.

contain the order number and state that the circuit could not be disconnected due to the presence of equipment and that the user should use a CIO contract to disconnect the circuit.

When processing a completion for a Related F order the PCNSO Contract Processor will spawn an UPDCKT contract for Dangling F circuits that do not contain any equipment.

When processing a cancellation for a Related T order the CANSO Contract Processor will provide a notifier for Dangling F circuits that contain equipment. The notifier will contain the order number and state that the circuit could not be disconnected due to the presence of equipment and that the user should use a CIO contract to disconnect the circuit. Use of the CIO will provide the appropriate frame and remote administration output.

When processing a cancellation for a Related T Order the CANSO Contract Processor will spawn an UPDCKT contract for Dangling F circuits that do not contain any equipment.

6.20.1.11 Output Processing For F&T Unexpected Secondary Services

For related and DUAL F and T orders, only secondary services that appeared in the input will be included in the output.

6.20.2 Suspend/Sublet Service

In seasonal areas, customers rent to vacationers who may request their own telephone service. This service requires the utilization of the owner's cable pair. Multiple service requests for the same customer equipment are frequently received out of due date sequence. This service is also utilized by college students who suspend or sublet their living quarters between semesters.

Suspended service is a customer requested, temporary interruption of service. The connectivity of the circuit is retained in the database. Service is restored at the customer's request. Typically, Suspend and Restore are "C" (Change) type service orders.

Sublet service involves the reuse of outside plant facilities (and central office facilities, when appropriate) at a customer premise that contains a suspended TN. For equipment (switch port, carrier controller port, channel, call reference value) selection, users usually follow one of two practices: the sublet service may reuse the central office equipment or select new equipment, depending on company policy. Reusing the suspended service's equipment for the sublet service saves frame work, while selecting new equipment for the sublet service saves RCMAC intervention.

Assuming the suspended service's network units are valid for the sublet, the SWITCH system reuses the network units from the suspended service in the sublet service, and no frame work is necessary. If MAS can automatically process suspend, sublet and restore requests, then no RCMAC intervention is required. Generally, no manual intervention is required in OPS/INE for cross-connect work.

The SWITCH system sequences sublet requests by due date, regardless of the order in which the requests arrive in the SWITCH system. If a sublet request is received for a suspended service on which a sublet already exists, the new sublet RMAs until the current sublet disconnects. When the existing sublet disconnect is processed, the RMA-d sublet is reworked and successfully assigned. There is no limit to the number of sublet requests which may be received on a suspended service, however, only one sublet can be assigned at any time.

6.20.2.1 Suspend Processing

There are two *sublet options* available in the SWITCH system. They apply to a service which is suspended for both incoming and outgoing calls:

1. No Sublet allowed, or
2. Sublet allowed.

A *sublet option* parameter is defined in reference data *(sublet options* table) by assignment category. The *sublet options* table is delivered as a global reference data table, (see Table 6-48) however, wire center and IC instances may be created where necessary.

When a request is received to suspend a primary service both ways (incoming and outgoing), the assignment category of the service being *suspended* is located in the *sublet options* table. If the assignment category is not present in the table, or if the Sublet Option value is "N", then that suspended service may not be sublet. If the assignment category is located in the table and the sublet option value is "Y", then that suspended service may be sublet.

Circuits containing trunk pairs for LAC assigned foreign exchange service may be suspended and sublet. When the SWITCH system receives a request to suspend service for a circuit whose design edge contains the PFS information (indicating LAC assigned foreign exchange service), it will retain trunk pairs in the circuit for potential reuse for a future sublet service request.

Party service may be suspended, but it may not be sublet. If the assignment category of the service being suspended represents party service and the sublet option is "Y", the DLBB RMAs. Once the sublet option has been determined for a suspended service, it may not be changed.

No Sublet Allowed If the assignment category of the suspended service indicates that no sublet processing is allowed, the following takes place:

1. The service indicator is set to the value of the SUS tag on the input service order (SVC_IND=Y).
2. The sublet option indicator in the body of the suspended service(s) is set to N. (SUBL_OPT=N).

3. All component relationship edges between the suspended service and its network units (cable pairs, switch ports, carrier controller ports, channels, call reference values) are retained.

If the service which was suspended has secondary services, the secondary services are only suspended if explicitly requested on the service order.

Sublet Allowed If the assignment category of the suspended service indicates that sublet processing *is* allowed, the following takes place:

1. The service indicator is set to the value of the SUS tag on the input service order (SVC_IND=Y).
2. The sublet option indicator in the body of the suspended service(s) is set to Y. (SUBL_OPT=Y).
3. All component relationship edges between the suspended service and the switch ports (OEs and POEs), carrier controller ports (CCPTs), channels, call reference value (CRV) are removed. All other component relationship edges are maintained.
4. An assignment limitation (lim_type=rst, lim_val=sus) is placed on all the switch ports, CCPTs, channels, CRV left in the circuit to prevent selection.
5. Load and spread counts, and capacity arrays and carrier group utilization factors are adjusted as if the switch ports, CCPTs, channels, CRV have become spare. (Note: Collections are not updated).

Refer to Section 13 for a description of the special output processing employed to achieve flow-through of suspend/sublet orders in MAS.

6.20.2.2 Sublet Processing

Sublet orders are only accepted on services which have been suspended both incoming and outgoing, *and* have a sublet option of "Y", [117]otherwise the sublet request causes an RMA.

When a sublet service request is received, an RMA is generated if the suspended service has PFS design data (indicating LAC assigned foreign exchange service and trunk pairs in the circuit) and the sublet service request does not contain the PFS tag. When a sublet service request is received, an RMA is generated if the sublet service request contains the PFS tag and the suspended service does not have PFS design data associated with it (and therefore no trunk pairs). If the both the sublet service request and the suspended service have the PFS design data associated with them, the assignment engine attempts to reuse the trunk pairs in the suspended circuit as described in the next paragraph. If the trunk pairs cannot be reused, an RMA is generated.

117. Sublet requests are not allowed for party services. However, party services *can* be suspended with a sublet option of N.

During sublet processing, the assignment engine first validates all the network units including trunk pair left in the circuit for use by the sublet request. If these network units validate, then they are used for the sublet service. The SWITCH system then sends a response to SOAC indicating that the sublet service has been created with the equipment originally used in the suspended service.

If the network units in the circuit do not validate for the sublet, new network units are selected for the sublet service and the network units which are currently in the circuit become spare. The response to SOAC indicates that new equipment was selected for the sublet service.

The request to disconnect a sublet causes the sublet service in the SWITCH system to be disconnected. The network units which were in the circuit for the sublet are retained along with the suspended service without further validation by the SWITCH system.

6.20.2.3 Restore Processing

When a request to restore a suspended service is received, processing in the SWITCH system is dependent on the sublet option which was in effect at the time of the suspend request.

No Sublet Allowed Restore processing removes the service indicator (SVC_IND) and the sublet option (SUBL_OPT) from the body of the suspended service.

The network units in the circuit at the time of the restore request are validated for the service being restored. If the network units do not validate, new network units are selected. Upon receipt of the response from the SWITCH system, SOAC creates a request for MAS to change the service from its suspended state to a working state using the specified equipment.

Sublet Allowed If the sublet option was "Y" for this service during the processing of the suspend request, then the circuit in the IC may have been disconnected via the TRM response sent following the suspend. Therefore, the request to restore the suspended service must provide MAS with sufficient information to recreate the suspended service.

When restoring the suspended service, the SWITCH system attempts to validate the network units which are currently part of the circuit. These may not be the network units of the original suspended service (they may have been changed during sublet processing). If the network units in the circuit do not validate for the service being restored, new network units are selected. Once valid network units have been found, the component relationship is restored between the service and the network units and the assignment limitation is removed. The service indicator (SVC_IND) and the sublet option indicator (SUBL_OPT) in the service body (bodies) are removed.

6.20.2.4 Service Order Activity on Suspended/Sublet Services

Service order activities which are valid on suspended and sublet services include:

- Change of telephone number
- Change of design data
- Change of translation data
- Deny/Restore of suspended service (for non-payment)
- Disconnect of suspended service
- Network unit changes (some restrictions apply, see below)

Processing of these requests depends on whether a sublet is allowed or currently exists for the suspended service.

Suspended Only, No Sublet A suspended service with no working sublet is treated as a working service when service order activity is requested. That is, any change activity on the suspended service is validated using normal validation rules. If the equipment of the suspended service is not valid for a change request, new equipment is selected.

Suspended Service with Sublet Service

- Activity on Suspended Service

  Cable pair changes requested for the suspended service with a working sublet are applied to both the suspended and sublet services.

  In addition, only service type changes (telephone number, design data, translation data) are allowed for the suspended service when a sublet exists. These changes are validated for the suspended service (not the circuit).

  Any other network unit changes must be requested via the Sublet Service as described below.

  If the suspended service is being disconnected, the sublet service becomes the sole primary service working on the circuit.

- Activity on Sublet Service

  Since the sublet is a working service, any service order activity which is valid on a working circuit/service is allowable via the sublet service. All changes are validated for the sublet service using normal circuit rules. The network units are changed as needed. Additional equipment required to support the request is also added or removed as necessary.

  Cable pair changes requested for the sublet service are applied to both the suspended and sublet services.

6.20.2.5 Work Order Activity on Suspended/Sublet Services

The work order activity allowed on suspended and sublet services is summarized below:

- Suspended only, no sublet:

  Any changes allowed by work orders can be made to suspended services with no sublet, regardless of sublet option. The database model of the suspended service is retained following the work order.

- Suspended services with working sublet service:

  Any changes allowed by work orders can be made to the sublet service. The changes will apply to the suspended and sublet services. The database model of the suspended and sublet services is retained following the work order.

6.20.3 Party Service

The standard assignment processing is followed for Party service. Exceptions and special processing are highlighted in this section. As with all types of services, the appropriate Assignment Category is determined based upon selected CEC attributes. The two Assignment Categories used for Party service are RESP and BUSP. When a provisioning request is received for Party service, the following conditions cause an RMA:

- existence of a DUAL tag to signify DUAL F & T service
- existence of a PFS (Pseudo Foreign Serving Office) tag to signify LAC assigned foreign exchange service (possible selection of trunk pairs)
- existence or addition of a second leg
- existence of a SUBL tag to signify Sublet service
- existence of a CTX, SFG, HML or HTG tag
- existence of a secondary service request
- receipt of a Related T order before its associated Related F order (the Related T order will be reworked and processed properly once the Related F order is received)

When a fully integrated route is possible, only field bridged party service is supported. [118]When a non-integrated route is possible, both field bridged and central office bridged party service is supported.

118. Any central office bridged party service which is assigned an integrated route will be given single party treatment.

6.20.3.1 Build Requests

When a Party service is to be built (i.e., a new connect request), the type of bridging (CO or Field Bridged) must be determined in order to determine whether network units need to be selected. If the cable pair on the provisioning request is already working for another Party customer, the order is considered to be Field Bridged and existing circuit components are validated for assignment (if they fail, the request RMAs). If the cable pair is spare, the order is considered CO bridged and network units must be selected. Composition analysis uses the *asgn category rule set* table (Table 6-4) to determine which composition rules should be used. There is one composition rule, swptP, for use with Ericsson [119]RESP, BUSP and COIN Assignment Categories (see Table 6-5, Glossary of Composition Rules, for a description of swptP). The connectivity weight to use for all network units is obtained from the *linear connect weight* table (Table 6-40).

Network Unit Selection and Validation The *swpt rule set* (Table 6-12) [120]and the *swpt relaxation* table (Table 6-31) are used along with the individual scoring tables (Table 6-14 - *swpt penalty score am* table and Table 6-29 - *swpt penalty score pfil)* to create the FAST filter. The FAST filter contains the specific values of each criteria that pass the Relaxation threshold at a particular Relaxation level. When present, the Frame Location Override (frm_int_id and zone on compedg to PASM) is used as the FAST filter instead of the switch port frame location from the physical appearance edge.

There are two Party Fill evaluation rules; one is for non-Ericsson (i.e., non-PASM) Party and one is for Ericsson (i.e., PASM) Party (see Table 6-13, Glossary of Network Unit Evaluation Rules). Switch ports that are components of Party and Coin PASMs (nu_sel_scale = 0) are selectable with no special penalties.

For Party service builds, there are no additional FAST criteria (other than Party Fill). There is no scoring on party fill for CC ports.

Validations of the selected switch port must include:

- if the circuit already supports another Party service, the GRD (Grade) and CLS (Class of Service) of the service on the provisioning request must match the values of the existing service
- if the circuit already supports another Party service, the circuit cannot be Constrained (man_ind in the asmbod for the circuit is set to Y)
- switch port has Available Capacity
- switch port Assigned Use is < GRD

119.A PASM consisting of 2 switch ports and an ICE (for 2-party in an Ericsson AXE 4.0 IC) or 1 switch port and an ICE (for 2-party in an Ericsson AXE 4.2 IC, or 4-party and 8-party in an Ericsson AXE 4.0 IC) is inventoried for Ericsson Party.

120.The SWITCH system does not score on party fill for the DLC variety, since the selection of this switch port is an interim step toward selecting the desired network unit (i.e., channel or CRV).

- for Party PASMs, the ICE belongs to the same IC as the switch port and it is available to the circuit

In addition, if the switch port was pre-specified, its administrative constraint must be validated. If either the CP or the pre-specified switch port belongs to an IDLC PASM, the process should RMA if digital bridging would be required in the circuit. An IDLC CP can support Field-Bridged Party service, but digital bridging for Party service is not supported.

BL Assignment The initial selection and connectivity of BLs for multi-leg/multi-party circuits that require Regular or Mated BLs will be based upon the leg indicators (i.e. dpa or ckl) for each leg. The first BL that is selected will be connected to the CP for the main leg. The remaining legs are sorted in ascending sequence based upon the leg indicator. If Mated BLs are selected, the end BL of the Mated Pair that has the lowest external id will be connected to the main leg. The next BL, as connected in the Mated Pair, is connected to the leg with the next highest leg indicator. This is done until all BLs in the Mated Pair are used and then another Mated Pair is selected if needed.

When a leg or party is added to an existing circuit and BLs were previously in the circuit, the existing connectivity is maintained. The new legs are ordered in ascending sequence based upon the leg indicator (dpa or ckl) and connected to the last leg that had previously been in the circuit. The first choice, if possible, is to assign an available BL that is already on circuit. This would be possible if Mated BLs were assigned to the circuit and not all of the connections were in use.

However if no BLs are available in the circuit, the Assignment Engine selects another BL of the same type (Mini-BL, Mated BL or Regular BL) that is already in the circuit. If more than one type is already in circuit, the processing described in Section 6.11 should be followed.

When BLs were not previously in the circuit and the addition of the leg or party necessitates BLs, the processing described in Section 6.11 should be followed.

Party Position Assignment Once the switch port/ CC port is selected or a pre-specified switch port/CC port is validated, the Party position for the service must be assigned. If the user had pre-specified the Party position, the pre-specified one is used. Otherwise, the first unassigned position in the asgn_pty_pos array of the switch port/CC port is used.

Database Updates The asgn_use and avail_cap in the switch port/CC port nubod(s) must be updated. A "Y" is placed in the corresponding position in the asgn_pty_pos array in the switch port/CC port nubod(s). For PASMs in Ericsson AXE 4.0 IC, a "Y" is also placed in the same position in the asgn_pty_pos array in the other switch port. The pty_pos attributes in the service asmbod and its compedgs are updated with the ordinal value of the position from the asgn_pty_pos array of the switch port. That is, if the asgn_pty_pos array is YYY, then the pty_pos attribute in the service asmbod and the pty_pos attribute in its compedgs is 3.

The asgn_use of the channel nubod will be updated. The asgn_use of the channel may be grater than the asgn_cap (i.e., when the channel gets assigned to more than one primary service, as in the field bridged case). The avail_cap of the channel will always be n, when the asgn_cap is greater than or equal to 1, until the asgn_use is decremented to 0.

6.20.3.2 Change Requests

In addition to the selection criteria discussed previously for Party builds, change requests may specify Party position(s) or asgn_use value(s) (e.g., 1,2,3 or 4) to use as FAST filters. [121]If Party Position is used as a FAST filter, the process RMAs if no switch ports are retrieved. If Party Position is *not* used as a FAST filter, once the switch port is selected, the same Party position is attempted to be assigned but if already in use, another position is assigned and a message stating this fact sent to DCOR.

BL Changes If a main leg changes to a completely new CP, the existing BL connectivity is maintained. However, if the main leg is changed to a CP that had previously been a leg in the circuit, the connectivity is redone so that the CP for the main leg continues to be connected to the BL that is connected to the switch port. The BL that had been connected to the CP when it was a dpa is processed as if the leg was removed (see Section 6.20.3.3).

Regrades A Party Regrade occurs when a customer changes their Grade of Service. If the change is from Party to Non-Party or to a different Party service and the customer was the only Party on the circuit, the existing switch port can be validated for reuse.

If the change is from non-Party to Party, the existing switch port can also be validated for reuse. Party position would have to be assigned as for a Party build. Database updates would have to be performed as for a Party build (refer to Section 6.20.3.1).

If the BCC permits cross-loading of non-party service to party switch ports, it is possible that the existing switch port may be valid. It is never valid in the SWITCH System to put party service on a non-party switch port. If it is not valid, or if the customer had Party mates, a new switch port should be selected (see discussion of Reassociation). Database updates should be performed as for a Party remove (refer to Section 6.20.3.3).

Party position is only used as a FAST filter for Regrades if the user explicitly prespecified it on the ULBB work session. There is no value to trying to maintain the same position that the service had before in a Party-to-Party Regrade because the specific settings at the customer's premises are different for the different Grades of Service.

Since Regrades are only received from service orders, the changes only apply to the service identified on the request.

Reassociations Reassociation refers to a rearrangement of Party customers on existing Party circuits where all of the customers retain their original grade of service. That is, the circuit to which the Party customer belongs is changed to another Party circuit.

121.Party position can be specified for changes initiated from the ULBB provisioning or SET work sessions. Assigned Use can also be requested from the SET work session.

Explicit Reassociations (Reassociation flag = Y) cannot reuse the same switch port (or another switch port in the same PASM). The user has either pre-specified the new switch port to use or left the selection to the assignment process. If the flag = Y, the existing switch port (or the other switch port in the PASM) may not be reused and a new one must be selected (or the pre-specified one validated for use) along with other network units. If this is not possible, the process should RMA. This is referred to as an explicit Reassociation.

If the Reassociation flag is not present, there are no special restrictions on the status or location of the new network unit and a Reassociation is only done if the new network unit is already working in another circuit or if it is in a different building than the existing one. This is referred to as an implicit Reassociation. The assignment process RMAs if either the "from" or "to" circuit in an implicit Reassociation is Constrained. Implicit Reassociations (Reassociation flag not present) validate the existing switch port for reuse and only select a new one if

- the existing one is invalid (i.e., Regrade),
- the CP has been changed to one that is already working in another circuit or
- the new CP is in a different building than the existing one.

In any case, if the CP has changed and the service is now Field-Bridged, the switch port already in use with that CP is validated for use. The implicit Reassociation process RMAs if

- the Administrative Constraint of the switch port is not valid,
- if the switch port (or other switch port in a PASM) does not have available capacity,
- if the number of services on the circuit exceed the Grade of Service after the present service(s) is added
- if the Assignment Categories or Grades of Service of the services do not match or
- if the "to" circuit is Constrained.

If the Reassociation flag = N, the new switch port/cable pair must be spare and the switch port (if present) must be in the same building as the existing one. If this is not true, the process should RMA.

Reassociations may occur as a result of service order or work order activity. For Reassociations that are the result of service order activity, the Reassociation applies only to the service identified on the request. For Reassociations that are the result of work order activity, the Reassociation applies to all services that use the network unit(s) that caused the Reassociation. [122]

6.20.3.3 Remove Requests

When a Party service is removed from a circuit (either through a normal disconnect order or from a Regrade/Reassociation), in addition to the standard processing, various special Party database updates must be made. The asgn_pty_pos array must be updated to change the Y to a N for the Party position of the service. For PASMs in Ericsson AXE 4.0 ICs, the asgn_pty_pos array in the other switch port must also be updated.

If the removed Party was the only Party in the circuit, the circuit is removed. The PASM, if present, remains intact.

BL Removal When a leg or party is removed from an existing circuit and BLs were previously in the circuit, BL removal processing depends on the type of BL involved. When Mini-BLs were previously assigned, they should be removed from the Cable Pair when the Cable Pair is removed from the circuit.

When Regular or Mated BLs were previously assigned, the appropriate BL Removal parameter from the *bldg parms* table (see Table 6-8bd) must be retrieved. When the parameter is N, the BLs are left in the circuit. When the parameter is Y, Regular BLs are removed. Additional processing is required to determine the disposition of Mated BLs.

When all the legs or parties that were connected to the BLs in a Mated BL PASM are removed, the PASM itself is removed from the circuit. However, if some of the BLs in a PASM remain connected to legs or parties, the total number of remaining legs or parties must be subtracted from the number of BLs in the circuit. If the result is a multiple of the number of BLs in a PASM, the connectivity should be changed to consolidate the remaining legs or parties onto as few PASMs as possible. The excess Mated BLs are removed.

6.20.4 Integrated Services Digital Network (ISDN)

ISDN provides end-to-end digital connectivity and access to many services over the same local loop. This flexibility is obtained by separating the data being transmitted from the signaling (call set-up) data. Each ISDN interface, also known as a pipe, is divided into channels. The information is carried on 64 kilobits per second (Kbps) B (bearer) channels and the signaling on 16 or 64 Kbps D (delta) channels. The D channel can also carry low speed packet data. These pipes can be configured in two ways, Basic Rate Interface (BRI) and Primary Rate Interface (PRI). The SWITCH system supports BRI ISDN service.

122. Although the functional result implies this, the assignment process does *not* really differentiate between the sources of the request. The two sources produce different contract structures which the assignment process then interprets. Service order activity results in the use of a *MASG{SEQP aggregate and work order activity uses a *MASG{EQP. The SEQP is interpreted to mean that the identified changes apply only to the identified service. The EQP is interpreted to mean that the identified changes apply to all services that use the identified network units.

BRI consists of two B channels plus a16 Kbps D channel, which can be provided over a single cable pair (2-wire U interface) or two cable pairs (4-wire T interface). B channel services can be On-Demand in which the B channel is selected at call set-up time or Permanent Packet in which a dedicated B channel is assigned to the customer. There can be multiple Circuit Switched Voice (CSV) and Circuit Switched Data (CSD) services on a B channel.

Each BRI access line can be used to provide services to a given terminal or group of terminals. The number of terminals permitted is a function of the type of IC involved and whether a U or T interface is used. Each terminal can support up to 64 keys which can be associated with a directory number or be used to activate a feature (such as three-way calling).

5ESS ICs need Digital Subscriber lines (DSLs) in ISLUs or CRVs (on DS1s in IDCUs), and Packet Handler ports (POEs) to be assigned. To do this, the SWITCH System administers collection groups and collections to manage the Direct Peripheral Interface Data Bus (DPIDB) time slot capacity between the ISLU or IDCU, and the Packet Switching Unit shelf (which contains the set of POEs). Collection processing is discussed beginning in Section 6.7.3.3. Updating of collection information is discussed in Section 6.17.6.

The SWITCH System does not support POE assignment for DMS 100 and EWSD ICs and therefore does not perform collection processing for those ICs.

6.20.4.1 ISDN on DLE

ISDN service can be provided on DLE equipment using configurations with either a U (2-wire) or a T (4-wire) interface. There are two service transport formats supporting ISDN; the 4:1 Time Division Multiplexing (TDM) transport format using the TR-303 interface standard and the 3-DS0 transport format.

In the 4:1 TDM transport format, D channels from 4 ISDN pipes are multiplexed by the IC into one ds0 channel. Each B channel service has one ds0 channel that is determined by the IC. For On-demand B service, the channel is set up only for the duration of the call. For Permanent Packet B service, the channel is dedicated to the service. Therefore the IC sets up to 2 1/4 DS0 channels depending on the services. A CRV is used to communicate between the IC and the RT for call processing.

For the 4:1 TDM transport format, the SWITCH system:

- assigns a CRV between the RT and the IC
- automatically assigns POEs if the client specific feature, tr303 dle isdn, is enabled or if not enabled, allows manual POE pre-specification for those ICs for which the SWITCH system supports POE processing

The 3-DS0 transport format is used to provide ISDN service in two configurations, Universal Digital Loop Carrier (UDLC) and IDLC systems that are following the TR008 interface standard. With UDLC, up to 3 ds0 channels (the number is based on the type of service) [123]are assigned between the Origination Controller (RT or ONU) and the COT, a CC port is assigned at the COT and a DSL and POE, if necessary, is assigned at the IC. POEs are assigned at the IC, if required for that IC type. The 4-wire T interface requires a 2-wire switch port, a 2-wire CC port at the COT and a 4-wire CC port at the Origination Controller.

With IDLC, up to 3 ds0 channels (the number is based on the type of service) are needed between the Origination Controller (RT or ONU) and the IC and then the circuit needs to be hair-pinned [124]out of the IC to a COT that has compatible CC ports that can be connected to DSL switch ports with POEs, if necessary. Since no automatic hair-pinned channel assignment will be made, Totally Constrained (TC) manual assignment of all these components is required.

6.20.5 Deny/Restore Service

When a request to deny a primary or secondary service is being processed, the value of the deny_flag attribute for the service must be set to the value of the DNP (Denied Non-Payment) tag that comes across in the SOAC and the SWITCH system Interface or the ULBB. When a request to restore a primary or secondary service is being processed and the value of the deny_flag is DI, DO or DB, the deny_flag attribute for the primary or secondary service must be set to null.

When a service is denied, subsequent provisioning requests, except orders to disconnect service (C or D orders), must have a value for the RST (Restore) tag, otherwise the SWITCH system RMAs. Changes resulting from changes to associated primary services (i.e., services on the same circuit, e.g., sublet service, party service) proceed. Other unexpected changes, resulting from changing other circuits (i.e. LSTs) also are allowed to proceed.

When an out-of-sequence condition occurs, (restore order precedes the denial), the SWITCH system RMAs. When a deny (Change) order comes through with an earlier due date than the restore (Change) order, triggers are set so that the orders can be reworked.[125] If a deny order (Change) with the same due date as the restore (Change) order comes through, the deny order needs to be placed before the restore order in the pending chain.

123.Assembly or pre-specification is required for channels on SLC2000, SLC96, Raynet LOC2 and DISC*S systems.

124.Hair-pin refers to using the IC to get access to another carrier controller. Hair-pin will not be supported flow-through.

125.Record (R) orders cannot be reworked, since R orders are single pass (do not pend in the database).

6.20.6 Reservations

Network units, which are components of reservations, are claimed by the primary service ID (i.e., primary circuit ID) appearing on the claiming provisioning request. Note this is not the secondary service ID. The verification part of the component selection process determines whether the reserved network units are allowed for the circuit on the request. Reserved network units that do not satisfy the request cause the request to RMA. When all of the network units in the reservation can be used to partially satisfy the request, processing selects additional network units in order to satisfy the request.

Reservations are removed by the cancellation or completion of the claiming provisioning request. For information about creating, modifying or deleting reservations, see Section 5.

6.20.7 Single Subscriber Carrier

Single Subscriber Carrier (SSC) is a single hardware device that has two logical 'sides' which allow up to two separate services to be carried over a single cable pair. The service associated with one side of an SSC may have an assignment category and even an intelligent controller relationship that is completely different than the service on the other side of the SSC. Each side of the SSC is inventoried in the SWITCH system database as a piece of Miscellaneous Equipment (ME). Each ME contains a specific functionality attribute with valid values (e.g., AML, SLC1, DAML, DSSC or UDC), and a side attribute with corresponding valid values (e.g., P, D, A, B, 1 or 2).

When there is one customer working on an SSC, the SWITCH system database model has one circuit with one cable pair, one switch port, an ME and possibly other network units (e.g., intra-wire center facilities). When there are two working customers, the SWITCH system database model has two circuits with one cable pair, two switch ports, and two MEs. The cable pair should be inventoried in the SWITCH system database as part of a PSSV (Pseudo-Service) assembly where the other component is the ME. The PSSV allows the two network units to remain together when the service disconnects. By convention, the side of the ME that has the CP in its circuit is called the "physical" circuit, and the side of the ME that has no CP is the "derived" circuit.

SSC's are used when a service order cannot be assigned automatically in LFACS due to a lack of outside plant pairs. Engineering, on reviewing the condition, may elect to provide the incoming service on a particular type of SSC. When this occurs, the order must be transitioned by an LFACS assigner to a completely manual Track and Distribute Only mode (TDO) in LFACS. Since the order must be handled in the same mode across systems, SOAC and the SWITCH system also handle the order as TDO (see Section 7). Outward actions which remove SSC facilities must also be handled in TDO mode in both LFACS and the SWITCH system.

Change actions which neither place nor remove SSC facilities can be processed in a flowthrough mode by LFACS (if it is involved), and the SWITCH system. Change actions which are not LFACS involved will flowthrough in the SWITCH system using normal processing. Change actions which are LFACS involved, and are against circuits assigned to the physical side of SSCs will also flowthrough the SWITCH system using normal assignment processing. (LFACS returns the cable pair of the SSC and the SWITCH system SSC assignment for a physical side circuit contains the cable pair.) For LFACS involved change actions against circuits assigned to the derived side of SSCs, additional SWITCH system processing allows flowthrough assignment to occur. When the SWITCH system receives an assignment request against a circuit assigned to the derived side of an SSC (determined via the *ssc sf side map* table, Table 6-58), SWITCH system processing will ignore any cable pair assignments in the assignment request. (As the SWITCH system model for SSC derived side assignments does not include the SSC cable pair, this processing allows flowthrough processing to proceed.)

6.20.7.1 Output

If the provisioning request is either an N order or an unrelated T order, the SWITCH system output is composed of two lines. The first line looks like a basic new (inward) action and the second line looks like a change action reusing all the network units in the circuit and adding an ME.

Also, if the provisioning request is either a D order or an unrelated F order reclaiming the SSC, the output is composed of two lines. The first line is a basic disconnect (outward) action and the second line looks like a change action reusing all the network units in the circuit, removing an ME.

6.20.8 High Capacity Service (HICAP)

A High Capacity (HICAP) service is a digital data service operating at a bandwidth rate of 1.54 Megabits per second (Mb/s) or greater. Access and non-access service orders can be written to install, change or disconnect non-channelized and channelized HICAP services. The SWITCH System processes Assignment Requests (ARs) for non-switched HICAP services that terminate on a DLE device inventoried in LFACS and in the SWITCH system. TIRKS makes the channel assignments on a channelized HICAP pipe.

The Facility Equipment Planning System (FEPS) planning design for a HICAP service may terminate at a Digital Cross-Connect frame (DSX), at an Electronic Digital Signal Cross-Connect (EDSX) system or at a Digital Cross-Connect System (DCS) in the Local Serving Office (LSO) wire center. The SWITCH system inventories these devices. During service activation, assignment data and cross-connect instructions are returned to SOAC.

Both non-channelized and channelized HICAP orders are processed the same way, using the standard DLE Assignment Engine functionality. Non-channelized and channelized customer HICAP service are modeled as a standard 4-wire service. The CC ports and channel with the requested Digital Data Rate (DDR) are assigned for the existing assignment category "PL4W".

No bridging of multi-leg cuircuits and no target frame processing is required, since the TIRKS system completes the connectivity of these type of services.

6.20.9 Lottery Circuits

Lottery circuits are one example of a multi-leg circuit that do not have the same number of conductors (e.g., 2-wire, 4-wire) for every leg. These circuits are designed ("ADSR=Y") non-switched ("COTE=N") circuits.

An order for a designed non-switched multi-leg circuit adding a non-DLE leg with a different number of conductors than the existing circuit requires frame appearance and tie pairs for each cable pair (if target frame logic is on).

An order for a designed non-switched multi-leg circuit adding a DLE leg with a different number of conductors than the existing circuit requires selection of CC ports, in addition to frame appearance and tie pairs (if target frame logic on).

In a DLE environment, a criteria to select a non-DLC variety CC port is the card type, which is determined based on the assignment category. The assignment category is also used to invoke the rules to select/validate the number of CC ports. The number of conductors is used to determine assignment category, so a lottery circuit might not have the same assignment category per leg. The SWITCH architecture stores only one assignment category per service (not per leg). To avoid selection of a wrong number of CC ports and incompatible card types, the SWITCH system generates an RMA (DLE leg and different number of conductors) so that the service is provisioned in a constrained mode. To resolve the RMA, the users need to specify the correct number of CC ports and card types at the COT.[126]

126. Due to changes made for supporting two-wire special services, where a transition to a four-wire cc port may be needed, a problem has been introduced in the case where the first leg of a lottery circuit is provisioned as two-wire and the subsequent leg is four-wire. This problem is due to the administrative constraint attribute being a scorable attribute for the two-wire assignment category (i.e., pldata) and the lack of any administrative constraint on a four-wire cc port. No support currently exists in the SWITCH system for this scenario.

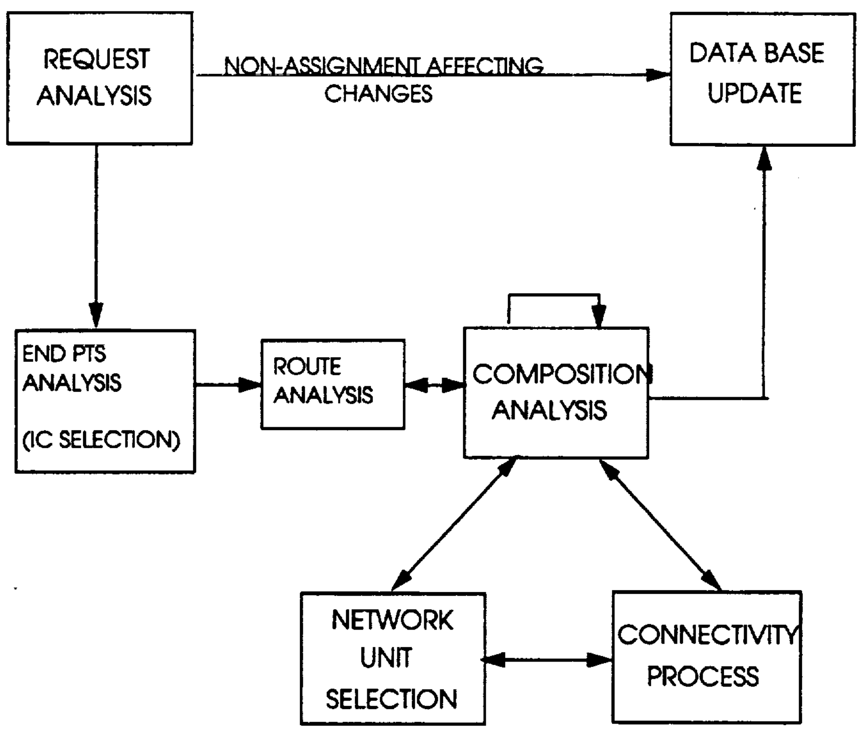

Figure 6-1. Assignment Process

NOTE — See Figure 2-2 for the higher level flow.

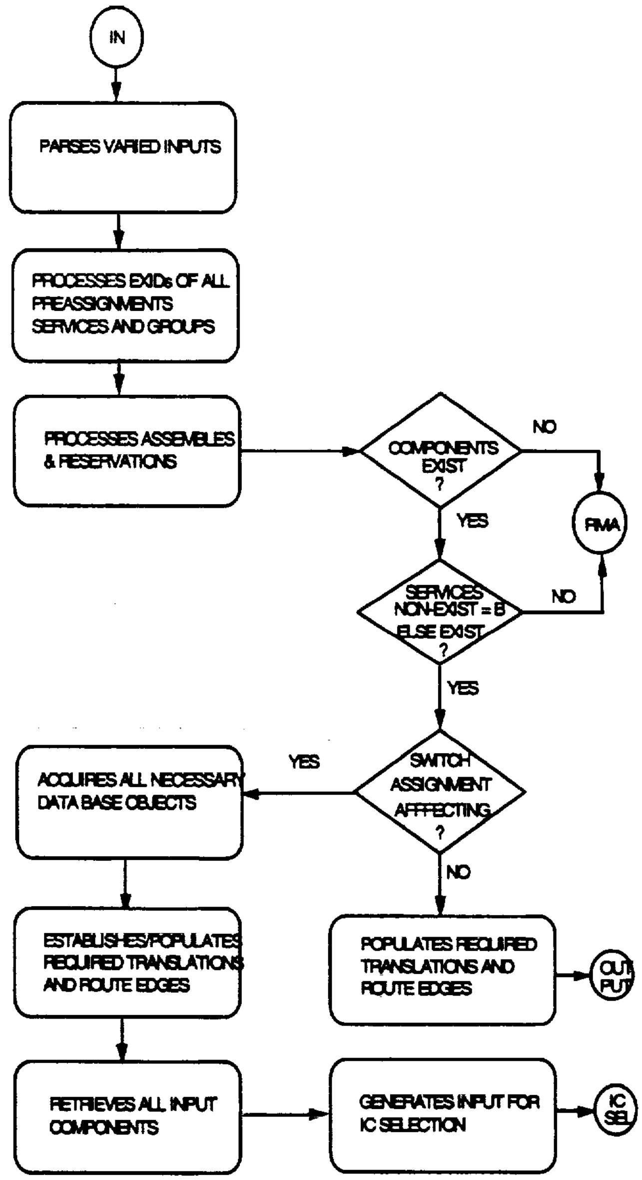

Figure 6-2. Request Analysis Process

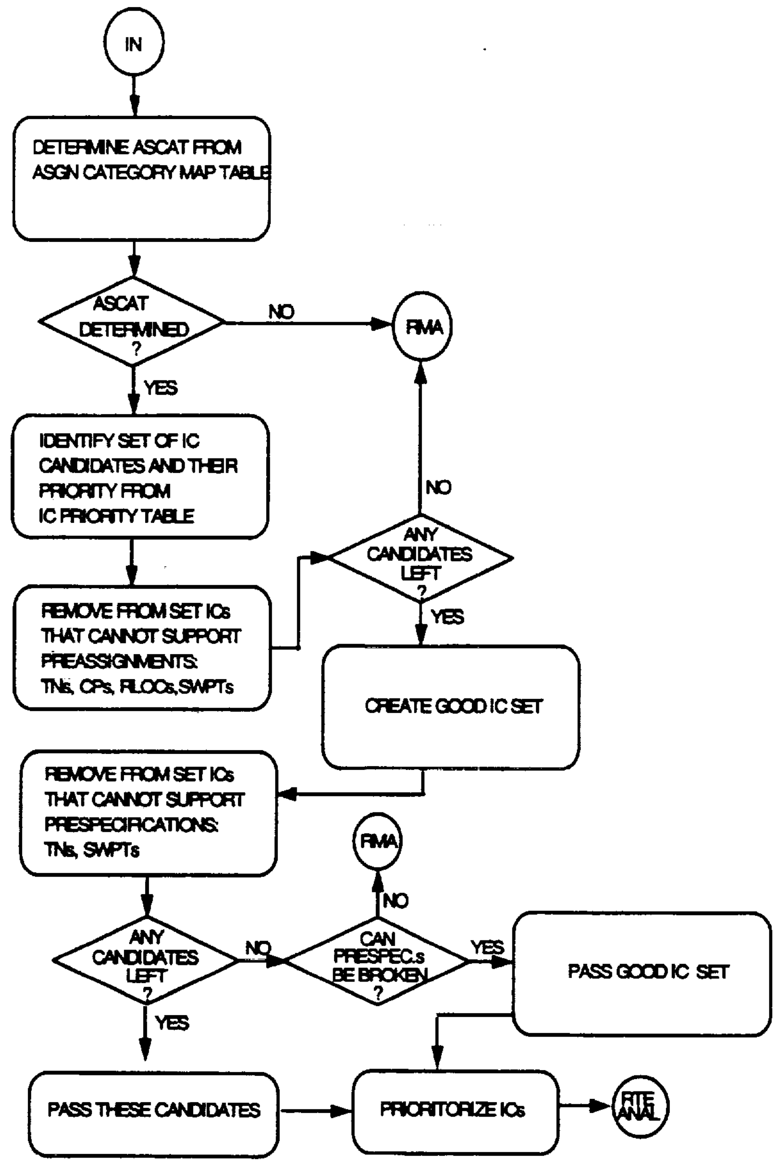

Figure 6-3. Intelligent Controller Selection Process

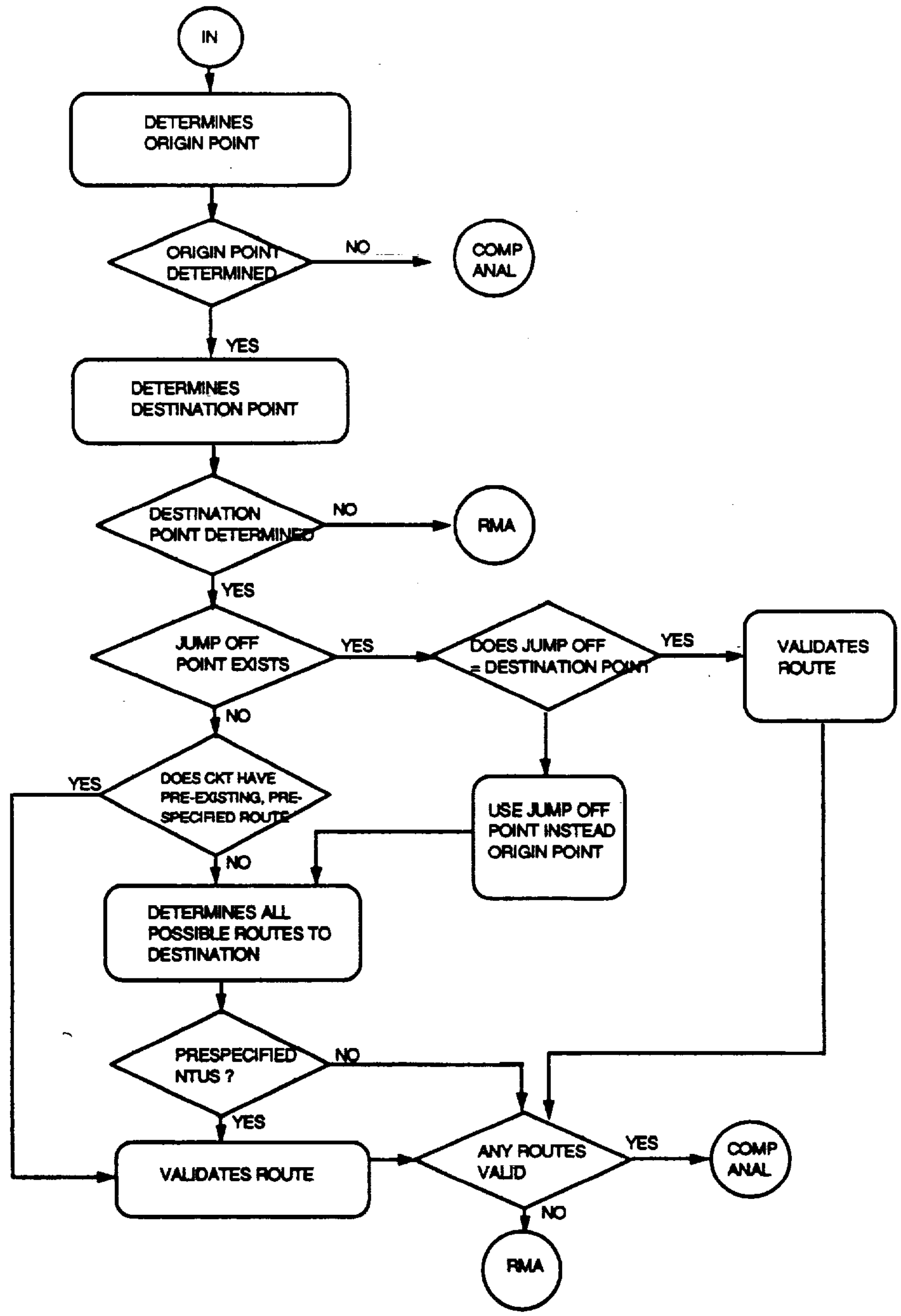

Figure 6-4. Route Analysis Process

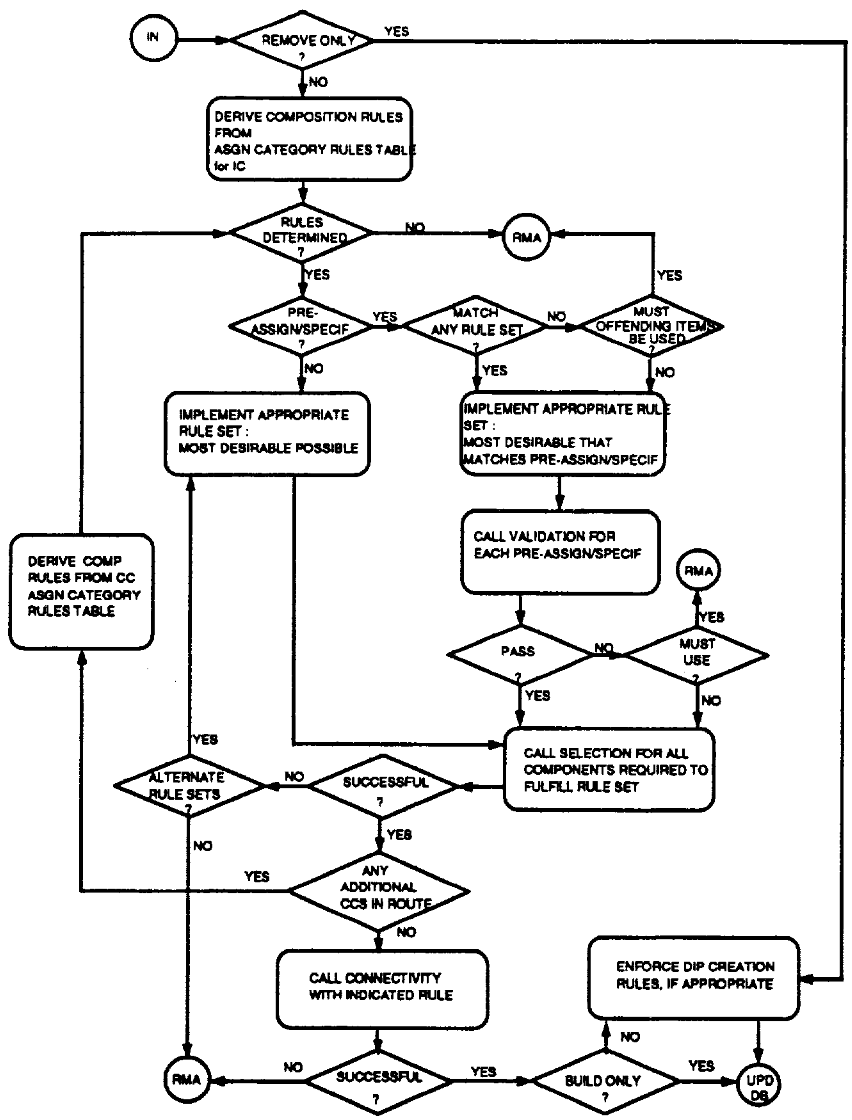

Figure 6-5. Composition Analysis Process

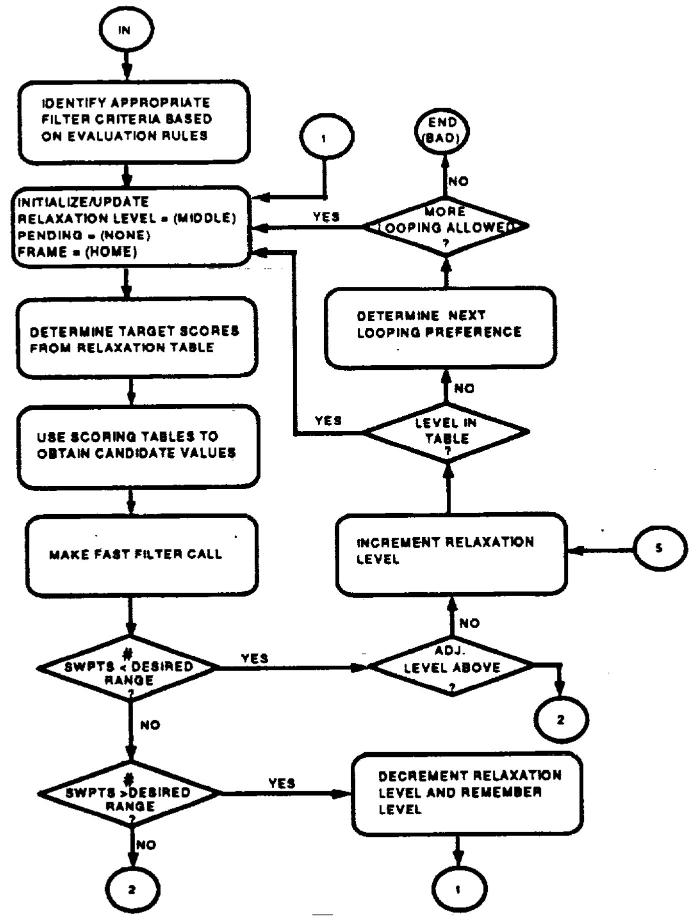

Figure 6-6. Switch Port Selection Process

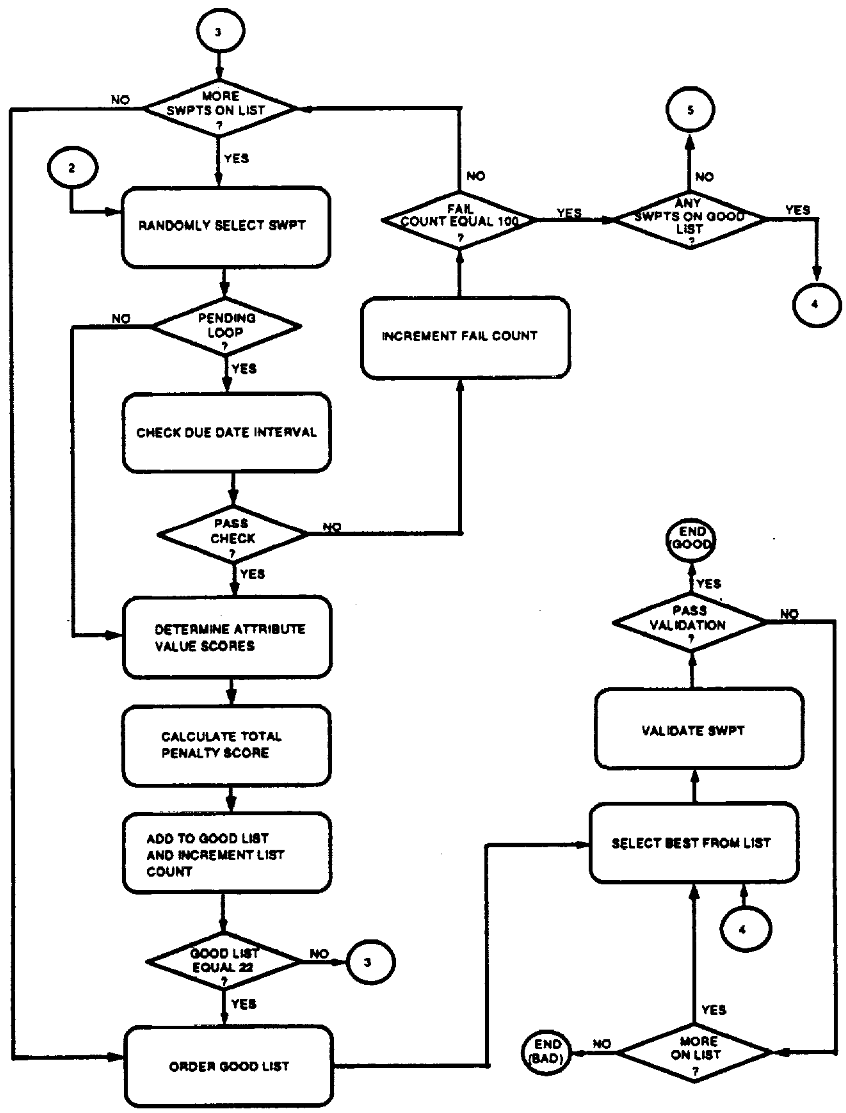

Figure 6-7. Switch Port Selection Process

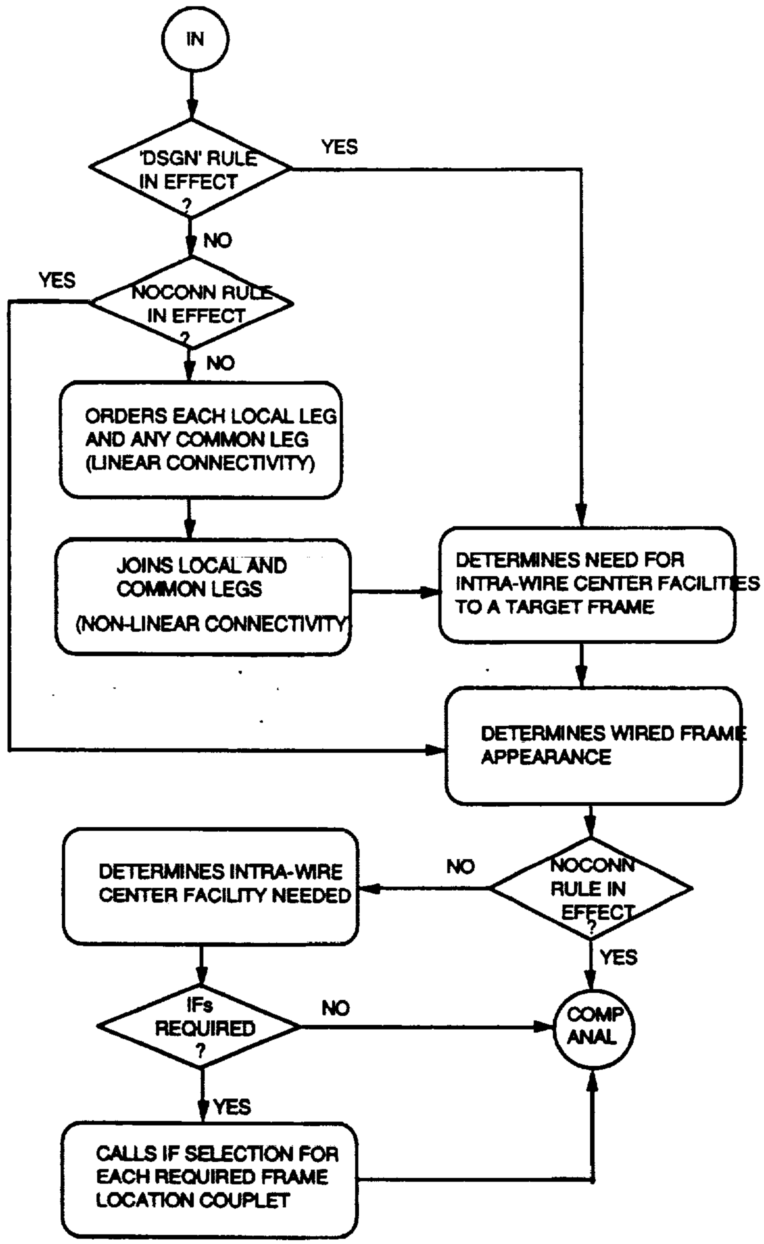

Figure 6-8. Connectivity Process

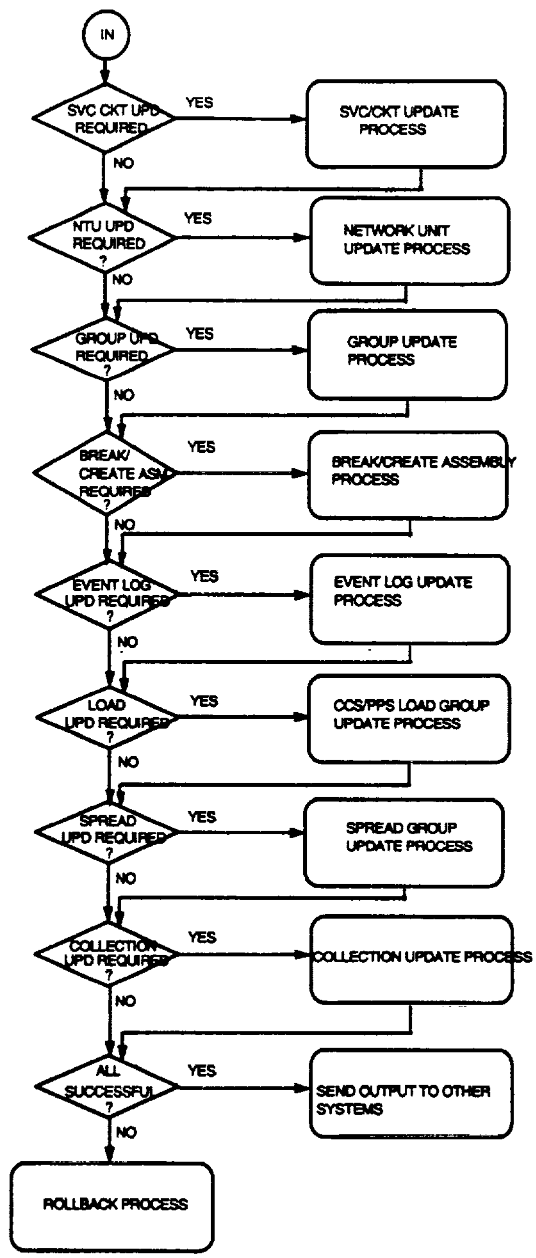

Figure 6-9. Database Update Process

Table 6-01. Selected CEC Attributes Mapped to Assignment Category
(Reference Data name = asgn category map)
(Instance Key = none)
(Scope = global)
(SCCS level = 13.1)

seq	asgcat	(central office equivalence code)				
		ncond	grade	class	category	co term
100	res1	2	1	r	v	s
110	bus	2	1	b	v,e,t	s
120	coin	2	1	c	v	s
130	data	2	1	b	d	s
140	busp	2	2,4,8	b	v	s
170	resp	2	2,4,8	r	v	s
200	madn	2	*	b	m	s
210	pbxt	2	*	b	a	s
220	busnt	0	*	b,r	v	s
240	isdnt	4	*	*	i	s
250	isdnu	2	*	*	i	s
255	plhic	2	*	*	b	s
260	plvoice	2	*	*	v	n,x
280	pl4w	4	*	*	*	n,f
300	plalarm	2	*	*	n	n
310	pldata	2	*	*	*	n
320	plvoice	2	*	*	*	f
330	trk	*	*	*	u	s
340	ppsndo	2,4	*	b	y	s
360	ppsndup	0	*	b	k	s
370	ppsndov	2	*	b,r	k	s
390	carrier	*	*	*	z	*
400	mptcar	*	*	*	f	*

Note: The assignment categories used here are meant to represent, from top to bottom: single party residence, business (including no-test and test), coin, switched data service, multi-party business, multi-party residence, MADN, PBX DID trunk, remote-call forwarding, ISDN T interface, ISDN U interface, ATM high capacity service, two-wire non-switched voice grade service, four-wire non-switched or non-locally switched voice (and data) service, two-wire non-switched alarm service, two-wire non-switched non-voice grade and analog data service, two-wire non-locally switched service, message trunks, PPSN (data only, dial-up and data over voice options), carrier and multi-point carrier.

Note: Each table entry with multiple values is implemented as separate lines in the reference data table.

Table 6-02. Intelligent Controller Prioritization
(Reference Data name = ic priority)
(Instance Key = date)
(Scope = defwc)
(SCCS level = 13.1)

Instance =					
asgcat	ic id	priority	asgcat	ic id	priority
bus	ic 1es.1	01	isdnu	ic dmc.0	02
bus	ic 5es.5	02	isdnu	ic dco.7	NS
bus	ic dmc.0	03	isdnu	ic ewsd.2	NS
busnt	ic dmc.0	01	madn	ic 5es.5	NS
busnt	ic 5es.5	02	madn	ic dmc.0	01
busnt	ic 1es.1	03	pbxt	ic 2es.4	01
busnt	ic 3es.3	NS	pbxt	ic 5es.5	MA
busp	ic dmc.0	01	pbxt	ic dmc.0	02
busp	ic 1es.1	02	pl4w	null	01
busp	ic 5es.5	03	plalarm	null	01
coin	ic 1es.1	01	pldata	null	01
coin	ic 5es.5	02	plvoice	null	01
coin	ic dmc.0	MA	res1	ic dmc.0	01
data	ic dmc.0	01	res1	ic 1es.1	02
data	ic 5es.5	02	res1	ic 5es.5	03
data	ic 1es.1	03	resp	ic dmc.0	01
isdnt	ic 5es.5	01	resp	ic 1es.1	02
isdnt	ic dmc.0	02	resp	ic 5es.5	03
isdnt	ic axe.6	NS	trk	ic 2es.4	01
isdnu	ic 5es.5	01	trk	ic 3es.3	02
ppsndup	ic 1es.1	MA	carrier	ic 5es.5	01
ppsndo	null	MA	mptcar	ic 5es.5	01
ppsndov	ic 1es.1	MA			

Note: NS = not supported, MA = manual assistance

†Note: The contents of this table are for illustrative purposes only. No global default is provided.

Table 6-03. Frame to IC Priority for IC Selection
(Reference Data name = ic frame map)
(Instance Key = date)
(Scope = modwc)
(SCCS level = 13.1)

Instance =		
frame id‡	ic id	priority
fr f01	ic 1es.1	01
fr f01	ic 5es.5	01
fr f01	ic dmc.0	01
fr f02	ic 1es.1	01
fr f02	ic 5es.5	01
fr f02	ic dmc.0	01
fr f03	ic 1es.1	01
fr f03	ic 5es.5	01
fr f03	ic dmc.0	01
fr f04	ic 1es.1	01
fr f04	ic 5es.5	01
fr f04	ic dmc.0	01
fr piscnjapf01	ic 5es.5	01
fr piscnjapf01	ic 1es.1	02
fr piscnjapf01	ic dmc.0	02
fr piscnjmaf01	ic dmc.0	01
fr piscnjmaf01	ic 5es.5	02
fr piscnjmaf01	ic 1es.1	02

†Note: Sample table shown. No global default is provided.
‡Note: Frame may be identified with either 3 character or 11 character frame name.

Table 6-04.1e. Assignment Category Rule Set - 1ESS
(Reference Data Name = asgn category rules)
(Instance Key = ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = 1es								
asgcat	rules							
	(dsgn)	(swpt)		(bls)		(tre)		(conn)
	(rule)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)
bus	dsgn1	swptb	swptrz=15		bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=18	defconn
busnt		swptd	swptovr=pseudo	nobl		notre		noconn
busp	dsgn1	swptb	swptrz=15		bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=18	defconn
coin	dsgn1	swpta		nobl		trea	trrz=16	defconn
data	dsgn1	swpta		nobl		trea	trrz=16	defconn
pbxt		noswpt	dle=ccpt	nobl		notre		defconn
ppsndov		swpta		nobl		treb		defconn
ppsndup		swpta		nobl		treb		defconn
resp	dsgn1	swptb	swptrz=15		bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=18	defconn
res1	dsgn1	swptb	swptrz=15		bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=18	defconn

Table 6-04.2e. Assignment Category Rule Set - 2ESS
(Reference Data Name = asgn category rules)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = 2es								
	rules							
asgcat	(dsgn)	(swpt)		(bls)		(tre)		(conn)
	(rule)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)
bus	dsgn1	swptb	swptrz=15		bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=18	defconn
busnt		swptd		nobl		notre		noconn
busp	dsgn1	swptb	swptrz=15		bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=18	defconn
coin	dsgn1	swpta		nobl		trea	trrz=15	defconn
data	dsgn1	swpta		nobl		trea	trrz=15	defconn
pbxt		swpta		nobl		notre		defconn
ppsndov		swpta		nobl		treb		defconn
ppsndup		swpta		nobl		treb		defconn
resp	dsgn1	swptb	swptrz=15		bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=18	defconn
res1	dsgn1	swptb	swptrz=15		bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=18	defconn
trk		swpta		nobl		notre		noconn

Table 6-04.3e. Assignment Category Rule Set - 3ESS
(Reference Data Name = asgn category rules)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = 3es								
	rules							
asgcat	(dsgn)	(swpt)		(bls)		(tre)		(conn)
	(rule)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)
bus	dsgn1	swpta			bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=16	defconn
busp	dsgn1	swpta			bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=16	defconn
coin	dsgn1	swpta		nobl		trea	trrz=16	defconn
data	dsgn1	swpta		nobl		trea	trrz=16	defconn
pbxt		swpta		nobl		notre		defconn
ppsndov		swpta		nobl		treb		defconn
ppsndup		swpta		nobl		treb		defconn
resp	dsgn1	swpta			bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=16	defconn
res1	dsgn1	swpta			bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=16	defconn
trk		swpta		nobl		notre		noconn

Table 6-04.5e. Assignment Category Rule Set - 5ESS
(Reference Data Name = asgn category rules)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = 5es										
asgcat	rules									
	(dsgn)	(swpt)		(bls)		(tre)		(conn)	(ltid)
	(rule)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)	(rule)
bus	dsgn1	swpta	db=2		bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=16	defconn	
busnt		swptd		nobl		notre		noconn	
busp	dsgn1	swpta			bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=16	defconn	
carrier	dsgn1	swptz		nobl		notre		defconn	
coin	dsgn1	swpta		nobl		trea	trrz=16	defconn	
data	dsgn1	swpta		nobl		trea	trrz=16	defconn	
isdnt		swptc	dyn_only=y	nobl		notre		defconn	
isdnu		swptc	dyn_only=y	nobl		notre		defconn	
mptcar	dsgn1	swptz		nobl		notre		defconn	
pbxt		noswpt	dle=ccpt; dstcu=4w;	nobl		notre		defconn	
ppsndov		swpta		nobl		treb		defconn	
ppsndup		swpta		nobl		treb		defconn	
resp	dsgn1	swpta			bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=18	defconn	
res1	dsgn1	swpta	db=2		bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=18	defconn	

Table 6-04.ax. Assignment Category Rule Set - AXE
(Reference Data Name = asgn category rules)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.2)

Instance = axe								
asgcat	rules							
	(dsgn)	(swpt)		(bls)		(tre)		(conn)
	(rule)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)
bus	dsgn1	swpta	db=4		bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=16	defconn
busnt		noswpt		nobl		notre		noconn
busp	dsgn1	swptp			bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=16	defconn
carrier	dsgn1	swptz		nobl		notre		defconn
coin	dsgn1	swptp		nobl		trea	trrz=16	defconn
data	dsgn1	swpta		nobl		trea	trrz=16	defconn
mptcar	dsgn1	swptz		nobl		notre		defconn
pbxt		noswpt	dle=ccpt; dstcu=4w	nobl		notre		defconn
ppsndov		swpta		nobl		treb		defconn
ppsndup		swpta		nobl		treb		defconn
resp	dsgn1	swptp			bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=18	defconn
res1	dsgn1	swpta	db=4		bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=18	defconn

Table 6-04.dc. Assignment Category Rule Set - DMS100
(Reference Data Name = asgn category rules)
(Instance Key = ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = dmc										
asgcat	rules									
	(dsgn)	(swpt)		(bls)		(tre)		(conn)	(ltid)
	(rule)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)	(rule)
bus	dsgn1	swpta			bls=minia,mateda,bla blrz=13;mblrz=16;mblmax=3;	trea	trrz=15	defconn	
busnt		noswpt		nobl		notre		noconn	
busp	dsgn1	swpta			bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=15	defconn	
carrier	dsgn1	swptz		nobl		notre		defconn	
coin	dsgn1	swpta		nobl		trea	trrz=15	defconn	
data	dsgn1	swpta		nobl		trea	trrz=15	defconn	
isdnt		swptf	dyn_only=y	nobl		notre		defconn	ltida
isdnu		swptf	dyn_only=y	nobl		notre		defconn	ltida
madn	dsgn1	swpta		nobl		trea	trrz=16	defconn	
mptcar	dsgn1	swptz		nobl		notre		defconn	
pbxt		noswpt	dle=ccpt; dstcu=4w;	nobl		notre		defconn	
ppsndov		swpta		nobl		treb		defconn	
ppsndup		swpta		nobl		treb		defconn	
resp	dsgn1	swpta			bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=16	defconn	
res1	dsgn1	swpta	db=4		bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=16	defconn	

Table 6-04.do. Assignment Category Rule Set - DCO
(Reference Data Name = asgn category rules)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dco								
asgcat	rules							
	(dsgn)	(swpt)		(bls)		(tre)		(conn)
	(rule)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)
bus	dsgn1	swpta		nobl		trea	trrz=15	defconn
busnt		noswpt		nobl		notre		noconn
busp	dsgn1	swpta		nobl		trea	trrz=15	defconn
coin	dsgn1	swpta		nobl		trea	trrz=15	defconn
data	dsgn1	swpta		nobl		trea	trrz=15	defconn
pbxt		noswpt	dle=ccpt	nobl		notre		defconn
ppsndov		swpta		nobl		treb		defconn
ppsndup		swpta		nobl		treb		defconn
resp	dsgn1	swpta		nobl		trea	trrz=16	defconn
res1	dsgn1	swpta		nobl		trea	trrz=16	defconn

Table 6-04.dx. Assignment Category Rule Set - DMS10
(Reference Data Name = asgn category rules)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.2)

Instance = dmx								
asgcat	rules							
	(dsgn)	(swpt)		(bls)		(tre)		(conn)
	(rule)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)
bus	dsgn1	swpta			bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=15	defconn
busnt		noswpt		nobl		notre		noconn
busp	dsgn1	swptb	swptrz=15		bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=18	defconn
coin	dsgn1	swpta		nobl		trea	trrz=15	defconn
data	dsgn1	swpta		nobl		trea	trrz=15	defconn
isdnu		swptf		nobl		notre		defconn
pbxt		noswpt	dle=ccpt	nobl		notre		defconn
ppsndov		swpta		nobl		treb		defconn
ppsndup		swpta		nobl		treb		defconn
resp	dsgn1	swptb	swptrz=15		bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=16	defconn
res1	dsgn1	swpta			bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=16	defconn
trk		swpta		nobl		notre		noconn
madn	dsgn1	swpta		nobl		trea	trrz=16	defconn

Table 6-04.ew. Assignment Category Rule Set - EWSD
(Reference Data Name = asgn category rules)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = ewsd								
asgcat	rules							
	(dsgn)	(swpt)		(bls)		(tre)		(conn)
	(rule)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)
bus	dsgn1	swpta	db=4		bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=16	defconn
busnt		noswpt		nobl		notre		noconn
busp	dsgn1	swpta			bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=16	defconn
carrier	dsgn1	swptz		nobl		notre		defconn
coin	dsgn1	swpta		nobl		trea	trrz=16	defconn
data	dsgn1	swpta		nobl		trea	trrz=16	defconn
isdnu		swptf	dyn_only=y	nobl		notre		defconn
mptcar	dsgn1	swptz		nobl		notre		defconn
pbxt		noswpt	dle=ccpt; dstcu=4w;	nobl		notre		defconn
ppsndov		swpta		nobl		treb		defconn
ppsndup		swpta		nobl		treb		defconn
resp	dsgn1	swpta			bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=18	defconn
res1	dsgn1	swpta	db=4		bls=minia,mateda,bla; blrz=13;mblrz=16;mblmax=3;	trea	trrz=18	defconn

Table 6-04.fl. Assignment Category Rule Set - FCL
(Reference Data Name = asgn category rules)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = fcl								
	rules							
asgcat	(dsgn)	(swpt)		(bls)		(tre)		(conn)
	(rule)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)
plhic	dsgn1	swpta		nobl		notre		noconn

Table 6-04.nl. Assignment Category Rule Set - Non-switched
(Reference Data Name = asgn category rules)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = null									
	rules								
asgcat	(dsgn)	(swpt)		(bls)		(tre)		(conn)	(tkp)
	(rule)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)	(ctl fact)	(rule)	(rule)
plvoice	dsgn1	noswpt	dle=ccpt		bls=matedd,bld;blrz=13;	notre		defconn	tkpa
plalarm	dsgn1	noswpt	dle=ccpt	nobl		notre		defconn	
pldata	dsgn1	noswpt	dle=ccpt	nobl		notre		defconn	
pl4w	dsgn1	noswpt	dle=ccpt	nobl		notre		4wconn	
ppsndo		noswpt		nobl		treb		defconn	

Table 6-05. Glossary of Composition Rules

Network Unit Type	Composition Rule Name	Description
	dsgn1	If ADSR = Y, selects any required switch ports, inhibits subsequent component selection and connectivity processes (the latter only if target frame selection not desired)
swpt	noswpt	Switch ports are not required. If control fact dle=ccpt and **there is a non-integrated Route**, retrieves rule for adjacent Controller — If control fact dstcu exists, pass value to rule of adjacent controller
	swpta	If the db=x control fact exists, digital bridging will be considered if at least one leg (DLE or non-DLE) is assigned on integrated facilities If **there is no Route**, selects a single switch port If **there is an integrated Route**, selects a DLC variety switch port for the purpose of selecting a CRV or channel (which is made the component of the circuit) — if the dyn_only control fact is present, only a CRV is selected — if the dyn_excl control fact is present, only a channel is selected — if neither of these control facts are present, the process tries to select a CRV first, but if none are available, it selects a channel. If **there is a non-integrated Route**, selects a regular switch port and a regular CC port (controlled by the adjacent Controller)

Network Unit Type	Composition Rule Name	Description
swpt	swptb	If **there is no Route**, selects a single switch port • If the resistance zone of any cable pair is >or= value in swptrz control fact and is not= value in trrz control fact, a CREG variety switch port is selected. • If a CREG variety switch port is supposed to be selected but a switchport **not equipped** with CREG is selected instead, the swptrz control fact will be used by composition rule treA in place of the trrz control fact. If **there is an integrated Route**, selects a DLC variety switch port for the purpose of selecting a CRV or channel (which is made the component of the circuit) — If the dyn_only control fact is present, only a CRV is selected — if the dyn_excl control fact is present, only a channel is selected — if neither of these control facts are present, the process tries to select one CRV first, but if none are available, it selects one channel If **there is a non-integrated Route**, selects a regular switch port and a regular CC port (that is controlled by the adjacent Controller)

Network Unit Type	Composition Rule Name	Description
swpt	swptc	If **there is no Route**, selects DSL variety switch port AND — selects a BPOE variety switch port for each BS1/BS2 that = X25 (so 0-2 BPOE switch ports) — selects 1 DPOE variety switch port — selects number of ODB variety switch ports that are specified by ODBU — determine the odband for each ODB POE If **there is an integrated Route**, selects ICARRIER variety switch port for the purpose of selecting a CRV (which is made the component of the circuit) • If Collections exist: — set "idcu=y" condition — select a BPOE variety switch port for each BS1/BS2 that = X25 — selects 1 DPOE variety switch port — selects number of ODB varitey switch ports that are specified by ODBU • If Collections do not exist: — validates BPOE variety switch port for each BS1/BS2 that = X25 (RMA if POEs not pre-specified; validate assignment limitation type of "RST" and value "IDC" on pre-specified POEs) — validates DPOE variety switch port, (RST=IDC required) — validates ODB variety switch port, number specified by ODBU (RST=IDC required)

Network Unit Type	Composition Rule Name	Description
swpt	swptc	**If there is a non-integrated Route,** — if NUM_COND=2, selects DSL variety switch port — if NUM_COND=4, selects UDSL variety switch port — selects BPOE variety switch port for each BS1/BS2 = X25) — selects DPOE variety switch port — selects number of ODB variety switch ports specified by ODBU — selects one CC port controlled by adjacent Controller

Network Unit Type	Composition Rule Name	Description
swpt	swptd	If **there is no Route**, selects a single switchport — if control fact swptovr=pseudo is present, selects a PSEUDO variety switch port — if there is no swptovr control fact or the selection attempt was unsuccessful, selects a DEF variety switch port (assignment limitation type = defective) — if selection attempt was unsuccessful, selects a regular switch port If **there is an integrated Route**, selects a DLC variety switch port for the purpose of selecting a CRV or channel (which is made the component of the circuit) — if the dyn_only control fact is present, selects only a CRV — if the dyn_excl control fact is present, selects only a channel — if neither of these control facts are present, the process tries to select a CRV first, but if none are available, it then selects a channel. If **there is a non-integrated Route**, selects a switch port (variety is as described above for no Route) and a regular CC port (that is controlled by the adjacent Controller)
	swptf	If **there is no Route**, selects a single switch port If **there is an integrated Route**, selects a DLC variety switch port for the purpose of selecting a CRV (which is made the component of the circuit) **If there is a non-integrated Route**, — if NUM_COND=2, selects switch port — if NUM_COND=4, selects UDSL variety switch port — selects one regular CC port controlled by adjacent Controller

Network Unit Type	Composition Rule Name	Description
swpt	swptp	If **there is no Route**, selects a single switchport first. ICE from the PASM connected to the switch port must be validated; if it fails, RMA. If **there is an integrated Route**, selects a DLC variety switch port for the purpose of selecting a CRV or channel (which is made the component of the circuit) — if the dyn_only control fact is present, selects only a CRV — if the dyn_excl control fact is present, selects only a channel — if neither of these control facts are present, the process tries to select a CRV first, but if none are available, it selects a channel. If **there is a non-integrated Route**, selects a regular switch port (ICE from the PASM connected to the switch port must be validated; if it fails, RMA) and a regular CC port (that is controlled by the adjacent Controller)
	swptz	validates for 1 regular switch port and 1 regular CC port (controlled by the adjacent Controller)

Network Unit Type	Composition Rule Name	Description
ccpt	ccpt3	If **there is a Path to adjacent Controller** selects a DLC variety CC port for the purpose of selecting 3 channels (which are made the components of the circuit) and blanks out the usage on the channels **Else**, selects one regular CC port
	ccpt4w	If **there is a Path to adjacent Controller**, selects a DLC variety CC port for the purpose of selecting a channel (which is made the component of the circuit) **Else**, selects 2 regular CC ports
	ccpt4x	If **there is a Path to adjacent Controller**, selects a DLC variety CC port for the purpose of selecting a channel (which is made the component of the circuit) **Else**, selects 2 regular CC ports when assignment rate is ds0 and selects 1 regular CC port when assignment rate is ds1
	ccpta	If **there is a Path to adjacent Controller**, selects a DLC variety CC port for the purpose of selecting a channel (which is made the component of the circuit) **Else**, selects one regular CC port
	ccptb	If **there is a Path to adjacent Controller**, selects a DLC variety CC port for the purpose of validating 3 channels pre-assembled to CC port or pre-specified (RMA if not present) and blanks out the usage on the channels **Else**, validates CC port (RMAs if CCPT is not pre-assembled to channels or pre-specified)
	ccptco	If **there is a Path to adjacent Controller**, selects a DLC variety CC port for the purpose of selecting a channel (which is made the component of the circuit) **Else**, if dstcu=4w and CC is the adjacent controller (not the origin CC), obtains 2 regular CC ports **Else**, obtains 1 regular CC port

Network Unit Type	Composition Rule Name	Description
ccpt	ccpte	Retrieves rule for adjacent Controller and selects regular CC port(s) (controlled by adjacent Controller) that has Destination CC (in ccterm attribute of CC port)
	ccptt	**If there is a Path to adjacent Controller**, selects a DLC variety CC port for the purpose of validating 3 channels pre-assembled to CC port or pre-specified (RMA if not present) and blanks out the usage on the channels **Else**, validates 2 CC ports (RMAs if CCPTs are not pre-assembled to channels or pre-specified)
	ccptu	**If there is a Path to adjacent Controller**, selects DLC variety CC port for the purpose of selecting channels (which are made components of the circuit) — Selects one channel for D service — if BS1 not = (NONE or BLANK), selects one channel for B1 service — if BS2 not = (NONE or BLANK) selects one channel for B2 service **Else**, selects one regular CC port.

Network Unit Type	Composition Rule Name	Description
ccpt	ccec4w	Requires manual assignment of multiple CC Ports and channels for 56 and 64 Kbps DDS with Error Correction (i.e., ddr CEC = H or A); follows ccpt4w rule for other requests.
	ccec4x	Requires manual assignment of multiple CC Ports and channels for 56 and 64 Kbps DDS with Error Correction (i.e., ddr CEC = H or A); follows ccpt4x rule for other requests.
	ccpty	If **there is an adjacent Controller**, validates for either 1 CC port (controlled by the CC) OR 1 channel (that belongs to a Carrier Group on the Path between the CC and the adjacent Controller) **Else**, validates a single CC port controlled by the CC
	ccptz	If **there is an adjacent Controller**, validates for 2 CC ports (1 controlled by the CC and 1 controlled by the adjacent Controller) OR 1 channel (that belongs to a Carrier Group on the Path between the CC and the adjacent Controller) **Else**, nothing is required.

Network Unit Type	Composition Rule Name	Description
bls	nobl	Bridge lifters are not required
	bla	When there are at least two "non" (where "non" refers to non-carrier) cable pairs, if at least one has a resistance zone >= the blrz control fact, assign regular bridge lifters to all "non" or "udlc" (where "udlc" refers to analog DS0 terminations in the non-DLE model) cable pairs in the circuit
	blb	When there are at least two "non" cable pairs, if at least one has a resistance zone >= the blrz control fact, assign regular bridge lifters to all "non" cable pairs in the circuit
	blc	When there are at least three "non" cable pairs, if at least one has a resistance zone >= the blrz control fact, assign regular bridge lifters to all "non" or "udlc" cable pairs in the circuit
	bld	When there are at least three "non" cable pairs, if at least one has a resistance zone >= the blrz control fact, assign regular bridge lifters to all "non" cable pairs in the circuit
	ble	When there are at least two cable pairs of which one is a "non" cable pair with a resistance zone >= the blrz control fact, assign regular bridge lifters to all "non" or "udlc" cable pairs in the circuit
	minia	When there are at least two "non" cable pairs, if at least one has a resistance zone >= the blrz control fact but <= the mblrz control fact (where mblrz refers to the maximum resistance zone above which bridge lifters can no longer be assigned), assign mini bridge lifters to all "non" or "udlc" cable pairs in the circuit as long as the number of cable pairs is <= the mblmax control fact (where mblmax refers to the maximum number of mini bridge lifters allowed in a circuit)

Network Unit Type	Composition Rule Name	Description
bls	minib	When there are at least two "non" cable pairs, if at least one has a resistance zone >= the blrz control fact but <= the mblrz control fact, assign mini bridge lifters to all "non" cable pairs in the circuit as long as the number of cable pairs is <= the mblmax control fact
	minie	When there are at least two cable pairs of which one is a "non" cable pair with a resistance zone >= the blrz control fact but <= the mblrz control fact, assign mini bridge lifters to all "non" or "udlc" cable pairs in the circuit as long as the number of cable pairs is <= the mblmax control fact
	mateda	When there are at least two "non" cable pairs, if at least one has a resistance zone >= the blrz control fact, assign mated bridge lifters to all "non" or "udlc" cable pairs in the circuit
	matedb	When there are at least two "non" cable pairs, if at least one has a resistance zone >= the blrz control fact, assign mated bridge lifters to all "non" cable pairs in the circuit
	matedc	When there are at least three "non" cable pairs, if at least one has a resistance zone >= the blrz control fact, assign mated bridge lifters to all "non" or "udlc" cable pairs in the circuit
	matedd	When there are at least three "non" cable pairs, if at least one has a resistance zone >= the blrz control fact, assign mated bridge lifters to all "non" cable pairs in the circuit
	matede	When there are at least two cable pairs of which one is a "non" cable pair with a resistance zone >= the blrz control fact, assign mated bridge lifters to all "non" or "udlc" cable pairs in the circuit

Network Unit Type	Composition Rule Name	Description
tre	notre	Transmission equipment is not required.
	trea	Have two-wire transmission equipment selected for each TID whose resistance zone meets or exceeds the value indicated by the trerz control fact.
	treb	Transmission equipment is required.
ice	noice	ICE are not required.
	icea	If **there is no Route**, a single ICE is required, brought in as part of a PASM once the switchport has been selected. If **there is an integrated Route**, no ICE is required. If **there is a non-integrated Route**, a single ICE is required, brought in as part of a PASM once the switch port has been selected.
ltid	ltida	Selects LTIDs for secondary services. Associates all secondary services of the ISDN pipe sharing a common LOGT value to the assigned LTID for that value.
tkp	tkpa	When the end location design attribute is present and its value is not equal to the current wire center, selects one trunk pair for the lowest TID associated with incoming cable pairs or trunk pairs.

Table 6-06.dc. Switch Port CEC Exclusion Attribute - DMS100
(Reference Data Name = swpt cec excl)
(Instance Key = ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = dmc		
task	cec name	cec value
ace	adsr	y
ace	ctg_svc	m
ace	ctg_svc	i
cpt	adsr	y
cpt	ctg_svc	m
cpt	ctg_svc	i
lst	adsr	y
lst	ctg_svc	m
lst	ctg_svc	i
mct	adsr	y
mct	ctg_svc	m
mct	ctg_svc	i
so	adsr	y
so	ctg_svc	m
so	ctg_svc	i
sol	adsr	y
sol	ctg_svc	m
sol	ctg_svc	i
sot	adsr	y
sot	ctg_svc	m
sot	ctg_svc	i

Table 6-06.df. Switch Port CEC Exclusion Attribute - DFLT
(Reference Data Name = swpt cec excl)
(Instance Key = ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default IC)		
task	cec name	cec value
ace	adsr	y
ace	ctg_svc	i
cpt	adsr	y
cpt	ctg_svc	i
lst	adsr	y
lst	ctg_svc	i
mct	adsr	y
mct	ctg_svc	i
so	adsr	y
so	ctg_svc	i
sol	adsr	y
sol	ctg_svc	i
sot	adsr	y
sot	ctg_svc	i

Table 6-07. Switch Port Reuse Control
(Reference Data Name = swpt reuse control)
(Instance Key = ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default IC)		
task	parameter	value
ace	cia	y
ace	csr	r
ace	cvo	y
cpt	cia	y
cpt	csr	y
cpt	cvo	n
lst	cia	y
lst	csr	y
lst	cvo	n
mct	cia	y
mct	csr	n
mct	cvo	n
so	cia	y
so	csr	n
so	cvo	n
sol	cia	y
sol	csr	n
sol	cvo	n
sot	cia	y
sot	csr	n
sot	cvo	n

Note: The default value for the CIA parameter, if not entered, is CIA=Y. The CIA parameter does not apply when the CSR parameter has a value of "E" (exclude reuse). If entered, it will be used only if CSR=Y, CSR=R, or if CSR=N and reuse of the existing switch port, although not preferred, needs to be attempted.

Table 6-08.bd. Building Parameters
(Reference Data name = bldg parms)
(Instance key = group_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = (sample building)	
parm name	parm value
bl-rem-nonpty	y
bl-rem-pty	n
matedbl-rem-nonpty	y
matedbl-rem-pty	n

Table 6-08.fr. Wire Center Parameters - Frame Level
(Reference Data name = wc parms)
(Instance Key = group_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = (default frame)	
parm name	parm value
add-alpha	
dip-create	y
dip-max-jmpr-lngth	9
jmpr-mgmt-zone-limit	9
jmpr-zone-per-iter	1
tp-intra-zone-max	3
tp-max-jmpr-lngth	9
tp-no-intra-frm-rma	y
tp-reuse-distance	3

Table 6-08.ic. Wire Center Parameters - IC Level
(Reference Data name = wc parms)
(Instance Key = group_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = (default IC)	
parm name	parm value
base-number	
ctx-zero-sup	n
dip-create-ct	y
dip-create-cf	y
dip-create-diff-frm	n
dip-create-not-ctcf	y
dip-lower-lflim	1
dip-reuse-lflim	9
dip-swpt-sig	
dip-upper-lflim	9
dual-t-reu-only	y
ep-chan	
ep-ckt-ana	
ep-ckt-int	
ep-isdn	
ep-pkt	
inv-sfg	n
odb-ccs-per-ts	32
office-name	
tn-sel-all-in-rtz	n
tn-sel-nxxs-in-rtz	n
3dig-dmc-frm	n

Table 6-08.wc. Wire Center Parameters - WC Level
(Reference Data name = wc parms)
(Instance Key=group_id)
(Scope = defwc)
(SCCS level = 13.1)

Instance = (default wire center)	
parm name	parm value
ace-new-prsv-dip	y
default-npa	
design-remark	
dual-f-remove-cps	y
dual-t-nockt-rma	n
if-to-target	n
int-tdo-compl-trans	n
nonadsr-default-dest	
rcu-derive-from-lcc	n
related-f-remove-tps	n
related-t-prsv-dip	n
relt-out-of-seq-rma	n
sfg-in-use-rma	n
so-wo-assign	y
target-frame	
target-zone	
telco-code	
tn-pending-in-rma	y
tn-remote-opt	n
tn-reuse	5
wo-adsr-default-dest	
wo-default-nxfac	dc
dtr-overlay-ovr	n
int-route-wo-adsr	y
wo-adsr-dflt-ccdest	
portable-tn-nxx-val	n

Table 6-09. DIP Determination
(Reference Data name = dip definition)
(Instance Key = ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = (default IC)				
nu type	adm const	spec func	use code	tie override
swpt	lr		1	n
swpt	lb		1	n
swpt	pb		1	n
swpt	hb		1	n
me			0	n
tre				y
if			0	n
bl			0	n
cp			1	n

Where:

A use code indicates the maximum number of that type network unit
A blank is the same as unlimited network units of that type
Not having a network unit type in the table is the same as having an entry with zero (0) as the number
The tie override column allows circuits that have tie pairs (IFs) hooked to the indicated type of network units to be DIPed, while excluding circuits that have IFs between other types of network units from being DIPed.

Table 6-10. Determine Telephone Number Type
(Reference Data Name = tn type)
(Instance Key = ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance =	(default IC)
asgn cat	sel type
bus	x
busnt	x
busp	x
coin	c
data	x
isdnt	x
isdnu	x
madn	x
plhic	x
res1	x
resp	x

Table 6-11. NXX Identification
(Reference Data name = ic nxx)
(Instance Key = date)
(Scope = modwc)
(SCCS level = 13.1)

Instance =					
ic id	npa	nxx	rate zone	(nxx subset)	
				low id	high id
les.1	908	899	1		
les.1	908	958	1		
les.1	908	768	1		
les.1	908	788	1		
les.2	908	853	1		
les.2	908	854	1		
les.2	908	633	2	0000	4999
5es.0	908	633	2	5000	9999
5es.0	908	768	1		

†Note: Sample table shown. No global default is provided.

Table 6-12.1e. Switch Port Evaluation Rule Set - Automatic Assignment - 1ESS
(Reference Data Name = swpt rule set)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = 1es

asgn cat	variety	rule														
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pry fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1	ld1	jump1	sig1	es1	asm1	age1			if1					
bus	creg	am1	ld1	jump1	sig1	es1	asm1	age1			if1					
busnt		am1	ld1		sig1	es1										
busnt	def	am1	ld1													
busnt	pseudo	am1														
busp		am1	ld1	jump1	sig1	es1	asm1	age1		pfill	if1					
busp	creg	am1	ld1	jump1	sig1	es1	asm1	age1		pfill	if1					
coin		am1	ld1	jump1	sig1	es1	asm1	age1			if1					
data		am1	ld1	jump1	sig1	es1	asm1	age1			if1					
ppsndov		am1	ld1	jump1	sig1	es1	asm1	age1								
ppsndup		am1	ld1	jump1	sig1	es1	asm1	age1								
resp		am1	ld1	jump1	sig1	es1	asm1	age1		pfill	if1					
resp	creg	am1	ld1	jump1	sig1	es1	asm1	age1		pfill	if1					
res1		am1	ld1	jump1	sig1	es1	asm1	age1			if1					
res1	creg	am1	ld1	jump1	sig1	es1	asm1	age1			if1					

Table 6-12.2e. Switch Port Evaluation Rule Set - Automatic Assignment - 2ESS
(Reference Data Name = swpt rule set)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = 2es																
asgn cat	variety	rule														
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1	ld1	jump1	sig1	es1	asm1	age1			if1					
bus	creg	am1	ld1	jump1	sig1	es1	asm1	age1			if1					
busnt		am1	ld1		sig1	es1										
busnt	def	am1	ld1													
busp		am1	ld1	jump1	sig1	es1	asm1	age1		pfill1	if1					
busp	creg	am1	ld1	jump1	sig1	es1	asm1	age1		pfill1	if1					
coin		am1	ld1	jump1	sig1	es1	asm1	age1			if1					
data		am1	ld1	jump1	sig1	es1	asm1	age1			if1					
pbxt		am1	ld1	jump1	sig1											
ppsndov		am1	ld1	jump1	sig1	es1	asm1	age1								
ppsndup		am1	ld1	jump1	sig1	es1	asm1	age1								
resp		am1	ld1	jump1	sig1	es1	asm1	age1		pfill1	if1					
resp	creg	am1	ld1	jump1	sig1	es1	asm1	age1		pfill1	if1					
res1		am1	ld1	jump1	sig1	es1	asm1	age1			if1					
res1	creg	am1	ld1	jump1	sig1	es1	asm1	age1			if1					
trk		am1	ld1		sig1											

Table 6-12.3e. Switch Port Evaluation Rule Set - Automatic Assignment - 3ESS
(Reference Data name = swpt rule set)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = 3es																	
asgn cat	variety	rule															
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1	ld1	jump1	sig1	es1	asm1	age1								
busp		am1	ld1	jump1	sig1	es1	asm1	age1		pfill1						
coin		am1	ld1	jump1	sig1	es1	asm1	age1								
data		am1	ld1	jump1	sig1	es1	asm1	age1								
pbxt		am1	ld1	jump1	sig1											
ppsndov		am1	ld1	jump1	sig1	es1	asm1	age1								
ppsndup		am1	ld1	jump1	sig1	es1	asm1	age1								
resp		am1	ld1	jump1	sig1	es1	asm1	age1		pfill1						
res1		am1	ld1	jump1	sig1	es1	asm1	age1								
trk		am1	ld1		sig1											

Table 6-12.5e. Switch Port Evaluation Rule Set - Automatic Assignment - 5ESS
(Reference Data Name = swpt rule set)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = 5es

asgn cat	variety	rule														
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1	ld1	jump1	sig1	es1	asm1	age1								
bus	dlc		ld1											util1	ccost	path1
busnt		am1	ld1		sig1	es1	asm1	age1								
busnt	def	am1	ld1													
busnt	dlc		ld1											util1	ccost	path1
busp		am1	ld1	jump1	sig1	es1	asm1	age1		pfil1						
busp	dlc		ld1											util1	ccost	path1
carrier													ct1			
coin		am1	ld1	jump1	sig1	es1	asm1	age1								
coin	dlc		ld1											util1	ccost	path1
data		am1	ld1	jump1	sig1	es1	asm1	age1								
data	dlc		ld1											util1	ccost	path1
isdnt	bpoe	am2	ld1													
isdnt	dpoe	am2	ld1													
isdnt	dsl	am2	ld1	jump1					en1							
isdnt	icarrier		ld1											util1	ccost	path1
isdnt	odb	am2	ld1									bnd1				
isdnt	udsl	am2	ld1	jump1					en1							
isdnu	bpoe	am2	ld1													
isdnu	dpoe	am2	ld1													
isdnu	dsl	am2	ld1	jump1					en1							
isdnu	icarrier		ld1											util1	ccost	path1
isdnu	odb	am2	ld1									bnd1				
mpscar													ct1			
ppsndov		am1	ld1	jump1	sig1	es1	asm1	age1								
ppsndup		am1	ld1	jump1	sig1	es1	asm1	age1								
resp		am1	ld1	jump1	sig1	es1	asm1	age1		pfil1						
resp	dlc		ld1											util1	ccost	path1
res1		am1	ld1	jump1	sig1	es1	asm1	age1								
res1	dlc		ld1											util1	ccost	path1

Table 6-12.ax. Switch Port Evaluation Rule Set - Automatic Assignment - AXE
(Reference Data Name = swpt rule set)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.2)

Instance = axe

asgn cat	variety	rule														
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1	ld1	jump1	sig1	es1	asm1	age1								
bus	dlc		ld1											util1	ccost	path1
busp		am1	ld1	jump1	sig1	es1	asm1	age1		pfil2						
busp	dlc		ld1											util1	ccost	path1
carrier													ct1			
coin		am1	ld1	jump1	sig1	es1	asm1	age1								
coin	dlc		ld1											util1	ccost	path1
data		am1	ld1	jump1	sig1	es1	asm1	age1								
data	dlc		ld1											util1	ccost	path1
mptcar													ct1			
ppsndov		am1	ld1	jump1	sig1	es1	asm1	age1								
ppsndup		am1	ld1	jump1	sig1	es1	asm1	age1								
resp		am1	ld1	jump1	sig1	es1	asm1	age1		pfil2						
resp	dlc		ld1											util1	ccost	path1
res1		am1	ld1	jump1	sig1	es1	asm1	age1								
res1	dlc		ld1											util1	ccost	path1

Table 6-12.dc. Switch Port Evaluation Rule Set - Automatic Assignment - DMS100
(Reference Data Name = swpt rule set)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dmc																
		rule														
asgn cat	variety	(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1	ld1	jump1	sig1	es1	asm1	age1								
bus	dlc		ld1											util1	ccost	path1
busp		am1	ld1	jump1	sig1	es1	asm1	age1		pfil1						
busp	dlc		ld1											util1	ccost	path1
carrier													ct1			
coin		am1	ld1	jump1	sig1	es1	asm1	age1								
coin	dlc		ld1											util1	ccost	path1
data		am1	ld1	jump1	sig1	es1	asm1	age1								
data	dlc		ld1											util1	ccost	path1
isdnt		am1	ld1	jump1					en1							
isdnt	dlc		ld1											util1	ccost	path1
isdnt	udsl	am1	ld1	en1												
isdnu		am1	ld1	jump1					en1							
isdnu	dlc		ld1											util1	ccost	path1
madn		am1	ld1	jump1	sig1	es1										
madn	dlc		ld1											util1	ccost	path1
mptcar													ct1			
ppsndov	am1	ld1	jump1	sig1	es1	asm1	age1									
ppsndup	am1	ld1	jump1	sig1	es1	asm1	age1									
resp		am1	ld1	jump1	sig1	es1	asm1	age1		pfil1						
resp	dlc		ld1											util1	ccost	path1
res1		am1	ld1	jump1	sig1	es1	asm1	age1								
res1	dlc		ld1											util1	ccost	path1

Table 6-12.do. Switch Port Evaluation Rule Set - Automatic Assignment - DCO
(Reference Data name = swpt rule set)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dco																
asgn cat	variety	rule														
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1	ld1	jump1	sig1	es1	asm1	age1								
busp		am1	ld1	jump1	sig1	es1	asm1	age1		pfill						
coin		am1	ld1	jump1	sig1	es1	asm1	age1								
data		am1	ld1	jump1	sig1	es1	asm1	age1								
ppsndov		am1	ld1	jump1	sig1	es1	asm1	age1								
ppsndup		am1	ld1	jump1	sig1	es1	asm1	age1								
resp		am1	ld1	jump1	sig1	es1	asm1	age1		pfill						
res1		am1	ld1	jump1	sig1	es1	asm1	age1								

Table 6-12.dx. Switch Port Evaluation Rule Set - Automatic Assignment - DMS10
(Reference Data name = swpt rule set)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.2)

Instance = dmx

asgn cat	variety	rule														
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1	ld1	jump1	sig1	es1	asm1	age1			if1					
busp		am1	ld1	jump1	sig1	es1	asm1	age1		pfill1	if1					
busp	creg	am1	ld1	jump1	sig1	es1	asm1	age1		pfill1	if1					
coin		am1	ld1	jump1	sig1	es1	asm1	age1			if1					
data		am1	ld1	jump1	sig1	es1	asm1	age1			if1					
isdnu		am1	ld1	jump1					en1							
ppsndov		am1	ld1	jump1	sig1	es1	asm1	age1								
ppsndup		am1	ld1	jump1	sig1	es1	asm1	age1								
resp		am1	ld1	jump1	sig1	es1	asm1	age1		pfill1	if1					
resp	creg	am1	ld1	jump1	sig1	es1	asm1	age1		pfill1	if1					
res1		am1	ld1	jump1	sig1	es1	asm1	age1			if1					
trk		am1	ld1		sig1											
madn		am1	ld1	jump1	sig1	es1										

Table 6-12.ew. Switch Port Evaluation Rule Set - Automatic Assignment - EWSD
(Reference Data name = swpt rule set)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.2)

Instance = ewsd

asgn cat	variety	rule														
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1	ld1	jump1	sig1	es1	asm1	age1								
bus	dlc		ld1											util1	ccost	path1
busp		am1	ld1	jump1	sig1	es1	asm1	age1		pfill						
busp	dlc		ld1											util1	ccost	path1
carrier													ct1			
coin		am1	ld1	jump1	sig1	es1	asm1	age1								
coin	dlc		ld1											util1	ccost	path1
data		am1	ld1	jump1	sig1	es1	asm1	age1								
data	dlc		ld1											util1	ccost	path1
isdnu		am1	ld1	jump1					en1							
isdnu	dlc		ld1											util1	ccost	path1
mptcar													ct1			
ppsndov		am1	ld1	jump1	sig1	es1	asm1	age1								
ppsndup		am1	ld1	jump1	sig1	es1	asm1	age1								
resp		am1	ld1	jump1	sig1	es1	asm1	age1		pfill						
resp	dlc		ld1											util1	ccost	path1
res1		am1	ld1	jump1	sig1	es1	asm1	age1								
res1	dlc		ld1											util1	ccost	path1

Table 6-12.fl. Switch Port Evaluation Rule Set - Automatic Assignment - FCL
(Reference Data Name = swpt rule set)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = fcl																
asgn cat	variety	rule														
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
plhic		am1														

Table 6-13. Glossary of Network Unit Evaluation Rules

Selection Attribute	Evaluation Rule Name	Description
Administrative Constraint	am1	Score based on administrative constraint and conditions indicated in the scoring table.
	am2	Score based on the administrative constraint and collection processing involved.
Assembly Age	age1	Score based on assembly age and any conditions indicated in the scoring table.
Assembly Involvement	asm1	Score based on assembly involvement and any conditions indicated in the scoring table.
Card Type	ct1	Score based on the card type and conditions indicated in the scoring table.
Carrier Circuit Cost	ccost	Score based on the carrier circuit cost and conditions indicated in the scoring table.
Desirability	de1	Score based on whether a slot is equipped or pending equipped as well as any conditions indicated in the scoring table.
Encoding Protocol	en1	Score based on encoding protocol and any conditions indicated in the scoring table.
Essentiality	es1	Score based on essentiality attribute and any conditions indicated in the scoring table.

Selection Attribute	Evaluation Rule Name	Description
Inherited Feature	if1	Score based on inherited feature attribute and any conditions indicated in the scoring table.
Jumper Length	jump1	Score based on zone iteration and any conditions indicated in the scoring table.
Load Factor	ld1	Score based on load factor and any conditions indicated in the scoring table.
Loaded Indicator	li1	Score based on loaded indicator and any conditions indicated in the scoring table.
LTID Group Index	ltid1	Score based on LTID Group Index and any conditions indicated in the scoring table.
Next Location	nl1	Score based on next location and any conditions indicated in the scoring table.
ODB Band	band1	Score based on ODB Band attribute and any conditions indicated in the scoring table.

Selection Attribute	Evaluation Rule Name	Description
Party Fill	pfil1	Score based on the network unit assignment use and any conditions indicated in the scoring table.
	pfil2	For grade of service greater than two, the score is based on the network unit assignment use and any conditions indicated in the scoring table. For grade of service equal to two, the score is based on the pty_pos_asgn attribute and any conditions indicated in the scoring table.

Selection Attribute	Evaluation Rule Name	Description
Number of Paths	path1	Score based on the number of Paths in a Route and any conditions indicated in the scoring table.
Signaling	sig1	Score based on signaling attribute and any conditions indicated in the scoring table.
Specific Functionality	sf1	Score based on specific functionality and any conditions indicated in the scoring table.
Utilization Factor	util1	Score based on the Carrier Group Utilization Factor and, if there is more than one Route, on the worst Utilization Factors of the remaining Paths in the Routes.

Table 6-14.bp.1e. Determine Administrative Constraint Score - BUSP/1ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = busp;1es			
seq	value	score	condition
100	2rp	50	gs=2
100	4rp	75	gs=2
100	8rp	75	gs=2
150	2bp	0	gs=2
150	4bp	75	gs=2
150	8bp	75	gs=2
200	2rp	75	gs=4
200	4rp	50	gs=4
200	8rp	75	gs=4
250	2bp	75	gs=4
250	4bp	0	gs=4
250	8bp	75	gs=4
300	2rp	75	gs=8
300	4rp	75	gs=8
300	8rp	50	gs=8
350	2bp	75	gs=8
350	4bp	75	gs=8
350	8bp	0	gs=8

Note: gs = grade of service

Table 6-14.bp.2e. Determine Administrative Constraint Score - BUSP/2ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = busp;2es			
seq	value	score	condition
100	2bp	0	gs=2
100	4bp	75	gs=2
100	8bp	75	gs=2
150	2rp	15	gs=2
150	4rp	75	gs=2
150	8rp	75	gs=2
200	2bp	75	gs=4
200	4bp	0	gs=4
200	8bp	75	gs=4
250	2rp	75	gs=4
250	4rp	15	gs=4
250	8rp	75	gs=4
300	2bp	75	gs=4
300	4bp	75	gs=8
300	8bp	0	gs=8
350	2rp	75	gs=8
350	4rp	75	gs=8
350	8rp	15	gs=8

Note: gs = grade of service

Table 6-14.bp.3e. Determine Administrative Constraint Score - BUSP/3ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = busp;3es			
seq	value	score	condition
100	2bp	0	gs=2
100	4bp	75	gs=2
100	8bp	75	gs=2
150	2rp	15	gs=2
150	4rp	75	gs=2
150	8rp	75	gs=2
200	2bp	75	gs=4
200	4bp	0	gs=4
200	8bp	75	gs=4
250	2rp	75	gs=4
250	4rp	15	gs=4
250	8rp	75	gs=4
300	2bp	75	gs=8
300	4bp	75	gs=8
300	8bp	0	gs=8
350	2rp	75	gs=8
350	4rp	75	gs=8
350	8rp	15	gs=8

Note: gs = grade of service

Table 6-14.bp.5e. Determine Administrative Constraint Score - BUSP/5ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = busp;5es			
seq	value	score	condition
100	2rp	50	gs=2
100	4rp	75	gs=2
100	8rp	75	gs=2
150	2bp	0	gs=2
150	4bp	75	gs=2
150	8bp	75	gs=2
175	idlc	99	gs=2
200	2rp	75	gs=4
200	4rp	50	gs=4
200	8rp	75	gs=4
250	2bp	75	gs=4
250	4bp	0	gs=4
250	8bp	75	gs=4
275	idlc	99	gs=4
300	2rp	75	gs=8
300	4rp	75	gs=8
300	8rp	50	gs=8
350	2bp	75	gs=8
350	4bp	75	gs=8
350	8bp	0	gs=8
375	idlc	99	gs=8

Note: gs = grade of service

Table 6-14.bp.ax. Determine Administrative Constraint Score - BUSP/AXE
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = busp;axe			
seq	value	score	condition
100	2bp	0	gs=2
100	4bp	75	gs=2
100	8bp	75	gs=2
150	2rp	15	gs=2
150	4rp	75	gs=2
150	8rp	75	gs=2
200	2bp	75	gs=4
200	4bp	0	gs=4
200	8bp	75	gs=4
250	2rp	75	gs=4
250	4rp	15	gs=4
250	8rp	75	gs=4
300	2bp	75	gs=8
300	4bp	75	gs=8
300	8bp	0	gs=8
350	2rp	75	gs=8
350	4rp	75	gs=8
350	8rp	15	gs=8

Note: gs = grade of service

Table 6-14.bp.dc. Determine Administrative Constraint Score - BUSP/DMS100
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = busp;dmc			
seq	value	score	condition
100	2bp	0	gs=2
100	4bp	75	gs=2
100	8bp	75	gs=2
150	2rp	15	gs=2
150	4rp	75	gs=2
150	8rp	75	gs=2
175	idlc	99	gs=2
200	2bp	75	gs=4
200	4bp	0	gs=4
200	8bp	75	gs=4
250	2rp	75	gs=4
250	4rp	15	gs=4
250	8rp	75	gs=4
275	idlc	99	gs=4
300	2bp	75	gs=8
300	4bp	75	gs=8
300	8bp	0	gs=8
350	2rp	75	gs=8
350	4rp	75	gs=8
350	8rp	15	gs=8
375	idlc	99	gs=8

Note: gs = grade of service

Table 6-14.bp.do. Determine Administrative Constraint Score - BUSP/DCO
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = busp;dco			
seq	value	score	condition
100	2bp	0	gs=2
100	4bp	75	gs=2
100	8bp	75	gs=2
150	2rp	15	gs=2
150	4rp	75	gs=2
150	8rp	75	gs=2
175	idlc	99	gs=2
200	2bp	75	gs=4
200	4bp	0	gs=4
200	8bp	75	gs=4
250	2rp	75	gs=4
250	4rp	15	gs=4
250	8rp	75	gs=4
275	idlc	99	gs=4
300	2bp	75	gs=8
300	4bp	75	gs=8
300	8bp	0	gs=8
350	2rp	75	gs=8
350	4rp	75	gs=8
350	8rp	15	gs=8
375	idlc	99	gs=8

Note: gs = grade of service

Table 6-14.bp.dx. Determine Administrative Constraint Score - BUSP/DMS10
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = busp;dmx			
seq	value	score	condition
100	2bp	0	gs=2
100	4bp	75	gs=2
100	8bp	75	gs=2
175	idlc	99	gs=2
150	2rp	15	gs=2
150	4rp	75	gs=2
150	8rp	75	gs=2
200	2bp	75	gs=4
200	4bp	0	gs=4
200	8bp	75	gs=4
250	2rp	75	gs=4
250	4rp	15	gs=4
250	8rp	75	gs=4
275	idlc	99	gs=4
300	2bp	75	gs=8
300	4bp	75	gs=8
300	8bp	0	gs=8
350	2rp	75	gs=8
350	4rp	75	gs=8
350	8rp	15	gs=8
375	idlc	99	gs=8

Note: gs = grade of service

Table 6-14.bp.ew. Determine Administrative Constraint Score - BUSP/EWSD
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = busp;ewsd			
seq	value	score	condition
100	2bp	0	gs=2
100	2rp	15	gs=2
150	idlc	99	gs=2

Note: gs = grade of service

Table 6-14.bs.1e. Determine Administrative Constraint Score - BUS/1ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;1es			
seq	value	score	condition
050	note	99	ct = e
060	test	99	ct = t
100	pb	0	ccs = m
100	hb	15	ccs = m
100	1b	20	ccs = m
100	1r	25	ccs = m
100	1c	35	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
100	nt	-	ccs = m
200	hb	0	ccs = h
200	pb	15	ccs = h
200	1b	20	ccs = h
200	1r	25	ccs = h
200	1c	35	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
200	nt	-	ccs = h
300	1b	0	
300	pb	15	
300	hb	20	
300	1r	25	
300	1c	35	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	
300	nt	-	

Note: ccs = estimated hundred call seconds, ct = category

Table 6-14.bs.2e. Determine Administrative Constraint Score - BUS/2ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;2es			
seq	value	score	condition
050	note	99	ct = e
060	test	99	ct = t
100	pb	0	ccs = m
100	hb	15	ccs = m
100	1b	20	ccs = m
100	1r	25	ccs = m
100	1c	35	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
200	hb	0	ccs = h
200	pb	15	ccs = h
200	1b	20	ccs = h
200	1r	25	ccs = h
200	1c	35	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
300	1b	0	
300	pb	15	
300	hb	20	
300	1r	25	
300	1c	35	
300	2bp	99	
300	4bp	99	
300	8bp	99	
300	2rp	99	
300	4rp	99	
300	8rp	99	

Note: ccs = estimated hundred call seconds, ct = category

Table 6-14.bs.3e. Determine Administrative Constraint Score - BUS/3ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;3es			
seq	value	score	condition
050	note	99	ct = e
060	test	99	ct = t
100	pb	0	ccs = m
100	hb	15	ccs = m
100	1b	20	ccs = m
100	1r	25	ccs = m
100	1c	35	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
200	hb	0	ccs = h
200	pb	15	ccs = h
200	1b	20	ccs = h
200	1r	25	ccs = h
200	1c	35	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
300	1b	0	
300	pb	15	
300	hb	20	
300	1r	25	
300	1c	35	
300	2bp	99	
300	4bp	99	
300	8bp	99	
300	2rp	99	
300	4rp	99	
300	8rp	99	

Note: ccs = estimated hundred call seconds, ct = category

Table 6-14.bs.5e. Determine Administrative Constraint Score - BUS/5ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;5es			
seq	value	score	condition
050	note	99	ct = e
060	test	99	ct = t
100	pb	0	ccs = m
100	hb	15	ccs = m
100	zb	20	ccs = m
100	1b	25	ccs = m
100	1r	30	ccs = m
100	1c	45	ccs = m
100	idlc	99	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
200	hb	0	ccs = h
200	zb	11	ccs = h
200	pb	20	ccs = h
200	1b	25	ccs = h
200	1r	30	ccs = h
200	1c	45	ccs = h
200	idlc	99	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h

Instance = bus;5es			
seq	value	score	condition
300	lb	0	
300	pb	11	
300	hb	20	
300	zb	25	
300	lr	30	
300	lc	45	
300	idlc	99	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	

Note: ccs = estimated hundred call seconds, ct = category

Table 6-14.bs.ax. Determine Administrative Constraint Score - BUS/AXE
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;axe			
seq	value	score	condition
050	note	99	ct = e
060	test	99	ct = t
100	pb	0	ccs = m
100	hb	15	ccs = m
100	1b	20	ccs = m
100	1r	30	ccs = m
100	idlc	99	ccs = m
100	1c	-	ccs = m
100	data	-	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	1b	20	ccs = h
200	1r	30	ccs = h
200	idlc	99	ccs = h
200	1c	-	ccs = h
200	data	-	ccs = h
300	1b	0	
300	pb	15	
300	hb	20	
300	1r	30	
300	idlc	99	
300	1c	-	
300	data	-	

Note: ccs = estimated hundred call seconds, ct = category

Table 6-14.bs.dc. Determine Administrative Constraint Score - BUS/DMS100
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = bus;dmc			
seq	value	score	condition
050	note	99	ct = e
060	test	99	ct = t
070	mws	0	sd = mwl
100	pb	0	ccs = m
100	hb	15	ccs = m
100	1b	20	ccs = m
100	1r	30	ccs = m
100	1c	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	idlc	99	ccs = m
100	madn	99	ccs = m
100	mws	99	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	1b	20	ccs = h
200	1r	30	ccs = h
200	1c	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	idlc	99	ccs = h
200	madn	99	ccs = h
200	mws	99	ccs = h

Instance = bus;dmc			
seq	value	score	condition
300	1b	0	
300	pb	15	
300	hb	20	
300	1r	30	
300	1c	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	idlc	99	
300	madn	99	
300	mws	99	

Note: ccs = estimated hundred call seconds, ct = category
sd = mwl indicates Message Waiting Lamp

Table 6-14.bs.do. Determine Administrative Constraint Score - BUS/DCO
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;dco			
seq	value	score	condition
050	note	99	ct = e
060	test	99	ct = t
100	pb	0	ccs = m
100	hb	15	ccs = m
100	1b	20	ccs = m
100	1r	30	ccs = m
100	1c	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	idlc	99	ccs = m
100	data	-	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	1b	20	ccs = h
200	1r	30	ccs = h
200	1c	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	idlc	99	ccs = h
200	data	-	ccs = h
300	1b	0	
300	pb	15	
300	hb	20	
300	1r	30	
300	1c	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	idlc	99	
300	data	-	

Note: ccs = estimated hundred call seconds, ct = category

Table 6-14.bs.dx. Determine Administrative Constraint Score - BUS/DMS10
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;dmx			
seq	value	score	condition
050	note	99	ct = e
060	test	99	ct = t
100	pb	0	ccs = m
100	hb	15	ccs = m
100	1b	20	ccs = m
100	1r	30	ccs = m
100	1c	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
100	idlc	99	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	1b	20	ccs = h
200	1r	30	ccs = h
200	1c	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
200	idlc	99	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
300	1b	0	
300	pb	15	
300	hb	20	
300	1r	30	
300	1c	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	
300	idlc	99	
300	2rp	99	
300	4rp	99	
300	8rp	99	

Note: ccs = estimated hundred call seconds, ct = category

Table 6-14.bs.ew. Determine Administrative Constraint Score - BUS/EWSD
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;ewsd			
seq	value	score	condition
050	note	99	ct = e
060	test	99	ct = t
100	pb	0	ccs = m
100	hb	15	ccs = m
100	1b	20	ccs = m
100	1r	30	ccs = m
100	1c	99	ccs = m
100	2bp	99	ccs = m
100	idlc	99	ccs = m
100	2rp	99	ccs = m
100	iu	-	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	1b	20	ccs = h
200	1r	30	ccs = h
200	1c	99	ccs = h
200	2bp	99	ccs = h
200	idlc	99	ccs = h
200	2rp	99	ccs = h
200	iu	-	ccs = h
300	1b	0	
300	pb	15	
300	hb	20	
300	1r	30	
300	1c	99	
300	2bp	99	
300	idlc	99	
300	2rp	99	
300	iu	-	

Note: ccs = estimated hundred call seconds, ct = category

Table 6-14.bt.1e. Determine Administrative Constraint Score - BUSNT/1ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = busnt;1es			
seq	value	score	condition
	nt	0	variety=pseudo
	pb	0	
	hb	15	
	1b	25	
	1r	35	
	1c	45	
	2rp	99	
	4rp	99	
	8rp	99	
	2bp	99	
	4bp	99	
	8bp	99	

Table 6-14.bt.2e. Determine Administrative Constraint Score - BUSNT/2ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = busnt;2es			
seq	value	score	condition
	pb	0	
	hb	15	
	1b	20	
	1r	25	
	1c	35	
	2rp	99	
	4rp	99	
	8rp	99	
	2bp	99	
	4bp	99	
	8bp	99	

Table 6-14.bt.5e. Determine Administrative Constraint Score - BUSNT/5ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = busnt;5es			
seq	value	score	condition
	pb	0	
	hb	15	
	zb	20	
	1b	25	
	1r	30	
	1c	35	
	idlc	99	
	2rp	99	
	4rp	99	
	8rp	99	
	2bp	99	
	4bp	99	
	8bp	99	
	iu	-	
	iusp	-	
	it	-	
	itsp	-	

Table 6-14.cn.1e. Determine Administrative Constraint Score - COIN/1ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = coin;1es			
seq	value	score	condition
	1c	0	
	1r	11	
	1b	15	
	pb	20	
	hb	25	
	2rp	99	
	4rp	99	
	8rp	99	
	2bp	99	
	4bp	99	
	8bp	99	
	nt	-	

Table 6-14.cn.2e. Determine Administrative Constraint Score - COIN/2ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = coin;2es			
seq	value	score	condition
	1c	0	
	1r	11	
	1b	15	
	pb	20	
	2rp	99	
	4rp	99	
	8rp	99	
	2bp	99	
	4bp	99	
	8bp	99	

Table 6-14.cn.3e. Determine Administrative Constraint Score - COIN/3ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = coin;3es			
seq	value	score	condition
	1c	0	
	1r	11	
	1b	15	
	pb	20	
	2rp	99	
	4rp	99	
	8rp	99	
	2bp	99	
	4bp	99	
	8bp	99	

Table 6-14.cn.5e. Determine Administrative Constraint Score - COIN/5ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = coin;5es			
seq	value	score	condition
	1c	0	
	1r	11	
	1b	15	
	pb	20	
	hb	25	
	zb	55	
	idlc	99	
	2rp	99	
	4rp	99	
	8rp	99	
	2bp	99	
	4bp	99	
	8bp	99	
	iu	-	
	iusp	-	
	it	-	
	itsp	-	

Table 6-14.cn.ax. Determine Administrative Constraint Score - COIN/AXE
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = coin;axe			
seq	value	score	condition
	1c	0	
	idlc	-	
	1b	-	
	1r	-	
	data	-	
	hb	-	
	pb	-	

Table 6-14.cn.dc. Determine Administrative Constraint Score - COIN/DMS100
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = coin;dmc			
seq	value	score	condition
	lc	0	
	idlc	99	
	lb	-	
	lr	-	
	2bp	-	
	4bp	-	
	8bp	-	
	data	-	
	hb	-	
	madn	-	
	pb	-	
	2rp	-	
	4rp	-	
	8rp	-	
	it	-	
	itsp	-	
	iu	-	
	iusp	-	

Table 6-14.cn.do. Determine Administrative Constraint Score - COIN/DCO
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = coin;dco			
seq	value	score	condition
	lc	0	
	idlc	99	
	lb	-	
	lr	-	
	data	-	
	hb	-	
	pb	-	

Table 6-14.cn.dx. Determine Administrative Constraint Score - COIN/DMS10
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = coin;dmx			
seq	value	score	condition
	lc	0	
	idlc	99	
	lb	-	
	lr	-	
	2bp	-	
	4bp	-	
	8bp	-	
	hb	-	
	pb	-	
	2rp	-	
	4rp	-	
	8rp	-	

Table 6-14.cn.ew. Determine Administrative Constraint Score - COIN/EWSD
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = coin;ewsd			
seq	value	score	condition
	1c	0	
	idlc	99	
	1b	-	
	1r	-	
	2bp	-	
	hb	-	
	pb	-	
	2rp	-	
	iu	-	

Table 6-14.da.1e. Determine Administrative Constraint Score - DATA/1ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = data; 1es			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	15	ccs = m
100	1b	20	ccs = m
100	1r	25	ccs = m
100	1c	35	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
100	nt	-	ccs = m
200	hb	0	ccs = h
200	pb	15	ccs = h
200	1b	20	ccs = h
200	1r	25	ccs = h
200	1c	35	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
200	nt	-	ccs = h
300	1b	0	
300	pb	15	
300	hb	20	
300	1r	25	
300	1c	35	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	
300	nt	-	

Note: ccs = estimated hundred call seconds

Table 6-14.da.2e. Determine Administrative Constraint Score - DATA/2ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = data;2es			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	15	ccs = m
100	1b	20	ccs = m
100	1r	25	ccs = m
100	1c	35	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
200	hb	0	ccs = h
200	pb	15	ccs = h
200	1b	20	ccs = h
200	1r	25	ccs = h
200	1c	35	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
300	1b	0	
300	pb	15	
300	hb	20	
300	1r	25	
300	1c	35	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	

Note: ccs = estimated hundred call seconds

Table 6-14.da.3e. Determine Administrative Constraint Score - DATA/3ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = data;3es			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	15	ccs = m
100	1b	20	ccs = m
100	1r	25	ccs = m
100	1c	35	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
200	hb	0	ccs = h
200	pb	15	ccs = h
200	1b	20	ccs = h
200	1r	25	ccs = h
200	1c	35	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
300	1b	0	
300	pb	15	
300	hb	20	
300	1r	25	
300	1c	35	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	

Note: ccs = estimated hundred call seconds

Table 6-14.da.5e. Determine Administrative Constraint Score - DATA/5ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = data;5es			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	11	ccs = m
100	1b	20	ccs = m
100	zb	25	ccs = m
100	1r	30	ccs = m
100	1c	35	ccs = m
100	idlc	99	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	1b	20	ccs = h
200	zb	25	ccs = h
200	1r	30	ccs = h
200	1c	35	ccs = h
200	idlc	99	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
300	1b	0	
300	pb	11	
300	hb	20	
300	zb	25	
300	1r	30	
300	1c	35	
300	idlc	99	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	
300	it	-	
300	itsp	-	
300	iu	-	
300	iusp	-	

Note: ccs = estimated hundred call seconds

Table 6-14.da.ax. Determine Administrative Constraint Score - DATA/AXE
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = data;axe			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	11	ccs = m
100	lb	20	ccs = m
100	lr	30	ccs = m
100	idlc	99	ccs = m
100	lc	-	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	lb	20	ccs = h
200	lr	30	ccs = h
200	idlc	99	ccs = h
200	lc	-	ccs = h
300	lb	0	
300	pb	11	
300	hb	20	
300	lr	30	
300	idlc	99	
300	lc	-	

Note: ccs = estimated hundred call seconds

Table 6-14.da.dc. Determine Administrative Constraint Score - DATA/DMS100
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = data;dmc			
seq	value	score	condition
	data	0	
	idlc	99	
	1b	-	
	1c	-	
	1r	-	
	2bp	-	
	4bp	-	
	8bp	-	
	hb	-	
	it	-	
	itsp	-	
	iu	-	
	iusp	-	
	madn	-	
	pb	-	
	2rp	-	
	4rp	-	
	8rp	-	

Table 6-14.da.do. Determine Administrative Constraint Score - DATA/DCO
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = data;dco			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	11	ccs = m
100	1b	20	ccs = m
100	1r	30	ccs = m
100	1c	35	ccs = m
100	idlc	99	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	1b	20	ccs = h
200	1r	30	ccs = h
200	1c	35	ccs = h
200	idlc	99	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
300	1b	0	
300	pb	11	
300	hb	20	
300	1r	30	
300	1c	35	
300	idlc	99	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	

Note: ccs = estimated hundred call seconds

Table 6-14.da.dx. Determine Administrative Constraint Score - DATA/DMS10
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = data;dmx			
seq	value	score	condition
100	data	0	
100	idlc	99	
100	1b	-	
100	1c	-	
100	1r	-	
100	2bp	-	
100	4bp	-	
100	8bp	-	
100	hb	-	
100	madn	-	
100	pb	-	
100	2rp	-	
100	2rp	-	
100	4rp	-	
100	8rp	-	

Table 6-14.da.ew. Determine Administrative Constraint Score - DATA/EWSD
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = data;ewsd			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	11	ccs = m
100	1b	20	ccs = m
100	1r	30	ccs = m
100	1c	99	ccs = m
100	idlc	99	ccs = m
100	2rp	99	ccs = m
100	2bp	99	ccs = m
100	iu	-	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	1b	20	ccs = h
200	1r	30	ccs = h
200	1c	99	ccs = h
200	idlc	99	ccs = h
200	2rp	99	ccs = h
200	2bp	99	ccs = h
200	iu	-	ccs = h
300	1b	0	
300	pb	11	
300	hb	20	
300	1r	30	
300	1c	99	
300	idlc	99	
300	2rp	99	
300	2bp	99	
300	iu	-	

Note: ccs = estimated hundred call seconds

Table 6-14.hc.fl. Determine Administrative Constraint Score - PLHIC/FCL
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plhic;fcl			
seq	value	score	condition
	hic	0	

Table 6-14.it.5e. Determine Administrative Constraint Score - ISDNT/5ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnt;5es			
seq	value	score	condition
100	it	0	variety=dsl, mt≥2
100	idlc	99	variety=dsl, mt≥2
100	itsp	-	variety=dsl, mt≥2
100	iu	-	variety=dsl, mt≥2
100	iusp	-	variety=dsl, mt≥2
150	it	-	variety=udsl, mt≥2
150	itsp	-	variety=udsl, mt≥2
150	iu	0	variety=udsl, mt≥2
150	iusp	-	variety=udsl, mt≥2
200	it	0	variety=dsl
200	itsp	10	variety=dsl
200	idlc	99	variety=dsl
200	iu	-	variety=dsl
200	iusp	-	variety=dsl
250	it	-	variety=udsl
250	itsp	-	variety=udsl
250	iu	0	variety=udsl
250	iusp	10	variety=udsl
255	idchc	0	variety=dpoe,csl=y,idcu=y
255	idch	40	variety=dpoe,csl=y,idcu=y
255	idch2	99	variety=dpoe,csl=y,idcu=y
260	idch2	0	variety=dpoe,bd=admin,idcu=y
260	idch	40	variety=dpoe,bd=admin,idcu=y
260	idchc	99	variety=dpoe,bd=admin,idcu=y
265	idch2	0	variety=dpoe,bd=sonly,idcu=y
265	idch	40	variety=dpoe,bd=sonly,idcu=y
265	idchc	99	variety=dpoe,bd=sonly,idcu=y
270	idch2	0	variety=dpoe,bd=sx,md<1,idcu=y
270	idch	40	variety=dpoe,bd=sx,md<1,idcu=y
270	idchc	99	variety=dpoe,bd=sx,md<1,idcu=y
275	idch	0	variety=dpoe,idcu=y
275	idchc	99	variety=dpoe,idcu=y
275	idch2	-	variety=dpoe,idcu=y
280	ippbc	0	variety=bpoe,csl=y,idcu=y
280	ippb	40	variety=bpoe,csl=y,idcu=y

Note: More entries on following page ---->

Instance = isdnt;5es			
seq	value	score	condition
285	ippb	0	variety=bpoe,idcu=y
285	ippbc	99	variety=bpoe,idcu=y
290	iodbc	0	variety=odb,csl=y,idcu=y
290	iodb	40	variety=odb,csl=y,idcu=y
295	iodb	0	variety=odb,idcu=y
295	iodbc	99	variety=odb,idcu=y
300	dchc	0	variety=dpoe,csl=y
300	dch	40	variety=dpoe,csl=y
300	dch2	99	variety=dpoe,csl=y
325	dch2	0	variety=dpoe,bd=admin
325	dch	40	variety=dpoe,bd=admin
325	dchc	99	variety=dpoe,bd=admin
350	dch2	0	variety=dpoe,bd=sonly
350	dch	40	variety=dpoe,bd=sonly
350	dchc	99	variety=dpoe,bd=sonly
360	dch2	0	variety=dpoe,bd=sx,md<1
360	dch	40	variety=dpoe,bd=sx,md<1
360	dchc	99	variety=dpoe,bd=sx,md<1
375	dch	0	variety=dpoe
375	dchc	99	variety=dpoe
375	dch2	-	variety=dpoe
400	ppbc	0	variety=bpoe,csl=y
400	ppb	40	variety=bpoe,csl=y
400	ppb2	-	variety=bpoe,csl=y
500	ppb	0	variety=bpoe
500	ppbc	99	variety=bpoe
500	ppb2	-	variety=bpoe
600	odbc	0	variety=odb,csl=y
600	odb	40	variety=odb,csl=y
600	odb2	-	variety=odb,csl=y
700	odb	0	variety=odb
700	odbc	99	variety=odb
700	odb2	-	variety=odb

Note: mt = max number of terminals, bd = D channel bearer service code (admin and sonly indicate no D packet services)

Table 6-14.it.5e.500. Determine Administrative Constraint Score - ISDNT/5ESS/5E5
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnt;5es;5e5			
seq	value	score	condition
100	it	0	variety=dsl, mt≥2
100	itsp	-	variety=dsl, mt≥2
100	iu	-	variety=dsl, mt≥2
100	iusp	-	variety=dsl, mt≥2
200	it	0	variety=dsl
200	itsp	10	variety=dsl
200	iu	-	variety=dsl
200	iusp	-	variety=dsl
400	dch2	0	variety=dpoe
400	ppb2	-	variety=dpoe
400	odb2	-	variety=dpoe
500	ppb2	0	variety=bpoe
500	dch2	-	variety=bpoe
500	odb2	-	variety=bpoe
600	odb2	0	variety=odb
600	ppb2	-	variety=odb
600	dch2	-	variety=odb

Note: mt = max number of terminals

Table 6-14.it.5e.600. Determine Administrative Constraint Score - ISDNT/5ESS/5E6
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnt;5es;5e6			
seq	value	score	condition
100	it	0	variety=dsl, mt≥2
100	itsp	-	variety=dsl, mt≥2
100	iu	-	variety=dsl, mt≥2
100	iusp	-	variety=dsl, mt≥2
200	it	0	variety=dsl
200	itsp	10	variety=dsl
200	iu	-	variety=dsl
200	iusp	-	variety=dsl
300	dch2	0	variety=dpoe,bd=admin
300	dch	10	variety=dpoe,bd=admin
400	dch2	0	variety=dpoe,bd=sonly
400	dch	10	variety=dpoe,bd=sonly
500	dch	0	variety=dpoe
500	dch2	10	variety=dpoe
500	ppb	-	variety=dpoe
500	ppb2	-	variety=dpoe
500	odb	-	variety=dpoe
500	odb2	-	variety=dpoe
600	ppb	0	variety=bpoe
600	ppb2	10	variety=bpoe
600	dch	-	variety=bpoe
600	dch2	-	variety=bpoe
600	odb	-	variety=bpoe
600	odb2	-	variety=bpoe
700	odb	0	variety=odb
700	odb2	10	variety=odb
700	dch	-	variety=odb
700	dch2	-	variety=odb
700	ppb	-	variety=odb
700	ppb2	-	variety=odb

Note: mt = max number of terminals
bd = D channel bearer service code (admin and sonly indicate no D packet services)

Table 6-14.it.5e.700. Determine Administrative Constraint Score - ISDNT/5ESS/5E7
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnt;5es;5e7			
seq	value	score	condition
100	it	0	variety=dsl, mt≥2
100	itsp	-	variety=dsl, mt≥2
100	iu	-	variety=dsl, mt≥2
100	iusp	-	variety=dsl, mt≥2
200	it	0	variety=dsl
200	itsp	10	variety=dsl
200	iu	-	variety=dsl
200	iusp	-	variety=dsl
300	dch2	0	variety=dpoe,bd=admin
300	dch	10	variety=dpoe,bd=admin
400	dch2	0	variety=dpoe,bd=sonly
400	dch	10	variety=dpoe,bd=sonly
500	dch	0	variety=dpoe
500	dch2	10	variety=dpoe
500	ppb	-	variety=dpoe
500	ppb2	-	variety=dpoe
500	odb	-	variety=dpoe
500	odb2	-	variety=dpoe
600	ppb	0	variety=bpoe
600	ppb2	10	variety=bpoe
600	dch	-	variety=bpoe
600	dch2	-	variety=bpoe
600	odb	-	variety=bpoe
600	odb2	-	variety=bpoe
700	odb	0	variety=odb
700	odb2	10	variety=odb
700	dch	-	variety=odb
700	dch2	-	variety=odb
700	ppb	-	variety=odb
700	ppb2	-	variety=odb

Note: mt = max number of terminals
bd = D channel bearer service code (admin and sonly indicate no D packet services)

Table 6-14.it.5e.800. Determine Administrative Constraint Score - ISDNT/5ESS/5E8
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = isdnt;5es;5e8			
seq	value	score	condition
100	it	0	variety=dsl, mt≥2
100	itsp	-	variety=dsl, mt≥2
100	iu	-	variety=dsl, mt≥2
100	iusp	-	variety=dsl, mt≥2
100	it	-	variety=udsl, mt≥2
100	itsp	-	variety=udsl, mt≥2
100	iu	0	variety=udsl, mt≥2
100	iusp	-	variety=udsl, mt≥2
200	it	0	variety=dsl
200	itsp	10	variety=dsl
200	iu	-	variety=dsl
200	iusp	-	variety=dsl
200	it	-	variety=udsl
200	itsp	-	variety=udsl
200	iu	0	variety=udsl
200	iusp	10	variety=udsl
300	dchc	0	variety=dpoe,csl=y
300	dch	40	variety=dpoe,csl=y
300	dch2	99	variety=dpoe,csl=y
325	dch2	0	variety=dpoe,bd=admin
325	dch	40	variety=dpoe,bd=admin
325	dchc	99	variety=dpoe,bd=admin
350	dch2	0	variety=dpoe,bd=sonly
350	dch	40	variety=dpoe,bd=sonly
350	dchc	99	variety=dpoe,bd=sonly
375	dch	0	variety=dpoe
375	dch2	40	variety=dpoe
375	dchc	99	variety=dpoe
400	ppbc	0	variety=bpoe,csl=y
400	ppb	40	variety=bpoe,csl=y
400	ppb2	99	variety=bpoe,csl=y
500	ppb	0	variety=bpoe
500	ppb2	40	variety=bpoe
500	ppbc	99	variety=bpoe
600	odbc	0	variety=odb,csl=y
600	odb	40	variety=odb,csl=y
600	odb2	99	variety=odb,csl=y
700	odb	0	variety=odb
700	odb2	40	variety=odb
700	odbc	99	variety=odb

Note: mt = max number of terminals
bd = D channel bearer service code (admin and sonly indicate no D packet services)

Table 6-14.it.dc. Determine Administrative Constraint Score - ISDNT/DMS100
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnt;dmc			
seq	value	score	condition
100	iu	0	variety=udsl
200	it	0	
200	idlc	99	

Table 6-14.iu.5e. Determine Administrative Constraint Score - ISDNU/5ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnu;5es			
seq	value	score	condition
100	iu	0	variety=dsl, mt≥2
100	idlc	99	variety=dsl, mt≥2
100	iusp	-	variety=dsl, mt≥2
100	it	-	variety=dsl, mt≥2
100	itsp	-	variety=dsl, mt≥2
200	iu	0	variety=dsl
200	iusp	10	variety=dsl
200	idlc	99	variety=dsl
200	it	-	variety=dsl
200	itsp	-	variety=dsl
210	idchc	0	variety=dpoe,csl=y,idcu=y
210	idch	40	variety=dpoe,csl=y,idcu=y
210	idch2	99	variety=dpoe,csl=y,idcu=y
220	idch2	0	variety=dpoe,bd=admin,idcu=y
220	idch	40	variety=dpoe,bd=admin,idcu=y
220	idchc	99	variety=dpoe,bd=admin,idcu=y
230	idch2	0	variety=dpoe,bd=sonly,idcu=y
230	idch	40	variety=dpoe,bd=sonly,idcu=y
230	idchc	99	variety=dpoe,bd=sonly,idcu=y
240	idch2	0	variety=dpoe,bd=sx,md<1,idcu=y
240	idch	40	variety=dpoe,bd=sx,md<1,idcu=y
240	idchc	99	variety=dpoe,bd=sx,md<1,idcu=y
250	idch	0	variety=dpoe,idcu=y
250	idchc	99	variety=dpoe,idcu=y
250	idch2	-	variety=dpoe,idcu=y
260	ippbc	0	variety=bpoe,csl=y,idcu=y
260	ippb	40	variety=bpoe,csl=y,idcu=y
270	ippb	0	variety=bpoe,idcu=y
270	ippbc	99	variety=bpoe,idcu=y
280	iodbc	0	variety=odb,csl=y,idcu=y
280	iodb	40	variety=odb,csl=y,idcu=y
290	iodb	0	variety=odb,idcu=y
290	iodbc	99	variety=odb,idcu=y
300	dchc	0	variety=dpoe,csl=y
300	dch	40	variety=dpoe,csl=y
300	dch2	99	variety=dpoe,csl=y

Note: More entries on following page ----->

Instance = isdnu;5es			
seq	value	score	condition
325	dch2	0	variety=dpoe,bd=admin
325	dch	40	variety=dpoe,bd=admin
325	dchc	99	variety=dpoe,bd=admin
350	dch2	0	variety=dpoe,bd=sonly
350	dch	40	variety=dpoe,bd=sonly
350	dchc	99	variety=dpoe,bd=sonly
360	dch2	0	variety=dpoe,bd=sx,md<1
360	dch	40	variety=dpoe,bd=sx,md<1
360	dchc	99	variety=dpoe,bd=sx,md<1
375	dch	0	variety=dpoe
375	dchc	99	variety=dpoe
375	dch2	-	variety=dpoe
400	ppbc	0	variety=bpoe,csl=y
400	ppb	40	variety=bpoe,csl=y
400	ppb2	-	variety=bpoe,csl=y
500	ppb	0	variety=bpoe
500	ppbc	99	variety=bpoe
500	ppb2	-	variety=bpoe
600	odbc	0	variety=odb,csl=y
600	odb	40	variety=odb,csl=y
600	odb2	-	variety=odb,csl=y
700	odb	0	variety=odb
700	odbc	99	variety=odb
700	odb2	-	variety=odb

Note: mt = max number of terminals, bd = D channel bearer service code (admin and sonly indicate no D packet services)

Table 6-14.iu.5e.500. Determine Administrative Constraint Score - ISDNU/5ESS/5E5
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnu;5es;5e5			
seq	value	score	condition
100	iu	0	variety=dsl, mt≥2
100	iusp	-	variety=dsl, mt≥2
100	it	-	variety=dsl, mt≥2
100	itsp	-	variety=dsl, mt≥2
200	iu	0	variety=dsl
200	iusp	10	variety=dsl
200	it	-	variety=dsl
200	itsp	-	variety=dsl
400	dch2	0	variety=dpoe
400	ppb2	-	variety=dpoe
400	odb2	-	variety=dpoe
500	dch2	-	variety=bpoe
500	ppb2	0	variety=bpoe
600	odb2	0	variety=odb
600	dch2	-	variety=odb
600	ppb2	-	variety=odb

Note: mt = max number of terminals

Table 6-14.iu.5e.600. Determine Administrative Constraint Score - ISDNU/5ESS/5E6
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnu;5es;5e6			
seq	value	score	condition
100	iu	0	variety=dsl, mt≥2
100	iusp	-	variety=dsl, mt≥2
100	it	-	variety=dsl, mt≥2
100	itsp	-	variety=dsl, mt≥2
200	iu	0	variety=dsl
200	iusp	10	variety=dsl
200	it	-	variety=dsl
200	itsp	-	variety=dsl
300	dch2	0	variety=dpoe,bd=admin
300	dch	10	variety=dpoe,bd=admin
400	dch2	0	variety=dpoe,bd=sonly
400	dch	10	variety=dpoe,bd=sonly
500	dch	0	variety=dpoe
500	dch2	10	variety=dpoe
500	ppb	-	variety=dpoe
500	ppb2	-	variety=dpoe
500	odb	-	variety=dpoe
500	odb2	-	variety=dpoe
600	ppb	0	variety=bpoe
600	ppb2	10	variety=bpoe
600	dch	-	variety=bpoe
600	dch2	-	variety=bpoe
600	odb	-	variety=bpoe
600	odb2	-	variety=bpoe
700	odb	0	variety=odb
700	odb2	10	variety=odb
700	dch	-	variety=odb
700	dch2	-	variety=odb
700	ppb	-	variety=odb
700	ppb2	-	variety=odb

Note: mt = max number of terminals
bd = D channel bearer service code (admin and sonly indicate no D packet services)

Table 6-14.iu.5e.700. Determine Administrative Constraint Score - ISDNU/5ESS/5E7
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnu;5es;5e7			
seq	value	score	condition
100	iu	0	variety=dsl, mt≥2
100	iusp	-	variety=dsl, mt≥2
100	it	-	variety=dsl, mt≥2
100	itsp	-	variety=dsl, mt≥2
200	iu	0	variety=dsl
200	iusp	10	variety=dsl
200	it	-	variety=dsl
200	itsp	-	variety=dsl
300	dch2	0	variety=dpoe,bd=admin
300	dch	10	variety=dpoe,bd=admin
400	dch2	0	variety=dpoe,bd=sonly
400	dch	10	variety=dpoe,bd=sonly
500	dch	0	variety=dpoe
500	dch2	10	variety=dpoe
500	ppb	-	variety=dpoe
500	ppb2	-	variety=dpoe
500	odb	-	variety=dpoe
500	odb2	-	variety=dpoe
600	ppb	0	variety=bpoe
600	ppb2	10	variety=bpoe
600	dch	-	variety=bpoe
600	dch2	-	variety=bpoe
600	odb	-	variety=bpoe
600	odb2	-	variety=bpoe
700	odb	0	variety=odb
700	odb2	10	variety=odb
700	dch	-	variety=odb
700	dch2	-	variety=odb
700	ppb	-	variety=odb
700	ppb2	-	variety=odb

Note: mt = max number of terminals
bd = D channel bearer service code (admin and sonly indicate no D packet services)

Table 6-14.iu.5e.800. Determine Administrative Constraint Score - ISDNU/5ESS/5E8
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnu;5es;5e8			
seq	value	score	condition
100	iu	0	variety=dsl, mt≥2
100	iusp	-	variety=dsl, mt≥2
100	it	-	variety=dsl, mt≥2
100	itsp	-	variety=dsl, mt≥2
200	iu	0	variety=dsl
200	iusp	10	variety=dsl
200	it	-	variety=dsl
200	itsp	-	variety=dsl
300	dchc	0	variety=dpoe,csl=y
300	dch	40	variety=dpoe,csl=y
300	dch2	99	variety=dpoe,csl=y
325	dch2	0	variety=dpoe,bd=admin
325	dch	40	variety=dpoe,bd=admin
325	dchc	99	variety=dpoe,bd=admin
350	dch2	0	variety=dpoe,bd=sonly
350	dch	40	variety=dpoe,bd=sonly
350	dchc	99	variety=dpoe,bd=sonly
375	dch	0	variety=dpoe
375	dch2	40	variety=dpoe
375	dchc	99	variety=dpoe
400	ppbc	0	variety=bpoe,csl=y
400	ppb	40	variety=bpoe,csl=y
400	ppb2	99	variety=bpoe,csl=y
500	ppb	0	variety=bpoe
500	ppb2	40	variety=bpoe
500	ppbc	99	variety=bpoe
600	odbc	0	variety=odb,csl=y
600	odb	40	variety=odb,csl=y
600	odb2	99	variety=odb,csl=y
700	odb	0	variety=odb
700	odb2	40	variety=odb
700	odbc	99	variety=odb

Note: mt = max number of terminals
bd = D channel bearer service code (admin and sonly indicate no D packet services)

Table 6-14.iu.dc. Determine Administrative Constraint Score - ISDNU/DMS100
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnu;dmc			
seq	value	score	condition
	iu	0	
	iusp	-	
	1b	-	
	1c	-	
	1r	-	
	2bp	-	
	4bp	-	
	8bp	-	
	data	-	
	hb	-	
	idlc	99	
	it	-	
	itsp	-	
	madn	-	
	pb	-	
	2rp	-	
	4rp	-	
	8rp	-	

Table 6-14.iu.dx. Determine Administrative Constraint Score - ISDNU/DMS10
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnu;dmx			
seq	value	score	condition
	iu	0	

Table 6-14.iu.ew. Determine Administrative Constraint Score - ISDNU/EWSD
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnu;ewsd			
seq	value	score	condition
	iu	0	
	1r	-	
	1b	-	
	pb	-	
	hb	-	
	1c	-	
	2rp	-	
	2bp	-	
	idlc	-	

Table 6-14.mn.dc. Determine Administrative Constraint Score - MADN/DMS100
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;dmc			
seq	value	score	condition
	madn	0	
	1b	99	
	1c	99	
	1r	99	
	hb	99	
	pb	99	
	idlc	99	
	data	-	
	it	-	
	itsp	-	
	iu	-	
	iusp	-	

Table 6-14.mn.dx. Determine Administrative Constraint Score - MADN/DMS10
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;dmx			
seq	value	score	condition
100	madn	0	sig=p
200	1b	0	
200	1c	0	
200	1r	0	
200	hb	0	
200	pb	0	
200	idlc	0	
200	data	-	
200	madn	-	

Table 6-14.pb.2e. Determine Administrative Constraint Score - PBXT/2ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;2es			
seq	value	score	condition
100	t1	0	ccs = l
100	t2	35	ccs = l
100	t3	75	ccs = l
200	t1	90	ccs = h
200	t2	80	ccs = h
200	t3	0	ccs = h
300	t1	85	
300	t2	0	
300	t3	35	

Note: ccs = estimated hundred call seconds

Table 6-14.pb.3e. Determine Administrative Constraint Score - PBXT/3ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;3es			
seq	value	score	condition
100	t1	0	ccs = l
100	t2	35	ccs = l
100	t3	75	ccs = l
200	t1	90	ccs = h
200	t2	80	ccs = h
200	t3	0	ccs = h
300	t1	85	
300	t2	0	
300	t3	35	

Note: ccs = estimated hundred call seconds

Table 6-14.r1.1e. Determine Administrative Constraint Score - RES1/1ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;1es			
seq	value	score	condition
	1r	0	
	1b	15	
	pb	20	
	hb	25	
	1c	35	
	2bp	99	
	4bp	99	
	8bp	99	
	2rp	99	
	4rp	99	
	8rp	99	
	nt	-	

Table 6-14.r1.2e. Determine Administrative Constraint Score - RES1/2ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;2es			
seq	value	score	condition
	1r	0	
	1b	15	
	pb	20	
	hb	25	
	1c	35	
	2rp	99	
	4rp	99	
	8rp	99	
	2bp	99	
	4bp	99	
	8bp	99	

Table 6-14.r1.3e. Determine Administrative Constraint Score - RES1/3ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;3es			
seq	value	score	condition
	1r	0	
	1b	15	
	pb	20	
	hb	25	
	1c	35	
	2rp	99	
	4rp	99	
	8rp	99	
	2bp	99	
	4bp	99	
	8bp	99	

Table 6-14.r1.5e. Determine Administrative Constraint Score - RES1/5ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;5es			
seq	value	score	condition
	1r	0	
	1b	15	
	pb	20	
	hb	25	
	1c	35	
	zb	45	
	idlc	99	
	2rp	99	
	4rp	99	
	8rp	99	
	2bp	99	
	4bp	99	
	8bp	99	
	iu	-	
	it	-	

Table 6-14.r1.ax. Determine Administrative Constraint Score - RES1/AXE
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;axe			
seq	value	score	condition
	1r	0	
	1b	15	
	pb	20	
	hb	25	
	idlc	99	
	1c	-	
	data	-	

Table 6-14.r1.dc. Determine Administrative Constraint Score - RES1/DMS100
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;dmc			
seq	value	score	condition
	1r	0	
	1b	15	
	pb	20	
	hb	25	
	1c	99	
	2rp	99	
	4rp	99	
	8rp	99	
	2bp	99	
	4bp	99	
	8bp	99	
	idlc	99	
	madn	99	
	data	-	
	it	-	
	itsp	-	
	iu	-	
	iusp	-	

Table 6-14.r1.do. Determine Administrative Constraint Score - RES1/DCO
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;dco			
seq	value	score	condition
	1r	0	
	1b	15	
	pb	20	
	hb	25	
	1c	99	
	2rp	99	
	4rp	99	
	8rp	99	
	2bp	99	
	4bp	99	
	8bp	99	
	idlc	99	

Table 6-14.r1.dx. Determine Administrative Constraint Score - RES1/DMS10
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;dmx			
seq	value	score	condition
	1r	0	
	1b	15	
	pb	20	
	hb	25	
	1c	99	
	2rp	99	
	4rp	99	
	8rp	99	
	2bp	99	
	4bp	99	
	8bp	99	
	idlc	99	

Table 6-14.r1.ew. Determine Administrative Constraint Score - RES1/EWSD
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;ewsd			
seq	value	score	condition
	1r	0	
	1b	15	
	pb	20	
	hb	25	
	1c	99	
	2rp	99	
	2bp	99	
	idlc	99	
	iu	-	

Table 6-14.rp.1e. Determine Administrative Constraint Score - RESP/1ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = resp;1es			
seq	value	score	condition
100	2rp	0	gs=2
100	4rp	75	gs=2
100	8rp	75	gs=2
150	2bp	50	gs=2
150	4bp	75	gs=2
150	8bp	75	gs=2
200	2rp	75	gs=4
200	4rp	0	gs=4
200	8rp	75	gs=4
250	2bp	75	gs=4
250	4bp	50	gs=4
250	8bp	75	gs=4
300	2rp	75	gs=8
300	4rp	75	gs=8
300	8rp	0	gs=8
350	2bp	75	gs=8
350	4bp	75	gs=8
350	8bp	50	gs=8

Note: gs = grade of service

Table 6-14.rp.2e. Determine Administrative Constraint Score - RESP/2ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = resp;2es			
seq	value	score	condition
100	2rp	0	gs=2
100	4rp	75	gs=2
100	8rp	75	gs=2
150	2bp	15	gs=2
150	4bp	75	gs=2
150	8bp	75	gs=2
200	2rp	75	gs=4
200	4rp	0	gs=4
200	8rp	75	gs=4
250	2bp	75	gs=4
250	4bp	15	gs=4
250	8bp	75	gs=4
300	2rp	75	gs=8
300	4rp	75	gs=8
300	8rp	0	gs=8
350	2bp	75	gs=8
350	4bp	75	gs=8
350	8bp	15	gs=8

Note: gs = grade of service

Table 6-14.rp.3e. Determine Administrative Constraint Score - RESP/3ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = resp;3es			
seq	value	score	condition
100	2rp	0	gs=2
100	4rp	75	gs=2
100	8rp	75	gs=2
150	2bp	15	gs=2
150	4bp	75	gs=2
150	8bp	75	gs=2
200	2rp	75	gs=4
200	4rp	0	gs=4
200	8rp	75	gs=4
250	2bp	75	gs=4
250	4bp	15	gs=4
250	8bp	75	gs=4
300	2rp	75	gs=8
300	4rp	75	gs=8
300	8rp	0	gs=8
350	2bp	75	gs=8
350	4bp	75	gs=8
350	8bp	15	gs=8

Note: gs = grade of service

Table 6-14.rp.5e. Determine Administrative Constraint Score - RESP/5ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = resp;5es			
seq	value	score	condition
100	2rp	0	gs=2
100	4rp	75	gs=2
100	8rp	75	gs=2
150	2bp	50	gs=2
150	4bp	75	gs=2
150	8bp	75	gs=2
175	idlc	99	gs=2
200	2rp	75	gs=4
200	4rp	0	gs=4
200	8rp	75	gs=4
250	2bp	75	gs=4
250	4bp	50	gs=4
250	8bp	75	gs=4
275	idlc	99	gs=4
300	2rp	75	gs=8
300	4rp	75	gs=8
300	8rp	0	gs=8
350	2bp	75	gs=8
350	4bp	75	gs=8
350	8bp	50	gs=8
375	idlc	99	gs=8

Note: gs = grade of service

Table 6-14.rp.ax. Determine Administrative Constraint Score - RESP/AXE
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = resp;axe			
seq	value	score	condition
100	2rp	0	gs=2
100	4rp	75	gs=2
100	8rp	75	gs=2
150	2bp	15	gs=2
150	4bp	75	gs=2
150	8bp	75	gs=2
200	2rp	75	gs=4
200	4rp	0	gs=4
200	8rp	75	gs=4
250	2bp	75	gs=4
250	4bp	15	gs=4
250	8bp	75	gs=4
300	2rp	75	gs=8
300	4rp	75	gs=8
300	8rp	0	gs=8
350	2bp	75	gs=8
350	4bp	75	gs=8
350	8bp	15	gs=8

Note: gs = grade of service

Table 6-14.rp.dc. Determine Administrative Constraint Score - RESP/DMS100
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = resp;dmc			
seq	value	score	condition
100	2rp	0	gs=2
100	4rp	75	gs=2
100	8rp	75	gs=2
150	2bp	15	gs=2
150	4bp	75	gs=2
150	8bp	75	gs=2
175	idlc	99	gs=2
200	2rp	75	gs=4
200	4rp	0	gs=4
200	8rp	75	gs=4
250	2bp	75	gs=4
250	4bp	15	gs=4
250	8bp	75	gs=4
275	idlc	99	gs=4
300	2rp	75	gs=8
300	4rp	75	gs=8
300	8rp	0	gs=8
350	2bp	75	gs=8
350	4bp	75	gs=8
350	8bp	15	gs=8
375	idlc	99	gs=8

Note: gs = grade of service

Table 6-14.rp.do. Determine Administrative Constraint Score - RESP/DCO
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = resp;dco			
seq	value	score	score
100	2rp	0	gs=2
100	4rp	75	gs=2
100	8rp	75	gs=2
150	2bp	15	gs=2
150	4bp	75	gs=2
150	8bp	75	gs=2
175	idlc	99	gs=2
200	2rp	75	gs=4
200	4rp	0	gs=4
200	8rp	75	gs=4
250	2bp	75	gs=4
250	4bp	15	gs=4
250	8bp	75	gs=4
275	idlc	99	gs=4
300	2rp	75	gs=8
300	4rp	75	gs=8
300	8rp	0	gs=8
350	2bp	75	gs=8
350	4bp	75	gs=8
350	8bp	15	gs=8
375	idlc	99	gs=8

Note: gs = grade of service

Table 6-14.rp.dx. Determine Administrative Constraint Score - RESP/DMS10
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = resp;dmx			
seq	value	score	condition
100	2rp	0	gs=2
100	4rp	75	gs=2
100	8rp	75	gs=2
150	2bp	15	gs=2
150	4bp	75	gs=2
150	8bp	75	gs=2
175	idlc	99	gs=2
200	2rp	75	gs=4
200	4rp	0	gs=4
200	8rp	75	gs=4
250	2bp	75	gs=4
250	4bp	15	gs=4
250	8bp	75	gs=4
275	idlc	99	gs=4
300	2rp	75	gs=8
300	4rp	75	gs=8
300	8rp	0	gs=8
350	2bp	75	gs=8
350	4bp	75	gs=8
350	8bp	15	gs=8
375	idlc	99	gs=8

Note: gs = grade of service

Table 6-14.rp.ew. Determine Administrative Constraint Score - RESP/EWSD
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = resp;ewsd			
seq	value	score	condition
100	2rp	0	gs=2
100	2bp	15	gs=2
150	99	idlc	gs=2

Note: gs = grade of service

Table 6-14.su.1e. Determine Administrative Constraint Score - PPSNDUP/1ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = ppsndup;1es			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	15	ccs = m
100	1b	20	ccs = m
100	1r	25	ccs = m
100	1c	35	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
100	nt	-	ccs = m
200	hb	0	ccs = h
200	pb	15	ccs = h
200	1b	20	ccs = h
200	1r	25	ccs = h
200	1c	35	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
200	nt	-	ccs = h
300	1b	0	
300	pb	15	
300	hb	20	
300	1r	25	
300	1c	35	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	
300	nt	-	

Note: ccs = estimated hundred call seconds

Table 6-14.su.2e. Determine Administrative Constraint Score - PPSNDUP/2ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = ppsndup;2es			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	15	ccs = m
100	1b	20	ccs = m
100	1r	25	ccs = m
100	1c	35	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
200	hb	0	ccs = h
200	pb	15	ccs = h
200	1b	20	ccs = h
200	1r	25	ccs = h
200	1c	35	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
300	1b	0	
300	pb	15	
300	hb	20	
300	1r	25	
300	1c	35	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	

Note: ccs = estimated hundred call seconds

Table 6-14.su.3e. Determine Administrative Constraint Score - PPSNDUP/3ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = ppsndup;3es			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	15	ccs = m
100	1b	20	ccs = m
100	1r	25	ccs = m
100	1c	35	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
200	hb	0	ccs = h
200	pb	15	ccs = h
200	1b	20	ccs = h
200	1r	25	ccs = h
200	1c	35	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
300	1b	0	
300	pb	15	
300	hb	20	
300	1r	25	
300	1c	35	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	

Note: ccs = estimated hundred call seconds

Table 6-14.su.5e. Determine Administrative Constraint Score - PPSNDUP/5ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = ppsndup;5es			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	11	ccs = m
100	lb	20	ccs = m
100	zb	25	ccs = m
100	lr	30	ccs = m
100	lc	35	ccs = m
100	idlc	99	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	lb	20	ccs = h
200	zb	25	ccs = h
200	lr	30	ccs = h
200	lc	35	ccs = h
200	idlc	99	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
300	lb	0	
300	pb	11	
300	hb	20	
300	zb	25	
300	lr	30	
300	lc	35	
300	idlc	99	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	
300	it	-	
300	itsp	-	
300	iu	-	
300	iusp	-	

Note: ccs = estimated hundred call seconds

Table 6-14.su.ax. Determine Administrative Constraint Score - PPSNDUP/AXE
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = ppsndup;axe			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	11	ccs = m
100	lb	20	ccs = m
100	lr	30	ccs = m
100	idlc	99	ccs = m
100	lc	-	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	lb	20	ccs = h
200	lr	30	ccs = h
200	idlc	99	ccs = h
200	lc	-	ccs = h
300	lb	0	
300	pb	11	
300	hb	20	
300	lr	30	
300	idlc	99	
300	lc	-	

Note: ccs = estimated hundred call seconds

Table 6-14.su.dc. Determine Administrative Constraint Score - PPSNDUP/DMS100
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = ppsndup;dmc			
seq	value	score	condition
	data	0	
	idlc	99	
	1b	-	
	1c	-	
	1r	-	
	2bp	-	
	4bp	-	
	8bp	-	
	hb	-	
	it	-	
	itsp	-	
	iu	-	
	iusp	-	
	madn	-	
	pb	-	
	2rp	-	
	4rp	-	
	8rp	-	

Table 6-14.su.do. Determine Administrative Constraint Score - PPSNDUP/DCO
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = ppsndup;dco			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	11	ccs = m
100	1b	20	ccs = m
100	1r	30	ccs = m
100	1c	35	ccs = m
100	idlc	99	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	1b	20	ccs = h
200	1r	30	ccs = h
200	1c	35	ccs = h
200	idlc	99	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
300	1b	0	
300	pb	11	
300	hb	20	
300	1r	30	
300	1c	35	
300	idlc	99	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	

Note: ccs = estimated hundred call seconds

Table 6-14.su.dx. Determine Administrative Constraint Score - PPSNDUP/DMS10
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = ppsndup;dmx			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	11	ccs = m
100	1b	20	ccs = m
100	1r	30	ccs = m
100	1c	35	ccs = m
100	idlc	99	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	1b	20	ccs = h
200	1r	30	ccs = h
200	1c	35	ccs = h
200	idlc	99	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
300	1b	0	
300	pb	11	
300	hb	20	
300	1r	30	
300	1c	35	
300	idlc	99	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	

Note: ccs = estimated hundred call seconds

Table 6-14.su.ew. Determine Administrative Constraint Score - PPSNDUP/EWSD
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = ppsndup;ewsd			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	11	ccs = m
100	1b	20	ccs = m
100	1r	30	ccs = m
100	1c	99	ccs = m
100	idlc	99	ccs = m
100	2rp	99	ccs = m
100	2bp	99	ccs = m
100	iu	-	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	1b	20	ccs = h
200	1r	30	ccs = h
200	1c	99	ccs = h
200	idlc	99	ccs = h
200	2rp	99	ccs = h
200	2bp	99	ccs = h
200	iu	-	ccs = h
300	1b	0	
300	pb	11	
300	hb	20	
300	1r	30	
300	1c	99	
300	idlc	99	
300	2rp	99	
300	2bp	99	
300	iu	-	

Note: ccs = estimated hundred call seconds

Table 6-14.sv.1e. Determine Administrative Constraint Score - PPSNDOV/1ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = ppsndov;1es			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	15	ccs = m
100	1b	20	ccs = m
100	1r	25	ccs = m
100	1c	35	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
100	nt	-	ccs = m
200	hb	0	ccs = h
200	pb	15	ccs = h
200	1b	20	ccs = h
200	1r	25	ccs = h
200	1c	35	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
200	nt	-	ccs = h
300	1b	0	
300	pb	15	
300	hb	20	
300	1r	25	
300	1c	35	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	
300	nt	-	

Note: ccs = estimated hundred call seconds

Table 6-14.sv.2e. Determine Administrative Constraint Score - PPSNDOV/2ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = ppsndov; 2es			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	11	ccs = m
100	lb	20	ccs = m
100	lr	30	ccs = m
100	idlc	99	ccs = m
100	lc	-	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	lb	20	ccs = h
200	lr	30	ccs = h
200	idlc	99	ccs = h
200	lc	-	ccs = h
300	lb	0	
300	pb	11	
300	hb	20	
300	lr	30	
300	idlc	99	
300	lc	-	

Note: ccs = estimated hundred call seconds

Table 6-14.sv.3e. Determine Administrative Constraint Score - PPSNDOV/3ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = ppsndov;3es			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	15	ccs = m
100	1b	20	ccs = m
100	1r	25	ccs = m
100	1c	35	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
200	hb	0	ccs = h
200	pb	15	ccs = h
200	1b	20	ccs = h
200	1r	25	ccs = h
200	1c	35	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
300	1b	0	
300	pb	15	
300	hb	20	
300	1r	25	
300	1c	35	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	

Note: ccs = estimated hundred call seconds

Table 6-14.sv.5e. Determine Administrative Constraint Score - PPSNDOV/5ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = ppsndov;5es			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	11	ccs = m
100	1b	20	ccs = m
100	zb	25	ccs = m
100	1r	30	ccs = m
100	1c	35	ccs = m
100	idlc	99	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	1b	20	ccs = h
200	zb	25	ccs = h
200	1r	30	ccs = h
200	1c	35	ccs = h
200	idlc	99	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
300	1b	0	
300	pb	11	
300	hb	20	
300	zb	25	
300	1r	30	
300	1c	35	
300	idlc	99	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	
300	it	-	
300	itsp	-	
300	iu	-	
300	iusp	-	

Note: ccs = estimated hundred call seconds

Table 6-14.sv.ax. Determine Administrative Constraint Score - PPSNDOV/AXE
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = ppsndov; axe			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	11	ccs = m
100	lb	20	ccs = m
100	lr	30	ccs = m
100	idlc	99	ccs = m
100	lc	-	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	lb	20	ccs = h
200	lr	30	ccs = h
200	idlc	99	ccs = h
200	lc	-	ccs = h
300	lb	0	
300	pb	11	
300	hb	20	
300	lr	30	
300	idlc	99	
300	lc	-	

Note: ccs = estimated hundred call seconds

Table 6-14.sv.dc. Determine Administrative Constraint Score - PPSNDOV/DMS100
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = ppsndov;dmc			
seq	value	score	condition
	data	0	
	idlc	99	
	1b	-	
	1c	-	
	1r	-	
	2bp	-	
	4bp	-	
	8bp	-	
	hb	-	
	it	-	
	itsp	-	
	iu	-	
	iusp	-	
	madn	-	
	pb	-	
	2rp	-	
	4rp	-	
	8rp	-	

Table 6-14.sv.do. Determine Administrative Constraint Score - PPSNDOV/DCO
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = ppsndov; dco			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	11	ccs = m
100	1b	20	ccs = m
100	1r	30	ccs = m
100	1c	35	ccs = m
100	idlc	99	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	1b	20	ccs = h
200	1r	30	ccs = h
200	1c	35	ccs = h
200	idlc	99	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
300	1b	0	
300	pb	11	
300	hb	20	
300	1r	30	
300	1c	35	
300	idlc	99	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	

Note: ccs = estimated hundred call seconds

Table 6-14.sv.dx. Determine Administrative Constraint Score - PPSNDOV/DMS10
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = ppsndov;dmx			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	11	ccs = m
100	1b	20	ccs = m
100	1r	30	ccs = m
100	1c	35	ccs = m
100	idlc	99	ccs = m
100	2rp	99	ccs = m
100	4rp	99	ccs = m
100	8rp	99	ccs = m
100	2bp	99	ccs = m
100	4bp	99	ccs = m
100	8bp	99	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	1b	20	ccs = h
200	1r	30	ccs = h
200	1c	35	ccs = h
200	idlc	99	ccs = h
200	2rp	99	ccs = h
200	4rp	99	ccs = h
200	8rp	99	ccs = h
200	2bp	99	ccs = h
200	4bp	99	ccs = h
200	8bp	99	ccs = h
300	1b	0	
300	pb	11	
300	hb	20	
300	1r	30	
300	1c	35	
300	idlc	99	
300	2rp	99	
300	4rp	99	
300	8rp	99	
300	2bp	99	
300	4bp	99	
300	8bp	99	

Note: ccs = estimated hundred call seconds

Table 6-14.sv.ew. Determine Administrative Constraint Score - PPSNDOV/EWSD
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = ppsndov;ewsd			
seq	value	score	condition
100	pb	0	ccs = m
100	hb	11	ccs = m
100	1b	20	ccs = m
100	1r	30	ccs = m
100	1c	99	ccs = m
100	idlc	99	ccs = m
100	2rp	99	ccs = m
100	2bp	99	ccs = m
100	iu	-	ccs = m
200	hb	0	ccs = h
200	pb	11	ccs = h
200	1b	20	ccs = h
200	1r	30	ccs = h
200	1c	99	ccs = h
200	idlc	99	ccs = h
200	2rp	99	ccs = h
200	2bp	99	ccs = h
200	iu	-	ccs = h
300	1b	0	
300	pb	11	
300	hb	20	
300	1r	30	
300	1c	99	
300	idlc	99	
300	2rp	99	
300	2bp	99	
300	iu	-	

Note: ccs = estimated hundred call seconds

Table 6-14.tk.2e. Determine Administrative Constraint Score - TRK/2ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = trk;2es			
seq	value	score	condition
100	t1	0	ccs = l
100	t2	35	ccs = l
100	t3	75	ccs = l
200	t3	0	ccs = h
200	t1	90	ccs = h
200	t2	80	ccs = h
300	t2	0	
300	t1	85	
300	t3	35	

Note: ccs = estimated hundred call seconds

Table 6-14.tk.3e. Determine Administrative Constraint Score - TRK/3ESS
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = trk;3es			
seq	value	score	condition
100	t1	0	ccs = l
100	t2	35	ccs = l
100	t3	75	ccs = l
200	t3	0	ccs = h
200	t1	90	ccs = h
200	t2	80	ccs = h
300	t2	0	
300	t1	85	
300	t3	35	

Note: ccs = estimated hundred call seconds

Table 6-14.tk.dx. Determine Administrative Constraint Score - TRK/DMS10
(Reference Data name = swpt penalty score am)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope=global)
(SCCS level = 13.1)

Instance = trk;dmx			
seq	value	score	condition
100	t1	0	ccs = l
100	t2	35	ccs = l
100	t3	75	ccs = l
200	t1	90	ccs = h
200	t2	80	ccs = h
200	t3	0	ccs = h
300	t1	85	
300	t2	0	
300	t3	35	

Note: ccs = estimated hundred call seconds

Table 6-15.bt.df. Determine Load Score - BUSNT/DFLT
(Reference Data name = swpt penalty score ld)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = busnt (default IC)			
seq	value (load factor)	score	condition
	1	49	
	2	49	
	3	49	
	4	37	
	5	37	
	6	25	
	7	24	
	8	12	
	9	11	
	10	0	

Table 6-15.df.df. Determine Load Score - DFLT/DFLT
(Reference Data name = swpt penalty score ld)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)			
seq	value (load factor)	score	condition
	1	0	
	2	0	
	3	0	
	4	11	
	5	12	
	6	24	
	7	25	
	8	37	
	9	49	
	10	99	

Table 6-16.bl. Frame System Prioritization For Bridge Lifter Selection
(Reference Data name = frame system priority)
(Instance Key = nu_type; ic_id)
(Scope = modwc)
(SCCS level = 13.1)

Instance = bl†					
(input)		(preferred frame system)			(ranking)
clli(8) (building)	frame id	frm sysid1	frm sysid2	frm sysid3	frm sysid pri
8 char CLLIa	fr f01	c0			01
8 char CLLIa	fr f02	c0			01
8 char CLLIa	fr f03	c0			01
8 char CLLIa	fr f04	c0			01

†Note: Sample table shown. No global default is provided.

Table 6-16.sw.1e. Frame System Prioritization For Switch Port Selection - 1ESS
(Reference Data name = frame system priority)
(Instance Key = nu_type; ic-id)
(Scope = modin)
(SCCS level = 13.1)

Instance = swpt;1es.0†					
(input)		(preferred frame system)			(ranking)
clli(8) (building)	frame id	frm sysid1	frm sysid2	frm sysid3	frm sysid pri
8 char CLLIa	fr f01	a0			01
8 char CLLIa	fr f02	a0			01
8 char CLLIa	fr f03	a0			01
8 char CLLIa	fr f04	a0			01

†Note: Sample table shown. No global default is provided.

Table 6-16.sw.2e. Frame System Prioritization For Switch Port Selection - 2ESS
(Reference Data name = frame system priority)
(Instance Key = nu_type; ic-id)
(Scope = modin)
(SCCS level = 13.1)

Instance = swpt;2es.2†					
(input)		(preferred frame system)			(ranking)
clli(8) (building)	frame id	frm sysid1	frm sysid2	frm sysid3	frm sysid pri
8 char CLLIa	fr f02	a0			01
8 char CLLIa	fr f03	a0			01
8 char CLLId	fr f01	b0	a0		02

†Note: Sample table shown. No global default is provided.

Table 6-16.sw.3e. Frame System Prioritization For Switch Port Selection - 3ESS
(Reference Data name = frame system priority)
(Instance Key = nu_type; ic-id)
(Scope = modin)
(SCCS level = 13.1)

Instance = swpt;3es.3†					
(input)		(preferred frame system)			(ranking)
clli(8) (building)	frame id	frm sysid1	frm sysid2	frm sysid3	frm sysid pri
8 char CLLIa	fr f02	a0			01
8 char CLLIa	fr f03	a0			01
8 char CLLId	fr f01	b0	a0		02

†Note: Sample table shown. No global default is provided.

Table 6-16.sw.5e. Frame System Prioritization For Switch Port Selection - 5ESS
(Reference Data name = frame system priority)
(Instance Key = nu_type; ic-id)
(Scope = modin)
(SCCS level = 13.1)

Instance = swpt;5es.1†					
(input)		(preferred frame system)			(ranking)
clli(8) (building)	frame id	frm sysid1	frm sysid2	frm sysid3	frm sysid pri
8 char CLLIa	fr f01	a0			01
8 char CLLIa	fr f02	a0			01
8 char CLLIa	fr f03	a0			01
8 char CLLIa	fr f04	a0			01
8 char CLLIb	fr f01	b0	a0		05

†Note: Sample table shown. No global default is provided.

Table 6-16.sw.dc. Frame System Prioritization For Switch Port Selection - DMS100
(Reference Data name = frame system priority)
(Instance Key = nu_type; ic-id)
(Scope = modin)
(SCCS level = 13.1)

Instance = swpt;dmc.2†					
(input)		(preferred frame system)			(ranking)
clli(8) (building)	frame id	frm sysid1	frm sysid2	frm sysid3	frm sysid pri
8 char CLLIa	fr f01	a0			01
8 char CLLIa	fr f02	a0			01
8 char CLLIa	fr f03	a0			01
8 char CLLIa	fr f04	a0			01
8 char CLLId	fr f01	d0	a0		05

†Note: Sample table shown. No global default is provided.

Table 6-16.tk. Frame System Prioritization For TKP Selection
(Reference Data name = frame system priority)
(Instance Key = nu_type; ic-id)
(Scope = modwc)
(SCCS level = 13.1)

Instance = tkp†					
(input)		(preferred frame system)			(ranking)
clli(8) (building)	frame id	frm sysid1	frm sysid2	frm sysid3	frm sysid pri
8 char CLLIa	fr f01	c0			01
8 char CLLIa	fr f02	c0			01
8 char CLLIa	fr f03	c0			01
8 char CLLIa	fr f04	c0			01
8 char CLLIb	fr f01	b0	c0		02

†Note: Sample table shown. No global default is provided.

Table 6-16.tr. Frame System Prioritization For TRE Selection
(Reference Data name = frame system priority)
(Instance Key = nu_type; ic-id)
(Scope = modwc)
(SCCS level = 13.1)

Instance = tre†					
(input)		(preferred frame system)			(ranking)
clli(8) (building)	frame id	frm sysid1	frm sysid2	frm sysid3	frm sysid pri
8 char CLLIa	fr f01	c0			01
8 char CLLIa	fr f02	c0			01
8 char CLLIa	fr f03	c0			01
8 char CLLIa	fr f04	c0			01
8 char CLLIb	fr f01	b0	c0		02

†Note: Sample table shown. No global default is provided.

Table 6-17. Frame System Identification
(Reference Data name = frame system id)
(Instance Key = none)
(Scope = modwc)
(SCCS level = 13.1)

frame sysid	(encompasses)	
	clli(8) (building)	frame id
a0	8 char CLLIa	fr f01 fr f02 fr f03
b0	8 char CLLIb	fr f01
c0	8 char CLLIa	fr f04
d0	8 char CLLId	fr f01

†Note: Sample table shown. No global default is provided.

Table 6-18.sw.df. Determine Jumper Length Score - SWPT DFLT
(Reference Data name = swpt penalty score jump)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)			
seq	value (iteration)	score	condition
	1	0	
	2	11	
	3	22	
	4	33	
	5	44	
	6	55	
	7	66	
	8	77	
	9	88	
	10	94	

Table 6-18.tk.df. Determine Jumper Length Score - TKP DFLT
(Reference Data name = tkp penalty score jump)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)			
seq	value (iteration)	score	condition
	1	0	
	2	11	
	3	22	
	4	33	
	5	44	
	6	55	
	7	66	
	8	77	
	9	88	
	10	94	

Table 6-18.tr.df. Determine Jumper Length Score - TRE DFLT
(Reference Data name = tre penalty score jump)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)			
seq	value (iteration)	score	condition
	1	0	
	2	11	
	3	22	
	4	33	
	5	44	
	6	55	
	7	66	
	8	77	
	9	88	
	10	94	

Table 6-19.bt.1e. Determine Signaling Score - BUSNT/1ESS
(Reference Data name = swpt penalty score sig)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = busnt;1es			
seq	value	score	condition
	b	5	
	g	95	
	l	0	

Table 6-19.df.1e. Determine Signaling Score - DFLT/1ESS
(Reference Data name = swpt penalty score sig)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt;1es			
seq	value	score	condition
100	b	5	sig=g
100	g	0	sig=g
100	l	-	sig=g
200	b	5	
200	g	-	
200	l	0	

Note: sig = signaling

Table 6-19.df.2e. Determine Signaling Score - DFLT/2ESS
(Reference Data name = swpt penalty score sig)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt;2es			
seq	value	score	condition
100	b	5	sig=g
100	g	0	sig=g
100	l	-	sig=g
200	b	5	
200	g	-	
200	l	0	

Note: sig = signaling

Table 6-19.df.3e. Determine Signaling Score - DFLT/3ESS
(Reference Data name = swpt penalty score sig)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt;3es			
seq	value	score	condition
100	b	5	sig=g
100	g	0	sig=g
100	l	-	sig=g
200	b	5	
200	g	-	
200	l	0	

Note: sig = signaling

Table 6-19.df.5e. Determine Signaling Score - DFLT/5ESS
(Reference Data name = swpt penalty score sig)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt;5es			
seq	value	score	condition
100	b	-	sig=q
100	g	-	sig=q
100	l	-	sig=q
100	p	-	sig=q
100	q	0	sig=q
200	b	0	
200	g	0	
200	l	0	
200	p	-	
200	q	-	

Note: sig = signaling

Table 6-19.df.ax. Determine Signaling Score - DFLT/AXE
(Reference Data name = swpt penalty score sig)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt;axe			
seq	value	score	condition
100	b	-	sig=q
100	g	-	sig=q
100	l	-	sig=q
100	p	-	sig=q
100	q	0	sig=q
200	b	0	
200	g	0	
200	l	0	
200	p	-	
200	q	-	

Note: sig = signaling

Table 6-19.df.dc. Determine Signaling Score - DFLT/DMS100
(Reference Data name = swpt penalty score sig)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt;dmc			
seq	value	score	condition
100	g	0	sig=g
100	l	-	sig=g
100	p	-	sig=g
100	q	-	sig=g
200	g	-	sig=p
200	l	-	sig=p
200	p	0	sig=p
200	q	99	sig=p
300	g	-	sig=q
300	l	-	sig=q
300	p	-	sig=q
300	q	0	sig=q
400	g	39	
400	l	0	
400	p	99	
400	q	99	

Note: sig = signaling

Table 6-19.df.do. Determine Signaling Score - DFLT/DCO
(Reference Data name = swpt penalty score sig)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt;dco			
seq	value	score	condition
100	b	0	sig=g
100	1	55	sig=g
200	b	5	
200	1	0	

Note: sig = signaling

Table 6-19.df.dx. Determine Signaling Score - DFLT/DMS10
(Reference Data name = swpt penalty score sig)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt;dmx			
seq	value	score	condition
100	b	0	sig=g
100	g	0	sig=g
100	l	-	sig=g
200	b	-	sig=p
200	g	-	sig=p
200	l	-	sig=p
200	p	0	sig=p
300	b	55	
300	g	55	
300	l	0	

Note: sig = signaling

Table 6-19.df.ew. Determine Signaling Score - DFLT/EWSD
(Reference Data name = swpt penalty score sig)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt;ewsd			
seq	value	score	condition
100	b	-	sig=q
100	g	-	sig=q
100	l	-	sig=q
100	p	-	sig=q
100	q	0	sig=q
200	b	0	sig=g
200	g	0	sig=g
200	l	-	sig=g
200	p	-	sig=g
200	q	-	sig=g
300	b	0	
300	g	0	
300	l	0	
300	p	-	
300	q	-	

Note: sig = signaling

Table 6-20.df.5e. Determine Essentiality Score - DFLT/5ESS
(Reference Data name = swpt penalty score es)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt;5es			
seq	value	score	condition
100	n	59	es=y
100	y	0	es=y
200	n	0	
200	y	22	

Note: es = essentiality

Table 6-20.df.dc. Determine Essentiality Score - DFLT/DMS100
(Reference Data name = swpt penalty score es)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt;dmc			
seq	value	score	condition
100	n	59	es=y
100	y	0	es=y
200	n	0	
200	y	22	

Note: es = essentiality

Table 6-20.df.df. Determine Essentiality Score - DFLT/DFLT
(Reference Data name = swpt penalty score es)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt (default IC)			
seq	value	score	condition
100	n	99	es=y
100	y	0	es=y
200	n	0	
200	y	22	

Note: es = essentiality

Table 6-21.sw.df. Determine Assembly Category Score - SWPT DFLT
(Reference Data name = swpt penalty score asm)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)			
seq	value (selectability scale)	score	condition
	0	0	
	1	20	
	2	40	
	3	60	
	4	99	
	5	99	
	6	-	

Note: The network unit selectability scale attribute, which is depicted as a numerical value in the data base, is used to determine when a network unit is in a dip, cfdip, ctdip, manually selectable or a non-selectable assembly.

Table 6-21.tr.df. Determine Assembly Category Score - TRE DFLT
(Reference Data name = tre penalty score asm)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)			
seq	value (selectability scale)	score	condition
	0	0	
	1	20	
	2	40	
	3	60	
	4	99	
	5	99	
	6	-	

Note: The network unit selectability scale attribute, which is depicted as a numerical value in the data base, is used to determine when a network unit is in a dip, cfdip, ctdip, manually selectable or a non-selectable assembly.

Table 6-22.sw.df. Determine Assembly Age Score - SWPT DFLT
(Reference Data name = swpt penalty score age)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)			
seq	value (no. of months >)	score	condition
	0	99	
	1	60	
	3	30	
	6	0	

Table 6-22.tr.df. Determine Assembly Age Score - TRE DFLT
(Reference Data name = tre penalty score age)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)			
seq	value (no. of months >)	score	condition
	0	99	
	1	60	
	3	30	
	6	0	

Table 6-23.df.df. Determine Encoding Protocol Score - DFLT/DFLT
(Reference Data name = swpt penalty score en)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)			
seq	value	score	condition
100	a	0	le=a
200	b	0	le=b
300	f	0	le=f

Note: le = line encoding

Table 6-24.5e. Spread Typing - 5ESS
(Reference Data name = spread typing)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = 5es				
admin grp type	(spread type)			
	reverse	deny	standard	extra strict
ctx		x	x	
hml			x	
sch			x	

Table 6-24.5e6. Spread Typing - 5ESS/5E6
(Reference Data name = spread typing)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = 5es;5e6				
admin grp type	(spread type)			
	reverse	deny	standard	extra strict
ctx	x	x	x	
hml			x	
sch			x	

Table 6-24.5e7. Spread Typing - 5ESS/5E7
(Reference Data name = spread typing)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = 5es;5e7				
admin grp type	(spread type)			
	reverse	deny	standard	extra strict
ctx	x	x	x	
hml			x	
sch			x	

Table 6-24.5e8. Spread Typing - 5ESS/5E8
(Reference Data name = spread typing)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = 5es;5e8				
admin grp type	(spread type)			
	reverse	deny	standard	extra strict
ctx	x	x	x	
hml			x	
sch			x	

Table 6-24.dc. Spread Typing - DMS100
(Reference Data name = spread typing)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dmc				
admin grp type	(spread type)			
	reverse	deny	standard	extra strict
ctx			x	
hml			x	
madn				x
sch			x	

Table 6-24.df. Spread Typing - DFLT
(Reference Data name = spread typing)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default IC)				
admin grp type	(spread type)			
	reverse	deny	standard	extra strict
ctx			x	
hml			x	
sch			x	
madn				

Table 6-25.ex.df. Determine Spread Score - Extra Strict/DFLT
(Reference Data name = swpt penalty score spread)
(Instance Key = spread_type; ic_type; ic_generic; admin_grp_type)
(Scope = global)
(SCCS level = 13.1)

Instance = extra strict†				
seq	(X‡)		score	condition
	low value	hi value		
100	0	15	0	level=1
100	16	-	-	level=1
200	0	7	0	level=3
200	8	-	-	level=3
300	0	0	0	level=4
300	1	1	-	level=4

† Optional Instance Keys: IC Type, IC Generic, Admin Grp Type

‡ where X=Number of assignments already in spread group

Table 6-25.st.dc. Determine Spread Score - Standard/DMS100
(Reference Data name = swpt penalty score spread)
(Instance Key = spread_type; ic_type; ic_generic; admin_grp_type)
(Scope = global)
(SCCS level = 13.1)

Instance = standard;dmc†				
seq	(spread grade) ‡		score	condition
	low value	hi value		
01	-999	0.1	0	level=3,4
02	0.1	0.7	5	level=3,4
03	0.7	1.0	10	level=3,4
04	1.0	1.4	25	level=3,4
05	1.4	1.8	35	level=3,4
06	1.9	2.1	55	level=3,4
07	2.1	2.3	65	level=3,4
08	2.3	2.5	75	level=3,4
09	2.5	2.9	85	level=3,4
10	2.9	-	95	level=3,4
11	-999	0.1	0	variety=dlc
12	0.1	0.7	5	variety=dlc
13	0.7	1.0	10	variety=dlc
14	1.0	1.4	25	variety=dlc
15	1.4	1.8	35	variety=dlc
16	1.9	2.1	55	variety=dlc
17	2.1	2.3	65	variety=dlc
18	2.3	2.5	75	variety=dlc
19	2.5	2.9	85	variety=dlc
20	2.9	-	95	variety=dlc

Spread Grade = (X - T)/squareroot of T
Where X=Number of assignments in spread group plus 1 and
T=Average number of assignments per available spread group at this level

Table 6-25.st.df. Determine Spread Score - Standard/DFLT
(Reference Data name = swpt penalty score spread)
(Instance Key = spread_type; ic_type; ic_generic; admin_grp_type)
(Scope = global)
(SCCS level = 13.1)

Instance = standard (default IC)†				
seq	(spread grade) ‡		score	condition
	low value	hi value		
01	-999	0.1	0	
02	0.1	0.7	5	
03	0.7	1.0	10	
04	1.0	1.4	25	
05	1.4	1.8	35	
06	1.8	2.1	55	
07	2.1	2.3	65	
08	2.3	2.5	75	
09	2.5	2.9	85	
10	2.9	-	95	

† Optional Instance Keys: Spread Type, IC Type, IC Generic, Admin Grp Type

‡ Spread Grade = $(X - T)/\sqrt{T}$
Where X=Number of assignments in spread group plus 1 and
T=Average number of assignments per available spread group at this level

Table 6-26. Reverse Spread List
(Reference Data name = reverse spread)
(Instance Key = ic_id; admin_grp_typ; admin_grp_id)
(Scope = modin)
(SCCS level = 13.1)

Instance = ic 1es.1;ctx;ctx 1es.1.124†
eqpt grp id
eqpt 1es.100

†Note: Sample table shown. No global default is provided.

Table 6-27.5e. Reverse Spreading Automatic Controls - 5ESS
(Reference Data name = reverse spread auto control)
(Instance Key = ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = 5es		
(number of switch ports)		spread groups
low value	high value	
0	10	2
11	25	3
26	50	4
51	100	6
101	200	10
201	500	12
501	1000	15
1001	-	*

Note: * in final entry implies that any number of Switch Modules is recommended (reverse spreading is no longer done for that group)

Table 6-28. Denied Spread List
(Reference Data name = deny spread)
(Instance Key = ic_id; admin_grp_typ; admin_grp_id)
(Scope = modin)
(SCCS level = 13.1)

Instance = ic 5es.0;ctx;ctx 5es.0.101†
eqpt grp id
eqpt 5es.0001

†Note: Sample table shown. No global default is provided.

Table 6-29.df.df. Determine Party Fill Score - DFLT/DFLT
(Reference Data name = swpt penalty score pfil)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)			
seq	value (assigned use)	score	condition
100	0	25	gs=2
100	1	0	gs=2
200	0	25	gs=4
200	1	10	gs=4
200	2	0	gs=4
200	3	0	gs=4
300	0	25	gs=8
300	1	15	gs=8
300	2	10	gs=8
300	3	0	gs=8
300	4	0	gs=8
300	5	0	gs=8
300	6	0	gs=8
300	7	0	gs=8

Note: gs = grade of service

Table 6-30.cn.1e. Determine Inherited Features Score - COIN/1ESS
(Reference Data name = swpt penalty score if)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = coin;1es			
seq	value	score	condition
	x	-	
	NULL	0	

Table 6-30.cn.2e. Determine Inherited Features Score - COIN/2ESS
(Reference Data name = swpt penalty score if)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = coin;2es			
seq	value	score	condition
	x	-	
	NULL	0	

Table 6-30.cn.dx. Determine Inherited Features Score - COIN/DMX
(Reference Data name = swpt penalty score if)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = coin;dmx			
seq	value	score	condition
	x	-	
	NULL	0	

Table 6-30.da.1e. Determine Inherited Features Score - DATA/1ESS
(Reference Data name = swpt penalty score if)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = data;1es			
seq	value	score	condition
	x	-	
	NULL	0	

Table 6-30.da.2e. Determine Inherited Features Score - DATA/2ESS
(Reference Data name = swpt penalty score if)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = data;2es			
seq	value	score	condition
	x	-	
	NULL	0	

Table 6-30.da.dx. Determine Inherited Features Score - DATA/DMX
(Reference Data name = swpt penalty score if)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance =data;dmx			
seq	value	score	condition
	x	-	
	NULL	0	

Table 6-30.df.1e. Determine Inherited Features Score - DFLT/1ESS
(Reference Data name = swpt penalty score if)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt;1es			
seq	value	score	condition
100	x	0	variety=creg
100	NULL	99	variety=creg
200	x	99	
200	NULL	0	

Table 6-30.df.2e. Determine Inherited Features Score - DFLT/2ESS
(Reference Data name = swpt penalty score if)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt;2es			
seq	value	score	condition
100	x	0	variety=creg
100	NULL	99	variety=creg
200	x	99	
200	NULL	0	

Table 6-30.df.dx. Determine Inherited Features Score - DFLT/DMX
(Reference Data name = swpt penalty score if)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt;dmx			
seq	value	score	condition
100	x	0	variety=creg
100	NULL	99	variety=creg
200	x	99	
200	NULL	0	

Table 6-31. Switch Port Relaxation - Automatic Assignment
(Reference Data name = swpt relaxation)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)																
level	rule															
	am (admin const)	ld (load factor)	jump (jumper length)	sig (sig)	es (esl)	asm (asmbly type)	age (asmbly age)	en (encoding protocol)	sprd (spread)	pfil (pty fill)	if (inh feat)	bnd (odb band)	ct (card type)	util (util factor)	cost (car cost)	path (paths)
01	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0
02	0	15	15	0	0	0	0	0	5	0	0	0	10	0	0	0
03	15	15	15	50	50	0	0	0	10	5	0	0	20	0	50	0
04	15	25	30	50	50	0	0	0	10	5	0	0	30	0	50	0
05	30	25	30	50	50	0	0	0	25	10	0	0	40	25	50	25
06	30	40	40	50	50	0	0	0	25	10	0	0	50	25	50	25
07	30	40	40	50	50	30	0	0	35	20	50	0	55	25	75	25
08	40	40	40	50	50	40	30	0	35	20	50	0	60	60	75	60
09	40	40	50	50	50	40	30	0	55	30	50	0	65	85	75	85
10	40	50	60	50	50	40	60	0	65	40	50	0	70	85	75	85
11	50	50	60	50	50	60	60	0	75	50	50	0	75	85	75	85
12	50	50	70	50	50	60	60	0	85	60	50	0	80	85	75	85
13	50	50	80	50	50	60	60	0	85	60	50	0	85	85	75	85
14	75	50	90	50	50	60	60	0	85	60	50	0	90	85	75	85
15	75	50	95	95	50	75	75	0	95	60	50	0	95	95	95	95

Table 6-32. Automatic Selection Pending Flags
(Reference Data name = sel pending flags)
(Instance Key = none)
(Scope = global)
(SCCS level = 13.1)

type	ic id	(loop on)	
		pend out	pend in
bl	*	y	n
if	*	y	n

†Note: Sample table shown. No global default is provided.
Can be limited to a wire center scope if desired.

Table 6-32.sw. Control Pending - Automatic Assignment - SWPT
(Reference Data name = swpt pending frame control)
(Instance Key = none)
(Scope = global)
(SCCS level = 13.1)

pending state	(frame state)			
	home frame	home system	alt sys 1	alt sys 2
a. no pending	1	2	5	7
b. pending out	3	4	6	8
c. pending in	-	-	-	-

†Note: The global instance can be overridden at a wire center level

Table 6-32.tk. Control Pending - Automatic Assignment - TKP
(Reference Data name = tkp pending frame control)
(Instance Key = none)
(Scope = global)
(SCCS level = 13.1)

pending state	(frame state)			
	home frame	home system	alt sys 1	alt sys 2
a. no pending	1	2	5	7
b. pending out	3	4	6	8
c. pending in	-	-	-	-

†Note: The global instance can be overridden at a wire center level

Table 6-32.tr. Control Pending - Automatic Assignment - TRE
(Reference Data name = tre pending frame control)
(Instance Key = none)
(Scope = global)
(SCCS level = 13.1)

pending state	(frame state)			
	home frame	home system	alt sys 1	alt sys 2
a. no pending	1	2	5	7
b. pending out	3	4	6	8
c. pending in	-	-	-	-

†Note: The global instance can be overridden at a wire center level

Table 6-33. Pending Out Validation
(Reference Data name = order pending out)
(Instance Key = ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default IC)		
in asgn type	del asgn type (pending out)	date interval
atr	atr	-
atr	cpt	-
atr	ctr	-
atr	dtr	-
atr	lst	-
atr	set	-
atr	spd	-
atr	spp	-
atr	wao	-
cpt	atr	-
cpt	cpt	-
cpt	ctr	-
cpt	dtr	-
cpt	lst	-
cpt	set	-
cpt	spd	-
cpt	spp	-
cpt	wao	-
ctr	atr	-
ctr	cpt	-
ctr	ctr	-
ctr	dtr	-
ctr	lst	-
ctr	set	-
ctr	spd	-
ctr	spp	-
ctr	wao	-

Instance = (default IC)		
in asgn type	del asgn type (pending out)	date interval
dtr	atr	-
dtr	cpt	-
dtr	ctr	-
dtr	dtr	-
dtr	lst	-
dtr	set	-
dtr	spd	-
dtr	spp	-
dtr	wao	-
lst	atr	-
lst	cpt	-
lst	ctr	-
lst	dtr	-
lst	lst	-
lst	set	-
lst	spd	-
lst	spp	-
lst	wao	-
set	atr	-
set	cpt	-
set	ctr	-
set	dtr	-
set	lst	-
set	set	-
set	spd	-
set	spp	-
set	wao	-

Instance = (default IC)		
in asgn type	del asgn type (pending out)	date interval
spd	atr	-
spd	cpt	-
spd	ctr	-
spd	dtr	-
spd	lst	-
spd	set	-
spd	spd	8
spd	spp	3
spd	wao	-
spi	atr	-
spi	cpt	-
spi	ctr	-
spi	dtr	-
spi	lst	-
spi	set	-
spi	spd	7
spi	spp	2
spi	wao	-
spp	atr	-
spp	cpt	-
spp	ctr	-
spp	dtr	-
spp	lst	-
spp	set	-
spp	spd	7
spp	spp	4
spp	wao	-

Instance = (default IC)		
in asgn type	del asgn type (pending out)	date interval
wao	atr	-
wao	cpt	-
wao	ctr	-
wao	dtr	-
wao	lst	-
wao	set	-
wao	spd	-
wao	spp	-
wao	wao	-

Note: The code set used to define assignment type is:

- atr = Area Transfer
- cpt = Cable Pair Transfer
- ctr = Channel/CRV Transfer
- dtr = Dial Transfer
- lst = Line and Station Transfer
- set = Switch Port Equipment Transfer
- spd = Automatic Service Provisioning Design
- spi = Inquiry Service Provisioning
- spp = Automatic Service Provisioning Non-design
- wao = Wire Assembly Order

Table 6-34. Pending In Validation
(Reference Data name = order pending in)
(Instance Key = ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default IC)		
in asgn type	del asgn type (pending in)	date interval
atr	atr	-
atr	cpt	-
atr	ctr	-
atr	dtr	-
atr	lst	-
atr	set	-
atr	spd	-
atr	spp	-
atr	wao	-
cpt	atr	-
cpt	cpt	-
cpt	ctr	-
cpt	dtr	-
cpt	lst	-
cpt	set	-
cpt	spd	-
cpt	spp	-
cpt	wao	-
ctr	atr	-
ctr	cpt	-
ctr	ctr	-
ctr	dtr	-
ctr	lst	-
ctr	set	-
ctr	spd	-
ctr	spp	-
ctr	wao	-

Instance = (default IC)		
in asgn type	del asgn type (pending in)	date interval
dtr	atr	-
dtr	cpt	-
dtr	ctr	-
dtr	dtr	-
dtr	lst	-
dtr	set	-
dtr	spd	-
dtr	spp	-
dtr	wao	-
lst	atr	-
lst	cpt	-
lst	ctr	-
lst	dtr	-
lst	lst	-
lst	set	-
lst	spd	-
lst	spp	-
lst	wao	-
set	atr	-
set	cpt	-
set	ctr	-
set	dtr	-
set	lst	-
set	set	-
set	spd	-
set	spp	-
set	wao	-

Instance = (default IC)		
in asgn type	del asgn type (pending in)	date interval
spd	atr	-
spd	cpt	-
spd	ctr	-
spd	dtr	-
spd	lst	-
spd	set	-
spd	spd	25
spd	spp	6
spd	wao	-
spi	atr	-
spi	cpt	-
spi	ctr	-
spi	dtr	-
spi	lst	-
spi	set	-
spi	spd	25
spi	spp	5
spi	wao	-
spp	atr	-
spp	cpt	-
spp	ctr	-
spp	dtr	-
spp	lst	-
spp	set	-
spp	spd	25
spp	spp	7
spp	wao	-

Instance = (default IC)		
in asgn type	del asgn type (pending in)	date interval
wao	atr	-
wao	cpt	-
wao	ctr	-
wao	dtr	-
wao	lst	-
wao	set	-
wao	spd	-
wao	spp	-
wao	wao	-

Note: The code set used to define assignment type is:

- atr = Area Transfer
- cpt = Cable Pair Transfer
- ctr = Channel/CRV Transfer
- dtr = Dial Transfer
- lst = Line and Station Transfer
- set = Switch Port Equipment Transfer
- spd = Automatic Service Provisioning Design
- spi = Inquiry Service Provisioning
- spp = Automatic Service Provisioning Non-design
- wao = Wire Assembly Order

Table 6-35. Switch Port Weighting
(Reference Data name = swpt score weight)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default IC)																
asgnmt type	(rule set - scoring characteristics)															
	am (admin const)	ld (load factor)	jump (jumper length)	sig (signal)	es (esl)	asm (asmbly cat)	age (asmbly age)	en (enc)	sprd (spread)	pfil (party fill)	if (inh feat)	band (odb band)	ct (card type)	util (util factor)	cost (car cost)	path (paths)
asm (Auto Asm)	100	100	100	10	10	100	100	100	100	100	100	100	10	100	100	100
atr (Auto ATR)	100	100	100	25	25	50	50	100	25	10	100	100	10	100	100	100
cpt (Auto CT)	100	100	100	25	25	50	50	100	25	10	100	100	10	100	100	100
ctr (Auto CTR)	75	100	100	50	50	50	50	100	25	10	100	100	10	100	100	100
dtr (Auto DTR)	100	100	100	25	25	50	50	100	25	10	100	100	10	100	100	100
lst (Auto LST)	100	100	100	10	10	50	50	100	50	10	100	100	10	100	100	100
mct (Auto MCT)	100	100	100	25	25	50	50	100	25	10	100	100	10	100	100	100
set (Auto SET)	75	100	100	50	50	50	50	100	25	10	100	100	10	100	100	100
spd (Auto Svc Pro-D)	100	100	100	10	10	50	50	100	50	30	100	100	10	100	100	100
spi (Inquiry Svc Pro)	75	100	100	10	10	50	50	100	10	10	100	100	10	100	100	100
spp (Auto Svc Pro-P)	100	100	100	10	10	50	50	100	50	30	100	100	10	100	100	100

Table 6-36. TRE Evaluation Rule Set - Automatic Assignment
(Reference Data Name = tre rule set)
(Instance Key = ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default IC)†					
		rule			
asgn cat	variety	(specific functionality)	(jumper length)	(asmbly)	(age)
dflt		sf1	jump1	asm1	age1

† The scope of this table can be limited to a wire center.

Table 6-37.cn.1e. TRE Specific Functionality Score - COIN/1ESS
(Reference Data name = tre penalty score sf)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = coin;1es			
seq	value	score	condition
	re	99	
	re1	0	

Table 6-37.cn.df. TRE Specific Functionality Score - COIN/DFLT
(Reference Data name = tre penalty score sf)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = coin (default IC)			
seq	value	score	condition
	re	99	
	rel	0	

Table 6-37.df.1e. TRE Specific Functionality Score - DFLT/1ESS
(Reference Data name = tre penalty score sf)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt;1es			
seq	value	score	condition
100	re	99	rz ≥18
100	rel	0	rz ≥18
200	re	0	
200	rel	30	

Table 6-37.df.df. TRE Specific Functionality Score - DFLT/DFLT
(Reference Data name = tre penalty score sf)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)			
seq	value	score	condition
100	re	99	rz ≥19
100	re1	0	rz ≥19
200	re	0	
200	re1	30	

Table 6-37.so.df. TRE Specific Functionality Score - PPSNDO/DFLT
(Reference Data name = tre penalty score sf)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = ppsndo (default IC)			
seq	value	score	condition
100	do	0	
200	*	99	

Table 6-37.su.df. TRE Specific Functionality Score - PPSNDUP/DFLT
(Reference Data name = tre penalty score sf)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = ppsndup (default IC)			
seq	value	score	condition
100	dup	0	
200	*	99	

Table 6-37.sv.df. TRE Specific Functionality Score - PPSNDOV/DFLT
(Reference Data name = tre penalty score sf)
(Instance Key = asgn_cat; ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = ppsndov (default IC)			
seq	value	score	condition
100	dov	0	
200	*	99	

Table 6-38. TRE Relaxation - Automatic Assignment
(Reference Data name = tre relaxation)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)				
level	sf (specific functionality)	jump (jumper length)	asm (asmbly type)	age (asmbly age)
01	0	0	0	0
02	0	15	0	0
03	0	30	0	0
04	0	40	0	0
05	0	50	0	0
06	0	60	0	0
07	0	70	0	0
08	0	80	0	0
09	0	90	0	0
10	0	95	0	0
11	30	95	0	0
12	30	95	20	0
13	30	95	20	30
14	30	95	40	30
15	30	95	40	60
16	30	95	60	60

Table 6-39. Transmission Equipment Weighting - DFLT/DFLT
(Reference Data name = tre score weight)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)				
asgn type	(rule set - scoring characteristics)			
	sf (specific functionality)	jump (jumper length)	asm (asmbly cat)	age (asmbly age)
dflt	100	100	100	100

Note: This table actually represents a set of tables keyed by assignment type (e.g. asm).

Table 6-40. Linear Connectivity Weight
(Reference Data name = linear connect weight)
(Instance Key = none)
(Scope = global)
(SCCS level = 13.1)

nu type	seq	operator†	attribute name	attribute value	weight	can bridge
bl			type	bl	70	y
ccpt			type	ccpt	10	
chan			type	chan	00	
cp			spec_func	int	00	
cp			spec_func	cc	00	
cp			type	cp	10	
crv			type	crv	00	
ice			spec_func	cn, 2p, 4p, 8p	80	
ice			type	ice	80	
me			spec_func	met	05	
me			spec_func	dcp	10	
me			spec_func	cme	30	
me			spec_func	mpta	70	
me			spec_func	modem	75	
me			spec_func	msfe	45	
me			spec_func	aml, awsr, cga, clc, daml, dpai, dpit, dpp, dpr, dssc, msic, pcp, slc1, udc	50	
me			spec_func	abp, abs, awsc, dpmr, dpof, sp, spet, sprb, sprg	90	
me			type	me	00	
swpt			integrated	y	00	
swpt			fabric	pkt	00	
swpt			type	swpt	90	y
tkp			control_ind	n	10	
tkp		!	control_ind	n	15	y
tre			type	tre	40	

†Note: An operator can be used with an "and" value to associate two lines of the table with a connectivity weight. An operator of "not" can be used by itself for a given line of the table or in conjunction with the "and" value.

Note: Each table entry with multiple values is implemented as separate lines in the reference data table.

Table 6-41. Frame-to-Frame Connection Priority
(Reference Data name = frame connect priority)
(Instance Key = none)
(Scope = modwc)
(SCCS level = 13.1)

from frame	to frame	priority
fr f01	fr f01	01
fr f01	fr f02	02
fr f01	fr f03	02
fr f01	fr f04	03
fr f02	fr f02	01
fr f02	fr f03	02
fr f02	fr f04	03
fr f03	fr f03	01
fr f03	fr f04	03
fr f04	fr f04	09

†Note: Sample table shown. No global default is provided.

Table 6-42. Intra-Wire Center Facility Routing
(Reference Data name = tp routes)
(Instance Key = none)
(Scope = modwc)
(SCCS level = 13.1)

from frame	to frame	priority	int fr1	int fr2	int fr3	int fr4
fr f01	fr f01	01	fr f05			
fr f01	fr f02	01	fr f05			
fr f01	fr f02	02	fr f04			
fr f01	fr f02	03	fr f06	fr f07		
fr f01	fr f03	01	fr f05			
fr f01	fr f03	02	fr f04			
fr f01	fr f03	03	fr f06	fr f07		
fr f01	fr f04	01				
fr f02	fr f02	01	fr f05			
fr f02	fr f03	01	fr f05			
fr f02	fr f03	02	fr f04			
fr f02	fr f03	03	fr f06	fr f07		
fr f02	fr f04	01				
fr f03	fr f03	01	fr f05			
fr f03	fr f04	01				
fr f04	fr f04	01				
fr f04	fr f04	02	fr f06			

†Note: Sample table shown. No global default is provided.

Two entries must exist in this table for each route (both directions must be given). For example, if a route exists between fr f01 and fr f02 then an entry must exist with the "from frame = fr f01" and the "to frame = fr f02" and a second entry with the "from frame = fr f02" and the "to frame = fr f01". Due to size constraints, this example does NOT show both entries for a route.

Table 6-43. Selected CEC Attributes Mapped to Usage Category
(Reference Data name = usage category map)
(Instance Key = none)
(Scope = global)
(SCCS level = 13.1)

(central office equivalence code)					usage cat
grade	svc	class	category	co term	
*	*	*	i	*	isdn
*	*	*	k	s	1mbus
*	*	*	u	s	trk
*	*	*	y	s	1mbus
*	*	b	a	s	pbxt
*	*	c	v	s	coin
*	o	b	d,m,v	s	obus
*	w	b	v	s	wats
1	f	b	v	s	1fbus
1	f	r	v	s	1fres
1	m	b	d,v	s	1mbus
1	m	r	v	s	1mres
2,4,8	f	b	v	s	mfbus
2,4,8	f	r	v	s	mfres
2,4,8	m	b	v	s	mmbus
2,4,8	m	r	v	s	mmres

Note: The usage categories represent, from top to bottom: ISDN, public packet switched service (treated as measured business), single-party measured business, message trunks, PBX trunks, coin, other business, WATS, single-party flat business, single-party flat residence, single-party measured residence, multi-party flat business, multi-party flat residence, multi-party measured business and multi-party measured residence.

Note: Each table entry with multiple values is implemented as separate lines in the reference data table.

Table 6-44.1fb. Determine CCS Adjustment - 1FBUS
(Reference Data name = ccs adjustment)
(Instance Key = usgcat; ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = 1fbus (default IC)									
seq	ccs	ccf	ccf	ccf	dir	pul	caty	usoc	adjustment
010	h	*	*	*	b	*	*	*	10.0
020	h	*	*	*	o	*	*	*	8.0
030	h	*	*	*	i	*	*	*	6.0
040	*	*	*	*	*	*	*	*	4.0

An asterisk (*) is used to indicate all legitimate values.

Table 6-44.1fr. Determine CCS Adjustment - 1FRES
(Reference Data name = ccs adjustment)
(Instance Key = usgcat; ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = 1fres (default IC)									
seq	ccs	ccf	ccf	ccf	dir	pul	caty	usoc	adjustment
010	*	esx	*	*	*	*	*	*	6.0
020	*	*	*	*	*	j	*	*	3.0
030	*	*	*	*	*	*	*	*	2.5

An asterisk (*) is used to indicate all legitimate values.

Table 6-44.1mb. Determine CCS Adjustment - 1MBUS
(Reference Data name = ccs adjustment)
(Instance Key = usgcat; ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = 1mbus (default IC)									
seq	ccs	ccf	ccf	ccf	dir	pul	caty	usoc	adjustment
010	h	*	*	*	b	*	*	*	10.0
020	h	*	*	*	o	*	*	*	8.0
030	h	*	*	*	i	*	*	*	6.0
040	*	*	*	*	*	*	*	*	4.0

An asterisk (*) is used to indicate all legitimate values.

Table 6-44.1mr. Determine CCS Adjustment - 1MRES
(Reference Data name = ccs adjustment)
(Instance Key = usgcat; ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = 1mres (default IC)									
seq	ccs	ccf	ccf	ccf	dir	pul	caty	usoc	adjustment
010	*	esx	*	*	*	*	*	*	6.0
020	*	*	*	*	*	j	*	*	3.0
030	*	*	*	*	*	*	*	*	2.5

An asterisk (*) is used to indicate all legitimate values.

Table 6-44.coi. Determine CCS Adjustment - COIN
(Reference Data name = ccs adjustment)
(Instance Key = usgcat; ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = coin (default IC)									
seq	ccs	ccf	ccf	ccf	dir	pul	caty	usoc	adjustment
	*	*	*	*	*	*	*	*	3.0

An asterisk (*) is used to indicate all legitimate values.

Table 6-44.isn.5e. Determine CCS Adjustment - ISDN/5ESS
(Reference Data name = ccs adjustment isdn)
(Instance Key = ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = 5es						
seq	bearer service	ccs	caty	usoc	adjustment	car adjustment
010	csv	*	*	*	4.0	4.0
020	csd	*	*	*	3.8	3.8
030	csdv	*	*	*	4.2	4.2
040	dmd	*	*	*	4.5	4.5
050	x25	*	*	*	36.0	36.0
060	none	*	*	*	0.0	0.0
070	blank	*	*	*	0.0	0.0
080	admin	*	*	*	0.0	9.0
090	sx	*	*	*	0.0	9.0
100	sonly	*	*	*	0.0	9.0
110	xonly	*	*	*	0.0	9.0
120	xmp	*	*	*	0.0	9.0

Table 6-44.isn.dc. Determine CCS Adjustment - ISDN/DMS100
(Reference Data name = ccs adjustment isdn)
(Instance Key = ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = dmc						
seq	bearer service	ccs	caty	usoc	adjustment	car adjustment
010	csv	*	*	*	4.0	4.0
020	csd	*	*	*	3.8	3.8
030	csdv	*	*	*	4.2	4.2
040	psb	*	*	*	36.0	36.0
050	none	*	*	*	0.0	0.0
060	psd	*	*	*	9.0	9.0
070	blank	*	*	*	9.0	9.0

Table 6-44.isn.dx. Determine CCS Adjustment - ISDN/DMS10
(Reference Data name = ccs adjustment isdn)
(Instance Key = ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = dmx						
seq	bearer service	ccs	caty	usoc	adjustment	car adjustment
010	dmd	*	*	*	4.5	
020	x25	*	*	*	0.0	
030	none	*	*	*	0.0	
040	sonly	*	*	*	0.0	
050	sx	*	*	*	0.0	
060	xonly	*	*	*	0.0	

Table 6-44.isn.ew. Determine CCS Adjustment - ISDN/EWSD
(Reference Data name = ccs adjustment isdn)
(Instance Key = ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = ewsd						
seq	bearer service	ccs	caty	usoc	adjustment	car adjustment
010	dmd	*	*	*	4.5	36.0
020	x25	*	*	*	0.0	36.0
030	none	*	*	*	0.0	0.0
040	sonly	*	*	*	0.0	9.0
050	sx	*	*	*	0.0	9.0
060	xonly	*	*	*	0.0	9.0

Table 6-44.mfb. Determine CCS Adjustment - MFBUS
(Reference Data name = ccs adjustment)
(Instance Key = usgcat; ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = mfbus (default IC)									
seq	ccs	ccf	ccf	ccf	dir	pul	caty	usoc	adjustment
	*	*	*	*	*	*	*	*	2.0

An asterisk (*) is used to indicate all legitimate values.

Table 6-44.mfr. Determine CCS Adjustment - MFRES
(Reference Data name = ccs adjustment)
(Instance Key = usgcat; ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = mfres (default IC)									
seq	ccs	ccf	ccf	ccf	dir	pul	caty	usoc	adjustment
	*	*	*	*	*	*	*	*	2.0

An asterisk (*) is used to indicate all legitimate values.

Table 6-44.mmb. Determine CCS Adjustment - MMBUS
(Reference Data name = ccs adjustment)
(Instance Key = usgcat; ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = mmbus (default IC)									
seq	ccs	ccf	ccf	ccf	dir	pul	caty	usoc	adjustment
	*	*	*	*	*	*	*	*	2.0

An asterisk is used to indicate all legitimate values.

Table 6-44.mmr. Determine CCS Adjustment - MMRES
(Reference Data name = ccs adjustment)
(Instance Key = usgcat; ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = mmres (default IC)									
seq	ccs	ccf	ccf	ccf	dir	pul	caty	usoc	adjustment
	*	*	*	*	*	*	*	*	2.0

An asterisk (*) is used to indicate all legitimate values.

Table 6-44.obs. Determine CCS Adjustment - OBUS
(Reference Data name = ccs adjustment)
(Instance Key = usgcat; ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = obus (default IC)									
seq	ccs	ccf	ccf	ccf	dir	pul	caty	usoc	adjustment
010	h	*	*	*	*	*	*	*	10.0
020	*	*	*	*	*	*	*	*	8.0

An asterisk (*) is used to indicate all legitimate values.

Table 6-44.oisd. Determine Collection CCS Adjustment for ODB - 5ESS
(Reference Data name = ccs adjustment odb isdn)
(Instance Key = ic_type; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = 5es	
odb band	adjustment
*	8.0
0	8.0

Table 6-44.pbx. Determine CCS Adjustment - PBXT
(WC Reference Data name = ccs adjustment)
(Instance Key = usgcat; ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = pbxt (default IC)									
seq	est ccs	ccf	ccf	ccf	dir	pul	caty	usoc	adjustment
010	h	*	*	*	*	*	*	*	18.0
020	m	*	*	*	*	*	*	*	6.8
030	l	*	*	*	*	*	*	*	0.8

An asterisk (*) is used to indicate all legitimate values.

Table 6-44.pisd. Determine PPS Adjustment - ISDN
(Reference Data name = pps adjustment isdn)
(Instance Key = ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = (default IC)					
seq	bearer service	pps	caty	usoc	adjustment
010	xonly	*	*	*	10.0
020	xmp	*	*	*	8.0
030	sx	*	*	*	6.0
040	sonly	*	*	*	0.1
050	admin	*	*	*	0.1
060	blank	*	*	*	0.0
070	x25	*	*	*	37.0
080	dmd	*	*	*	4.0
090	csv	*	*	*	0.0
100	csd	*	*	*	0.0
110	csdv	*	*	*	0.0

An asterisk (*) is used to indicate all legitimate values.

Table 6-44.trk. Determine CCS Adjustment - TRK
(WC Reference Data name = ccs adjustment)
(Instance Key = usgcat; ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = trk (default IC)									
seq	est ccs	ccf	ccf	ccf	dir	pul	caty	usoc	adjustment
010	h	*	*	*	*	*	*	*	18.0
020	m	*	*	*	*	*	*	*	6.8
030	l	*	*	*	*	*	*	*	0.8

An asterisk (*) is used to indicate all legitimate values.

Table 6-44.wts. Determine CCS Adjustment - WATS
(Reference Data name = ccs adjustment wats)
(Instance Key = ic_type; ic_id)
(Scope = defin)
(SCCS level = 13.1)

Instance = (default IC)						
seq	ccs	dir	band	caty	usoc	adjustment
010	h	b	*	*	*	10.0
020	h	o	*	*	*	8.0
030	h	i	*	*	*	7.0
040	*	*	*	*	*	5.0

An asterisk (*) is used to indicate all legitimate values.

Table 6-45. POE Data - 5ESS
(Reference Data name = poe am data)
(Instance Key = ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.2)

Instance = (default IC)					
adm_const	svc_type	unit_alloc	cap_int	ph_type	eqpt_type
dch	d	4	1	3	islu
dchc	d	4	1	3	islu
dch2	d	4	1	2	islu
idch	d	4	1	3	idcu
idchc	d	4	1	3	idcu
idch2	d	4	1	2	idcu
odb	o	-	4	3	islu
odbc	o	-	4	3	islu
odb2	o	-	4	2	islu
iodbc	o	-	4	3	idcu
iodb	o	-	4	3	idcu
ppb	b	1	4	3	islu
ppbc	b	1	4	3	islu
ppb2	b	1	4	2	islu
ippb	b	1	4	3	idcu
ippbc	b	1	4	3	idcu

Table 6-46. Determine Aging Interval
(Reference Data name = tn aging)
(Instance Key = none)
(Scope = global)
(SCCS level = 13.1)

seq	asgn cat	days	condition	dir date
	bus	90	dy=o;ts=w;	n
	bus	30	dy=i;ts=w;	n
	bus	0	co=sdt;	n
	bus	0	co=cdt;	n
	busnt	90	cs=r;	n
	coin	30	co=cpts;	n
	coin	90	co=pc;	n
	dflt	365		n
	plhic	0		n
	resp	30	co=adl;	n
	resp	90		n
	res1	0	co=sdt;	n
	res1	0	co=cdt;	n
	res1	30	co=adl;	n
	res1	90		n

Note: cs = class of service, co = caty code,
dy = directionality, ts = type of service

Default (dflt) indicates all legitimate values. Default indicates any legitimate values are acceptable *after* failing to match on any of the other more specific entries.

Table 6-47. ADSR Frame Priority
(Reference Data name = adsr frame priority)
(Instance Key = none)
(Scope = defwc)
(SCCS level = 13.1)

frame ID	priority
fr f01	01
fr f03	02
fr f02	03

Note: Sample table shown.
Conversion default will give every frame in WC, priority = 1.

Table 6-48. Sublet Options
(Reference Data Name = sublet options)
(Instance Key = ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance =	(default IC)
asgn cat	sublet option
bus	y
busp	n
dflt	n
resp	n
res1	y

Table 6-49. Determine Zone Search - Over/Under Frame Configuration
(Reference Data name = frame zone search)
(Instance Key = frame_type; frame_id)
(Scope = global)
(SCCS level = 13.1)

Instance = cods2over		
iteration	mod offset	zone offset
1	0	0
2	- 1	0
2	+1	0
3	- 1	+1
3	- 1	- 1
3	+1	+1
3	+1	- 1
4	- 1	+2
4	- 1	- 2
4	+1	+2
4	+1	- 2
5	- 1	+3*
5	- 1	- 3*
5	+1	+3*
5	+1	- 3*
6	0	+1
6	0	- 1
7	0	+2
7	0	- 2
8	0	+3*
8	0	+3*

* indicates search the remaining vertical zone(s)

Table 6-50.df.5e. Determine Band Score - DFLT/5ESS
(Reference Data name = swpt penalty score bnd)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt;5es			
seq	value	score	condition
100	0	0	band=0
100	1	0	band=1
100	2	0	band=2
100	3	0	band=3
100	4	0	band=4
100	5	0	band=5
100	6	0	band=6
100	7	0	band=7
100	8	0	band=8
100	9	0	band=9
200	10	0	band=10
200	11	0	band=11
200	12	0	band=12
200	13	0	band=13
200	14	0	band=14
200	15	0	band=15

Table 6-51.df.df. Determine LTID Group Index Score - DFLT/DFLT
(Reference Data name = ltid penalty score lgi)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope =global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)			
seq	value	score	condition
100	0-15	0	sd=psd
100	16-31	-	sd=psd
200	16-31	0	sd=psb
200	0-15	50	sd=psb
300	16-31	0	sd=cs
300	0-15	50	sd=cs

Note - This table is not qualified by Assignment Category. It is, however, expected to be used only for the ISDNT and ISDNU Assignment Categories based on the appearance of the ltida composition rule for these two Assignment Categories.

Table 6-52. LTID Evaluation Rule Set - Automatic Assignment
(Reference Data Name = ltid rule set)
(Instance Key = ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default IC)†		
asgn cat	variety	rule (group index)
isdnt		lgi1
isdnu		lgi1

† The scope of this table can be limited to a wire center.

Table 6-53. TKP Evaluation Rule Set - Automatic Assignment
(Reference Data Name = tkp rule set)
(Instance Key = ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default IC)†				
		rule		
asgn cat	variety	(next location)	(jumper length)	(loaded indicator)
dflt		nl1	jump1	li1

† The scope of this table can be limited to a wire center.

Table 6-54.df.df. Determine Next Location Score - TKP DFLT/DFLT
(Reference Data Name = tkp penalty score nl)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = modwc)
(SCCS level = 13.1)

Instance = (default asgcat, IC)†			
seq	value	score	condition
100	312344	0	End Loc = 312344
100	312345	50	End Loc = 312344
100	312346	70	End Loc = 312344
200	312345	0	End Loc = 312561
200	312344	50	End Loc = 312561
200	312346	50	End Loc = 312561
:	:	:	:

†Note: Sample table shown. No global default is provided.
Conversion default will give every next location value in the WC a score of 0.

Table 6-55.df.df. Determine Loaded Indicator Score - TKP DFLT/DFLT
(Reference Data Name = tkp penalty score li)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)			
seq	value	score	condition
100	n	0	ct = m, sig = p
110	y	-	ct = m, sig = p
200	n	0	ct = i
210	y	-	ct = i
300	n	0	ct = w
310	y	-	ct = w
400	n	0	ct = d
410	y	-	ct = d
500	n	0	ct = p
510	y	-	ct = p
600	n	30	
610	y	0	

Note: ct = category

Table 6-56. TKP Relaxation - Automatic Assignment
(Reference Data name = tkp relaxation)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)			
level	nl (next location)	jump (jumper length)	li (loaded indicator)
01	0	0	0
02	0	15	0
03	0	30	0
04	0	40	0
05	0	50	30
06	0	60	30
07	0	70	30
08	0	80	30
09	0	90	30
10	0	95	30
11	20	95	30
12	40	95	30
13	60	95	30
14	80	95	30
15	95	95	30
16	95	95	95

Table 6-57. Trunk Pair Weighting
(Reference Data name = tkp score weight)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)			
asgn type	(rule set - scoring characteristics)		
	nl (next location)	jump (jumper length)	li (loaded indicator)
asm	100	100	100
cpt	100	100	100
dtr	100	100	100
lst	100	100	100
mct	100	100	100
set	100	100	100
spd	100	100	100
spi	100	100	100
spp	100	100	100

Table 6-58. SSC Side Mapping
(Reference Data Name = ssc sf side map)
(Instance Key = none)
(Scope = global)
(SCCS level = 13.1)

ssc	primary	derived
aml	p	d
daml	a	b
dssc	a	b
slc1	p	d
udc	1	2

Table 6-59.cm.df. Determine Card Type Score - MPTCAR/DFLT
(Reference Data name = swpt penalty score ct)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = mptcar (default IC)			
seq	value	score	condition
100	ds1	0	dr=e
200	ds2	0	dr=f

Table 6-59.cr.df. Determine Card Type Score - CARRIER/DFLT
(Reference Data name = swpt penalty score ct)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = carrier (default IC)			
seq	value	score	condition
100	ds1	0	dr=e
200	ds2	0	dr=f

Table 6-59.df.dc. Determine Card Type Score - DFLT/DMS100
(Reference Data name = swpt penalty score ct)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = dflt;dmc			
seq	value	score	condition
100	e	0	sd=mwl
110	NULL	99	sd=mwl
200	a	0	sd=cid
220	b	0	sd=cid
230	c	0	sd=cid
240	d	0	sd=cid
250	e	90	sd=cid
260	NULL	0	sd=cid
300	a2x	-	sd=cid
310	b2x	-	sd=cid
320	c2x	-	sd=cid
330	d2x	-	sd=cid
400	a2x	0	
410	a	0	
420	b2x	0	
430	b	0	
440	c2x	0	
450	c	0	
460	d2x	0	
470	d	0	
480	e	90	
490	NULL	0	

Note: SD = MWL indicates Message Waiting Lamp
SD = CID indicates Caller Identification

Table 6-60. Determine Directory Date
(Reference Data name = tn directory dates)
(Instance Key = none)
(Scope = modwc)
(SCCS level = 13.1)

npa	nxx	asgn cat	close date	direc date	(nxx subset)	
					line subset low	line subset high
908	899	bus	3/1	6/15		
908	633	bus	9/15	12/15	0000	4999
908	633	bus	12/1	2/1	5000	9999
908	526	*	6/1	9/1	0000	9999

†Note: Sample table shown. No global default is provided.

Table 6-61.dft. Integration Exclusion Table - DFLT
(Reference Data name = integration excl)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance =	(default CC)
card type	condition
ebs	

Table 6-61.dis. Integration Exclusion Table - DISCS
(Reference Data name = integration excl)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.2)

Instance = discs	
card type	condition
bri	
ebs	

Table 6-61.dou. Integration Exclusion Table - DISONU
(Reference Data name = integration excl)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.2)

Instance = disonu	
card type	condition
bri	
ebs	

Table 6-61.fct. Integration Exclusion Table - FCTR
(Reference Data name = integration excl)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = fctr	
card type	condition
bri	
ebs	

Table 6-61.s2t. Integration Exclusion Table - SLC2T
(Reference Data name = integration excl)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = slc2t	
card type	condition
bri	
ebs	

Table 6-61.slo. Integration Exclusion Table - SLCONU
(Reference Data name = integration excl)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = slconu	
card type	condition
bri	
ebs	

Table 6-62. CC IC Connect Map
(Reference Data Name = cc ic connect map)
(Instance Key = none)
(Scope = modwc)
(SCCS level = 13.1)

cc	cc ic
cc piscnjmtds0	ic 5es.1

+Note: The contents of this table are for illustrative purposes only.
No global default is provided.

Table 6-63.and. Assignment Category CC Rule Set - AN
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = an			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
bus	-	ccpta	
busp	-	ccpta	
coin	-	ccpta	
isdnu	-	ccptu	
madn	-	ccpta	
pbxt	-	ccptco	
plvoice	-	ccptco	
pl4w	-	ccpt4x	
plalarm	-	ccpta	
pldata	-	ccptco	
resp	-	ccpta	
res1	-	ccpta	
carrier	-	ccptz	
mptcar	-	ccpty	

Table 6-63.ano. Assignment Category CC Rule Set - ANONU
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = anonu			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
bus	-	ccpta	
busp	-	ccpta	
coin	-	ccpta	
isdnu	-	ccptu	
madn	-	ccpta	
pbxt	-	ccpta	
plvoice	-	ccpta	
pl4w	-	ccpt4x	
plalarm	-	ccpta	
pldata	-	ccpta	
resp	-	ccpta	
res1	-	ccpta	
carrier	-	ccptz	
mptcar	-	ccpty	

Table 6-63.dft. Assignment Category CC Rule Set - DFLT
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default CC)			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
bus	-	ccpta	
busp	-	ccpta	
coin	-	ccpta	
isdnu	-	ccptu	
madn	-	ccpta	
pbxt	-	ccptco	
pl4w	-	ccpt4w	
plalarm	-	ccpta	
pldata	-	ccptco	
plvoice	-	ccptco	
res1	-	ccpta	
resp	-	ccpta	
carrier	-	ccptz	
mptcar	-	ccpty	

Table 6-63.dis. Assignment Category CC Rule Set - DISCS
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = discs			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
bus	-	ccpta	
busp	-	ccpta	
coin	-	ccpta	
isdnu	-	ccptb	
madn	-	ccpta	
pbxt	-	ccptco	
pl4w	-	ccpt4x	
plalarm	-	ccpta	
pldata	-	ccptco	
plvoice	-	ccptco	
res1	-	ccpta	
resp	-	ccpta	
carrier	-	ccptz	
mptcar	-	ccpty	

Table 6-63.dm2. Assignment Category CC Rule Set - DDM2000
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = ddm2000			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
pl4w	-	ccpt4x	
carrier	-	ccptz	

Table 6-63.eds. Assignment Category CC Rule Set - EDSX
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = edsx			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
pl4w	-	ccpte	

Table 6-63.fco. Assignment Category CC Rule Set - FCTRONU
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = fctronu			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
bus	-	ccpta	
busp	-	ccpta	
coin	-	ccpta	
isdnu	-	ccptu	
madn	-	ccpta	
pbxt	-	ccpta	
plvoice	-	ccpta	
pl4w	-	ccpt4x	
plalarm	-	ccpta	
pldata	-	ccpta	
resp	-	ccpta	
res1	-	ccpta	
carrier	-	ccptz	
mptcar	-	ccpty	

Table 6-63.fct. Assignment Category CC Rule Set - FCTR
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = fctr			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
bus	-	ccpta	
busp	-	ccpta	
coin	-	ccpta	
isdnu	-	ccptu	
madn	-	ccpta	
pbxt	-	ccptco	
plvoice	-	ccptco	
pl4w	-	ccpt4x	
plalarm	-	ccpta	
pldata	-	ccptco	
resp	-	ccpta	
res1	-	ccpta	
carrier	-	ccptz	
mptcar	-	ccpty	

Table 6-63.fdl. Assignment Category CC Rule Set - FDLC
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = fdlc			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
bus	-	ccpta	
busp	-	ccpta	
coin	-	ccpta	
isdnu	-	ccptb	
madn	-	ccpta	
pbxt	-	ccptco	
plvoice	-	ccptco	
pl4w	-	ccpt4w	
plalarm	-	ccpta	
pldata	-	ccptco	
resp	-	ccpta	
res1	-	ccpta	
carrier	-	ccptz	
mptcar	-	ccpty	

Table 6-63.flm. Assignment Category CC Rule Set - FLM 150
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = flm1			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
pl4w	-	ccpt4x	
carrier	-	ccptz	

Table 6-63.hfc. Assignment Category CC Rule Set - HFC2T
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = hfc2t			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
bus	-	ccpta	
coin	-	ccpta	
res1	-	ccpta	
carrier	-	ccptz	
mptcar	-	ccpty	

Table 6-63.hmx. Assignment Category CC Rule Set - HMX
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 11.3)

Instance = hmx			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
bus	-	ccpta	
coin	-	ccpta	
isdnu	-	ccptu	
pbxt	-	ccptco	
res1	-	ccpta	
carrier	-	ccptz	
mptcar	-	ccpty	

Table 6-63.lc2. Assignment Category CC Rule Set - LOC2
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = loc2			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
bus	-	ccpta	
coin	-	ccpta	
isdnu	-	ccpt3	
madn	-	ccpta	
pbxt	-	ccpta	
plvoice	-	ccpta	
pl4w	-	ccpt4x	
plalarm	-	ccpta	
pldata	-	ccpta	
res1	-	ccpta	
carrier	-	ccptz	
mptcar	-	ccpty	

Table 6-63.nxt. Assignment Category CC Rule Set - NEXT3
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.2)

Instance = next3			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
bus	-	ccpta	
coin	-	ccpta	
isdnu	-	ccptu	
pbxt	-	ccptco	
pl4w	-	ccpt4x	
pldata	-	ccpta	
plvoice	-	ccpta	
res1	-	ccpta	
carrier	-	ccptz	
mptcar	-	ccpty	

Table 6-63.s16. Assignment Category CC Rule Set - SSU16
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.2)

Instance = ssu16			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
pbxt	-	ccptco	
pl4w	-	ccpt4x	
pldata	-	ccptco	
plvoice	-	ccptco	
carrier	-	ccptz	

Table 6-63.s2t. Assignment Category CC Rule Set - SLC2T
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = slc2t			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
bus	-	ccpta	
busp	-	ccpta	
coin	-	ccpta	
isdnu	-	ccptb	
isdnt	-	ccptt	
madn	-	ccpta	
pbxt	-	ccptco	
pl4w	-	ccpt4x	
plalarm	-	ccpta	
pldata	-	ccptco	
plvoice	-	ccptco	
res1	-	ccpta	
resp	-	ccpta	
carrier	-	ccptz	
mptcar	-	ccpty	

Table 6-63.s96. Assignment Category CC Rule Set - SLC96
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = slc96			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
bus	-	ccpta	
busp	-	ccpta	
coin	-	ccpta	
isdnu	-	ccptb	
isdnt	-	ccptb	
madn	-	ccpta	
pbxt	-	ccptco	
pl4w	-	ccpt4w	
plalarm	-	ccpta	
pldata	-	ccptco	
plvoice	-	ccptco	
res1	-	ccpta	
resp	-	ccpta	
carrier	-	ccptz	
mptcar	-	ccpty	

Table 6-63.sdv. Assignment Category CC Rule Set - SDV2T
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = sdv2t			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
bus	-	ccpta	
coin	-	ccpta	
isdnu	-	ccptu	
madn	-	ccpta	
pl4w	-	ccpt4x	
plalarm	-	ccpta	
pldata	-	ccpta	
plvoice	-	ccpta	
res1	-	ccpta	
carrier	-	ccptz	
mptcar	-	ccpty	

Table 6-63.slo. Assignment Category CC Rule Set - SLCONU
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = slconu			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
bus	-	ccpta	
busp	-	ccpta	
coin	-	ccpta	
isdnu	-	ccptb	
isdnt	-	ccptt	
madn	-	ccpta	
pbxt	-	ccpta	
pl4w	-	ccpt4x	
plalarm	-	ccpta	
pldata	-	ccpta	
plvoice	-	ccpta	
res1	-	ccpta	
resp	-	ccpta	
carrier	-	ccptz	
mptcar	-	ccpty	

Table 6-63.usm. Assignment Category CC Rule Set - USAM
(Reference Data Name = asgn category rules cc)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = usam			
asgcat	rules		
	(dsgn)	(ccpt)	
	(rule)	(rule)	(ctl fact)
bus	-	ccpta	
coin	-	ccpta	
isdnu	-	ccptu	
res1	-	ccpta	
carrier	-	ccptz	
mptcar	-	ccpty	

Table 6-64.df.df. Determine Swpt Utilization Factor Penalty Score - DFLT/DFLT
(Reference Data name = swpt penalty score util)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance =	(default asgcat, IC)		
seq	value	score	condition
100	1	0	
100	2	0	
100	3	0	
100	4	0	
100	5	0	
100	6	0	
100	7	20	
100	8	30	
100	9	50	
200	10	60	
200	11	99	

Table 6-65.df.df. Determine Swpt Carrier Circuit Cost Penalty Score - DFLT/DFLT
(Reference Data name = swpt penalty score ccost)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance =	(default asgcat, ic)		
seq	value	score	condition
100	1500	0	
200	3500	50	
300	6000	75	

Table 6-66.df.df. Determine Swpt Number of Paths Penalty Score - DFLT/DFLT
(Reference Data name = swpt penalty score path)
(Instance Key = asgn_cat; ic_type; ic_generic; ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, IC)			
seq	value	score	condition
100	1	0	
100	2	25	
100	3	60	
100	4	85	
200	*	99	

Table 6-67. DDR Transformation
(Reference Data name = ddr transformation)
(Instance Key = none)
(Scope = wire center)
(SCCS level = 13.1)

ddr	ar
	ds0
a	ds0
b	ds0
e	ds1
f	ds2
g	ds3
h	ds0
l	ds0
m	ds0
o	prop
p	ds3
r	oc3
s	oc12

Table 6-68.and. CC Port Evaluation Rule Set - Automatic Assignment/AN
(Reference Data Name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = an									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		de1	ct1	am1					
coin		de1	ct1	am1					
isdnu		de1	ct1						
madn		de1	ct1	am1					
pbxt		de1	ct1	am1					
plvoice		de1	ct1	am1					
pl4w		de1	ct1						
pldata		de1	ct1	am1					
res1		de1	ct1	am1					
carrier			ct1						
mptcar			ct1						
bus	dlc						util1	ccost	path1
coin	dlc						util1	ccost	path1
isdnu	dlc						util1	ccost	path1
madn	dlc						util1	ccost	path1
plvoice	dlc						util1	ccost	path1
pl4w	dlc						util1	ccost	path1
plalarm	dlc						util1	ccost	path1
pldata	dlc						util1	ccost	path1
res1	dlc						util1	ccost	path1
pbxt	dlc						util1	ccost	path1

Table 6-68.ano. CC Port Evaluation Rule Set - Automatic Assignment/ANONU
(Reference Data Name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = anonu									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		de1	ct1	am1					
coin		de1	ct1	am1					
isdnu		de1	ct1						
madn		de1	ct1	am1					
pbxt		de1	ct1	am1					
plvoice		de1	ct1	am1					
pl4w		de1	ct1						
pldata		de1	ct1	am1					
res1		de1	ct1	am1					
mptcar			ct1						

Table 6-68.dcs. CC Port Evaluation Rule Set - Automatic Assignment/DCS
(Reference Data Name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = dcs									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
carrier									
plvoice	dlc						util1	ccost	path1
pl4w	dlc						util1	ccost	path1
plalarm	dlc						util1	ccost	path1
pldata	dlc						util1	ccost	path1

Table 6-68dis. CC Port Evaluation Rule Set - Automatic Assignment/DISCS
(Reference Data Name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = discs									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		del	ctl						
coin		del	ctl						
isdnu		del	ctl						
madn		del	ctl						
pbxt		del	ctl						
plvoice		del	ctl						
pl4w		del	ctl						
plalarm		del	ctl						
pldata		del	ctl						
res1		del	ctl						
carrier			ctl						
mptcar			ctl						
bus	dlc						util1	ccost	path1
coin	dlc						util1	ccost	path1
isdnu	dlc						util1	ccost	path1
madn	dlc						util1	ccost	path1
plvoice	dlc						util1	ccost	path1
pl4w	dlc						util1	ccost	path1
plalarm	dlc						util1	ccost	path1
pldata	dlc						util1	ccost	path1
res1	dlc						util1	ccost	path1
pbxt	dlc						util1	ccost	path1

Table 6-68.dm2. CC Port Evaluation Rule Set - Automatic Assignment/DDM2000
(Reference Data Name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = ddm2000									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
pl4w		de1	ct1						
carrier			ct1						
bus	dlc						util1	ccost	path1
busp	dlc						util1	ccost	path1
coin	dlc						util1	ccost	path1
isdnt	dlc						util1	ccost	path1
isdnu	dlc						util1	ccost	path1
madn	dlc						util1	ccost	path1
plvoice	dlc						util1	ccost	path1
pl4w	dlc						util1	ccost	path1
plalarm	dlc						util1	ccost	path1
pldata	dlc						util1	ccost	path1
resp	dlc						util1	ccost	path1
res1	dlc						util1	ccost	path1
pbxt	dlc						util1	ccost	path1

Table 6-68dou. CC Port Evaluation Rule Set - Automatic Assignment/DISONU
(Reference Data Name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = disonu									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		del	ctl						
coin		del	ctl						
isdnu		del	ctl						
madn		del	ctl						
pbxt		del	ctl						
plvoice		del	ctl						
pl4w		del	ctl						
plalarm		del	ctl						
pldata		del	ctl						
res1		del	ctl						
mptcar			ctl						

Table 6-68.fco. CC Port Evaluation Rule Set - Automatic Assignment/FCTRONU
(Reference Data Name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = fctronu										
asgcat	variety	rule								
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		de1	ct1	am1					
busp		de1	ct1	am1					
coin		de1	ct1	am1					
isdnu		de1	ct1	am1					
madn		de1	ct1	am1					
pbxt		de1	ct1	am1					
plvoice		de1	ct1	am1					
pl4w		de1	ct1	am1					
plalarm		de1	ct1						
pldata		de1	ct1	am1					
resp		de1	ct1	am1					
res1		de1	ct1	am1					
mptcar			ct1						

Table 6-68.fct. CC Port Evaluation Rule Set - Automatic Assignment/FCTR
(Reference Data Name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = fctr									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		del	ctl	aml					
busp		del	ctl	aml					
coin		del	ctl	aml					
isdnu		del	ctl	aml					
madn		del	ctl	aml					
pbxt		del	ctl	aml					
plvoice		del	ctl	aml					
pl4w		del	ctl	aml					
plalarm		del	ctl						
pldata		del	ctl	aml					
resp		del	ctl	aml					
res1		del	ctl	aml					
carrier			ctl						
mptcar			ctl						
bus	dlc						util1	ccost	path1
busp	dlc						util1	ccost	path1
coin	dlc						util1	ccost	path1
isdnu	dlc						util1	ccost	path1
madn	dlc						util1	ccost	path1
plvoice	dlc						util1	ccost	path1
pl4w	dlc						util1	ccost	path1
plalarm	dlc						util1	ccost	path1
pldata	dlc						util1	ccost	path1
pbxt	dlc						util1	ccost	path1
resp	dlc						util1	ccost	path1
res1	dlc						util1	ccost	path1

Table 6-68.fdl. CC Port Evaluation Rule Set - Automatic Assignment/FDLC
(Reference Data Name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = fdlc									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		de1	ct1	am1					
busp		de1	ct1	am1					
coin		de1	ct1	am1					
isdnu		de1	ct1	am1					
madn		de1	ct1	am1					
pbxt		de1	ct1	am1					
plvoice		de1	ct1	am1					
pl4w		de1	ct1	am1					
plalarm		de1	ct1						
pldata		de1	ct1	am1					
resp		de1	ct1	am1					
res1		de1	ct1	am1					
carrier			ct1						
mptcar			ct1						
bus	dlc						util1	ccost	path1
busp	dlc						util1	ccost	path1
coin	dlc						util1	ccost	path1
isdnu	dlc						util1	ccost	path1
madn	dlc						util1	ccost	path1
plvoice	dlc						util1	ccost	path1
pl4w	dlc						util1	ccost	path1
plalarm	dlc						util1	ccost	path1
pldata	dlc						util1	ccost	path1
pbxt	dlc						util1	ccost	path1
resp	dlc						util1	ccost	path1
res1	dlc						util1	ccost	path1

Table 6-68.flm. CC Port Evaluation Rule Set - Automatic Assignment/FLM 150
(Reference Data Name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = flm1									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
pl4w		de1	ct1						
carrier			ct1						
bus	dlc						util1	ccost	path1
busp	dlc						util1	ccost	path1
coin	dlc						util1	ccost	path1
isdnu	dlc						util1	ccost	path1
madn	dlc						util1	ccost	path1
plvoice	dlc						util1	ccost	path1
pl4w	dlc						util1	ccost	path1
plalarm	dlc						util1	ccost	path1
pldata	dlc						util1	ccost	path1
pbxt	dlc						util1	ccost	path1
resp	dlc						util1	ccost	path1
res1	dlc						util1	ccost	path1

Table 6-68.hfc. CC Port Evaluation Rule Set - Automatic Assignment/HFC2T
(Reference Data name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = hfc2t									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		del	ctl						
coin		del	ctl						
resl		del	ctl						
carrier			ctl						
mptcar			ctl						
bus	dlc						utill	ccost	pathl
coin	dlc						utill	ccost	pathl
resl	dlc						utill	ccost	pathl

Table 6-68.hmx. CC Port Evaluation Rule Set - Automatic Assignment/HMX
(Reference Data name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = hmx									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		del	ctl						
coin		del	ctl						
isdnu		del	ctl						
pbxt		del	ctl						
res1		del	ctl						
carrier			ctl						
mptcar			ctl						
bus	dlc						util1	ccost	path1
coin	dlc						util1	ccost	path1
isdnu	dlc						util1	ccost	path1
res1	dlc						util1	ccost	path1
pbxt	dlc						util1	ccost	path1

Table 6-68.isc. CC Port Evaluation Rule Set - Automatic Assignment/IISC
(Reference Data name = ccpt rule set)
(Instance Key = cc_model: cc_generic: cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = iisc									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		de1	ct1						
busp		de1	ct1						
coin		de1	ct1						
madn		de1	ct1						
pbxt		de1	ct1	am1					
plvoice		de1	ct1	am1					
pl4w		de1	ct1						
pldata		de1	ct1	am1					
resp		de1	ct1						
res1		de1	ct1						
carrier			ct1						
bus	dlc						util1	ccost1	path1
busp	dlc						util1	ccost1	path1
coin	dlc						util1	ccost1	path1
madn	dlc						util1	ccost1	path1
plvoice	dlc						util1	ccost1	path1
pl4w	dlc						util1	ccost1	path1
plalarm	dlc						util1	ccost1	path1
pldata	dlc						util1	ccost1	path1
resp	dlc						util1	ccost1	path1
res1	dlc						util1	ccost1	path1
pbxt	dlc						util1	ccost1	path1

Table 6-68.12o. CC Port Evaluation Rule Set - Automatic Assignment/LOC2ONU
(Reference Data name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = loc2onu									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		de1	ct1						
coin		de1	ct1						
isdnu		de1	ct1						
madn		de1	ct1						
pbxt		de1	ct1						
plvoice		de1	ct1						
pl4w		de1	ct1						
plalarm		de1	ct1						
pldata		de1	ct1						
res1		de1	ct1						
mptcar			ct1						

Table 6-68.lc2. CC Port Evaluation Rule Set - Automatic Assignment/LOC2
(Reference Data name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = loc2									
asgcat	variety	rule							
		(desir- ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
pl4w		de1	ct1						
carrier			ct1						
mptcar			ct1						
bus	dlc						util1	ccost	path1
coin	dlc						util1	ccost	path1
isdnu	dlc						util1	ccost	path1
madn	dlc						util1	ccost	path1
plvoice	dlc						util1	ccost	path1
pl4w	dlc						util1	ccost	path1
plalarm	dlc						util1	ccost	path1
pldata	dlc						util1	ccost	path1
res1	dlc						util1	ccost	path1
pbxt	dlc						util1	ccost	path1

Table 6-68.lto. CC Port Evaluation Rule Set - Automatic Assignment/LTSPONU
(Reference Data Name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = ltsponu									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		de1	ct1	am1					
coin		de1	ct1	am1					
isdnu		de1	ct1						
madn		de1	ct1	am1					
pbxt		de1	ct1	am1					
plvoice		de1	ct1	am1					
pl4w		de1	ct1						
plalarm		de1	ct1	am1					
pldata		de1	ct1	am1					
res1		de1	ct1	am1					
mptcar			ct1						

Table 6-68.ltp. CC Port Evaluation Rule Set - Automatic Assignment/LTSP
(Reference Data Name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = ltsp									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		de1	ct1	am1					
coin		de1	ct1	am1					
isdnu		de1	ct1						
madn		de1	ct1	am1					
pbxt		de1	ct1	am1					
plvoice		de1	ct1	am1					
pl4w		de1	ct1						
plalarm		de1	ct1	am1					
pldata		de1	ct1	am1					
res1		de1	ct1	am1					
carrier			ct1						
mptcar			ct1						
bus	dlc						util1	ccost	path1
coin	dlc						util1	ccost	path1
isdnu	dlc						util1	ccost	path1
madn	dlc						util1	ccost	path1
plvoice	dlc						util1	ccost	path1
pl4w	dlc						util1	ccost	path1
plalarm	dlc						util1	ccost	path1
pldata	dlc						util1	ccost	path1
pbxt	dlc						util1	ccost	path1
res1	dlc						util1	ccost	path1

Table 6-68.nxt. CC Port Evaluation Rule Set - Automatic Assignment/NEXT3
(Reference Data name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.2)

Instance = next3									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		del	ctl						
coin		del	ctl						
isdnu		del	ctl						
pbxt		del	ctl	aml					
pl4w		del	ctl	aml					
pldata		del	ctl	aml					
plvoice		del	ctl	aml					
res1		del	ctl						
carrier			ctl						
mptcar			ctl						
bus	dlc						util1	ccost	path1
coin	dlc						util1	ccost	path1
isdnu	dlc						util1	ccost	path1
pbxt	dlc						util1	ccost	path1
pl4w	dlc						util1	ccost	path1
pldata	dlc						util1	ccost	path1
plvoice	dlc						util1	ccost	path1
res1	dlc						util1	ccost	path1

Table 6-68.s16. CC Port Evaluation Rule Set - Automatic Assignment/SSU16
(Reference Data name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = ssu16									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
pbxt		de1	ct1	am1					
pl4w		de1	ct1	am1					
pldata		de1	ct1	am1					
plvoice		de1	ct1	am1					
carrier			ct1						
pbxt	dlc						util1	ccost	path1
pl4w	dlc						util1	ccost	path1
pldata	dlc						util1	ccost	path1
plvoice	dlc						util1	ccost	path1

Table 6-68.s2t. CC Port Evaluation Rule Set - Automatic Assignment/SLC2T
(Reference Data Name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = slc2t									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		de1	ct1						
busp		de1	ct1						
coin		de1	ct1						
isdnt		de1	ct1			en1			
isdnu		de1	ct1			en1			
madn		de1	ct1	am1					
pbxt		de1	ct1	am1					
plvoice		de1	ct1	am1					
pl4w		de1	ct1	am1					
plalarm		de1	ct1						
pldata		de1	ct1	am1					
resp		de1	ct1						
res1		de1	ct1						
carrier			ct1						
mptcar			ct1						
bus	dlc						util1	ccost	path1
busp	dlc						util1	ccost	path1
coin	dlc						util1	ccost	path1
isdnt	dlc						util1	ccost	path1
isdnu	dlc						util1	ccost	path1
madn	dlc						util1	ccost	path1
plvoice	dlc						util1	ccost	path1
pl4w	dlc						util1	ccost	path1
plalarm	dlc						util1	ccost	path1
pldata	dlc						util1	ccost	path1
resp	dlc						util1	ccost	path1
res1	dlc						util1	ccost	path1
pbxt	dlc						util1	ccost	path1

Table 6-68.s96. CC Port Evaluation Rule Set - Automatic Assignment/SLC96
(Reference Data Name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = slc96									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		de1	ct1						
busp		de1	ct1						
coin		de1	ct1						
isdnt		de1	ct1			en1			
isdnu		de1	ct1			en1			
madn		de1	ct1	am1					
pbxt		de1	ct1	am1					
plvoice		de1	ct1	am1					
pl4w		de1	ct1	am1					
plalarm		de1	ct1						
pldata		de1	ct1	am1					
resp		de1	ct1						
res1		de1	ct1						
carrier			ct1						
mptcar			ct1						
bus	dlc						util1	ccost	path1
busp	dlc						util1	ccost	path1
coin	dlc						util1	ccost	path1
isdnt	dlc						util1	ccost	path1
isdnu	dlc						util1	ccost	path1
madn	dlc						util1	ccost	path1
plvoice	dlc						util1	ccost	path1
pl4w	dlc						util1	ccost	path1
plalarm	dlc						util1	ccost	path1
pldata	dlc						util1	ccost	path1
resp	dlc						util1	ccost	path1
res1	dlc						util1	ccost	path1
pbxt	dlc						util1	ccost	path1

Table 6-68.sdv. CC Port Evaluation Rule Set - Automatic Assignment/SDV2T
(Reference Data Name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = sdv2t									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		de1	ct1						
coin		de1	ct1						
isdnu		de1	ct1						
madn		de1	ct1						
plvoice		de1	ct1						
pl4w		de1	ct1	am1					
plalarm		de1	ct1						
pldata		de1	ct1						
res1		de1	ct1						
carrier			ct1						
mptcar			ct1						
bus	dlc						util1	ccost	path1
coin	dlc						util1	ccost	path1
isdnu	dlc						util1	ccost	path1
madn	dlc						util1	ccost	path1
plvoice	dlc						util1	ccost	path1
pl4w	dlc						util1	ccost	path1
plalarm	dlc						util1	ccost	path1
pldata	dlc						util1	ccost	path1
res1	dlc						util1	ccost	path1

Table 6-68.slo. CC Port Evaluation Rule Set - Automatic Assignment/SLCONU
(Reference Data Name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = slconu									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		de1	ct1						
busp		de1	ct1						
coin		de1	ct1						
isdnt		de1	ct1			en1			
isdnu		de1	ct1			en1			
madn		de1	ct1	am1					
pbxt		de1	ct1	am1					
plvoice		de1	ct1	am1					
pl4w		de1	ct1	am1					
plalarm		de1	ct1						
pldata		de1	ct1	am1					
resp		de1	ct1						
res1		de1	ct1						
mptcar			ct1						

Table 6-68.usm. CC Port Evaluation Rule Set - Automatic Assignment/USAM
(Reference Data name = ccpt rule set)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = usam									
asgcat	variety	rule							
		(desir-ability)	(card type)	(admin const)	(signal)	(encoding protocol)	(util factor)	(carrier cost)	(path segs)
bus		del	ctl						
coin		del	ctl						
isdnu		del	ctl						
res1		del	ctl						
carrier			ctl						
mptcar			ctl						
bus	dlc						util1	ccost	path1
coin	dlc						util1	ccost	path1
isdnu	dlc						util1	ccost	path1
res1	dlc						util1	ccost	path1

Table 6-69.df.dft. CC Port Relaxation - Automatic Assignment - DFLT/DFLT
(Reference Data name = ccpt relaxation)
(Instance Key = asgn_cat;cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, CC)								
	(rule set - scoring characteristics)							
level	de (desira bility)	ct card type)	am (admin const)	sig (signal)	en (enc)	util (util factor)	ccost (carrier cost)	path (paths)
01	0	0	0	0	0	0	0	0
02	0	0	15	0	0	0	0	0
03	15	15	15	50	0	0	0	0
04	15	15	25	50	0	0	25	0
05	30	30	25	50	0	0	25	0
06	30	30	40	50	0	25	25	0
07	30	30	40	50	0	25	50	0
08	40	40	40	50	30	25	50	0
09	40	40	40	50	30	25	50	25
10	40	40	50	50	60	25	50	25
11	50	50	50	50	60	50	75	25
12	50	50	50	50	60	50	75	25
13	50	50	50	50	60	75	95	50
14	75	75	50	50	60	75	95	75
15	75	75	50	95	75	95	95	95

Table 6-70.dft. CC Port Weighting - DFLT
(Reference Data name = ccpt score weight)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default CC)								
asgn type	(rule set - scoring characteristics)							
	de (desira bility)	ct card type)	am (admin const)	sig (signal)	en (enc)	util (util factor)	ccost (carrier cost)	path (# paths)
asm(Auto Asm)	100	100	100	10	100	100	100	100
atr(Auto ATR)	100	100	100	25	100	50	100	100
cpt(Auto CT)	100	100	100	25	100	50	100	100
ctr(Auto CTR)	100	100	100	25	100	50	100	100
dtr(Auto DTR)	100	100	100	25	100	50	100	100
lst(Auto LST)	100	100	100	10	100	50	100	100
mct(Auto MCT)	100	100	100	25	100	50	100	100
set(Auto SET)	100	100	75	50	100	50	100	100
spd(Auto SVC Pro-D)	100	100	100	10	100	50	100	100
spi (Inquiry SvcPro)	100	100	75	10	100	50	100	100
spp(Auto Svc Pro-P)	100	100	100	10	100	50	100	100

Table 6-71.df.dft. Determine Utilization Factor Score - DFLT/DFLT
(Reference Data name = ccpt penalty score util)
(Instance Key = asgn_cat;cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance =	(default asgcat, CC)		
seq	value	score	condition
100	1	0	
100	2	0	
100	3	0	
100	4	0	
100	5	0	
100	6	0	
100	7	20	
100	8	30	
100	9	50	
200	10	60	
200	11	99	

Table 6-72.df.dft. Determine Carrier Circuit Cost Score - DFLT/DFLT
(Reference Data name = ccpt penalty score ccost)
(Instance Key = asgn_cat;cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance =	(default asgcat, CC)		
seq	value	score	condition
100	1500	0	
200	3500	50	
300	6000	75	

Table 6-73.df.dft. Determine Number of Paths Score - DFLT/DFLT
(Reference Data name = ccpt penalty score path)
(Instance Key = asgn_cat;cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default asgcat, CC)			
seq	value	score	condition
100	1	0	
100	2	25	
100	3	60	
100	4	85	
200	*	99	

Table 6-74.df.dft. Determine Desirability Score - DFLT/DFLT
(Reference Data Name = ccpt penalty score de)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = (default asgcat, CC)			
seq	value	score	condition
100	y	0	
100	NULL	30	

Table 6-75.bp.dft. Determine Card Type Score - BUSP/DFLT
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = busp (default CC)			
seq	value	score	condition
100	mpty	0	

Table 6-75.bp.isc. Determine Card Type Score - BUSP/IISC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = busp;iisc			
seq	value	score	condition
100	mpty	0	gs=2

Table 6-75.bs.and. Determine Card Type Score - BUS/AN
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;an			
seq	value	score	condition
100	uvg	0	sig = g, cz≤16, orig = y
100	sad	15	sig = g, cz≤16, orig = y
200	uvg	0	q = l, cz≤16, orig = y
200	sad	15	q = l, cz≤16, orig = y
200	pots	99	q = l, cz≤16, orig = y
300	pots	0	cz≤19, orig = y
300	uvg	15	cz≤19, orig = y
300	sad	30	cz≤19, orig = y
400	sad	0	

Table 6-75.bs.ano. Determine Card Type Score - BUS/ANONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;anonu			
seq	value	score	condition
100	uvg	0	sig = g, cz≤16
100	sad	15	sig = g, cz≤16
200	uvg	0	q = l, cz≤16
200	sad	15	q = l, cz≤16
200	pots	99	q = l, cz≤16
300	pots	0	cz≤19
300	uvg	15	cz≤19
300	sad	30	cz≤19

Table 6-75.bs.dis. Determine Card Type Score - BUS/DISCS
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;discs			
seq	value	score	condition
100	uvg	0	sig = g
200	uvg	0	q = l, orig = y
200	pots	99	q = l, orig = y
300	pots	0	orig = y
300	uvg	30	orig = y
400	uvg	0	q = l
400	pots	30	q = l
500	pots	0	
500	uvg	30	

Table 6-75.bs.dou. Determine Card Type Score - BUS/DISONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;disonu			
seq	value	score	condition
100	uvg	0	sig = g
200	uvg	0	q = l
200	pots	99	q = l
300	pots	0	
300	uvg	30	

Table 6-75.bs.fco. Determine Card Type Score - BUS/FCTRONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;fctronu			
seq	value	score	condition
100	uvg	0	sig = g
200	uvg	0	q = l
200	pots	99	q = l
300	pots	0	
300	uvg	30	

Table 6-75.bs.fct. Determine Card Type Score - BUS/FCTR
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;fctr			
seq	value	score	condition
100	uvg	0	sig = g
200	uvg	0	q = l, orig = y
200	pots	99	q = l, orig = y
300	pots	0	orig = y
300	uvg	30	orig = y
400	uvg	0	q = l, oct = uvg
500	pots	0	oct = pots
600	pots	0	oct = uvg
600	uvg	30	oct = uvg

Table 6-75.bs.fdl. Determine Card Type Score - BUS/FDLC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;fdlc			
seq	value	score	condition
100	uvg	0	sig = g
200	uvg	0	q = l, orig = y
200	pots	99	q = l, orig = y
300	pots	0	orig = y
300	uvg	30	orig = y
400	uvg	0	q = l, oct = uvg
500	pots	0	oct = pots
600	pots	0	oct = uvg
600	uvg	30	oct = uvg

Table 6-75.bs.hfc. Determine Card Type Score - BUS/HFC2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;hfc2t			
seq	value	score	condition
100	uvg	0	sig = g, cz≤15
100	euvg	15	sig = g, cz≤15
200	uvg	0	q = l, cz≤15,
200	euvg	15	q = l, cz≤15,
200	pots	99	q = l, cz≤15
300	pots	0	cz≤15
300	uvg	15	cz≤15
300	euvg	30	cz≤15
300	mpty	99	cz≤15
400	euvg	0	cz>15

Table 6-75.bs.hmx. Determine Card Type Score - BUS/HMX
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 11.3)

Instance = bus;hmx			
seq	value	score	condition
100	uvg	0	sig = g
200	uvg	0	q = l
200	pots	99	q = l
300	pots	0	
300	uvg	30	

Table 6-75.bs.isc. Determine Card Type Score - BUS/IISC
(Reference Data name = ccpt penalty score ct)
(Instance Key = asgn_cat;cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = bus;iisc			
seq	value	score	condition
100	pots	0	orig = y
100	uvg	15	orig = y
100	2ws	30	orig = y
100	mpty	99	orig = y
200	pots	0	oct = pots
300	uvg	0	oct = uvg
400	2ws	0	oct = 2ws
500	mpty	0	oct = mpty

Table 6-75.bs.l2o. Determine Card Type Score - BUS/LOC2ONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;loc2onu			
seq	value	score	condition
100	uvg	0	sig = g
100	uvgv	15	sig = g
200	uvg	0	q = l
200	uvgv	15	q = l
200	pots	99	q = l
300	pots	0	
300	uvg	15	
300	uvgv	30	

Table 6-75.bs.lto. Determine Card Type Score - BUS/LTSPONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;ltsponu			
seq	value	score	condition
100	uvg	0	sig = g, cz≤16
100	euvg	15	sig = g, cz≤16
200	uvg	0	q = l, cz≤16
200	euvg	15	q = l, cz≤16
200	pots	99	q = l, cz≤16
300	pots	0	cz≤16
300	uvg	15	cz≤16
300	euvg	30	cz≤16
400	euvg	0	cz>16

Table 6-75.bs.ltp. Determine Card Type Score - BUS/LTSP
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.3)

Instance = bus;ltsp			
seq	value	score	condition
100	uvg	0	sig = g, cz≤16, orig = y
100	euvg	15	sig = g, cz≤16, orig = y
200	uvg	0	q = l, cz≤16, orig = y
200	euvg	15	q = l, cz≤16, orig = y
200	pots	99	q = l, cz≤16, orig = y
300	pots	0	cz≤16, orig = y
300	uvg	15	cz≤16, orig = y
300	euvg	30	cz≤16, orig = y
400	euvg	0	cz>16, orig = y
450	uvg	0	sig = g, oct = pots (for NLevel only)
450	euvg	15	sig = g, oct = pots (for NLevel only)
500	pots	0	oct = pots
500	uvg	15	oct = pots
500	euvg	30	oct = pots
600	uvg	0	sig = g, oct = uvg
600	euvg	15	sig = g, oct = uvg
700	uvg	0	oct = uvg
700	euvg	15	oct = uvg
700	pots	30	oct = uvg
800	uvg	0	sig = g, oct = euvg
800	euvg	15	sig = g, oct = euvg
900	uvg	0	oct = euvg
900	euvg	15	oct = euvg
900	pots	30	oct = euvg
920	uvg	0	sig = g, oct = coin (for NLevel only)
920	euvg	15	sig = g, oct = coin (for NLevel only)
930	pots	0	oct = coin (for NLevel only)
930	uvg	15	oct = coin (for NLevel only)
930	euvg	30	oct = coin (for NLevel only)
940	uvg	0	sig = g, oct = bri303 (for NLevel only)
940	euvg	15	sig = g, oct = bri303 (for NLevel only)
950	pots	0	oct = bri303 (for NLevel only)
950	uvg	15	oct = bri303 (for NLevel only)
950	euvg	30	oct = bri303 (for NLevel only)

Table 6-75.bs.nxt. Determine Card Type Score - BUS/NEXT3
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;next3			
seq	value	score	condition
100	pots	0	
100	bri303	0	
100	coin	0	

Table 6-75.bs.s2t. Determine Card Type Score - BUS/SLC2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;slc2t			
seq	value	score	condition
100	uvg	0	sig = g, cz≤15, orig = y
100	euvg	15	sig = g, cz≤15, orig = y
200	uvg	0	q = l, cz≤15, orig = y
200	euvg	15	q = l, cz≤15, orig = y
200	pots	99	q = l, cz≤15, orig = y
300	pots	0	cz≤15, orig = y
300	uvg	15	cz≤15, orig = y
300	euvg	30	cz≤15, orig = y
300	mpty	99	cz≤15, orig = y
400	euvg	0	cz>15, orig = y
500	pots	0	oct = pots
500	uvg	15	oct = pots
500	euvg	30	oct = pots
600	uvg	0	sig = g, oct = uvg
600	euvg	15	sig = g, oct = uvg
700	pots	0	oct = uvg
700	uvg	15	oct = uvg
700	euvg	30	oct = uvg
800	uvg	0	sig = g, oct = euvg
800	euvg	15	sig = g, oct = euvg
900	pots	0	oct = euvg
900	uvg	15	oct = euvg
900	euvg	30	oct = euvg
950	mpty	0	oct = mpty

Table 6-75.bs.s96. Determine Card Type Score - BUS/SLC96
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;slc96			
seq	value	score	condition
100	uvg	0	sig = g, cz≤15, orig = y
100	euvg	15	sig = g, cz≤15, orig = y
200	uvg	0	q = l, cz≤15, orig = y
200	euvg	15	q = l, cz≤15, orig = y
200	pots	99	q = l, cz≤15, orig = y
300	pots	0	cz≤15, orig = y
300	uvg	15	cz≤15, orig = y
300	euvg	30	cz≤15, orig = y
300	mpty	99	cz≤15, orig = y
400	euvg	0	cz>15, orig = y
500	pots	0	oct = pots
500	uvg	15	oct = pots
500	euvg	30	oct = pots
600	uvg	0	sig = g, oct = uvg
600	euvg	15	sig = g, oct = uvg
700	pots	0	oct = uvg
700	uvg	15	oct = uvg
700	euvg	30	oct = uvg
800	uvg	0	sig = g, oct = euvg
800	euvg	15	sig = g, oct = euvg
850	pots	0	oct = euvg
850	uvg	15	oct = euvg
850	euvg	30	oct = euvg
875	uvg	0	sig = g, oct = uvgv
875	euvg	15	sig = g, oct = uvgv
900	pots	0	oct = uvgv
900	uvg	15	oct = uvgv
900	euvg	30	oct = uvgv
950	mpty	0	oct = mpty

Table 6-75.bs.sdv. Determine Card Type Score - BUS/SDV2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;sdv2t			
seq	value	score	condition
100	uvg	0	sig = g, cz≤15
100	euvg	15	sig = g, cz≤15
200	uvg	0	q = l, cz≤15
200	euvg	15	q = l, cz≤15
200	pots	99	q = l, cz≤15
300	pots	0	cz≤15
300	uvg	15	cz≤15
300	euvg	30	cz≤15
400	euvg	0	cz>15

Table 6-75.bs.slo. Determine Card Type Score - BUS/SLCONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;slconu			
seq	value	score	condition
100	uvg	0	sig = g, cz≤15
100	euvg	15	sig = g, cz≤15
200	uvg	0	q = l, cz≤15
200	euvg	15	q = l, cz≤15
200	pots	99	q = l, cz≤15
300	pots	0	cz≤15
300	uvg	15	cz≤15
300	euvg	30	cz≤15
300	mpty	99	cz≤15
400	euvg	0	cz>15

Table 6-75.bs.u48. Determine Card Type Score - BUS/UMC48
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;u48			
seq	value	score	condition
100	uvg	0	sig = g, cz≤16, orig = y
200	uvg	0	q = l, cz≤9, orig = y
200	coin	99	q = l, cz≤9, orig = y
200	pots	99	q = l, cz≤9, orig = y
250	uvg	0	q = l, cz≤16, orig = y
250	epots	99	q = l, cz≤16, orig = y
300	pots	0	cz≤9, orig = y
300	epots	15	cz≤9, orig = y
300	uvg	30	cz≤9, orig = y
300	coin	99	cz≤9, orig = y
400	epots	0	cz≤16, orig = y
400	uvg	15	cz≤16, orig = y
500	uvg	0	sig=g, oct = uvg
600	pots	0	oct = pots
600	uvg	15	oct = pots
600	coin	99	oct = pots
700	pots	0	oct = coin
700	uvg	15	oct = coin
700	coin	99	oct = coin
800	pots	0	oct = uvg
800	uvg	15	oct = uvg
800	coin	99	oct = uvg
900	pots	0	oct = epots
900	uvg	15	oct = epots
900	coin	99	oct = epots

Table 6-75.bs.umc. Determine Card Type Score - BUS/UMC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;umc			
seq	value	score	condition
100	uvg	0	sig = g, cz≤16, orig = y
200	uvg	0	q = l, cz≤9, orig = y
200	coin	99	q = l, cz≤9, orig = y
200	pots	99	q = l, cz≤9, orig = y
250	uvg	0	q = l, cz≤16, orig = y
250	epots	99	q = l, cz≤16, orig = y
300	pots	0	cz≤9, orig = y
300	epots	15	cz≤9, orig = y
300	uvg	30	cz≤9, orig = y
300	coin	99	cz≤9, orig = y
400	epots	0	cz≤16, orig = y
400	uvg	15	cz≤16, orig = y
500	uvg	0	sig=g, oct = uvg
600	pots	0	oct = pots
600	uvg	15	oct = pots
600	coin	99	oct = pots
700	pots	0	oct = coin
700	uvg	15	oct = coin
700	coin	99	oct = coin
800	pots	0	oct = uvg
800	uvg	15	oct = uvg
800	coin	99	oct = uvg
900	pots	0	oct = epots
900	uvg	15	oct = epots
900	coin	99	oct = epots

Table 6-75.bs.usm. Determine Card Type Score - BUS/USAM
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = bus;usam			
seq	value	score	condition
100	pots	0	

Table 6-75.cm.dft. Determine Card Type Score - MPTCAR/DFLT
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = mptcar (default CC)			
seq	value	score	condition
100	ou	0	dr=o

Table 6-75.cm.hfc. Determine Card Type Score - MPTCAR/HFC2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = mptcar;hfc2t			
seq	value	score	condition
100	rfds	0	dr=o

Table 6-75.cm.hmx. Determine Card Type Score - MPTCAR/HMX
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = mptcar;hmx			
seq	value	score	condition
100	cxmu	0	dr=o

Table 6-75.cn.and. Determine Card Type Score - COIN/AN
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = coin;an			
seq	value	score	condition
100	sad	0	

Table 6-75.cn.ano. Determine Card Type Score - COIN/ANONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = coin;anonu			
seq	value	score	condition
100	sad	0	

Table 6-75.cn.dft. Determine Card Type Score - COIN/DFLT
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = coin (default CC)			
seq	value	score	condition
100	coin	0	

Table 6-75.cr.dft. Determine Card Type Score - CARRIER/DFLT
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = carrier (default CC)			
seq	value	score	condition
100	ds1	0	dr = e
200	ds2	0	dr = f
300	ds3	0	dr = g
400	ds3	0	dr = p
500	oc3	0	dr = r
600	oc12	0	dr = s
700	*	0	dr = o

Table 6-75.it.dft. Determine Card Type Score - ISDNT/DFLT
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnt (default CC)			
seq	value	score	condition
100	bri4	0	orig=y
200	bri	0	

Table 6-75.iu.and. Determine Card Type Score - ISDNU/AN
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnu;an			
seq	value	score	condition
100	sad	0	orig = y

Table 6-75.iu.ano. Determine Card Type Score - ISDNU/ANONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnu;anonu			
seq	value	score	condition
100	sad	0	

Table 6-75.iu.dft. Determine Card Type Score - ISDNU/DFLT
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnu (default CC)			
seq	value	score	condition
100	bri	0	

Table 6-75iu.dis. Determine Card Type Score - ISDNU/DISCS
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.3)

Instance = isdnu;discs			
seq	value	score	condition
100	bri	0	orig = y
100	bri303	0	orig = y
200	bri	0	oct = bri

Table 6-75iu.dou. Determine Card Type Score - ISDNU/DISONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.4)

Instance = isdnu;disonu			
seq	value	score	condition
100	bri	0	oct = bri

Table 6-75.iu.fct. Determine Card Type Score - ISDNU/FCTR
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnu;fctr			
seq	value	score	condition
100	bri	0	orig = y
100	bri303	0	orig = y
200	bri	0	oct = bri

Table 6-75.iu.fdl. Determine Card Type Score - ISDNU/FDLC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnu;fdlc			
seq	value	score	condition
100	bri	0	oct = bri

Table 6-75.iu.nxt. Determine Card Type Score - ISDNU/NEXT3
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnu;next3			
seq	value	score	condition
100	bri303	0	

Table 6-75.iu.s2t. Determine Card Type Score - ISDNU/SLC2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.2)

Instance = isdnu;slc2t			
seq	value	score	condition
100	bri	0	orig = y
100	bri303	0	orig = y
100	bri303q	0	orig = y
200	bri	0	oct = bri

Table 6-75.iu.s96. Determine Card Type Score - ISDNU/SLC96
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnu;slc96			
seq	value	score	condition
100	bri	0	oct = bri

Table 6-75.iu.sdv. Determine Card Type Score - ISDNU/SDV2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.2)

Instance = isdnu;sdv2t			
seq	value	score	condition
100	bri303	0	
100	bri303q	0	

Table 6-75.iu.slo. Determine Card Type Score - ISDNU/SLCONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.2)

Instance = isdnu;slconu			
seq	value	score	condition
100	bri	0	orig = y
100	bri303	0	orig = y
100	bri303q	0	orig = y

Table 6-75.iu.usm. Determine Card Type Score - ISDNU/USAM
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = isdnu;usam			
seq	value	score	condition
100	bri	0	

Table 6-75.mn.and. Determine Card Type Score - MADN/AN
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;an			
seq	value	score	condition
100	sad	0	sig=p, orig=y
200	uvg	0	sig = g, cz≤16, orig = y
200	sad	15	sig = g, cz≤16, orig = y
300	uvg	0	q = l, cz≤16, orig = y
300	sad	15	q = l, cz≤16, orig = y
300	pots	99	q = l, cz≤16, orig = y
400	pots	0	cz≤19, orig = y
400	uvg	15	cz≤19, orig = y
400	sad	30	cz≤19, orig = y
500	sad	0	sig!=p

Table 6-75.mn.ano. Determine Card Type Score - MADN/ANONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;anonu			
seq	value	score	condition
100	sad	0	sig=p
200	uvg	0	sig = g, cz≤16
200	sad	15	sig = g, cz≤16
300	uvg	0	q = l, cz≤16
300	sad	15	q = l, cz≤16
300	pots	99	q = l, cz≤16
400	pots	0	cz≤19
400	uvg	15	cz≤19
400	sad	30	cz≤19

Table 6-75.mn.dis. Determine Card Type Score - MADN/DISCS
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;discs			
seq	value	score	condition
100	ebs	0	sig=p
200	uvg	0	sig = g
300	uvg	0	q = 1, orig = y
300	pots	99	q = 1, orig = y
400	pots	0	orig = y
400	uvg	30	orig = y
500	uvg	0	q = 1
500	pots	30	q = 1
600	pots	0	
600	uvg	30	

Table 6-75.mn.dou. Determine Card Type Score - MADN/DISONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;disonu			
seq	value	score	condition
100	ebs	0	sig=p
200	uvg	0	sig = g
300	uvg	0	q = 1
300	pots	99	q = 1
400	pots	0	
400	uvg	30	

Table 6-75.mn.fco. Determine Card Type Score - MADN/FCTRONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;fctronu			
seq	value	score	condition
100	ebs	0	sig = p
200	uvg	0	sig = g
300	uvg	0	q = l, orig = y
300	pots	99	q = l, orig = y
400	pots	0	orig = y
400	uvg	30	orig = y

Table 6-75.mn.fct. Determine Card Type Score - MADN/FCTR
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;fctr			
seq	value	score	condition
100	ebs	0	sig = p
200	uvg	0	sig = g
300	uvg	0	q = l, orig = y
300	pots	99	q = l, orig = y
400	pots	0	orig = y
400	uvg	30	orig = y
500	uvg	0	q = l, oct = uvg
600	pots	0	oct = pots
700	pots	0	oct = uvg
700	uvg	30	oct = uvg

Table 6-75.mn.fdl. Determine Card Type Score - MADN/FDLC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;fdlc			
seq	value	score	condition
100	ebs	0	sig = p
200	uvg	0	sig = g
300	uvg	0	q = l, orig = y
300	pots	99	q = l, orig = y
400	pots	0	orig = y
400	uvg	30	orig = y
500	uvg	0	q = l, oct = uvg
600	pots	0	oct = pots
700	pots	0	oct = uvg
700	uvg	30	oct = uvg

Table 6-75.mn.isc. Determine Card Type Score - MADN/IISC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn (default CC)			
seq	value	score	condition
100	ebs	0	sig=p
200	pots	0	oct=pots
200	uvg	0	oct=uvg
200	2ws	0	oct=2ws

Table 6-75.mn.l2o. Determine Card Type Score - MADN/LOC2ONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;loc2onu			
seq	value	score	condition
100	ebs	0	sig = p
200	uvg	0	sig = g
200	uvgv	15	sig = g
300	uvg	0	q = l
300	uvgv	15	q = l
300	pots	99	q = l
400	pots	0	
400	uvg	15	
400	uvgv	30	

Table 6-75.mn.lto. Determine Card Type Score - MADN/LTSPONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;ltsponu			
seq	value	score	condition
100	ebs	0	sig = p
150	uvg	0	sig = g, cz≤16
150	euvg	15	sig = g, cz≤16
200	uvg	0	q = l, cz≤16
200	euvg	15	q = l, cz≤16
200	pots	99	q = l, cz≤16
300	pots	0	cz≤16
300	uvg	15	cz≤16
300	euvg	30	cz≤16
400	euvg	0	cz>16

Table 6-75.mn.ltp. Determine Card Type Score - MADN/LTSP
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;ltsp			
seq	value	score	condition
100	ebs	0	sig = p
150	uvg	0	sig = g, cz≤16, orig = y
150	euvg	15	sig = g, cz≤16, orig = y
200	uvg	0	q = l, cz≤16, orig = y
200	euvg	15	q = l, cz≤16, orig = y
200	pots	99	q = l, cz≤16, orig = y
300	pots	0	cz≤16, orig = y
300	uvg	15	cz≤16, orig = y
300	euvg	30	cz≤16, orig = y
400	euvg	0	cz>16, orig = y
500	pots	0	oct = pots
500	uvg	15	oct = pots
500	euvg	30	oct = pots
600	uvg	0	sig = g, oct = uvg
600	euvg	15	sig = g, oct = uvg
700	uvg	0	oct = uvg
700	euvg	15	oct = uvg
700	pots	30	oct = uvg
800	uvg	0	sig = g, oct = euvg
800	euvg	15	sig = g, oct = euvg
900	uvg	0	oct = euvg
900	euvg	15	oct = euvg
900	pots	30	oct = euvg

Table 6-75.mn.s2t. Determine Card Type Score - MADN/SLC2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;slc2t			
seq	value	score	condition
100	uvg	0	sig = g, cz≤15, orig = y
100	euvg	15	sig = g, cz≤15, orig = y
200	uvg	0	sig! = p, q = l, cz≤15, orig = y
200	euvg	15	sig! = p, q = l, cz≤15, orig = y
200	pots	99	sig! = p, q = l, cz≤15, orig = y
300	pots	0	sig! = p, cz≤15, orig = y
300	uvg	15	sig! = p, cz≤15, orig = y
300	euvg	30	sig! = p, cz≤15, orig = y
400	euvg	0	sig!=p, cz>15, orig = y
500	pots	0	oct = pots
500	uvg	15	oct = pots
500	euvg	30	oct = pots
600	uvg	0	sig = g, oct = uvg
600	euvg	15	sig = g, oct = uvg
700	pots	0	sig! = p, oct = uvg
700	uvg	15	sig! = p, oct = uvg
700	euvg	30	sig! = p, oct = uvg
800	uvg	0	sig = g, oct = euvg
800	euvg	15	sig = g, oct = euvg
900	pots	0	sig! = p, oct = euvg
900	uvg	15	sig! = p, oct = euvg
900	euvg	30	sig! = p, oct = euvg
950	ebs	0	sig=p

Table 6-75.mn.s96. Determine Card Type Score - MADN/SLC96
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;slc96			
seq	value	score	condition
100	uvg	0	sig = g, cz≤15, orig = y
100	euvg	15	sig = g, cz≤15, orig = y
200	uvg	0	sig! = p, q = l, cz≤15, orig = y
200	euvg	15	sig! = p, q = l, cz≤15, orig = y
200	pots	99	sig! = p, q = l, cz≤15, orig = y
300	pots	0	sig! = p, cz≤15, orig = y
300	uvg	15	sig! = p, cz≤15, orig = y
300	euvg	30	sig! = p, cz≤15, orig = y
400	euvg	0	sig!=p, cz>15, orig = y
500	pots	0	oct = pots
500	uvg	15	oct = pots
500	euvg	30	oct = pots
600	uvg	0	sig = g, oct = uvg
600	euvg	15	sig = g, oct = uvg
700	pots	0	sig! = p, oct = uvg
700	uvg	15	sig! = p, oct = uvg
700	euvg	30	sig! = p, oct = uvg
800	uvg	0	sig = g, oct = euvg
800	euvg	15	sig = g, oct = euvg
900	pots	0	sig! = p, oct = euvg
900	uvg	15	sig! = p, oct = euvg
900	euvg	30	sig! = p, oct = euvg
950	ebs	0	sig = p

Table 6-75.mn.sdv. Determine Card Type Score - MADN/SDV2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;sdv2t			
seq	value	score	condition
100	uvg	0	sig = g, cz≤15
100	euvg	15	sig = g, cz≤15
200	uvg	0	sig! = p, q = l, cz≤15
200	euvg	15	sig! = p, q = l, cz≤15
200	pots	99	sig! = p, q = l, cz≤15
300	pots	0	sig! = p, cz≤15
300	uvg	15	sig! = p, cz≤15
300	euvg	30	sig! = p, cz≤15
400	euvg	0	sig!=p, cz>15

Table 6-75.mn.slo. Determine Card Type Score - MADN/SLCONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;slconu			
seq	value	score	condition
100	uvg	0	sig = g, cz≤15
100	euvg	15	sig = g, cz≤15
200	uvg	0	sig! = p, q = l, cz≤15
200	euvg	15	sig! = p, q = l, cz≤15
200	pots	99	sig! = p, q = l, cz≤15
300	pots	0	sig! = p, cz≤15
300	uvg	15	sig! = p, cz≤15
300	euvg	30	sig! = p, cz≤15
400	euvg	0	sig!=p, cz>15
500	ebs	0	sig=p

Table 6-75.mn.u48. Determine Card Type Score - MADN/UMC48
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;u48			
seq	value	score	condition
100	ebs	0	sig = p
150	uvg	0	sig = g, cz≤16, orig = y
200	uvg	0	q = l, cz≤9, orig = y
200	coin	99	q = l, cz≤9, orig = y
200	pots	99	q = l, cz≤9, orig = y
250	uvg	0	q = l, cz≤16, orig = y
250	epots	99	q = l, cz≤16, orig = y
300	pots	0	cz≤9, orig = y
300	epots	15	cz≤9, orig = y
300	uvg	30	cz≤9, orig = y
300	coin	99	cz≤9, orig = y
400	epots	0	cz≤16, orig = y
400	uvg	15	cz≤16, orig = y
500	uvg	0	sig=g, oct = uvg
600	pots	0	oct = pots
600	uvg	15	oct = pots
600	coin	99	oct = pots
700	pots	0	oct = coin
700	uvg	15	oct = coin
700	coin	99	oct = coin
800	pots	0	oct = uvg
800	uvg	15	oct = uvg
800	coin	99	oct = uvg
900	pots	0	oct = epots
900	uvg	15	oct = epots
900	coin	99	oct = epots

Table 6-75.mn.umc. Determine Card Type Score - MADN/UMC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = madn;umc			
seq	value	score	condition
100	ebs	0	sig = p
150	uvg	0	sig = g, cz≤16, orig = y
200	uvg	0	q = l, cz≤9, orig = y
200	coin	99	q = l, cz≤9, orig = y
200	pots	99	q = l, cz≤9, orig = y
250	uvg	0	q = l, cz≤16, orig = y
250	epots	99	q = l, cz≤16, orig = y
300	pots	0	cz≤9, orig = y
300	epots	15	cz≤9, orig = y
300	uvg	30	cz≤9, orig = y
300	coin	99	cz≤9, orig = y
400	epots	0	cz≤16, orig = y
400	uvg	15	cz≤16, orig = y
500	uvg	0	sig=g, oct = uvg
600	pots	0	oct = pots
600	uvg	15	oct = pots
600	coin	99	oct = pots
700	pots	0	oct = coin
700	uvg	15	oct = coin
700	coin	99	oct = coin
800	pots	0	oct = uvg
800	uvg	15	oct = uvg
800	coin	99	oct = uvg
900	pots	0	oct = epots
900	uvg	15	oct = epots
900	coin	99	oct = epots

Table 6-75.p4.and. Determine Card Type Score - PL4W/AN
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;an			
seq	value	score	condition
100	ds1	0	dr=e
200	ds3	0	dr=g
300	4ws	0	
400	sad	99	

Table 6-75.p4.ano. Determine Card Type Score - PL4W/ANONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;anonu			
seq	value	score	condition
100	ds1	0	dr=e
200	ds3	0	dr=g
300	4ws	0	
400	sad	99	

Table 6-75.p4.dis. Determine Card Type Score - PL4W/DISCS
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;discs			
seq	value	score	condition
100	ds1	0	dr=e
200	dds	0	catg = d
300	4ws	0	
300	2ws	99	

Table 6-75.p4.dm2. Determine Card Type Score - PL4W/DDM2000
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;ddm2000			
seq	value	score	condition
200	ds1	0	dr=e

Table 6-75.p4.dou. Determine Card Type Score - PL4W/DISONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;disonu			
seq	value	score	condition
100	ds1	0	dr = e
200	dds	0	catg = d
300	4ws	0	
300	2ws	99	

Table 6-75.p4.fco. Determine Card Type Score - PL4W/FCTRONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;fctronu			
seq	value	score	condition
100	dds	0	dr=a
200	ddsp	0	catg=d
200	dds	20	catg=d
300	ds1	0	dr=e
400	ds3	0	dr=g
500	4ws	0	
600	2ws	99	

Table 6-75.p4.fct. Determine Card Type Score - PL4W/FCTR
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;fctr			
seq	value	score	condition
100	dds	0	dr=a
200	ddsp	0	catg=d
200	dds	20	catg=d
300	ds1	0	dr=e
400	ds3	0	dr=g
500	4ws	0	
500	2ws	99	

Table 6-75.p4.fdl. Determine Card Type Score - PL4W/FDLC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;fdlc			
seq	value	score	condition
100	dds	0	dr=a
200	ddsp	0	catg=d
200	dds	20	catg=d
300	ds1	0	dr=e
400	ds3	0	dr=g
500	4ws	0	
500	2ws	99	

Table 6-75.p4.flm. Determine Card Type Score - PL4W/FLM 150
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;flm1			
seq	value	score	condition
100	ds1	0	dr=e
200	ds3	0	dr=g

Table 6-75.p4.isc. Determine Card Type Score - PL4W/IISC
(Reference Data name = ccpt penalty score ct)
(Instance Key = asgn_cat;cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = pl4w;iisc			
seq	value	score	condition
100	ddsp	0	dr = l
100	dds	30	dr = l
200	ddsp	0	dr = h
200	dds	30	dr = h
300	dds	0	dr = m
300	ddsp	30	dr = m
400	dds	0	dr = a
400	ddsp	30	dr = a
500	2ws	99	oct = 2ws
600	4ws	0	

Table 6-75.p4.l2o. Determine Card Type Score - PL4W/LOC2ONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;loc2onu			
seq	value	score	condition
100	ds1	0	dr=e
200	dds	0	catg = d
300	dds	0	catg = w
400	4ws	0	
500	2ws	99	

Table 6-75.p4.lc2. Determine Card Type Score - PL4W/LOC2
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;loc2			
seq	value	score	condition
100	ds1	0	dr=e

Table 6-75.p4.lto. Determine Card Type Score - PL4W/LTSPONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;ltsponu			
seq	value	score	condition
100	ds1	0	dr=e
200	dds	0	catg = d
300	dds	0	catg = w
400	uvg	99	oct = uvg
400	euvg	99	oct = uvg
500	uvg	99	oct = euvg
500	euvg	99	oct = euvg
600	4wsd	0	

Table 6-75.p4.ltp. Determine Card Type Score - PL4W/LTSP
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.2)

Instance = pl4w;ltsp			
seq	value	score	condition
100	ds1	0	dr=e
200	dds	0	catg = d
300	dds	0	catg = w
400	uvg	99	oct = uvg
400	euvg	99	oct = uvg
500	uvg	99	oct = euvg
500	euvg	99	oct = euvg
600	4wsd	0	
600	4ws	30	
700	uvg	99	oct = 2ws (for NLevel only)
700	euvg	99	oct = 2ws (for NLevel only)

Table 6-75.p4.nxt. Determine Card Type Score - PL4W/NEXT3
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;next3			
seq	value	score	condition
100	ddse	0	dr = l
200	ddse	0	dr = h
300	ddse	0	dr = m
400	ddse	0	dr = a
500	4ws	0	
600	2ws	99	

Table 6-75.p4.s16. Determine Card Type Score - PL4W/SSU16
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;ssu16			
seq	value	score	condition
100	ddse	0	dr = l
200	ddse	0	dr = h
300	ddse	0	dr = m
400	ddse	0	dr = a
500	4ws	0	
600	2ws	99	

Table 6-75.p4.s2t. Determine Card Type Score - PL4W/SLC2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;slc2t			
seq	value	score	condition
100	ddsp	0	dr=l
100	dds	20	dr=l
100	ddse	20	dr=l
200	ddsp	0	dr=h
200	dds	20	dr=h
200	ddse	20	dr=h
300	dds	0	dr=m
300	ddse	0	dr=m
400	dds	0	dr=a
400	ddse	0	dr=a
500	ds1	0	dr=e
600	4ws	0	
700	2ws	99	

Table 6-75.p4.s96. Determine Card Type Score - PL4W/SLC96
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;slc96			
seq	value	score	condition
100	ddsp	0	dr=l
100	dds	20	dr=l
100	ddse	20	dr=l
200	ddsp	0	dr=h
200	dds	20	dr=h
200	ddse	20	dr=h
300	dds	0	dr=m
300	ddse	0	dr=m
400	dds	0	dr=a
400	ddse	0	dr=a
500	ds1	0	dr=e
600	4ws	0	
700	2ws	99	

Table 6-75.p4.sdv. Determine Card Type Score - PL4W/SDV2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;sdv2t			
seq	value	score	condition
100	ddsp	0	dr=l
100	dds	20	dr=l
100	ddse	20	dr=l
200	ddsp	0	dr=h
200	dds	20	dr=h
200	ddse	20	dr=h
300	dds	0	dr=m
300	ddse	0	dr=m
400	dds	0	dr=a
400	ddse	0	dr=a
500	ds1	0	dr=e
600	4ws	0	
700	2ws	99	

Table 6-75.p4.slo. Determine Card Type Score - PL4W/SLCONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;slconu			
seq	value	score	condition
100	ddsp	0	dr=l
100	dds	20	dr=l
100	ddse	20	dr=l
200	ddsp	0	dr=h
200	dds	20	dr=h
200	ddse	20	dr=h
300	dds	0	dr=m
300	ddse	0	dr=m
400	dds	0	dr=a
400	ddse	0	dr=a
500	ds1	0	dr=e
600	4ws	0	
700	2ws	99	

Table 6-75.p4.u48. Determine Card Type Score - PL4W/UMC48
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;u48			
seq	value	score	condition
100	ds1	0	dr=e
200	dds	0	catg = d
300	dds	0	catg = w
400	uvg	99	oct = uvg
400	2ws	99	oct = uvg
500	uvg	99	oct = 2ws
500	2ws	99	oct = 2ws
600	4ws	0	

Table 6-75.p4.umc. Determine Card Type Score - PL4W/UMC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;umc			
seq	value	score	condition
100	ds1	0	dr=e
200	dds	0	catg = d
300	dds	0	catg = w
400	uvg	99	oct = uvg
400	2ws	99	oct = uvg
500	uvg	99	oct = 2ws
500	2ws	99	oct = 2ws
600	4ws	0	

Table 6-75.pa.dft. Determine Card Type Score - PLALARM/DFLT
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plalarm (default CC)			
seq	value	score	condition
100	dc	0	

Table 6-75.pa.dis. Determine Card Type Score -PLALARM /DISCS
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plalarm;discs			
seq	value	score	condition
100	2ws	0	

Table 6-75.pa.dou. Determine Card Type Score -PLALARM /DISONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plalarm;disonu			
seq	value	score	condition
100	2ws	0	

Table 6-75.pa.u48. Determine Card Type Score - PLALARM/UMC48
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plalarm;u48			
seq	value	score	condition
100	2ws	99	

Table 6-75.pa.umc. Determine Card Type Score - PLALARM/UMC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plalarm;umc			
seq	value	score	condition
100	2ws	99	

Table 6-75.pb.and. Determine Card Type Score - PBXT/AN
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;an			
seq	value	score	condition
100	4ws	0	dstcu=4w, orig!=y
200	sad	0	

Table 6-75.pb.ano. Determine Card Type Score - PBXT/ANONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;anonu			
seq	value	score	condition
100	sad	0	

Table 6-75.pb.dis. Determine Card Type Score - PBXT/DISCS
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;discs			
seq	value	score	condition
100	4ws	0	dstcu=4w, orig!=y
200	2ws	0	

Table 6-75.pb.dou. Determine Card Type Score - PBXT/DISONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;disonu			
seq	value	score	condition
100	2ws	0	

Table 6-75.pb.fco. Determine Card Type Score - PBXT/FCTRONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;fctronu			
seq	value	score	condition
100	did	0	orig = y
100	2ws	15	orig = y

Table 6-75.pb.fct. Determine Card Type Score - PBXT/FCTR
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;fctr			
seq	value	score	condition
100	did	0	orig = y
100	2ws	15	orig = y
200	4ws	0	dstcu=4w
300	did	0	
300	2ws	15	

Table 6-75.pb.fdl. Determine Card Type Score - PBXT/FDLC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;fdlc			
seq	value	score	condition
100	did	0	orig = y
100	2ws	15	orig = y
200	4ws	0	dstcu=4w
300	did	0	
300	2ws	15	

Table 6-75.pb.hmx. Determine Card Type Score - PBXT/HMX
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 11.3)

Instance = pbxt;hmx			
seq	value	score	condition
100	did	0	

Table 6-75.pb.isc. Determine Card Type Score - PBXT/IISC
(Reference Data name = ccpt penalty score ct)
(Instance Key = asgn_cat;cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = pbxt;iisc			
seq	value	score	condition
100	4ws	0	dstcu=4w, orig!=y
200	did	0	oct = did
300	2ws	0	oct = 2ws

Table 6-75.pb.l2o. Determine Card Type Score - PBXT/LOC2ONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;loc2onu			
seq	value	score	condition
100	2ws	0	

Table 6-75.pb.lto. Determine Card Type Score - PBXT/LTSPONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;ltsponu			
seq	value	score	condition
100	uvg	0	cz≤16
100	euvg	15	cz≤16
200	euvg	0	cz>16

Table 6-75.pb.ltp. Determine Card Type Score - PBXT/LTSP
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.2)

Instance = pbxt;ltsp			
seq	value	score	condition
100	uvg	0	cz≤16, orig = y
100	euvg	15	cz≤16, orig = y
200	euvg	0	cz>16, orig = y
300	4wsd	0	dstcu=4w
300	4ws	30	dstcu=4w
400	uvg	0	oct = uvg
400	euvg	15	oct = uvg
500	uvg	0	oct = euvg
500	euvg	15	oct = euvg
600	uvg	0	oct= 2ws (for NLevel only)
600	euvg	15	oct = 2ws (for NLevel only)

Table 6-75.pb.nxt. Determine Card Type Score - PBXT/NEXT3
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;next3			
seq	value	score	condition
100	2ws	0	

Table 6-75.pb.s16. Determine Card Type Score - PBXT/SSU16
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;ssu16			
seq	value	score	condition
100	4ws	0	dstcu = 4
200	2ws	0	

Table 6-75.pb.s2t. Determine Card Type Score - PBXT/SLC2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;slc2t			
seq	value	score	condition
100	did	0	orig = y
100	2ws	15	orig = y
200	4ws	0	dstcu=4w
300	did	0	oct = did
400	2ws	0	oct = 2ws

Table 6-75.pb.s96. Determine Card Type Score - PBXT/SLC96
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;slc96			
seq	value	score	condition
100	did	0	orig = y
100	2ws	15	orig = y
200	4ws	0	dstcu=4w
300	did	0	oct = did
400	2ws	0	oct = 2ws

Table 6-75.pb.slo. Determine Card Type Score - PBXT/SLCONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;slconu			
seq	value	score	condition
100	did	0	
100	2ws	10	

Table 6-75.pb.u48. Determine Card Type Score - PBXT/UMC48
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;u48			
seq	value	score	condition
100	uvg	0	cz≤16, orig = y
200	2ws	15	orig = y
300	4ws	0	dstcu=4w
400	uvg	0	oct = uvg
400	2ws	15	oct = uvg
500	uvg	0	oct = 2ws
500	2ws	15	oct = 2ws

Table 6-75.pb.umc. Determine Card Type Score - PBXT/UMC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;umc			
seq	value	score	condition
100	uvg	0	cz≤16, orig = y
200	2ws	15	orig = y
300	4ws	0	dstcu=4w
400	uvg	0	oct = uvg
400	2ws	15	oct = uvg
500	uvg	0	oct = 2ws
500	2ws	15	oct = 2ws

Table 6-75.pd.and. Determine Card Type Score - PLDATA/AN
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;an			
seq	value	score	condition
100	4ws	0	dstcu=4w, orig!=y
200	sad	0	
300	4ws	99	

Table 6-75.pd.ano. Determine Card Type Score - PLDATA/ANONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;anonu			
seq	value	score	condition
100	sad	0	
200	4ws	99	

Table 6-75.pd.dis. Determine Card Type Score - PLDATA/DISCS
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;discs			
seq	value	score	condition
100	4ws	0	dstcu=4w, orig!=y
200	2ws	0	
300	4ws	99	

Table 6-75.pd.dou. Determine Card Type Score - PLDATA/DISONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;disonu			
seq	value	score	condition
100	2ws	0	
100	4ws	99	

Table 6-75.pd.fco. Determine Card Type Score - PLDATA/FCTRONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;fctronu			
seq	value	score	condition
100	2ws	0	
100	4ws	99	

Table 6-75.pd.fct. Determine Card Type Score - PLDATA/FCTR
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;fctr			
seq	value	score	condition
100	4ws	0	dstcu=4w, orig!=y
200	2ws	0	
200	4ws	99	

Table 6-75.pd.fdl. Determine Card Type Score - PLDATA/FDLC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;fdlc			
seq	value	score	condition
100	4ws	0	dstcu=4w, orig!=y
200	2ws	0	
200	4ws	99	

Table 6-75.pd.isc. Determine Card Type Score - PLDATA/IISC
(Reference Data name = ccpt penalty score ct)
(Instance Key = asgn_cat;cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = pldata;iisc			
seq	value	score	condition
100	4ws	0	dstcu=4w, orig!=y
200	4ws	99	oct = 4ws
300	2ws	0	

Table 6-75.pd.l2o. Determine Card Type Score - PLDATA/LOC2ONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;loc2onu			
seq	value	score	condition
100	2ws	0	
200	4ws	99	

Table 6-75.pd.lto. Determine Card Type Score - PLDATA/LTSPONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;ltsponu			
seq	value	score	condition
100	4wsd	99	oct = 4wsd
200	uvg	0	cz≤16
200	euvg	15	cz≤16
300	euvg	0	cz>16

Table 6-75.pd.ltp. Determine Card Type Score - PLDATA/LTSP
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.2)

Instance = pldata;ltsp			
seq	value	score	condition
100	4wsd	99	oct = 4wsd
100	4ws	99	oct = 4wsd
200	uvg	0	cz≤16, orig = y
200	euvg	15	cz≤16, orig = y
300	euvg	0	cz>16, orig = y
400	4wsd	0	dstcu=4w
400	4ws	30	dstcu=4w
500	uvg	0	oct = uvg
500	euvg	15	oct = uvg
600	uvg	0	oct = euvg
600	euvg	15	oct = euvg
700	uvg	0	oct = 2ws (for NLevel only)
700	euvg	15	oct = 2ws (for NLevel only)

Table 6-75.pd.nxt. Determine Card Type Score - PLDATA/NEXT3
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;next3			
seq	value	score	condition
100	2ws	0	
100	4ws	99	

Table 6-75.pd.s16. Determine Card Type Score - PLDATA/SSU16
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;ssu16			
seq	value	score	condition
100	4ws	0	dstcu = 4w
200	2ws	0	
300	4ws	99	

Table 6-75.pd.s2t. Determine Card Type Score - PLDATA/SLC2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;slc2t			
seq	value	score	condition
100	4ws	0	dstcu=4w, orig!=y
200	2ws	0	
300	4ws	99	

Table 6-75.pd.s96. Determine Card Type Score - PLDATA/SLC96
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;slc96			
seq	value	score	condition
100	4ws	0	dstcu=4w, orig!=y
200	2ws	0	
300	4ws	99	

Table 6-75.pd.sdv. Determine Card Type Score - PLDATA/SDV2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;sdv2t			
seq	value	score	condition
100	pots	0	
100	uvg	15	
100	euvg	30	
100	2ws	0	
100	4ws	99	

Table 6-75.pd.slo. Determine Card Type Score - PLDATA/SLCONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;slconu			
seq	value	score	condition
100	2ws	0	
200	4ws	99	

Table 6-75.pd.u48. Determine Card Type Score - PLDATA/UMC48
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;u48			
seq	value	score	condition
100	4ws	99	oct = 4ws
200	2ws	0	orig = y
300	4ws	0	dstcu=4w
400	2ws	0	

Table 6-75.pd.umc. Determine Card Type Score - PLDATA/UMC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;umc			
seq	value	score	condition
100	4ws	99	oct = 4ws
200	2ws	0	orig = y
300	4ws	0	dstcu=4w
400	2ws	0	

Table 6-75.pv.and. Determine Card Type Score - PLVOICE/AN
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;an			
seq	value	score	condition
100	4ws	0	dstcu=4w, orig!=y
200	sad	0	
200	mrd	99	

Table 6-75.pv.ano. Determine Card Type Score - PLVOICE/ANONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;anonu			
seq	value	score	condition
100	sad	0	
200	mrd	99	

Table 6-75.pv.dis. Determine Card Type Score - PLVOICE/DISCS
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;discs			
seq	value	score	condition
100	4ws	0	dstcu=4w, orig!=y
200	uvg	0	cot=f
200	2ws	30	cot=f
300	mrd	0	oct=mrd
400	2ws	0	

Table 6-75.pv.dou. Determine Card Type Score - PLVOICE/DISONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;disonu			
seq	value	score	condition
100	uvg	0	cot=f
100	2ws	30	cot=f
200	2ws	0	
200	mrd	0	

Table 6-75.pv.fco. Determine Card Type Score - PLVOICE/FCTRONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;fctronu			
seq	value	score	condition
100	uvg	0	cot=f
100	2ws	30	cot=f
100	4ws	99	cot=f
200	2ws	0	
200	4ws	99	
200	mrd	99	

Table 6-75.pv.fct. Determine Card Type Score - PLVOICE/FCTR
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;fctr			
seq	value	score	condition
100	uvg	0	cot=f, orig = y
100	2ws	30	cot=f, orig = y
200	2ws	0	orig = y
200	mrd	99	orig = y
300	4ws	0	dstcu=4w
400	uvg	0	oct = uvg
500	2ws	0	oct = 2ws
600	mrd	0	oct = mrd

Table 6-75.pv.fdl. Determine Card Type Score - PLVOICE/FDLC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;fdlc			
seq	value	score	condition
100	uvg	0	cot=f, orig = y
100	2ws	30	cot=f, orig = y
200	2ws	0	orig = y
200	mrd	99	orig = y
300	4ws	0	dstcu=4w
400	uvg	0	oct = uvg
500	2ws	0	oct = 2ws
600	mrd	0	oct = mrd

Table 6-75.pv.isc. Determine Card Type Score - PLVOICE/IISC
(Reference Data name = ccpt penalty score ct)
(Instance Key = asgn_cat;cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = plvoice;iisc			
seq	value	score	condition
100	4ws	0	dstcu=4w, orig!=y
200	2ws	0	

Table 6-75.pv.l2o. Determine Card Type Score - PLVOICE/LOC2ONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;loc2onu			
seq	value	score	condition
100	uvg	0	sig = g
100	uvgv	15	sig = g
100	2ws	30	sig = g
200	uvg	0	q = l
200	uvgv	15	q = l
200	pots	99	q = l
300	pots	0	cot = f
300	uvg	15	cot = f
300	uvgv	20	cot = f
300	2ws	30	cot = f
400	uvg	0	
400	uvgv	15	
400	2ws	30	

Table 6-75.pv.lto. Determine Card Type Score - PLVOICE/LTSPONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;ltsponu			
seq	value	score	condition
100	uvg	0	sig = g, cz≤16
100	euvg	15	sig = g, cz≤16
100	mrd	99	sig = g, cz≤16
200	uvg	0	q = l, cot = f, cz≤16
200	euvg	15	q = l, cot = f, cz≤16
200	pots	99	q = l, cot = f, cz≤16
300	pots	0	cot = f, cz≤16
300	uvg	15	cot = f, cz≤16
300	euvg	30	cot = f, cz≤16
400	uvg	0	cz≤16
400	euvg	15	cz≤16
400	mrd	99	cz≤16
500	euvg	0	cz>16

Table 6-75.pv.ltp. Determine Card Type Score - PLVOICE/LTSP
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.2)

Instance = plvoice;ltsp			
seq	value	score	condition
100	uvg	0	sig = g, cz≤16, orig = y
100	euvg	15	sig = g, cz≤16, orig = y
100	mrd	99	sig = g, cz≤16, orig = y
200	uvg	0	q = l, cot = f, cz≤16, orig = y
200	euvg	15	q = l, cot = f, cz≤16, orig = y
200	pots	99	q = l, cot = f, cz≤16, orig = y
300	pots	0	cot = f, cz≤16, orig = y
300	uvg	15	cot = f, cz≤16, orig = y
300	euvg	30	cot = f, cz≤16, orig = y
400	uvg	0	cz≤16, orig = y
400	euvg	15	cz≤16, orig = y
400	mrd	99	cz≤16, orig = y
500	euvg	0	cz>16, orig = y
550	4wsd	0	dstcu=4w
550	4ws	30	dstcu=4w
600	pots	0	oct = pots, cot = f
600	uvg	15	oct = pots, cot = f
600	euvg	30	oct = pots, cot = f
700	uvg	0	oct = uvg
700	euvg	15	oct = uvg
800	uvg	0	oct = euvg
800	euvg	15	oct = euvg
900	mrd	99	oct = mrd
950	uvg	0	oct = 2ws (for NLevel only)
950	euvg	15	oct = 2ws (for NLevel only)

Table 6-75.pv.nxt. Determine Card Type Score - PLVOICE/NEXT3
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;next3			
seq	value	score	condition
100	2ws	0	

Table 6-75.pv.s16. Determine Card Type Score - PLVOICE/SSU16
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;ssu16			
seq	value	score	condition
100	4ws	0	dstcu = 4w
200	2ws	0	

Table 6-75.pv.s2t. Determine Card Type Score - PLVOICE/SLC2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;slc2t			
seq	value	score	condition
100	4ws	0	dstcu=4w, orig!=y
200	2ws	0	
300	mrd	99	

Table 6-75.pv.s96. Determine Card Type Score - PLVOICE/SLC96
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;slc96			
seq	value	score	condition
100	4ws	0	dstcu=4w, orig!=y
200	2ws	0	
300	mrd	99	

Table 6-75.pv.sdv. Determine Card Type Score - PLVOICE/SDV2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;sdv2t			
seq	value	score	condition
100	pots	0	
100	uvg	15	
100	euvg	30	
100	2ws	0	
100	mrd	99	

Table 6-75.pv.slo. Determine Card Type Score - PLVOICE/SLCONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;slconu			
seq	value	score	condition
100	2ws	0	
200	mrd	99	

Table 6-75.pv.u48. Determine Card Type Score - PLVOICE/UMC48
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;u48			
seq	value	score	condition
100	uvg	0	sig = g, cz≤16, orig = y
200	uvg	0	cot = f, cz≤9, orig = y
200	2ws	15	cot = f, cz≤9, orig = y
200	coin	99	cot = f, cz≤9, orig = y
300	uvg	0	cz≤16, orig = y
300	2ws	15	cz≤16, orig = y
400	2ws	0	cz>16, orig = y
500	4ws	0	dstcu=4w
600	uvg	0	oct = uvg
600	2ws	15	oct = uvg
700	uvg	0	oct = coin
700	2ws	15	oct = coin
800	2ws	0	

Table 6-75.pv.umc. Determine Card Type Score - PLVOICE/UMC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;umc			
seq	value	score	condition
100	uvg	0	sig = g, cz≤16, orig = y
200	uvg	0	cot = f, cz≤9, orig = y
200	2ws	15	cot = f, cz≤9, orig = y
200	coin	99	cot = f, cz≤9, orig = y
300	uvg	0	cz≤16, orig = y
300	2ws	15	cz≤16, orig = y
400	2ws	0	cz>16, orig = y
500	4ws	0	dstcu=4w
600	uvg	0	oct = uvg
600	2ws	15	oct = uvg
700	uvg	0	oct = coin
700	2ws	15	oct = coin
800	2ws	0	

Table 6-75.r1.and. Determine Card Type Score - RES1/AN
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;an			
seq	value	score	condition
100	pots	0	orig = y
100	uvg	15	orig = y
100	sad	30	orig = y
200	sad	0	

Table 6-75.r1.ano. Determine Card Type Score - RES1/ANONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;anonu			
seq	value	score	condition
100	pots	0	
100	uvg	15	
100	sad	30	

Table 6-75.r1.dis. Determine Card Type Score - RES1/DISCS
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;discs			
seq	value	score	condition
100	uvg	0	sig = g
200	uvg	0	q = l, orig = y
200	pots	99	q = l, orig = y
300	pots	0	orig = y
300	uvg	30	orig = y
400	uvg	0	q = l
400	pots	30	q = l
500	pots	0	
500	uvg	30	

Table 6-75.r1.dou. Determine Card Type Score - RES1/DISONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;disonu			
seq	value	score	condition
100	uvg	0	sig = g
200	uvg	0	q = l
200	pots	99	q = l
300	pots	0	
300	uvg	30	

Table 6-75.r1.fco. Determine Card Type Score - RES1/FCTRONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;fctronu			
seq	value	score	condition
100	pots	0	
100	uvg	15	
100	mpty	99	

Table 6-75.r1.fct. Determine Card Type Score - RES1/FCTR
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;fctr			
seq	value	score	condition
100	pots	0	orig = y
100	uvg	15	orig = y
100	mpty	99	orig = y
200	pots	0	oct = pots
300	pots	0	oct = uvg
300	uvg	15	oct = uvg
400	mpty	0	oct = mpty

Table 6-75.r1.fdl. Determine Card Type Score - RES1/FDLC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;fdlc			
seq	value	score	condition
100	pots	0	orig = y
100	uvg	15	orig = y
100	mpty	99	orig = y
200	pots	0	oct = pots
300	pots	0	oct = uvg
300	uvg	15	oct = uvg
400	mpty	0	oct = mpty

Table 6-75.r1.hfc. Determine Card Type Score - RES1/HFC2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;hfc2t			
seq	value	score	condition
100	pots	0	orig = y
100	uvg	15	orig = y
100	euvg	30	orig = y
100	mpty	99	orig = y

Table 6-75.r1.hmx. Determine Card Type Score - RES1/HMX
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 11.3)

Instance = res1;hmx			
seq	value	score	condition
100	pots	0	
100	uvg	15	

Table 6-75.r1.isc. Determine Card Type Score - RES1/IISC
(Reference Data name = ccpt penalty score ct)
(Instance Key = asgn_cat;cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = res1;iisc			
seq	value	score	condition
100	pots	0	orig = y
100	uvg	15	orig = y
100	mpty	99	orig = y
200	pots	0	oct = pots
300	uvg	0	oct = uvg
400	mpty	0	oct = mpty

Table 6-75.r1.l2o. Determine Card Type Score - RES1/LOC2ONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;loc2onu			
seq	value	score	condition
100	uvg	0	sig = g
100	uvgv	15	sig = g
200	uvg	0	q = 1
200	uvgv	15	q = 1
200	pots	99	q = 1
300	pots	0	
300	uvg	15	
300	uvgv	30	

Table 6-75.r1.lto. Determine Card Type Score - RES1/LTSPONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;ltsponu			
seq	value	score	condition
100	uvg	0	sig = g, cz≤16
100	euvg	15	sig = g, cz≤16
200	uvg	0	q = l, cz≤16
200	euvg	15	q = l, cz≤16
200	pots	99	q = l, cz≤16
300	pots	0	cz≤16
300	uvg	15	cz≤16
300	euvg	30	cz≤16
400	euvg	0	cz>16

Table 6-75.r1.ltp. Determine Card Type Score - RES1/LTSP
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.3)

Instance = res1;ltsp			
seq	value	score	condition
100	uvg	0	sig = g, cz≤16, orig = y
100	euvg	15	sig = g, cz≤16, orig = y
200	uvg	0	q = 1, cz≤16, orig = y
200	euvg	15	q = 1, cz≤16, orig = y
200	pots	99	q = 1, cz≤16, orig = y
300	pots	0	cz≤16, orig = y
300	uvg	15	cz≤16, orig = y
300	euvg	30	cz≤16, orig = y
400	euvg	0	cz>16, orig = y
450	uvg	0	sig=g, oct = pots (for NLevel only)
450	euvg	15	sig = g, oct = pots (for NLevel only)
500	pots	0	oct = pots
500	uvg	15	oct = pots
500	euvg	30	oct = pots
600	uvg	0	sig = g, oct = uvg
600	euvg	15	sig = g, oct = uvg
700	uvg	0	oct = uvg
700	euvg	15	oct = uvg
700	pots	30	oct = uvg
800	uvg	0	sig = g, oct = euvg
800	euvg	15	sig = g, oct = euvg
900	uvg	0	oct = euvg
900	euvg	15	oct = euvg
900	pots	30	oct = euvg
920	uvg	0	sig = g, oct = coin (for NLevel only)
920	euvg	15	sig = g, oct = coin (for NLevel only)
930	pots	0	oct = coin (for NLevel only)
930	uvg	15	oct = coin (for NLevel only)
930	euvg	30	oct = coin (for NLevel only)
940	uvg	0	sig = g, oct = bri303 (for NLevel only)
940	euvg	15	sig = g, oct = bri303 (for NLevel only)
950	pots	0	oct = bri303 (for NLevel only)
950	uvg	15	oct = bri303 (for NLevel only)
950	euvg	30	oct = bri303 (for NLevel only)

Table 6-75.r1.nxt. Determine Card Type Score - RES1/NEXT3
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;next3			
seq	value	score	condition
100	pots	0	
100	bri303	0	
100	coin	0	

Table 6-75.r1.s2t. Determine Card Type Score - RES1/SLC2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;slc2t			
seq	value	score	condition
100	pots	0	orig = y
100	uvg	15	orig = y
100	euvg	30	orig = y
100	mpty	99	orig = y
200	pots	0	oct = pots
200	uvg	15	oct = pots
300	pots	0	oct = uvg
300	uvg	15	oct = uvg
400	pots	0	oct = euvg
400	uvg	15	oct = euvg
500	mpty	0	oct = mpty

Table 6-75.r1.s96. Determine Card Type Score - RES1/SLC96
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;slc96			
seq	value	score	condition
100	pots	0	orig = y
100	uvg	15	orig = y
100	euvg	30	orig = y
100	mpty	99	orig = y
200	pots	0	oct = pots
200	uvg	15	oct = pots
300	pots	0	oct = uvg
300	uvg	15	oct = uvg
400	pots	0	oct = euvg
400	uvg	15	oct = euvg
500	pots	0	oct = uvgv
500	uvg	15	oct = uvgv
600	mpty	0	oct = mpty

Table 6-75.r1.sdv. Determine Card Type Score - RES1/SDV2T
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;sdv2t			
seq	value	score	condition
100	pots	0	
100	uvg	15	
100	euvg	30	

Table 6-75.r1.slo. Determine Card Type Score - RES1/SLCONU
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;slconu			
seq	value	score	condition
100	pots	0	
100	uvg	15	
100	euvg	30	
100	mpty	99	

Table 6-75.r1.u48. Determine Card Type Score - RES1/UMC48
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;u48			
seq	value	score	condition
100	uvg	0	sig = g, cz≤16, orig = y
200	uvg	0	q = l, cz≤9, orig = y
200	coin	99	q = l, cz≤9, orig = y
200	pots	99	q = l, cz≤9, orig = y
250	uvg	0	q = l, cz≤16, orig = y
250	epots	99	q = l, cz≤16, orig = y
300	pots	0	cz≤9, orig = y
300	epots	15	cz≤9, orig = y
300	uvg	30	cz≤9, orig = y
300	coin	99	cz≤9, orig = y
400	epots	0	cz≤16, orig = y
400	uvg	15	cz≤16, orig = y
500	uvg	0	sig=g, oct = uvg
600	pots	0	oct = pots
600	uvg	15	oct = pots
600	coin	99	oct = pots
700	pots	0	oct = coin
700	uvg	15	oct = coin
700	coin	99	oct = coin
800	pots	0	oct = uvg
800	uvg	15	oct = uvg
800	coin	99	oct = uvg
900	pots	0	oct = epots
900	uvg	15	oct = epots
900	coin	99	oct = epots

Table 6-75.r1.umc. Determine Card Type Score - RES1/UMC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;umc			
seq	value	score	condition
100	uvg	0	sig = g, cz≤16, orig = y
200	uvg	0	q = l, cz≤9, orig = y
200	coin	99	q = l, cz≤9, orig = y
200	pots	99	q = l, cz≤9, orig = y
250	uvg	0	q = l, cz≤16, orig = y
250	epots	99	q = l, cz≤16, orig = y
300	pots	0	cz≤9, orig = y
300	epots	15	cz≤9, orig = y
300	uvg	30	cz≤9, orig = y
300	coin	99	cz≤9, orig = y
400	epots	0	cz≤16, orig = y
400	uvg	15	cz≤16, orig = y
500	uvg	0	sig=g, oct = uvg
600	pots	0	oct = pots
600	uvg	15	oct = pots
600	coin	99	oct = pots
700	pots	0	oct = coin
700	uvg	15	oct = coin
700	coin	99	oct = coin
800	pots	0	oct = uvg
800	uvg	15	oct = uvg
800	coin	99	oct = uvg
900	pots	0	oct = epots
900	uvg	15	oct = epots
900	coin	99	oct = epots

Table 6-75.r1.usm. Determine Card Type Score - RES1/USAM
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = res1;usam			
seq	value	score	condition
100	pots	0	

Table 6-75.rp.dft. Determine Card Type Score - RESP/DFLT
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = resp (default CC)			
seq	value	score	condition
100	mpty	0	

Table 6-75.rp.isc. Determine Card Type Score - RESP/IISC
(Reference Data Name = ccpt penalty score ct)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = resp;iisc			
seq	value	score	condition
100	mpty	0	gs=2

Table 6-76.df.dft. Determine Administrative Constraint Score - DFLT/DFLT
(Reference Data Name = ccpt penalty score am)
(Instance Key = asgn_cat;cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.2)

Instance = (default asgcat, CC)			
seq	value	score	condition
50	s	0	oct=epots
100	s	0	orig = y
200	*	0	dstcu=4w
300	o	0	

Table 6-76.p4.nxt. Determine Admin Constraint Score - PL4W/NEXT3
(Reference Data Name = ccpt penalty score am)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;next3			
seq	value	score	condition
100	*	0	catg = d
200	*	0	catg = w
300	s	0	

Table 6-76.p4.s16. Determine Admin Constraint Score - PL4W/SSU16
(Reference Data Name = ccpt penalty score am)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pl4w;ssu16			
seq	value	score	condition
100	*	0	catg = d
200	*	0	catg = w
300	o	0	

Table 6-76.p4.s2t. Determine Administrative Constraint Score - PL4W/SLC2T
(Reference Data Name = ccpt penalty score am)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = pl4w;slc2t			
seq	value	score	condition
100	*	0	catg = d
200	*	0	catg = w
300	s	0	orig = y
400	o	0	cot = f
500	o	0	cot = n

Table 6-76.p4.s96. Determine Administrative Constraint Score - PL4W/SLC96
(Reference Data Name = ccpt penalty score am)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = pl4w;slc96			
seq	value	score	condition
100	*	0	catg = d
200	*	0	catg = w
300	s	0	orig = y
400	o	0	cot = f
500	o	0	cot = n

Table 6-76.p4.sdv. Determine Administrative Constraint Score - PL4W/SDV2T
(Reference Data Name = ccpt penalty score am)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = pl4w;sdv2t			
seq	value	score	condition
100	*	0	catg = d
200	*	0	catg = w
300	s	0	

Table 6-76.p4.slo. Determine Administrative Constraint Score - PL4W/SLCONU
(Reference Data Name = ccpt penalty score am)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = pl4w;slconu			
seq	value	score	condition
100	*	0	catg = d
200	*	0	catg = w
300	s	0	

Table 6-76.pb.dft. Determine Administrative Constraint Score - PBXT/DFLT
(Reference Data Name = ccpt penalty score am)
(Instance Key = asgn_cat;cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = pbxt (default CC)			
seq	value	score	condition
100	o	0	orig = y
200	*	0	dstcu=4w
300	s	0	

Table 6-76.pb.fco. Determine Administrative Constraint Score - PBXT/FCTRONU
(Reference Data Name = ccpt penalty score am)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = pbxt;fctronu			
seq	value	score	condition
100	s	0	oct = did
200	o	0	oct = 2ws

Table 6-76.pb.fct. Determine Administrative Constraint Score - PBXT/FCTR
(Reference Data Name = ccpt penalty score am)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = pbxt;fctr			
seq	value	score	condition
100	s	0	oct = did, orig = y
200	o	0	oct = 2ws, orig = y
300	*	0	dstcu=4w
400	o	0	oct = did
500	s	0	oct = 2ws

Table 6-76.pb.fdl. Determine Administrative Constraint Score - PBXT/FDLC
(Reference Data Name = ccpt penalty score am)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = pbxt;fdlc			
seq	value	score	condition
100	s	0	oct = did, orig = y
200	o	0	oct = 2ws, orig = y
300	*	0	dstcu=4w
400	o	0	oct = did
500	s	0	oct = 2ws

Table 6-76.pb.nxt. Determine Admin Constraint Score - PBXT/NEXT3
(Reference Data Name = ccpt penalty score am)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;next3			
seq	value	score	condition
100	o	0	

Table 6-76.pb.s16. Determine Admin Constraint Score - PBXT/SSU16
(Reference Data Name = ccpt penalty score am)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pbxt;ssu16			
seq	value	score	condition
100	*	0	dstcu = 4w
200	s	0	

Table 6-76.pb.s2t. Determine Administrative Constraint Score - PBXT/SLC2T
(Reference Data Name = ccpt penalty score am)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = pbxt;slc2t			
seq	value	score	condition
100	NULL	0	orig = y
100	o	0	orig = y
200	*	0	dstcu=4w
300	NULL	0	oct = did
400	s	0	oct = 2ws

Table 6-76.pb.s96. Determine Administrative Constraint Score - PBXT/SLC96
(Reference Data Name = ccpt penalty score am)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = pbxt;slc96			
seq	value	score	condition
100	NULL	0	orig = y
100	o	0	orig = y
200	*	0	dstcu=4w
300	NULL	0	oct = did
400	s	0	oct = 2ws

Table 6-76.pb.slo. Determine Administrative Constraint Score - PBXT/SLCONU
(Reference Data Name = ccpt penalty score am)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = pbxt;slconu			
seq	value	score	condition
100	NULL	0	
100	o	0	

Table 6-76.pd.nxt. Determine Admin Constraint Score - PLDATA/NEXT3
(Reference Data Name = ccpt penalty score am)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;next3			
seq	value	score	condition
100	s	0	
100	o	99	

Table 6-76.pd.s16. Determine Admin Constraint Score - PLDATA/SSU16
(Reference Data Name = ccpt penalty score am)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = pldata;ssu16			
seq	value	score	condition
100	*	0	dstcu = 4w
200	o	0	

Table 6-76.pd.s2t. Determine Administrative Constraint Score - PLDATA/SLC2T
(Reference Data Name = ccpt penalty score am)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = pldata;slc2t			
seq	value	score	condition
100	s	0	orig = y
100	o	99	orig = y
200	*	0	dstcu=4w
300	o	0	

Table 6-76.pd.s96. Determine Administrative Constraint Score - PLDATA/SLC96
(Reference Data Name = ccpt penaalty score am)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = pldata;slc96			
seq	value	score	condition
100	s	0	orig = y
200	*	0	dstcu=4w
300	o	0	

Table 6-76.pd.slo. Determine Administrative Constraint Score - PLDATA/SLCONU
(Reference Data Name = ccpt penalty score am)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = pldata;slconu			
seq	value	score	condition
100	s	0	
100	o	99	

Table 6-76.pv.nxt. Determine Admin Constraint Score - PLVOICE/NEXT3
(Reference Data Name = ccpt penalty score am)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;next3			
seq	value	score	condition
100	s	0	cot = n
100	o	99	cot = n
200	s	0	cot = x
200	o	99	cot = x
300	s	0	cot = f

Table 6-76.pv.s16. Determine Admin Constraint Score - PLVOICE/SSU16
(Reference Data Name = ccpt penalty score am)
(Instance Key=asgn_cat;cc_model;cc_generic;cc_id)
(Scope=global)
(SCCS level = 13.1)

Instance = plvoice;ssu16			
seq	value	score	condition
100	*	0	dstcu = 4w
200	o	0	cot = n
200	s	0	cot = n
300	o	0	cot = x
300	s	0	cot = x
400	o	0	cot = f

Table 6-76.pv.s2t. Determine Administrative Constraint Score - PLVOICE/SLC2T
(Reference Data Name = ccpt penalty score am)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = plvoice;slc2t			
seq	value	score	condition
100	s	0	cot = n, orig = y
100	o	99	cot = n, orig = y
200	s	0	cot = x, orig = y
200	o	99	cot = x, orig = y
300	s	0	cot = f, orig = y
400	*	0	dstcu=4w
500	o	0	cot = n
500	s	0	cot = n
600	o	0	cot = x
600	s	0	cot = x
700	o	0	cot = f

Table 6-76.pv.s96. Determine Administrative Constraint Score - PLVOICE/SLC96
(Reference Data Name = ccpt penalty score am)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = plvoice;slc96			
seq	value	score	condition
100	s	0	cot = n, orig = y
100	o	99	cot = n, orig = y
200	s	0	cot = x, orig = y
200	o	99	cot = x, orig = y
300	s	0	cot = f, orig = y
400	*	0	dstcu=4w
500	o	0	cot = n
500	s	0	cot = n
600	o	0	cot = x
600	s	0	cot = x
700	o	0	cot = f

Table 6-76.pv.slo. Determine Administrative Constraint Score - PLVOICE/SLCONU
(Reference Data Name = ccpt penalty score am)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = plvoice;slconu			
seq	value	score	condition
100	s	0	cot = n
100	o	99	cot = n
200	s	0	cot = x
200	o	99	cot = x
300	s	0	cot = f

Table 6-77.it.s2t. Determine Encoding Protocol Score - ISDNT/SLC2T
(Reference Data Name = ccpt penalty score en)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = isdnt;slc2t			
seq	value	score	condition
100	a	0	

Table 6-77.it.s96. Determine Encoding Protocol Score - ISDNT/SLC96
(Reference Data Name = ccpt penalty score en)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = isdnt;slc96			
seq	value	score	condition
100	a	0	

Table 6-77.it.slo. Determine Encoding Protocol Score - ISDNT/SLCONU
(Reference Data Name = ccpt penalty score en)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = isdnt;slconu			
seq	value	score	condition
100	a	0	

Table 6-77.iu.s2t. Determine Encoding Protocol Score - ISDNU/SLC2T
(Reference Data Name = ccpt penalty score en)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = isdnu;slc2t			
seq	value	score	condition
100	b	0	

Table 6-77.iu.s96. Determine Encoding Protocol Score - ISDNU/SLC96
(Reference Data Name = ccpt penalty score en)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = isdnu;slc96			
seq	value	score	condition
100	b	0	

Table 6-77.iu.slo. Determine Encoding Protocol Score - ISDNU/SLCONU
(Reference Data Name = ccpt penalty score en)
(Instance Key = asgn_cat; cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = isdnu;slconu			
seq	value	score	condition
100	b	0	

Table 6-78. Admin Group Exclusion
(Reference Data name = admin group excl)
(Instance Key = ic_id)
(Scope = modin)
(SCCS level = 13.1)

Instance = dmc.0†	
admin group id	excl value
ctx dmc.0.1	ibm
hml dmc.0.12	sears

†Note: Sample table shown. No global default is provided.

Table 6-79. TN Remote Map
(Reference Data name = tn remote map)
(Instance Key = none)
(Scope = wc)
(SCCS level = 13.1)

ic id	npa	nxx	(nxx subset)		remote 1	remote 2	remote 3	remote 4	remote 5
			low id	high id					
ic 1ES.1	908	899	0000	0999	ru 1ES.1.01				
ic 1ES.1	908	899	1000	1999	ru 1ES.1.01	ru 1ES.1.02			
ic 5ES.5	908	899	2000	2999	ru 5ES.5.1				

†Note: Sample table shown. No global default is provided.

Table 6-80.5e. Channel Evaluation Rule Set - Automatic Assignment/5ESS
(Reference Data Table name = chan rule set)
(Instance Key=ic_type;ic_generic;ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = 5es		
asgn cat	variety	rule (eng comp)
bus		ec2
busp		ec2
coin		ec2
data		ec2
isdnu		ec2
isdnt		ec2
resp		ec2
res1		ec2

Table 6-80.ax. Channel Evaluation Rule Set - Automatic Assignment/AXE
(Reference Data Table name = chan rule set)
(Instance Key=ic_type;ic_generic;ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = axe		
asgn cat	variety	rule (eng comp)
bus		ec2
busp		ec2
coin		ec2
data		ec2
resp		ec2
res1		ec2

Table 6-80.dc. Channel Evaluation Rule Set - Automatic Assignment/DMS100
(Reference Data Table name = chan rule set)
(Instance Key=ic_type;ic_generic;ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = dmc		
asgn cat	variety	rule (eng comp)
bus		ec2
busp		ec2
coin		ec2
data		ec2
isdnu		ec2
isdnt		ec2
madn		ec2
resp		ec2
res1		ec2

Table 6-81.df.5e. Determine Channel Engineered Compatibility Score - 5ESS
(Reference Data Name = chan penalty score ec)
(Instance Key=asgn_cat;ic_type;ic_generic;ic_id)
(Scope = global)
(SCCS level = 13.5)

Instance = dflt;5es			
seq	value	score	condition
100	sp	0	oct=pots
150	spots	0	oct=uvg, sig=g
200	sp	0	oct=uvg
200	spots	30	oct=uvg
250	spots	0	oct=euvg, sig=g
300	sp	0	oct=euvg
300	spots	30	oct=euvg
350	spots	0	oct=uvgv, sig=g
400	sp	0	oct=uvgv
400	spots	30	oct=uvgv
450	sp	0	oct=sad, cs=r
450	spots	30	oct=sad, cs=r
500	spots	0	oct=sad, cs=b, sig=g
550	sp	0	oct=sad, cs=b
550	spots	30	oct=sad, cs=b
600	coin	0	oct=sad, cs=c
610	spots	0	oct=coin, cs!=c, sig=g
620	sp	0	oct=coin, cs!=c
620	spots	30	oct=coin, cs!=c
650	coin	0	oct=coin
700	mpty	0	oct=mpty
725	sp	0	oct=epots
725	spots	0	oct=epots
750	fsr	0	oct=fsr
760	spots	0	oct=bri303, sig=g
770	sp	0	oct=bri303
770	spots	30	oct=bri303
800	nailup	99	
850	nailul	99	

Table 6-81.df.ax. Determine Channel Engineered Compatibility Score - AXE
(Reference Data Name = chan penalty score ec)
(Instance Key=asgn_cat;ic_type;ic_generic;ic_id)
(Scope = global)
(SCCS level = 13.5)

Instance = dflt;axe			
seq	value	score	condition
100	sp	0	oct=pots
150	spots	0	oct=uvg, sig=g
200	sp	0	oct=uvg
200	spots	30	oct=uvg
250	spots	0	oct=euvg, sig=g
300	sp	0	oct=euvg
300	spots	30	oct=euvg
350	spots	0	oct=uvgv, sig=g
400	sp	0	oct=uvgv
400	spots	30	oct=uvgv
450	sp	0	oct=sad, cs=r
450	spots	30	oct=sad, cs=r
500	spots	0	oct=sad, cs=b, sig=g
550	sp	0	oct=sad, cs=b
550	spots	30	oct=sad, cs=b
600	coin	0	oct=sad, cs=c
610	spots	0	oct=coin, cs!=c, sig=g
620	sp	0	oct=coin, cs!=c
620	spots	30	oct=coin, cs!=c
650	coin	0	oct=coin
700	mpty	0	oct=mpty
725	sp	0	oct=epots
725	spots	0	oct=epots
750	fsr	0	oct=fsr
760	spots	0	oct=bri303, sig=g
770	sp	0	oct=bri303
770	spots	30	oct=bri303
800	nailup	99	
850	nailul	99	

Table 6-81.df.dc. Determine Channel Engineered Compatibility Score - DMS100
(Reference Data Name = chan penalty score ec)
(Instance Key=asgn_cat;ic_type;ic_generic;ic_id)
(Scope = global)
(SCCS level = 13.6)

Instance = dflt;dmc			
seq	value	score	condition
100	sp	0	oct=pots
150	spots	0	oct=uvg, sig=g
200	sp	0	oct=uvg
200	spots	30	oct=uvg
250	spots	0	oct=euvg, sig=g
300	sp	0	oct=euvg
300	spots	30	oct=euvg
350	spots	0	oct=uvgv, sig=g
400	sp	0	oct=uvgv
400	spots	30	oct=uvgv
450	sp	0	oct=sad, cs=r
500	spots	0	oct=sad, cs=b, sig=g
550	sp	0	oct=sad, cs=b, sig!=p
550	spots	30	oct=sad, cs=b, sig!=p
600	coin	0	oct=sad, cs=c
610	spots	0	oct=coin, cs!=c, sig=g
620	sp	0	oct=coin, cs!=c
620	spots	30	oct=coin, cs!=c
650	coin	0	oct=coin
700	mpty	0	oct=mpty
725	sp	0	oct=epots
725	spots	0	oct=epots
750	fsr	0	oct=fsr
760	spots	0	oct=bri303, sig=g
770	sp	0	oct=bri303
770	spots	30	oct=bri303
800	nailup	99	

Table 6-82.dc. CRV Evaluation Rule Set - Automatic Assignment/DMS100
(Reference Data Table name = crv rule set)
(Instance Key=ic_type;ic_generic;ic_id)
(Scope = global)
(SCCS level = 13.1)

Instance = dmc		
asgn cat	variety	rule (eng comp)
bus		ec2
busp		ec2
coin		ec2
data		ec2
isdnt		ec2
isdnu		ec2
madn		ec2
resp		ec2
res1		ec2

Table 6-83.df.dc. Determine CRV Engineered Compatibility Score - DMS100
(Reference Data Name = crv penalty score ec)
(Instance Key=asgn_cat;ic_type;ic_generic;ic_id)
(Scope = global)
(SCCS level = 13.3)

Instance = dflt;dmc			
seq	value	score	condition
100	spots	0	oct=uvg
200	spots	0	oct=pots
300	spots	0	oct=euvg
320	spots	0	oct=coin, cs!=c
400	coin	0	oct=coin
500	isdn	0	oct=bri
600	spots	0	oct=sad
620	spots	0	oct=bri303, catg!=i
700	isdn	0	oct = bri303
800	spots	0	oct=epots

Table 6-84.dft. Leave in Place (LIP) Determination Table
(Reference Data name = lip determination)
(Instance Key = cc_model; cc_generic; cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default CC)			
seq	adsr	card type	lip
100	y	uvg	y
200	y	euvg	y
300	y	sad	y
400	y	*	t
500	n	*	y

Table 6-85. RXA Derivation Table
(Reference Data name = rxa derivation)
(Instance Key = none)
(Scope = modwc)
(SCCS level = 13.1)

target id	adsr	rxa
dflt		o
facs0123456789		i
facs0123456789	y	o
gxc12345777777		o
gxc33333222222		m

+Note: The contents of this table are for illustrative purposes only.
No global default is provided.

Table 6-86.1e. Switch Port Evaluation Rule Set - DTR Overlay Assignment - 1ESS
(Reference Data Name = swpt rule set overlay)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = 1es

asgn cat	variety	rule														
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1			sig1											
bus	creg	am1			sig1											
busnt		am1			sig1											
busnt	def	am1														
busnt	pseudo	am1														
busp		am1			sig1											
busp	creg	am1			sig1											
coin		am1			sig1											
data		am1			sig1											
ppsndov		am1			sig1											
ppsndup		am1			sig1											
resp		am1			sig1											
resp	creg	am1			sig1											
res1		am1			sig1											
res1	creg	am1			sig1											

Table 6-86.2e. Switch Port Evaluation Rule Set - DTR Overlay Assignment - 2ESS
(Reference Data Name = swpt rule set overlay)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = 2es

asgn cat	variety	rule															
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1			sig1											
bus	creg	am1			sig1											
busnt		am1			sig1											
busnt	def	am1														
busp		am1			sig1											
busp	creg	am1			sig1											
coin		am1			sig1											
data		am1			sig1											
pbxt		am1			sig1											
ppsndov		am1			sig1											
ppsndup		am1			sig1											
resp		am1			sig1											
resp	creg	am1			sig1											
res1		am1			sig1											
res1	creg	am1			sig1											
trk		am1			sig1											

Table 6-86.3e. Switch Port Evaluation Rule Set - DTR Overlay Assignment - 3ESS
(Reference Data name = swpt rule set overlay)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = 3es																
asgn cat	variety	rule														
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1			sig1											
busp		am1			sig1											
coin		am1			sig1											
data		am1			sig1											
pbxt		am1			sig1											
ppsndov		am1			sig1											
ppsndup		am1			sig1											
resp		am1			sig1											
res1		am1			sig1											
trk		am1			sig1											

Table 6-86.5e. Switch Port Evaluation Rule Set - DTR Overlay Assignment - 5ESS
(Reference Data Name = swpt rule set overlay)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = 5es

asgn cat	variety	rule														
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1			sig1											
busnt		am1			sig1											
busnt	def	am1														
busp		am1			sig1											
coin		am1			sig1											
data		am1			sig1											
isdnt	bpoe	am2														
isdnt	dpoe	am2														
isdnt	dsl	am2														
isdnt	icarrier													util1	ccost	path1
isdnt	odb	am2														
isdnt	udsl	am2														
isdnu	bpoe	am2														
isdnu	dpoe	am2														
isdnu	dsl	am2														
isdnu	icarrier													util1	ccost	path1
isdnu	odb	am2														
ppsndov		am1			sig1											
ppsndup		am1			sig1											
resp		am1			sig1											
res1		am1			sig1											

Table 6-86.ax. Switch Port Evaluation Rule Set - DTR Overlay Assignment - AXE
(Reference Data Name = swpt rule set overlay)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = axe

asgn cat	variety	rule														
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1														
busp		am1														
coin		am1														
data		am1														
ppsndov		am1														
ppsndup		am1														
resp		am1														
res1		am1														

Table 6-86.dc. Switch Port Evaluation Rule Set - DTR Overlay Assignment - DMS100
(Reference Data Name = swpt rule set overlay)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dmc																
asgn cat	variety	rule														
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1														
busp		am1														
coin		am1														
data		am1														
isdnt		am1														
isdnt	udsl	am1														
isdnu		am1														
madn		am1														
ppsndov	am1															
ppsndup	am1															
resp		am1														
res1		am1														

Table 6-86.do. Switch Port Evaluation Rule Set - DTR Overlay Assignment - DCO
(Reference Data name = swpt rule set overlay)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = dco																	
asgn cat	variety	rule															
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1			sig1											
busp		am1			sig1											
coin		am1			sig1											
data		am1			sig1											
ppsndov		am1			sig1											
ppsndup		am1			sig1											
resp		am1			sig1											
res1		am1			sig1											

Table 6-86.dx. Switch Port Evaluation Rule Set - DTR Overlay Assignment - DMS10
(Reference Data name = swpt rule set overlay)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.2)

Instance = dmx

asgn cat	variety	rule														
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1			sig1											
busp		am1			sig1											
busp	creg	am1			sig1											
coin		am1			sig1											
data		am1			sig1											
isdnu		am1														
ppsndov		am1			sig1											
ppsndup		am1			sig1											
resp		am1			sig1											
resp	creg	am1			sig1											
res1		am1			sig1											
trk		am1			sig1											
madn		am1														

Table 6-86.ew. Switch Port Evaluation Rule Set - DTR Overlay Assignment - EWSD
(Reference Data name = swpt rule set overlay)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = ewsd																	
asgn cat	variety	rule															
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
bus		am1			sig1											
busp		am1			sig1											
coin		am1			sig1											
data		am1			sig1											
isdnu		am1														
ppsndov		am1			sig1											
ppsndup		am1			sig1											
resp		am1			sig1											
res1		am1			sig1											

Table 6-86.fl. Switch Port Evaluation Rule Set - DTR Overlay Assignment - FCL
(Reference Data Name = swpt rule set overlay)
(Instance Key = ic_type; ic_generic; ic-id)
(Scope = global)
(SCCS level = 13.1)

Instance = fcl																
asgn cat	variety	rule														
		(admin const)	(load factor)	(jumper length)	(signal)	(essent)	(asmbly)	(age)	(encoding protocol)	(pty fill)	(inh feat)	(odb band)	(card type)	(util factor)	(car cost)	(paths)
plhic		aml														

Table 6-88.dft. Next Facility Mapping Table - DFLT
(Reference Data name = nxfac map)
(Instance Key = cc_model;cc_generic;cc_id)
(Scope = global)
(SCCS level = 13.1)

Instance = (default CC)	
nxfac	dstcu
dc	4w
ac	4w
2p	2w
4p	4w
no	4w

Table 6-89. Custom Assignment Rules
(Reference Data name = custom asgn rules)
(Instance Key = none)
(Scope = mod/global)
(SCCS level = 13.1)

cust_rule	seq	base_rule	condition
newswpta	001	noswpt	wc.new-parm=y
newswpta	002	swpta	

†Note: Sample table shown. No global default is provided.

Table 6-90. Imported TN IC/RU Map
(Reference Data name = imported tn ic ru map)
(Instance Key = date)
(Scope = modwc)
(SCCS level = 13.1)

Instance = (date)					
npa	nxx	low_id	high_id	ic_ru_id	host_and_rmts
908	699	1000	1999	ic 5es.1	y
908	699	2000	3999	ic dmc.0	
908	699			ru 5es.5.a	
908	699			ru 5es.5.b	
908	699			ru dmc.1.r	
908	555			ic 5es.2	
908				ic 5es.3	
908				ru dmc.3.r	
609				ic dmc.3	y

†Note: Sample table shown. No global default is provided.

Table 6-91. IC/RU to LRN Map
(Reference Data name = ic ru lrn map)
(Instance Key = date)
(Scope = modwc)
(SCCS level = 13.1)

Instance = (date)			
seq	ic_ru_id	lrn	priority
100	ic 5es.1	7326990000	1
100	ic 5es.1	7325550000	99
100	ic 5es.1	7327771111	-
100	ru 5es.1.1	7324444444	1
100	ru 5es.1.2	7324444444	1
200	ic dmc.0	7326990000	1
200	ru dmc.0.1	9084470000	1
200	ru dmc.0.2	9085260000	1

†Note: Sample table shown. No global default is provided.

Appendix 6A: SERVICE IDENTIFICATIONS

As part of the support for ISDN and MADN, the concept of separating the pipe (i.e., transmission pathway) from the services riding on the pipe was introduced. In the SWITCH system there are database objects that represent the services riding on the pipe. The transmission pathway will still be known as the circuit. A circuit contains all the BCC owned resources used to provide a complete communications pathway (i.e., cable pairs, switch ports, etc.).

Circuits can provide:

- Single Primary Service - example: traditional telephony
- Single Primary and Multiple Secondary Services - example: ISDN, MADN, and Distinctive Ringing
- Multiple Primary Services - example: Party or Suspend/Sublet
- Multiple Primary and Multiple Secondary Services - example: Suspend/Sublet with Distinctive Ringing.

Circuits do not have external IDs in the SWITCH system; only the services associated with them will have IDs. The primary service ID(s) are the CTIDs received in a CAR section from SOAC. The secondary service ID(s) are STIDs received in a SDR section from SOAC.

The SWITCH system provides a service ID parser that accepts either CTIDs (Circuit Termination IDs, actually primary service IDs) or STIDs (Secondary Service Terminations IDs) as input, parse the IDs, store the IDs, and output the IDs in standard formats.

SOAC is sending service (*SDR) sections for the SWITCH system to process on. In this *SDR section, ACL aggregate, there are new FCIF tags that have been created. One of these tags is the STID tag. This tag is used to identify an end point of a circuit on the customer's premises where a telephone service is provided. For ISDN basic rate, when key data is available, each telephone set key is a service termination of the circuit. The service terminations are identified by combining the telephone set identifier with the key identifier. When key data is not available, other data is used, such as terminal profile data, or the number of telephone umber appearances. For packet-switched data terminals, the CLS identifier that identifies the customer terminal also identifies the single service termination of the packet-switched data terminal.

A database object will be known to the the SWITCH system community by its external ID. External IDs are unique within a database object type. There may be more than one ID for a database object.

External IDs are mapped to a the SWITCH system internal ID for the ease of SWITCH system processing. The external ID of a service node may change. Separation of external and internal IDs allows renaming of a node without significant changes to the node and its relationships in the database.

The SWITCH system stores the external ID to provide the external to internal mapping. The SWITCH system stores the external ID in a standardized or canonical format. This aids in matching or finding IDs when slightly different formats are entered.

Service nodes are the database objects where all service affecting data will be stored. This data includes CEC (Central Office Equivalency Code) data, SEC (Service Equivalency Code) data, external IDs, relationships to circuits, etc. External IDs that deal with services were created to allow the user access to the service nodes and their associated data.

6A.1 The SWITCH System Service ID Process

The SWITCH system provides a parsing function to analyze service ID input (i.e., CTIDs or STIDs) for the service being provisioned and derive attributes. The parsing function is used for both populating the database and for matching input to existing database contents. This function shall be capable of parsing fielded and field-identified inputs. Fielded input consists of a string of characters that are divided into fields by use of a field separation character (e.g., dots, dashes). Field-identified input uses specific character strings (FIDs) to identify each field.

There are three processes the SWITCH system provides when interpreting service external IDs:

1. Accept and Parse ID Input

   The SWITCH system is able to collect input data and interpret this data using a service ID parser. This parser identifies, from the input, the pieces of data that make up the ID. Based on that data, the parser creates a canonical form that provides a consistent format of the ID. ID attributes and the canonical form are stored on the EX edge of the service node. These attributes along with the canonical form are used for output formatting. The canonical form is the the SWITCH system internal form of the external ID.

2. Match on the ID Input Data

   Once the input data is parsed and processed into canonical forms, the service node's type and canonical form (ID value) are used as matching criteria to access the object using the External to Internal ID (EIX) table. The type identifies the database object as a service node (e.g., svc). The user does not see the canonical form.

3. Create the Proper Output Format

   An output formatter is provided to convert the canonical form(s), and any additional attributes required, into a recognizable external ID for the "user." There is processing that will identify the attributes to be used for the output, depending on the "user" of the output. The "user" can be either an external system, or a human through the ULBB. If a specific output format cannot be determined, a default hierarchy of formats will be searched and an output formatted.

The above processes are discussed in the following sections.

6A.1.1 Accept and Parse ID Input

Input is presented to a service ID parser. Hard-coded rules are used to determine the parsing of the service and circuit IDs. The parser will determine three things:

1. The attributes that make up the name
2. The type (or dialect) of the name
3. The canonical form of the name

Parsing identifies the attributes required to make up the name and then process on them. The attributes may be fielded or field-identified, or need to be concatenated with other attributes. The parser has the capability to add default attributes if they are required but not provided on input.

Assuming the service node is being added to the database, the attributes that are parsed are stored on an EX edge for that node. The attributes are examined to determine what dialect(s) are possible by matching the attributes passed to a matrix that identifies the dialects. A dialect describes the type of ID that has been input, and leads to rules for processing on that ID. Once the dialect is identified, the rules to create the canonical form for the dialect are followed and the canonical form is placed on the EX edge.

There may be a variety of canonical forms that can be associated with a service node. If the external ID formats differ in content, there will be more than one canonical form.

The SWITCH system provides a parsing function to analyze service ID input and derive the attributes described in Figure 1. The parsing function is used for both populating the data base and for matching input to existing data base contents (e.g., finding a service node). This function is capable of parsing fielded and field-identified inputs as described below.

CTIDs are parsed into CID and TID portions, with the CID portion treated as the primary service ID. STIDs will not be parsed into SID and TID portions. The STID is the secondary service ID with the TID portion included for uniqueness of the ID.

6A.1.1.1 Fielded Input

Fielded inputs consist of a string of characters that are divided into fields by use of a field separation character. As an example, some identifiers use dots as field separators. Generally, fielded identifiers are used for manual input. The parser shall accept dots, dashes, blanks and commas as field separators. It is possible to use several different separation characters within a single identifier.

6A.1.1.2 Field Identified Input

In field-identified input, specific character strings (FIDs) are used to identify each field. Generally, field identified input is used for mechanized input.

The SWITCH system supports two types of fielded input: FCIF format service IDs (Figure 2) and Service Order (SO) format service IDs (Figure 3). the SWITCH system shall also process the CLCI segment number behind the FID SGN.

There are several instances when the data behind the FIDs shown in Figures 2 and 3 contain field separators. Specifically, the parsing function shall deal with the following cases.

a. When FID_1 is CLS (Common Language Serial identifier), $data_1$ in both the FCIF and SO case will be the serial number format shown in Figure 4.

a. When FID_1 is CLT (Common Language Telephone identifier), $data_1$ in both the FCIF and SO case will be the telephone number format shown in Figure 4.

b. When FID_1 is SIT, TN or TLI, $data_1$ in the SO case will be the telephone number format shown in Figure 5, with the exception that blanks and dots may also be used as field separators.

6A.1.1.3 Extension Trunk/Kind and Value

Extension numbers and trunk codes are used when several different services have the same basic telephone number. For example, several INWATS trunk services might have the same "800" number so they would be differentiated by Special Identifying Supplement (SIS) numbers.

Extension/trunk codes are broken down into two parts: the Kind and the Value. The SWITCH system supports the extension/trunk kinds listed in Figure 6. Extensions/trunk kinds are entered explicitly as FIDs or are indicated by a key letter which is the first character of the extension trunk field. The relationship between key letters and kinds is shown in Figure 6. Since the parsing function uses the extension/trunk kind to help differentiate between dialects, the appropriate relationships are also shown in Figure 6. For telephone number identifiers, a non-existent kind shall imply a dialect of either TLI (TLId) or TN (TNd) depending on whether the extension/trunk value exists.

The SWITCH system supports extension/trunk values of between 0 and 5 alphanumeric characters.

6A.1.1.4 Service Termination IDs

Service Termination IDs (STIDs) were created to support MADN, ISDN, and selective ringing, where multiple services can ride on a single communications pathway (i.e., circuit). The TID portion of the STID is required to give the terminations uniqueness in identification. Examples of TIDs are KPI (Key Position Indicator) and SPI (Selective Ringing Position Identifier). The KPI can be three character numeric up to 999. The SPI is a single character numeric up to 9.

STIDs are not broken into SID and TID portions. The SID by itself is not unique enough to be used as an ID. Therefore the TID is part of the service ID's canonical form for STIDs. STID dialects are included in Figure 7. STIDs are parsed into piece parts like CTIDs, but the TID portion is stored on the EX edge unlike the TID portion of the CTID.

6A.1.1.5 Other Attributes

The other attributes shown in Figure 1 are relatively straight-forward. They are taken directly from the various fields of the input names. Of course, not all attributes can exist at the same time for the same service. The set of NPA, NXX, LINE, EX_TK_K and EX_TK_V shall be mutually exclusive with the set of SER_NO, SUFFIX and ISSCO.

6A.1.1.6 Dialects

Dialects describe the type of service identifier that has been input. Basically dialects are the FIDs that are used when service identifiers are written on service orders. Figure 7 shows the list of dialects that shall be supported. Dialects shall be determined by the input FID or prefix and by matching the pattern of the input to one of those shown in Figure 5. (If the FID or prefix is inconsistent with the pattern, it shall be considered an error.)

It will often be desirable to derive other identifiers rather than cause the user to input two similar identifiers. Therefore, in addition to the CLT dialect, the SWITCH system shall store a derived dialect when a CLT identifier is input, according to the specifications stated below.

a. If the CLT does not contain an extension/trunk code, then a derived TN dialect (TNd) shall be stored.

b. If the first character of the extension/trunk code is an "S", then a derived SIT dialect shall be stored.

c. If the first character of the extension/trunk code is a T, G, D, P or X, then a derived TLI dialect shall be stored.

d. Otherwise, no derived dialect shall be stored.

If multiple identifiers are received for the same service, then each unique dialect and/or derived dialect shall be stored for that service. The SWITCH system is able to distinguish between derived and "actual" dialects. If a derived dialect (say SITd) and a similar "actual" dialect (say SIT) are produced for the same service, the derived dialect shall be discarded.

The SWITCH system is able to support up to four dialects for the same service ID.

6A.1.2 Match on the ID Input Data

The SWITCH system has the ability to search the database and find service nodes. The service nodes may be searched for, and accessed by, use of their external IDs. All these functions can break down into two features; inquiring on the database about service nodes and adding service nodes to the database.

An external ID to internal ID "table" (EIX table) is used to locate and access service nodes as well as other database objects. Most the SWITCH system processing works with internal IDs for service nodes. The canonical forms are stored with the service nodes as well as in the external ID table. The external ID table contains the following:

- type
- canonical form
- internal node ID

This table may contain multiple canonical forms for a service node (i.e., multiple canonical forms mapping to one internal id). Duplicate canonical forms are be allowed, they must be unique. Internal IDs are not used or presented outside the the SWITCH system process. Access into the SWITCH system is by using external IDs, parsing them into canonical forms, and retrieving the internal ID through the EIX table.

The SWITCH system uses a system-generated internal node ID to identify a service node in the database. No other service node, within the same the SWITCH system database, will have the same internal ID. A unique internal ID is assigned from a free ID pool when a service node is first created. When the service node is deleted, the ID is returned to the free pool. The external identifier is allowed to change during the life of the service node, but the internal ID is never changed.

When a the SWITCH system function, or user through the ULBB, inquires about a service node, they are required to pass a set of appropriate attributes for the service node that will identify it. These attributes provided on input are validated, parsed, used to determine a dialect, and based on the dialect formed into a canonical ID.

The matching process is accomplished by parsing the input service ID into its attributes and comparing these attributes with those stored in the database. If the input does not contain any termination identifiers (CKL, DPA, LTI or SGN) *and* the data base does not contain any termination identifiers *and* the data base contains only one termination, then this condition shall constitute a match. Otherwise, the lti (the collection of DPA, CKL, LTI) and the SGN in the input and the data base shall meet one of the following conditions before a match is declared.

a. The lti and SGN in the input both match the lti and SGN in the data base. This includes the case where all four values are null. (The null case can occur for the main address of a multi-leg circuit whose terminations are identified by DPAs.)

b. The input SGN is null and the input lti exists and matches the data base lti. It does not matter if the data base SGN has a value.

c. The input lti is null and the input SGN exists and matches the data base SGN. It does not matter if the data base lti has a value.

6A.1.2.1 Additional Process for Flow-through Disconnects and Changes

During the processing of flow-through disconnects and changes, an additional process is required when an exact match on service ID cannot be made. If the AID portion of a CTID exists, while the TID portion does not, and the identified network unit is associated with that AID, the TID that the network unit is related to will be changed to match the requested TID. The service ID will therefore match.

This process is done in order to reduce the need for manual assistance. It takes advantage of the fact that for flow-through disconnects and changes another system (typically LIFTS) has verified the service ID to network unit relationship. The usual scenario is that LIFTS would initially RNA due to a service ID mismatch. In response to that RNA, the LIFTS data base would be changed to match the assignment request. This process eliminates the need to do an equivalent inventory transaction in the SWITCH system.

6A.1.3 Create the Proper Output Format

When a service node has multiple external IDs, which of the ID(s) will be seen on output? Since the data is stored as parsed attributes on one or more EX edges, an output formulator is used to pass attributes back to the application as that application, or user, wishes to see it. Based on the attributes available, the dialect determined, and the application or user options, the formulator presents the output.

Since service IDs are stored as a collection of attributes, they must be reconstructed for output. It is intended that the SWITCH system be able to construct common language, LAC format or service order format depending on the ultimate destination of the output.

In order to allow a certain degree of flexibility, outputs are constructed based on four parameters. These parameters are used internally by the various modules in the SWITCH system to construct and format outputs depending on their destination. The four parameters are:

- Number of service ID dialects
- AID format
- TID type
- TID format

6A.1.3.1 Number of Service ID dialects

In order to determine which of several possible identifiers to output, it is first necessary to select a dialect. The SWITCH system supports the output of either one or three dialects. If one dialect is requested, the SO service ID shall be provided. If three are requested the SO, CLOTHES and secondary TN service IDs shall be provided in that order. When the service ID to be output is a STID service ID, only the STID format will be output. To determine which service ID to output in each case, the SWITCH system maintains three rules or hierarchies for selecting dialects. The rules are as follows.

a. *SO* - Select the first dialect on the list shown in Figure 7 that applies to the service. This list yields the SO identifier for the service, but it gives specifically entered dialects precedence over derived dialects. CLT is not a SO dialect but it is to be output as the last choice.

b. *CLOTHES* - If applicable, output the CALLS dialect. If CALLS does not apply to the given service, output the CLT dialect. If neither CALLS or CLT apply, do not output a service ID.

c. *Secondary TN* - Output the TN dialect but only if another dialect, which is above TN in Figure 7, also applies to the given service. If TN does not apply, output the derived TN, but only if a higher dialect also applies. Otherwise, do not output a service ID.

Once a dialect has been selected, the service ID is constructed using the attributes from the particular service identification node containing that dialect. The specific attributes that are used to construct the AID portion of the CTID service ID, and the order of their appearance are shown in Figure 8. There is no need to construct the SID portion of the STID since it was not parsed out as the AID is with CTIDs.

It is possible that a service may have multiple service IDs with the same dialect. For the cases of multiple Class, CKTs, or CLFs where these identifiers are the USO identifiers, one is displayed as the USO service ID and one as the CLCI service ID. It is a random choice as to which appears where. If there are multiple TNs and TN is the USO identifier, one TN appears as the USO service ID and one as the secondary TN. If there is a third TN, it is displayed in the CLCI service ID.

6A.1.3.2 CID Format

The second parameter is intended to control the format of the CID portion of the output. Basically, this parameter controls the field identifiers and/or separators that are displayed between the various attributes shown in Figure 8. It also controls whether the extension/trunk kind is written out or whether a key letter is used.

The SWITCH system supports 3 CID Formats as follows:

1. *LAC* - This format produces CID output as shown in Figure 5 and/or the CLT output shown in Figure 4. All attributes shown in Figure 8 are separated with dots with two

exceptions. First, TN, NHN, DTN and TNd dialects use blank and dash separators. Second, no separators are used between the EX_TK_K and EX_TK_V attributes. The EX_TK_K is expressed as a key letter. (Note that CLCI CIDs are in LAC format.)

2. *FCIF* - This format produces CID output as follows:

   `FID1[data1]FID2[data2].`

   FID_1 is the dialect. The "d" is excluded for derived dialects. FID_2 and $data_2$ are the extension/trunk code kind and value, if they apply. $Data_1$ is the collection of attributes shown in Figure 8 exclusive of extension/trunk code value and kind. If the dialect is CLT or CLS, dots are used to separate the attributes in $data_1$. Otherwise, no separators are added to the attributes in $data_1$.

3. *Common Update* - This format provides the USO service ID in the FCIF format and the CLCI and Secondary TN service IDs in the LAC format.

6A.1.3.3 TID Type

The third parameter indicates whether a USO or CLCI TID is to be output. It also indicates if the TID is to be appended to the CID string or passed as a separate field. The CLCI TID is the SGN attribute. The USO TID is a combination of the CKL, DPA, LTI attributes. Only those combinations shown in Figure 9 are considered valid.

6A.1.3.4 TID Format

The fourth parameter is intended to control the format of the TID portion of the output in a manner very similar to the CID format parameter described above. The SWITCH system supports 3 TID formats as follows:

a. *LAC* - This format produces USO TID output as shown on Figure 9. The requirements for the CLCI TID are a dot followed by the SGN data.

b. *FCIF* - This format produces USO TID output as following:

   `+FID3[data3]FID4[data4].`

   The FIDs and data are those shown on Figure 9. This format produces CLCI TID output as follows:

   `SGN = data.`

c. *Service Order (SO)* - This format produces USO TID output as follows:

   `/FID3 data3/FID4 data4.`

   The FIDs and data are those shown on Figure 9. This format produces CLCI TID output as follows:

   `/SGN data.`

6A.1.3.5 STID Output Formats

The dialect associated with the service ID in STID format determine the format rules for the output of the service ID (see Figure 10). Switch supports 3 formats as follows:

1. *LAC* - This format produces output as shown in Figure 5. The NPA, NXX, and Line are separated by dashes and SET, KPI, and/or SPI are separated by blanks.
2. *FCIF* - This format produces the STID output as follows:

   $$\texttt{FID}_1\texttt{[data}_1\texttt{]} + \texttt{FID}_2\texttt{[data}_2\texttt{]}.$$

   FID_1 is pn (primary number). FID_2 and $data_2$ are the TID portion of the STID (i.e., KPI or SPI) and their specific value. $Data_1$ is the collection of attributes shown in Figure 10.
3. *Common Update* - This format uses the FCIF formatting rules.

Figure 6A-1. SERVICE ID ATTRIBUTES

DIALECT	AAAA	DESCRIBES ID CONTENT
PRE	XX	PREFIX
SM	XXXX	SERVICE CODE & MODIFIER
NPA	NNN	NUMBERING PLAN AREA
NXX	XNN	EXCHANGE CODE
LINE	NNNN	LINE NUMBER
SER_NO	XXXXXX	SERIAL NUMBER
SUFFIX	XXX	
ISSCO	AAAA	ISSUING COMPANY
EXTK_TP	X	EXTENSION/TRUNK TYPE
EXTK_VAL	XXXX	EXTENSION/TRUNK VALUE
TSC	AANNNNNN	TWO-SIX CODE
TRN	NNNN	TRUNK NUMBER
FACDES	XXXXX	FACILITY DESIGNATION FOR CLF
FACTP	XXXXXX	FACILITY TYPE FOR CLF
ALPL	AAA	A LOCATION - PLACE CODE FOR CLF ONLY USED WITH 3 CHAR A LOC PLACE CODE ELSE 4 CHAR A LOC PLACE CODE IN ALOC
ALOC	AAAAAAXXXXX	A LOCATION COMMON LANGUAGE NAME FOR CLF
ZLPL	AAA	Z LOCATION - PLACE CODE FOR CLF ONLY USED WITH 3 CHAR Z LOC PLACE CODE ELSE 4 CHAR Z LOC PLACE CODE IN ZLOC
ZLOC	AAAAAAXXXXX	Z LOCATION COMMON LANGUAGE NAME FOR CLF
SGN	XXXX	SEGMENT
CKL	XXXX	CIRCUIT LOCATION
DPA	XXXX	DIFFERENT PREMIS ADDRESS
LTI	XXXX	LOOP TERMINATION ID
SET	NN	MADN SET
KPI	NN	KEY POSITION INDICATOR
SPI	N	SELECTIVE RINGING POSITION IDENTIFIER
TNA	NNN	TELEPHONE NUMBER APPEARANCE

NOTE — A - Alphabetic N - Numeric X - Alphanumeric

Field Identified Input

$FID_1[data_1]FID_2[data_2]$ + $FID_3[data_3]FID_4[data_4]$

Figure 6A-2. FCIF FORMAT INPUT

$/FID_1\ data_1/FID_2\ data_2/FID_3\ data_3/FID_4\ data_4$

Figure 6A-3. S.O. FORMAT INPUT

Notes:

1. FID_2 thru FID_4 and their data are optional.
2. FID_1: CKT, CLT, CLS, DTN, NHN, SIT, TLI, TN, TSC, CLF.
   This is the dialect FID.
3. FID_2: SIS, TER, OGO, DID, PX, XN, or TRN.
   This is the extension/trunk kind FID for SIT and TLI or the trunk number for TSC.
   Its data is the value.
4. FID_3: DPA, CKL, LTI.
   FID_3 and FID_4 make up the lti.
5. FID_4: LTI .

Figure 6A-4. COMMON LANGUAGE SERVICE IDENTIFICATION

CLCI - SERIAL NUMBER FORMAT

PREFIX		SERVICE CODE	MODIFIER		SERIAL NUMBER		SUFFIX		ISSUING COMPANY		SEGMENT NUMBER
1 2	3	4 5	6 7	8	9 10 11 12 13 14	15	16 17 18	19	20 21 22 23	24	25 26 27
A/N A/N	.	A/N A/N	A A/N	.	N N N N N N	.	N N	.	A A A A	.	A/N A/N A/N
O	R	R	R	R	R	R	O	R	R	O	O
1-2	1	2	2	1	1-6	1	1-3	1	2 or 4	1	1-3

CLCI - TELEPHONE NUMBER FORMAT

PREFIX		SERVICE CODE	MODIFIER		NPA		NXX		LINE NUMBER		EXTENSION NO. OR TRUNK CODE		SEGMENT NUMBER
1 2	3	4 5	6 7	8	9 10 11	12	13 14 15	16	17 18 19 20	21	22 23 24 25 26	27	28 29 30
A/N A/N	.	A/N A/N	A A/N	.	N N N	.	N N N	.	N N N N	.	A/N A/N A/N N N	.	A/N A/N A/N
O	R	R	R	R	R	R	R	R	R	O	O	O	O
1-2	1	2	2	1	3	1	3	1	4	1	1-5	1	1-3

CLCI - MESSAGE TRUNK FORMAT

TRUNK NUMBER	TRUNK TYPE: TRAFFIC CLASS	TRUNK TYPE: OFFICE CLASS	TRUNK TYPE: TRAFFIC US	TRUNK TYPE: TYPE MODIFIER	LOCATION IDENTIFICATION (OFFICE A)	TYPE AND DIRECTION OF PULSING	LOCATION IDENTIFICATION (OFFICE Z)
1 2 3 4	5 6	7 8	9 10	11-17	18-28	29-30	31-41
N N N N	A A	X X	A A	X....	A A A A A A X...	X X	A A A A A A X...
R	R	R	R	R	R	R	R
1-4	2	2	2	1-7	11	2	11

(Not supported currently - future support should add field separators) LEGEND

LEGEND

General Format

DATA NAME
CHARACTER POSITION ON INPUT STRING
DATA TYPE (PERIODS AND HYPHENS ARE DELIMITERS
REQUIRED OR OPTIONAL
DATA SIZE

Codes Used

```
N   =  Numeric (0-9)
A   =  Alphabetic (A-Z)
A/N =  Alphabetic or Numeric (A-Z or 0-9)
R   =  Required
O   =  Optional
" " = Identifies specific alphabetic or numeric
       characters to use.
```

Figure 6A-5. USO SERVICE IDENTIFICATION LAC FORMAT

CLS (USO - SERIAL NUMBER FORMAT)

PREFIX		SERVICE CODE and MODIFIER		SERIAL NUMBER			SUFFIX		ISSUING COMPANY
1 2	3	4 5 6 7	8	9 10 11 12 13 14	15		16 17 18	19	20 21 22 23
X	.	A/N A/N A X	.	N N N N N N	.		N N N	.	A A A A
O	R	R		R	R		R	O	R
1-2	1	2-4	1	1-6	1		1-3	1	2-4

SIT/SIS (INWATS SERVICE)

WATS NPA		WATS NXX		WATS LINE NUMBER			SIS NUMBER
1 2 3	4	5 6 7	8	9 10 11 12	13	14	15 16 17 18
"8 0 0"	.	N N N	.	N N N N	.	"S"	N N N N
R	R	R	R	R	R	R	R
3	1	3	1	4	1	1	1-4

TSC (MESSAGE TRUNKS)

TSC		TRN
1 2 3 4 5 6 7 8	9	10 11 12 13
A A N N N N N N	.	N N N N
R	R	O
8	1	1-4

TLI/TER-OGO-DID-PX-XN (TELEPHONE LINE IDENTIFIERS)

TLI NPA		TLI NXX		TLI LINE NUMBER			TER/OGO/DID/PX NUMBER
1 2 3	4	5 6 7	8	9 10 11 12	13	14	15 16 17 18
N N N	.	N N N	.	N N N N	.	A*	X X X X
R	R	R	R	R	R	R	R
3	1	3	1	4	1	1	1-4

TLI/(TER/OGO/DID/PX/XN)* FORMATS

TN (TELEPHONE NUMBER)

NPA		NXX		LINE NUMBER
1 2 3	4	5 6 7	8	9 10 11 12
N N N	-	N N N	-	N N N N
O	O	R	R	R
3	1	3	1	4

NHN (NON-HUNTING NUMBER)
DTN (DATA TERMINAL NUMBER)

		N P A		N X X		LINE
1 2 3	4	5 6 7	8	9 10 11	12	13 14 15 16
* * *		N N N		X N N		N N N N
R	R	O	O	R	R	R
3	1	3	1	3	1	4

*** "NHN" or "DTN"

CKT

PREFIX		NON-STANDARD CIRCUIT IDENTIFICATION
1 2 3	4	5-34
"C K T"		X
R	R	R
3	1	1-30

CLF (COMMON LANGUAGE FACILITY IDENTIFICATION)

FACILITY DESIG.		FACILITY TYPE		A LOCATION COMMON LANGUAGE NAME					Z LOCATION COMMON LANGUAGE NAME			
				PLACE CODE	STATE CODE	BLDG CODE	ENTITY CODE		PLACE CODE	STATE CODE	BLDG CODE	ENTITY CODE
1-5	6	7-12	13	14-17	18-19	20-21	22-24	25	26-29	30-31	32-33	34-36
X		X		A	A	X	X		A	A	X	X
R	R	R	R	R	R	R	O	R	R	R	R	O
1-5		1-6		8 or 11					8 or 11			

PN (PRIMARY NUMBER MADN CTID)

NPA		NXX		LINE		SET
N N N	-	N N N	-	N N N N	SET	N N
O	O	R	R	R	R	R
3	1	3	1	4	3	1-2

KPI (KEY POSITION INDICATOR, STID)

NPA		NXX		LINE		KPI
N N N	-	N N N	-	N N N N	KPI	N N N
O	O	R	R	R	R	R
3	1	3	1	4	3	1-3

SPI (SERVICE RINGING POSITION IDENTIFIER, STID)

NPA		NXX		LINE		SPI
N N N	-	N N N	-	N N N N	SPI	N
O	O	R	R	R	R	R
3	1	3	1	4	3	1

MADN (MULTIPLE APPEARANCE DIRECTORY NUMBER, STID)

NPA		NXX		LINE		SET		KPI
N N N	-	N N N	-	N N N N	SET	N N	KPI	N N N
O	O	R	R	R	R	R	R	R
3	1	3	1	4	3	1-2	3	1-3

SPTN (SPID + TN) STID

SPID TAG		SPID DATA		TN TAG		NPA		NXX		LINE
1 2 3 4	5	6-26	27	28 29	30	31 32 33	34	35 36 37	38	39 40 41 42
"SPID"	.	X...	.	"TN"	.	N N N	.	N N N	.	N N N N
R	R	R	R	R	R	O	O	R	O	R
4	1	1-21	1	2	1	3	1	3	1	4

PNTR (PN + SET + TLI + TER) STID

PN		NPA		NXX		LINE		SET		SET ID		TLI		NPA		NXX		LINE		TER		TER ID
1 2	3	4 5 6	7	8 9 10	11	12 13 14 15	16	17 18 19	20	21 22	23	24 25 26	27	28 29 30	31	32 33 34	35	36 37 38 39	40	41 42 43	44	45 46 47 48
"PN"	.	N N N	.	N N N	.	N N N N	.	"SET"	.	N N	.	"TLI"	.	N N N	.	N N N	.	N N N N	.	"TER"	.	N N N N
R	R	O	O	R	O	R	R	O	O	O	O	R	R	O	O	R	O	R	R	R	R	R
2	1	3	1	3	1	4	1	3	1	1-2	1	3	1	3	1	3	1	4	1	3	1	1-4

TSPD (TERMINAL SERVICES PROFILE) STID

TSPD		TSP ID
1234	5	6-26
"TSPD"	.	X...
R	R	R
4	1	1-21

PTNA (PN + TN+ TNA) STID

PN		NPA		NXX		LINE		SET		SET ID		TN		NPA		NXX		LINE		TNA		TNA VAL
1 2	3	4 5 6	7	8 9 10	11	12 13 14 15	16	17 18 19	20	21 22	23	24 25	26	27 2829	30	31 32 33	34	35 36 37 38	39	40 41 42	43	44 45 46
"PN"	.	N N N	.	N N N	.	N N N N	.	"SET"	.	N N	.	"TN"	.	N N N	.	N N N	.	N N N N	.	"TNA"	.	N N N
R	R	O	O	R	O	R	R	R	O	R	R	R	R	O	O	R	O	R	R	R	R	R
2	1	3	1	3	1	4	1	3	1	1-2	1	2	1	3	1	3	1	4	1	3	1	1-3

Figure 6A-6. VALID EXTENSION/TRUNK TYPES

Kind	Key letter	Name	Valid Dialects
SIS	S	Special Ident. Suppl.	SIT, SITd, CLT
TER	T	ESS Multiline Hunting Terminal	TLI, TLId, CLT
OGO	G	Outgoing Only	TLI, TLId, CLT
DID	D	Direct In Dial	TLI, TLId, CLT
PX	P	PBX Extension	TLI, TLId, CLT
XN	X	#1 Crossbar Hunting Extra Number	TLI, TLId, CLT

Figure 6A-7. SERVICE ID DIALECTS[1]

Dialect	Name	Typical Usage
CLS	CLCI Serial Number	Private line
SIT	Special Identifying TN	INWATS (800)
CKT	Circuit Number	Company circuits
CLF	Common Language Facility ID	High Capacity Facilities
TSC	Two Six Code	Switched Access Message Trunks
TLI	Telephone Line Identifier	Hunting, PBX trunks
SITd(1)	SIT derived from CLT	
TLId(2)	TLI derived from CLT	
TN	Telephone Number	POTS, FX
TNd(3)	TN derived from CLT	
DTN	Data Terminal Number	Public Packet Switched Network
NHN	Non-Hunting Number	Multi-line hunt groups
CLT	CLCI Telephone Number	Same as SIT, TLI, TN
PN	Primary Number	MADN CTID
KPI	Key Position Indicator	ISDN Services
SPI	Selective Ringing Position Identifier	Distinctive Ringing
MADN	Multiple Directory Number	MADN STID
SPTN	SPID + TN	ISDN STID
PNTR	PN + TLI + TER	ISDN STID
TSPD	Terminal Service Profile	ISDN STID
PTNA	PN + TN + TNA (nth TN appearance)	ISDN STID

1. When first character of extension/trunk code is "S" (SIS), *LFACS* derives a SIT dialect.
2. When first character of extension/trunk code is "T" (TER), "G" (OGO), "D" (DID), "P" (PBX), or "X" (XN), *LFACS* derives a TLI dialect.
3. When CLT does not contain an extension/trunk code, *LFACS* derives a TN dialect.

1. Dialects are listed in Service ID hierarchy sequence (CLS is the highest). KPI, SPI, MADN, SPTN, PNTR and TSPD are dialects for secondary services.

Figure 6A-8. CONSTRUCTION OF CIDS

Dialect	Attributes to be Output
CLS	PRE, SM, SER_NO, SUFFIX, ISSCO
SIT, SITd	NPA, NXX, LINE, EX_TK_K, EX_TK_V
CKT	AF KEY
CLF	FACDES, FACTP, ALOC, ZLOC
TSC	TSC, TRN
TLI, TLId	NPA, NXX, LINE, EX_TK_K, EX_TK_V
TN, TNd	NPA, NXX, LINE
DTN	DIALECT, NPA, NXX, LINE
NHN	DIALECT, NPA, NXX, LINE
CLT	PRE, SM, NPA, NXX, LINE, EX_TK_K, EX_TK_V

Figure 6A-9. USO TERMINATION IDENTIFICATION

LAC FORMAT

DPA or DPA and either LTI Format

DPA		DPA NUMBER		LTI		LTI
1 2 3	4	5 6 7	8	9 10 11	12	13 14 15
"D P A"		N N N	"/"	"L T I"		X X X
				"M L I"		
R	R	R	O	O	O	O
3	1	1-3	1	3	1	1-3

CKL or CKL and either LTI Format

CKL		CKL NUMBER		LTI		LTI
1 2 3	4	5 6 7 8	9	10 11 12	13	14 15 16
"C K L"		N N N N	"/"	"L T I"		X X X
				"M L I"		
R	R	R	O	O	O	O
3	1	1-4	1	3	1	1-3

LTI or LTI

LTI		LTI IDENTIFIER				
1 2 3	4	5 6 7				
"L T I"		N N N				
R	R	R				
3	1	1-3				

Figure 6A-10. CONSTRUCTION OF STIDS

Dialect	Attributes to be Output
KPI	NPA, NXX, LINE
SPI	NPA, NXX, LINE
MADN	NPA, NXX, LINE, SET
TSPD	TSPD
SPTN	SPID NPA NXX LINE
PNTR	PN(NPA, NXX, LINE, SET), TLI(NPA, NXX, LINE), TER
PTNA	PN (NPA,NXX, LINE, SET), TN(NPA, NXX, LINE), TNA

Appendix 6B: DESIGN ATTRIBUTES AND VALUES

The list of design attributes (also known as Central Office Equivalence Code or CEC attributes) and values depict the data used by the assignment engine. The majority of these attributes appear in the CEC and SEC aggregates of the SOAC/SWITCH contract interface. This list is not meant to be exhaustive and will evolve as the requirement process continues.

1. NUMBER OF CONDUCTORS

0	no conductors required
1	1 conductor required (one wire or half pair)
2	2 conductors required (two wire or one pair)
4	4 conductors required (four wire or two pair)
6	6 conductors required (six wire or three pair)
U	conductors are required, but the specific number is unknown, or variable
?	ambiguous
-	not applicable

2. GRADE OF SERVICE

1	single party service
2	two party service
4	four party service
8	eight party or rural service
-	not applicable

3. TYPE OF SERVICE

F	flat rate
M	measured rate
W	WATS
O	other
-	not applicable

4. CLASS OF SERVICE

R	residence service
B	business service
C	coin service
-	not applicable

5. GROUP IDENTIFIER AND NUMBER

CTX	Centrex (followed by group number)
HML	multi-line hunt (followed by group number)
HTG	series completion hunt (followed by group designator)

6. CATEGORY

V	voice grade
N	narrowband
W	wideband, high capacity
D	digital data
P	program audio
M	MADN set or MADN service
I	ISDN pipe or ISDN service
R	distinctive (selective) ringing service
T	test circuit
E	no-test circuit
A	PBX access trunks
U	class 5 to 5 trunk
O	optical service (for future use)
F	multi-point carrier
Z	point-to-point carrier
L	ADSL
B	atm broadband
K	ppsn/colan data-over-voice and dial-up
Y	ppsn/colan data-only
?	ambiguous
-	not applicable

7. CO-SIDE TERMINATION

S	switched, public network, direct termination (e.g. POTS, PBX DID, class 5 to 5 trunks)
B	switched, public network, bridged (e.g. secretarial line)
X	switched, customer premises switcher (e.g. PBX station line)
N	non-switched via public network (e.g. private line, CO-bridged PBX off-premises station line, SSN station line)
F	switched, foreign CO primary switcher
?	ambiguous
-	not applicable

8. QUALITY

O	ordinary loss (for POTS service)
L	low loss (for locally switched specials e.g., Centrex or WATS)
?	ambiguous
-	not applicable

9. ESSENTIAL

Y	essential
-	not applicable

10. SIGNALING

L	loop start
B	loop or ground start
G	ground start
R	reverse battery feed
P	proprietary
Q	Q.931 (ISDN)
O	other
?	ambiguous
-	not applicable

11. PULSING

D	dial pulse (rotary)
J	dual-tone multi-frequency (touch tone)
?	ambiguous
-	not applicable

12. DIGITAL DATA RATE

L	2.4, 4.8, or 9.6 kb/s
M	19.2 kb/s
H	56.0 kb/s
A	64.0 kb/s
B	144.0 kb/s
C	640.0 kb/s
D	1.6 Mb/s
K	7.168 Mb/s
E	1.544 Mb/s (DS1)
F	6.132 Mb/s (DS2)
G	44.736 Mb/s (DS3)
P	51.840 Mb/s (OC1)
R	155.520 Mb/s (OC3)
S	622.080 Mb/s (OC12)
O	other
?	ambiguous
-	not applicable

13. RESISTANCE ZONE

#	numeric value equals resistance zone

14. CARRIER ZONE

#	numeric value equals carrier zone

15. UNIGAUGE

L	loaded unigauge cable loop assigned
NL	non-loaded unigauge cable loop assigned

16. ESTIMATED CCS (HUNDRED CALL SECONDS) LOAD

A-Z	load bands
?	ambiguous
-	not applicable

17. ESTIMATED PPS (PACKETS PER SECOND) LOAD

A-Z	load bands
?	ambiguous
-	not applicable

18. CUSTOM CALLING FEATURES (POSSIBLY MULTIPLE VALUES)

XXX	actual CCFs

19. ADMINISTRATION OF DESIGNED SERVICES REVIEW

Y	ADSR required

20. DIRECTIONALITY

I	incoming only
O	outgoing only
B	both (2-way)
?	ambiguous
-	not applicable

21. CHANNEL SELECTION

Y	channel selection is available on the ISDN pipe
N	channel selection is not available on the ISDN pipe
-	not applicable

22. BS1 (B1 CHANNEL SERVICE)

CSD circuit switched data
CSDV circuit switched data/voice
CSV circuit switched voice
DMD channel-on-demand services
X25 permanent packet switched data
PSB packet switched data
NONE no type of service
BLANK filler code - no translation required

23. BS2 (B2 CHANNEL SERVICE)

CSD circuit switched data
CSDV circuit switched data/voice
CSV circuit switched voice
DMD channel-on-demand services
X25 permanent packet switched data
PSB packet switched data
NONE no type of service
BLANK filler code - no translation required

24. BSD (D CHANNEL SERVICE)

ADMIN X.25 on B, NONE on D
SONLY CSV, CSD, CSD/V on B, Signaling on D
SX CSV, CSD, CSD/V on B, X.25 and signaling on D
XONLY X.25 on D only
XMP D Channel Modem Pooling
PSD packet switched data
BLANK no entry

25. SERVICE DESCRIPTOR

CS ISDN Circuit Switched Service Termination
PSD ISDN D Packet Service Termination
PSB ISDN B Packet Service Termination
CID Caller Identification
MWL Message Waiting Lamp

26. MAX NUMBER OF TERMINALS

maximum number of terminals (users) supported by an ISDN pipe being provisioned in the 5E5 and later generics; allowable numbers are 1-8.

27. MAX D CHANNEL PACKET USERS

#	maximum number of D channel packet users supported by an ISDN pipe being provisioned in the 5E5 and later generics; allowable numbers are 0-8.

28. ON DEMAND B CHANNEL POE ASSIGNMENT REQUIREMENTS

#	number of on demand B channel POE assignments required per ISDN pipe being provisioned in a 5ESS IC; allowable numbers are 1-16.

29. ON DEMAND B CHANNEL PACKET BAND LEVELS

#	on demand B channel packet band levels; represents the collection of band levels from all the packet users to be provisioned on the pipe; there are n occurrences of this data (in series) where n corresponds to the number of on demand B channel packet users; allowable levels are 0-15.

30. CENTRAL OFFICE ADMINISTRATIVE TYPE (CATY)

xxxxx	1-5 alphanumeric code
?	ambiguous
-	not applicable

31. LINE ENCODING

A	alternate mark inversion (AMI)
B	CCITT standard line code for ISDN (2B1Q)
F	four binary, three ternary encoding for ISDN (4B3T)
?	ambiguous
-	not applicable

32. BEARER CAPABILITY NAME

xxxxxxxx 3-8 alphanumeric field, spaces allowed.

33. ON DEMAND B POEs REQUIRED

#	number of on demand B channel POEs required for a particular service; allowable numbers are 0-2.

34. ON DEMAND B CHANNEL PACKET BAND LEVEL

#	on demand B channel packet band level for a particular service; allowable levels are 0-15.

SWITCH System DLBB Functional Product Specification

Contents

7. PROVISIONING

Provisioning applies to processing a service order either flow-through or through manual assignment or processing a company initiated order. This section deals with the manual assistance required when the provisioning process cannot be automatically completed (i.e., flow-through cannot be achieved) or when changes to pending assignments, made either automatically or manually, are necessary. In addition, this section describes how a Company Initiated Order (CIO) can be assigned in the SWITCH system.

Manual assistance in the provisioning process occurs when assignment requests cannot be processed automatically either by SOAC, LFACS or the SWITCH system. When this occurs, a Request for Manual Assistance (RMA) results. RMAs may be due to the inability of the provisioning process to handle certain types of complex services. RMAs of this type usually occur in SOAC and are triggered by entries in BCC-controlled SOAC tables. RMAs also occur due to lack of facilities or problems encountered in component databases, such as facility status conflicts. RMAs of this type usually occur in LFACS or in the SWITCH system and are considered exception conditions.

Exceptions occur in the SWITCH system when assignment processing (see Section 6) encounters conditions which prevent equipment and/or facilities from being assigned. They can result from service orders (i.e., RMAs), work orders, or inventory transactions. In general, the SWITCH system approach to detecting problems is to identify as many as are reasonably possible when processing a contract. After exception conditions have been identified, the SWITCH system notifies the transaction source (e.g., SOAC, the User Layer Building Block) that normal processing can not be accomplished. The SWITCH system provides as much supporting information as possible to aid in the resolution of the exception condition.

There are four classes of exceptions which can occur in the SWITCH system:

- ADVISORY - an exception falls into this class when it provides information about order related or facility related events but does not interrupt processing. No user action is required. This exception is intended to advise the user of a particular condition which may have been expected to occur but for some reason did not. This exception might occur for example, if a work order completion does not find any network units eligible for completion.
- WARNING - an exception falls into this class when it provides information about order related or facility related events and also does not interrupt processing. However, user action may be required to avoid errors on subsequent activity. This exception might occur for example, if on an LFACS cable transfer, a "from" cable pair exists as a "from" cable pair on another transfer. If not corrected, a subsequent assign cable transfer errors on this pair.
- ERROR - an exception falls into this class when it causes processing to halt due to problems with internal processing, the database, or the input request. User action is required. Examples of this type of exception are failures of high level edits and

validations, cable pair status conflicts between LFACS and the SWITCH system, failure to select appropriate network units for the request, etc.

- SYSTEM ERROR - an exception falls into this class when it causes processing to halt due to an abnormal condition. These exceptions must be fixed by a system administrator. An example of this type of exception is the inability to read a node in the database.

Exceptions can be delivered via alternate message delivery vehicles. These are:

- via SOAC
  — Messages for ERRORS or SYSTEM ERRORS encountered during service order processing are sent to SOAC for delivery via the SOAC RMA process (referred to as Requests for Manual Assistance).
  — Messages for ADVISORIES or WARNINGS encountered during service order processing are sent to SOAC for delivery as a Notice.
  — Messages for ERRORS, SYSTEM ERRORS, ADVISORIES or WARNINGS encountered during processing of SOAC originated work orders or ULBB originated MCTs are sent to SOAC for delivery as a Notice.
- via the SWITCH system
  — Messages for ERRORS, SYSTEM ERRORS, ADVISORIES, or WARNINGS encountered during ULBB deferred interaction (e.g., inventory updates, manual provisioning), are output to DCOR (Deferred Contract Output Review).
  — Messages for ERRORS, SYSTEM ERRORS, ADVISORIES or WARNINGS encountered during ULBB immediate interaction (e.g., data request, some reports/ inquiries) are output to the ULBB terminal screen.

This section provides the SWITCH system requirements for provisioning order assignment when manual assistance is required in the SWITCH system. It concentrates on the requirements necessary to support the resolution of ERRORS and SYSTEM ERRORS encountered during service order processing. When these occur, they are output via SOAC as RMAs (i.e., delivered via the SOAC RMA process). Examples of conditions which would result in the generation of an RMA are: [1]

- the provisioning request fails high level edits and validations
- an assignment category cannot be determined (from a subset of CEC attributes)
- the required intelligent controller cannot be selected
- circuit or service rules contain an RMA indication

1. Note that manual assistance in the SWITCH system may be required if processing in other components of the provisioning process (e.g., SOAC, LFACS) results in an RMA.

- required components cannot be selected or proper connectivity cannot be determined
- SWITCH system MA triggers exist in SOAC tables for certain FIDS, USOCs, etc.

7.1 Flow-Through Provisioning

Flow-through provisioning, which uses the interface processing described in Section 13, allows a provisioning request to automatically process (i.e., all facilities are assigned automatically). When all facilities can be automatically assigned, solicited messages are returned to SOAC. When a provisioning request cannot completely flow through, (i.e., manual assistance is required), interface processing allows the provisioning request to continue automatically through the remaining provisioning process once the manual assistance process is done. This is accomplished with unsolicited messages to SOAC which result after a manual assistance task is done in the SWITCH system. These messages provide assignment related data and/or information (e.g., translation data) which can be sent by SOAC to other systems in the provisioning process.

7.2 Assisting the Assignment Process in the SWITCH System

When a provisioning request cannot flow-through the provisioning components, the user must manually assist in the assignment process. Today in the provisioning process, there exist two manual methods of handling an order, inner loop and outer loop. Inner loop requires the minimum amount of manual assistance where much of the assignment process is still automatic. Outer loop, which falls into two classifications, integrated assignment (INT) and track and distribute only (TDO), requires significantly more manual assistance. Integrated assignment requires manual assistance in both LFACS and the SWITCH system, whereas TDO assignment requires manual assistance in SOAC, LFACS and the SWITCH system.

The manual method chosen is dependent on the extent of automatic processing that the provisioning process has been able to perform for the assignment request, and also BCC-specific methods and procedures. Inner loop procedures can be followed if assignment requests were successfully generated by SOAC (order is in AUTO mode) but a problem, resulting in an RMA, was encountered in the SWITCH system. Outer loop procedures are followed if SOAC cannot generate complete assignment requests or for some reason, inner loop procedures are not adequate. When this occurs the user can choose one of two outer loop methods to resolve the RMA, integrated (INT) manual assignment and track and distribute only (TDO) manual assignment. Typically, the RMA reason and the appended provisioning order image can be used to determine the method to resolve the problem. These methods are explained more fully in subsequent sections.

It is also possible that SOAC successfully generated assignment requests but the user decides that outer loop procedures are necessary to assign the order due to a problem encountered in LFACS or in the SWITCH system. In this case, the order is "transitioned" from inner loop to outer loop (also known as transitioning from AUTO to INT or TDO mode).

Whether an order is handled using inner or outer loop procedures, the SWITCH system allows the user to employ similar methods to resolve an RMA. A user may fully specify facilities which is called "totally constrained assignment". All network units, including intra-wire center facilities (IFs) and connectivity must be specified. However, cross-connects or CRV associations needed to update network elements do not have to be specified in the "totally constrained" mode. Alternatively, a user may operate using "partially constrained assignment" procedures referring to the full specification of network units and connectivity, excluding specification of intra-wire center facilities, and cross-connect or CRV information. If only types of facilities are specified (e.g., OE ?), or only some network units specified, or all assignments are to be automatically made by the SWITCH system, then this is referred to as "unconstrained assignment". In this case, connectivity and cross-connect information cannot be specified and is also performed automatically.

When a service is to be provisioned on digital loop electronics, a route of a circuit from the origin carrier controller to the destination point is needed. This route can be determined automatically from information provided on the service request. That is, the cable pair allows the SWITCH system to determine an origin carrier controller. Data provided on the service order for switched services allows the SWITCH system to determine an intelligent controller as the destination. Data provided by TIRKS System/FEPS for design non-switched services, and from default processing for non-design non-switched services allows the SWITCH system to determine a carrier controller or a frame to be a destination.

The user is never required to input a route. The assignment engine determines all possible routes and selects the best choice whether totally constrained, partially constrained or automatic assignment takes place. However, the user can specify a route when one cannot be automatically generated or wants to ensure a specific route is used. When specifying a route, the destination, if received from TIRKS System/FEPS via SOAC, can only be changed if outer loop procedures are used to resolve the RMA.

While the above procedures can be used in either inner or outer loop modes, the following discusses the requirements for the SWITCH system to support manual assignment using inner loop or outer loop procedures.

7.3 Inner Loop Manual Assignment

Inner loop manual assignment is required in the SWITCH system when SOAC is able to successfully determine the loop and/or central office assignment requirements and can generate assignment requests. However, the SWITCH system encounters a problem when processing the request and an RMA results. When this occurs, the SWITCH system always tries to retain the assignment requests. [2]Thus, there is no "error kept, error not kept" concept in the SWITCH system for facility assignment type problems. For example, facility status conflicts between LFACS and COSMOS result in an error not kept situation in COSMOS. If the SWITCH system encounters this conflict it keeps the order (and assignment requests). In any case, inner loop assignment allows for SOAC to automatically produce an assignment section once the SWITCH system RMA is resolved.

As discussed in Section 7.2, fully constrained, partially constrained, or unconstrained assignment methods can be used to resolve an RMA for an order in INT mode.

Alternatively, the user may have to modify certain administrative or inventory constraints that originally caused the problem followed by the user resubmitting the assignment requests. As previously mentioned, when using inner loop manual procedures, automatic processing can resume and an assignment section can be automatically generated by SOAC.

Inner loop manual assignment must be supported in the SWITCH system in scenarios for precompletion and correction passes. Since the provisioning order has already been established in the SWITCH system and assignment request data exists for the order, it is made available to the user.

7.3.1 Inner Loop Resolution Scenarios

There are two possible resolution scenarios that the user may choose to resolve a SWITCH RMA depending on the RMA reason.

Case 1 - Assist the SWITCH system in Provisioning Facilities

In this case, the user decides to examine the existing assignment request and assist in the facility assignment process. The user is allowed to:

- Partially or fully specify the facility assignments necessary to satisfy the assignment requests using totally constrained assignment, partially constrained assignment or unconstrained assignment. In the latter case, if the user only enters a subset of network units, the SWITCH system automatically selects any additional facilities needed to support the assignment request.
- Specify a route if necessary, if the service is provisioned on digital loop electronics (DLE).

2. The SWITCH system does not maintain assignment requests if it receives an order pass out of sequence or at an inappropriate time (e.g., a CORSO contract received without ever receiving a PRESO contract, or a PCNSO contract received and the order is not yet assigned). Additionally, the SWITCH system is unable to maintain assignment requests when the format of the requests are invalid or serious database problems are encountered. In these situations, the SWITCH system is unable to read, or store the requests in its database, usually requiring intervention by a system administrator. Once the problem is resolved, it is necessary to initiate a resend assignment request transaction into SOAC resulting in a PRESO or CORSO contract being initiated between SOAC and the SWITCH system.

- Partially or fully specify the type of facilities (e.g., a switch port, CRV) needed to satisfy the assignment requests. The frame from which to pick a switch port or trunk pair can be entered, as can the carrier circuit from which to pick a channel, or the carrier controller from which to pick a CRV. Additionally, a facility with a particular administrative constraint (for switch port selection) or specific functionality (for transmission equipment selection) can be requested. Since this is an unconstrained assignment, full specification of connectivity and cross-connect information is not allowed, and is performed automatically.
- Specify a user override to the automatic assignment method used to provision a two-wire special service on DLE.
- Allow modification to selected CEC attributes on primary or secondary services if the client specific feature, allowing modifications to CEC data on the RESOL ASG work session (resolve assign modify cec attrs), is enabled.

The RESOL ASG work session is started by the user to begin inner loop resolution. Once the user has specified the relevant information (e.g., order number, circuit id, etc.) the script initiates a Work Session Initialization for Provisioning (WSIPRV) contract between the User Layer Building Block (ULBB) and the Data Layer Building Block (DLBB). This contract supplies any assignment related data the SWITCH system has for the assignment request which is pre-populated on the screen by the ULBB scripts. [3] Once the user has added and/or modified the appropriate facility data, an Assign Provisioning Request (ASGSO) contract is initiated between the ULBB and the DLBB. This contract results in SOAC receiving an unsolicited PRESO or CORSO response (dependent on the latest pass of the order) to the initial PRESO or CORSO contract. [4]Additionally, if the SWITCH system assignment processing is successful, an Establish Frame Output (PREFO) is initiated to update FOMS, if appropriate.

Case 2 - Modify the Database

In this case, the user decides to modify the SWITCH system database and/or tables and restart the assignment process. The user is allowed to:

- Modify assignment algorithm parameters so that these changed values are used by the SWITCH system component selection processes.
- Modify inventory or administrative constraints.

In the case where modification of inventory or administrative constraints must be made, a Work Session Initialization for Network Unit (WSINTU) contract is initiated between the

3. The RESOL ASG work session cannot be used to change any order information that exists in the assignment request (e.g., correction suffix, CEC data, RTG data) since this is data derived from service order input. Facility-related data, used by the SWITCH system component selection processes can be entered.

4. For more information on the messages the SWITCH system receives from SOAC and sends to SOAC under the Provisioning contracts, see Section 13.

ULBB and the DLBB. User modifications result in an Update Network Unit (UPDNTU) contract being initiated between the ULBB and the DLBB.

Once these modifications have been made, the user must resubmit the assignment requests to the SWITCH system. This is accomplished through the REX ORD work session, resulting in a REXASG contract between the ULBB and the DLBB. This contract results in SOAC receiving an unsolicited response to the initial PRESO or CORSO contract. Additionally, if the SWITCH system assignment processing is successful, a PREFO contract is initiated to update FOMS, if appropriate.

7.4 Integrated Assignment (INT)

Integrated assignment (INT) is one way of handling an RMA using outer loop procedures. Outer loop procedures are used when SOAC cannot build complete assignment requests.[5] The order must be manually established in the SWITCH system (and LFACS if required). Additionally, SOAC does not track assignment requests as is done in AUTO mode. With integrated assignment, however, SOAC accepts assignment request responses from the components allowing for automatic formatting of the assignment section. Thus, this method is the more desirable outer loop method as SOAC provides some automatic processing for the user.

During the resolution of a SWITCH system RMA following inner loop procedures, the user may decide that INT mode procedures are required to successfully complete the resolution process. Thus, provisioning orders can be transitioned from inner loop (AUTO) to INT mode but never vice versa. An INT mode order can be transitioned to TDO mode.

An order can be transitioned to INT mode in one of two ways. SOAC can either receive an INT mode response from a component, or the user can perform a SET INT transaction in SOAC. A typical scenario for transitioning from AUTO to INT mode occurs when SOAC has been able to build assignment requests for both LFACS and the SWITCH system, but because of a problem encountered in LFACS, the user decides to transition to INT mode. At this point, SOAC no longer tracks assignment requests as is done when an order is in AUTO mode. When this occurs however, SOAC is able to send a SWITCH system "skeletal" assignment request in a PRESOS contract. [6]This allows for pre-population of CEC and translation data when the user invokes the INPUT ORD work session as discussed in the following section. However, INT mode procedures still apply as the assignment

5. Complete assignment requests refer to those which contain all relevant CEC, translation and loop data (from LFACS). As will be discussed, SOAC has the ability in some cases to generate "skeletal" assignment requests on INT and TDO mode orders to reduce the amount of manual data entry necessary to establish an order in the SWITCH system. This occurs in the cases where an order is transitioned from AUTO to INT or TDO mode or if a SOAC deferred MA trigger is detected on the order. In all other cases, (e.g., SOAC immediate MA trigger is detected), SOAC does not build any assignment requests at all.

6. The generation of PRESOS contracts is controlled by a user tunable table in SOAC.

request is for pre-population only. The SWITCH system does NOT return any response to SOAC as a result of receiving a PRESOS request.

As discussed in Section 7.2, fully constrained, partially constrained, or unconstrained assignment methods can be used to resolve an RMA for an order in INT mode.

7.4.1 Establish and Assign INT Mode Assignment Requests

Integrated manual assignment must be supported in the SWITCH system to establish and assign assignment requests in INT mode. This scenario occurs when a provisioning request RMAs in SOAC and SOAC cannot generate assignment requests, or when an order is transitioned from AUTO to INT mode and skeletal assignment request data exists in the SWITCH system database. The user must build the assignment requests (via the INPUT ORD work session discussed later) to provide the SWITCH system with the necessary data to provision the request. Following this step, the user is able to:

- Request that the SWITCH system attempt automatic assignment. This feature is useful in instances where a request can be automatically provisioned by the SWITCH system but not by LFACS.
- Partially or fully specify the facility assignments necessary to satisfy the assignment requests using totally constrained assignment, partially constrained assignment or unconstrained assignment. In the latter case, if the user only enters a subset of network units, the SWITCH system automatically selects any additional facilities needed to support the assignment request.
- Specify a route if necessary, if the service is provisioned on digital loop electronics (DLE).
- Partially or fully specify the type of facilities (e.g., a switch port, CRV) needed to satisfy the assignment requests. The frame from which to pick a switch port or trunk pair can be entered, as can the carrier circuit from which to pick a channel, or the carrier controller from which to pick a CRV. Additionally, a facility with a particular administrative constraint (for switch port selection) or specific functionality (for transmission equipment selection) can be requested. Since this is an unconstrained assignment, full specification of connectivity and cross-connect information is not allowed, and is performed automatically.
- Specify "next segment" data used when provisioning a two-wire special service on DLE (determines if a transition to a four-wire channel unit in the central office is needed).
- Enter translation data if not already present, pertaining to the assignment requests. [7]

7. See Section 13.2 for information on entering translation data on provisioning requests.

- Allow the user to change the correction suffix, circuit id or circuit termination id in an assignment request.

The INPUT ORD work session is started by the user who indicates that the mode of resolution is INT. Depending on the type of activity requested on the provisioning order (i.e., new service being provided, existing service being modified or removed), the SWITCH system may or may not be able to initially provide the user with any data. For example, for new service where no assignment request data has been sent by SOAC (e.g., SOAC immediate MA trigger detected and RMA occurs in SOAC), the SWITCH system does not have any data to present to the user. In this case, the user must specify the order number, circuit id, hunt group ids and simulated facility group (SFG) ids, if they are to be provisioned, on the input screen. The script then initiates a Work Session Initialization for Provisioning (WSIPRV) contract between the User Layer Building Block (ULBB) and the Data Layer Building Block (DLBB). A check for the existence of the order and circuit in the SWITCH system database is made. Since this data does not exist in the database, the screen is pre-populated with the circuit id and the order number specified on input. Any assignment related data which normally appears in an assignment request must be entered. An example is the CEC, derived by SOAC to allow the SWITCH system to select facilities. The CEC information can be obtained by performing an INQ CEC transaction into SOAC. [8]Data pertaining to the provisioning of hunt groups (multi-line hunt or series completion), or SFG groups can be entered. If a line and station transfer (LST) is required to provision the request, LST data can also be entered.

Alternatively for new service, data may exist if SOAC was able to generate a skeletal assignment request (PRESOS contract) and the order was transitioned from AUTO to INT mode. When this occurs, CEC and translation data, and hunt group data are pre-populated on the INPUT ORD screen for the order specified on input. Changes can be made to any of this data as needed. Note that loop assignment data must be entered manually.

For changes to or removal of existing service, the SWITCH system is able to provide the user with information pertaining to the circuit(s) on the provisioning request. The INPUT ORD work session is started by the user after the relevant input data is entered. The WSIPRV contract pre-populates (one circuit at a time) the screen with assignment and facility data stored in the SWITCH system database for the circuit being changed or removed, including the CEC (which may be obtained from a PRESOS contract for this order).

The user is not able to indicate that all assignments have been made and responses can be forwarded to SOAC for assignment section generation. Instead, the user utilizes the SAVE command on the screen if all facility assignments have not been completed for all circuits on the order. Once the user has added all the appropriate facility data for all circuits, an

8. The INQ CEC transaction into SOAC results in the derivation of CEC attributes based on FIDs, Service Codes, and/or USOCs appearing on the service order. This data is entered manually onto the INQ CEC screen; the resulting CEC attributes are output to a screen or local printer if desired. These attributes must then be entered manually onto the INPUT ORD screen in the SWITCH system.

EXECUTE command results in an Establish and Assign INT Mode Provisioning Request (PREINT) contract between the ULBB and the DLBB. This contract results in SOAC receiving an unsolicited PREINT response. [9]Additionally, if the SWITCH system assignment processing is successful, an Establish Frame Output (PREFO) is initiated to update FOMS, if appropriate.

7.4.2 Correct and Assign INT Mode Assignment Requests

Integrated manual assignment must be supported in the SWITCH system when assignment requests already exist in the SWITCH system for the provisioning request. This scenario occurs when subsequent activity occurs for an INT mode order. For example, a correction pass could be received from SOAC after INT mode resolution has occurred for the prior pass. Similarly, unsolicited activity against the pending INT mode order in the SWITCH system could be initiated by the user.

Alternatively, a provisioning request could be transitioned from AUTO to INT mode where assignment requests already exist in the SWITCH system. It is possible in this case, that the SWITCH system was able to automatically generate assignments but the order is being resolved using INT mode procedures because of assignment problems in LFACS.

As discussed in Section 7.4.1, the INPUT ORD work session allows the user to establish the order. Once established, if the user decides to correct order information (e.g., the correction suffix, the CEC, addition or deletion of circuits, circuit ids, etc.), or correct facility assignments, the INPUT ORD work session can be used. Alternatively, if the user desires to do only the latter (modify facility assignments), they can also use the RESOL ASG work session on INT mode orders already established. The user is then able to:

- Request that the SWITCH system attempt automatic assignment.
- Partially or fully specify the facility assignments necessary to satisfy the assignment requests using totally constrainted assignment, partially constrained assignment or unconstrained assignment. In the latter case, if the user only enters a subset of network units, the SWITCH system automatically selects any additional facilities needed to support the assignment request.
- Specify a route if necessary, if the service is provisioned on digital loop electronics.
- Partially or fully specify the type of facilities (e.g., a switch port, CRV) needed to satisfy the assignment requests. The frame from which to pick a switch port or trunk pair can be entered, as can the carrier circuit from which to pick a channel, or the carrier controller from which to pick a CRV. Additionally, a facility with a particular administrative constraint (for switch port selection) or specific functionality (for

9. Even if SOAC sent a PRESOS contract to the SWITCH system, the PREINT response is still considered unsolicited, as NO response is returned by the SWITCH system to SOAC as a result of the PRESOS contract request.

transmission equipment selection) can be requested. Since this is an unconstrained assignment, full specification of connectivity and cross-connect information is not allowed, and is performed automatically.

- Specify "next segment" data used when provisioning a two-wire special service on DLE (determines if a transition to a four-wire channel unit in the central office is needed).
- Enter translation data if not already present, pertaining to the assignment requests.
- Allow the user to change the correction suffix, circuit id or circuit termination id in an assignment request (via INPUT ORD only).

If the user decides to change order information, the INPUT ORD work session must be started by the user who indicates that the mode of resolution is INT. The user must supply the circuit id(s) for any new circuits being added on this correction pass. If hunt groups or SFG groups are being added/changed on this pass, the user must supply hunt group ids or SFG ids. If the user decides to only change assignment information, the RESOL ASG work session can be initiated.

Once the user has specified the relevant information, the script initiates a WSIPRV contract between the ULBB and DLBB. A check for the existence of the order and circuit in the SWITCH system database is made (the order should exist).

For corrections against new connect orders, the WSIPRV contract pre-populates the screen with assignment request data (from the prior pass) stored in the SWITCH system database for the circuit specified on input (any pending assignments from the prior pass of the inward order are not pre-populated). Any changes to assignment related data for circuits pending on the order can be made if necessary. If additional lines are being added on the correction pass, assignment requests have to be built. [10]The INQ CEC transaction may have to be performed to obtain CEC attributes relevant to the new service being requested.

For corrections to existing service (e.g., corrections to a change or disconnect order), the SWITCH system provides the user with assignment request data from the prior pass, and facility assignments that are working for the circuit (not those that are pending from the prior pass). The WSIPRV contract pre-populates the screen with this data, including the CEC.

The user is not able to indicate that all assignments have been made and responses can be forwarded to SOAC for assignment section generation. Instead, the user utilizes the SAVE command on the screen if all facility assignments have not been completed for all circuits on the order. Once the user has modified and/or added all the appropriate facility data for all circuits, an EXECUTE command indicates that all assignments are complete. If the work session used was INPUT ORD, a Correct INT Mode Provisioning (CORINT) contract is initiated between the ULBB and the DLBB. If the work session used was

10. PRESOS contracts are not generated by SOAC for orders that have already been sent to the SWITCH system. Correction passes entered into SOAC against orders in INT mode RMA in SOAC.

RESOL ASG, an ASGSO contract is initiated between the ULBB and the DLBB. In either case, SOAC receives an unsolicited CORINT assignment response. Additionally, if processing is successful, a PREFO contract is initiated to update FOMS, if appropriate.

In the case where the SWITCH system has previously responded to SOAC for an AUTO mode order, and the user decides to work the order using INT mode procedures (and the SWITCH system assignments require modification), the mode of the order is changed in the SWITCH system database to INT as a result of the CORINT contract. In this case, the INPUT ORD work session must be used.

7.4.3 Cancellations and Completions

The SWITCH system can expect to receive cancellation and completion passes from SOAC for orders established in INT mode. The SWITCH system receives CANSO and PCNSO contracts from SOAC in this case and processes them automatically.

7.5 Track and Distribute Only (TDO)

Track and distribute only (TDO) is the second method of handling an RMA using outer loop procedures. These procedures and the subsequent processing performed by the SWITCH system are very similar to INT mode processing. SOAC does not generate complete assignment requests for the provisioning order (same as INT), so the user must manually establish the order in the SWITCH system as well as in LFACS (if required). However, the output responses are different. The user must manually enter the facility assignments into SOAC (different than INT) to build the assignment section for TDO orders. SOAC can, in this mode, track the order and distribute the manually entered assignment section.

Typically an order is handled using TDO procedures when:

- SOAC is unable to parse (or interpret) the service order due to non-standard provisioning order writing practices.
- Complex services are requested on the order which cannot be automatically provisioned; these are usually entered in BCC-controlled tables maintained in SOAC as manual assistance "triggers" denoting that LFACS and/or the SWITCH system cannot automatically assign the request; processing is halted in SOAC.
- Inner loop and INT manual assignment procedures do not apply (i.e. an internal processing limit in LFACS or the SWITCH system prevents the automatic building of assignment request responses).

During the resolution of a SWITCH system RMA following inner loop or INT mode procedures, the user may decide that TDO mode procedures are required to successfully complete the resolution process. Thus, provisioning orders can be transitioned from inner loop (AUTO) or INT mode to TDO mode. Once set to TDO, an order can never be transitioned back to AUTO mode or to INT.

To provision an order from AUTO to TDO mode, a SET TDO transaction must be performed in SOAC. A typical scenario for transitioning from AUTO to TDO mode occurs when SOAC has been able to build assignment requests for both LFACS and the SWITCH system, but because of a problem encountered in LFACS, the user decides to transition to TDO mode (as opposed to INT which is more desirable) because SOAC is unable to automatically format an assignment section for this particular service. Similar to the INT case, SOAC sends the SWITCH system "skeletal" assignment requests in a PRESOS contract after the SET TDO transaction is performed. This allows for pre-population of CEC and translation data when the user invokes the INPUT ORD work session as discussed in the following section. However, TDO mode procedures still apply as the assignment request is for pre-population only. The SWITCH system does NOT return any response to SOAC as a result of receiving a PRESOS request.

As discussed in Section 7.2, fully constrained, partially constrained, or unconstrained assignment methods can be used to resolve an RMA for an order in TDO mode.

7.5.1 Establish and Assign TDO Mode Assignment Requests

TDO manual assignment must be supported in the SWITCH system to establish and assign assignment requests in TDO mode. This scenario occurs when a provisioning request RMAs in SOAC and the SWITCH system has no knowledge of the request. The user must build the assignment request (via the INPUT ORD work session discussed later) to provide the SWITCH system with the necessary data to provision the request. Following this step, the user is able to:

- Request that the SWITCH system attempt automatic assignment.
- Partially or fully specify the facility assignments necessary to satisfy the assignment requests using totally constrainted assignment, partially constrained assignment or unconstrained assignment. In the latter case, if the user only enters a subset of network units, the SWITCH system automatically selects any additional facilities needed to support the assignment request.
- Specify a route if necessary, if the service is provisioned on digital loop electronics.
- Partially or fully specify the type of facilities (e.g., a switch port, CRV) needed to satisfy the assignment requests. The frame from which to pick a switch port or trunk pair can be entered, as can the carrier circuit from which to pick a channel, or the carrier controller from which to pick a CRV. Additionally, a facility with a particular administrative constraint (for switch port selection) or specific functionality (for transmission equipment selection) can be requested. Since this is an unconstrained assignment, full specification of connectivity and cross-connect information is not allowed, and is performed automatically.

- Specify "next segment" data used when provisioning a two-wire special service on DLE (determines if a transition to a four-wire channel unit in the central office is needed).
- Enter translation data if not already present, pertaining to the assignment requests.
- Allow the user to change the correction suffix, circuit id or circuit termination id in an assignment request.

The INPUT ORD work session is started by the user who indicates that the mode of resolution is TDO. Depending on the type of activity requested on the provisioning order (i.e., new service being provided, existing service being modified or removed), the SWITCH system may or may not be able to initially provide the user with any data. For example, for new service where no assignment request data has been sent by SOAC (e.g., SOAC immediate MA trigger detected and RMA occurs in SOAC), the SWITCH system does not have any data to present to the user. In this case, the user must specify the order number, circuit id, hunt group ids and simulated facility group (SFG) ids, if they are to be provisioned, on the input screen.The script then initiates a Work Session Initialization for Provisioning (WSIPRV) contract between the User Layer Building Block (ULBB) and the Data Layer Building Block (DLBB). A check for the existence of the order and circuit in the SWITCH system database is made. Since this data does not exist in the database, the screen is pre-populated with the circuit id and the order number specified on input. Any assignment related data which normally appears in an assignment request must be entered. An example is the CEC, derived by SOAC to allow the SWITCH system to select facilities. The CEC information can be obtained by performing an INQ CEC transaction into SOAC. Data pertaining to the provisioning of hunt groups (multi-line hunt or series completion), or SFG groups can be entered. If a line and station transfer (LST) is required to provision the request, LST data can also be entered.

Alternatively for new service, data may exist if SOAC was able to generate a skeletal assignment request (PRESOS contract) and the order was transitioned from AUTO to TDO mode. When this occurs, CEC and translation data, and hunt group data are pre-populated on the INPUT ORD screen for the order specified on input. Changes can be made to any of this data as needed. Note that loop assignment data must be entered manually.

For changes to or removal of existing service, the SWITCH system is able to provide the user with information pertaining to the circuit(s) on the provisioning request. The INPUT ORD work session is started by the user after the relevant input data is entered. The WSIPRV contract pre-populates (one circuit at a time) the screen with assignment and facility data stored in the SWITCH system database for the circuit being changed or removed, including the CEC (which may be obtained from a PRESOS contract for this order).

The user is not able to indicate that all assignments have been made and responses (containing MAS data only) can be forwarded to SOAC. Instead, the user utilizes the SAVE command on the screen if all facility assignments have not been completed for all circuits on the order. Once the user has added all the appropriate facility data for all circuits, an EXECUTE command results in an Establish and Assign TDO Mode Provisioning Request (PRETDO) contract between the ULBB and the DLBB. This contract results in SOAC receiving an unsolicited PRETDO response (containing MAS data only). Additionally, if the SWITCH system assignment processing is successful, an Establish Frame Output (PREFO) is initiated to update FOMS, if appropriate.

A notice containing the central office facility assignments is routed to a user designated printer or associated local printer. [11]In the very rare case where a user cannot establish the assignment requests in the SWITCH system, inventory transactions are necessary to add, modify, or remove circuit(s) from the SWITCH system database, depending on the activity requested. A Work Session Initialization for Circuit (WSICKT) contract may be initiated between the ULBB and the DLBB. Once the required data is entered, an Update Circuit (UPDCKT) contract between the ULBB and the DLBB is initiated resulting in the appropriate database updates for the circuit(s) being made. Updates to MAS and FOMS, if required, must be handled manually in this case. The use of this inventory transaction should not be required to establish a circuit on a pending order in the SWITCH system database. That is, it is envisioned to be used when the SWITCH system database is not in agreement with the real world; it should not be used for resolving RMAs in TDO mode.

7.5.2 Correct and Assign TDO Mode Assignment Requests

TDO manual assignment must be supported in the SWITCH system when assignment requests already exist in the SWITCH system for the provisioning request. This scenario occurs when subsequent activity occurs for a TDO mode order. For example, a correction pass could be received from SOAC after TDO mode resolution has occurred for the prior pass. Similarly, unsolicited activity against the pending TDO mode order in the SWITCH system could be initiated by the user.

Alternatively, a provisioning request could be transitioned from AUTO to TDO mode where assignment requests already exist in the SWITCH system. It is possible in this case, that the SWITCH system was able to automatically generate assignments but the order is being resolved using TDO mode procedures because of assignment problems in LFACS.

As discussed in Section 7.5.1, the INPUT ORD work session allows the user to establish the order. Once established, if the user decides to correct order information (e.g., the correction suffix, the CEC, addition or deletion of circuits, circuit ids, etc.), or correct facility assignments, the INPUT ORD work session can be used. Alternatively, if the user desires to do only the latter (modify facility assignments), they can also use the RESOL ASG work session on TDO mode orders already established. The user is then able to:

- Partially or fully specify the facility assignments necessary to satisfy the assignment requests using totally constrainted assignment, partially constrained assignment or

11. This notice has not been updated with the new digital loop electronics information due to the extensive changes made to the assignment section format.

unconstrained assignment. In the latter case, if the user only enters a subset of network units, the SWITCH system automatically selects any additional facilities needed to support the assignment request.

- Specify a route if necessary, if the service is provisioned on digital loop electronics.
- Partially or fully specify the type of facilities (e.g., a switch port, CRV) needed to satisfy the assignment requests. The frame from which to pick a switch port or trunk pair can be entered, as can the carrier circuit from which to pick a channel, or the carrier controller from which to pick a CRV. Additionally, a facility with a particular administrative constraint (for switch port selection) or specific functionality (for transmission equipment selection) can be requested. Since this is an unconstrained assignment, full specification of connectivity and cross-connect information is not allowed, and is performed automatically.
- Specify "next segment" data used when provisioning a two-wire special service on DLE (determines if a transition to a four-wire channel unit in the central office is needed).
- Enter translation data if not already present, pertaining to the assignment requests.
- Allow the user to change the correction suffix, circuit id or circuit termination id in an assignment request (via INPUT ORD only).

If the user decides to change order information, the INPUT ORD work session must be started by the user who indicates that the mode of resolution is TDO. The user must supply the circuit id(s) for any new circuits being added on this correction pass. If hunt groups, SFG groups are being added/changed on this pass, the user must supply hunt group ids and SFG ids. If the user decides to only change assignment information, the RESOL ASG work session can be initiated.

Once the user has specified the relevant information, the script initiates a WSIPRV contract between the ULBB and DLBB. A check for the existence of the order and circuit in the SWITCH system database is made (the order should exist).

For corrections against new connect orders, the WSIPRV contract pre-populates the screen with assignment request data (from the prior pass) stored in the SWITCH system database for the circuit specified on input (any pending assignments from the prior pass of the inward order are not pre-populated). Any changes to assignment related data for circuits pending on the order can be made if necessary. If additional lines are being added on the correction pass, assignment requests must be built. [12]The INQ CEC transaction may have to be performed to obtain CEC attributes relevant to the new service being requested.

For corrections to existing service (e.g., corrections to a change or disconnect order), the SWITCH system provides the user with assignment request data from the prior pass, and

12. PRESOS contracts are not generated by SOAC for orders that have already been sent to the SWITCH system. Correction passes entered into SOAC against orders in TDO mode RMA in SOAC.

facility assignments that are working for the circuit (not those that are pending from the prior pass). The WSIPRV contract pre-populates the screen with this data, including the CEC.

The user is not able to indicate that all assignments have been made and responses can be forwarded to SOAC for assignment section generation. Instead, the user utilizes the SAVE command on the screen if all facility assignments have not been completed for all circuits on the order. Once the user has modified and/or added all the appropriate facility data for all circuits, an EXECUTE command indicates that all assignments are complete. If the work session used was INPUT ORD, a Correct TDO Mode Provisioning (CORTDO) contract is initiated between the ULBB and the DLBB. If the work session used was RESOL ASG, an ASGSO contract is initiated between the ULBB and the DLBB. In either case, SOAC receives an unsolicited CORTDO assignment response (containing MAS data only). Additionally, if processing is successful, a PREFO contract is initiated to update FOMS, if appropriate.

In the case where the SWITCH system has previously responded to SOAC for an AUTO mode order, and the user decides to work the order using TDO mode procedures (and the SWITCH system assignments require modification), the mode of the order is changed in the SWITCH system database to TDO as a result of the CORTDO contract. In this case, the INPUT ORD work session must be used.

A notice containing the central office facility assignments is routed to a user designated printer or associated local printer.

In the very rare case where a user cannot establish the assignment requests in the SWITCH system, inventory transactions are necessary to add, modify, or remove circuit(s) from the SWITCH system database, depending on the activity requested. A Work Session Initialization for Circuit (WSICKT) contract may be initiated between the ULBB and the DLBB. Once the required data is entered, an Update Circuit (UPDCKT) contract between the ULBB and the DLBB is initiated resulting in the appropriate database updates for the circuit(s) being made. Updates to MAS and FOMS, if required, must be handled manually in this case. The use of this inventory transaction should not be required to establish a circuit on a pending order in the SWITCH system database. That is, it is envisioned to be used when the SWITCH system database is not in agreement with the real world and not for resolving RMAs in TDO mode.

7.5.3 Cancellations and Completions

The SWITCH system can expect to receive cancellation and completion passes for TDO mode orders if the user had specified all the involved component wire centers when setting TDO. The SWITCH system receives CANSO and PCNSO contracts from SOAC in this case and processes them automatically.

If the SWITCH system receives a completion request (PCNSO contract) for an order of which it has no knowledge, it should not issue an error, but should positively acknowledge the request and send a PCNSO response back to SOAC. This could occur if inventory transactions were used to build the circuits in the SWITCH system database or bulk completions were run prior to the issuance of a completion pass from the SOP.

If the SWITCH system receives a cancellation request (CANSO contract) for an order which it has no knowledge of, an RMA should be returned in the CANSO response to SOAC stating such.

7.6 Company Initiated Order (CIO)

Company Initiated Orders are service affecting orders which are not initiated in the SOP and do not flow through from SOAC. Instead, these orders are established manually in the SWITCH system. The provisioning work sessions in the ULBB can be used for CIOs for activities including establishment of a CIO, change to an existing CIO, withdrawal of circuits or groups on the CIO, assignment of facilities for items on a CIO, and cancellation or completion of a CIO.

The user must manually establish the CIO in the SWITCH system. However, the output responses are different. Assignments are not sent to SOAC as for flow through or INT mode orders. Instead, translations are sent to SOAC in a work order Translation Redundancy Management (TRM) contract, described in more detail in Section 14.

Typically an order is handled as a CIO when:

- There are discrepancies associated with a customer's service which only require updates to MAS, the SWITCH system, and FOMS. No updates are required to LFACS or to a billing system.
- Frame wiring and/or translation data needs to be rectified.
- Party customers need to be rearranged on existing party circuits, or party reassociations, need to be performed.
- Other rearrangements of facilities or services need to be performed which cannot be performed using existing work order types.

The SWITCH system treats a CIO like a service order with a mode of CIO. CIO mode orders cannot be transitioned to INT or TDO mode or vice versa. In addition, F and T Company Initiated Orders are not allowed and Line and Station Transfers (LSTs) are not allowed on CIOs.

As discussed in Section 7.2, fully constrained, partially constrained, or unconstrained assignment methods can be used to provision an order in CIO mode.

7.6.1 Establish and Assign CIO Mode Assignment Requests

CIO manual assignment must be supported in the SWITCH system to establish and assign assignment requests in CIO mode. The user must build the assignment request (via the INPUT ORD work session discussed later) to provide the SWITCH system with the necessary data to provision the request. Following this step, the user is able to:

- Request that the SWITCH system attempt automatic assignment.
- Partially or fully specify the facility assignments necessary to satisfy the assignment requests using totally constrainted assignment, partially constrained assignment or unconstrained assignment. In the latter case, if the user only enters a subset of network units, the SWITCH system automatically selects any additional facilities needed to support the assignment request.
- Specify a route if necessary, if the service is provisioned on digital loop electronics.
- Partially or fully specify the type of facilities (e.g., a switch port, CRV) needed to satisfy the assignment requests. The frame from which to pick a switch port or trunk pair can be entered, as can the carrier circuit from which to pick a channel, or the carrier controller from which to pick a CRV. Additionally, a facility with a particular administrative constraint (for switch port selection) or specific functionality (for transmission equipment selection) can be requested. Since this is an unconstrained assignment, full specification of connectivity and cross-connect information is not allowed, and is performed automatically.
- Enter translation data if not already present
- Allow the user to change the correction suffix, circuit id or circuit termination id

The INPUT ORD work session is started by the user who indicates that the mode is CIO. Depending on the type of activity requested on the provisioning order (i.e., new service being provided, existing service being modified or removed), the SWITCH system may or may not be able to initially provide the user with any data. For example, for new service, the SWITCH system does not have any data to present to the user. In this case, the user must specify the order number, circuit id, hunt group ids and simulated facility group (SFG) ids, if they are to be provisioned, on the input screen. The script then initiates a Work Session Initialization for Provisioning (WSIPRV) contract between the User Layer Building Block (ULBB) and the Data Layer Building Block (DLBB). A check for the existence of the order and circuit in the SWITCH system database is made. Since this data does not exist in the database, the screen is pre-populated with the circuit id and the order number specified on input. Any assignment related data which normally appears in an assignment request must be entered. An example is the CEC, usually derived by SOAC, to allow the SWITCH system to select facilities. The CEC information can be obtained by performing an INQ CEC transaction into SOAC. Data pertaining to the provisioning of hunt groups (multi-line hunt or series completion), or SFG groups can be entered. A line and station transfer (LST), however, cannot be entered for a CIO mode order.

For changes to or removal of existing service, the SWITCH system is able to provide the user with information pertaining to the circuit(s) on the provisioning request. The INPUT ORD work session is started by the user after the relevant input data is entered. The WSIPRV contract pre-populates (one circuit at a time) the screen with assignment and facility data stored in the SWITCH system database for the circuit being changed or removed, including the CEC.

The user is not able to indicate that all assignments have been made and responses (containing MAS data only in a work order TRM contract) can be forwarded to SOAC. Instead, the user utilizes the SAVE command on the screen if all facility assignments have not been completed for all circuits on the order. Once the user has added all the appropriate facility data for all circuits, an EXECUTE command results in a Establish and Assign CIO Mode Provisioning Request (PRECIO) contract between the ULBB and the DLBB. This contract results in SOAC receiving an unsolicited work order TRM contract, PRETMO, containing MAS data only. The TRM processing for this contract is described in more detail in Section 14. Additionally, if the SWITCH system assignment processing is successful, an Establish Frame Output (PREFO) is initiated to update FOMS, if appropriate.

In the very rare case where a user cannot establish the assignment requests in the SWITCH system, inventory transactions are necessary to add, modify, or remove circuit(s) from the SWITCH system database, depending on the activity requested. A Work Session Initialization for Circuit (WSICKT) contract may be initiated between the ULBB and the DLBB. Once the required data is entered, an Update Circuit (UPDCKT) contract between the ULBB and the DLBB is initiated resulting in the appropriate database updates for the circuit(s) being made. Updates to MAS and FOMS, if required, must be handled manually in this case. The use of this inventory transaction should not be required to establish a circuit on a pending order in the SWITCH system database. That is, it is envisioned to be used when the SWITCH system database is not in agreement with the real world.

7.6.2 Correct and Assign CIO Mode Assignment Requests

CIO manual assignment must be supported in the SWITCH system when assignment requests already exist in the SWITCH system for the provisioning request. This scenario occurs when subsequent activity occurs for a CIO mode order. For example, activity could be initiated by the user against a CIO mode order to make corrections or changes to the initial input.

As discussed in Section 7.6.1, the INPUT ORD work session allows the user to establish the order. Once established, if the user decides to correct order information (e.g., the correction suffix, the CEC, addition or deletion of circuits, circuit ids, etc.), or correct facility assignments, the INPUT ORD work session can be used. Alternatively, if the user desires to do only the latter (modify facility assignments), they can also use the RESOL ASG work session on CIO mode orders already established. The user is then able to:

- Partially or fully specify the facility assignments necessary to satisfy the assignment requests using totally constrainted assignment, partially constrained assignment or unconstrained assignment. In the latter case, if the user only enters a subset of network units, the SWITCH system automatically selects any additional facilities needed to support the assignment request.
- Specify a route if necessary, if the service is provisioned on digital loop electronics.
- Partially or fully specify the type of facilities (e.g., a switch port, CRV) needed to satisfy the assignment requests. The frame from which to pick a switch port or trunk pair can be entered, as can the carrier circuit from which to pick a channel, or the carrier controller from which to pick a CRV. Additionally, a facility with a particular administrative constraint (for switch port selection) or specific functionality (for transmission equipment selection) can be requested. Since this is an unconstrained assignment, full specification of connectivity and cross-connect information is not allowed, and is performed automatically.
- Enter translation data if not already present
- Allow the user to change the correction suffix, circuit id or circuit termination id (via INPUT ORD only).

If the user decides to change order information, the INPUT ORD work session must be started by the user who indicates that the mode is CIO. The user must supply the circuit id(s) for any new circuits being added on this correction pass. If hunt groups, SFG groups are being added/changed on this pass, the user must supply hunt group ids and SFG ids. If the user decides to only change assignment information, the RESOL ASG work session can be initiated.

Once the user has specified the relevant information, the script initiates a WSIPRV contract between the ULBB and DLBB. A check for the existence of the order and circuit in the SWITCH system database is made (the order should exist).

For corrections against new connect orders, the WSIPRV contract pre-populates the screen with assignment request data (from the prior pass) stored in the SWITCH system database for the circuit specified on input (any pending assignments from the prior pass of the inward order are not pre-populated). Any changes to assignment related data for circuits pending on the order can be made if necessary. If additional lines are being added on the correction pass, assignment requests must be built. The INQ CEC transaction may have to be performed to obtain CEC attributes relevant to the new service being requested.

For corrections to existing service (e.g., corrections to a change or disconnect order), the SWITCH system provides the user with assignment request data from the prior pass, and facility assignments that are working for the circuit (not those that are pending from the prior pass). The WSIPRV contract pre-populates the screen with this data, including the CEC.

The user is not able to indicate that all assignments have been made and responses can be forwarded to SOAC for assignment section generation. Instead, the user utilizes the SAVE command on the screen if all facility assignments have not been completed for all circuits on the order. Once the user has modified and/or added all the appropriate facility data for all circuits, an EXECUTE command indicates that all assignments are complete. If the work session used was INPUT ORD, a Correct CIO Mode Provisioning (CORCIO) contract is initiated between the ULBB and the DLBB. If the work session used was RESOL ASG, an ASGSO contract is initiated between the ULBB and the DLBB. In either case, SOAC receives an unsolicited work order TRM contract, PRETMO or CORTMO, [13]containing MAS data only. Additionally, if processing is successful, a PREFO contract is initiated to update FOMS, if appropriate.

In the very rare case where a user cannot establish the assignment requests in the SWITCH system, inventory transactions are necessary to add, modify, or remove circuit(s) from the SWITCH system database, depending on the activity requested. A Work Session Initialization for Circuit (WSICKT) contract may be initiated between the ULBB and the DLBB. Once the required data is entered, an Update Circuit (UPDCKT) contract between the ULBB and the DLBB is initiated resulting in the appropriate database updates for the circuit(s) being made. Updates to MAS and FOMS, if required, must be handled manually in this case. The use of this inventory transaction should not be required to establish a circuit on a pending order in the SWITCH system database. That is, it is envisioned to be used when the SWITCH system database is not in agreement with the real world.

7.6.3 Cancellations and Completions

The SWITCH system can expect to receive completion passes for CIO mode orders from FOMS, but not from SOAC. The SWITCH system receives and processes the PCNSO contract from FOMS automatically.

7.7 Pending Assignment Changes

When assignments on a pending provisioning request need to be changed prior to or during installation of service, the resulting interaction with the SWITCH system, LFACS, SOAC and FUSA (Frame User assignment System Access) is called an Assignment Change. The need for an Assignment Change may be caused by various situations. The assigned network unit may be defective, unable to be located, changed as a result of a work order[14] already in service (an inconsistency between reality and our inventory data base), or non-conforming to local policies or procedures.

13. A PRETMO contract is sent when no TRM contract has been sent to SOAC previously for MAS, or if the previous TRM contract removed MAS involvement of the CIO, withdrawing all circuits or changes that were originally made. Otherwise, a CORTMO contract is sent to SOAC for MAS.

Assignment Changes may **not** be used to change a working assembly, change the circuit's identifier or termination identifier, change TNs, affect individual units that are components of a permanent assembly (either the entire permanent assembly is changed or nothing), nor change/create reservation assemblies.

The Assignment Change request identifies one or more of the previously assigned network units or assemblies. It also must either specify the replacement, identify the characteristics that the SWITCH system should use in selecting the replacement, or request the SWITCH system to automatically assign it.

Assignment Changes have the following characteristics within the SWITCH system:

- They have highest priority (of all the deferred transactions) in the assignment process.
- They produce intelligible error messages directed to the source of entry containing the information necessary for the user to correct entry errors.
- Once submitted, a specific Assignment Change request cannot be modified or withdrawn. If modifications to an Assignment Change become necessary, another Assignment Change must be requested.
- They automatically produce wiring information for FOMS (if the parameter for that wire center so indicates) with sufficient information so that FOMS knows the output was created by an Assignment Change.
- They automatically produce output to SOAC for MAS (if appropriate).
- They result in one of the following unsolicited responses being returned to SOAC, depending on the last contract received from SOAC: PRESO, CORSO, PREINT, CORINT, PRETDO or CORTDO. However, for CIO mode orders, only a TRM contract is returned to SOAC for MAS (if appropriate).
- In the process of obtaining the replacement assignment, they follow the rules defined for normal component selection as discussed in Section 6.
- Their successful completion is acknowledged back to the source of entry.

To perform an Assignment Change from the SWITCH system, a CHG ASG work session is initiated from the ULBB. [15]The user views information about facilities assigned to the circuit, via the WSIPRV (Work Session Initialization for Service Provisioning) contract

14. When a cable throw or work order line and station transfer completes in LFACS involving facilities currently pending out or in on a provisioning request, an Assignment Change will be generated by SOAC to the SWITCH system. See Section 9 for a discussion of interactions between work orders and service orders.

15. Assignment Changes that originate in LFACS are sent to the SWITCH system from SOAC using an ACESO contract. They are not discussed in this section because they are not manual provisioning requests (they are discussed in Chapter 13). Discussion of the Assignment Engine in Section 6 does not differentiate functionality based upon whether the Assignment Change was initiated in LFACS, the SWITCH system or FUSA.

between the ULBB and the DLBB. The WSIPRV contract requires the entry of an order number. The response to the WSIPRV contract, with the user changes incorporated, becomes the input to the ACESO contract.

During the CHG ASG work session, the user is able to:

- Request assignment changes for network units, provided they are for pending assigned circuits (circuits out for "Manual Assistance" may not be ACE'd via the SWITCH system ULBB).
- Optionally, provide a facility change reason for the outgoing network unit. Valid reasons are the same as valid assignment limitation values for the network unit (e.g., DEF, WTH).
- Optionally place a permanent remark on the "OUT" network unit. Additionally, a remark can be placed on the circuit.
- Request that the SWITCH system automatically assign new facilities.
- Partially or fully specify the facility assignments necessary to satisfy the assignment requests using totally constrainted assignment, partially constrained assignment or unconstrained assignment. In the latter case, if the user only enters a subset of network units, the SWITCH system automatically selects any additional facilities needed to support the assignment request.
- Specify a route if necessary, if the service is provisioned on digital loop electronics.
- Partially or fully specify the type of facilities (e.g., a switch port, CRV) needed to satisfy the assignment requests. The frame from which to pick a switch port or trunk pair can be entered, as can the carrier circuit from which to pick a channel, or the carrier controller from which to pick a CRV. Additionally, a facility with a particular administrative constraint (for switch port selection) or specific functionality (for transmission equipment selection) can be requested. Since this is an unconstrained assignment, full specification of connectivity and cross-connect information is not allowed, and is performed automatically.
- Specify a user override to the automatic assignment method used to provision a two-wire special service on DLE.
- Optionally, change the default queuing priority for the ACESO contract that they are working on.
- Add/remove other network units to/from the circuit (the one exception is cable pairs, which may only be replaced one-for-one). This addition/removal is necessary in those cases where a like-for-like replacement cannot be accommodated (e.g., lack of remaining inventory for the "OUT" network unit and it must be replaced with a different type of network unit which requires additional equipment to achieve equivalent functionality). If more than one network unit is identified, each may potentially have a different assignment limitation.

- Specify whether the facility assignments should be distributed to the work forces. A default of no distribution is assumed unless specified otherwise by the user (i.e., distribution to the work forces is desired).

If the user-initiated contract results in successful assignment of the provisioning request, any temporary remarks associated with the "OUT" network unit are automatically transferred to the "IN" network unit. The SWITCH system sets the assignment limitation of the "OUT" network unit to "null", unless the user entered a facility change reason, in which case the user entry is used.

Frame personnel may submit ACESOs through FUSA, as well as through the SWITCH system ULBB, although some restrictions apply. When entering an ACESO from FUSA the user is able to:

- Request assignment changes for network units for circuits which are "assigned"; a BCC-tunable table in FUSA allows the user control of which network units can be ACE'd. However, cable pairs can never be ACE'd through FUSA.
- Indicate which network unit needs replacement. All network units to be in the "OUT" facility should be identified as such.
- Optionally, provide a facility change reason for the outgoing network unit. Valid reasons are the same as valid assignment limitation values for the network unit (e.g., DEF, WTH).
- Identify the "IN" network unit.
- Request that the SWITCH system automatically assign new facilities.

After initial validation and interface processing of the ACESO contract received from SOAC, the ULBB or FUSA, an ACESO contract is sent to the DLBB for processing.

7.8 Inquiry for Assignment

The inquiry for assignment provides manual input to the SWITCH system Assignment Engine to obtain network units based on the given input. The assignment inquiry sends network unit information to selection in order for selection to choose network units based on the given input. The selection process uses the same scoring and relaxation tables described in Section 6 when choosing network units for the assignment inquiry.

The possible network unit types allowed for this assignment inquiry is limited to switch ports (OEs), transmission equipment, bridge lifters, intra-wire center facilities and telephone numbers (if the client specific TN Suppression feature is activated for the wire center, a telephone number assignment inquiry is not allowed). A client specific feature is also available to allow selection of POE switch ports for ISLUs in the 5ESS by this assignment inquiry (inquire assign poe). However, this inquiry will not support selection of any network units particular to the DLE environment (such as CC ports, channels, CRVs, or DLC variety switch ports).

7.8.1 Inquiry Processing

WSIASG is the immediate contract processor which calls the selection process. For switch ports and transmission equipment, WSIASG, translates the CEC design data to assignment category using the reference data table, asgn category map (see Table 6-1). Knowing the assignment category, the contract processor uses the reference data table, ic priority, (see Table 6-2) to determine whether the intelligent controller (input by the user) can support the assignment category. When the intelligent controller does support the assignment category, WSIASG sends the assignment category, along with other ULBB input, to network unit selection.

When selection of an ISDN switch port (DSL, digital subscriber line card) is desired, collection capacity is considered if the intelligent controller is a 5ESS.[16] To ensure the DSL has capacity for its bearer services, WSIASG derives the number of B and D channel packet switch ports (POEs) needed. WSIASG counts the number of X25 bearer services, and uses this to determine if collection capacity is adequate. However, during DSL selection , no verification is made of the availability of suitable POEs for the DSL.

A client specific feature, Inquiry for Assignment of POEs (inquire assign poe), does allows 5ESS ISDN POEs to be selected. This can occur for either:

- a user specified ISDN OE (DSL), or
- a user selected ISDN OE returned by the OE selection phase of this inquiry

The number and types of POEs selected will be based on the user entered CEC data.The algorithm for determining the number and types of POEs required is equivalent to the algorithm used for automatic assignment. POE selection for RISLU and IDCU assignments is not supported with this inquiry. POE selection for the ISDN channel selection feature is also not supported with this inquiry.

When the intelligent controller is 1ESS or 2ESS and the resistance zone is greater than or equal to 15 and less than 18, WSIASG hard-codes variety equal to creg to switch port selection.

When the intelligent controller is Ericsson and the assignment category is RESP, BUSP or COIN, WSIASG sends the override frame assembly flag to network unit selection. This flag indicates to selection that the frame location of the ICE is used to select the switch port.

16. Because this inquiry was not updated to support DLE network units, support is not provided for either CRVs or POEs for ISDN on IDCUs, even if the client specific features, tr303 dle isdn or inquire assign poe, are enabled.

In addition, if ADSR=Y is input, WSIASG sends an assignment type of spd (for service provisioning design) to network unit selection when selecting a switch port. When there is no ADSR input, WSIASG sends spi (Service Provisioning Inquiry) as the assignment type to network unit selection. The assignment type is needed to determine due date interval when selecting a pending network unit and to weight scores of selected network units.

- When a line count is input, selection returns more than one network unit. When the request is for intra-wire center facilities, either one or more than one intra-wire center facility may be returned as a route between the input frame locations.

- When the proper input indicator is set, WSIASG operates below the level of automatic selection and selects switch ports and transmission equipment with penalty scores as high as 99 in the scoring tables.

  With the indicator set *and* overrides included (e.g., load factor = 5), the overrides are honored. Selection may choose those network units with penalty scores as high as 99 in the other selection criteria (e.g., administrative constraint). Selection does *not* choose switch ports that are in excluded load groups, unless an exclusion override is input.

  When the indicator is set to select below the automatic assignment level, processing attempts to select switch ports and transmission equipment in the following order:

  1. "Good" network units may be selected.
  2. If no "Good" network units found, those network units with penalty scores as high as 99 may be selected.
  3. Looping (i.e., selecting pending network units) remains as dictated in Section 6.

7.8.2 Inquiry Response

Upon receiving each network unit ID from selection, the network unit is retrieved from the database. Depending upon the network unit type, only certain attributes are returned in the response back to the ULBB, along with the network unit type and ID.

An assignment limitation value is one of the attributes displayed by the ULBB for each returned network unit. The displayed assignment limitation value is trs for temporary reserved. The temporary reserved assignment limitation value indicates the network unit is being reserved temporarily, until it becomes a component of a circuit. The user may overtype this value with any valid assignment limitation value.

During the same work session, a deferred inventory contract may be submitted. This deferred inventory update contract gives the returned network unit an assignment limitation type and value. Giving the network unit an assignment limitation prevents selection from choosing that network unit for a subsequent request.

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8. CONTROL CONTRACTS

This section provides the SWITCH system requirements for control contracts. Control contracts are user-initiated contracts, that is, they are submitted via the SWITCH system User Layer Building Block (ULBB) or via the Frame User assignment System Access (FUSA). These contracts provide the user with "control" over the automatic provisioning process. Control contracts are often used in conjunction with other provisioning contracts in the manual assistance process. They allow the automatic provisioning process to resume after a manual update has been made. Alternatively, they can be used to emulate certain automatic functions when problems occur in the normal provisioning flow. An example of this occurs when a response to another system has been lost and must be resent. Control contracts also allow users from other systems (i.e., FOMS) to request information from the SWITCH system Data Layer Building Block (DLBB).

There are three primary functions of control contracts:

1. assisting the provisioning flow to resume automatic processing,
2. providing information to other systems,
3. synchronizing the SWITCH system DLBB with other systems with respect to the state of a provisioning request.

The following control contracts are provided:

- cancel a circuit on a provisioning request or an entire provisioning request (CANSO),
- complete an entire provisioning request (PCNSO),
- cancel a provisioning request Line and Station Transfer (CANSOL),
- complete a provisioning request Line and Station Transfer (PCNSOL),
- re-execute central office facility assignment requests (REXASG),
- resend central office facility assignments to the requesting system (RSDASG),
- resend provisioning request frame output to FOMS (RSDFO),
- resend multi-pass work order frame output to FOMS (REQWO),
- request multi-pass work order frame output (REQWO),
- request multi-pass work order translation data (REQTRM),
- unlock a provisioning order (SETOWT),
- unlock a work order (UNLKWO).

8.1 Cancel a Circuit or an Entire Provisioning Request

The SWITCH system will provide the user with the capability to cancel a circuit on a provisioning request or an entire provisioning request. Although a cancellation is usually accomplished by a flow-through CANSO, there are cases when a user must initiate a CANSO from the ULBB. A user may initiate a Cancel Order work session for one of the following reasons:

- to cancel TDO orders when SOAC does not send flow-through CANSOs (because the involved wire centers were not specified in SOAC),
- to cancel Company Initiated Orders which are established in the SWITCH system and not in SOAC,
- to correct out of sync conditions between SOAC and the SWITCH system,
- to re-execute a CANSO contract that has errored in the SWITCH system.

The user interaction for canceling a provisioning request is started with a CAN ORD work session. The work session will initiate two contracts with the SWITCH system DLBB: a work session initialization contract to validate the user's input (i.e., WSIVAL), and a CANSO contract. The CANSO contract represents an agreement between the ULBB and the DLBB to cancel the single circuit or the entire provisioning request (in the SWITCH system) specified on input. The ULBB will request that such action be taken by sending a CANSO contract to the DLBB with the user specified wire center, order information, re-establish tag and optional circuit identifier.

If the cancellation processes successfully in the SWITCH system, then a CANSO contract response with a "successfully processed" status will be sent to SOAC only if the last contract received from SOAC was a CANSO. Otherwise, no response will be sent to SOAC. If the input contract specified a single circuit of a multi-circuit order for cancellation, and the request is FOMS involved, the SWITCH system will send a PREFO contract to FOMS with the circuits remaining on the provisioning request with the new frame output. If the input contract specified a single circuit of a single circuit order or an entire provisioning request for cancellation and the request is FOMS involved, the SWITCH system will send a CANFO contract to FOMS with the new frame output. The DLBB will also send an FCIF message to the ULBB providing status information for the completion of the contract between the ULBB and the DLBB.

The user will have the ability to specify that a cancellation is a true cancellation -- one which will not be re-input to the SWITCH system -- or to specify that the cancellation will be re-established in the SWITCH system. If re-establishment is specified, FOMS output will remain as described above, but a tag in the PREFO or CANFO will indicate to FOMS that cancellation was performed with intent to re-establish. FOMS will then output an appropriate message.

A CANSO contract is the only control contract allowed to process against work tasks existing in the SWITCH database as a result of a PRESOS contract (discussed in Section 7) from SOAC.

8.2 Complete a Provisioning Request

The SWITCH system will provide the user with the capability to complete a pending provisioning request that has been successfully assigned in the SWITCH system. A user may initiate a Complete Order work session for one of the following reasons:

- to complete TDO orders when SOAC does not send flow-through PCNSO's (because the involved wire centers were not specified in SOAC),
- to complete Company Initiated Orders which are established in the SWITCH system and not in SOAC,
- to correct out of sync conditions between SOAC and the SWITCH system (i.e., order has already been completed in SOAC),
- to re-execute a PCNSO contract that has errored in the SWITCH system.

The user interaction for completing a provisioning request is started with a CMP ORD work session. The work session will initiate two contracts with the SWITCH system DLBB: a work session initialization contract to validate the user's input (i.e., WSIVAL), and a PCNSO contract. The PCNSO contract represents an agreement between the ULBB and the DLBB to complete the provisioning request (in the SWITCH system) specified on input. The ULBB will request that such action be taken by sending a PCNSO contract to the DLBB with the user specified wire center and order information.

In addition to receiving a PCNSO contract from the ULBB as a result of the CMP ORD work session, the DLBB can also receive a PCNSO contract from FOMS for Company Initiated Orders *only*. When the frame force completes the last item in a CIO, FOMS sends a PCNSO contract to the SWITCH system, equivalent to the PCNSO contract which is sent to the DLBB today as a result of the CMP ORD work session. The PCNSO contract completes the entire CIO. FOMS generates this completion contract, PCNSO, *only* for CIOs and not for other types of orders.

If the completion processes successfully in the SWITCH system, then a PCNSO contract response with a "successfully processed" status will be sent to SOAC only if the last contract received from SOAC was a PCNSO. Otherwise, no response will be sent to SOAC. If the provisioning request is FOMS involved, the SWITCH system will send a PCNFO contract to FOMS with the new frame output. The DLBB will also send an FCIF message to the ULBB providing status information for the completion of the contract between the ULBB and the DLBB.

8.3 Cancel a Provisioning Request Line and Station Transfer

The SWITCH system will provide the user with the capability to cancel item(s) in a pending provisioning Line and Station Transfer (SOLST).

The user interaction for canceling item(s) in a provisioning LST is started with a RMV SOLST work session. The work session will initiate two contracts with the SWITCH system DLBB: a work session initialization contract to validate the user's input (i.e., WSIVAL), and a CANSOL contract. The CANSOL contract represents an agreement between the ULBB and the DLBB to cancel the item(s) in the pending provisioning LST (in the SWITCH system) specified on input. The ULBB will request that such action be taken by sending a CANSOL contract to the DLBB with the user specified wire center, order information, circuit identifier and LST item and number.

No response will be sent to SOAC. If the provisioning LST is FOMS involved, the SWITCH system will send a CANFOL contract to FOMS with the new frame output. The DLBB will also send an FCIF message to the ULBB providing status information for the completion of the contract between the ULBB and the DLBB.

8.4 Complete a Provisioning Line and Station Transfer

The SWITCH system will provide the user with the capability to complete item(s) in a pending provisioning Line and Station Transfer (SOLST) which have been successfully assigned in the SWITCH system.

The user interaction for completing item(s) in a provisioning LST is started with a CMP SOLST work session. The work session will initiate two contracts with the SWITCH system DLBB: a work session initialization contract to validate the user's input (i.e., WSIVAL), and a PCNSOL contract. The PCNSOL contract represents an agreement between the ULBB and the DLBB to complete the pending provisioning LST (in the SWITCH system) specified on input. The ULBB will request that such action be taken by sending a PCNSOL contract to the DLBB with the user specified wire center, order information, circuit identifier and LST item and number.

No response is sent to SOAC. If the provisioning LST is FOMS involved, the SWITCH system will send a PCNFOL. contract to FOMS with the new frame output. The DLBB will send an FCIF message to the ULBB providing status information for the completion of the contract between the ULBB and the DLBB.

8.5 Re-execute Central Office Facility Assignment Requests

The SWITCH system will provide the user with the capability to restart automatic processing of assignment requests that are in a RMA state in the SWITCH system and optionally have the order re-established at the end of the order due date. This capability will be used as part of the manual procedures being followed to resolve a RMA where inventory or administrative constraints in the SWITCH system database need modification. Following these changes, the user can restart the automatic assignment process by resubmitting the assignment requests generated as a result of an initial provisioning contract. The option to re-establish the order at the end of the day is required when another pending provisioning request which was posted after the order at RMA is freeing up facilities to be used on the order at RMA.

If an order is at manual status because of a manual assistance (MA) trigger, then one of the provisioning work sessions (either RESOL ASG or INPUT ORD) must be used to re-execute the order. The Re-execute Order work session only applies to orders with a pass type (i.e., contract category) of REX, CON, PRE, COR, ACE, or ASG (pass type for manual assignment contracts). The CAN ORD and CMP ORD work sessions are used to re-execute CAN and PCN passes that have errored.

The user interaction for restarting the assignment process is started with a REX ORD work session. The work session will initiate two contracts with the SWITCH system DLBB: a work session initialization contract to validate the user's input (i.e., WSIVAL), and a Re-execute Assignment Request (REXASG contract). The REXASG contract represents an agreement between the ULBB and the DLBB to process all assignment requests that are at RMA and, if the re-establish option is specified, also re-establish the assignment requests that are already assigned. If all inventory or administrative problems that originally prevented the automatic assignment from being made are corrected, the DLBB will automatically make the assignments. The ULBB will request that such action be taken by sending a REXASG contract to the DLBB with the user specified wire center, order information, and optional re-establish flag.

If processing is successful, the DLBB will send an unsolicited response (e.g., PRESO, CORSO) to SOAC. However, for Company Initiated Orders, TRM Output will instead be sent to SOAC because SOAC has no knowledge of these orders. Additionally, a PREFO contract will be initiated to update FOMS, if appropriate. If processing is not successful, a contract response containing RMA data will be sent to SOAC. The DLBB will also send a FCIF message to the ULBB providing status information for the completion of the contract between the ULBB and the DLBB.

8.6 Resend Central Office Facility Assignments

The SWITCH system will provide the user with the capability to resend the last assignment request response for a particular provisioning request to SOAC. This capability is necessary in situations where a response is lost in transmission between the SWITCH system and SOAC or when a system problem causes a response not to be automatically sent. An optional order version number, solicited/unsolicited flag and correction suffix can be input to support system related out of sync conditions between the SWITCH system and

SOAC. Resend Order is not intended for resends of PCN or CAN responses to SOAC nor is it allowed for Company Initiated Orders (CIOs).

The user interaction through the ULBB for resending central office facility assignments is started with a RSD ORD work session. The work session will initiate two contracts with the SWITCH system DLBB: a work session initialization contract to validate the user's input (i.e., WSIVAL), and a Resend Assignments (RSDASG) contract. The RSDASG contract represents an agreement between the ULBB and the DLBB to resend the last central office facility assignments for a user specified order within a specified wire center to SOAC. The ULBB will request that such action be taken by sending a RSDASG contract to the DLBB with the user specified wire center, order information, and optional order version number, solicited/unsolicited flag and correction suffix.

If processing is successful, the DLBB will send a response to SOAC for the initial provisioning contract request (e.g., PRESO, CORSO, PREINT, CORINT). The DLBB will also send a FCIF message to the ULBB providing status information for the completion of the contract between the ULBB and the DLBB.

SOAC may also request a resend of the last assignment request response over the SWITCH system and FACS App-to-App link. The SOAC system will create a RSDASG contract request which represents an agreement between SOAC and the DLBB to resend the last central office facility assignments for a user specified order within a specified wire center to SOAC.

SOAC will request that such action be taken by sending a RSDASG contract to the DLBB with the user specified wire center, order information, and optional order version number, solicited/unsolicited flag and correction suffix.

If processing is successful, the DLBB will send a response to SOAC for the initial provisioning contract request (e.g., PRESO, CORSO, PREINT, CORINT).

8.7 Resend Provisioning Request Frame Output to FOMS

The SWITCH system will provide the user with the capability to resend the last message generated by the SWITCH system containing frame related data for a provisioning request. This request will be initiated either in FUSA or the SWITCH system ULBB and will result in the frame related data for the request being sent to FOMS. This capability is necessary in situations where a response is lost in transmission between the SWITCH system and FOMS or when a system problem caused a FOMS response to not be automatically sent.

In the SWITCH system, the user interaction for resending the last frame output message is started with a RSD FO work session. The work session will initiate two contracts with the SWITCH system DLBB: a work session initialization contract to validate the user's input (i.e., WSIVAL), and a Resend Frame Output (RSDFO) contract (see Section 15 for a discussion of the SWITCH/FOMS contracts). Through FUSA, the RSDFO contract will be initiated by the FUSA transaction "rsf". The RSDFO contract represents an agreement by the DLBB to resend the last frame output message sent for a user-specified provisioning order within a specified wire center to FOMS. The ULBB or FUSA will request that such action be taken by sending a RSDFO contract to the DLBB with the wire center and order information input by the user. The message to be resent is identified by the contract *sequence number.*

If processing of a RSDFO contract is successful, the DLBB will resend either a PREFO, CANFO or PCNFO contract to FOMS. The sequence number will not be updated, and a RESEND tag in the contract will indicate that this contract has been resent. The DLBB will also send an FCIF message to the ULBB or FUSA providing status information for the completion of the contract between the ULBB/FUSA and the DLBB.

8.8 Resend Multi-pass Work Order Frame Output

The SWITCH system will provide the user with the capability to resend the last message generated by the SWITCH system containing the frame related data for a multi-pass work order. This request will be initiated either in FUSA or the SWITCH system ULBB and will result in the SWITCH system resending work instruction information to FOMS. This capability is necessary in situations where a response is lost in transmission between the SWITCH system and FOMS or when a system problem caused a FOMS response not automatically to be sent.

In the SWITCH system, the user interaction for resending a work order frame output message is started with a RSD FO work session. The work session will initiate two contracts with the SWITCH system DLBB: a work session initialization contract to validate the user's input (i.e., WSIVAL), and a Resend Work Order Frame Output (REQWO) contract (see Section 15 for a discussion of the SWITCH/FOMS contracts). Through FUSA, the REQWO contract will be initiated by the FUSA transaction "rsw". The REQWO contract will contain a resend flag which represents an agreement by the DLBB to resend the last frame output message sent for a user-specified multi-pass work order within a specified wire center to FOMS. The message to be resent is identified by the contract *sequence number* or by *item number* range. Since Work Order Line and Station Transfers only contain one circuit, only the order number is required to identify the contract.

If a resend request is identified by sequence number, the previous contract sent to FOMS containing that sequence number (i.e., PREWO, CANWO, or PCNWO contract) will be resent to FOMS. A RESEND tag in the contract will indicate that this contract has been resent. The same sequence number will be sent in the contract; a new sequence number will not be derived. If a request is identified by item number, then the associated frame output will be resent to FOMS in a new PREWO contract. The SWITCH system will verify that frame output has been previously sent for the item(s), and that the item(s) have not been canceled or completed. A new sequence number will be generated and sent in the contract.

The DLBB will also send a FCIF message to the ULBB or FUSA providing status information for the completion of the contract between the ULBB/FUSA and the DLBB.

8.9 Request Multi-Pass Work Order Frame Output

The SWITCH system will provide the FOMS user with the capability to request frame output for work orders. This request will be initiated either in FUSA or the SWITCH system ULBB and will result in work instruction information being sent to FOMS.

In the SWITCH system, the user interaction for requesting frame output be sent to FOMS is started with the REQ FO work session. The work session will initiate two contracts with the SWITCH system DLBB: a work session initialization contract to validate the user's input (i.e., WSIVAL), and a Request Work Order Frame Output (REQWO) contract. Through FUSA, the REQWO contract will be initiated by the FUSA transaction "rqf."[1] The REQWO contract represents an agreement by the DLBB to send the work instruction message for a user specified multi-pass work order within a specified wire center to FOMS. The ULBB or FUSA will request that such action be taken by sending a REQWO contract to the DLBB.

If processing of a REQWO contract is successful, the DLBB will send a PREWO contract to FOMS.

For CPTs, SETs, JAMs, WAOs, WOLSTs, CTRs, FTRs, DTRs, and ATRs, the user has the option of requesting frame output for items in the order by item number, cable pair ID, switch port ID, carrier controller port ID, or telephone number. In addition, an optional line count can be entered specifying the number of items to be included in the resulting frame output contracts. If no items are specified, the request is to send frame output for the entire order.

A user-settable parameter is available to determine whether translation data should also be sent for the requested items. If the SOS (Send Output Simultaneously) parameter is set to Y (yes), then the translation data for the MAS involved items for which frame output has been requested will be sent to MAS via a TRM contract.[2] In accordance, the BOA (Bulk Output Allowed) parameter must be set to N (no) in order to send translation data for Dial Transfers. If set to Y, an appropriate exception message will be generated.

1. See Section 9 for more detail on requesting work order frame output from FOMS and Section 15 for a discussion of FOMS contracts.

2. See Section 14 for a discussion on TRM contracts.

8.10 Request Work Order Translation Data

The SWITCH system will provide the capability to request translation data for items in a work order. In order to send translation data for the "TO" IC in a Dial or Area Transfer, the BOA (Bulk Output Allowed) parameter must be set to N (no). If BOA is set to Y, an appropriate exception message will be generated.

The REQTRM contract can be initiated by the FUSA transaction "rqt" or the SWITCH System REQ TRM work session. If processing is successful, the DLBB will send a PRETM*x* contract and/or CORTM*x* contract(s) to MAS (where *x* is C for CPTs, for example).[3] The DLBB will also send a FCIF message to the originator providing status information for the completion of the contract between the ULBB or FUSA and the DLBB.

For CPTs, SETs, JAMs, WOLSTs, CTRs, and FTRs, the user has the option of requesting translation data for items in the order by item number, cable pair ID, switch port ID, channel ID, call reference value ID, carrier controller port ID, carrier circuit ID, or telephone number. In addition, an optional line count may be entered specifying the number of items to be included in the resulting TRM contracts. If no items are specified, the request is to send translation data for the entire order. For ATRs/DTRs, the user has the added options of requesting by group as well as some additional filtering criteria which define the circuits in the ATR/DTR for which translation data is to be sent.

A user-settable parameter will be available to determine whether frame output should also be sent for the requested items. If the SOS (Send Output Simultaneously) parameter is set to Y (yes), then the frame output for the items for which translation data has been requested will be sent to FOMS.[4]

8.11 Unlock a Service Order

The SWITCH system will provide the user with the capability to unlock orders in the SWITCH system database which have been left in a locked state. A locked state leaves an order unavailable for subsequent processing. This capability is necessary in situations where processing terminates abnormally and the order is not unlocked (made available for additional processing). This request will come through the SWITCH system ULBB and will result in the SWITCH system unlocking the specified order.

The user interaction for unlocking an order from the SWITCH system ULBB is started with an UNLOK ORD work session. The ULBB work session will initiate two contracts with the SWITCH system ULBB: a work session initialization contract to validate the user's input (i.e., WSIVAL) and an Unlock Order Request (SETOWT). The SETOWT contract

3. See Section14 for a discussion on TRM contracts from Work Orders.

4. See Section 9 for more detail on requesting work order frame output from FOMS and Section 15 for a discussion of FOMS contracts.

represents an agreement by the DLBB to unlock the user-specified order making it available for subsequent processing requests. The ULBB will request that such action be taken by sending a SETOWT contract to the DLBB with the wire center and order information input by the user. The DLBB will also send a FCIF message to the ULBB providing status information for the completion of the contract between the ULBB and the DLBB.

8.12 Unlock a Work Order

The SWITCH system will provide the user with the capability to unlock orders in the SWITCH system database which have been left in a locked state. A locked state leaves an order unavailable for subsequent processing. This capability is necessary in situations where processing terminates abnormally and the order is not unlocked (made available for additional processing). This request will come through the SWITCH system ULBB and will result in the SWITCH system unlocking the specified order.

The user interaction for unlocking an order from the SWITCH system ULBB is started with an UNLOK ORD work session. The ULBB work session will initiate two contracts with the SWITCH system ULBB: a work session initialization contract to validate the user's input (i.e., WSIVAL) and an Unlock Order Request (UNLKWO). An UNLKWO contract will be initiated if the user has requested that a Work Order be unlocked. The UNLKWO contract represents an agreement by the DLBB to unlock the user-specified order making it available for subsequent processing requests. The ULBB will request that such action be taken by sending a UNLKWO contract to the DLBB with the wire center and order information input by the user. The DLBB will also send a FCIF message to the ULBB providing status information for the completion of the contract between the ULBB and the DLBB.

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9. WORK ORDER PROCESSING AND CONTRACTS

Work orders are BCC-initiated requests that result in the reconfiguration of the existing, inventoried network. The size of a work order will range from changes to a single circuit or a small group of circuits (e.g., switch port equipment transfers and maintenance change tickets) through bulk transfers involving hundreds or thousands of circuits (e.g., dial transfers, cable pair transfers[1]). Work orders may be done in support of a specific service order or may be done to better utilize existing or planned company inventory. For this reason, work orders have the potential to interact with the service provisioning assignment logic.

To support work orders and associated service requests, the SWITCH system will provide the following capabilities:

- Order Management - where multiple circuits are associated with a work order, order management will maintain the relationship between the order and the associated circuits. The SWITCH system selection and assignment capabilities will be used to assure that new circuit configurations resulting from a work order fulfill all the requirements of future service requests.
- Order Administration - the SWITCH system will support work order/work order and service order/work order interactions while minimizing any interference with the flow-through nature of the system. Potential work order conflicts created by subsequent service or work order activities will be noted. If possible, conflicts will be cleared automatically. If the conflict cannot be cleared automatically, notifiers will be produced requesting manual intervention.
- Order Reports - the SWITCH system will provide reports to monitor and control work orders. These reports will track the partial completion of work orders or display all of the pending activity, both service order and work order, on a given NTU or circuit. Other reports will provide high level wire center summaries of work order activity.
- Switch Replacement - the SWITCH system will generate an output tape for switch replacement work activities that reflect translation information. This tape will be given to the switch vendor to load recent change translation information directly into the switch[2]. The SWITCH system will support a data-gathering process to generate a stream of FCIF messages to other provisioning, engineering and operations components to reflect changes caused by the work order.

There are two classes of work orders: single-pass and multi-pass. Single pass work order transactions require a high priority in the assignment process and will produce an RMA

1. Dial transfers are documented in Section 16.
2. The SWITCH system will support creation of TAGTMART and TMART tapes in support of Dial Transfer processing. See Sections 14 and 16.

message if they cannot be processed. The characteristics of single-pass work orders include:

- The inability to be modified or withdrawn (these orders do not pend)
- Automatic, immediate production of wiring information for FOMS
- Automatic, immediate production of output to SOAC for MAS (if required)
- Automatic, immediate production of update data for downstream systems such as LMOS

Information needed to create FOMS and MAS messages is not retained in the SWITCH system for single-pass work orders. As a result, there is no resend capability available through the SWITCH system for these messages.

The following are the types of single-pass work orders supported by the SWITCH system:

1. Maintenance Change Ticket (MCT)
2. Telephone Number Aging (TNA) (also known as Release TN)
3. Telephone Number Swaps

Other work orders are considered multi-pass transactions. These orders tend to exist for a long time. Multi-pass work orders will not restrict service order assignment processing. The characteristics of multi-pass work orders include:

- The ability to establish, assign, cancel and complete the order incrementally
- The ability to withdraw or modify the order once it is established
- The ability to complete all or part of the order
- The ability to manually resolve an assignment
- Manual correction tools (for ATRs, CPTs, CTRs, SETs, and DTRs)
- Production of frame output automatically or on demand
- Production of translation information automatically or on demand
- Production of update data for downstream systems

The following are the types of multi-pass work orders supported by the SWITCH system[3]:

1. Cable Pair Transfers (CPTs)
2. Channel/CRV Transfers (CTRs)
3. Frame Transfers (FTRs)

3. Area Transfers and Dial Transfers are also implemented as multi-pass work orders. They are covered separately in this document. See Section 16 for Dial Transfers and Section 17 for Area Transfers.

4. Jumper Activity Management (JAM)
5. Switch Port Equipment Transfers (SETs)
6. Wire Assembly Orders (WAOs)
7. Work Order Line and Station Transfers (WOLSTs)

9.1 Work Order Administration

Work orders are BCC-initiated requests that may be received from SOAC (as flow-through cases) or that may be directly established in the SWITCH system via the SWITCH System User Layer Building Block (ULBB) or FUSA. Either case, flow-through or direct establishment, falls into one of the two categories: single-pass (such as MCTs), and multi-pass (such as cable pair transfers). Single pass orders update the SWITCH system database immediately. Multi-pass work orders will pend in the SWITCH system and receive completion passes.

Multi-pass work orders may be long-lived, may involve bulk operations and may interact with service order processing. Individual items on multi-pass work orders are tracked in a Unit Status Table (UST), which serves as the basis of item status information for work order processing. The SWITCH system will be able to process service orders due after the due date of a work order. Work instructions generated for such service orders will take into account the changes to the circuits made by the pending work order. If the work order is overdue and service orders complete before the work order, some manual intervention may be necessary. The SWITCH system will post notifiers if this is the case.

9.1.1 Interaction with other SWITCH System Processes

Due to the large number of circuits which can be involved in a work order, the actual running times of a particular work session can be quite long. While running, other updating contracts are prevented from running. These running times can be managed by limiting the number of circuits to be considered by a particular pass. As an alternative, the running times can be managed by putting the work order processing in a special wire center, "$LNG".This capability is available for all work orders. It allows work order processing to "time share" with regular processing. While running in the $LNG wire center, these processes will actually process in the real target wire center but will time-slice with other contracts which queue up for the target wire center.

When $LNG-processing is used, each work order process will process through a commit interval, and if, at the end of the commit interval another updater contract is queued for the target wire center, the work order process will wait while the other contract is processing. The other contract processor will work through a commit interval and then allow the work order process to have a turn. This will continue until the other contracts or the work order process completes. At that time, if there is still work order processing to be done, the work order contract processor will have full access to the target wire center (until another contract is queued). Thus an incoming updater contract will have to wait only for one commit interval to be completed before having access to the target wire center.

9.1.2 Completion/Cancellation Posting

The multi-pass work order process will provide the capability to post completions and cancellations for an entire order or for individual items of an order. A bulk completion/cancellation process will be provided to perform completions/cancellations of several items at a time.

When completions/cancellations are reported at the order level, the completion/cancellation will propagate downward to all items of the order. When completions/cancellations are reported at the item level, the user will have the option of completing individual items or ranges of items.

9.1.3 Local Number Portability

When a wire center is configured to support Local Number Portability (refer to Section 6 for a more complete discussion of this customer specific feature), circuits that have Ad-Hoc TNs have additional processing associated with them. All work orders that can change switch ports are affected.

9.1.3.1 Regular LNP Processing

When work orders are assigning circuits that have Ad-Hoc TNs, the SWITCH system will restrict the selection of switch ports to those which have the same exchange key (EXK) as the original switch port in the circuit. In addition, if a switch port is prespecified in a work order assignment request, its EXK will be validated against the original EXK in the circuit. The assignment will fail if the prespecified switch port does not have the same EXK. In all cases, the Location Routing Number (LRN) will remain the same.

9.1.3.2 LNP IC/RU and LRN Selection Processing

When LNP IC/RU and LRN Selection Processing, a customer specific feature, is enabled, the SWITCH System will determine the EXK and Location Routing Number for new connect service orders and work order assignments that work on circuits that have Ad-Hoc TNs. This feature relaxes the validations and selection criteria described above and provides user tuneable tables that will permit the EXK and LRN data to be modified in work order assignments. When an LRN is modified, a notifier will be sent to a printer indicating that manual updates to the LNP Service Order Administration (SOA) system must be made. The particular Ad-Hoc TN will get a new LRN which must be communicated to SOA.

9.2 Work Order Jeopardy Processing

The SWITCH system will have the ability to accept and process jeopardy requests and cancellations from FOMS for multi-pass work orders. See Section 15 for additional information on jeopardy processing in the SWITCH system. When a jeopardy request is received for a single pass work order (i.e., an MCT), the SWITCH system will output a message indicating that this order is not pending in the SWITCH system database.

A PREJWO contract will be accepted to place a pending work order assignment in jeopardy. A CANJWO contract will be accepted to clear a jeopardy condition. Alternatively, an assignment which is in jeopardy can be canceled via the appropriate CANxxx contract (i.e., CANCPT, CANSET, CANLST), and subsequently reestablished and reassigned. This will effectively clear the jeopardy condition.

Completion will optionally be blocked on any circuit(s) in jeopardy depending on the type of jeopardy and a user-settable table.

CPT jeopardies will also be cleared via the CORCPT contract to correct a pending CPT assignment (COR WO work session).

9.3 Switch Port Reuse

During Composition Analysis, reuse processing determines if switch ports that are *currently working in a circuit* can be reused. For complex circuits (those which contain multiple switch ports, or those which contain at least one switch port in addition to one or more cable pairs, and/or one or more bridge lifters, transmission equipment, or miscellaneous equipment), reusing the working switch port and as much of the circuit as possible is attempted first. A complex circuit might require frame work anyway, so reuse is attempted first to minimize possibly complex translations. Even if the circuit is not complex, the service itself might be complex. The *swpt cec excl* table (see Table 6-6), identifies complex services. When changing a complex circuit/service, if the new network unit is part of a modifiable or temporary assembly (MASM/TASM), the assembly is broken. An RMA is issued if the MASM cannot be broken.

For simple service/circuits, BCC-tunable tables control switch port reuse. Switch port reuse control does not apply to a new network unit (CP) that is part of a Permanent Assembly (PASM), a Pseudo-Service (PSSV)[4] or a Reservation (RSV).

4. For information on assemblies, see Section 6.19.

Pending reuse, which only applies to ACE and COR passes against pending-in circuits, refers to trying to reuse the pending switch port.

9.4 Maintenance Change Tickets

Maintenance Change Tickets (MCTs) are single-pass work orders to replace defective network unit(s) in a working circuit. Sometimes more than one network unit may be assigned by an MCT if the replacement of a single network unit induces changes to other non-defective network units within the circuit. The network units which may changed with an MCT are cable pairs (CPs), switch ports (SWPTs), packet switch ports (POEs), carrier controller ports (CCPTs), channels (CHNLs)[5], call reference values (CRVs), transmission equipment (TRE), miscellaneous equipment (ME), intelligent controller equipment (ICE), bridge lifters (BLs), tie pairs (TPs), and trunk pairs (TKPs). MCTs for cable pairs typically originate in LFACS and are sent to the SWITCH system via SOAC. However, MCTs for cable pairs may be entered directly into the SWITCH system through the ULBB. MCTs for other network units are established directly into the SWITCH system through the ULBB or FUSA. Since MCTs are a single-pass transaction, order modification, cancellation or withdrawal is not possible. A completion pass is not received from SOAC nor entered manually. Modifications to an MCT are performed by entering another MCT. Any network unit inventoried in the SWITCH system database can be replaced using an MCT.

9.4.1 SOAC Interface Input

PREMCT is the contract that sends the cable pair maintenance change request from SOAC to the SWITCH system. When an MCT for a cable pair is sent from SOAC, the following data are included in the PREMCT contract:

1. MCT order number
2. A circuit termination identification number (e.g., TN, OE, CP, CTID)
3. The ID of the OUT cable pair
4. The ID of the IN cable pair
5. A Facility Change Reason (FCR) (optional). FCR will appear when FCR=NDC (Non-Defective Change)
6. A Resistance Zone (RZ) or Carrier Zone (CZ).

   The RZ or CZ tag will appear in the FCIF message from SOAC if LFACS returns either to SOAC. RZ applies to copper cable pairs while CZ applies to cable pairs derived from pair gain systems. If LFACS does not return either tag, SWITCH will

5. Channels and Call Reference Values may be changed only if automatic assignment has been turned off.

use what exists in the database (for the existing cable pair) for the new cable pair, if it is still applicable.

7. Receive/Transmit (R/T) (optional).

   If the circuit is four-wire, R or T will appear in the PREMCT contract. R identifies the pair as the receive pair of the circuit, while T identifies the pair as the transmit pair of the circuit.

Additional optional information which may appear in the PREMCT contract from SOAC include[6]:

- Due date
- ADSR - Administration of Designed Services Review Flag
- SGN - COMMON LANGUAGE Segment Number
- SSM - Special Safeguarding Measures
- SSP - Special Service Protection
- UG - Unigauge

9.4.2 MCT Processing For Cable Pairs

The SWITCH system performs the following validations for an MCT from SOAC:

1. Circuit termination ID (CTID) and OUT cable pair on input must match the information in the SWITCH system database.

   When the input CTID and OUT cable pair do not match the information in the SWITCH system database, the following cases are possible:

   a. The OUT cable pair exists for the circuit in the database but the input TID does not match.

      Processing overwrites the TID in the database with the one on input.

   b. The OUT cable pair does not exist in the circuit but the input TID matches a TID in the circuit.

      Processing replaces the cable pair associated with the input TID, but generates a notice indicating the OUT cable pair from LFACS did not match the OUT cable pair in the SWITCH system database.

   c. The OUT cable pair exists in the circuit but is associated with a different TID.

      Processing will generate an RMA.

6. See "SOAC/SWITCH System Interface Specification," BD-SOAC-SPEC-001.

2. If SGN, SSM or SSP is specified for the circuit on input, processing will store this information in the SWITCH system database. If the information previously existed in the database, processing will overwrite the stored information with the input information.
3. Since cable pairs are controlled by LFACS, SOAC sends the FCR reason to the SWITCH system only when FCR=NDC (Non-Defective Change). Due to a non-defective change to a cable pair, processing investigates this cable pair as a potential candidate for an assembly.
4. If ADSR is input and the SWITCH system database does not have the circuit as designed, processing ignores the input ADSR and continues the MCT.
5. If R/T is sent from SOAC for the IN cable pair, validations will be done to ensure that the OUT cable pair in the SWITCH system database also has an R or T pair identified. If both the receive and transmit pair in a four-wire circuit are defective, a separate MCT contract is sent to the SWITCH system for each defective pair.
6. The SWITCH system will produce an RMA back to SOAC if the IN F1 cable pair is working in another circuit.

After this initial validation, MCT processing for cable pairs takes the information received from SOAC and sends it to the change request processing described in Section 6. Circuits may be transferred from cable pairs in a copper environment to cable pairs in a DLE environment, and vice versa. When transferring to a DLE environment, a route as well as a channel(s) (CHNL) and/or a call reference value (CRV) will be selected by the assignment process. Additionally, a route can be manually specified via the ULBB ASG MCT work session. When performing an MCT on a cable pair within a DLE environment, the assignment process will attempt to reuse the route, and all channels and/or the call reference value whenever possible.

In a copper environment, the change request checks BCC-tunable database parameters which are delivered with default settings (See Table 6-7). These parameters apply to circuits which involve a switch port and a cable pair. Using these parameters, the BCC will have the option to indicate whether MCTs for cable pairs should:

1. Attempt to reuse the switch port that currently supports the circuit.
2. Attempt to assign a new switch port, unless the switch port currently supports a circuit that has a specific service category (e.g., ISDN), or that is designed (i.e., ADSR). Both the service categories and the Administration of Design Service Review (ADSR) are CEC (Central Office Equivalency Code) parameter values. (See Table 6-6).
3. Allow intra-wire center facilities (i.e., tie pairs) when attempting to reuse the switch port that currently supports the service.

These parameters will allow the change request process to determine whether it is desirable to attempt switch port reuse initially or to consider other conditions which may make new switch port assignment a more desirable option.

The change request processing must also determine if additional equipment must be added/ removed from the circuit when the IN cable pair comes from SOAC. For example, if the RZ is sent from SOAC, transmission equipment (TRE) may have to be added or removed on the circuit. Processing will retrieve the RZ value of the OUT cable pair. The RZ of the IN cable pair will be compared to the value of the RZ of the OUT cable pair to see if the RZ change is significant to indicate a change in TRE. See Section 6 for more detail about change request processing and the tables involved.

For MCTs involving cable pairs, DIPs will *not* be created on the OUT cable unless the FCR tag is sent across the interface from SOAC with a value of NDC. The SWITCH system will not give an assignment limitation to the OUT cable pair. Cable pairs are controlled by LFACS. If a cable pair change allows a new switch port to be assigned, the OUT switch port will not be given an assignment limitation either.

Any temporary remarks associated with the OUT cable pair will be automatically transferred to the IN cable pair.

If the due date was within the information coming from SOAC, processing will associate this due date in both the due date and the change date of the IN cable pair. If there is no due date, processing will use the system date as the default.

Tables in Section 6 indicate MCT processing when pending activity and assemblies are involved. Other tables in Section 6 describe MCT interaction with other provisioning tasks.

9.4.3 ULBB Interface Input

Before doing an MCT from the ULBB, the user will be able to inquire about a network unit or the circuit of which that network unit is a part. WSIMCT (Work Session Initialization for Maintenance Change) is the contract which allows the user to do this inquiry. WSIMCT is a contract between the ULBB and the DLBB.

The response to the WSIMCT from the DLBB is used to pre-populate the ULBB screens with information about the network unit, including the circuit to which the network unit belongs. The user may add, delete or modify this information on the screen. The response to the WSIMCT contract, with the user changes incorporated, becomes the input to the PREMCT contract.

In most cases WSI MCT will use the root view of the circuit for the response data. In the case where a pending Dial Transfer (DTR) is past due (i.e. the MCT processing date is later than the DTR Estimated Completion Date), the WSIMCT will return information from the DTR pending view of the circuit to pre-populate the MCT screens. The WSIMCT response to the work session inquiry will contain the DTR pending view of the circuit, which represents the circuit configuration in the TO IC. The PREMCT contract processor also investigates the due date status of the DTR. If a pending DTR is past due, assignments are made using the DTR pending view of the circuit.

PREMCT is the contract used to establish a maintenance change request for all network units into the SWITCH system from the ULBB. The PREMCT will contain the information previously retrieved from the WSIMCT (e.g., wire center).

If no order number was previously input, it must be entered as part of the PREMCT input. The circuit identification number will be retrieved by the WSIMCT if it was not input previously. All the network units involved in the OUT circuit will be displayed.

The user will indicate which network unit needs replacement. The user will have the option of indicating whether the system should automatically assign a replacement network unit or specifying the replacement network unit ID. The user will also have the capability to enter attributes that they wish the replacement network unit to have. This can impact the type of assignment which is made. In addition, there will be a place on the screen for other network units. These other network units were either not retrieved from the database and are not displayed on the screen, or they were retrieved from the database and are displayed on the screen. In either case, the capability will be provided for the user to add/remove other network units to/from the circuit. However, trunk pairs cannot be added to or deleted from the circuit, only replaced.

The user is required to enter a facility change reason to the OUT network unit. The facility change reason will be translated and stored in the SWITCH system as an assignment limitation type and value. The SWITCH system will also provide the user the capability to suppress automatic assignment and connectivity on MCTs involving manually built circuits.

Note that due date may *not* be entered for MCTs initiated via the ULBB.

9.4.4 ULBB Interface Processing

The SWITCH system will provide MCT processing for cable pairs from the ULBB if the user has certain security permission. This processing is the same as if the request came from SOAC. See Section 9.3.2.

Network units in the SWITCH system are generally replaced on a like-for-like basis, i.e., for each type of network unit removed, an equivalent type must be entered manually or selected automatically via the assignment engine. There may be cases where more extensive changes (e.g., adding/removing additional equipment) are needed. Some of these will be determined by user-settable parameters which the assignment logic checks.

For example, if the OUT switch port had a C-Reg and it is being replaced by a non-C-Reg switch port, a piece of transmission equipment (TRE) is needed to provide service. The assignment logic will check the characteristics of the circuit to which the OUT switch port belonged to see if TRE must be added. The opposite case is also true. If a non-C-Reg switch port is replaced by one that has a C-Reg, then TRE would have to be removed. In either case, the assignment and connectivity logic will check to see that the MCT will not affect the service supported.

When replacing trunk pairs via an MCT, the assignment engine selects only those trunk pairs which have the same next location as the defective trunk pair. If a trunk pair with a different next location is desired, the user will need to prespecify the trunk pair. For more information about trunk pairs, see Section 6.

Sometimes a like-for-like replacement cannot be assigned. An example of this would be if a network unit became defective and there were no replacement units available in the database. When this situation occurs, the SWITCH system issues an RMA. If the defective network unit is a cable pair, the user would have the option of manually replacing the defective cable pair with a "derived" single subscriber carrier unit (SSC).

Any remarks entered for either the OUT or IN network unit will be associated with this network unit. If no remarks are entered for the IN network unit, the remarks associated with the OUT network unit will be propagated to the IN network unit.

The OUT network unit will be given an assignment limitation type of defective with an associated assignment limitation value, unless the user input a facility change reason other than "defective" on the PREMCT input screen.

9.4.5 Send FOMS Output

The contract PREFO is used to automatically transmit the new assignments to FOMS when the PREMCT completes its processing. These new assignments will include any additional equipment that was assigned as a result of the MCT (e.g., adding tie pairs, TRE, etc.). See Section 15 for more information about the PREFO contract.

9.4.6 Send Response to SOAC

If the MCT involves a change of SWPT, CCPT, CHNL, CRV, TRE, ME, ICE, or BL, or party reassociation of a SWPT, the response will include a PCNMCT Assignment Redundancy Management (ARM) contract to SOAC. If the change involved a CCPT, CHNL, or CRV, in a DLE environment, and the network units are associated with a carrier controller (network element) which has time slot interchange (TSI) technology, then the response will include the required cross-connects or associations which must be performed in the carrier controller. SOAC will then inform the downstream systems that must receive the changes. See Section 14 for more information on PCNMCT.

9.4.7 Send MAS Output to SOAC

The contract PRETMM is used to automatically transmit the new translation information to MAS when the PREMCT completes its processing, if appropriate. PRETMM will be generated only if the MCT is MAS-involved and set accordingly in the *mas involvement* table. See Section 14 for more information about PRETMM.

9.4.8 MCT on Party Service

If an MCT is initiated on a party service via the SWITCH system ULBB, only single network unit changes are allowed. If the input network unit is a component of only one party service, the change affects that service only. If the input network unit is a component of more than one party service, the change will affect *all* involved services.

If the circuit is non-constrained, reassociations are allowed. If the circuit is constrained, reassociations are *not* allowed. Regrades will *not* be supported for any party circuit.

9.4.9 Service Order Out of Sequence Completion

When a Dial Transfer (DTR) work order assignment is past due, the completion pass of the MCT process will force complete the DTR assignment. See section 9.9.14 for details of out of sequence completion.

9.5 Telephone Number Aging

Telephone number aging is the concept of holding telephone numbers on intercept for adequate periods of time before they are reassigned. This is to ensure that disconnected and changed telephone numbers are relatively free from incoming calls intended for the previous customer before being reassigned to a new customer. Processing gives all disconnected/changed telephone numbers an intercept value in the SWITCH system database. This intercept value remains with the telephone number while the number is being aged a certain length of time. After this time, the telephone number becomes available for reassignment. Processing makes the telephone number reassignable by changing the selectable attribute of the telephone number to "Y".

Ad-Hoc TNs may also be aged after being disconnected from a service and before they are returned to their original LEC. See section xxx for a discussion of TN aging of imported TNs.

When a telephone number on intercept is reassigned, some intelligent controllers may fail to accept the input. In this situation MAS sends the circuit to a file for manual intervention. To prevent the need for manual intervention with these intelligent controllers, the SWITCH system notifies MAS before the telephone number is reassigned.

A TN aging order (also known as "Release TN") is a single pass work order that changes the selectable attribute of the telephone number. (However, if the client specific TN Suppression feature is activated for the wire center, a TN aging order is not allowed and

Tables 9-2, 9-2a (described below) do not exist).[7] Changing the selectable attribute allows the telephone number selection processes (see Section 6) to choose the telephone number for a provisioning request or a TN list. The TN aging order also notifies MAS, if necessary, that the telephone number is available to be reassigned. Some intelligent controllers must take the telephone number off intercept before it can be reassigned to a new request. For these intelligent controllers, processing uses a BCC-tunable, intelligent controller-based reference data table (named the *mas involvement* table) to determine whether to send the telephone number to MAS.

PRETNA is the contract which is initiated from the ULBB to change the selectable attribute of the telephone number. The PRETNA contract sets the selectable attribute of telephone numbers which makes them available for reassignment. PRETNA initiates the telephone number aging order. If activated by the *mas involvement* table, PRETNA automatically generates a PRETMA contract to send the telephone number to MAS, if necessary.

Upon completion, PRETNA generates a report which lists the released telephone numbers along with some of their attributes. When no destination is input, the report is sent to the printer associate with the user's logical terminal.

9.5.1 ULBB Input

There will be no Work Session Initialization contract for telephone number aging orders. From the ULBB, the user will indicate which telephone numbers in a particular wire center are to be made available for selection and sent to MAS, if necessary, on a TN aging order. As mentioned previously, a TN aging order is not allowed if the client specific TN Suppression feature is activated for the wire center. A message is returned to the user indicating that the "Release TN" work session is not valid when the TN Suppression feature is active.

At least one of the following is required as input from the ULBB:

- Intelligent controller
- NXX
- Multiple NXXs
- Range of telephone numbers
- A specific set of telephone numbers within a wire center

The following is required:

7. The activation of the client specific TN Suppression feature means that another Operation Support System (e.g., MediaCore/Customer_Number™) provides the TN administration functionality such as "Release TN".

- Remove Remark - indicates whether to remove the telephone number remark when the telephone number is released.

Optional input that the user may enter is:

- Assignment category on disconnect - the assignment category the telephone number had while in service
- CATY code on disconnect - the CATY code the telephone number had prior to disconnect
- Intercept value - possible choices are: DNT, DTC, CNT or CTC
- Non-Pub indicator - whether the telephone number is published or not
- Telephone Number Type - alpha character A through Z
- Destination - specific destination to which report can be routed
- Heading - title on release telephone number report
- Release Date
- Count
- Imported and Regular (i.e., non-imported) TNs (allowed only if LNP - TN Administration feature is activated)
  - The following types of imported TNs are allowed to be specified:
    - TNs that are from a different service provider
    - TNs that are from the same service provider

The input release date is checked against the release date in the telephone number database body. The count is the maximum number of telephone numbers that may be sent to MAS in a given contract. The maximum number allowed for the count is 2000.

9.5.2 DLBB Processing

The PRETNA contract finds the requested telephone numbers based on the given input. Processing finds those telephone numbers within the given input that have no component edges to a service or reservation, or have no membership edges to a TN list or administrative group (e.g., CTX, SCH, SFG, or HML) in the SWITCH system database. PRETNA checks the input date, the release date attribute, and the release date override attribute, and processes the selectable attribute as described in the following section. The release date indicates when a telephone number becomes available for assignment. It is calculated on disconnect/change provisioning processing based on BCC-tunable reference data. The release date override indicates that the rules to calculate the release date of the telephone number were overridden. When the rules have been overridden, the telephone number must stay unavailable for assignment until the release date is past.

When setting the selectable attribute, the following possibilities exist:

1. No input date

   Processing uses the system date as the input date. This date is compared to the release date attribute of the telephone number. Processing should set the selectable attribute to "Y" for all those telephone numbers whose release date is prior or equal to the input date. Processing does not need to check the release date override attribute.

2. Input date is equal or prior to the system date

   As in the previous case, the input date is compared to the release date attribute of the telephone number. Processing should set the selectable attribute to "Y" for all those telephone numbers whose release date is prior or equal to the input date. Processing does not need to check the release date override attribute.

3. Input date is a future date (past the system date)

   In this case, PRETNA needs to check the release date override attribute of the telephone number.

   For those telephone numbers whose release date override attribute is not set to "Y", processing functions as in the previous cases. That is, the selectable attribute is set to "Y" for all those telephone numbers whose release date is prior to the input date.

   For those telephone number whose release date override attribute is set to "Y", which implies the release date was overridden, different processing needs to be done. That is, processing needs to compare the release date of the telephone number to the *current* system date. If the release date is prior to the current system date, processing sets the selectable attribute to "Y". If the release date is after the current system date, the value of the selectable attribute remains as is (even if it was before the input date).

The selectable attribute set to "Y":

- prevents the telephone number from being sent to MAS on a subsequent PRETMA contract
- allows the telephone number selection rules to choose this telephone number for reassignment

If the LNP - TN Administration feature is activated the following actions will take place:

- If the *imported* field in the TN node *is not null* then the TN will be removed from inventory
- If the *imported* field in the TN node *is null*, and there is a cntrl_by edge where ad_hoc = 'y', then the TN will *not* be removed from inventory but the edge where ad_hoc= 'y' will be removed, the rel_date will be set to null, and the TN sel_ind will remain 'n'

- If the TN has no release date and has an assignment limitation with type=RST and value=EXP, the TN will not be released
- If a TN has an eligible release date and an assignment limitation of type=RST and value=EXP, *and* there is no cntrl_by edge where ad_hoc = 'y', then the limitation will be removed. The TN will not be included in the PRETMA contract to SOAC/MAS.

When a count number was optionally input, processing keeps a count of the number of telephone numbers whose selectable attribute was set to "Y". This count is to allow only a specified number of telephone numbers to be sent to MAS in a given contract (when it is determined that MAS must receive the telephone numbers). Processing continues until the count equals the count number on input or until all of the retrieved telephone numbers have been checked. When the count number on input equals the count of telephone numbers whose attributes were changed, PRETNA processing terminates.

9.5.3 Send SOAC/MAS Output

PRETNA may automatically generate the contract PRETMA to send telephone numbers to MAS. Processing uses a BCC-tunable, intelligent controller-based reference data table to determine for which intelligent controllers to send a TN aging order to MAS. The global reference data name for this table is *mas involvement*. See Section 13 for more information on the PRETMA contract.

If the *mas involvement* table has TNA=Y, processing then checks the *mas tn intercept* table (Table 9-2, 9-2a). Processing searches for an IC type instance of the table. If an IC type instance of the table exists, processing uses the intercept values in the table to determine which telephone numbers to include in the message to MAS. If an IC type instance of the table does not exist, processing uses the intercept values found in the default table to determine which telephone numbers to include in the message to MAS. If the *mas involvement* table has TNA=N, processing does not send any regular (i.e., non-imported) telephone numbers to MAS.

If the LNP - TN Administration feature is on the following actions will take place:

- If the *mas involvement* table has TNA=Y or TNA = N, then imported TNs, successfully processed, will be returned to SOAC/MAS
- If the *mas involvement* table has TNA=X, then neither regular or imported TNs will be returned to SOAC/MAS.

Another BCC-tunable table determines the number of telephone numbers that the PRETMA contract can send to MAS at one time. If the number is less than the number of telephone numbers being released, multiple contracts are generated. The global reference data name for this table is *wo output size control.*

9.5.4 Local Number Portability and TN Aging

This work session will also be used to release "imported" TNs if the customer specific LNP TN Administration feature is enabled. When an imported TN is encountered that is eligible for release, the TN will be processed based on how the TN is marked as "imported" in the data base:

1. If the *imported* field in the TN node *is not null*[8] this indicates that the TN is either imported from a different service provider ('c' in the imported field), or imported from a different wc for the same service provider ('i' in the imported field).

   In this case the TN does not need to be maintained in inventory in the current WC. Therefore, the TN will be removed.

2. If the imported field *is null*, and there is a cntrl_by edge where ad_hoc = 'y', this indicates that the TN is imported from an IC in the same WC[9] (same service provider).

   In this case the TN needs to be maintained in inventory since its home switch is in the current WC. Therefore, the TN will *not* be removed from inventory but the edge where ad_hoc= 'y' will be removed, the rel_date will be set to null, and the TN sel_ind will be remain 'n'.

In both cases, (if the office is set up as such) the TN will be returned in the PRETMA contract to SOAC for subsequent transfer to the SOA (Service Order Activation)and to MAS. The PRETMA contract will be modified to support both imported and exported TNs. Imported and regular TNs will be sent in separate messages with an imported indicator being populated for imported TNs. Additionally MAS Involvement reference data will be modified to allow users to enter data to independently control MAS output for imported and exported TNs. "Imported tns/Regular tns " input filters will be added to the RLS TN Data Request screen to allow users to process "imported" TNs separately from "regular" TNs. The imported filter will default to "n" and the regular filter will default to "y". RLS TN also generates a report that indicates the TNs that have been released. Certain information about the released TNs is displayed on the report (i.e. rlsdte, dascgat, dcaty). An indication that the TN is imported should also be displayed.

9.6 Telephone Number Swaps

Telephone number swaps perform station rearrangements. A rearrangement involves interchanging two or more working service IDs as well as the associated translations data and service data that go with each TN. Thus, the TN and service working on one circuit are

8. In addition *ad_hoc* = 'y' will be set on the cntrl_by edge for the IC.

9. Additionally the TN should have an assignment limit with type=RST, and value=EXP since the TN will also be *exported* from an IC in the same WC.

moved to another circuit. Network units and circuit connectivity do not change and the order does not pend in SWITCH system. The SWITCH system assumes the presence of a front end system which has already sent translation input to an intelligent controller (IC) and provided update information for LMOS. The swap work order allows customers to move services directly without incurring the cost of preparing a provisioning request. The TN swap contract may arrive as a work order from the ULBB or from an external system, such as CCSS via FUSA, that meets the contract interface.

Swaps are limited to services that are identified by a TN. The TN swap is limited to TNs associated with a common group ID (Centrex number, multi-line hunt group number, series hunt TNs, etc.). Small multi-line business customers or residential customers with several lines that have no group ID are excluded from a TN swap. Provisioning requests are also used to rearrange TN sequences. In this case a Change Type order (C Order) will arrive from SOAC with C and T action lines for each of the TNs being moved. The key difference between the work order and provisioning request TN rearrangement is that in the service order case only the TN moves; translation and service data remain as before. This section does not address TN swaps via provisioning requests.

9.6.1 PRESWP Contract

PRESWP is a single pass deferred contract. Since the PRESWP does not pend, completions, cancellations and corrections do not apply. The contract processor will perform validations on the input contract, move each service in the sequence to work on its new circuit and terminate. If any service cannot be moved, all circuit / service relationships will be restored to their original condition.

The following validations will be performed by PRESWP:

1. All TNs are working
2. All TNs are unique - no duplication
3. All services are free of provisioning (service order) activity
4. There is a single, primary service for each circuit
5. All the TNs are members of the same group
    a. If the first TN is a Centrex number, all TNs are members of the Centrex TN Group
    b. If the first TN is not Centrex but is a member of a series hunt group (SCH), all the TNs must be members of the same group
    c. If the first TN is not Centrex but is a component of a service that is associated with a multi-line hunt group (HUNT), all TNs must be components of services in the same group

The SWITCH system will not reference an exclusion table to verify that a swap is permitted. Such a test is unnecessary since the changes being implemented in the SWITCH system reflect data that have already been entered in the IC. The swap is merely updating the SWITCH system to reflect a "real world" condition.

If any service fails validation, the SWITCH system will produce an RMA message for the originator and terminate the process. If any swaps have been made the circuit / service relationships must be rolled back to their prior state.

9.6.2 PRESWP Processing

The first TN of the swap is a component of a single, working service. This TN identifies the service information for the circuit together with the service's:

- translations data
- design data
- external ID

The TN swap contract will move this service, and the service-related data identified above, from the current working circuit to the circuit associated with the second TN in the PRESWP contract. All network units which are identified as components of the second working service become components of the first TN's service. Since the assignment engine is not invoked for the swap, validation is not performed to check the compatibility of the service with the new network units. For the same reason, no network unit reassignment is performed to support the new service/circuit relationship. The reassociation must be accomplished without destroying the existing service data for the second working circuit.

Once the first swap is complete, above process is repeated by moving the service data that were associated with the second TN in the PRESWP contract to the third circuit. The process continues until the service identified by the last TN is reached. This service moves to the circuit that was associated with the first TN and completes the PRESWP process.

If the PRESWP contract contains just two TNs, the service/circuit data are simply exchanged.

If an error is encountered during the processing of any swap, all circuit / service changes made up to that point are to be rolled back to their preswap condition, a RMA message produced and the process stopped.

9.6.3 Output

Upon completion of the PRESWP process, a response contract is sent to the originator (FUSA or the ULBB) indicating either the successful completion status of the process, or the error status together with a *UMSG.

If the process completes successfully, a PRESWP Assignment Redundancy Management contract will send output to LFACS via SOAC.

9.7 Cable Pair Transfers

Cable Pair Transfers (CPTs) or Cable Throws are large jobs that rearrange the outside plant to maximize its efficient use. From a SWITCH system perspective, the CPT moves services from one set of F1 cable pairs to another set of spare F1 cable pairs. A CPT performs the same function as an LST, but it occurs in bulk rather than as a single circuit move. CPTs originate in LFACS and flow through SOAC to the SWITCH system. CPT completion activity also flows to the SWITCH system from LFACS.

The SWITCH system may assign new switch ports, channels, or call reference values due to the transfer of services to Digital Loop Electronics (DLE) systems, Integrated Digital Loop Carrier (IDLC) systems or Dedicated Inside Plant (DIP) assemblies, or to simply support good frame utilization. Coordination is required between the Recent Change Memory Administration Center (RCMAC) personnel and the outside plant forces when the switch ports, channels, or call reference values are changed. To reduce the coordination, the user can elect to establish a "temporary" digital bridge between the switch ports, channels, or call reference values. The existence of a digital bridge between the old and new switch ports, channels, or call reference values within the Intelligent Controller (IC) allows the translation changes to be performed in advance of the cable pair changes. After the digital bridge is in place, the cable pair transfer does not require any coordination between the two work groups and can be performed at any time. When the cable pair is transferred, the digital bridge can be removed.

A CPT progresses in the following stages:

1. The transfer arrives from SOAC with the range of FROM and TO counts and an order due date. The SWITCH system establishes the CPT and generates a planning message to FOMS[10]. (See Section 15 for details of the FOMS planning message.) When the order is established in the SWITCH system, each circuit associated with the FROM count will be recorded in the CPT's Unit Status Table (UST) to indicate its involvement with the transfer. Inquiries on network units (cable pairs) in the transfer will not show any involvement with the CPT. When all counts are properly recorded, the SWITCH system will acknowledge the successful CPT establishment.
2. During the assignment phase of a CPT which involves copper plant, the frame forces will want to begin the frame wiring for the circuits involved in the CPT. A request to assign "N" circuits will be received by the SWITCH system. If specified, a temporary digital bridge will be assigned to the applicable circuits. The wiring instructions for each working circuit will be produced and sent to FOMS. They will include any switch

10. It is assumed that the SWITCH system database has already been updated with appropriate data for the TO count as part of inventory management.

port reassignments that are required (e.g. integrated ports or circuit moves between a host and a remote site) and any made by the SWITCH system due to user-selected optional switch port changes. Optional switch port changing may be enabled to reuse and create DIPS, minimize jumper length, and support IDLC/RSU configurations. When all circuits are processed, a message can be generated for delivery to MAS. In addition, each circuit will be marked in the UST to indicate that it has been "reported out" for frame wiring.

3. Subsequently, additional frame work packets will be requested until the entire transfer has been jumpered (or "backtapped") at the frame (copper plant only). While this work has been progressing, service orders may have involved pairs in either the FROM or the TO counts. For example, a service order may change a service on a pair in the FROM count which changes the switch port. The SWITCH system must keep track of these changes so frame wiring updates can be produced.

4. After the transfer has been completed by the outside plant forces, the SWITCH system will receive a completion from SOAC. Any item which is temporarily digitally bridged, will be unbridged during the completion process. The completion may be for the entire CPT or for those pairs which have actually been completed by the outside plant. The SWITCH system will execute the appropriate status changes to reflect the partial transfer completion and will update the database. When the last partial completion is received, the CPT will be marked completed and removed from the database.

9.7.1 CPT Processing Overview

The SWITCH system processes that are used during the life of a CPT are:

- **Establish CPT** (PRECPT)

  The PRECPT contract is used to record the presence of a new CPT in the SWITCH system or to update the characteristics of a CPT that already exists. The establishment will produce an establishment (ostat=e) planning message for FOMS (PREPWO).

  The PRECPT process may result from flow-through SOAC input or from a manual ULBB input.

- **Assign CPT** (ASGCPT)

  The ASGCPT contract is used to assign the transfer in the SWITCH system database and prepare the wiring information for FOMS and translation information for MAS, if necessary. This process may be triggered automatically on the completion of a PRECPT contract or may be started manually from the SWITCH system ULBB or FUSA.

  Options available in the ASG CPT work session include normal assignments, Work Items Now (WIN), and Change Estimated Completion Date (ECD) options.

ASGCPT prepares, on a circuit by circuit basis, an input to the SWITCH system assignment engine. The result will be to either assign a circuit to the new CP, reusing the existing switch port/channel/call reference value, assign a circuit to the new CP and assign a new switch port/channel/call reference value, or assign the new CP and select a new switch port/channel/call reference value and assign a temporary digital bridge between the old and new switch ports/channels/call reference values.

On completing the assignments, an assignment (ostat=a) planning message is sent to FOMS. Based on user-settable parameters, the output from the assignment process may be stored until requested, or sent immediately to FOMS and/or MAS.

If the WIN or Change ECD options are selected, the circuits affected can include circuits that were previously assigned. For the Change ECD option, already-assigned circuits will get a new Estimated Completion Date. For the WIN option, already-assigned circuits will get "today's" date as their ECD and, in addition, FOMS output will be sent and if required, MAS output will be sent.

- **Correct CPT** (CORCPT)

  CORCPT provides three functions:

  1. Allows a user to add, delete or change items in a pending CPT assignment ("Item" means a delta possessing one FROM/TO cable pair relationship) - may effect anything on the TO side of the transfer except the cable pair
  2. Manually resolve CPT assignments - used when CPT assignment resulted in RMA conditions
  3. Allows a user to change the Expected Completion Date of an item

  CORCPT may be initiated from the SWITCH System ULBB COR WO Work Session or FUSA. Assignment logic and connectivity normally will be invoked. The SWITCH system will forward updates to FOMS and/or MAS, based on the change being made to the item and whether or not prior output has been sent.

- **Complete CPT** (PCNCPT).

  CPT completion requests (PCNCPT) will usually flow through from SOAC although manual completion of the CPT is permitted. Completions will arrive for an entire CPT or for a range of cable pairs in a CPT. If an item is temporarily digitally bridged, the item will be unbridged before the item is completed. The appropriate translations data and frame output will be sent to MAS and FOMS, respectively. As each part of the CPT is completed, the network units involved take on their final status in the database. At this time all pending activity information is deleted although the CPT number and the CPT's due date (or the estimated completion date used for the assignment) are retained as a record of the last activity on the network unit.

  If required translations data have not been sent to MAS, completion requests for those items will RMA. If frame output has not been sent to FOMS, based on a user-settable parameter (IFC), the completion request for those items will either be rejected or allowed. Upon successful completion, PCNWO contract(s) will be sent to FOMS for any items in which frame output was previously sent. When the entire transfer is completed, a header-only PCNWO contract will be sent to FOMS so that FOMS may delete its record of the transfer.

CPT completion requests for items in the CPT that are pending **after** any order will cause the CPT item to attempt to complete out of sequence. (See Section 9.6.13.4 for details.)

- **Cancel CPT** (CANCPT)

  CANCPT will usually flow through from SOAC although manual cancellation (via the SWITCH system ULBB) of the CPT is permitted. Cancellations will arrive for an entire CPT or for a range of cable pairs in a CPT. As each part of the CPT is canceled, the network units involved are returned to their original status and the items are removed from the CPT. A new establishment planning message is generated since the size of the CPT is changed. CANWO contracts are sent to FOMS for the canceled items so that FOMS may update its record of the CPT.

  If MAS has previously received TRM requests to change the switch ports/channels/call reference values or to temporarily digitally bridge the switch ports/channels/call reference values of the items which are being canceled, a TRM update message will be sent following the cancellation request to restore the canceled items to their original state.

9.7.1.1 Process Flow Control

BCC-settable parameters are used to provide maximum processing flexibility for each CPT. The parameters are normally set to control CPT flow at a wire center level (default values). Table 9-1 shows the work order control parameter table (*wo order control*) to be delivered as default reference data. Users have the option of providing control values at the order level (overrides) for SAL (start assignment logic), STD (send translations data), SFO (send frame output), TDB (temporary digital bridging), and IFC (ignore frame output for completions). The manual overrides for SAL, STD, SFO, and TDB may be accomplished with either the PRECPT or the ASGCPT contract. The parameters and their allowable settings provide for the following process flows:

1. SAL (Start Assignment Logic) - default value is "Y"
   a. SAL=N - establish a CPT (PRECPT) and stop processing. Assignment will be initiated by a manual entry from the ULBB or FUSA
   b. SAL=Y - start the ASGCPT process immediately after completion of the PRECPT process
2. **SFO** (Send Frame Output) - default value is "Y"

a. SFO=N - do not send FOMS frame output automatically on completion of ASGCPT

   Frame output will be generated by a request from FUSA or the SWITCH system ULBB work session REQ FO (REQWO contract). Manual override of this parameter may be accomplished from the PRECPT or the ASGCPT screen.

b. SFO=Y - send frame output automatically on completion of ASGCPT

3. **STD** (Send Translations Data) - default value is "N"

   a. STD=N - do not send translations data to MAS automatically on completion of ASGCPT

      Translations data will be generated by a request from FUSA or the SWITCH system ULBB work session REQ TRM (REQTRM contract). Translations data will also be generated as the result of a WIN transaction (option WIN of the ASG CPT work session or the FUSA asc command.)

   b. STD=Y - send translations data to MAS automatically on completion of ASGCPT for CPT assignments which are MAS-involved

4. **SOS** (Send Output Simultaneously) - default value is "N"

   a. SOS=N - the REQWO contract produces only frame output. The REQTRM contract produces only MAS output

   b. SOS=Y - produce both frame and translations output upon receipt of either a REQWO or REQTRM contract

5. **TDB** (Temporary Digital Bridging) - default value is "N"

   a. TDB=N - do not assign a temporary digital bridge for any CPT item

   b. TDB=Y - assign a temporary digital bridge for all applicable CPT items

6. **IFC** (Ignore Frame Output for Completions) - default value is "N"

   a. IFC=N - do not allow completions to process if frame output has not been sent to FOMS

   b. IFC=Y - allow completions to process regardless of whether or not frame output has been sent to FOMS

User input is permitted to supersede the default values of the parameters for a specific transfer.

9.7.1.2 Switch Port Reuse Control

For CPTs which only involve the copper plant, BCC-settable parameters are used to provide switch port assignment flexibility for each transfer. Table 6-7 shows the Switch

Port Reuse Control *(swpt reuse control)* table to be delivered as default reference data[11]. The scope of this table is global and possible instances can be by IC type, IC generic and IC ID. Wire center overrides of this table can exist.

BCC users may want to allow switch port reassignments for most types of service but prefer reuse in specific cases. The BCC-settable Switch Port CEC Exclusion table[12] is used for this purpose. See Table 6-6 for a sample of the table being delivered as default reference data. This table may be populated with various types of services, such as ISDN and MADN. If the assignment engine determines that the service being processed matches one of the values in this table, switch port reuse is attempted first and intra-wire center facility assignments will be made if required.

The switch port reuse control parameters and their allowable settings provide for the following:

1. **CSR** (Conditional Switch Port Reuse Preference)

   When a CPT is assigned, the decision may be made to reuse all switch ports on the FROM side, to assign new switch ports to as many circuits as possible, or to assign switch ports given certain conditions. Therefore, the CSR parameter will have one of four values:

   a. CSR=E (exclude) - reuse of the working switch port is excluded when the CP is changed, and use of switch port assembled (MASM/TASM) to the new CP is attempted; if this fails, a new switch port is selected

   b. CSR=N (no) - use of switch port assembled (MASM/TASM) to the new CP is attempted first; if this fails, reuse of the working switch port is tried; if this fails, a new switch port is selected

   c. CSR=Y (yes) - reuse of the working switch port is attempted first, based on the value of the CIA parameter; if reuse of the working switch port is disabled or fails, the use of a switch port assembled to the new network unit (CP), if any, is attempted next; if this fails, a new switch port is selected

   d. CSR=R (reuse) - the switch port will be reused, if valid; if it is not, an RMA will be generated.

2. **CIA** (Candidate For Intra-wire center Facility Allowance)

   This parameter determines whether ASGCPT will attempt to assign a new switch port to avoid intra-wire center facility assignments, or to reuse the working switch port and allow the assignment of intra-wire center facilities. The determination is based on the

11. Note: The Switch Port Reuse Control table is not applicable when performing temporary digital bridging assignments.

12. Note: The Switch Port CEC Exclusion table is not applicable when performing temporary digital bridging assignments.

frame locations of the FROM and TO cable pairs. CIA only applies to simple circuits, i.e., circuits that have a single cable pair and switch port.

a. CIA=Y - attempt reuse of the existing switch port even if it requires the assignment of intra-wire center facilities

b. CIA=N - do not reuse the working switch port if it requires the assignment of new intra-wire center facilities

The CIA parameter does not apply when the CSR parameter has a value of "E" (exclude reuse). It will apply only if CSR=Y, or if CSR=N *and* reuse of the existing switch port, although not preferred, needs to be attempted.

3. **CVO** (Critical Validations Only)

a. CVO=Y (yes) - if the design data (cec) remains the same, switch port validations will be relaxed so that only critical validations (capacity, inventory availability, assignment limitations, assigned use vs. grade of service, load group exclusions, administrative group steering, TN-RSU mapping and reverse, denied, and extra-district spreading) will be performed. If the design data changes, all validations will be performed.

b. CVO=N (no/null) - all validations will be performed whether the design data changes or not

The assignment control parameter logical flow is depicted in Figure 9-2. Refer to Section 6 for additional information regarding switch port reuse control.

9.7.1.3 Channel/Call Reference Value Reuse

When performing a CPT within a DLE environment, the assignment process will attempt to reuse the route, and all channels and/or the call reference value whenever possible.

9.7.1.4 MAS Involvement

An entry for CPTs exist in the *mas involvement* table. The table determines whether output will be sent to MAS for items which which generate MAS-affecting changes. If the value is "N", then output will not be sent to MAS. If the value is "Y", then output will be sent to MAS. The default value is "Y".

9.7.1.5 Item Numbers

Each item assigned in the CPT will be given an item number unique within the order. This item number remains with that transfer unit until it is completed or canceled. Item numbers are sent to FOMS and MAS to facilitate coordination of frame and translation work.

Once canceled or completed, an item number will *not* be reused within the order. For example, if a pending assignment is canceled and subsequently reestablished, it will be given a new item number. However, a pending assignment which is corrected or reworked will retain its original item number.

9.7.2 SWITCH System-to-FOMS Interface for CPTs

The following contracts are used to transmit information to FOMS for a CPT in the SWITCH system:

1. PREPWO - Planning Message
2. PREWO - Frame Output
3. CANWO - Cancellation Notification
4. PCNWO - Completion Notification

9.7.2.1 Planning Messages

The contract PREPWO is used to transmit planning information about the transfer to FOMS. It is produced to satisfy two conditions:

a. To notify the frame that the SWITCH system has received a new CPT or that the size of an existing CPT has changed. This PREPWO (type "e" for establishment) is generated at the completion of the PRECPT contract.

b. To notify the frame that assignments have been made in the SWITCH system database. This PREPWO is type "a" (for assignment). Wiring information may be sent automatically if SFO=Y or may be requested by FOMS via contract REQWO.

The planning message will contain:

1. The order number
2. The identification of each cable with its low and high pair numbers
3. The order due date
4. The frame due date (optional)
5. The total number of circuits (either established or assigned)

6. The number of designed circuits
7. The setting of the SAL, SFO, and IFC flow control parameters
8. The estimated completion date used by this assignment pass (returned in assignment planning messages only)
9. The item numbers assigned by the assignment pass (returned in assignment planning messages only)

See Section 15 for details of the planning message.

9.7.2.2 Frame Output

The contract PREWO is used to send the frame output to FOMS for the pending CPT assignments. Each PREWO contract contains information indexed by CPT transfer unit (i.e., the FROM cable pairs in the CPT). Each PREWO contract will include a sequence number. Sequence numbers will be included in all contracts sent to FOMS, except for planning messages. The sequence number will increment by one for each frame output contract sent for an order. The SWITCH system will record the sequence number of each item sent to FOMS so that the information in lost transmissions can be regenerated and resent.

Each item in the PREWO will also include the item number assigned by the SWITCH system. This item number is also sent to MAS in the TRM contracts and can be used to facilitate coordination between the work centers.

If an assignment for which frame output has previously been sent is corrected or reworked, frame output will be sent via a new PREWO contract reflecting the updated assignment. Each PREWO will have a unique sequence number as described above.

9.7.2.3 Cancellation Notification

Cancellations may be received after the CPT is established. Corrections from LFACS are received as a CANCPT contract followed by a new PRECPT contract. The CANWO and PREPWO contracts are used by the SWITCH system to update (modify) the existing (last) planning message and wiring information sent to FOMS. Deletions to a CPT are sent to FOMS via a CANWO for circuits whose wiring instructions were previously sent to FOMS, followed by a new establishment planning message (PREPWO, ostat=e) to inform FOMS of the changed size of the order.

In the event the whole CPT is canceled, the SWITCH system will send a single CANWO with header-only (order level) information to FOMS. In this case, a new planning message (PREPWO) will not be generated. The sending of a CANWO header message from the SWITCH system to FOMS will always be interpreted as a total cancellation.

CANWO contracts will contain sequence numbers as described above.

9.7.2.4 Completion Notification

When a CPT completion is processed in the SWITCH system, a PCNWO contract will be sent to notify FOMS of the completion if IFC=N. If IFC=Y, then a PCNWO contract will be sent for only those items in which frame output was previously sent. If an item is temporarily digitally bridged, it will be unbridged before it is completed. For these cases, a PREWO contract will be sent to FOMS prior to the PCNWO contract. Following a final (total) completion of the CPT, the PCNWO sent to FOMS will contain header-only information (e.g., order number) to notify FOMS of the CPT completion. Following a partial completion of the CPT, the PCNWO sent to FOMS will identify each transfer unit for which the assignment has been completed.

PCNWO contracts will contain sequence numbers as described above.

9.7.3 Establish a CPT

CPT establishment (PRECPT contract) is used to record the presence of a new CPT in the SWITCH system or to update the characteristics of a CPT that already exists. Establishment will produce an establishment (ostat=e) planning message for FOMS (PREPWO).

The PRECPT contract may result from flow-through SOAC input or from a manual ULBB input.

9.7.3.1 SOAC Input Interface

When a CPT is received for the first time via a PRECPT contract, the SWITCH system will receive the following information:

1. The CPT Order Number (the concatenation of a EWO number and a Transfer number)
2. The CPT Due Date
3. The details on each circuit in the CPT (a circuit identifier, OUT cable and pair, IN cable and pair, IN resistance zone)
4. Frame Due Date (optional)

9.7.3.2 Manual CPT Establishment

A CPT may need to be established manually in the SWITCH system because:

1. There is a need to review and possibly override the default parameter settings controlling the process flow before receiving a specific CPT from FACS
2. The interface with SOAC is unavailable and there is some urgency in providing FOMS with wiring instructions

User input to establish a CPT includes:

- Overrides to the Flow Control Parameters
- Overrides to the Assignment Control Options
- A Frame Due Date

  A Frame Due Date is the time when frame wiring is expected to be complete. It is not used for selection or assignment purposes, but is treated like a remark entry.
- An Estimated Completion Date (ECD)

  The Estimated Completion Date provides the time view to be used by the SWITCH system assignment engine when selecting network units and making assignments. If no estimated completion date is entered, the order due date will be used. The estimated completion date entered should be the best estimate of the date the work will actually be done, which is usually prior to the order due date. Although there is a single order due date for the whole order, individual items may have different estimated completion dates, and may complete on different dates.
- An "expand" option tag

  The expand option indicates the output screens following the WSI for the CPT should be displayed by individual network unit ID. The default value (or absence) of the expand tag is EXPAND=N which displays network units in range format. This tag applies only when the establishment request is for an existing CPT.

9.7.3.3 PRECPT Processing

On receiving the PRECPT contract, the SWITCH system will check to determine whether the CPT order number exists.

If the order does not exist, the SWITCH system will:

1. Create a work order in the SWITCH system database to store the following information:
   a. CPT Order Number which is the concatenation of the EWO number from the FCIF REC and the transfer number from the C1 header (a colon is the delimiter between the EWO and transfer number)
   b. CPT Order Due Date

   c. Frame Due Date, if present
   d. Estimated Completion Date, if present
   e. The details on each circuit in the CPT which includes a circuit ID, FROM cable pair, and TO cable pair

2. Determine the status of the DCI (Database Check for Inconsistencies) parameter (a default value of "Y" (Yes) is provided in the *wo order control* reference data table)
   a. If the DCI parameter is set to "Y" (Yes), the PRECPT process will:
      — Verify that each FROM cable pair is working or is pending working in the database
      — Verify that each TO cable pair is spare or pending spare in the database

        For transfers of party service on non-constrained circuits, the TO cable pair may be working in another multi-party circuit. This is necessary to support implicit reassociation as a result of the CPT. For transfers of party service on constrained circuits, the TO cable pair must be spare. Reassociations will *not* be processed on constrained circuits during a CPT.

      — Set an indicator in the UST for each FROM pair for which a discrepancy is found
      — Produce a notifier indicating all discrepancies noted in the prior step
   b. If DCI is set to "N" (No), the inconsistency check will still be performed, the conflict indicator will be set in the UST, however, no notifiers will be sent

3. Produce a FOMS establishment planning message (PREPWO)

4. Determine the value of the Start Assignment Logic (SAL) parameter by determining whether an override value has been set for this order number (if an override is present, the override value is used; if an override is not present, the default value from SWITCH system reference data table *wo order control* (see Table 9-1) is used)
   a. If the value indicates the CPT will be assigned manually (SAL=N), PRECPT processing terminates and the ASGCPT contract must then be invoked by an entry from the ULBB.
   b. If the value indicates the CPT should be assigned automatically in the SWITCH system (SAL=Y), the ASGCPT contract is invoked at the completion of PRECPT processing, and the values of all overrides (e.g., SFO, STD, TDB) that have been entered are passed along.

If the CPT order number already exists, the SWITCH system will:

1. Replace the existing order due date with a new due date (if changed).
2. Add or overwrite the frame due date if one is entered.

3. Check the status of each input FROM cable pair in the UST

   If the cable pair is already in the UST and the circuit does not have a "canceled" status, generate a warning message for the circuit. (LFACS modifications to an existing CPT require a cancellation, CANCPT contract, followed by a new PRECPT contract.) If the cable pair is in the UST and has a "canceled" status, replace the existing TO pair with new TO pair and remove the "canceled" status.

4. Add each new circuit to the existing order UST and update the counts of total circuits and designed/special circuits.

5. Verify the FROM and TO pair statuses and report discrepancies as described above (DCI check).

6. Produce a corrected establishment planning message (PREPWO) for FOMS.

   Additional copies of the planning message text may be routed to other work locations based on BCC-controlled output routing table values for PREPWO. For example, this output may be used by a Mechanized Loop Assignment Center (MLAC) to verify that all circuits set up in a CPT have been received by and established in the SWITCH system.

7. Stop or continue on to ASGCPT processing based on the Start Assignment Logic (SAL) parameter value.

9.7.4 Assign a CPT

The CPT assignment process (ASGCPT contract) may be started automatically following completion of CPT establishment (PRECPT with SAL=Y), or manually via the SWITCH system ULBB ASG CPT work session.

The ASGCPT contract is used to perform the following transactions:

A. **Normal Assignment** - add or change network units (if required) in the FROM (working) circuit, to remove any unnecessary network units, and to prepare the wiring and translation information that is required by FOMS and MAS.

B. **Change ECD** - set the Estimated Completion Date (ECD) for un-assigned circuits and modify the ECD of already-assigned circuits (Change ECD option).

C. **Work Items Now (WIN)** - prepare a range of the CPT for completion today. The transaction modifies the ECD of items that are already assigned to "today's" date, determines if there is any MAS output to be sent and sends it, and sends the corresponding frame output.

The ASGCPT contract does this by generating, on a circuit by circuit basis, an input to the SWITCH system assignment engine to move a circuit from the current working cable pair to the new cable pair at an effective ECD date. If the WIN option has been selected, the contract will contain STD=Y and SFO=Y, which will force consideration of TRM and send frame output.

The user-controllable temporary digital bridging (TDB) parameter will determine whether an attempt to assign a temporary digital bridge will be performed. If TDB=Y, the ASGCPT contract processor will invoke the assignment engine to temporarily digitally bridge all applicable items. The following (non-applicable) items will not be candidates for temporary digital bridging:

— non-switched, designed, and party services

— members of series completion hunt, multi-line hunt, simulated facility, and centrex groups

— services with a non-qualifying assignment category for digital bridging[13]

— multi-leg circuits

— constrained circuits

— circuits with pending activity

— cable pair swaps

If TDB=N or the item is not a candidate for temporary digital bridging, the item will be assigned using the conventional CPT method. The user-controllable assignment options will be passed to the assignment engine to determine if the existing switch port will be reused or if a new switch port assignment will be attempted (applicable to copper plant only).

Once assigned, a transfer unit in the CPT is given an item number. This item number is retained with the assigned transfer unit until it is either canceled or completed. The item number will be sent to FOMS and MAS to facilitate coordination of work between the RCMAC and the frame personnel. An item which is reworked or corrected is not assigned a new item number - the original item number is retained. Once canceled, an item which is subsequently reestablished and reassigned will be given a new, unique item number. Item numbers will not be reused within an order.

Any wiring information from the assignment process, including the item number, may be stored until requested (SFO=N), or sent immediately upon completion of the ASGCPT contract. An assignment planning message, the type "a" PREPWO contract, will be generated for FOMS with information about this assignment pass, including the range for which assignment was requested, the estimated completion date used by this assignment pass, the number of circuits assigned, the number of designed circuits assigned, and the

13. The Assignment Category Rule Set tables define whether an IC allows digital bridging based on the assignment category. The ASGCPT contract processor will derive the assignment category for each item and compare it against the associated table to determine if the IC supports digital bridging for that particular assignment category.

item numbers which were given to the assignments. Note that when the WIN option is selected, the send frame output parameter is forced to SFO=Y in the contract.

Translations data will be sent to MAS only for those CPT assignments which are determined to be MAS-affecting (e.g., change of switch port, channel, or call reference, addition or removal of transmission equipment, establishment of a temporary digital bridge)[14]. The translations data from the assignment process may be stored until requested by MAS (STD=N) or sent immediately on the completion of ASGCPT contract (STD=Y). Note that when the WIN option has been selected, the STD parameter will be forced to STD=Y in the contract.

Multi-pass work orders are considered "coordinated" work items. Therefore, if translations data for an item are sent to MAS (excluding dial transfers), it is held by MAS until notification to release the item (i.e, apply the translations to the IC) is received from the construction and/or the frame work forces. However, if an item is to be temporarily digitally bridged, this magnitude of coordination is not required. Therefore, MAS will release the translations to temporarily digitally bridge an item immediately upon receipt.

9.7.4.1 Assignment Initiated Automatically (SAL=Y)

When SAL=Y during PRECPT processing, the assignment request is initiated automatically. Information necessary for assignment will be passed to the ASGCPT contract processor from the PRECPT process. This information includes:

1. The CPT order number.
2. Wire center ID.
3. CPT order due date.
4. Selection of assignment type (Change ECD, WIN or Initial Assignment)
5. An optional frame due date.
6. An optional estimated completion date.
7. Inclusion and exclusion circuit/service and equipment filters entered to filter the assignment request.
8. The data for each circuit being moved, including the FROM cable pair, the TO cable pair, and the resistance zone of the TO pair.
9. Override values for any assignment or flow control parameters that may have been changed for this order.

14. Translations can be sent to MAS only if the CPT has been set to be MAS-involved in the *mas involvement* table. See Section 13.2.4 "Determining MAS Involvement" for further details.

9.7.4.2 ULBB Assignment Input Interface

Information that will be passed from the ULBB/FUSA to the ASGCPT contract will include:

1. The Order Number.
2. A wire center.
3. A valid user identification.
4. An estimated completion date (ECD).

   If entered, the ECD will be used as the time view in the SWITCH system database of the pending CPT assignments. If not entered, the order due date will be used.
5. A frame due date.

   If a frame due date is not entered when assignment is triggered from the ULBB, the frame due date from the order work task file will be used. If a frame due date is entered from the ULBB it will be verified to be less than the order due date and then applied to each transfer item being assigned on the current screen.
6. The Work Session Initialization program (WSI) will prepopulate the screen with the items available for assignment. The FROM cable pair identifies each item in the CPT. The user may select those items for which assignment is requested. Alternatively, the user may enter the FROM cable pairs, individually or in ranges (or a combination of both) on the screen to request assignment.
7. Inclusion and exclusion circuit/service and equipment filters to determine which transfer units are assigned by the request.
8. Override control parameters (e.g., SFO, STD, TDB).

9.7.5 CPT Filtering

The SWITCH system can use filter options to identify a subset of working circuits with particular characteristics within the pool of all working circuits in the range of a CPT. The circuits which meet the input filter criteria will be passed to the assignment engine for assignment in the CPT. The characteristics on which the SWITCH system will filter usually relate to service request (CEC) attributes such as coin lines or customers with essential service (circuit/service filters). Filtering may also be used to identify working circuits at a specified frame location, circuits with specified network unit types and circuits with specified physical characteristics (equipment filters).

As discussed in Section 9.6.4, certain services/circuits will not be candidates for temporary digital bridging. Hardcoded filters (overrides) will exist to ensure that temporary digital bridging is not attempted for these services/circuits.

9.7.5.1 Circuit/Service Filter Options

The circuit/service filter options available for CPTs include:

1. Grade of service (GRSV) - (1) single party, (2) two party, (4) four party, or (8) eight party
2. Class of service (CLSV) - (R) residence, (B) business, (C) coin
3. Category (CATG) - (V) voicegrade, (N) narrowband, (W) wideband, (D) digital data, (P) program audio, (I) ISDN pipe, (M) MADN set
4. Central office administrative type (CATY)
5. Administration of designed service review (ADSR)
6. Signaling (SIG) - (L) loop start, (G) ground start, (L) loop or ground start, (R) reverse battery, (P) proprietary, (Q) Q.931 ISDN, (O) other
7. Essentiality (ESL) - (Y) Yes or (N) No
8. Type of service (TYPSV) - (F) flat, (M) measured, (W) WATS
9. Directionality (DIR) - (I) inward, (O) outward, (B) both ways
10. Group ID
    - Centrex ID (CTX) - Centrex group number with identification of intelligent controller, or "*" for all centrex groups
    - Multi-Line Hunt Group ID (HML) - Multi-line hunt group number with identification of intelligent controller, or "*" for all multi-line hunt groups
    - Simulated Facility Group ID (SFG) - Simulated facility group number with identification of intelligent controller, or "*" for all simulated facility groups
    - Series Completion Hunt Group ID (SCH) - "*" for all series completion hunt groups
11. Telecommunications service priority circuit (TSP)

Filters may be specified for inclusion or exclusion.

9.7.5.2 Equipment Filter Options

The equipment filter options will find circuits with the following equipment features:

1. Network Unit Type - Circuits containing from one to three specified network unit types, e.g., circuits with transmission equipment and bridge lifters.
2. Assembly - Circuits that are composed of assemblies such as integrated facilities.

3. Frame/Zone - Circuits at a specified OUT frame or frame/zone location.
4. Exclude complex circuit tag.

   This tag prevents the assignment of any circuit composed of more than a single switch port and cable pair.

The filters may be entered as inclusion or exclusion filters.

9.7.5.3 ULBB Processing

CPT Filtering is accessible only from the ULBB. It may be accessed as part of an assignment work session or as part of an establishment work session when the Start Assignment Logic (SAL) option is set to "Y" (Yes).

There are no stored, default values for filtering: the filter screen will not be prepopulated when accessed in a work session. Filter values exist only for the life of the contract chain.

ULBB scripts will:

1. Validate for legal code sets and formats.
2. Prohibit the entry of both an inclusion and exclusion for one tag.
3. Verify that all values are different when entered behind the tags for grade of service, class of service, type of service, signaling, and category.
4. Accept an alpha character such as "X" or "Y", to indicate inclusion, as the value for the designed circuit, complex circuit, series hunt circuit, and TSP circuit tags.
5. Accept and validate one specific value for the centrex and multi-line hunt tags.
6. Accept the value "*" to indicate all values for the centrex and multi-line hunt tags.
7. Accept up to three different network unit types for inclusion as circuit filters.
8. Verify that a frame value is supplied if there is an entry for the zone tag.

9.7.5.4 DLBB Contract Processing

If no filter options are specified for the assignment process, all circuits specified by input range will be passed to the assignment engine. If filters are present:

1. Each working circuit will be tested to determine if it meets all the circuit/service filter criteria. This means:

   — Each included filter is present, and

   — Each excluded filter is absent.

Multiple values following any circuit/service filter tag are treated as a logical OR condition, i.e., matching on any one of the values is considered meeting that filter requirement[15]. The following tags may be multi-valued:

- Category
- Class of service
- Grade of service
- Signaling
- Type of service

2. When any circuit meets all the filter criteria, it is sent to the assignment engine for processing.
3. If no circuit passes filtering, a notifier is returned to the user's terminal indicating that no circuits were found that met the input filter requirements.

9.7.5.5 Filtering Rules

The following rules and definitions apply for the filtering process when comparing a user entered value with database conditions:

1. Frame must be an exact match between the user entered value and the frame location of the working cable pair.
2. Frame and zone must be an exact match between the user entered values and the frame/zone location of the working cable pair.
3. A complex circuit is any circuit that has more than one component edge for any single type of network unit excluding intra-wire center facilities (tie pairs), channels, and carrier controller ports.
4. Secondary services are ignored for filtering.
5. Line count (LC) is considered a filter option. When the total number of successful assignments reaches the value of LC, the assignment process is stopped.
6. The value "*" following the centrex and/or multi-line hunt tag is an automatic match for all such services in the transfer.
7. All network unit types entered as equipment filters must be present for a circuit to pass filtering.

15. For the equipment filter options which allow multiple entries as exclusion filters, e.g. network unit types, matching on all of the specified values is considered meeting the filter criteria (logical AND condition).

8. Exclusion of a circuit takes precedence over inclusion if both an inclusion and an exclusion filter match occurs.

9.7.5.6 Assignment Control Options

The only assignment control option that may be entered through filtering is an estimated completion date (ECD). The other control options (applicable to copper plant) are:

- CSR - Conditional switch port reuse preference.
- CIA - Candidate for intra-wire center facility allowance.
- CVO - Critical validations only
- Excluded circuit attributes from the exclusion table (CEC Exclusion).

These control options are determined from default values or from the PRECPT or ASGCPT user entered contract overrides (CSR and CIA only).

9.7.5.7 Effect Of Filtering On Completion

All working cable pairs in the range of a CPT must be assigned or canceled before the CPT can be totally completed. If a total completion contract is invoked and the UST indicates that there are circuits that have been filtered out of assignment, a notice is generated that indicates the CPT was not completed and lists the circuits that still require assignment. Those items which are eligible for completion will be completed as requested. However, the order will remain in the SWITCH system database.

9.7.6 Request Frame Output

Requests for work instruction information are received with the contract REQWO. The user invokes the REQWO contract via the REQ FO work session from the SWITCH system ULBB or the FUSA transaction RQF. REQWO is used to provide frame output for circuits which were assigned with SFO=N (meaning the frame output was not sent automatically following assignment). The response is returned to FOMS using the contract PREWO.

The major options available when requesting frame output via the REQWO contract allow for:

1. The production of work instruction information for a given range of cable pairs (the transfer unit of the CPT).
2. The production of work instruction information for a given range of switch ports, carrier controller ports, telephone numbers, or item numbers (non-transfer unit identifiers).

3. The production of work instruction information for a given number of circuits (i.e., line count) or for ALL assigned circuits associated with 1 and 2.

If the request includes a circuit which contains multiple cable pairs (transfer units), and more than one of these cable pairs are being transferred in the CPT, then frame output will be sent for *all* cable pairs in the order which are part of that circuit.

If a request is received for a range that has not been assigned or has no new assignments, the SWITCH system will return an exception notice to the requesting terminal.

Once output has been requested and sent for an item, subsequent changes or corrections to that assignment will be sent to FOMS automatically.

FOMS will detect when a provisioning request has assigned a facility being made available for assignment by a transfer. If the frame work for the transfer has not been reported complete, FOMS will package the new provisioning request wiring information with the CPT information so that the frame will not put the inward service order into jeopardy.

An alternate way to request frame output is to run the ASG CPT work session with the WIN option (See Section 9.6.13.2)

9.7.7 Request MAS Output

The contract REQTRM is used to generate translation information for MAS. The contract may be invoked by a manual input into the SWITCH system through the ULBB REQ TRM Work Session, or the FUSA transaction RQT. REQTRM is used to send translations data for circuits which were assigned with STD=N (meaning the translations data were not sent automatically following assignment).

The options available when requesting MAS output via the REQTRM contract allow for:

1. The production of TRM output for a given range of cable pair assignments (the transfer unit of the CPT).
2. The production of TRM output for a given range of switch ports, channels, call reference values, carrier controller ports, telephone numbers, or item numbers (non-transfer unit identifiers).
3. The production of work instruction information for all temporarily digitally bridged items.
4. The production of TRM output for a given number of circuits (i.e., line count) or for ALL assigned circuits associated with 1, 2 and 3.

If a request is received for a range that has not been assigned or has no new assignments, the SWITCH system will return an exception notice to the requesting terminal.

The translation response is returned to MAS via SOAC in a PRETMC or CORTMC contract. The range of information evaluated for TRM output matches the range specified in the REQTRM contract. Only those assignments which are MAS-affecting will be sent in the PRE/CORTMC contracts.

The SWITCH system will send a single PRETMC contract to MAS for each order. Corrections to information that has already been sent and additions to the CPT are sent to MAS via CORTMC contracts. Pending CPT assignments may be corrected through the ULBB COR WO work session. Following correction or rework processing, the work order will automatically send a TRM update if the resulting change is MAS-affecting (see Section 14).

Corrections or modifications may arrive from SOAC (as a single PRECPT or as a CANCPT followed by a new PRECPT) or may be entered directly into the SWITCH system.

An alternate way to request MAS output is to run the ASG CPT work session with the WIN option (See Section 9.6.13.2)

9.7.8 Simultaneous FOMS and MAS Output

When output is requested for FOMS for pending work order assignments, the user may request that TRM output also be sent to MAS for those items. Likewise, when output is requested for MAS for pending work order assignments, the frame output may also be sent to FOMS at the same time. The control parameter SOS (Send Output Simultaneously) is evaluated during output request processing (either REQWO or REQTRM) to determine if the output is to be sent to both systems as a result of this request.

The following occurs when SOS=Y while processing a request for frame output (REQWO) and MAS output (REQTRM):

REQWO - When processing a request for FOMS output (contract REQWO), the items for which frame output has been requested will be screened for MAS involvement. Those items which are found to be MAS-affecting for which TRM output has not yet been created will be sent to MAS in the appropriate TRM contract (PRETMC or CORTMC).

REQTRM - When processing a request for MAS output (contract REQTRM), the assignments which are evaluated to determine if they are MAS-affecting will be checked for FOMS output at the same time. Any item being screened for MAS involvement during REQTRM processing for which frame output has not yet been sent will be included in a PREWO contract and sent to FOMS.

When SOS=N, only the requested output will be sent, i.e., frame output will be sent as a result of REQWO and MAS output will be sent as a result of REQTRM.

Note that SOS is evaluated *only* when processing REQTRM or REQWO. It does not modify the action of SFO or STD, which are evaluated only when processing the assignment pass.

9.7.9 Order Interaction

There are two sources of order interaction. Temporary cable pair conflicts may be created by LFACS assignments or work order activity. These conditions will be accepted for CPT establishment, detected by the database check for inconsistencies (DCI) process and reported to users for resolution.

The second source occurs in the SWITCH system when network unit selection rules are applied to inward order activity after determining that no completely spare units are available. The term "Order Interaction" implies that the selection process has the capability to continue searching for suitable network units even though they are involved in pending order activity. The order interactions that result require a unique set of rules. BCC-tunable rules provide for all types of order interactions (e.g. provisioning request with provisioning request, provisioning request with work order, or work order with work order). The defaults is for the selection process to only select network units which are completely spare.

9.7.9.1 Detection Of New Transfers Due To Service Order Activity

Whenever a cable pair in the FROM or TO range of a CPT is assigned by LFACS to a service order which is due before the due date of the CPT, LFACS will detect the condition so that a new PRECPT may be sent to the SWITCH system. The SWITCH system will not perform any internal checking of provisioning requests to determine whether or not a new cable pair assignment is within the range of a CPT.

9.7.9.2 Clash Avoidance

LFACS will avoid the creation of a clash on a transfer as a result of automatic service order cable pair assignment. However, manual capabilities exist which could create a temporary worker-to-worker condition[16]. If a cable pair is assigned to a service order creating a worker-to-worker condition and -

— the pair is in the range of a CPT (either the FROM or TO count), and

— the service order is due before the frame due date of the CPT,

LFACS will detect the condition and a CANCPT and a new PRECPT will be generated for the transfer item.

On receipt of the CANCPT, the SWITCH system will remove the item from the CPT. The new PRECPT will reestablish the item with the clash condition. The SWITCH system will

16. Worker-to-worker for party service means there are no available party positions in the circuit of the TO cable pair. Worker-to-worker for non-party service means the TO cable pair is part of any service.

determine if FOMS and/or MAS output has previously been sent for the item and send updates as necessary.

9.7.10 Correct a CPT

CPT corrections fall into three classes. Corrections are necessary to:

- Resolve differences between LFACS and the SWITCH system.
- Resolve assignment problems encountered by the SWITCH system.
- Change the Expected Completion Date of an item.

In the first case, manual inventory contracts may be required to synchronize the LFACS and the SWITCH system databases.

In the second case, the COR WO work session (contract CORCPT) is employed to modify the results of the assignment process or to manually assign an item in the CPT:

- Correcting a pending CPT assignment:

  CORCPT provides for additions, deletions or changes to pending items in a CPT. The correction may affect anything on the TO side of the CPT except the cable pair. If the pending assignment is in a jeopardy condition, a successful CORCPT process will remove the jeopardy. If unsuccessful, the CORCPT will produce an error message and leave the database in the previously assigned state.

- Resolve CPT assignment:

  CORCPT can also be used to manually assign a CPT item which has not yet been assigned (e.g., assignment originally resulted in an RMA condition). The assignment will be in the conventional CPT mode (i.e., a temporary digital bridge can not be assigned). The COR WO work session will recognize when the input circuit has not yet been assigned in the CPT and create a request to assign the item based on the user input.

- Change ECD:

  CORCPT can be used to modify the Expected Completion Date of a CPT item. The SWITCH system will attempt to assign the item at the new ECD. The UST will be updated with the new ECD. If the assignment fails, the CPT item will be marked in error. If the assignment succeeds, the CPT item will be marked as assigned.

CORCPT may be initiated from the ULBB COR WO work session or FUSA. Assignment logic and connectivity normally are invoked, however CORCPT allows the user to transition between completely automatic assignment and constrained (manual) assignment when correcting a pending assignment. In addition, CORCPT will allow any newly selected network unit of a pending temporarily digitally bridged item to be changed. However, CORCPT will not allow the item to change states (i.e., transition from a temporarily digitally bridged item to a non-bridged item).

If the CPT involves DLE facilities, the route may be changed, as long as the new route provides a path from the origination point to the destination point.

When changing ECD, the date change should be the only aspect of the CPT item to be changed.

The SWITCH system will forward changes to FOMS and/or MAS, based on the change being made to the item and whether or not prior output has been sent.

9.7.10.1 ULBB Correction Processing

The CORCPT contract, submitted from a ULBB COR WO work session, is initiated by a work session initialization (WSI) contract. The input to access the information for one pending assignment includes:

- Wire center ID
- CPT number (EWO plus transfer number)

and one of the following:

- A circuit identifier (may include an optional termination identifier).
- A FROM or TO cable pair identifier (cable name and pair number). If there are multiple cable pairs in the circuit, then the FROM cable pair must be specified to identify the transfer unit that is to be retrieved.
- The identifier of any other network unit in the pending item.

Once within the COR WO work session, any network unit in the after view except for the cable pair may be modified. However, trunk pairs cannot be added to or deleted from the circuit, only replaced. Connectivity may be specified if the transfer item is partially constrained or totally constrained. The estimated completion date may be changed and circuit remarks may be updated. The user has the option of swapping between the before and after views of the transfer item.

9.7.10.2 ULBB Resolve Assignment Processing

The COR WO work session will allow an unassigned transfer item to be manually assigned in the convention CPT mode. Assigning a temporary digital bridge is not allowed by this process. The input to access the information to resolve assignment on a transfer item includes:

- Wire center ID.

- CPT number (EWO plus transfer number).
- FROM cable pair identifier (cable name and pair number).
- Optionally, an estimated completion date may be specified to indicate the time view from which the transfer unit should be retrieved. If no estimated completion date is entered, the CPT due date will be used.

Within the COR WO work session, all network units other than the cable pair can be added, changed or deleted. The connectivity of the transfer item may be entered if the transfer item is partially or totally constrained. The default values of SFO and STD may be overridden.

9.7.10.3 WSI Contract Processing

The WSI contract process for CPTs will validate the input contract prior to returning the circuit data.

The following error conditions will be detected and reported to the users screen:

1. The circuit is in a CPT but not assigned (correction only).
2. The circuit is in a CPT and has been both assigned and completed.
3. The circuit is not involved in a CPT.

After validating the input, the WSI will return data on the working circuit and the pending assignments to the ULBB. The working circuit data are to be protected.

9.7.10.4 CORCPT Contract Processing

The CORCPT contract will support the following actions when correcting pending assignments or manually assigning an item:

1. Add a new prespecified network unit or have the SWITCH system select from inventory a new network unit of a specified type. The assignment process will verify that the new configuration matches an existing skeletal circuit model.
2. Delete any unnecessary pending network unit except the cable pair. The assignment process will verify that the new configuration matches an existing skeletal circuit model.
3. Change any network unit except the cable pair by prespecifying the new unit or having the SWITCH system select a different unit.
4. Change the route of the circuit.
5. Force network unit assignment at a specified frame or frame and zone.
6. Force assignment at a specified common language frame location.

7. Add or modify the estimated completion date.
8. Enter a facility change reason (FCR) for a network unit being taken out of a circuit.
9. Suppress the assignment of intra-wire center facilities.
10. Suppressing the assignment engine validation and, if necessary, additional automatic assignments (complete manual override).
11. Add, modify, or remove a frame remark (up to 80 characters) for the circuit.

The CORCPT processor will prepare an input to the assignment engine. This input may cause selection and assignment to occur or validate the manual assignment changes and then apply connectivity logic.

If a replacement trunk pair was prespecified, it must have the same next location as the original trunk pair; if this is not the case, the assignment engine generates an error. For more information on trunk pairs, see Section 6.

Where a user has suppressed assignment of a circuit, the CORCPT process will create a manual input for the assignment engine. In this case, the user is responsible for providing all network units and connectivity.

When a successful response is returned from the assignment engine, any jeopardy condition that exists against the transfer unit is removed.

9.7.10.5 CORCPT Output

Upon completion of the CORCPT process, FOMS and MAS may need to be sent updated information.

Correction Processing:

FOMS - If FOMS has previously been sent frame instructions for the corrected assignment, new instructions are sent automatically via a new PREWO contract. If frame output was not sent, the SWITCH system will not send any frame output following CORCPT processing. The contract sequence number will be incremented if a new PREWO contract is generated. The item number of the transfer item will not change as a result of the correction and is included in the output to FOMS.

MAS - If the change affects MAS and the transfer unit has been marked as "MAS Active"[17], then a TRM contract will be sent to MAS for the corrected item. The contract sequence number will be incremented.

17. A transfer unit is considered "MAS Active" if TRM has previously been sent for this item, or if STD was "Y" during initial assignment, or if the item was part of an earlier REQTRM request.

The item number of the transfer item will not change as a result of the correction and is included in the output to MAS.

If the assignment was not MAS-involved prior to the correction but is now MAS-involved, the SWITCH system will use the following to determine if TRM should be sent:

- If STD=Y during initial assignment or if the unit was part of a previous TRM request, i.e., the unit is MAS active, then a PRE/CORTMC contract will be sent immediately following CORCPT processing.
- If STD=N during initial assignment and the unit has not been part of an earlier TRM request, i.e., the unit is not MAS active, then no TRM will be sent following the CORCPT process.

Resolve Assignment Processing:

FOMS - An assignment planning message will be sent to FOMS with planning information about the newly assigned item. If SFO is Y, frame output for the item will also be sent to FOMS immediately. The sequence number of the PREWO contract will be incremented. The item number of the newly assigned transfer unit will be included in the FOMS output.

If SFO is "N", the frame output will not be sent until explicitly requested.

MAS - If the assignment is MAS-affecting and STD=Y, a TRM contract will be sent to MAS immediately. If the assignment is MAS-affecting and STD=N, the TRM output will not be sent until explicitly requested. The item number of the newly assigned transfer unit will be included in the output to MAS.

If the assignment is not MAS-involved following assignment, but becomes MAS-involved later (due to rework or correction processing), the SWITCH system will use the following to determine if TRM should be sent:

1. If STD=Y during initial assignment or if the unit was part of a previous TRM request, i.e., the unit is MAS active, then a PRE/CORTMC contract will be sent immediately following the rework or correction which caused the assignment to be MAS-affecting.
2. If STD=N during initial assignment and the unit has not been part of an earlier TRM request, i.e., the unit is not MAS active, then no TRM will be sent following the correction or rework process which caused the assignment to be MAS-affecting. MAS output must be explicitly requested for this unit.

9.7.11 Cancel a CPT

A CPT can be canceled completely or in part on receipt of CANCPT contract. All assigned circuits involved in the cancellation will revert to their original status (i.e., before the CPT).

9.7.11.1 Cancellation Input Interface

- Total Cancellation

  The SWITCH system input will consist of a CANCPT contract containing only the CPT order number (EWO and transfer number).

- Partial Cancellation

  The SWITCH system input will consist of a CANCPT contract containing:

  a. The CPT order number (EWO and transfer number).

  b. Cable pairs (individual or ranges) to identify each of the canceled items in the CPT.

9.7.11.2 CANCPT Processing

- Total Cancellation

  a. If the SWITCH system has only stored the CPT information and sent a planning message to FOMS (i.e., no frame output has been sent to FOMS), a CANWO contract will be sent to FOMS consisting of header information including the CPT order number. There will be no information on specific transfer units canceled.

  b. If the SWITCH system has sent wiring information to FOMS on any item in the CPT, the CANWO will contain the CPT order number. There will be no information on specific transfer units canceled (FOMS will cancel any item in the order for which it has already received frame output).

  c. If the SWITCH system has sent translation information to MAS on any circuit in the CPT, a CORTMC will be sent to "undo" any translation changes made as a result of this CPT. See Section 14 for details of the TRM processing.

- Partial Cancellation

  a. The SWITCH system will use the input cable pairs to identify the transfer items which are to be canceled.

  b. The SWITCH system will determine which of the transfer units being canceled have been assigned and which have been both assigned and have had output sent to either FOMS or MAS or both.

c. A new PREPWO will be generated defining the new size and characteristics (range, designed circuits) of the CPT.

d. Frame output will be sent to FOMS as follows:

   — If the SWITCH system has not sent wiring information to FOMS on any circuit in the CPT, only the new PREPWO will be sent.

   — If the SWITCH system has sent wiring information to FOMS on any of the canceled items, a CANWO contract will be sent to FOMS with the CPT order number and identifiers for each canceled transfer item that was previously sent to FOMS. The updated PREPWO will also be sent.

e. If the SWITCH system has sent translation information to MAS for any of the canceled items, a CORTMC contract will be sent to revert those items to their original state.

9.7.12 Complete a CPT

The PCNCPT contract will usually flow through from SOAC but may be entered from the ULBB. Completions may be entered for a range of cable pairs in the CPT or for the entire CPT. A CPT involving DLE facilities may not require any frame work. The IFC parameter determines whether a completion will be allowed for circuits in which frame output has not been sent to FOMS.

- Total Completion

  If IFC=N, entering the CPT number will complete the whole CPT providing all items have been assigned and all output has been sent to FOMS and MAS. If IFC=Y, entering the CPT number will complete the whole CPT providing all items have been assigned and all required output has been sent to MAS. Total completion will remove all pending database conditions for the CPT and remove the work order from the SWITCH system database.

- Partial Completion

  If required translations data have not been sent to MAS, completion requests for those items will be rejected. If frame output has not been sent to FOMS, based on the IFC parameter, the completion request for those items will either be rejected or allowed. As each part of the CPT is completed, the network units involved take on their final status in the database. Although all pending information is deleted for each item in the range, the CPT number and the CPT's due date (or estimated completion date) are retained. The entire CPT may be completed in this manner.

The SWITCH system will unbridge any temporarily digitally bridged item prior to completing it. For each item in the PCNCPT contract, the contract processor will determine if it is temporarily digitally bridged. If the item is temporarily digitally bridged, the assignment engine will be invoked to unbridge the item. The OUT cable pair will be removed from the circuit and the IN cable pair will remain in the circuit. Depending on the table settings, the OUT cable pair and switch port may be DIPed. If the item unbridges successfully, translations data to unbridge the item will be sent to MAS in a CORTMC contract. Additionally, frame output will be sent to FOMS in a PREWO contract. After both outputs are sent, the item will be completed.

When processing a partial completion, the SWITCH system will automatically produce PCNWO contracts to FOMS for items in which frame output was previously sent. This will occur regardless of the value of the IFC parameter. When processing a total completion, the PCNWO will include header-only information identifying the CPT which has been completed.

9.7.13 CPT/Pending Service Order Interaction and Sequencing

Due to the architecture of the SWITCH system database handling of pending order activity, work orders and service orders interact with each other. Work orders, specifically CPTs and WOLSTs, whose items (i.e., cable pairs) are also involved with pending service orders, and vice versa, will result in processing to take each order into consideration. This may occur as part of normal processing or as a result of rework.

A result of this work order/service order interaction is that service orders may RMA due to an intervening work order. This can best be demonstrated by examples. Assume a CPT with a due date of 4/1/93 and a service order with a due date of 5/1/93 exist. The service order is disconnecting the customer.

One of two scenarios can occur, but the end result is the same:

- The CPT is received first, and the CPT item changes cp1 to cp2. The service order (disconnecting service on cp1) arrives next. The SWITCH system database shows the customer working on cp2 as of the completion date of the work order and cp1 is spare in that time view. The service order input which the SWITCH system receives from SOAC shows the customer working on cp1. In the time view of the service order, the SWITCH system database shows the customer working on cp2, so an RMA is generated since the database is not in agreement with the information sent from SOAC in the SWITCH system assignment request.
- The service order is received first, and the disconnect processes successfully. The CPT is then received, causing the pending service order to rework, resulting in an RMA condition.

The SWITCH system expects that both service orders and work orders will complete on their respective due dates and processes accordingly (so when the frame work must be done for the service order, the correct facilities are reflected on the appropriate output document). If both do complete on their respective due dates, in most cases the work order completion will result in an ACESO contract from SOAC. This contract will cause rework of the service order with the new cable pair information (TO pair) resulting in an assigned state[18]. However, since work orders typically do not complete by their due date, a parameter exists which controls whether or not the service order will RMA in the above scenarios. The wire center-based parameter, *so-wo-assign*, in the wire center instance of the *wc parms* table (see Table 6-8wc in Section 6) controls this processing. This parameter was introduced to reduce the need to leave service orders in an RMA state waiting for either the ACESO contract from SOAC or reassignment of the work order item using the ECD date (see Section 9.6.13.1 below for a discussion of the change ECD option).

The so-wo-assign parameter will direct one of three cases to occur:

- so-wo-assign=Y - allow the service order to assign successfully
- so-wo-assign=N - do not allow the service order to assign successfully (i.e., RMA)
- so-wo-assign=C - allow the service order to assign successfully only if the switch port/channel/call reference value remains the same on the prior work order (otherwise RMA if the switch port/channel/call reference value changes).

The first case results in the service order processing successfully even though the database does not agree with the service order input[19]. In addition, a notifier is issued to make the engineering work center aware that a pending work order exists which has impact on a future due dated service order.

The second case results in an RMA. The third case may also result in an RMA when there is a switch port/channel/call reference value change on the prior work order. This option to fail assignment if there is such a change is offered to avoid complexity in the RCMAC.

When a work order results in a MAS-affecting change (e.g., a switch port/channel/call reference value change), the STD parameter determines whether or not output is sent to MAS (or must be requested). Even if sent, there is no knowledge in the SWITCH system if the intelligent controller (IC) has been updated. If a service order is received or already exists with a later due date, any translation update as a result of the service order may reject in the IC (depending on whether or not the translation update from the work order has been applied). Therefore the service order will RMA, thus notifying the user about the work

18. When a cable throw completes in LFACS, a search is made in LFACS for any pending service orders containing facilities involved in the cable throw. For each service order, LFACS returns an unsolicited response to SOAC, updating the last response it had sent for the service order. SOAC in turn, processes each unsolicited response from LFACS and generates a corresponding ACESO contract to SWITCH. See Section 13 for a discussion of ACESO contracts.

19. For example, the database will show the circuit working on the TO cable pair (e.g., cp2). The service order input shows the circuit disconnecting from cp1. In this scenario (so-wo-assign = Y), processing will assume that the service order input should reflect that the circuit is disconnecting from cp2. This assumption will be made if a CPT exists in an earlier time view that is changing cp1 to cp2.

order/service order interaction if there was a switch port/channel/call reference value change, to allow the appropriate procedures to be followed in coordinating the frame, outside plant and/or RCMAC work.

In the case where an item is in a temporarily digitally bridged state, any rework of the item caused by a provisioning request or work order whose due date is earlier than that of the item will result in the item being placed in error. An item which has pending activity can not be temporarily digitally bridged. Therefore, the item should be reassigned in the conventional CPT mode, or reassigned as temporarily digitally bridged when there is no pending activity on the item.

A circuit which is temporarily digitally bridged will have an additional switch port/channel/call reference value. This does not depict the final state of the circuit when the bridge is removed. Therefore, any provisioning request or work order attempting assignment on a temporarily digitally bridged item will RMA/error. The temporarily digitally bridged item should be reassigned in the conventional CPT mode to resolve the situation.

As just discussed, interaction between service orders and cable pair transfers may occur. The overall goal in dealing with these interactions is to manage the service order and CPT due dates so that they "match" the real world as closely as possible. This helps to minimize the occurrence of out-of-sequence conditions on the CPT items. However, if the completion date of a CPT item can not be determined, the CPT should be positioned (assigned) with an Estimated Completion Date in the far future. This will help to minimize the occurrence of out-of-sequence conditions on service orders. Positioning CPT items in their proper sequence can be accomplished by the following two options: Change ECD Option and WIN Option

9.7.13.1 Change ECD Option

The Change ECD Option provides the capability to change the estimated completion date (ECD) on an item or a range of items in the CPT. The option can be performed from the SWITCH system ULBB or FUSA. If performed from the ULBB, the option will display all items in the CPT (i.e., items established, assigned, and in error). If filters are entered, the filters will only apply to those items which are not assigned.

The option attempts to reassign the items in the CPT using the new estimated completion date. If the assignment of an item is successful, the item will be assigned at the new ECD and marked as such in the CPT UST (Unit Status Table). If frame output was previously sent to FOMS or the SFO parameter is set to "Y", frame output will automatically be sent. Similarly, if a Translations Redundancy Management (TRM) message was previously sent to MAS or the STD parameter is set to "Y", all required translations data will be sent automatically. If the assignment of an item fails, the item will be in an error state, although the UST will reflect the new ECD for that item.

9.7.13.2 WIN Option

The WIN (Work-Items-Now) Option provides the capability to reassign an item or a range of items in the CPT at the current time view ("today's" date). The WIN Option should be executed when the outside plant work forces are ready to perform the splice. Then frame output will automatically be sent to FOMS, regardless of whether or not frame output was previously sent or the setting of the SFO parameter. Similarly, any required translations data will automatically be sent to MAS, regardless of whether or not translations data were previously sent or the setting of the STD parameter.

The option can be implemented from the SWITCH system ULBB or FUSA. Like the Change ECD Option, if the WIN Option is implemented from the ULBB, the option will display all items in the CPT (i.e., items established, assigned, and in error). If the assignment of an item is successful, the item will be assigned at the current time view and marked as such in the CPT UST. If the assignment of an item fails, the item will be in an error state, although the UST will reflect the current time view for that item.

9.7.13.3 Service Order Out of Sequence Completions

When a service order is completing before a CPT work order with an earlier due date (i.e., completing out of sequence), the SWITCH system reassigns conflicting CPT items to a time view later than that of the completing service order. See Section 9.13 for a discussion of service order out of sequence completion processing and CPTs.

9.7.13.4 CPT Out-of-Sequence Completions

The SWITCH system database sequences assignments based on the estimated completion date or order due date input to the assignment engine. CPT completions may be received in the SWITCH system before (or after) the specified estimated completion date or due date (i.e., out of sequence). Dependent service order activity may be pending before and after the CPT and may be impacted if an out-of-sequence completion is received.

Upon receipt of a PCNCPT contract for an item that is involved in a prior pending order, the SWITCH system will attempt to move the CPT assignment to the root time view (i.e. the time view prior to any currently pending order activity) regardless of the estimated completion date or order due date. If the assignment in the root time view does not require the selection of a new network unit, the SWITCH system will process the completion in the root time view. This will bring the database into agreement with the LFACS view and reflect the work that has been done. Any pending service or work orders are then free to process as required. If the assignment in the root time view requires the selection of a new network unit, the SWITCH system will process the completion, but a notifier will be generated to reflect that the units selected by the SWITCH system have not been sent to the frame in work instructions. Figure 9-1 depicts the flow of the out-of-sequence completion processing.

If the assignment cannot be moved to the root time view, an error message will be generated and the CPT item will be left in its previously assigned state. Manual methods should be used to allow the assignment of the CPT item in the root time view; the CPT item should be manually assigned there, then manually completed. If necessary, the item can be canceled from the CPT. When canceled, a CANWO contract will be sent to FOMS which could produce the undesired result of necessary wiring being removed (on the assumption that if completion was previously attempted for this item, the wiring must be already done). A tag is sent in the CANWO contract to FOMS to indicate that a cancellation contract should be handled in FOMS as a completion contract (PCNWO). The RMV CPT work session will accept input specifying that the cancellation is necessary to correct the database for an out-of-sequence CPT completion.

If an out-of-sequence condition occurs on a temporarily digitally bridged item, the SWITCH system will attempt to reassign the item (temporarily digitally bridged) in the root time view. If the previous assignments can be maintained in the root time view, the SWITCH system will process the completion in the root time view, as described in Section 9.6.12. If the previous assignments cannot be maintained in the root time view, the completion will be rejected.

9.7.14 Assignment Redundancy Management

An Assignment Redundancy Management (ARM) process is used to send common update information from the SWITCH system to SOAC. The ARM contract for CPTs, PCNCPT, is created on partial or total completion of the CPT. Those items in the CPT which involve a change of line switch port, carrier controller port, channel, call reference value, transmission equipment, bridge lifter, ICE, or miscellaneous equipment will be included in the PCNCPT sent to SOAC. The information is transmitted in a *WCOF section in the PCNCPT contract.

See Section 14 for more information on ARM processing.

9.7.15 CPT Administration

The work sessions RPT WO and INQ WO (contracts RPTWO and INQWO) may be used to track the status of the transfer. A new option has been added to the RPT WO work session that will produce a report of overdue CPT items within a wire center. The PDUE format is discussed in the ULBB FPS.

9.8 Channel/CRV Transfers

A Channel/CRV Transfer (CTR) is a multi-pass work order to reassign working channels or call references values (CRVs) in the broadband network. The work order provides the capability to transfer services in a digital loop electronics (DLE) environment from one carrier facility to another, or from one switch equipment group to another. Essentially, CTRs provide the same functionality in a broadband network that SETs (Switch Port Equipment Transfers) provide in the narrowband network, in addition to some enhanced capabilities.

CTRs are entered manually into the SWITCH system through the ULBB. The CTR process is divided into the following functions:

1. Establish the CTR to broadly define the characteristics of the transfer such as the due date and the channels or call reference values to be transferred.
2. Provide filters to refine the identity of the circuits to move from the population of circuits.
3. Provide assignment controls to steer or constrain the normal assignment process.
4. Assign the new channels or call reference values.
5. Complete the CTR.

CTRs are used by Network Administration and other work centers to:

- Improve the load balance of an Intelligent Controller (IC).
- Support equipment upgrades by transferring circuits in a DLE environment from analog switch equipment groups to digital switch equipment groups (e.g., from TR-57 to TR-08 or TR-303), or from one digital switch equipment group to another (e.g., from TR-08 to TR-303).
- Free up or fill up a specific carrier circuit (i.e., transfer circuits from or to a specific carrier circuit)

Although the functionality will not be explicitly mentioned, CTRs also support downgrades by allowing circuits to be transferred from digital switch equipment groups to analog switch equipment groups.

Multi-pass work orders will not send associations or cross-connect data mechanically to downstream systems such as LMOS, NSDB, ILAS, or OPS/INE while the order is pending. Therefore, if the CTR requires associations or cross-connects to be performed in a network element (NE), they must be performed manually.

BCC users may establish CTRs in a variety of ways: by channel range, call reference value range, switch port range, or by carrier circuit(s). If a network unit (NTU) range is entered (that is, channels, call reference values, or switch ports), the CTR establishment process will create a list of those NTUs that satisfy the establishment criteria. If a carrier circuit is entered, the CTR establishment process will create a list of those channels which are riding on the carrier circuit that satisfy the establishment criteria. A user may provide additional filters, such as a group of CEC values, to further define the circuits that are actually to be processed. These circuits are then passed, one at a time, to the SWITCH system assignment engine. A user may provide additional selection constraints during assignment, such as a load group ID or a carrier circuit ID, to obtain the new channel or call reference value. Since the CTR is a multi-pass work order which pends in the SWITCH system, it can be modified or withdrawn once it is established and it requires positive completion.

9.8.1 CTR Processing Overview

The SWITCH system processes (excluding reports and work session initialization) that are used during the life of a CTR are:

- **Establish CTR** (PRECTR)

  The contract PRECTR is used to record the presence of a new CTR in the SWITCH system or to update the characteristics (filter options, assignment controls) of a CTR that already exists. Although the CTR may not require any frame work, successful CTR establishment or the update of an existing CTR will produce an establishment (ostat=e) planning message for FOMS (contract PREPWO).

  The PRECTR contract is initiated by a manual SWITCH system ULBB input.

- **Assign CTR** (ASGCTR)

  The ASGCTR contract is used to perform the assignment in the SWITCH system database and prepare any wiring information for FOMS and any translation information for MAS.

  The ASGCTR contract may be initiated automatically upon completion of the PRECTR contract (if SAL=Y) or may be started manually from the SWITCH system ULBB. The ASGCTR process sends input data to the assignment engine on a circuit by circuit basis to assign a new channel or call reference value.

  After successfully completing the assignments, an assignment (ostat=a) planning message is sent to FOMS. Based on user-settable parameters (SFO & STD), the output from the assignment process may be stored until requested, or sent immediately to FOMS and MAS, if required.

- **Correct CTR** (CORCTR)

  CORCTR allows the user to manually resolve CTR assignments. This function is generally used when CTR assignments result in RMA conditions, or when specific assignments are required. The SWITCH system will forward the assignment information to FOMS and MAS, if required, based on the SFO and STD control parameters.

CORCTR is started only through the SWITCH system ULBB COR WO Work Session.

- **Complete CTR** (PCNCTR)

  The contract PCNCTR is initiated manually from the SWITCH system ULBB. Completions are entered for an entire CTR or for one or more items in a CTR. As each part of the CTR is completed, the network units involved take on their final status in the database. At this time all pending activity information is deleted although the CTR number and the due date (or the estimated completion date used for the assignment) are retained as a record of the last activity on the network unit. When a PCNCTR completes a whole transfer or the last part of a transfer, the CTR will be removed from the SWITCH system database.

  If required translations data have not been sent to MAS, completion requests for those items will be rejected. If frame output has not been sent to FOMS, the user-settable parameter (IFC) determines whether the completion request for those items will be rejected or allowed:

  — IFC=N - completion requests will be rejected

  — IFC=Y - completion requests will be allowed

  Upon successful completion, PCNWO contract(s) will be sent to FOMS for any items in which frame output was previously sent. When the entire transfer is completed, a header-only PCNWO contract will be sent to FOMS so that FOMS may delete its record of the transfer.

- **Cancel CTR** (CANCTR)

  The contract CANCTR is initiated from the SWITCH system ULBB. Cancellations are entered for an entire CTR or for one or more items in the CTR. On partial cancellation, all pending activity information is deleted from the SWITCH system database and the network units involved are returned to their original state. Each involved item is marked as canceled in the CTR Unit Status Table (UST). Total cancellation removes all data associated with the CTR and removes the order from the SWITCH system database.

  On total cancellation of a CTR, a CANWO with header-only information is sent to FOMS.

  On partial cancellations, each canceled item for which FOMS has previously received wiring instructions is identified in the CANWO contract. If frame output has not been sent for any of the canceled items, then no CANWO is sent. A new establishment planning message is sent following any partial cancellation.

  If translations data have been sent to MAS for any of the items which are being canceled, then a cancellation request is sent to restore the canceled items to their original state.

9.8.1.1 Process Flow Control

BCC-settable parameters are used to provide maximum processing flexibility for each CTR. The parameters are provided to control the flow of CTR orders at any and all wire centers. Table 9-1 shows the work order control parameter (*wo order control*) table to be delivered as default reference data. Users have the option of providing control values at the order level (overrides) for SAL (start assignment logic), STD (send translations data), SFO (send frame output), and IFC (ignore frame output for completions). The manual overrides for SAL, STD, and SFO may be accomplished with either the PRECTR or the ASGCTR contract. The manual override for the IFC parameter may be accomplished with the PCNCTR contract. The parameters and their allowable settings provide for the following process flows:

1. **SAL** (Start Assignment Logic) Default value is "N".
   a. SAL=N - Establish a CTR (PRECTR) only. The ASGCTR contract will be initiated by a manual entry from the SWITCH system ULBB.
   b. SAL=Y - Start the ASGCTR process immediately after completion of the PRECTR process.
2. **SFO** (Send Frame Output) Default value is "N".
   a. SFO=N - Do not send FOMS frame output automatically on completion of the ASGCTR process. Frame output will be generated by a user-initiated request from FUSA or the SWITCH system ULBB REQ FO work session (REQWO contract). Manual override of this parameter may be accomplished from the PRECTR or ASGCTR process.
   b. SFO=Y - Send frame output automatically to FOMS on completion of the ASGCTR process.
3. **STD** (Send Translation Data) Default value is "N".
   a. STD=N - Do not send translations data to MAS automatically on completion of the ASGCTR process. Translations data will be generated by a user-initiated request via FUSA or the SWITCH system ULBB REQ TRM work session (REQTRM contract).
   b. STD=Y - Send translations data to MAS automatically on completion of the ASGCTR process.
4. **SOS** (Send Output Simultaneously) Default value is "N".
   a. SOS=N - The REQWO contract produces only frame output. The REQTRM contract produces only MAS output.
   b. SOS=Y - Produce both frame and translation output on receipt of either a REQWO or REQTRM contract.

5. **IFC** (Ignore Frame Output for Completions) Default value is "N".
   a. IFC=N - Do not allow completions to process if frame output has not been sent to FOMS.
   b. IFC=Y - Allow completions to process regardless of whether or not frame output has been sent to FOMS.

User input is permitted to supersede the default values of the parameters for a specific transfer.

9.8.1.2 MAS Involvement

An entry for CTRs exists in the *mas involvement* table. The table determines whether output will be sent to MAS for items which which generate MAS-affecting changes. If the value is "N", then output will not be sent to MAS. If the value is "Y", then output will be sent to MAS. The default value is "Y".

9.8.1.3 Item Numbers

Each item assigned in the CTR will be given a unique item number within the order. This item number remains with that transfer unit until it is completed or canceled. Item numbers are sent to FOMS and MAS to facilitate coordination of frame and translation work, when required.

Once canceled or completed, an item number will *not* be reused within the order. For example, if a pending assignment is canceled and subsequently reestablished, it will be given a new item number. However, a pending assignment which is corrected or reworked will retain its original item number.

9.8.2 SWITCH System-to-FOMS Interface for CTRs

The following contracts are used to transmit information to FOMS for a CTR in the SWITCH system:

- PREPWO - Planning Message
- PREWO - Frame Output
- CANWO - Cancellation Notification
- PCNWO - Completion Notification

9.8.2.1 Planning Messages

The contract PREPWO is used to transmit planning information about the CTR to FOMS. Establishment planning messages (PREPWO, ostat=e) are sent to FOMS following PRECTR processing. Assignment planning messages (PREPWO, ostat=a) are sent to FOMS following ASGCTR processing. The planning message will contain:

1. The order number.
2. The identification of the low and high switch port IDs, if the order is established by switch ports.
3. The order due date.
4. The frame due date (optional).
5. The setting of the SAL, SFO, and IFC flow control parameters.
6. The estimated completion date used for this assignment pass (optional). Returned in assignment planning messages only.
7. The total number of circuits available for assignment (establishment planning messages only).

9.8.2.2 Frame Output

The contract PREWO is used to send the frame output to FOMS for the pending CTR assignments. Each PREWO contract will include a sequence number. Sequence numbers will be included in all contracts sent to FOMS, except for planning messages. The sequence number will increment by one for each frame output contract sent for an order. The SWITCH system will record the sequence number of each item sent to FOMS so that the information in lost transmissions can be collected and resent.

Each item in the PREWO will also include the item number assigned by the SWITCH system. This item number is also sent to MAS in the TRM contracts and can be used to facilitate coordination between the work centers.

If an assignment for which frame output has previously been sent is reworked, frame output will be sent via a new PREWO contract reflecting the updated assignment. Each PREWO will have a unique sequence number as described above.

9.8.2.3 Cancellation Notification

Cancellations may be received after the CTR is established. The contracts CANWO and PREPWO are used by the SWITCH system to update (modify) the existing (last) planning message and information sent to FOMS. Deletions to a CTR are sent to FOMS via a

CANWO for circuits whose information was previously sent to FOMS, followed by a new establishment planning message (PREPWO, ostat=e) to inform FOMS of the changed size of the order.

In the event the whole CTR is canceled, the SWITCH system will send a single CANWO with header-only (order level) information to FOMS. A CANWO header message without any circuit data (OUTEQP aggregate) will always be interpreted as a total cancellation. A new planning message will not be generated.

CANWO contracts will contain sequence numbers as described above.

9.8.2.4 Completion Notification

Following a partial completion of a CTR, the SWITCH system determines if frame output was previously sent to FOMS for the completed items. If frame output was previously sent, then a PCNWO contract will be sent to notify FOMS of the completed items. Following a final (total) completion of the CTR, the PCNWO sent to FOMS will contain header-only information (e.g., order number) to notify FOMS of the CTR completion.

PCNWO contracts will contain sequence numbers as described above.

9.8.3 Establish a CTR

CTR establishment (PRECTR) is used to record the presence of a new CTR in the SWITCH system, to add circuits to a CTR that already exists or to enter or update user options. Establishment will produce an establishment (ostat=e) planning message for FOMS (PREPWO).

PRECTR may be initiated only via the SWITCH system ULBB SET CTR Work Session. The CTR can be established by specifying individual or range(s) of customer channels, call reference values, or switch ports. Only one type of network unit can be specified per CTR order. The CTR can also be established by specifying carrier circuits, or DS1 or higher level (non-customer associated) channels. If any of these items are specified, the PRECTR process will traverse the channel hierarchy to obtain all of the associated working (customer) channels. Since channels are obtained in this process, carrier circuits and channels may be specified within the same order. Channels and call reference values must have two IDs; one in a format distinguishable to an IC and the other in a format distinguishable to a CC (carrier controller). Only one format can be specified per CTR order.

The working NTUs (channels, call reference values, or switch ports) will be stored in the Unit Status Table (UST). The type of NTU, known as the key NTU type, as well as the ID format type will be stored in the CTR Order Work Task (OWT).

User input to establish a CTR includes:

1. The CTR order number.
2. The CTR Due Date.
3. Valid carrier circuits or network units defining the network units to be transferred. The network units may be in one or more formats:
   - Individual network units
   - A valid network unit range or ranges (low ID and high ID)
   - A masked network unit format

   The network units which can be specified are: channels, call reference values, and switch ports.
4. An optional estimated completion date (ECD) specifying the date on which the order (items on a particular pass of the order) is expected to be completed. The estimated completion date provides the time view the SWITCH system assignment engine uses to make switch port assignments. In the absence of an ECD, the order due date provides the time view the SWITCH system uses to make switch port assignments. An ECD functions as an override to the order date.
5. An optional frame due date (FDD).
6. An optional establishment line count to specify the maximum number of circuits to be established for this range of items.
7. An optional assignment line count to specify the maximum number of circuits to be assigned for this transfer range.
8. Optional order remarks (up to 60 characters).
9. Control options which include:
   — Filtering options.

   — Assignment control options.

   — Overrides to the flow control parameters.

   — An "expand" option tag. The expand option indicates that the output screen following the WSI for the CTR should be displayed by individual network unit ID. The default value (or absence) of the expand tag is EXPAND=N which displays network units in range format. This tag applies only when the establishment request is for an existing CTR.

9.8.3.1 PRECTR Processing

On receiving the PRECTR contract, the SWITCH system will check to determine whether the CTR order number exists.

If the order does not exist, the SWITCH system will:

1. Create a work order in the SWITCH system database to store the following information:

   a. CTR Order Number.

   b. CTR Order Due Date.

   c. Frame Due Date, if present.

   d. Estimated Completion Date, if present.

   e. The OUT channel, call reference value, or switch port IDs.

      The data stored are a function of the way the input has been identified in the PRECTR contract. Only the working network units will be established.

      — Transfer set up by individual network units.

        There will be a UST entry for each OUT network unit entered into the PRECTR contract.

      — Transfer set up by network unit range.

        There will be a UST entry for every OUT network unit in the transfer range. (This implies a way of deriving the correct sequence of valid network unit IDs for a specific IC or CC.)

      — Transfer set up by a hierarchal level ID (e.g., load group).

        There will be a UST entry for every working channel, call reference value, or switch port in the IC at the specified level. For example, a user entry of a load group ID (e.g., 101-115-???, a concentrator) will produce a UST with an entry for each switch port in the concentrator.

      — Transfer set up from a masked network unit format.

        There will be a UST entry for every OUT channel, call reference value, or switch port in the transfer range that matches the switching machine hierarchy level entered by the user. For example, the entry of a specific 5ESS line card level (e.g., 0???-???-12) will produce a UST with an entry for each switch port in 5ESS entity "0" whose line card number is "12".

      — Transfer set up by carrier circuit(s).

        There will be a UST entry for every working channel which is riding on the carrier circuit(s).

   If none of the network units entered are valid, the order will not be created. A message will be returned to the user indicating that the establishment was unsuccessful.

2. Produce a message to the user indicating the size of the new UST.
3. Produce a FOMS establishment planning message (PREPWO, type=e).
4. Determine the value of the Start Assignment Logic (SAL) parameter by:
   a. Determining whether an override value has been set for this order number. If an override is present, use the override value. If an override is not present, use the default value from SWITCH system reference data table *wo order control* (see Table 9-1).
   b. If the value indicates the CTR will be assigned manually (SAL=N), PRECTR processing terminates and the ASGCTR contract must then be invoked by an entry from the SWITCH system ULBB.
   c. If the value indicates the CTR should be assigned automatically in the SWITCH system (SAL=Y), invoke the ASGCTR contract at the completion of PRECTR processing. Pass along the values of all override (e.g., SFO, STD) that have been entered.

If the CTR order number already exists, the SWITCH system will:

1. Replace the existing order due date with a new due date (if changed).
2. Add or overwrite the frame due date if one is entered.
3. Add or overwrite the estimated completion date if one is entered.
4. Check the status of each input FROM network unit in the UST. If the network unit is already in the UST and does not have a "canceled" status, generate a message for the circuit. If the network unit is in the UST and has a "canceled" status, replace remove the "canceled" status.
5. Add each new network unit to the existing order (as described above for creating new orders).
6. Return a message to the user indicating the number of network units that have been added to the UST and the current size of the table.
7. Produce a corrected establishment planning message (PREPWO) for FOMS.
8. Stop or continue on to ASGCTR based on the Start Assignment Logic (SAL) parameter value.

9.8.4 Assign a CTR

The CTR assignment process (ASGCTR contract) may start automatically following completion of the CTR establishment (PRECTR with SAL=Y), or manually via the SWITCH system ULBB ASG CTR work session.

ASGCTR processing will determine which circuits will be transferred from the pool of working circuits established in the CTR. If filter control options are entered, the ASGCTR process will identify the circuits that match all the filter options and pass only those circuits to the assignment engine. The ASGCTR contract processor will also determine whether a switch port is available, working or pending. A circuit must be found to be working in the SWITCH system database as of the CTR order due date (or the estimated completion date, if present). The circuit must match the constraints imposed by user entered filter options.

The assignment engine is invoked for each circuit to be assigned. The assignment engine will select a new network unit(s) which will support the services on the circuit being transferred. ASGCTR will pass any user entered selection criteria to the assignment engine in specific tag/value pairs. The input selection criteria will be used to steer the selection of the new network unit(s). The selection criteria will also be used to ensure that certain network units are not selected. For example, if a maximum load factor is passed to selection, any network unit in a load group with a load factor greater than the maximum will be excluded from selection.

Network units may be added, deleted or changed by the assignment engine to support the service. Unless a route is specified (via the correction process described in Section 9.7.12), the assignment engine will use the selection criteria and/or the existing route to determine a route. The destination of the route will be determined by the assignment process as follows:

— If a route or destination is specified on input, the assignment process will use the destination provided in the route or the specified destination.

— If a route or destination is not specified on input, the assignment process will use the destination of the existing route.

Once assigned, a transfer unit in the CTR is given an item number. This item number is retained with the assigned transfer unit until it is either canceled or completed. The item number will be sent to FOMS and MAS to facilitate any required coordination of work between the RCMAC and the frame personnel. An item which is reworked is not assigned a new item number - the original item number is retained. Once canceled, an item which is subsequently reestablished and reassigned will be given a new, unique item number. Item numbers will not be reused within the order.

A count of the completed assignments is kept and compared to the input line count value, if present. Assignment will stop when the actual count is equal to the line count. If a line count is not entered, assignment will process all the circuits specified on the input.

Assignments may be sent to FOMS immediately (SFO=Y) upon completion of the ASGCTR process or may be stored until requested. An assignment planning message, the type "a" PREPWO contract, will be generated for FOMS with information about this assignment pass, including the estimated completion date used by this assignment pass, the number of circuits assigned, the item numbers which were given to the assignments, and the value of the IFC parameter. In addition, if the order was established by switch ports, the range for which the assignment was requested will be included.

If a MAS-affecting change has occurred, the translations data used to update the IC may be stored until requested (STD=N) or sent immediately to MAS on the completion of the ASGCTR process.

9.8.5 CTR Control Options

CTR Control options are divided into two types: filter options (circuit/service filters and equipment filters) and selection options. Control options are used to identify the network units to be changed in the range of the transfer and/or to pass assignment constraints for the new network units to the assignment engine. A user may enter or modify the control options for the transfer at any time prior to the total completion of the transfer. If more than one option is entered, the circuits that pass filtering will satisfy all the options entered (a logical AND condition).

If no options are entered, the assignment engine will attempt to reassign each working network unit in the transfer range to a suitable network unit using the normal assignment rules.

Filter options identify the characteristics of the circuits that will be transferred from the pool of working circuits in the range of the transfer. The options will be retained for subsequent establishment passes. Any modifications made during any establishment pass will be retained. In addition, the filters from the last establishment pass will be retained for subsequent assignment passes. The filter options are of two kinds:

- *Circuit/service filters* are used to find or exclude particular types of working circuits based on the original service assignment request.
- *Equipment filters* are generally used when the order is established by switch ports. They are used to detect conditions where the switch port assignment did not exactly match a requested CEC value, or to find or exclude switch ports based on the physical characteristics of the circuit such as working frame location.

One or more of the filter options may be entered or overridden. The filters provide the option of including or excluding circuits. When multiple filters are entered, these filters will be "ANDed" together. In addition, some filters may be given multiple values, e.g., class of service may have entries for two values such as coin and business. These values will be "ORed" together. If a filter is omitted, the filter condition will not be used to select circuits.

Line count, if entered, is considered a filter option in that it controls the maximum number of assignments that will be made at one time.

Selection options are used to establish network unit selection criteria for the assignment engine. These options *are* retained for subsequent CTR passes.

9.8.5.1 Circuit/Service Filter Options

The circuit/service filter options available for CTRs include:

1. Grade of service (GRSV) - (1) single party, (2) two party, (4) four party, (8) eight party
2. Class of service (CLSV) - (R) residence, (B) business, (C) coin
3. Category (CATG) - (V) voicegrade, (N) narrowband, (W) wideband, (D) digital data, (P) program audio, (M) MADN set, (I) ISDN pipe
4. Central office administrative type (CATY)
5. Essentiality (ESL) - (Y) Yes, (N) No
6. Administration of designed service review (ADSR)
7. Signaling (SIG) - (L) loop start, (G) ground start, (B) loop or ground start, (R) reverse battery, (P) Proprietary, (Q) Q.931 ISDN, (O) other
8. Pulsing (PUL) - (J) multi-frequency, (D) dial pulse
9. Digital data rate (DDR) - (L) 2.4, 4.8, or 9.6 kbs, (H) 56.0 kbs, (A) 64.0 kbs, (B) 144.0 kbs, (C) 1536.0 kbs, (D) 16.0 kbs, (E) 1.544 Mbs, (F) 384.0 kbs
10. Type of service (TYPSV) - (F) flag, (M) measured, (W) WATS
11. Directionality (DIR) - (I) inward, (O) outward, (B) both ways
12. Group ID
    - Centrex ID (CTX) - Centrex group number with identification of intelligent controller, or "*" for all centrex groups
    - Multi-Line Hunt Group ID (HML) - Multi-line hunt group number with identification of intelligent controller, or "*" for all multi-line hunt groups
    - Simulated Facility Group ID (SFG) - Simulated facility group number with identification of intelligent controller, or "*" for all simulated facility groups
    - Series Completion Hunt Group ID (SCH) - "i" for all series completion hunt groups
13. Telecommunications service priority circuit (TSP)
14. Low/High CCS (LOCCS/HICCS) (mutually exclusive with MINLF/MAXLF)
15. Minimum/Maximum Load Factor (MINLF/MAXLF) (mutually exclusive with LOCCS/HICCS)

9.8.5.2 Equipment Filter Options

The equipment filter options will find circuits with the following equipment features:

1. Network Unit Type - Circuits containing from one to three specified network unit types, e.g., circuits with transmission equipment and bridge lifters.
2. Assembly - Circuits that are composed of assemblies such as integrated facilities.
3. Frame/Zone - Circuits at a specified frame or frame/zone location.
4. Exclude complex circuit tag.
5. Essentiality - (Y) Yes, (N) No.
6. Signaling - (L) loop start, (G) ground start, (B) loop or ground start, (R) reverse battery, (P) proprietary, (Q) Q.931 ISDN, (O) other.
7. Pulsing - (J) multi-frequency, (D) dial pulse
8. Assigned Use (AUSE) (number of services working on a switch port) - 1-8

9.8.5.3 Selection Options

The selection criteria that may be passed to the assignment engine include:

1. Carrier Circuit - identifies specific carrier circuit from which a channel should be selected. (Mutually exclusive with any selection criteria).
2. Minimum and/or maximum load factor. The load factor value is inclusive. Passing a maximum value of "6" to the assignment engine requires the selection of a channel, call reference value, or switch port in a load group with a load factor of six or less. Both minimum and a maximum values may be entered. Entering a minimum value of "3" and a maximum value of "6" will constrain network unit selection to load groups with load factors of 3, 4, 5 or 6.
3. Load Group - identifies specific load group to include or exclude. (Mutually exclusive with load group exclusion.)
4. Load Group Exclusion - identifies the excluded load group from which a network unit should be selected. (Mutually exclusive with load group).

9.8.5.4 Filtering Rules

See Section 9.6.5.5 (Filtering Rules for CPTs).

9.8.5.5 Effect of Filtering On Completion

A user may establish a range of channels, call reference values, or switch ports in a CTR but intends on assigning only a subset of those circuits (using filtering options described above). Upon completion of those circuits, the order will remain in the SWITCH system database if there are unassigned circuits left in the transfer. If the user does not intend on assigning any more circuits in the transfer, the order is purged from the database by invoking the RMV CTR (CANCTR) work session.

The purging of the CTR order will be done automatically if the "remove order upon completion" (or PURGE) parameter is set to "Y" (Yes).

If the PURGE parameter is set to "N", then all working network units in the CTR must be assigned or canceled before the CTR can be totally completed. If a total completion contract is invoked, PURGE=N, and the UST indicates that there are circuits that have been filtered out of assignment, a notice is generated that indicates the CTR was not completed. Those items which are eligible for completion will be completed as requested. However, the order will remain in the SWITCH system database.

If the PURGE parameter is set to "Y", then when all pending assignments are completed, and there are no assignments in an error state, the CTR will be removed from the database. In this case there may be established items which were never assigned (i.e., filtered from assignment).

9.8.6 Request Frame Output

CTR orders may or may not require frame work. If the order involves a transfer of switch ports, then frame work will be required, otherwise frame work will not be required. However, frame output can be sent to FOMS for every item in the order, regardless of whether or not frame work is required. Requests for frame output are received with the REQWO contract. The user invokes the REQWO contract via the REQ FO work session from the SWITCH system ULBB or the FUSA transaction RQF. REQWO is used to provide frame output for circuits which were assigned with SFO=N (meaning the frame output was not sent automatically following assignment). The response is returned to FOMS using the PREWO contract. The output will contain information about physical network units, such as switch ports and carrier controller ports, and not information about logical network units, such as channels and call reference values.

The major options available when requesting frame output via the REQWO contract allow for:

1. The production of work instruction information for a given range of cable pairs, telephone numbers, switch ports, or item numbers (non-transfer unit identifiers).
2. The production of work instruction information for a given number of circuits or for ALL assigned circuits (line count).

If a request if received for a range that has not been assigned or has no new assignments, the SWITCH system will return an exception notice to the requesting terminal.

The UST is used to track whether or not FOMS output has been sent. Once output has been requested and sent for an item, subsequent changes to that assignment will be sent to FOMS automatically.

FOMS will detect when a provisioning request has assigned a facility being made available for assignment by a transfer. If the frame work for the transfer has not been reported completed, FOMS will package the new provisioning request wiring information with the CTR information so that the frame will not put the inward service order into jeopardy.

9.8.7 Request MAS Output

The REQTRM contract is used to generate translation information for MAS. The contract may be invoked by a manual input into the SWITCH system through the ULBB REQ TRM Work Session or the FUSA transaction RQT. REQTRM is used to send translations data for circuits which were assigned with STD=N (meaning the translations data were not sent automatically following assignment).

The options available when requesting MAS output via the REQTRM contract allow for:

1. The production of TRM output for a given range of cable pairs, telephone numbers, channels, call reference values, switch ports, or item numbers (non-transfer unit identifiers).
2. The production of TRM output for a given number of circuits or for ALL assigned circuits (i.e., line count).

If a request is received for a range that has not been assigned or has no new assignments, the SWITCH system will return an exception notice to the requesting terminal.

The translation response is returned to MAS via SOAC in a PRETMW or CORTMW contract. It should be noted that the contracts are also used for Frame Transfer orders. The TRM order classification tag in the *TMIS section of the contracts will have a value of CTR to identify the order as a CTR order (TRMOC=CTR).

The SWITCH system will send a single PRETMW contract to MAS for each CTR order. Corrections to information that has already been sent and additions to the CTR are sent to MAS via CORTMW contracts. Pending CTR assignments may be updated by rework processing. Following rework of a pending CTR assignment, the work order will automatically send a TRM update if the resulting change is MAS-affecting.

Following cancellation of an assignment for which translations data have already been sent to MAS, the SWITCH system will send a request to MAS to cancel the translation changes via a CORTMW contract.

9.8.8 Simultaneous FOMS and MAS Output

When output is requested for FOMS for pending work order assignments, the user may request that TRM output also be sent to MAS for those items. Likewise, when output is requested for MAS for pending work order assignments, the frame output may also be sent to FOMS at the same time. The control parameter SOS (Send Output Simultaneously) is evaluated during output request processing (either REQWO or REQTRM) to determine if the output is to be sent to both systems as a result of this request.

The following occurs when SOS=Y while processing a request for frame output (REQWO) and MAS output (REQTRM):

REQWO - When processing a request for FOMS output (REQWO contract), the items for which frame output has been requested and for which TRM output has not yet been created, will be evaluated to determine if they are to be sent to MAS, and if necessary, will be sent to MAS in the appropriate TRM contract (PRETMW or CORTMW).

REQTRM - When processing a request for MAS output (REQTRM contract), the assignments which are evaluated to determine if they are to be sent to MAS will be checked for FOMS output at the same time. Any item being screened for MAS output during REQTRM processing for which frame output has not yet been sent will be included in a PREWO contract and sent to FOMS.

When SOS=N, only the requested output will be sent, i.e., frame output will be sent as a result of REQWO and MAS output will be sent as a result of REQTRM.

Note that SOS is evaluated *only* when processing REQTRM or REQWO. It does not modify the action of SFO or STD, which are evaluated only when processing the assignment pass.

9.8.9 Order Interaction

Order interaction occurs in the SWITCH system when network unit selection rules are applied to inward order activity after determining that no completely spare units are available. The term "Order Interaction" implies that the selection process has the capability to continue searching for suitable network units even though they are involved in pending order activity. The order interactions that result require a unique set of rules. BCC-tunable rules provide for all types of order interactions (e.g. provisioning request with provisioning request, provisioning request with work order, or work order with work order).

9.8.10 Rework

If a circuit in a CTR order is reworked, the rework process will pass the "last" file (i.e., the original input) to the assignment engine. If the assignment is successful and frame output was previously sent to FOMS, new frame output will be sent to FOMS in a PREWO contract to reflect the new state of the circuit. If translations data were previously sent to MAS system, the SWITCH system will evaluate whether a subsequent MAS-affecting change has occurred. If such a change has occurred, new translations data will be sent to MAS in a CORTMW contract to reflect the new state of the circuit. If the assignment is not successful, the item will be marked in error in the UST and an error message will be generated.

9.8.11 CTR Modifications

Manual intervention may be required to modify the size, date, characteristics or assignment controls of a transfer.

1. The PRECTR contract can be used to change the due date of a transfer or to add items to an existing transfer. A new establishment planning message (PREPWO) will be sent to FOMS following each addition.
2. PRECTR and ASGCTR can add or change the estimated completion date of a transfer. This will not affect circuits that are already assigned.
3. The CANCTR contract can remove circuits from a transfer unless they are completed.

9.8.12 Resolve CTR Assignment

The COR WO work session can be invoked to initiate a manual assignment request for an item in a CTR. The COR WO work session will allow an unassigned transfer item to be manually assigned. The input to access the information to resolve assignment on a transfer item includes:

- Wire Center ID.
- CTR order number.
- FROM network unit identifier (channel, call reference value, or switch port).
- Optionally, an estimated completion date may be specified to indicate the time view from which the transfer unit should be retrieved. If no estimated completion date is entered, the CTR due date will be used.

Within the COR WO work session, all network units other than the cable pair can be added, changed or deleted. Although allowed by the work session, the carrier controller port that is assembled to the cable pair can not be changed as well. The connectivity of the transfer item may be entered if the transfer item is partially or totally constrained. The default values of SFO and STD may be overridden.

The COR WO work session will not allow correction processing on pending CTR assignments. If the input item is already assigned, an error will be returned.

The COR WO work session will invoke the CORCTR contract to manually assign the CTR item. The CORCTR contract will support the following actions when manually assigning an item:

1. Add a new prespecified network unit or have the SWITCH system select from inventory a new network unit of a specified type. The assignment process will verify that the new configuration matches an existing skeletal circuit model.
2. Delete any unnecessary pending network unit expect the cable pair and the carrier controller port assembled to the cable pair. The assignment process will verify that the new configuration matches an existing skeletal circuit model.
3. Change any network unit except the cable pair and the carrier controller port assembled to the cable pair by prespecifying the network unit or having the SWITCH system select a different unit.
4. Change the route or destination of the circuit.
5. Force network unit assignment at a specified frame or frame and zone.
6. Force assignment at a specified COMMON LANGUAGE Location.
7. Enter a facility change reason (FCR) for a network unit being taken out of a circuit.
8. Suppress the assignment engine validation and if necessary, additional automatic assignments (complete manual override).

The CORCTR contract processor will prepare an input to the assignment engine. This input may cause selection and assignment to occur or merely verify the quality of the manual assignment changes.

Where a user has suppressed assignment of a circuit, the CORCTR process will create a manual input for the assignment engine. In this case, the user is responsible for providing all network units and physical connectivity.

Upon completion of the CORCTR processing, FOMS and MAS output will be sent based on the values of SFO and STD.

9.8.13 Cancel a CTR

A CTR can be canceled totally or in part on receipt of a CANCTR contract. All assigned circuits involved in the cancellation will revert to their original status (i.e., before the CTR).

9.8.13.1 Cancellation Input Interface

- Total Cancellation

  The SWITCH system input will consist of a CANCTR contract containing only the CTR order number.

- Partial Cancellation

  The SWITCH system input will consist of a CANCTR contract containing:

  a. The CTR order number.

  b. Carrier circuit identifier, or channel, call reference value, or switch port identifiers for each canceled item or range of items in the CTR.

9.8.13.2 CANCTR Processing

- Total Cancellation

  a. If the SWITCH system has only stored the transfer information and sent a planning message to FOMS (i.e., no frame output has been sent to FOMS), a CANWO contract will be sent to FOMS consisting of header information including the CTR order number. There will be no information on specific transfer units canceled.

  b. If the SWITCH system has sent frame output to FOMS on any circuit in the CTR, the CANWO contract will contain the CTR order number. There will be no information on specific transfer units canceled (FOMS will cancel any item in the order for which it has already received frame output).

  c. If the SWITCH system has sent translation information to MAS on any circuit in the CTR, a CORTMW will be sent to "undo" any translation changes made as a result of this CTR. See Section 14 for details of the TRM processing.

- Partial Cancellation

  a. The SWITCH system will use the input carrier circuit id or network unit ids to identify the transfer items which are to be canceled.

  b. The SWITCH system will determine which of the transfer units being canceled have been assigned and which have been both assigned and have had output sent to either FOMS or MAS or both.

  c. A new PREPWO will be generated defining the new size and characteristics (range, designed circuits) of the CTR.

  d. Frame output will be sent to FOMS as follows:

     — If the SWITCH system has not sent frame output to FOMS on any circuit in the CTR, only the new PREPWO will be sent.

— If the SWITCH system has sent frame output to FOMS on any of the canceled items, a CANWO will be sent to FOMS with the CTR order number and identifiers for each canceled transfer item that was previously sent to FOMS. The updated PREPWO will also be sent.

— If the SWITCH system has sent translation information to MAS for any of the canceled items, a CORTMW will be sent to revert those items to their original state.

9.8.14 Complete a CTR

The PCNCTR contract is initiated from the SWITCH system ULBB CMP CTR work session. Completion may be requested for carrier circuit(s) or a range of channels, call reference values, or switch ports in the CTR or for the entire CTR. The IFC parameter determines whether a completion will be allowed for circuits in which frame output has not been sent to FOMS.

- Total Completion

  Since CTR orders may not require any frame work, frame output may have not been sent to FOMS. If IFC=N, entering the CTR number will complete the whole CTR providing all items have been assigned and all output has been sent to FOMS and MAS. If IFC=Y, entering the CTR number will complete the whole CTR providing all items have been assigned and all required output has been sent to MAS. Total completion will remove all pending database conditions for the CTR and remove the work order from the SWITCH system database.

  CTRs also include the PURGE option, which allows a completion to be a "final" completion when all pending assignments are completed, regardless of the number of items which were never assigned (i.e., filtered, etc.). The completion is not "final" if there exist items in the order for which assignment failed (i.e., marked in error in the UST). A completion which is not a "final" completion is a "partial" completion.

- Partial Completion

  A portion of the CTR can be completed by entering the CTR order number and the carrier circuit id(s) or network unit(s) to be completed. If IFC=Y, all eligible items specified on input will be completed regardless of whether or not frame output has been sent to FOMS for those items. If IFC=N, only those eligible items which have had frame output sent to FOMS will be completed.

  As each part of the CTR is completed, the network units involved take on their final status in the database. Although all pending information is deleted for each item in the order, the CTR order number and the CTR's due date (or estimated completion date) are retained.

The SWITCH system will automatically produce PCNWO contracts for FOMS. When processing a total completion, the PCNWO will include header-only information identifying the CTR which has been completed. When processing a partial completion, the PCNWO will identify the CTR order and each item which has been completed.

No completion output is required for MAS.

9.8.15 Service Order Out of Sequence Completions

When a service order is completing before a CTR work order with an earlier due date (out of sequence), the SWITCH system reassigns conflicting CTR items to a time view later than the completing service order. See Section 9.13 for a discussion of service order out of sequence completion processing and CTRs.

9.8.16 Assignment Redundancy Management

An Assignment Redundancy Management (ARM) process is used to send common update information from the SWITCH system to SOAC to update downstream systems such as NSDB. The ARM contract for CTRs, PCNCTR, is created on partial or total completion of the CTR. Since every item in the CTR involves a change of channel, call reference value, or switch port, every completed item will be included in the PCNCTR sent to SOAC. The information is transmitted in a *WCOF section in the PCNCTR contract.

See Section 14 for more information on ARM processing.

9.8.17 CTR Administration

The contracts RPTWO and INQWO may be used to track the status of the transfer.

The Load Balance Report will provide the data needed to establish a CTR.

9.9 Frame Transfers

A Frame Transfer (FTR) is a multi-pass work order which moves working circuits from their existing frame location to a new frame. This function is generally initiated by the frame personnel and is performed to either retire an existing frame or to clear congestion on a frame. When transferring circuits to the new frame, new switch ports may be desired to obtain short jumpers. The use of short jumpers will maximize the life of the new frame. The SWITCH system provides the capability to perform a frame transfer using the following two options:

— reusing the existing switch ports on the new frame

— selecting new switch ports on the new frame

New switch ports are selected using the existing Jumper Activity Management (JAM) functionality.

The SWITCH system provides the capability to execute a Frame Transfer Analysis Report (RPT FTA) via the ULBB or FUSA. The report allows frame and engineering personnel to develop a strategy for accomplishing the frame transfer by projecting transfer activity and forecasting the magnitude of work required.

An FTR may be entered in the SWITCH system via the ULBB or FUSA. The FTR is divided into the following functions:

1. Update inventory with the new frame and network unit frame terminations, as well as the associated reference data with the new frame.
2. Execute the FTR Analysis Report to develop a strategy for accomplishing the frame transfer. The report may be executed several times throughout the life of the frame transfer.
3. Establish the FTR defining the frame and/or area of the frame circuits will be transferred from, as well as the frame(s) the circuits will be transferred to.
4. Provide filters to refine the identity of the circuits to move from the entire population of circuits.
5. Assign the circuits.
6. Complete the FTR.

BCC users may establish a FTR in a variety of ways: by cable pair range, switch port range, trunk pair range, carrier controller port range, or by frame. Inputs are mutually exclusive per establishment pass. The FTR process first creates a list of all circuits that satisfy the establishment criteria. A user may provide additional filters, such as a group of CEC values, to further define the circuits that are actually to be processed. During assignment, these circuits are then passed one at a time to the SWITCH system assignment engine for reassignment on the new frame.

Since the FTR is a multi-pass work order which pends in the SWITCH system, it can be withdrawn once it is established/assigned and it requires positive completion. Corrections (resolving assignments or correcting pending assignments) to items in a FTR is not provided. If a circuit can not be assigned, then either the inventory should be updated and the circuit should be reassigned, or the circuit should be reassigned using different assignment options.

9.9.1 FTR Processing Overview

The SWITCH system processes (excluding reports and work session initialization) that are used during the life of an FTR are:

- **Establish FTR** (PREFTR)

  The PREFTR contract is used to record the presence of a new FTR in the SWITCH system, or to update the characteristics (filter options, TO frames, due date) or add additional items to an existing FTR. Successful FTR establishment or the update of an existing FTR will produce an establishment (ostat=e) planning message for FOMS (PREPWO contract).

  The PREFTR contract is initiated by a manual SWITCH system ULBB input or an input from FUSA.

- **Assign FTR** (ASGFTR)

  The ASGFTR contract is used to perform the assignment in the SWITCH system database and prepare the wiring information for FOMS and if required, translation information for MAS.

  The ASGFTR contract may be initiated automatically upon completion of the PREFTR contract (if SAL=Y) or may be started manually from the SWITCH system ULBB or FUSA. The ASGFTR process sends input data to the assignment engine on a circuit by circuit basis to assign a new switch port.

  After successfully completing the assignments, an assignment (ostat=a) planning message is sent to FOMS. Based on user-settable parameters (SFO & STD), the output from the assignment process may be stored until requested, or sent immediately to FOMS and/or MAS (if required).

- **Complete FTR** (PCNFTR) The PCNFTR contract is used to complete the assignments in the SWITCH system database.

  The PCNFTR contract is initiated manually from the SWITCH system ULBB or generated automatically upon completion in FOMS. Completions are entered for an entire FTR or for one or more items in an FTR. As each part of the FTR is completed, the network units involved take on their final status in the database. At this time all pending activity information is deleted although the FTR number and the due date (or the estimated completion date used for the assignment) are retained as a record of the last activity on the network unit. When a PCNFTR completes an entire order or the remaining items in an order, the FTR will be removed from the SWITCH system database.

  PCNWO contracts are generated for FOMS so that FOMS may delete its record of the FTR.

If frame output has not been sent to FOMS or translations data have not been sent to MAS, completion requests for those items will be rejected.

- **Cancel FTR** (CANFTR)

  The CANFTR contract is initiated from the SWITCH system ULBB or FUSA. Cancellations are entered for an entire FTR or for one or more items in the FTR. On partial cancellation, all pending activity information is deleted from the SWITCH system database and the network units involved are returned to their original state. Each involved item is marked as canceled in the FTR Unit Status Table (UST). Total cancellation removes all data associated with the FTR and removes the order from the SWITCH system database.

  On total cancellation of an FTR, a CANWO contract with header-only information is sent to FOMS.

  On partial cancellations, each canceled item for which FOMS has previously received wiring instructions is identified in the CANWO contract. If frame output has not been sent for any of the canceled items, then no CANWO contract is sent. A new establishment planning message is sent following any partial cancellation.

  If translations data have been sent to MAS for any of the items which are being canceled, then a cancellation request is sent to restore the items to their original state.

9.9.1.1 Process Flow Control

BCC-settable parameters are used to provide maximum processing flexibility for each FTR. The parameters are provided to control the flow of FTR orders at any and all wire centers. Table 9-1 shows the work order control parameter (*wo order control*) table to be delivered as default reference data. Users have the option of providing control values at the order level (overrides) for SAL (start assignment logic), STD (send translations data) and SFO (send frame output). These manual overrides may be accomplished with either the PREFTR or the ASGFTR contract. The parameters and their allowable settings provide for the following process flows:

1. **SAL** (Start Assignment Logic) Default value is "N".
   a. SAL=N - Establish an FTR (PREFTR) only. The ASGFTR contract will be initiated by a manual entry from the SWITCH system ULBB or FUSA.
   b. SAL=Y - Start the ASGFTR process immediately after completion of the PREFTR process.
2. **SFO** (Send Frame Output) Default value is "Y".
   a. SFO=N - Do not send FOMS frame output automatically on completion of the ASGFTR process. Frame output will be generated by a user initiated request from FUSA or the SWITCH system ULBB REQ FO work session (REQWO contract).

Manual override of this parameter may be accomplished from the PREFTR or ASGFTR process.

b. SFO=Y - Send frame output automatically on completion of the ASGFTR process.

3. **STD** (Send Translation Data) Default value is "N".

   a. STD=N - Do not send translations data to MAS automatically on completion of the ASGFTR process. Translations data will be generated by a user initiated request from FUSA or the SWITCH system ULBB REQ TRM work session (REQTRM contract).

   b. STD=Y - Send translations data to MAS automatically on completion of the ASGFTR process.

4. **SOS** (Send Output Simultaneously) Default value is "N".

   a. SOS=N - The REQWO contract produces only frame output. The REQTRM contract produces only MAS output.

   b. SOS=Y - Produce both frame and translation output on receipt of either a REQWO or REQTRM contract.

User input is permitted to supersede the default values of the parameters for a specific FTR order.

9.9.1.2 Assignment Control

The jmpr-mgmt-zone-limit (JMZL) parameter in the frame instance of the *wc parms* table exists specifically for JAMs and FTRs. As previously stated, the SWITCH system provides the capability to select new switch ports on the new frame. With respect to COSMIC-like frames, it is used to define the maximum length in zones from the cable pair the SWITCH system will search for an appropriate spare switch port. For the CODS 2 Over & Under frames, the value is ignored. The SWITCH system will search for an appropriate spare switch port in the superzone.

Refer to Section 9.8.4 for further details on the use of the JMZL parameter[20].

9.9.1.3 MAS Involvement

An entry for FTRs exist in the *mas involvement* table. The table determines whether output will be sent to MAS for items which which generate MAS-affecting changes. If the value

20. A home zone refers to the module the cable pair is terminated in. The superzone refers to the home zone and a specified number of adjacent modules. The number of adjacent modules is determined by the *frame zone search* table.

is "N", then output will not be sent to MAS. If the value is "Y", then output will be sent to MAS. The default value is "Y".

9.9.1.4 Item Numbers

Each item assigned in the FTR will be given a unique item number within the order. This item number remains with that transfer unit until it is completed or canceled. Item numbers are sent to FOMS and MAS to facilitate coordination of frame and translation work.

Once canceled or completed, an item number will *not* be reused within the order. For example, if a pending assignment is canceled and subsequently reestablished, it will be given a new item number. However, a pending assignment which is corrected or reworked will retain its original item number.

9.9.2 SWITCH System-to-FOMS Interface for FTRs

The following contracts are used to transmit information to FOMS for an FTR in the SWITCH system:

- PREPWO - Planning Message
- PREWO - Frame Output
- CANWO - Cancellation Notification
- PCNWO - Completion Notification

9.9.2.1 Planning Messages

The contract PREPWO is used to transmit planning information about the FTR to FOMS. Establishment planning messages (PREPWO, ostat=e) are sent to FOMS following PREFTR processing. Assignment planning messages (PREPWO, ostat=a) are sent to FOMS following ASGFTR processing. The planning message will contain:

1. The order number.
2. The FROM frame (i.e., the frame in which the circuits are being transferred from).
3. The TO frame(s) (i.e., the frame(s) in which the circuits are being transferred to).
4. The order due date.
5. The frame due date (optional).
6. The setting of the SAL and SFO flow control parameters.

7. The estimated completion date used for this assignment pass (optional). Returned in assignment planning messages only.
8. The total number of circuits available for assignment (establishment planning messages only).

9.9.2.2 Frame Output

The contract PREWO is used to send the frame output to FOMS for the pending FTR assignments. Each PREWO contract will include a sequence number. Sequence numbers will be included in all contracts sent to FOMS, except for planning messages. The sequence number will increment by one for each frame output contract sent for an order. The SWITCH system will record the sequence number of each item sent to FOMS so that the information in lost transmissions can be collected and resent.

Each item in the PREWO will also include the item number assigned by the SWITCH system. This item number is also sent to MAS in the TRM contracts and can be used to facilitate coordination between the work centers.

If an assignment for which frame output has previously been sent is reworked, frame output will be sent via a new PREWO contract reflecting the updated assignment. Each PREWO will have a unique sequence number as described above.

9.9.2.3 Cancellation Notification

Cancellations may be received after the FTR is established. The contracts CANWO and PREPWO are used by the SWITCH system to update (modify) the existing (last) planning message and wiring information sent to FOMS. Deletions to a FTR are sent to FOMS via a CANWO for circuits whose wiring instructions were previously sent to FOMS, followed by a new establishment planning message (PREPWO, ostat=e) to inform FOMS of the changed size of the order.

In the event the whole FTR is canceled, the SWITCH system will send a single CANWO with header-only (order level) information to FOMS. A CANWO header message without any circuit data (OUTEQP aggregate) will always be interpreted as a total cancellation. A new planning message will not be generated.

CANWO contracts will contain sequence numbers as described above.

9.9.2.4 Completion Notification

When a FTR completion is processed in the SWITCH system, a PCNWO contract will be sent to notify FOMS of the completion. Following a final (total) completion of the FTR, the

PCNWO sent to FOMS will contain header-only information (e.g., order number) to notify FOMS of the FTR completion. Following a partial completion of the FTR, the PCNWO sent to FOMS will identify each item for which the assignment has been completed.

PCNWO contracts will contain sequence numbers as described above.

9.9.3 Establish a FTR

FTR establishment (PREFTR) is used to record the presence of a new FTR in the SWITCH system, to add circuits to an existing FTR or to update user options or characteristics of an FTR. Establishment will produce an establishment (ostat=e) planning message for FOMS (PREPWO).

The PREFTR contract may be initiated via the SWITCH system ULBB SET FTR Work Session or FUSA transaction FTE.

The FTR can be established by cable pair or range of cable pairs, switch port or range of switch ports, trunk pair or by range of trunk pairs, carrier controller port or by range of carrier controller port. However, only one type of network unit can be specified per establishment pass. Additionally, the FTR can be established by frame (i.e., all the circuits on the frame will be established in the order). Establishment by frame and establishment by network units are mutually exclusive per establishment pass.

The Unit Status Table (UST) of an FTR will be keyed by the internal circuit ID. Therefore, for any given input criteria (cable pairs, switch ports, trunk pairs, carrier controller ports, or frame), the associated circuit will be retrieved and stored in the UST. Only working customer circuits will be retrieved. Hence, switch ports and carrier controller ports of carrier circuits will not be established in an FTR. Working circuits include those having connectivity to the FROM frame, as well as those having no connectivity, but which have network units with physical appearance edges to the FROM frame. It is the responsibility of the User to ensure that all circuits that are established with no connectivity are verified to be a part of the FTR. User input to establish an FTR includes:

1. The name of the FROM frame.
2. The name of the TO frame(s) (a maximum of ten frames may be specified).
3. The FTR order number.
4. The FTR due date.
5. The assignment type (applicable only if SAL=Y).
   (the assignment type is discussed in the next section)
6. The threshold jumper length (threshold JL) (applicable only if SAL=Y). As discussed in the next section, the threshold JL in conjunction with the assignment type will determine which circuits will be assigned.

7. Valid network units defining the circuits to be processed. These may be in one or more formats:
   - Individual network units
   - A valid network unit range or ranges (low ID and high ID)
   - A masked network unit format.

   The network units which can be specified are: cable pairs, switch ports, trunk pairs, and carrier controller ports. Alternatively, the entire frame can be specified.
8. An optional estimated completion date (ECD) specifying the date on which the order (items on a particular pass of the order) is expected to be completed. The ECD provides the time view the SWITCH system assignment engine uses to make switch port assignments. In the absence of an ECD, the order due date provides the time view the SWITCH system uses to make the assignments. An ECD functions as an override to the order date.
9. An optional frame due date (FDD).
10. An optional establishment line count to specify the maximum number of circuits to be established for this range of items.
11. An optional assignment line count to specify the maximum number of circuits to be assigned for this range of items (applicable only if SAL=Y).
12. Optional frame remarks (up to 60 characters).
13. Control options which include:

    — Filtering options.

    — Assignment control options (applicable only if SAL=Y).

    — Purge option for completions.

    — Overrides to the flow control parameters.

9.9.3.1 PREFTR Processing

On receiving the PREFTR contract, the SWITCH system will check to determine whether the FTR order number exists.

If the order does not exist, the SWITCH system will:

1. Create a work order in the SWITCH system database to store the following information:

   a. FTR Order Number.

   b. FTR Order Due Date.

   c. Frame Due Date, if present.
   d. Estimated Completion Date, if present.
   e. The FROM Frame.
   f. The TO Frame(s).
   g. Internal Circuit IDs.

      For each network unit specified on input which is on the FROM frame, the associated circuit ID will be retrieved and stored in the UST. If the entire frame is specified on input, the associated circuit ID of each network unit on the frame will be retrieved and stored in the UST. If none of the network units entered are valid, the order will not be created. A message will be returned to the user indicating that the establishment was unsuccessful.

2. Produce a message to the user indicating the size of the new UST.
3. Produce a FOMS establishment planning message (PREPWO, type=e).
4. Determine the value of the Start Assignment Logic (SAL) parameter by:
   a. Determining whether an override value has been set for this order number. If an override is present, use the override value. If an override is not present, use the default value from SWITCH system reference data table *wo order control* (see Table 9-1).
   b. If the value indicates the FTR will be assigned manually (SAL=N), PREFTR processing terminates and the ASGFTR contract must then be invoked by an entry from the SWITCH system ULBB or FUSA.
   c. If the value indicates the FTR should be assigned automatically in the SWITCH system (SAL=Y), the ASGFTR contract is invoked at the completion of PREFTR processing. Pass along the values of all override (e.g., SFO, STD) that have been entered. A maximum limit of 500 circuits will be processed per establishment pass. If more than 500 circuits are entered on input, only the first 500 applicable circuits will be established and assigned in the order. A message will be generated indicating that only 500 circuits were processed.

If the FTR order number already exists, the SWITCH system will:

1. Replace the existing order due date with a new due date (if changed).
2. Add or overwrite the frame due date if one is entered.
3. Add or overwrite the estimated completion date if one is entered.
4. Add TO frame(s) if any are entered.

5. For each network unit specified on input, check the status of the associated circuit ID in the UST. If the circuit is in the UST and has a "canceled" status, remove the "canceled" status.
6. Add the internal circuit ID of each new network unit to the existing order (as described above for creating new orders).
7. Return a message to the user indicating the number of circuits that have been added to the UST and the current size of the table.
8. Produce a corrected establishment planning message (PREPWO) for FOMS.
9. Stop or continue on to ASGFTR based on the Start Assignment Logic (SAL) parameter value.

9.9.4 Assign an FTR

The FTR assignment process (ASGFTR contract) may start automatically following completion of the FTR establishment (PREFTR with SAL=Y), or manually via the SWITCH system ULBB ASG FTR work session or FUSA. If SAL=Y, a maximum of 500 circuits will be processed. The assignment can be requested for an individual network unit, for a range or ranges of network units which have been previously established, or for the entire order. For each circuit, the ASGFTR contract processor will verify that at least one network unit on the circuit is working on the FROM frame prior to being assigned. As above, the definition of a working circuit includes circuits with connectivity to the FROM frame, as well as those with no connectivity but having network units with physical appearance edges to the FROM frame. In addition, the ASGFTR contract processor will verify that all network units (except tie pairs) of a circuit which are working on the FROM frame, also have physical appearances on a TO frame.

A threshold JL may be specified on input which is used to select items for transfer based upon the zone differential between the cable pair and switch port or carrier controller port and switch port on the TO frame. The assignment process provides the capability to specify one of the following three types of assignments:

1. assignments that reuse switch ports at their new frame appearance:
   a. switch ports are reused for all circuits
   b. switch ports are reused based upon the threshold JL
2. assignments that select new switch ports on the new frame based upon the threshold JL
3. assignments where the SWITCH system determines whether to reuse the switch ports or select new switch ports based upon the threshold JL

The first assignment type, known as RSP (Reuse Switch Port at New Frame), has two options. The options are invoked depending on whether a threshold JL is specified. If a threshold JL is not specified, then all of the circuits within the given input range will be assigned during that assignment pass. The switch ports will be reused on each circuit. The distance between a cable pair and switch port or a carrier controller port and switch port for a circuit is known as the jumper length. If a threshold JL is specified, then only certain circuits within the given input range will be assigned during that assignment pass; specifically those circuits which have a jumper length on the TO frame that is less than or equal to the threshold JL. The switch ports will be reused on each circuit. Other circuits within the given input range which did not meet the criteria will not be assigned during that pass.

The second assignment type, known as ASP (Assign New Switch Port at New Frame), requires the threshold JL on input. If the threshold JL is not specified, an error message will be generated. Only certain circuits within the given input range will be assigned during the assignment pass; specifically those circuits which have a jumper length on the TO frame that is greater than the threshold JL. New switch ports will be selected for each circuit. Other circuits within the given input range which did not meet the criteria will not be assigned during that pass.

The third assignment type, known as SDA (SWITCH system Determines Assignment), also requires the threshold JL on input. If the threshold JL is not specified, an error message will be generated. All circuits within the given input range will be assigned during the assignment pass. Switch ports will be reused on all circuits which have a jumper length on the TO frame that is less than or equal to the threshold JL, and new switch ports will be selected for all circuits which have a jumper length on the TO frame that is greater than the threshold JL.

Calculating the jumper length of a circuit is only applicable when there are no other network units (with the exception of tie pairs) on a frame besides the cable pair and switch port or the carrier controller port and switch port. That is, the calculation of a jumper length is not applicable if the circuit contains network units with physical frame appearances such as bridge lifters, transmission equipment, miscellaneous equipment or multiple cable pairs. Since selecting new switch ports on these circuits does not guarantee a short jumper, and in almost all cases would require tie pairs, all switch ports on these circuits will be reused.

In order to calculate the jumper length of a circuit, a "common" TO frame must exist between the cable pair and switch port or the carrier controller port and switch port. Having a frame in common means that there exists a match between all three of the following items: 1) one of the specified TO frames, 2) a physical appearance edge or connectivity edge of the cable pair or carrier controller port a TO frame, and 3) a physical appearance edge or connectivity edge of the SWPT on a TO frame. If a common TO frame does not exist (i.e., a jumper length can not be calculated), the ASGFTR contract processor will determine if a physical appearance edge exists on the TO frame for the cable pair or carrier controller port. If one exists, then a new switch port will be selected on the TO frame of the cable pair or carrier controller port, otherwise the switch port will be reused at its new frame appearance.

All of the logic previously discussed is for circuits which are transferring to a COSMIC, ESS Modular, CODS2 Side-by-Side, or Conventional frame. However, for circuits transferring to a CODS2 Over & Under frame, different assignment logic is performed. The ASGFTR contract processor performs different calculations to determine whether the switch ports will be reused based on the type of frame. For each circuit transferring to a COSMIC, ESS Modular, CODS2 Side-by-Side, or Conventional frame, the contract processor uses the following calculations:

— If the jumper length <= the threshold JL, the SWPT will be reused.

— If the jumper length > the threshold JL, a new SWPT will be selected.

For each circuit transferring to a CODS2 Over & Under frame, the contract processor uses the following calculations:

— If the cable pair and switch port or carrier controller port and switch port are within the same superzone, the switch port will be reused.

— If the cable pair and switch port or carrier controller port and switch port are not within the same superzone, a new switch port will be selected.

When selecting a new switch port on a COSMIC, ESS Modular, CODS2 Side-by-Side, or Conventional frame, the ASGFTR contract processor verifies that the value of the threshold JL is greater than the value of the JMZL parameter. When selecting a new switch port on a CODS2 Over & Under frame, the ASGFTR contract processor verifies that the value of the JMZL parameter is equal to "S" (for superzone). These validations are performed to ensure that a proper set of circuits are assigned, and to prevent unnecessary and non-optimal assignments from occurring.

The assignment engine is invoked for each circuit to be assigned. When reusing the switch port of a circuit, the assignment engine reanalyzes the connectivity for all the networks in the circuit using the specified TO frame(s). When selecting a new switch port for a circuit, the assignment engine reanalyzes the connectivity for the cable pair or carrier controller port using the specified TO frame(s), and uses the existing circuit design criteria to select a new switch port on the TO frame. The search for the new switch port is restricted to within the bounds of the JMZL parameter. Originating from the cable pair, the value of the parameter defines the maximum allowable zone search. As an example, if the value of the JMZL parameter is 2, the assignment engine would search a maximum of 5 zones for an appropriate spare switch port on the new frame. This consists of the zone the cable pair is in, commonly referred to as the home zone, the two left zones adjacent to the home zone, and the two right zones adjacent to the home zone (providing they exist). In addition, the assignment engine will only assign a new switch port if the new circuit configuration will not require tie pairs.

As stated, the existing circuit design criteria is used in the selection process. In order to select a desirable or comparable switch port, the selection process recalculates the total penalty score of the current switch port and compares it with the total penalty score of the candidate switch port. The candidate switch port will be assigned only if the total penalty score of the candidate switch port is less than or equal to the total penalty score of the current switch port. Circuits which have tie pairs do not have a jumper length penalty score. For these circuits, the selection process will use the maximum jumper length penalty score in the *sel jumper score* table as the jumper length penalty score when recalculating the total penalty score for the current switch port. If the candidate switch port meets all of the criteria (i.e., sufficient penalty score, adequate jumper length, does not require tie pairs), the assignment engine will assign the switch port to the circuit; otherwise no assignments will be made to the circuit.

Once assigned, a transfer unit in the FTR is given an item number. This item number is retained with the assigned transfer unit until it is either canceled or completed. The item number will be sent to FOMS and MAS to facilitate coordination of work between the RCMAC and the frame personnel. An item which is reworked is not assigned a new item number - the original item number is retained. Once canceled, an item which is subsequently reestablished and reassigned will be given a new, unique item number. Item numbers will not be reused within the order.

A count of the completed assignments is kept and compared to the input assignment line count value, if present. Assignment will stop when the actual count is equal to the assignment line count. If a line count is not entered, assignment will process all the qualifying circuits specified on the input.

The wiring information from the assignment processing, including the item number, may be stored until requested (SFO=N), or sent immediately upon completion of the ASGFTR contract. An assignment planning message, the type "a" PREPWO contract, will be generated for FOMS with information about this assignment pass, the estimated completion date used by this assignment pass, and the item numbers which were given to the assignments.

If a MAS-affecting change has occurred on a circuit (i.e., a switch port change), translations data need to be sent to MAS to update the IC. The translations data from the assignment process may be stored until requested (STD=N) or sent immediately on the completion of the ASGFTR contract (STD=Y).

9.9.5 FTR Filter Control Options

FTR Filter Control options are used to identify the circuits to be changed in the range of the transfer. A user may enter or modify the filters options for the transfer at any time prior to the total completion of the transfer. If more than one option is entered, the circuits that pass filtering will satisfy all the options entered (a logical AND condition).

Filter options identify the characteristics of the circuits that will be transferred from the pool of circuits in the range of the transfer. If the process is invoked from the SWITCH system ULBB, the filters will be retained for subsequent (ULBB) establishment passes. Any modifications made during any establishment pass will be retained. In addition, the filters from the last establishment pass will be retained for subsequent (ULBB) assignment passes. The filter options are of two kinds: *Circuit/Service filters and Equipment filters*

- *Circuit/Service filters* are used to find particular types of working circuits based on the original service assignment request.
- *Equipment filters* are used to detect conditions where the switch port assignment did not exactly match a requested CEC value.

One or more of the filter options may be entered or overridden. The filters provide the option of including or excluding circuits. When multiple filters are entered, these filters will be "ANDed" together. In addition, some filters may be given multiple values, e.g., class of service may have entries for two values such as coin and business. These values will be "ORed" together. If a filter is omitted, the filter condition will not be used to select circuits.

The assignment line count, if entered, is considered a filter option in that it controls the maximum number of assignments that will be made at one time.

9.9.5.1 Circuit/Service Filter Options

The circuit/service filter options available for FTRs include:

1. Grade of service (GRSV) - (1) single party, (2) two party, (4) four party, (8) eight party
2. Class of service (CLSV) - (R) residence, (B) business, (C) coin
3. Category (CATG) - (V) voicegrade, (N) narrowband, (W) wideband, (D) digital data, (P) program audio, (M) MADN set, (I) ISDN pipe
4. Central office administrative type (CATY)
5. Essentiality (ESL) - (Y) Yes, (N) No
6. Administration of designed service review (ADSR)
7. Signaling (SIG) - (L) loop start, (G) ground start, (B) loop or ground start, (R) reverse battery, (P) Proprietary, (Q) Q.931 ISDN, (O) other
8. Pulsing (PUL) - (J) multi-frequency, (D) dial pulse
9. Type of service (TYPSV) - (F) flag, (M) measured, (W) WATS
10. Directionality (DIR) - (I) inward, (O) outward, (B) both ways
11. Group ID
    - Centrex ID (CTX) - Centrex group number with identification of intelligent controller, or "*" for all centrex groups
    - Multi-Line Hunt Group ID (HML) - Multi-line hunt group number with identification of intelligent controller, or "*" for all multi-line hunt groups

- Simulated Facility Group ID (SFG) - Simulated facility group number with identification of intelligent controller, or "*" for all simulated facility groups
- Series Completion Hunt Group ID (SCH) - "*" for all series completion hunt groups

12. Telecommunications service priority circuit (TSP)

9.9.5.2 Equipment Filter Options

The equipment filter options will find circuits with the following equipment features:

1. Network Unit Type - Circuits containing from one to three specified network unit types
2. Assembly - Circuits that are composed of assemblies such as integrated facilities.
3. Frame/Zone - Circuits at a specified OUT frame or frame/zone location. (The Frame is populated with the FROM frame and is protected).
4. Exclude complex circuit tag.
5. Essentiality - (Y) Yes, (N) No.
6. Signaling - (L) loop start, (G) ground start, (B) loop or ground start, (R) reverse battery, (P) proprietary, (Q) Q.931 ISDN, (O) other.
7. Pulsing - (J) multi-frequency, (D) dial pulse
8. Assigned Use (AUSE) (number of services working on a switch port) - 1-8

9.9.5.3 Effect of Filtering On Completion

A user may establish a range of network units in an FTR but intends on assigning only a subset of those circuits (using filtering options described above). Upon completion of those circuits, the order will remain in the SWITCH system database if there are unassigned circuits left in the transfer. If the user does not intend on assigning any more circuits in the transfer, the order may purged from the database by invoking the RMV FTR (CANFTR) work session or FUSA transaction FTW.

The purging of the FTR will be done automatically if the "remove order upon completion" (or PURGE) parameter is set to "Y" (Yes).

If the PURGE parameter is set to "N", then all the items in the FTR must be assigned or canceled before the FTR can be totally completed. If a total completion contract is invoked, PURGE=N, and the UST indicates that there are circuits that have been filtered out of assignment, a notice is generated that indicates the FTR was not completed. Those items which are eligible for completion will be completed as requested. However, the order will remain in the SWITCH system database.

If the PURGE parameter is set to "Y" and all pending assignments are completed, the FTR will be removed from the database.

9.9.6 Request Frame Output

Requests for work instruction information are received with the contract REQWO. The user invokes the REQWO contract via the REQ FO work session from the SWITCH system ULBB or the FUSA transaction RQF. REQWO is used to provide frame output for circuits which were assigned with SFO=N (meaning the frame output was not sent automatically following assignment). The response is returned to FOMS using the contract PREWO.

The major options available when requesting frame output via the REQWO contract allow for:

1. The production of work instruction information for a given range of cable pairs, switch ports, carrier controller ports, telephone numbers, or item numbers.
2. The production of work instruction information for a given number of circuits (line count) or for ALL assigned circuits.

The UST is used to track whether or not FOMS output has been sent. Once output has been requested and sent for an item, subsequent changes to that assignment will be sent to FOMS automatically.

If a request if received for a range that has not been assigned or has no new assignments, the SWITCH system will return an exception notice to the requesting terminal.

FOMS will detect when a provisioning request has assigned a facility being made available for assignment by a transfer. If the frame work for the transfer has not been reported completed, FOMS will package the new provisioning request wiring information with the FTR information so that the frame will not put the inward service order into jeopardy.

Frame Output for circuits that have no connectivity will generated as follows: For all network units, the physical appearance information for the FROM frame will be used in the *WO:TRAN.EQP.OLD section to populate the PRTERM, FRTERM and/or FRZONE tags. The physical appearance information for highest priority TO frame will be used in the *WO:TRAN.EQP.NEW section to populate the PRTERM, FRTERM and/or FRZONE tags.

9.9.7 Request MAS Output

The Translation Redundancy Management (TRM) interface is used to send translations data from the SWITCH system to MAS via SOAC. The REQTRM contract is used to generate the translation information for MAS. The contract may be invoked by a manual input into the SWITCH system through the ULBB REQ TRM Work Session, or the FUSA transaction RQT. REQTRM is used to send translations data for circuits which were assigned with STD=N (i.e., the translations data were not sent automatically following assignment).

The options available when requesting MAS output via the REQTRM contract allow for:

1. The production of TRM output for a given range of cable pairs, switch ports, carrier controller ports, telephone numbers, or item numbers.
2. The production of TRM output for a given number of circuits or for ALL assigned circuits (i.e., line count).

If a request is received for a range that has not been assigned, has no new assignments, or is not MAS-affecting, the SWITCH system will return an exception notice to the requesting terminal.

The translation response is returned to MAS in PRETMW or CORTMW contracts[21]. The range of information evaluated for TRM output matches the range specified in the REQTRM contract. Any MAS-affecting FTR assignment in the REQTRM request which has not yet been sent to MAS will be included in a PRE/CORTMW contract.

Corrections to information that has already been sent and additions to the FTR are sent to MAS via CORTMW contracts.

Following cancellation of an assignment for which translations data have already been sent to MAS, the SWITCH system will send a request to MAS to cancel the translation changes via a CORTMW contract.

9.9.8 Simultaneous FOMS and MAS Output

When output is requested for FOMS for pending work order assignments, the user may request that TRM output also be sent to MAS for those items. Likewise, when output is requested for MAS for pending work order assignments, the frame output may also be sent to FOMS at the same time. The control parameter SOS (Send Output Simultaneously) is evaluated during output request processing (either REQWO or REQTRM) to determine if the output is to be sent to both systems as a result of this request.

The following occurs when SOS=Y while processing a request for frame output (REQWO) and MAS output (REQTRM):

REQWO - When processing a request for FOMS output (contract REQWO), the items for which frame output has been requested and for which TRM

21. The PRETMW and CORTMW contracts are also used for FTRs.

output has not yet been created will be sent to MAS in the appropriate TRM contract (PRETMW or CORTMW).

REQTRM - When processing a request for MAS output (contract REQTRM), the assignments which are evaluated to determine if they are to be sent to MAS will be checked for FOMS output at the same time. Any item being screened for MAS output during REQTRM processing for which frame output has not yet been sent will be included in a PREWO contract and sent to FOMS.

When SOS=N, only the requested output will be sent, i.e., frame output will be sent as a result of REQWO and MAS output will be sent as a result of REQTRM.

Note that SOS is evaluated *only* when processing REQTRM or REQWO. It does not modify the action of SFO or STD, which are evaluated only when processing the assignment pass.

9.9.9 Order Interaction

Order interaction occurs in the SWITCH system when network unit selection rules are applied to inward order activity after determining that no completely spare units are available. The term "Order Interaction" implies that the selection process has the capability to continue searching for suitable network units even though they are involved in pending order activity. The order interactions that result require a unique set of rules. BCC-tunable rules provide for all types of order interactions (e.g. provisioning request with provisioning request, provisioning request with work order, or work order with work order).

9.9.10 Rework

If a circuit in an FTR order is disconnected in a prior time view of the FTR order, the rework process will automatically cancel the circuit from the transfer, with one exception (discussed below). This will apply to circuits which are in an "established" state as well as those which are in an "assigned" state. Circuits which are in an "established" state will have a trigger delta associated with it, and circuits which are in an "assigned" state will have an assignment delta associated with it. Whenever a circuit is reworked (and not being disconnected), the rework process will determine if any network units of the circuit are still on the FROM frame. If at least one network unit has a connectivity edge to the frame, or if no network unit has connectivity but at least one network unit has a physical appearance edge on the frame, then the rework process will invoke the assignment engine to reassign the circuit. If no network units have either connectivity or physical appearance edges to the frame, then the rework process will automatically cancel the circuit from the transfer, with one exception. The exception occurs when the item to be canceled is the last item in the FTR order. Instead of cancelling the item and essentially cancelling the order, the rework process will place the item in error and an error message will be generated. If a circuit is canceled, and translations data or frame output were previously sent to MAS or FOMS, then a CORTMW contract and/or a CANWO contract will be sent, respectively.

9.9.11 Cancel an FTR

An FTR can be canceled completely or in part on receipt of a CANFTR contract. The CANFTR contract can be initiated from the SWITCH system ULBB or FUSA. The cancellation may be requested for an individual network unit, for a range or ranges of network units which have been previously established/assigned, or for the entire FTR order. Additionally, if the cancellation is from FUSA, item numbers may be specified. All assigned circuits involved in the cancellation will revert to their original status (i.e., before the FTR).

9.9.11.1 Cancellation Input Interface

- Total Cancellation

  The SWITCH system input will consist of a CANFTR contract containing only the FTR order number.

- Partial Cancellation

  The SWITCH system input will consist of a CANFTR contract containing:

  a. The FTR order number.

  b. Network unit identifiers for each canceled item or range of items in the FTR.

9.9.11.2 CANFTR Processing

- Total Cancellation

  a. If the SWITCH system has only stored the transfer information and sent an establishment planning message to FOMS (i.e., no frame output has been sent to FOMS), a CANWO contract will be sent to FOMS consisting of header information including the FTR order number.

  b. If the SWITCH system has sent wiring information to FOMS on any circuit in the FTR, a CANWO contract will be sent to FOMS consisting of header information including the FTR order number. There will be no information on specific transfer units canceled. However, FOMS will cancel any item in the order for which it has already received frame output.

c. If the SWITCH system has sent translation information to MAS on any circuit in the FTR, a CORTMW will be sent to "undo" any translation changes made as a result of this FTR. See Section 14 for details of the TRM processing.

- Partial Cancellation

a. The SWITCH system will determine which of the transfer units being canceled have been assigned and which have been both assigned and have had output sent to either FOMS or MAS or both.

b. A new PREPWO will be generated defining the new size and characteristics (range, designed circuits) of the FTR.

c. Frame output will be sent to FOMS as follows:

— If the SWITCH system has not sent wiring information to FOMS on any circuit in the FTR, only the new PREPWO will be sent.

— If the SWITCH system has sent wiring information to FOMS on any of the canceled items, a CANWO will be sent to FOMS with the FTR order number and identifiers for each canceled transfer item that was previously sent to FOMS. The updated PREPWO will also be sent.

— If the SWITCH system has sent translation information to MAS for any of the canceled items, a CORTMW will be sent to revert those items to their original state.

9.9.12 Complete an FTR

The PCNFTR contract is normally initiated in FOMS but may be entered through the SWITCH system ULBB. The completion may be requested for an individual network unit, for a range or ranges of network units which have been previously assigned, or for the entire FTR order. Additionally, if the completion is from FOMS, item numbers may be specified.

- Total Completion

Entering the FTR order number will complete the whole FTR providing all output has been sent to FOMS and all required output has been sent to MAS for those items which are assigned. Total completion will remove all pending database conditions in the FTR and remove the work order from the SWITCH system database.

FTRs include the PURGE option, which allows a completion to be a "final" completion when all pending assignments are completed. Items which remain in the establishment phase (i.e., filtered, etc.) will be purged from the order. A completion which is not a "final" completion is a "partial" completion.

- Partial Completion

  As each part of the FTR is completed, the network units involved take on their final status in the database. Although all pending information is deleted for each item in the range, the FTR order number and the FTR's due date (or estimated completion date) are retained.

The SWITCH system will automatically produce PCNWO contracts for FOMS. When processing a total completion, the PCNWO will include header-only information identifying the FTR which has been completed. When processing a partial completion, the PCNWO will identify the FTR order and each item which has been completed. [22]

No completion output is required for MAS.

9.9.13 Service Order Out of Sequence Completions

When a service order is completing before an FTR work order with an earlier due date (out of sequence), the SWITCH system reassigns conflicting FTR items to a time view later than the completing service order. See Section 9.13 for a discussion of service order out of sequence completion processing and FTRs.

9.9.14 Assignment Redundancy Management

An Assignment Redundancy Management (ARM) process is used to send common update information from the SWITCH system to SOAC. The ARM contract for FTRs, PCNFTR, is created on partial or total completion of the FTR. The information is transmitted in a *WCOF section in the PCNFTR contract.

See Section 14 for more information on ARM processing.

9.9.15 FTR Administration

The contracts RPTWO and INQWO may be used to track the status of the FTR.

22. Since circuits that are selected and established into the FRT may not actually have any physical involvement on the frame, it is the responsibility of the used to ensure that all circuit that are established with no connectivity are verified to be part of the FTR prior to completion.

9.10 Jumper Activity Management

Jumper Activity Management (JAM), generally initiated by the frame personnel, is a multi-pass work order which reconfigures working circuits to alleviate trough congestion or to reclaim tie pairs. A JAM is processed by utilizing existing Switch Port Equipment Transfer (SET) functionality. Thus, the process of alleviating trough congestion (eliminating long jumpers) and reclaiming tie pairs (eliminating tie pairs) is performed by relocating the switch ports closer to the cable pairs. Effectively, long jumpers and tie pairs are replaced with short jumpers. Performing the process will maximize the life of the frame. A JAM can not be performed on DLE facilities.

A JAM may be entered in the SWITCH system via the ULBB or FUSA. The JAM is divided into the following functions:

1. Establish the JAM defining the area of the frame which is congested.
2. Provide filters to refine the identity of the circuits to move from the entire population of circuits.
3. Assign the new switch ports.
4. Complete the JAM.

The JAM will default to process non-complex circuits, however, complex circuits can be included in the order. With respect to this section pertaining to JAMs, non-complex circuits are defined to be voice grade circuits excluding those which are members of centrex, multi-line hunt, series completion hunt, and simulated facility groups, as well as excluding designed, telecommunication service priority, and party services. Additionally, circuits which contain miscellaneous equipment, bridge lifters, transmission equipment, ICE, and trunk pairs, will automatically be excluded from any JAM order.

BCC users may establish JAMs in a variety of ways: by tie pair range, cable pair range, switch port range, or frame and range of zones. The JAM process first creates a list of all switch ports that satisfy the establishment criteria. A user may provide additional filters, such as a group of CEC values, to further define the circuits that are actually to be processed. These circuits are then passed, one at a time, to the SWITCH system assignment engine for reassignment.

Since the JAM is a multi-pass work order which pends in the SWITCH system, it can be withdrawn once it is established and it requires positive completion. Corrections (resolving assignments or correcting pending assignments) to items in a JAM is not provided. If a circuit can not be assigned or a circuit is assigned to a defective network unit, the circuit should be canceled from the JAM.

Additionally, the process of alleviating trough congestion in the SWITCH system does not apply to the CODS 2 Over & Under frames. However, the process of reclaiming tie pairs for the CODS 2 Over & Under frames is provided.

9.10.1 JAM Processing Overview

The SWITCH system processes (excluding reports and work session initialization) that are used during the life of a JAM are:

- **Establish JAM** (PREJAM)

  The PREJAM contract is used to record the presence of a new JAM in the SWITCH system, or to update the characteristics (filter options, assignment controls, due date) or add additional items to an existing JAM. Successful JAM establishment or the update of an existing JAM will produce an establishment (ostat=e) planning message for FOMS (PREPWO contract).

  The PREJAM contract is initiated by a manual SWITCH system ULBB input or an input from FUSA.

- **Assign JAM** (ASGJAM)

  The ASGJAM contract is used to perform the assignment in the SWITCH system database and prepare the wiring information for FOMS and translation information for MAS.

  The ASGJAM contract may be initiated automatically upon completion of the PREJAM contract (if SAL=Y) or may be started manually from the SWITCH system ULBB or FUSA. The ASGJAM process sends input data to the assignment engine on a circuit by circuit basis to assign a new switch port.

  After successfully completing the assignments, an assignment (ostat=a) planning message is sent to FOMS. Based on user-settable parameters (SFO & STD), the output from the assignment process may be stored until requested, or sent immediately to FOMS and/or MAS.

- **Complete JAM** (PCNJAM)

  The PCNJAM contract is initiated manually from the SWITCH system ULBB or generated automatically upon completion in FOMS. Completions are entered for an entire JAM or for one or more items in a JAM. As each part of the JAM is completed, the network units involved take on their final status in the database. At this time all pending activity information is deleted although the JAM number and the due date (or the estimated completion date used for the assignment) are retained as a record of the last activity on the network unit. When a PCNJAM completes an entire order or the remaining items in an order, the JAM will be removed from the SWITCH system database.

  PCNWO contracts are generated for FOMS so that FOMS may delete its record of the JAM.

  If frame output has not been sent to FOMS or translations data have not been sent to MAS, completion requests for those items will be rejected.

- Cancel JAM (CANJAM)

  The CANJAM contract is initiated from the SWITCH system ULBB or FUSA. Cancellations are entered for an entire JAM or for one or more items in the JAM. On partial cancellation, all pending activity information is deleted from the SWITCH system database and the network units involved are returned to their original state. Each involved item is marked as canceled in the JAM Unit Status Table (UST). Total cancellation removes all data associated with the JAM and removes the order from the SWITCH system database.

  On total cancellation of a JAM, a CANWO contract with header-only information is sent to FOMS.

  On partial cancellations, each canceled item for which FOMS has previously received wiring instructions is identified in the CANWO contract. If frame output has not been sent for any of the canceled items, then no CANWO contract is sent. A new establishment planning message is sent following any partial cancellation.

  If translations data have been sent to MAS for any of the items which are being canceled, then a cancellation request is sent to restore the items to their original state.

9.10.1.1 Process Flow Control

BCC-settable parameters are used to provide maximum processing flexibility for each JAM. The parameters are provided to control the flow of JAM orders at any and all wire centers. Table 9-1 shows the work order control parameter (*wo order control*) table to be delivered as default reference data. Users have the option of providing control values at the order level (overrides) for SAL (start assignment logic), STD (send translations data) and SFO (send frame output). These manual overrides may be accomplished with either the PREJAM or the ASGJAM contract. The parameters and their allowable settings provide for the following process flows:

1. SAL (Start Assignment Logic) Default value is "N".

   a. SAL=N - Establish a JAM (PREJAM) only. The ASGJAM contract will be initiated by a manual entry from the SWITCH system ULBB or FUSA.

   b. SAL=Y - Start the ASGJAM process immediately after completion of the PREJAM process.

2. SFO (Send Frame Output) Default value is "N".

   a. SFO=N - Do not send FOMS frame output automatically on completion of the ASGJAM process. Frame output will be generated by a user initiated request from FUSA or the SWITCH system ULBB REQ FO work session (REQWO contract). Manual override of this parameter may be accomplished from the PREJAM or ASGJAM process.

   b. SFO=Y - Send frame output automatically on completion of the ASGJAM process.

3. STD (Send Translation Data) Default value is "N".

   a. STD=N - Do not send translations data to MAS automatically on completion of the ASGJAM process. Translations data will be generated by a user initiated request from FUSA or the SWITCH system ULBB REQ TRM work session (REQTRM contract).

   b. STD=Y - Send translations data to MAS automatically on completion of the ASGJAM process.

4. SOS (Send Output Simultaneously) Default value is "N".

   a. SOS=N - The REQWO contract produces only frame output. The REQTRM contract produces only MAS output.

   b. SOS=Y - Produce both frame and translation output on receipt of either a REQWO or REQTRM contract.

User input is permitted to supersede the default values of the parameters for a specific JAM order.

9.10.1.2 Assignment Control

The jmpr-mgmt-zone-limit (JMZL) parameter in the frame instance of the *wc parms* table exists specifically for JAMs and FTRs. It applies to both JAM processes of alleviating trough congestion and reclaiming tie pairs. With respect to COSMIC-like frames, it is used to define the maximum length in zones from the cable pair the SWITCH system will search for an appropriate spare switch port. For the CODS 2 Over & Under frames, the value will be used to determine whether the SWITCH system will search for an appropriate spare switch port in the home zone or superzone.

Refer to Section 9.9.4 for further details on the use of the JMZL parameter[23].

9.10.1.3 MAS Involvement

An entry for JAMs exist in the *mas involvement* table. The table determines whether output will be sent to MAS for items which which generate MAS-affecting changes. Since all JAM assignments will be selecting new switch ports, all of the items will produce MAS-affecting changes. If the value is "N", then output will not be sent to MAS. If the value is "Y", then output will be sent to MAS. The default value is "Y".

23. The home zone refers to the module the cable pair is terminated in. The superzone refers to the home zone and a specified number of adjacent modules. The number of adjacent modules is determined by the *frame zone search* table.

9.10.1.4 Item Numbers

Each item assigned in the JAM will be given a unique item number within the order. This item number remains with that transfer unit until it is completed or canceled. Item numbers are sent to FOMS and MAS to facilitate coordination of frame and translation work.

Once canceled or completed, an item number will *not* be reused within the order. For example, if a pending assignment is canceled and subsequently reestablished, it will be given a new item number. However, a pending assignment which is corrected or reworked will retain its original item number.

9.10.2 SWITCH System-to-FOMS Interface for JAMs

The following contracts are used to transmit information to FOMS for a JAM in the SWITCH system:

- PREPWO - Planning Message
- PREWO - Frame Output
- CANWO - Cancellation Notification
- PCNWO - Completion Notification

9.10.2.1 Planning Messages

The contract PREPWO is used to transmit planning information about the JAM to FOMS. Establishment planning messages (PREPWO, ostat=e) are sent to FOMS following PREJAM processing. Assignment planning messages (PREPWO, ostat=a) are sent to FOMS following ASGJAM processing. The planning message will contain:

1. The order number.
2. The identification of the low and high switch port IDs.
3. The order due date.
4. The frame due date (optional).
5. The setting of the SAL and SFO flow control parameters.
6. The estimated completion date used for this assignment pass (optional). Returned in assignment planning messages only.
7. The total number of circuits available for assignment (establishment planning messages only).

9.10.2.2 Frame Output

The contract PREWO is used to send the frame output to FOMS for the pending JAM assignments. The PREWO contract contains information indexed by each JAM transfer unit (i.e., the FROM switch ports in the JAM). Each PREWO contract will include a sequence number. Sequence numbers will be included in all contracts sent to FOMS, except for planning messages. The sequence number will increment by one for each frame output contract sent for an order. The SWITCH system will record the sequence number of each item sent to FOMS so that the information in lost transmissions can be collected and resent.

Each item in the PREWO will also include the item number assigned by the SWITCH system. This item number is also sent to MAS in the TRM contracts and can be used to facilitate coordination between the work centers.

If an assignment for which frame output has previously been sent is reworked, frame output will be sent via a new PREWO contract reflecting the updated assignment. Each PREWO will have a unique sequence number as described above.

9.10.2.3 Cancellation Notification

Cancellations may be received after the JAM is established. The contracts CANWO and PREPWO are used by the SWITCH system to update (modify) the existing (last) planning message and wiring information sent to FOMS. Deletions to a JAM are sent to FOMS via a CANWO for circuits whose wiring instructions were previously sent to FOMS, followed by a new establishment planning message (PREPWO, ostat=e) to inform FOMS of the changed size of the order.

In the event the whole JAM is canceled, the SWITCH system will send a single CANWO with header-only (order level) information to FOMS. A CANWO header message without any circuit data (OUTEQP aggregate) will always be interpreted as a total cancellation. A new planning message will not be generated.

CANWO contracts will contain sequence numbers as described above.

9.10.2.4 Completion Notification

When a JAM completion is processed in the SWITCH system, a PCNWO contract will be sent to notify FOMS of the completion. Following a final (total) completion of the JAM, the PCNWO sent to FOMS will contain header-only information (e.g., order number) to notify FOMS of the JAM completion. Following a partial completion of the JAM, the PCNWO sent to FOMS will identify each item for which the assignment has been completed.

PCNWO contracts will contain sequence numbers as described above.

9.10.3 Establish a JAM

JAM establishment (PREJAM) is used to record the presence of a new JAM in the SWITCH system, to add circuits to an existing JAM or to update user options or characteristics of a JAM. Establishment will produce an establishment (ostat=e) planning message for FOMS (PREPWO).

PREJAM may be initiated via the SWITCH system ULBB SET JAM Work Session or FUSA transaction jam.

The JAM may be established to:

1. alleviate trough congestion by indirectly performing a SET
2. reclaim tie pairs by indirectly performing a SET

Only one of the above processes can be specified per JAM order. If both processes are required, then two separate JAM orders must be established.

The JAM can be established by tie pair or range of tie pairs, cable pair or range of cable pairs, switch port or range of switch ports, or by frame and range of zones. However, only one type of network unit can be specified per establishment pass.

The Unit Status Table (UST) of a JAM will be keyed by the canonical form of the switch port ID. Therefore, for any given input criteria (tie pairs, cable pairs, switch ports, or frame and zones), the switch port of each circuit will be retrieved and stored in the UST.

User input to establish a JAM includes:

1. The JAM type.
2. The Frame Name.
3. The JAM order number.
4. The JAM Due Date.
5. If the JAM is being performed to alleviate trough congestion (Jam Type=JTR (Jumper Trough Relief)), then the specification of the minimum jumper length (JL) will be required. As discussed in the next section, the JL parameter will determine which circuits will be established.
6. Valid network units defining the circuits to be processed. These may be in one or more formats:
   - Individual network units
   - A valid network unit range or ranges (low ID and high ID)
   - A masked network unit format.

   The network units which can be specified are: tie pairs, cable pairs, and switch ports. Alternatively, the frame and zones can be specified.

7. An optional estimated completion date (ECD) specifying the date on which the order (items on a particular pass of the order) is expected to be completed. The ECD provides the time view the SWITCH system assignment engine uses to make switch port assignments. In the absence of an ECD, the order due date provides the time view the SWITCH system uses to make switch port assignments. An ECD functions as an override to the order date.
8. An optional frame due date (FDD).
9. An optional establishment line count to specify the maximum number of circuits to be established for this range of items.
10. An optional assignment line count to specify the maximum number of circuits to be assigned for this range of items.
11. Optional frame remarks (up to 60 characters).
12. Control options which include:
    - — Filtering options.

      "Protected" (hardcoded) filters and "default" (overridable) filters will be provided to ensure that simple circuits are processed. See Section 9.9.5.
    - — Assignment control options.
    - — Overrides to the flow control parameters.

9.10.3.1 PREJAM Processing

On receiving the PREJAM contract, the SWITCH system will check to determine whether the JAM order number exists.

If the order does not exist, the SWITCH system will:

1. Create a work order in the SWITCH system database to store the following information:
    a. JAM Order Number.
    b. JAM Order Due Date.
    c. Frame Due Date, if present.
    d. Estimated Completion Date, if present.
    e. Input Network Units or Frame and Zone.

       For each network unit specified, the switch port of the circuit will be retrieved and stored in the UST. The data stored are a function of the way the network units have been identified in the PREJAM contract.

— Transfer set up by individual network units.

There will be a UST entry for each switch port associated with the network units entered into the PREJAM contract.

— Transfer set up by network unit range.

There will be a UST entry for every associated switch port in the network unit range. (This implies a way of deriving the correct sequence of valid switch port numbers for a specific IC.)

— Transfer set up from a masked network unit format.

There will be a UST entry for every associated switch port in the network unit range that matches the format.

— Transfer set up by frame and zones.

There will be a UST entry for every associated switch port which is on the frame in the specified zones.

If none of the network units entered are valid, the order will not be created. A message will be returned to the user indicating that the establishment was unsuccessful.

Any network unit which has pending activity will be excluded from being established.

2. Produce a message to the user indicating the size of the new UST.
3. Produce a FOMS establishment planning message (PREPWO, type=e).
4. Determine the value of the Start Assignment Logic (SAL) parameter by:
   a. Determining whether an override value has been set for this order number. If an override is present, use the override value. If an override is not present, use the default value from SWITCH system reference data table *wo order control* (see Table 9-1).
   b. If the value indicates the JAM will be assigned manually (SAL=N), PREJAM processing terminates and the contract ASGJAM must then be invoked by an entry from the SWITCH system ULBB or FUSA.
   c. If the value indicates the JAM should be assigned automatically in the SWITCH system (SAL=Y), invoke the contract ASGJAM at the completion of PREJAM processing. Pass along the values of all override (e.g., SFO, STD) that have been entered.

If the JAM order number already exists, the SWITCH system will:

1. Replace the existing order due date with a new due date (if changed).
2. Add or overwrite the frame due date if one is entered.

3. Add or overwrite the estimated completion date if one is entered.
4. Check the status of each input FROM switch port in the UST. If the switch port is in the UST and has a "canceled" status, remove the "canceled" status.
5. Add each new network unit (switch port) to the existing order (as described above for creating new orders).
6. Return a message to the user indicating the number of switch ports that have been added to the UST and the current size of the table.
7. Produce a corrected establishment planning message (PREPWO) for FOMS.
8. Stop or continue on to ASGJAM based on the Start Assignment Logic (SAL) parameter value.

9.10.3.2 Special Filtering Processing

If the JAM is being performed to alleviate trough congestion, the PREJAM contract processor will only include (establish) those circuits which meet the specified minimum jumper length criteria. The JL filter is used to retain this value. This forces processing to only include circuits where the number of zones between the switch port and cable pair is equal to or greater than the JL value.

To ensure that a proper set of circuits are obtained, the PREJAM contract processor will verify that the value of the JL filter is greater than the value of the JMZL parameter. This will prevent unnecessary and non-optimal assignments from occurring.

If the JAM is being performed to alleviate trough congestion, then only circuits which do not contain tie pairs are established. This is accomplished by automatically providing a filter to exclude tie pairs. If the JAM is being performed to reclaim tie pairs, then only circuits which contain tie pairs are established. This is accomplished by automatically providing a filter to include tie pairs.

Since JAMs are performed on non-complex circuits, circuits containing the following network units will automatically be excluded (filtered out): miscellaneous equipment (ME), bridge lifters (BL), transmission equipment (TRE), ICE, trunk pairs (TKP), and complex circuits (CMPLX). The filters will be "protected" from being overridden[24]. In addition to the above "protected" filters, the process will provide "default" filters to only include voice grade circuits (CATG=V) and to exclude the following services: centrex (CTX), multi-line hunt (HML), series completion hunt (SCH), simulated facility groups (SFG), designed (ADSR), telecommunication service priority (TSP), and party services (GRSV=2,4,8). Unlike the protected filters, the default filters can be overridden.

24. CMPLX is a filter that evaluates circuits which contain more than one of the same network unit, excluding tie pairs, channels, and carrier controller ports.

9.10.4 Assign a JAM

The JAM assignment process (ASGJAM contract) may start automatically following completion of the JAM establishment (PREJAM with SAL=Y), or manually via the SWITCH system ULBB ASG JAM work session or FUSA. The assignment can be requested for an individual network unit, for a range or ranges of network units which have been previously established, or for the entire order.

ASGJAM processing will determine which circuits will be reassigned from the pool of circuits previously established in the JAM. Like the PREJAM contract processor, the ASGJAM contract processor will filter out circuits which have pending activity. If additional filter control options are entered, the ASGJAM process will identify the circuits that match all the filter options and pass only those circuits to the assignment engine.

The assignment engine is invoked for each circuit to be assigned. The value of the JMZL parameter associated with the frame to which the cable pair is connected to will be passed to the assignment engine with each circuit. The assignment engine will attempt to assign a new switch port for each item. The search for the new switch port will be restricted to within the bounds of the JMZL parameter. Originating from the cable pair, the value of the parameter defines the maximum allowable zone search. As an example, if the value of the JMZL parameter is 2, the assignment engine would search a maximum of 5 zones for an appropriate spare switch port. This consists of the zone the cable pair is in, commonly referred to as the home zone, the two left zones adjacent to the home zone, and the two right zones adjacent to the home zone (providing they exist). In addition, the assignment engine will only assign a new switch port if the new circuit configuration will not require tie pairs.

The existing circuit design criteria will be used in the selection process. In order to select a desirable or comparable switch port, the selection process will recalculate the total penalty score of the current switch port and compare it with the total penalty score of the candidate switch port. The candidate switch port will be assigned only if the total penalty score of the candidate switch port is less than or equal to the total penalty score of the current switch port. The process of reclaiming tie pairs involves circuits which do not have a jumper length penalty score. For these cases, the selection process will use the maximum jumper length penalty score in the *sel jumper score* table as the jumper length penalty score when recalculating the total penalty score for the current switch port. If the candidate switch port meets all of the criteria (i.e., sufficient penalty score, adequate jumper length, does not require tie pairs), the assignment engine will assign the switch port to the circuit; otherwise no assignments will be made to the circuit.

Once assigned, a transfer unit in the JAM is given an item number. This item number is retained with the assigned transfer unit until it is either canceled or completed. The item number will be sent to FOMS and MAS to facilitate coordination of work between the RCMAC and the frame personnel. An item which is reworked is not assigned a new item number - the original item number is retained. Once canceled, an item which is subsequently reestablished and reassigned will be given a new, unique item number. Item numbers will not be reused within the order.

A count of the completed assignments is kept and compared to the input assignment line count value, if present. Assignment will stop when the actual count is equal to the assignment line count. If a line count is not entered, assignment will process all the circuits specified on the input.

The wiring information from the assignment processing, including the item number, may be stored until requested (SFO=N), or sent immediately upon completion of the ASGJAM. An assignment planning message, the type "a" PREPWO contract, will be generated for FOMS with information about this assignment pass, including the range for which the assignment was requested, the estimated completion date used by this assignment pass, the number of circuits assigned, and the item numbers which were given to the assignments.

Since a switch port change is always MAS-affecting, every JAM assignment is considered MAS-involved. The translations data from the assignment process may be stored until requested (STD=N) or sent immediately on the completion of the ASGJAM.

9.10.5 JAM Filter Control Options

JAM Filter Control options are used to identify the circuits (switch ports) to be changed in the range of the transfer. A user may enter or modify the filters options (excluding the "protected" filters) for the transfer at any time prior to the total completion of the transfer. If more than one option is entered, the circuits that pass filtering will satisfy all the options entered (a logical AND condition).

Filter options identify the characteristics of the circuits that will be transferred from the pool of circuits in the range of the transfer. If the process is invoked from the SWITCH system ULBB, the filters (protected, default, and user-specified filters) will be retained for subsequent (ULBB) establishment passes. Any modifications made during any establishment pass will be retained. In addition, the filters from the last establishment pass will be retained for subsequent (ULBB) assignment passes. However, if the input is from FUSA, FUSA will provide the protected, default, and any user-specified filters to the PREJAM and ASGJAM contracts.

The filter options are of two kinds: *Circuit/Service filters and Equipment filters*

- *Circuit/Service filters* are used to find particular types of working circuits based on the original service assignment request.
- *Equipment filters* are used to detect conditions where the switch port assignment did not exactly match a requested CEC value.

One or more of the filter options may be entered or overridden (excluding the "protected" filters). The filters provide the option of including or excluding circuits. When multiple filters are entered, these filters will be "ANDed" together. In addition, some filters may be given multiple values, e.g., class of service may have entries for two values such as coin and business. These values will be "ORed" together. If a filter is omitted, the filter condition will not be used to select circuits.

The assignment line count, if entered, is considered a filter option in that it controls the maximum number of assignments that will be made at one time.

9.10.5.1 Circuit/Service Filter Options

The circuit/service filter options available for JAMs include:

1. Grade of service (GRSV) - (1) single party, (2) two party, (4) four party, (8) eight party (Default Filter, excludes GRSV=2,4,8)
2. Class of service (CLSV) - (R) residence, (B) business, (C) coin
3. Category (CATG) - (V) voicegrade, (N) narrowband, (W) wideband, (D) digital data, (P) program audio, (M) MADN set, (I) ISDN pipe
(Default Filter, includes CATG=V)
4. Central office administrative type (CATY)
5. Essentiality (ESL) - (Y) Yes, (N) No
6. Administration of designed service review (ADSR)
(Default Filter, excludes ADSR)
7. Signaling (SIG) - (L) loop start, (G) ground start, (B) loop or ground start, (R) reverse battery, (P) Proprietary, (Q) Q.931 ISDN, (O) other
8. Pulsing (PUL) - (J) multi-frequency, (D) dial pulse
9. Type of service (TYPSV) - (F) flag, (M) measured, (W) WATS
10. Directionality (DIR) - (I) inward, (O) outward, (B) both ways
11. Group ID
    - Centrex ID (CTX) - Centrex group number with identification of intelligent controller, or "*" for all centrex groups
    (Default Filter, excludes CTX=*)
    - Multi-Line Hunt Group ID (HML) - Multi-line hunt group number with identification of intelligent controller, or "*" for all multi-line hunt groups
    (Default Filter, excludes HML=*)
    - Simulated Facility Group ID (SFG) - Simulated facility group number with identification of intelligent controller, or "*" for all simulated facility groups
    (Default Filter, excludes SFG=*)

- Series Completion Hunt Group ID (SCH) - "*" for all series completion hunt groups
  (Default Filter, excludes SCH)

12. Telecommunications service priority circuit (TSP)
    (Default Filter, excludes TSP)
13. Low/High CCS (LOCCS/HICCS) (mutually exclusive with MINLF/MAXLF)
14. Minimum/Maximum Load Factor (MINLF/MAXLF) (mutually exclusive with LOCCS/HICCS)

9.10.5.2 Equipment Filter Options

The equipment filter options will find circuits with the following equipment features:

1. Network Unit Type - Circuits containing from one to three specified network unit types
   (Protected Filter - excludes NTU=ME, BL, TRE, ICE, TKP)
2. Assembly - Circuits that are composed of assemblies such as integrated facilities.
3. Frame/Zone - Circuits at a specified OUT frame or frame/zone location.
4. Exclude complex circuit tag.
   (Protected Filter - excludes CMPLX)
5. Essentiality - (Y) Yes, (N) No.
6. Signaling - (L) loop start, (G) ground start, (B) loop or ground start, (R) reverse battery, (P) proprietary, (Q) Q.931 ISDN, (O) other.
7. Pulsing - (J) multi-frequency, (D) dial pulse
8. Assigned Use (AUSE) (number of services working on a switch port) - 1-8

9.10.5.3 Effect of Filtering On Completion

A user may establish a range of network units in a JAM but intends on assigning only a subset of those circuits (using filtering options described above). Upon completion of those circuits, the order will remain in the SWITCH system database if there are unassigned circuits left in the transfer. If the user does not intend on assigning any more circuits in the transfer, the order may purged from the database by invoking the RMV JAM (CANJAM) work session.

The purging of the JAM will be done automatically if the "remove order upon completion" (or PURGE) parameter is set to "Y" (Yes).

If the PURGE parameter is set to "N", then all the items in the JAM must be assigned or canceled before the JAM can be totally completed. If a total completion contract is invoked, PURGE=N, and the UST indicates that there are circuits that have been filtered out of assignment, a notice is generated that indicates the JAM was not completed. Those items which are eligible for completion will be completed as requested. However, the order will remain in the SWITCH system database.

If the PURGE parameter is set to "Y" and all pending assignments are completed, the JAM will be removed from the database. In this case there may be established items which were never assigned (i.e., filtered from assignment) as well as items which are in error.

9.10.6 Request Frame Output

Requests for work instruction information are received with the contract REQWO. The user invokes the REQWO contract via the REQ FO work session from the SWITCH system ULBB or the FUSA transaction RQF. REQWO is used to provide frame output for circuits which were assigned with SFO=N (meaning the frame output was not sent automatically following assignment). The response is returned to FOMS using the contract PREWO.

The major options available when requesting frame output via the REQWO contract allow for:

1. The production of work instruction information for a given range of switch ports (the transfer unit of the JAM).
2. The production of work instruction information for a given range of cable pairs, telephone numbers, or item numbers (non-transfer unit identifiers).
3. The production of work instruction information for a given number of circuits or for ALL assigned circuits (line count).

The UST is used to track whether or not FOMS output has been sent. Once output has been requested and sent for an item, subsequent changes to that assignment will be sent to FOMS automatically.

If a request if received for a range that has not been assigned or has no new assignments, the SWITCH system will return an exception notice to the requesting terminal.

FOMS will detect when a provisioning request has assigned a facility being made available for assignment by a transfer. If the frame work for the transfer has not been reported completed, FOMS will package the new provisioning request wiring information with the JAM information so that the frame will not put the inward service order into jeopardy.

9.10.7 Request MAS Output

The Translation Redundancy Management (TRM) interface is used to send translations data from the SWITCH system to MAS via SOAC. The REQTRM contract is used to generate the translation information for MAS. The contract may be invoked by a manual input into the SWITCH system through the ULBB REQ TRM Work Session, or the FUSA transaction RQT. REQTRM is used to send translations data for circuits which were assigned with STD=N (i.e., the translations data were not sent automatically following assignment).

The options available when requesting MAS output via the REQTRM contract allow for:

1. The production of TRM output for a given range of switch port assignments (the transfer unit of the JAM).
2. The production of TRM output for a given range of cable pairs, telephone numbers, or item numbers (non-transfer unit identifiers).
3. The production of TRM output for a given number of circuits or for ALL assigned circuits (i.e., line count).

If a request is received for a range that has not been assigned or has no new assignments, the SWITCH system will return an exception notice to the requesting terminal.

The translation response is returned to MAS in PRETME or CORTME contracts[25]. The range of information evaluated for TRM output matches the range specified in the REQTRM contract. Since all JAM assignments are MAS-affecting (because they resulted in switch port changes), any JAM assignment in the REQTRM request which has not yet been sent to MAS will be included in a PRE/CORTME contract.

Corrections to information that has already been sent and additions to the JAM are sent to MAS via CORTME contracts.

Following cancellation of an assignment for which translations data have already been sent to MAS, the SWITCH system will send a request to MAS to cancel the translation changes via a CORTME contract.

9.10.8 Simultaneous FOMS and MAS Output

When output is requested for FOMS for pending work order assignments, the user may request that TRM output also be sent to MAS for those items. Likewise, when output is requested for MAS for pending work order assignments, the frame output may also be sent to FOMS at the same time. The control parameter SOS (Send Output Simultaneously) is evaluated during output request processing (either REQWO or REQTRM) to determine if the output is to be sent to both systems as a result of this request.

25. The PRETME and CORTME contracts are also used for SETs.

The following occurs when SOS=Y while processing a request for frame output (REQWO) and MAS output (REQTRM):

REQWO - When processing a request for FOMS output (contract REQWO), the items for which frame output has been requested and for which TRM output has not yet been created will be sent to MAS in the appropriate TRM contract (PRETME or CORTME). Note that the MAS involvement check following assignment is unnecessary for JAMs since all JAM assignments are MAS-affecting (due to switch port changes).

REQTRM - When processing a request for MAS output (contract REQTRM), the assignments which are evaluated to determine if they are to be sent to MAS will be checked for FOMS output at the same time. Any item being screened for MAS output during REQTRM processing for which frame output has not yet been sent will be included in a PREWO contract and sent to FOMS.

When SOS=N, only the requested output will be sent, i.e., frame output will be sent as a result of REQWO and MAS output will be sent as a result of REQTRM.

Note that SOS is evaluated *only* when processing REQTRM or REQWO. It does not modify the action of SFO or STD, which are evaluated only when processing the assignment pass.

9.10.9 Order Interaction

Order interaction occurs in the SWITCH system when network unit selection rules are applied to inward order activity after determining that no completely spare units are available. The term "Order Interaction" implies that the selection process has the capability to continue searching for suitable network units even though they are involved in pending order activity. The order interactions that result require a unique set of rules. BCC-tunable rules provide for all types of order interactions (e.g. provisioning request with provisioning request, provisioning request with work order, or work order with work order).

9.10.10 Rework

To be consistent with the exclusion of circuits which have pending activity, any JAM item which is reworked (by a service order or another work order) will be canceled from the JAM. If translations data were previously sent to MAS, a CORTME contract will be sent to cancel the item. Similarly, if frame output was previously sent to FOMS, a CANWO contract will be sent to cancel the item.

There is one exception where a reworked item will not be canceled. This occurs when the last item in the JAM is reworked. Instead of the item being canceled, the item will be placed in error and a notifier will be generated. The last item must be canceled manually.

9.10.11 Cancel a JAM

A JAM can be canceled completely or in part on receipt of a CANJAM contract. The CANJAM contract can be initiated from the SWITCH system ULBB or FUSA. The cancellation may be requested for an individual network unit, for a range or ranges of network units which have been previously assigned, or for the entire JAM order. Additionally, if the cancellation is from FUSA, item numbers may be specified. All assigned circuits involved in the cancellation will revert to their original status (i.e., before the JAM).

9.10.11.1 Cancellation Input Interface

- Total Cancellation

  The SWITCH system input will consist of a CANJAM contract containing only the JAM order number.

- Partial Cancellation

  The SWITCH system input will consist of a CANJAM contract containing:

  a. The JAM order number.

  b. Switch port identifiers for each canceled item or range of items in the JAM.

9.10.11.2 CANJAM Processing

- Total Cancellation

  a. If the SWITCH system has only stored the transfer information and sent an establishment planning message to FOMS (i.e., no frame output has been sent to FOMS), a CANWO contract will be sent to FOMS consisting of header information including the JAM order number. There will be no information on specific transfer units canceled.

  b. If the SWITCH system has sent wiring information to FOMS on any circuit in the JAM, the CANWO will contain the JAM order number. There will be no information on specific transfer units canceled (FOMS will cancel any item in the order for which it has already received frame output).

c. If the SWITCH system has sent translation information to MAS on any circuit in the JAM, a CORTME will be sent to "undo" any translation changes made as a result of this JAM. See Section 14 for details of the TRM processing.

- Partial Cancellation

a. The SWITCH system will use the input switch port IDs to identify the transfer items which are to be canceled.

b. The SWITCH system will determine which of the transfer units being canceled have been assigned and which have been both assigned and have had output sent to either FOMS or MAS or both.

c. A new PREPWO will be generated defining the new size and characteristics (range, designed circuits) of the JAM.

d. Frame output will be sent to FOMS as follows:

— If the SWITCH system has not sent wiring information to FOMS on any circuit in the JAM, only the new PREPWO will be sent.

— If the SWITCH system has sent wiring information to FOMS on any of the canceled items, a CANWO will be sent to FOMS with the JAM order number and identifiers for each canceled transfer item that was previously sent to FOMS. The updated PREPWO will also be sent.

— If the SWITCH system has sent translation information to MAS for any of the canceled items, a CORTME will be sent to revert those items to their original state.

9.10.12 Complete a JAM

The contract PCNJAM is normally initiated in FOMS but may be entered through the SWITCH system ULBB. The completion may be requested for an individual network unit, for a range or ranges of network units which have been previously assigned, or for the entire JAM order. Additionally, if the completion is from FOMS, item numbers may be specified.

- Total Completion

Entering the JAM order number will complete the whole JAM providing all output has been sent to FOMS and MAS for those items which are assigned. Total completion will remove all pending database conditions in the JAM and remove the work order from the SWITCH system database.

JAMs include the PURGE option, which allows a completion to be a "final" completion when all pending assignments are completed. Items which remain in the establishment phase (i.e., filtered, etc.) as well as those in error will be purged from the order. A completion which is not a "final" completion is a "partial" completion.

- Partial Completion

  As each part of the JAM is completed, the network units involved take on their final status in the database. Although all pending information is deleted for each item in the range, the JAM order number and the JAM's due date (or estimated completion date) are retained.

The SWITCH system will automatically produce PCNWO contracts for FOMS. When processing a total completion, the PCNWO will include header-only information identifying the JAM which has been completed. When processing a partial completion, the PCNWO will identify the JAM order and each item which has been completed.

No completion output is required for MAS.

9.10.13 Service Order Out of Sequence Completions

When a service order is completing before a JAM work order with an earlier due date (out of sequence), the SWITCH system will cancel the conflicting JAM items. See Section 9.13 for a discussion of service order out of sequence completion processing and JAMS.

9.10.14 Assignment Redundancy Management

An Assignment Redundancy Management (ARM) process is used to send common update information from the SWITCH system to SOAC. The ARM contract for JAMs, PCNLET, is created on partial or total completion of the JAM[26]. Since every item in the JAM involves a change of switch port, every completed item will be included in the PCNLET sent to SOAC. The information is transmitted in a *WCOF section in the PCNLET contract.

See Section 14 for more information on ARM processing.

9.10.15 JAM Administration

The contracts RPTWO and INQWO may be used to track the status of the JAM.

26. The PCNLET contract is also used for SETs.

9.11 Switch Port Equipment Transfers

A Switch Port Equipment Transfer (SET) is a bulk order to reassign working switch ports within the same intelligent controller (IC). SETs are entered manually into the SWITCH system through the ULBB or through FUSA (they do not flow-through from SOAC)[27]. The SET process is divided into the following functions:

1. Establish the SET to broadly define the characteristics of the transfer such as due date and load group.
2. Provide filters to refine the identity of the circuits to move from the population of circuits.
3. Provide assignment controls to steer or constrain the normal assignment process.
4. Assign the new switch ports.
5. Complete the SET.

BCC users may establish SETs in a variety of ways including by load group, switch port range and/or frame location. The SET process first creates a list of all switch ports that satisfy the establishment criteria. A user may provide additional filters, such as a group of CEC values, to further define the circuits that are actually to be reassigned. These circuits are then passed, one at a time, to the SWITCH system assignment engine. A user may provide additional selection constraints during assignment, such as a load group ID or frame location, to obtain the new switch port. Since the SET is a multi-pass work order which pends in the SWITCH system, it can be modified or withdrawn once it is established and it requires positive completion.

SETs are used by Network Administration to:

- Improve the load balance of an Intelligent Controller (IC).
- Free switch ports for better equipment utilization -
  — remove non-essential customers from essential switch ports.
  — remove dial pulse customers from multi-frequency switch ports.
- Move switch ports to specific frame locations or from specific switch levels.

SETs use the SWITCH system assignment engine change order assignment logic to either:

- select the new switch port(s) and assure that the new circuit configuration is appropriate for the type of service carried on the old switch port, or
- validate preassigned switch ports.

27. SETs only support reassignment of switch ports associated with customer circuits, not switch ports associated with carrier switch ports. Reassignment of carrier switch ports is performed by the Capacity Activation process.

9.11.1 SET Processing Overview

The SWITCH system processes (excluding Reports and work session initialization) that are used during the life of an SET are:

- **Establish SET** (PRESET)

  The contract PRESET is used to record the presence of a new SET in the SWITCH system or to update the characteristics (filter options, assignment controls) of an SET that already exists. Successful SET establishment or the update of an existing SET will produce an establishment (ostat=e) planning message for FOMS (contract PREPWO).

  The PRESET contract is initiated by a manual SWITCH system ULBB input or an input from FUSA.

- **Assign SET** (ASGSET)

  The contract ASGSET is used to either:

  — generate the assignment, wiring and translation information that is required by FOMS and MAS, or

  — verify that prespecified units meet the requirements of the working service before making the assignments.

  In the first case, ASGSET invokes the SWITCH system assignment engine for each circuit to be moved. This input moves a circuit by reusing the existing cable pair and assigning a new switch port. The assignment engine may make other assignment changes that are required such as the addition or removal of intra-wire center facilities. The result of the assignment process may be stored until requested or sent immediately to FOMS and/or MAS.

  In the second case, the data for each preassigned circuit are passed to the assignment engine for validation and connectivity evaluation (possible intra-wire center facility assignment). The result of the assignment process may be stored until requested or sent immediately to FOMS and/or MAS.

  This ASGSET contract may be initiated automatically upon completion of the PRESET contract (if SAL=Y) or may be started manually from the SWITCH system ULBB or FUSA. If a header-only request is received from FUSA, the ASGSET process will assign all network units within the work order which have not been previously assigned. On completing the assignments, an assignment (ostat=a) planning message is sent to FOMS. Based on user-settable parameters, the output from the assignment process may be stored until requested, or sent immediately to FOMS and MAS.

- **Correct SET** (CORSET)

  CORSET allows the user to manually resolve SET assignments. This function is used when SET assignment resulted in RMA conditions.

CORSET is started only through the SWITCH system ULBB COR WO Work Session. Assignment logic and connectivity normally will be invoked. The SWITCH system will forward the assignment information to FOMS and MAS based on the SFO and STD control parameters.

- **Complete SET** (PCNSET)

  The contract PCNSET is initiated manually from the SWITCH system ULBB or generated automatically upon completion in FOMS. Completions are entered for an entire SET or for one or more switch port ranges in an SET. As each part of the SET is completed, the network units involved take on their final status in the database. At this time all pending activity information is deleted although the SET number and the due date (or the estimated completion date used for the assignment) are retained as a record of the last activity on the network unit. When a PCNSET completes a whole transfer or the last part of a transfer, the SET will be removed from the SWITCH system database.

  PCNWO contracts are generated for FOMS so that FOMS may delete its record of the transfer.

  If frame output has not been sent to FOMS or required translations data have not been sent to MAS, PCNs for those transfer items will be rejected.

- **Cancel SET** (CANSET)

  The contract CANSET is initiated from the SWITCH system ULBB or FUSA. Cancellations are entered for an entire SET or for one or more switch port ranges in the SET. On partial cancellation, all pending activity information is deleted from the SWITCH system database and the SET record of the item is marked as canceled in the SET Unit Status Table (UST). Total cancellation removes all data associated with the SET and removes the order from the SWITCH system database.

  On total cancellation of an SET, a CANWO with header-only information is sent to FOMS.

  On partial cancellations, each canceled item for which FOMS has previously received wiring instructions is identified in the CANWO contract. If frame output has not been sent for any of the canceled items, then no CANWO is sent. A new establishment planning message is sent following any partial cancellation.

  If MAS has previously received TRM requests to change the switch ports of the items which are being canceled, a TRM update message will be sent following the cancellation request to restore the canceled items to their original state.

A client specific feature, *dataset input to ewo,* allows users to pre-specify the units to which the work session should be applied. A user will identify a set of circuits, by some means, and provide that list of circuits as input to the particular work session desired.

Examples of circuit identification could include: SERQL queries or Reports output to a dataset, user supplied lists of circuits manually entered into a dataset.

Dataset input is being provided as an option to the following SET work sessions:

SET SET	Establish items in a SET
ASG SET	Assign items in a SET
RMV SET	Cancel or remove items from a SET
CMP SET	Complete items in a SET

9.11.1.1 Process Flow Control

BCC-settable parameters are used to provide maximum processing flexibility for each SET. The parameters are provided to control SET flow at a SWITCH wire center level (default values). Table 9-1 shows the work order control parameter (*wo order control*) table to be delivered as default reference data. Users have the option of providing control values at the order level (overrides) for SAL (start assignment logic), STD (send translations data) and SFO (send frame output). These manual overrides may be accomplished with either the PRESET or the ASGSET contract. If the client specific feature, Establish Switch Ports Non-Sequentially (est swpts non seq) is activated for the wire center, the RND (random (non-sequential) switch port establishment) parameter can also be overridden with the PRESET contract.

The parameters and their allowable settings provide for the following process flows:

1. **SAL** (Start Assignment Logic) Default value is "N".
   a. SAL=N - Establish an SET (PRESET) and stop processing. The ASGSET contract will be initiated by a manual entry from the ULBB or FUSA.
   b. SAL=Y - Start ASGSET immediately after completion of the PRESET process.
2. **SFO** (Send Frame Output) Default value is "N".
   a. SFO=N - Do not send FOMS frame output automatically on completion of ASGSET. Frame output will be generated by a request from FUSA or the SWITCH system ULBB work session REQ FO (REQWO contract). Manual override of this parameter may be accomplished from the PRESET or ASGSET screen.
   b. SFO=Y - Send frame output automatically on completion of the ASGSET process.
3. **STD** (Send Translation Data) Default value is "N".
   a. STD=N - Do not send translations data to MAS automatically on completion of the ASGSET process. Translations data will be generated by a user initiated request via FUSA or the SWITCH system ULBB work session REQ TRM (REQTRM contract).

b. STD=Y - Send translations data to MAS automatically on completion of the ASGSET process.

4. SOS (Send Output Simultaneously) Default value is "N".

   a. SOS=N - The REQWO contract produces only frame output. The REQTRM contract produces only MAS output.

   b. SOS=Y - Produce both frame and translation output on receipt of either a REQWO or REQTRM contract.

5. **RND** (Random (non-sequential) Switch Port Establishment)

   Default value is "N".

   a. RND=N - Given a range of switch ports on input, the PRESET contract establishes the qualifying switch ports sequentially.

   b. RND=Y - Given a range of switch ports *and* an establishment line count on input, the PRESET contract establishes the qualifying switch ports randomly.

   The RND parameter applies only if the client specific feature, Establish Switch Ports Non-Sequentially (est swpts non seq) is activated for the wire center.

User input is permitted to supersede the default values of the parameters for a specific transfer.

9.11.1.2 MAS Involvement

An entry for SETs exist in the *mas involvement* table. The table determines whether output will be sent to MAS for items which which generate MAS-affecting changes. Since all SET assignments will be selecting new switch ports, all of the items will produce MAS-affecting changes. If the value is "N", then output will not be sent to MAS. If the value is "Y", then output will be sent to MAS. The default value is "Y".

9.11.1.3 Item Numbers

Each item assigned in the SET will be given an item number unique within the order. This item number remains with that transfer unit until it is completed or canceled. Item numbers are sent to FOMS and MAS to facilitate coordination of frame and translation work.

Once canceled or completed, an item number will *not* be reused within the order. For example, if a pending assignment is canceled and subsequently reestablished, it will be given a new item number. However, a pending assignment which is corrected or reworked will retain its original item number.

9.11.2 SWITCH System-to-FOMS Interface for SETs

The following contracts are used to transmit information to FOMS for an SET in the SWITCH system:

- PREPWO - Planning Message
- PREWO - Frame Output
- CANWO - Cancellation Notification
- PCNWO - Completion Notification

9.11.2.1 Planning Messages

The contract PREPWO is used to transmit planning information about the SET to FOMS. Establishment planning messages (PREPWO, ostat=e) are sent to FOMS following PRESET processing. Assignment planning messages (PREPWO, ostat=a) are sent to FOMS following ASGSET processing. The planning message will contain:

1. The order number.
2. The identification of the low and high switch port IDs.
3. The order due date.
4. The frame due date (optional).
5. The setting of the SAL and SFO flow control parameters.
6. The estimated completion date used for this assignment pass (optional). Returned in assignment planning messages only.
7. The total number of circuits available for assignment (establishment planning messages only).

9.11.2.2 Frame Output

The contract PREWO is used to send the frame output to FOMS for the pending SET assignments. Each PREWO contract contains information indexed by SET transfer unit (i.e., the FROM switch ports in the SET). Each PREWO contract will include a sequence number. Sequence numbers will be included in all contracts sent to FOMS, except for planning messages. The sequence number will increment by one for each frame output contract sent for an order. The SWITCH system will record the sequence number of each item sent to FOMS so that the information in lost transmissions can be collected and resent.

Each item in the PREWO will also include the item number assigned by the SWITCH system. This item number is also sent to MAS in the TRM contracts and can be used to facilitate coordination between the work centers.

If an assignment for which frame output has previously been sent is reworked, frame output will be sent via a new PREWO contract reflecting the updated assignment. Each PREWO will have a unique sequence number as described above.

9.11.2.3 Cancellation Notification

Cancellations may be received after the SET is established. The contracts CANWO and PREPWO are used by the SWITCH system to update (modify) the existing (last) planning message and wiring information sent to FOMS. Deletions to an SET are sent to FOMS via a CANWO for circuits whose wiring instructions were previously sent to FOMS, followed by a new establishment planning message (PREPWO, ostat=e) to inform FOMS of the changed size of the order.

In the event the whole SET is canceled, the SWITCH system will send a single CANWO with header-only (order level) information to FOMS. A CANWO header message without any circuit data (OUTEQP aggregate) will always be interpreted as a total cancellation. A new planning message will not be generated.

CANWO contracts will contain sequence numbers as described above.

9.11.2.4 Completion Notification

When an SET completion is processed in the SWITCH system, a PCNWO contract will be sent to notify FOMS of the completion. Following a final (total) completion of the SET, the PCNWO sent to FOMS will contain header-only information (e.g., order number) to notify FOMS of the SET completion. Following a partial completion of the SET, the PCNWO sent to FOMS will identify each transfer unit for which the assignment has been completed.

PCNWO contracts will contain sequence numbers as described above.

9.11.3 Establish an SET

SET establishment (PRESET) is used to record the presence of a new SET in the SWITCH system, to add circuits to an SET that already exists or to enter or update user options. Establishment will produce an establishment (ostat=e) planning message for FOMS (PREPWO).

PRESET may be initiated only via the SWITCH system ULBB SET SET Work Session.

The SET may be established to:

1. Move specified switch ports to new, user specified switch ports.
2. Move all switch ports in the range of the transfer to new, suitable switch ports given the normal assignment rules.
3. Move all switch ports in the range of the transfer to switch ports that meet user specified assignment constraints.
4. Move selected switch ports in the range of the transfer to new, suitable switch ports given the normal assignment rules.
5. Move selected switch ports in the range of the transfer to switch ports that meet user specified assignment constraints.

Control options are used to identify the switch ports to be changed in the range of the SET and/or to pass assignment constraints for the new switch ports to the assignment engine.

User input to establish an SET includes:

1. The SET order number.
2. The SET Due Date.
3. Intelligent Controller Type.
4. Valid switch port ID(s) defining the network units to be moved. These may be in one or more formats:
   - A valid OUT switch port range or ranges (low ID and high ID).
   - A valid load group external ID.
   - Individual OUT switch port IDs.

     Note: A SET will accept the input of both range data and individual network unit IDs on a single screen.
   - A masked switch port ID format. A masked format will have the switch entity number and the identity of one or more, but not all, switching machine hierarchy levels.

     The presence of a masked switch port format indicates that services are being cleared from equipment for frame work or reprovisioning.
   - A dataset name identifying a dataset containing one switch port id per line (internal or external id)
5. An optional estimated completion date (ECD) specifying the date on which the assignments must be available to start wiring. The estimated completion date provides the time view the SWITCH system assignment engine uses to make switch port assignments. In the absence of an ECD, the order due date provides the time view the SWITCH system uses to make switch port assignments. An ECD functions as an override to the order date.

6. An optional frame due date (FDD).
7. An optional establishment line count to specify the maximum number of circuits to be established for this range of items.
8. An optional assignment line count to specify the maximum number of circuits to be assigned for this transfer range.
9. Individual IN switch port IDs.

   Note: The absence of an entry for the IN ID (a blank), or specifying a question mark ("?"), is interpreted as a request for the SWITCH system to select the new switch port.
10. Optional Frame remarks (up to 60 characters).
11. Control options which include:
    — Filtering options.
    — Assignment control options.
    — Overrides to the flow control parameters.
    — An "expand" option tag. The expand option indicates that the output screen following the WSI for the SET should be displayed by individual network unit ID. The default value (or absence) of the expand tag is EXPAND=N which displays network units in range format. This tag applies only when the establishment request is for an existing SET.
12. If the client specific feature, Establish Switch Ports Non-Sequentially (est swpts non seq) is activated for the wire center, the optional establish switch ports non-sequentially field can be used to override the "RND" parameter in the work order control parameter table (see Table 9-1). A value of "Y" requires that an establishment line count also be specified.

9.11.3.1 PRESET Processing

On receiving the PRESET contract, the SWITCH system will check to determine whether the SET order number exists.

If the order does not exist, the SWITCH system will:

1. Create a work order in the SWITCH system database to store the following information:
   a. SET Order Number.
   b. SET Order Due Date.
   c. Frame Due Date, if present.

d. Estimated Completion Date, if present.

e. The OUT switch port IDs.

   The data stored are a function of the way the switch ports have been identified in the PRESET contract. Only the working switch ports will be established.

   — Transfer set up by individual switch port.

     There will be a UST entry for each OUT switch port entered into the PRESET contract.

   — Transfer set up by switch port range.

     There will be a UST entry for every OUT switch port in the transfer range. (This implies a way of deriving the correct sequence of valid switch port numbers for a specific IC.)

   — Transfer set up by a hierarchal level ID (e.g., load group).

     There will be a UST entry for every working switch port in the IC at the specified level. For example, a user entry of a load group ID (e.g., 101-115-???, a concentrator) will produce a UST with an entry for each switch port in the concentrator.

   — Transfer set up from a masked switch port format.

     There will be a UST entry for every OUT switch port in the transfer range that matches the switching machine hierarchy level entered by the user. For example, the entry of a specific 5ESS line card level (e.g., 0???-???-12) will produce a UST with an entry for each switch port in 5ESS entity "0" whose line card number is "12".

   — Transfer set up by non-sequential establishment.

     This capability applies only if the client specific feature, Establish Switch Ports Non-Sequentially (est swpts non seq) is activated for the wire center. When the RND parameter value is "Y" (either set to "Y" in the work order control parameter table (see Table 9-1) or set via the ULBB SET SET work session), the switch ports will be established in a random manor. The PRESET contract processor divides the number of switch ports specified on input by the established line count specified on input to obtain an "increment value". The increment value is used to determine the "next" switch port to establish in the order. For example, if the user specifies 100 switch ports and an establishment line count value of 25, the "increment value" is 4. The PRESET contract processor will start with the first switch port in the input range, then the fifth switch port, then the ninth switch port, etc..

If none of the switch ports entered are valid, the order will not be created. A message will be returned to the user indicating that the establishment was unsuccessful.

2. Produce a message to the user indicating the size of the new UST.
3. Produce a FOMS establishment planning message (PREPWO, type=e).
4. Determine the value of the Start Assignment Logic (SAL) parameter by:
   a. Determining whether an override value has been set for this order number. If an override is present, use the override value. If an override is not present, use the default value from SWITCH system reference data table *wo order control* (see Table 9-1).
   b. If the value indicates the SET will be assigned manually (SAL=N), PRESET processing terminates and the contract ASGSET must then be invoked by an entry from the ULBB or FUSA.
   c. If the value indicates the SET should be assigned automatically in the SWITCH system (SAL=Y), invoke the contract ASGSET at the completion of PRESET processing. Pass along the values of all override (e.g., SFO, STD) that have been entered.

If the SET order number already exists, the SWITCH system will:

1. Replace the existing order due date with a new due date (if changed).
2. Add or overwrite the frame due date if one is entered.
3. Check the status of each input FROM switch port in the UST. If the switch port is in the UST and has a "canceled" status, replace the existing TO switch port with new TO switch port (if specified) and remove the "canceled" status.
4. Add each new switch port to the existing order (as described above for creating new orders).
5. Return a message to the user indicating the number of switch ports that have been established.
6. Produce a corrected establishment planning message (PREPWO) for FOMS.
7. Stop or continue on to ASGSET based on the Start Assignment Logic (SAL) parameter value.

9.11.4 Assign an SET

The SET assignment process (ASGSET contract) may start automatically following completion of the SET establishment (PRESET with SAL=Y), or manually via the SWITCH system ULBB ASG SET work session or FUSA. If a header-only request is received from FUSA, the ASGSET process will assign all network units within the work order which have not been previously assigned.

ASGSET processing will determine which circuits will be transferred from the pool of working circuits established in the SET. If filter control options are entered, the ASGSET process will identify the circuits that match all the filter options and pass only those circuits to the assignment engine. If dataset name is input, it must identify a dataset containing one switch port id per line (internal or external id). The items from the dataset that are established in the SET will be passed on to the assignment engine.

The ASGSET contract processor will also determine whether a switch port is available, working or pending. A circuit must be found to be working in the SWITCH system database as of the SET order due date (or the estimated completion date, if present). The circuit must match the constraints imposed by user entered filter options.

The assignment engine is invoked for each circuit to be assigned. The assignment engine will either select a switch port which will support the services on the circuit being transferred, or if a new switch port is prespecified, the assignment engine will validate the assignment. When selecting a switch port for the circuit, the input selection criteria are used to determine whether a switch port is valid. ASGSET will pass user entered selection criteria to the assignment engine in one of two ways:

1. Selection values will override the CEC value associated with the original service assignment request but will not alter the original request value. For example, all services may be forced to loop start switch ports even when some of the original requests were for ground start.
2. Non-CEC selection criteria will be passed as specific tag/value pairs. The network unit selection process will use these criteria to exclude available switch ports that do not meet the criteria from consideration as candidates. For example, if a maximum load factor is passed to selection, any switch port in a load group with a load factor greater than the maximum will be excluded from selection.

Network units may be added, deleted or changed by the assignment engine to support the service. The assignment engine's connectivity process may assign, remove or change intra-wire center facilities. Connectivity may move the working location of assigned network units to simplify wiring (removing intra-wire center facilities).

Once assigned, a transfer unit in the SET is given an item number. This item number is retained with the assigned transfer unit until it is either canceled or completed. The item number will be sent to FOMS and MAS to facilitate coordination of work between the RCMAC and the frame personnel. An item which is reworked is not assigned a new item number - the original item number is retained. Once canceled, an item which is subsequently reestablished and reassigned will be given a new, unique item number. Item numbers will not be reused within the order.

A count of the completed assignments is kept and compared to the input line count value, if present. Assignment will stop when the actual count is equal to the line count. If a line count is not entered, assignment will process all the circuits specified on the input.

The wiring information from the assignment processing, including the item number, may be stored until requested (SFO=N), or sent immediately upon completion of the ASGSET. An assignment planning message, the type "a" PREPWO contract, will be generated for FOMS with information about this assignment pass, including the range for which the assignment was requested, the estimated completion date used by this assignment pass, the number of circuits assigned, and the item numbers which were given to the assignments.

Since a switch port change is always MAS-affecting, every SET assignment is considered MAS-involved. The translations data from the assignment process may be stored until requested (STD=N) or sent immediately on the completion of the ASGSET.

9.11.4.1 SET Processing on Party Services

SETs in the SWITCH system will not support party regrades. However, party reassociations are supported via SETs for unconstrained circuits. The "grade of service" and "assigned use" filters allow the users to select party circuits to be transferred. For example, if the user enters "grade of service" of 2, and "assigned use" of 1, only those circuits with two party switch ports which have only one working party will be assigned.

The user may also specify selection criteria to indicate whether the party position of the services involved in the transfer is to be retained following the SET. In addition, the user may specify the assigned use of the switch ports which are to be selected. For example, specifying that party position need not be retained and selecting switch ports with grade of service of 2 and assigned use of 1 will fill vacant party positions (party fill capability).

If the circuits in the SET are constrained, then no regrades or reassociations will be possible through the SET. The TO switch port must be completely spare.

9.11.5 SET Control Options

SET Control options are divided into two types: filter options (circuit/service filters and equipment filters) and selection options. Control options are used to identify the switch ports to be changed in the range of the transfer and/or to pass assignment constraints for the new switch ports to the assignment engine. A user may enter or modify the control options for the transfer at any time prior to the total completion of the transfer. If more than one option is entered, the circuits that pass filtering will satisfy all the options entered (a logical AND condition).

If no options are entered and the IN switch ports are not specified, the assignment engine will attempt to reassign each working switch port in the transfer range to a suitable switch port using the normal assignment rules.

Filter options identify the characteristics of the circuits that will be transferred from the pool of working circuits in the range of the transfer. If the process is invoked from the

SWITCH system ULBB, the options will be retained for subsequent (ULBB) establishment passes. Any modifications made during any establishment pass will be retained. In addition, the filters from the last establishment pass will be retained for subsequent (ULBB) assignment passes. The filter options are of two kinds:

- *Circuit/service filters* are used to find particular types of working circuits based on the original service assignment request.
- *Equipment filters* are used to detect conditions where the switch port assignment did not exactly match a requested CEC value.

One or more of the filter options may be entered or overridden. The filters provide the option of including or excluding circuits. When multiple filters are entered, these filters will be "ANDed" together. In addition, some filters may be given multiple values, e.g., class of service may have entries for two values such as coin and business. These values will be "ORed" together. If a filter is omitted, the filter condition will not be used to select circuits.

Line count, if entered, is considered a filter option in that it controls the maximum number of assignments that will be made at one time.

Selection options are used to establish switch port selection criteria for the assignment engine. These options *are* retained for subsequent SET passes.

9.11.5.1 Circuit/Service Filter Options

The circuit/service filter options available for SETs include:

1. Grade of service (GRSV) - (1) single party, (2) two party, (4) four party, (8) eight party
2. Class of service (CLSV) - (R) residence, (B) business, (C) coin
3. Category (CATG) - (V) voicegrade, (N) narrowband, (W) wideband, (D) digital data, (P) program audio, (M) MADN set, (I) ISDN pipe
4. Central office administrative type (CATY)
5. Essentiality (ESL) - (Y) Yes, (N) No
6. Administration of designed service review (ADSR)
7. Signaling (SIG) - (L) loop start, (G) ground start, (B) loop or ground start, (R) reverse battery, (P) Proprietary, (Q) Q.931 ISDN, (O) other
8. Pulsing (PUL) - (J) multi-frequency, (D) dial pulse
9. Type of service (TYPSV) - (F) flag, (M) measured, (W) WATS
10. Directionality (DIR) - (I) inward, (O) outward, (B) both ways
11. Group ID

- Centrex ID (CTX) - Centrex group number with identification of intelligent controller, or "*" for all centrex groups
- Multi-Line Hunt Group ID (HML) - Multi-line hunt group number with identification of intelligent controller, or "*" for all multi-line hunt groups
- Simulated Facility Group ID (SFG) - Simulated facility group number with identification of intelligent controller, or "*" for all simulated facility groups
- Series Completion Hunt Group ID (SCH) - "i" for all series completion hunt groups

12. Telecommunications service priority circuit (TSP)
13. Low/High CCS (LOCCS/HICCS) (mutually exclusive with MINLF/MAXLF)
14. Minimum/Maximum Load Factor (MINLF/MAXLF) (mutually exclusive with LOCCS/HICCS)

9.11.5.2 Equipment Filter Options

The equipment filter options will find circuits with the following equipment features:

1. Network Unit Type - Circuits containing from one to three specified network unit types, e.g., circuits with transmission equipment and bridge lifters.
2. Assembly - Circuits that are composed of assemblies such as integrated facilities.
3. Frame/Zone - Circuits at a specified frame or frame/zone location.
4. Exclude complex circuit tag.
5. Essentiality - (Y) Yes, (N) No.
6. Signaling - (L) loop start, (G) ground start, (B) loop or ground start, (R) reverse battery, (P) proprietary, (Q) Q.931 ISDN, (O) other.
7. Pulsing - (J) multi-frequency, (D) dial pulse
8. Assigned Use (AUSE) (number of services working on a switch port) - 1-8
9. Switch port administrative functionality (e.g., high business usage)

   If the client specific feature, Filter By Administrative Functionality (filter by adm func) is activated for the wire center, the ULBB (via the SET SET and ASG SET work sessions) can specify that switch ports be included/excluded by administrative functionality in the establishment and assignment process.

9.11.5.3 Selection Options

The selection criteria that may be passed to the assignment engine include:

1. Signaling.

   Signaling changes from ground start to loop start for coin service must also be accompanied by the full set of CEC values. The assignment contract indicates signaling=(L)oop start is a "must match" equipment characteristic. The SET does not change the original CEC value. Updating CEC values in the original assignment (provisioning) request must be done with a manual transaction.

2. Pulsing.

   Passing a pulsing value of "D" to assignment assures the selection of a dial pulse switch port. If one is not available, the assignment process will not seek an acceptable alternative.

3. Minimum and/or maximum load factor. The load factor value is inclusive. Passing a maximum value of "6" to the assignment engine requires the selection of a switch port in a load group with a load factor of six or less. Both minimum and a maximum values may be entered. Entering a minimum value of "3" and a maximum value of "6" will constrain switch port selection to load groups with load factors of 3, 4, 5 or 6.

4. Frame or frame/zone location for IN switch port.

5. Load Group - identifies specific load group to include or exclude. (Mutually exclusive with load group exclusion.)

6. Load Group Exclusion - identifies the excluded load group from which a switch port should be selected. (Mutually exclusive with load group).

7. Retain Party Position - (Y) Yes (party position will be retained in new switch port), (N) No (party position need not be retained in new switch port). Default is (Y).

8. Assigned Use - 1-8, indicates the assigned use of the new switch port to select (for party fill).

9.11.5.4 Filtering Rules

See Section 9.6.5.5 (Filtering Rules for CPTs).

9.11.5.5 Effect of Filtering On Completion

A user may establish a range of switch ports in an SET but intends on assigning only a subset of those circuits (using filtering options described above). Upon completion of those circuits, the order will remain in the SWITCH system database if there are unassigned circuits left in the transfer. If the user does not intend on assigning any more circuits in the transfer, the order is purged from the database by invoking the RMV SET (CANSET) work session.

The purging of the SET will be done automatically if the "remove order upon completion" (or PURGE) parameter is set to "Y" (Yes). This parameter is described in Section 9.10.13 (Complete an SET).

If the PURGE parameter is set to "N", then all working switch ports in the SET must be assigned or canceled before the SET can be totally completed. If a total completion contract is invoked, PURGE=N, and the UST indicates that there are circuits that have been filtered out of assignment, a notice is generated that indicates the SET was not completed. Those items which are eligible for completion will be completed as requested. However, the order will remain in the SWITCH system database.

If the PURGE parameter is set to "Y", then when all pending assignments are completed, and there are no assignments in an error state, the SET will be removed from the database. In this case there may be established items which were never assigned (i.e., filtered from assignment).

9.11.6 Request Frame Output

Requests for work instruction information are received with the contract REQWO. The user invokes the REQWO contract via the REQ FO work session from the SWITCH system ULBB or the FUSA transaction RQF. REQWO is used to provide frame output for circuits which were assigned with SFO=N (meaning the frame output was not sent automatically following assignment). The response is returned to FOMS using the contract PREWO.

The major options available when requesting frame output via the REQWO contract allow for:

1. The production of work instruction information for a given range of switch ports (the transfer unit of the SET).
2. The production of work instruction information for a given range of cable pairs, telephone numbers, or item numbers (non-transfer unit identifiers).
3. The production of work instruction information for a given number of circuits or for ALL assigned circuits (line count).

If a request if received for a range that has not been assigned or has no new assignments, the SWITCH system will return an exception notice to the requesting terminal.

The UST is used to track whether or not FOMS output has been sent. Once output has been requested and sent for an item, subsequent changes to that assignment will be sent to FOMS automatically.

FOMS will detect when a provisioning request has assigned a facility being made available for assignment by a transfer. If the frame work for the transfer has not been reported completed, FOMS will package the new provisioning request wiring information with the SET information so that the frame will not put the inward service order into jeopardy.

9.11.7 Request MAS Output

The contract REQTRM is used to generate translation information for MAS. The contract may be invoked by a manual input into the SWITCH system through the ULBB REQ TRM Work Session, or the FUSA transaction RQT. REQTRM is used to send translations data for circuits which were assigned with STD=N (meaning the translations data were not sent automatically following assignment).

The options available when requesting MAS output via the REQTRM contract allow for:

1. The production of TRM output for a given range of switch port assignments (the transfer unit of the SET).
2. The production of TRM output for a given range of cable pairs, telephone numbers, or item numbers (non-transfer unit identifiers).
3. The production of TRM output for a given number of circuits or for ALL assigned circuits (i.e., line count).

If a request is received for a range that has not been assigned or has no new assignments, the SWITCH system will return an exception notice to the requesting terminal.

The translation response is returned to MAS via SOAC using contract PRETME or CORTME. The range of information evaluated for TRM output matches the range specified in the REQTRM contract. Since all SET assignments are MAS-affecting (because they resulted in switch port changes), any SET assignment in the REQTRM request which has not yet been sent to MAS will be included in a PRE/CORTME contract.

The SWITCH system will send a single PRETME contract to MAS for each SET order. Corrections to information that has already been sent and additions to the SET are sent to MAS via CORTME contracts. Pending SET assignments may be updated by rework processing. Following rework of a pending SET assignment, the work order will automatically send a TRM update if the resulting change is MAS-affecting.

Following cancellation of an assignment for which translations data have already been sent to MAS, the SWITCH system will send a request to MAS to cancel the translation changes via a CORTME contract.

9.11.8 Simultaneous FOMS and MAS Output

When output is requested for FOMS for pending work order assignments, the user may request that TRM output also be sent to MAS for those items. Likewise, when output is requested for MAS for pending work order assignments, the frame output may also be sent to FOMS at the same time. The control parameter SOS (Send Output Simultaneously) is evaluated during output request processing (either REQWO or REQTRM) to determine if the output is to be sent to both systems as a result of this request.

The following occurs when SOS=Y while processing a request for frame output (REQWO) and MAS output (REQTRM):

REQWO - When processing a request for FOMS output (contract REQWO), the items for which frame output has been requested and for which TRM output has not yet been created will be sent to MAS in the appropriate TRM contract (PRETME or CORTME). Note that the MAS involvement check following assignment is unnecessary for SETs since all SET assignments are MAS-affecting (due to switch port changes).

REQTRM - When processing a request for MAS output (contract REQTRM), the assignments which are evaluated to determine if they are to be sent to MAS will be checked for FOMS output at the same time. Any item being screened for MAS output during REQTRM processing for which frame output has not yet been sent will be included in a PREWO contract and sent to FOMS.

When SOS=N, only the requested output will be sent, i.e., frame output will be sent as a result of REQWO and MAS output will be sent as a result of REQTRM.

Note that SOS is evaluated *only* when processing REQTRM or REQWO. It does not modify the action of SFO or STD, which are evaluated only when processing the assignment pass.

9.11.9 Order Interaction

Order interaction occurs in the SWITCH system when network unit selection rules are applied to inward order activity after determining that no completely spare units are available. The term "Order Interaction" implies that the selection process has the capability to continue searching for suitable network units even though they are involved in pending order activity. The order interactions that result require a unique set of rules. BCC-tunable rules provide for all types of order interactions (e.g. provisioning request with provisioning request, provisioning request with work order, or work order with work order).

9.11.10 SET Modifications

Manual intervention may be required to modify the size, date, characteristics or assignment controls of a transfer.

1. Contract PRESET can be used to change the due date of a transfer or to add items to an existing transfer. A new establishment planning message (PREPWO) will be sent to FOMS following each addition.

2. PRESET and ASGSET can add or change the estimated completion date of a transfer. This will not affect circuits that are already assigned.
3. Contract CANSET can remove circuits from a transfer unless they are completed.

9.11.11 Resolve SET Assignment

The COR WO work session can be invoked to initiate a manual assignment request for an item in a SET. The COR WO work session will allow an unassigned transfer item to be manually assigned. The input to access the information to resolve assignment on a transfer item includes:

- Wire Center ID.
- SET order number.
- FROM switch port identifier.
- Optionally, an estimated completion date may be specified to indicate the time view from which the transfer unit should be retrieved. If no estimated completion date is entered, the SET due date will be used.

Within the COR WO work session, all network units other than the cable pair can be added, changed or deleted. The connectivity of the transfer item may be entered if the transfer item is partially or totally constrained. The default values of SFO and STD may be overridden.

The COR WO work session will not allow correction processing on pending SET assignments. If the input item is already assigned, an error will be returned.

The COR WO work session will invoke the CORSET contract to manually assign the SET item. The CORSET contract will support the following actions when manually assigning an item:

1. Add a new prespecified network unit or have the SWITCH system select from inventory a new network unit of a specified type. The assignment process will verify that the new configuration matches an existing skeletal circuit model.
2. Delete any unnecessary pending network unit expect the cable pair. The assignment process will verify that the new configuration matches an existing skeletal circuit model.
3. Change any network unit except the cable pair by prespecifying the network unit or having the SWITCH system select a different unit.
4. Force network unit assignment at a specified frame or frame and zone.
5. Force assignment at a specified COMMON LANGUAGE Location.
6. Enter a facility change reason (FCR) for a network unit being taken out of a circuit.

7. Suppress the assignment engine validation and , if necessary, additional automatic assignments (complete manual override).
8. Add, modify, or remove a frame remark (up to 80 characters) for the circuit.

The CORSET contract processor will prepare an input to the assignment engine. This input may cause selection and assignment to occur or merely verify the quality of the manual assignment changes and then apply connectivity logic.

Where a user has suppressed assignment of a circuit, the CORSET process will create a manual input for the assignment engine. In this case, the user is responsible for providing all network units and connectivity.

Upon completion of the CORSET processing, FOMS and MAS output will be sent based on the values of SFO and STD.

9.11.12 Cancel an SET

An SET can be canceled completely or in part on receipt of a CANSET contract. All assigned circuits involved in the cancellation will revert to their original status (i.e., before the SET).

9.11.12.1 Cancellation Input Interface

- Total Cancellation

  The SWITCH system input will consist of a CANSET contract containing only the SET order number.

- Partial Cancellation

  The SWITCH system input will consist of a CANSET contract containing:

  a. The SET order number.

  b. Switch port identifiers for each canceled item or range of items in the SET.

  c. A dataset name, where the dataset contains some number of switch port identifiers (one per line) indicating the items to be canceled from the SET.

9.11.12.2 CANSET Processing

- Total Cancellation

  a. If the SWITCH system has only stored the transfer information and sent a planning message to FOMS (i.e., no frame output has been sent to FOMS), a CANWO contract will be sent to FOMS consisting of header information including the SET order number. There will be no information on specific transfer units canceled.

b. If the SWITCH system has sent wiring information to FOMS on any circuit in the SET, the CANWO will contain the SET order number. There will be no information on specific transfer units canceled (FOMS will cancel any item in the order for which it has already received frame output).

c. If the SWITCH system has sent translation information to MAS on any circuit in the SET, a CORTME will be sent to "undo" any translation changes made as a result of this SET. See Section 14 for details of the TRM processing.

- Partial Cancellation

a. The SWITCH system will use the input switch port ids to identify the transfer items which are to be canceled.

b. The SWITCH system will determine which of the transfer units being canceled have been assigned and which have been both assigned and have had output sent to either FOMS or MAS or both.

c. A new PREPWO will be generated defining the new size and characteristics (range, designed circuits) of the SET.

d. Frame output will be sent to FOMS as follows:

— If the SWITCH system has not sent wiring information to FOMS on any circuit in the SET, only the new PREPWO will be sent.

— If the SWITCH system has sent wiring information to FOMS on any of the canceled items, a CANWO will be sent to FOMS with the SET order number and identifiers for each canceled transfer item that was previously sent to FOMS. The updated PREPWO will also be sent.

— If the SWITCH system has sent translation information to MAS for any of the canceled items, a CORTME will be sent to revert those items to their original state.

9.11.13 Complete an SET

The contract PCNSET is normally initiated in FOMS but may be entered through the SWITCH system ULBB. Completion may be requested for a range of switch ports in the SET, a list of switch ports in a dataset or for the entire SET.

- Total Completion

Entering the SET order number will complete the whole SET providing all items have been assigned and all output has been sent to FOMS and MAS. Total completion will remove all pending database conditions in the SET and remove the work order from the SWITCH system database.

SETs include the PURGE option, which allows a completion to be a "final" completion when all pending assignments are completed, regardless of the number of items which were never assigned (i.e., filtered, etc.). The completion is not "final" if there exist items in the order for which assignment failed (i.e., UST marked in error). A completion which is not a "final" completion is a "partial" completion.

- Partial Completion

  As each part of the SET is completed, the network units involved take on their final status in the database. Although all pending information is deleted for each item in the range, the SET number and the SET's due date (or estimated completion date) are retained.

The SWITCH system will automatically produce PCNWO contracts for FOMS. When processing a total completion, the PCNWO will include header-only information identifying the SET which has been completed. When processing a partial completion, the PCNWO will identify the SET order and each item which has been completed.

No completion output is required for MAS.

9.11.14 Service Order Out of Sequence Completions

When a service order is completing before a SET work order with an earlier due date (out of sequence), the SWITCH system reassigns conflicting SET items to a time view later than the completing service order. See Section 9.13 for a discussion of service order out of sequence completion processing and SETs.

9.11.15 Assignment Redundancy Management

An Assignment Redundancy Management (ARM) process is used to send common update information from the SWITCH system to SOAC. The ARM contract for SETs, PCNLET, is created on partial or total completion of the SET. Since every item in the SET involves a change of switch port, every completed item will be included in the PCNLET sent to SOAC. The information is transmitted in a *WCOF section in the PCNLET contract.

See Section 14 for more information on ARM processing.

9.11.16 SET Administration

The contracts RPTWO and INQWO may be used to track the status of the transfer.

The Load Balance Report will provide the data needed to establish an SET.

9.12 Wire Assembly Orders

Wire Assembly Orders (WAOs) can be used to break or create DIPs or other assemblies, either individually or in bulk, via the SWITCH system ULBB or FUSA. In addition, a change function will exist to support updating of assemblies in the SWITCH system database in which either the switch port has been overlaid to a new switch port or a new switch port is being selected as a part of a Dial Transfer (DTR). MediaPulse/Delivery also has the capability to initiate WAOs to break DIPs as part of the completion flow of the Subscriber Cutover Process. WAOs can not be performed on DLE-related facilities.

As Multi-Pass work orders, WAOs may be established, assigned, canceled and completed. In addition, WAO assignments will pend and may be reworked. Once established, additional items may be added to an order, or items may be removed (canceled) from an order. Items may be canceled or completed individually or in bulk. Frame output is sent to FOMS either automatically following assignment, or upon request by the users. The sending of frame output is determined by a Work Order parameter. A frame output contract may be resent upon request. In addition, WAO assignments may be placed in and canceled from jeopardy.

Although WAOs can support three different functions - breaking, creating and changing assemblies, a single WAO can perform only one of these functions. WAOs for each function (i.e., break, create, and change) are described in Sections 9.11.2 (break), 9.11.3 (create) and 9.11.4 (change).

9.12.1 WAO Process Control Parameters

BCC-settable parameters are used to provide maximum processing flexibility for each WAO. The parameters are normally set to control WAO flow at a wire center level (default values). Table 9-1 shows the work order control parameter table (*wo order control*) to be delivered as default reference data. Users have the option of providing control values at the order level (overrides) for SAL (start assignment logic) and SFO (send frame output). These manual overrides may be accomplished through either the PREWAO or ASGWAO contract. The parameters and their allowable settings provide the following process flows:

1. SAL (Start Assignment Logic) Default value is "N"
   a. SAL=N - Do not start ASGWAO immediately after completion of the PREWAO process.
   b. SAL=Y - Start ASGWAO immediately after completion of the PREWAO process.
2. SFO (Send Frame Output) Default value is "Y"

Manual override of this parameter may be accomplished from the PREWAO or the ASGWAO screen.

a. SFO=N - Do not send FOMS frame output automatically on completion of ASGWAO. Frame output will be generated by a request from FUSA or the SWITCH system ULBB work session REQ FO (REQWO contract).

b. SFO=Y - Send frame output automatically on completion of ASGWAO.

3. **ATP** (Allow Tie Pairs) Default value is "N"

   This parameter applies only to WAOs which create assemblies using default connectivity rules.

   a. ATP=N - Tie pairs will not be allowed in the created assemblies. When ATP=N, assignment will fail for those assemblies for which tie pairs are necessary.

   b. ATP=Y - Tie pairs will be allowed in the created assemblies.

4. **RND** (Random Establishment) Default value is "N"

   When this parameter is set to "Y" it causes WAO Establishment to establish qualifying network units throughout the input range when the line count is less than the number of NTUs in the input range.

Additional control parameters which exist for other multi-pass work orders (e.g., STD, SOS) are not used in WAOs.

9.12.2 Break Assembly WAOs

WAOs to break assemblies can be established from the SWITCH system ULBB, FUSA, or MediaPulse/Delivery. Once established, establishment requests will be accepted to add to the order additional assemblies to be broken, or to change default order information (e.g., order due date). Cancellation requests can be used to remove assemblies from the WAO. Assignment may be requested for all or some of the assemblies. Multiple assignment requests may be necessary to assign the entire order. Once assigned, the pending broken assemblies may be reworked, completed or canceled.

Each of the Multi-Pass Work Order passes for breaking assemblies are described below.

9.12.2.1 Break Assembly Establishment

Establishment of a WAO is initiated via the SWITCH ULBB transaction SET WAO, the corresponding FUSA transaction, or triggered by the completion flow of the Subscriber Cutover Process. The WAO contract processor accepts the PREWAO contract from the ULBB, FUSA, or MediaPulse/Delivery, and processes as described in this section.

When establishing a WAO to break assemblies, the following information must be provided:

- Wire Center (required)
- Order Number (optional when creating a new order, otherwise required)
- Order Function (break) (required when creating a new order)
- Order Due Date (required)
- Frame Due Date (optional)
- Frame Remark (optional)
- Key Network Unit Type (required when creating a new order)
- Key Network Unit ID(s) (required when creating a new order or adding to an existing order)
- User Name of Assembly to be broken (required when creating a new order)
- Specific Functionality of Assembly to be broken (optional)
- Establishment Filtering Criteria (optional)
- Start Assignment Logic Override (optional)
- Estimated Completion Date (optional)
- Send Frame Output Override (optional)
- Establishment Line Count (optional)
- Assignment Line Count (optional)
- Purge Option (optional)

Each of these input parameters is described below.

Wire Center

The user must identify the wire center in which the order exists (or will exist).

Order Number

The order number will be used to uniquely identify this WAO. It must be different than any other order in the SWITCH system database. Order number is optional. If no order number is entered, the SWITCH system will generate one. Any subsequent activity on this order must reference this order number to correctly identify the WAO in the SWITCH system.

Order Function

This field identifies the function of this WAO (i.e., break). This field is required for new orders and may not be changed.

Order Due Date

This field identifies the date the WAO is due to be completed. Subsequent establishment requests may be used to change this date. If the order due date is changed for a WAO, any assignments which already exist (or have been completed) will not be affected. Subsequent assignment requests will use the new order due date as the time view of the assignment (unless an ECD value was entered).

Frame Due Date

The frame due date specifies the date at which the frame will have all work for this order completed. If no frame due date is entered, the SWITCH system will create a frame due date which is the same as the order due date. This information is treated as a remark in the SWITCH system, that is, no processing for the Work Order depends on the value of this field. The frame due date will be stored in the Work Order and sent to FOMS as appropriate. Subsequent establishment requests may be used to change the frame due date. Frame due date is kept as an order level field. Changing frame due date does not affect (i.e., cause rework of) any previous assignments.

Frame Remark

The frame remark is specified for the entire order (order level field). The frame remark will be stored in the Work Order and sent to FOMS as appropriate. Subsequent establishment requests may be used to change a frame remark but will not affect (i.e., cause rework of) any previous assignments.

Key Network Unit Type

This field identifies the type of network unit which will be used as the key to identify the assemblies in the order. The key network units will be used to locate the assemblies which are to be broken. Once the key network unit type has been determined for an order, it may *not* be changed by subsequent passes of the order. Key network unit type is required when creating the order and may not be changed by any subsequent order activity.

Key Network Unit ID(s)

The user must enter IDs of network units of the key network unit type. The network units may be specified individually or as ranges. Switch ports may be entered as a masked ID. Cable Pairs may be specifically identified or input as CP * (meaning all cable pairs in the wire center).

The network units specified in the input will be evaluated to determine if they are part of assemblies of the type specified to be broken. Once an assembly is found which contains a key network unit within the input, and is of the appropriate type specified to be broken, the assembly is evaluated for the input filter criteria. If the assembly meets all of the criteria, then this assembly will be included in the work order (i.e., established).

The key network unit will be entered into the UST to identify an assembly which has been established in the WAO.

The network units will be evaluated as of the time view determined by the due date of the WAO, or the ECD, if provided.

If an establishment pass (PREWAO contract) is initiated to change default order level data on an existing order, (e.g., order due date), then key network unit ids need not be entered.

User Name of Assembly to be Broken

The user name of the assembly is entered to define the type of assembly being broken. A single break assembly order can break only one type of assembly (i.e., all assemblies to be broken must have the same user name). Examples of assembly user names are DIP, DORM, EXHB, PBL, etc. User name is required when the order is initially created and cannot be changed by subsequent order activity.

Specific Functionality of Assembly to be Broken

In some instances an assembly has specific functionality defined. The specific functionality of the assembly is optional. If a specific functionality is entered during initial establishment of the order, this value becomes the default specific functionality for the order. That is, when evaluating the assemblies to determine if they meet the establishment filtering criteria, the specific functionality of the assemblies will be compared to the order level default value. Specific functionality is optional, but if entered when the order is initially established, the value cannot be changed or removed by a subsequent establishment pass. The user name/ specific functionality pair must be valid (based on the information in the *asm names* Reference Data Table).

Establishment Filtering Criteria

In addition to the ids of key network units, assembly filtering criteria may be entered. The filters may be either inclusion or exclusion filters. For a network unit to be excluded, *all* exclusion filters must be satisfied. Likewise, for a network unit to be included, *all* inclusion filters must be satisfied. Note that exclusion filters take precedence over inclusion filters, that is, if a network unit meets both the exclusion and inclusion filters, then the network unit will be *excluded.* Once any exclusion filter fails, only inclusion filters will be considered from that point.

Establishment filter criteria consist of *Assembly Attributes* and *Network Unit Types and Attributes.*

1. *Assembly Attributes*
    - Age of Assembly

The user may specify an age as a number of months. Assemblies which have an age equal to or greater than the specified number of months will be eligible for inclusion in the order.

- OSP Disconnect Status

  This parameter applies to DIPs only and must be specified as an attribute of the cable pair in the DIP (not as an assembly attribute).

- Network Unit Selectable Scale

  A network unit selectability scale of 0-6 may be entered. If entered, this value will be compared to the network unit selectability scale of the assembly. This value may be specified as an inclusion or exclusion filter. If no value is entered, the Network Unit Selectable Scale will not be evaluated as a filter.

2. *Network Unit Types and Attributes*

   Additional network unit types and attributes of these network units may be specified. When present, the assemblies which will be included in the order must have the specified network unit types as components. If network unit attributes are entered as inclusion filters, the components must have the attributes specified. If network unit attributes are entered as exclusion filters, the components must *not* have any of the attributes specified.

   The valid network unit types which may be entered are: switch ports (OE), cable pairs (CP), intra-wire center facilities or tie pairs (IF), telephone numbers (TN), transmission equipment (TRE), bridge lifters (BL), miscellaneous equipment (ME), and trunk pairs (TKP). Attributes may also be specified for each network unit type. The valid attributes for each type are listed below.

   - Switch Port Attributes

     — Administrative Constraint

     — Minimum/Maximum Load Factor

     — Frame Location (frame and zone(s))

     — Essential

     — Pulsing

     — Signaling

   - Cable Pair Attributes

     — OSP Disconnect Status (CT or CF)

     — Disconnect date

     — Frame Location (frame and zone(s))

- Transmission Equipment Attributes
  - — Frame Location (frame and zone(s))
  - — Specific Functionality
- Tie Pair Attributes
  - — Frame Location (frame and zone(s))
    - Bridge Lifter Attributes
  - — Frame Location (frame and zone(s))
- Miscellaneous Equipment Attributes
  - — Specific Functionality
  - — Frame Location (frame and zone(s))
- Trunk Pair Attributes
  - — Frame Location (frame and zone(s))

Start Assignment Logic (SAL) Override

The SAL control parameter has a default value from SWITCH system reference data. The value of the parameter may be overridden by the user during an establishment pass. The overridden value will apply only to the establishment pass for which it was provided.

Estimated Completion Date (ECD)

Since the frame work of a WAO may be worked incrementally, it may be desirable to specify varying completion dates when assigning an item. If no ECD is input, the completion date will default to the order due date. The assembly engine uses the ECD date to determine the time view of the assignment in the SWITCH system database.

Send Frame Output (SFO) Override

A default value for SFO is defined in reference data. The user may override this value for the assignment pass being initiated. During establishment, this override only applies when the SAL parameter is "Y". If SAL is "Y" and the user enters an override value for SFO, this override value will be passed to the assignment request and will take precedence over the SFO value in reference data.

If SAL is "N", assignment will not be automatically attempted for the established network units, so an SFO override value will not be used.

Establishment Line Count

A line count may be entered to determine the maximum number of items to be included in the order during an assignment pass. When a line count is entered, the establishment process will continue adding assemblies to the order until the number of assemblies which have been added equals this input line count value, or until the input establishment range(s) are exhausted.

Assignment Line Count

A line count may be entered to determine the maximum number of assignments to be made by an assignment pass. When a line count is entered, the assignment process will continue breaking assemblies until the number of assemblies which have been broken equals this input line count value, or until the input assignment range(s) are exhausted.

Since this parameter is only valid during assignment processing, the assignment line count should be entered only when the SAL parameter is "Y". If SAL is "N", the assignment line count will not be used.

Purge Option

The Purge Option provides the capability to automatically remove the WAO from the SWITCH system database when all pending assignments in the order have been completed. When the Purge Option is "Y", the order will be removed from the database when all assignments made to date have been completed, regardless of how many items remain unassigned. This eliminates the need to explicitly cancel the remainder of the order once the required number of assemblies have been broken or created. If any currently requested assignments failed (item is currently marked in the UST as an error), the purge will *not* be allowed.

If the WAO specified by the input order number does not currently exist in the SWITCH system database, then the DLBB contract processor will create a new order. If no order number is entered, the PREWAO contract processor will create an order id for a new WAO. The format of this order number is "Wmmddhhnnss". The first character of the order id will always be "W" (for WAO). The next two characters will be the digits which identify the current month, e.g., 01=January, 02=February, ..., 12=December. Following the month will be two characters which identify the day of the month ("dd"): 01 - 31. Next will appear the hour ("hh") based on military time: 00-23. Finally "nn" represents the minute of the hour (00-59) and "ss" represents the seconds (00-59) in which the order is initially created.

When a new WAO is established, i.e., the order does not exist in the SWITCH system database, the order will be added to the SWITCH system database. A UST will be created.

If the specified WAO Work Order already exists in the SWITCH system database, the PREWAO request is processed on the existing order. The function of the existing order and the input request (i.e., break assemblies) must be consistent.

Assemblies which are established in the WAO will be added to the UST. The key to the UST will be the ID of the network unit of the key network unit type which is provided by the user. Only those key network units which are part of assemblies which meet all of the specified establishment filter criteria described above will be included in the order. The key network unit which was used to locate the assembly will be entered into the UST as the identifier of the assembly which has been established in the WAO.

When locating assemblies based on the key network units and evaluating these assemblies for inclusion in the WAO, the time view of the database specified by the ECD date will be used. If an ECD was entered, this date is the expected completion date. However, if no ECD was entered, the order due date will be used as the estimated completion date. An error message will be generated and returned to the initiating system for any network unit specified that is not in an assembly. Any assemblies which are not present in the SWITCH system database as of the time view used by the establishment process will not be included in the order. If an assembly is created due to service order activity which processes after the WAO establishment pass, this assembly will *not* be automatically added to the order. Subsequent establishment requests must be executed to include additional assemblies (assemblies which were not present in the SWITCH system database at the time of a previous establishment pass).

If a service order uses one of the established assemblies before the break assembly assignment has been processed, this item will *not* be automatically removed from the WAO. When assignment is attempted to break this assembly, it will be recognized that the assembly either no longer exists, or is in a circuit. Assignment processing will fail and the item must be removed from the WAO.

Subsequent PREWAO contracts will be accepted to change the order level default data: e.g., order due date.

Once all key network units identified in the PREWAO have been evaluated and all assemblies which meet the establishment criteria have been included in the order, the SAL parameter is checked to determine if the WAO assignment process is to be invoked.

If the establishment request was successful, then the PREWAO contract processor will send an establishment planning message to FOMS (PREPWO contract), identifying the total number of assemblies which are in the WAO. Additionally, an advisory message will be sent to the initiating system.

9.12.2.2 Break Assembly Assignment

The following information is input to assign a WAO to break assemblies:

- — Wire Center (required)
- — Order Number (required)
- — Key Network Unit ID(s), single or range(s) (optional)
- — Assignment Filtering Criteria (optional)
- — Estimated Completion Date (optional)

— Send Frame Output Override (optional)

— Assignment Line Count (optional)

— Purge Option (optional)

Each assignment input parameter is described below.

Wire Center

The user must identify the wire center in which the order exists.

Order Number

The order number must be entered to identify WAO for which assignment is requested.

Key Network Unit ID(s)

The user can enter the ID(s) of network units of the key network unit type (the items in the UST) for which assignment is requested. The network units may be specified individually or as a range (or ranges). If no network unit IDs are entered, assignment will be attempted for the entire order up to the assignment line count, if entered.

Assignment Filtering Criteria

The filtering criteria available for assignment is similar to the filtering criteria available for establishment. Filtering assignments allows the user to break assemblies with specific attributes during a given pass.

If an assembly meets the assignment filter criteria it is passed to the assembly engine to be broken. Assignment filtering criteria are optional.

Assignment filters may consist of *Assembly Attributes* and *Network Unit Types and Attributes* as described in the Section 9.11.2.1 (Establishment Filtering Criteria).

Estimated Completion Date (ECD)

If no ECD is input, the ECD date will default to the order due date. The assembly engine uses the ECD date to determine the time view of the assignment in the SWITCH system database.

Send Frame Output (SFO) Override

A default value for SFO is defined in reference data. The user may override this value for the assignment pass being initiated.

Assignment Line Count

A line count may be entered to determine the maximum number of assignments to be made by an assignment pass. When a line count is entered, the assignment process will continue breaking assemblies until the number of assemblies which have been broken equals this input line count value, or until the input assignment range(s) are exhausted.

Purge Option

When the Purge Option is "Y", the order will be removed from the database when all assignments made to date have been completed, regardless of how many items remain unassigned. This eliminates the need to explicitly cancel the remainder of the order once the required number of assemblies have been broken. If any currently requested assignments failed (item is currently marked in the UST as an error), the purge will *not* be allowed.

The assemblies referenced by the input key network units will be broken only if they are (still) part of assemblies of the type to be broken as of the specified assignment time view. If the assembly specified by the key network unit is of the appropriate type to be broken, the assembly is evaluated against the input assignment filter criteria. If the assembly meets all of the criteria, then this assembly will be passed to the assembly engine to be broken. The assembly engine will attempt to break the assembly as of the estimated completion date specified. If assignment was successful, the assigned item will be given a unique item number by the WAO assignment contract processor.

When all assignments have been attempted for an assignment pass, frame output will be sent to FOMS based on the SFO parameter. An assignment planning message (PREPWO) is always sent following a successful assignment pass.

The SFO parameter is evaluated to determine whether frame output should be sent following the assignment. If SFO is "Y" for this assignment pass, then frame output will be sent for all successfully assigned items (broken assemblies) within the requested input range(s). This information is sent via a PREWO contract, or multiple PREWO contracts, if necessary.

If SFO is "N", then no frame output contracts (PREWOs) will be sent. The user can request frame output via the SWITCH system ULBB REQ FO work session or the RQF transaction in FUSA (contract REQWO).

9.12.2.3 Break Assembly Completion

Completion of items in a WAO will normally be requested via a PCNWAO contract from FOMS. However, the capability exists to initiate completion requests manually via the CMP WAO work session in the SWITCH system.

The following information is input to complete all or part of a WAO to break assemblies:

- — Wire Center (required)
- — Order Number (required)
- — Key Network Unit ID(s) *or* Item Numbers, single or range(s) (optional)

Each item identified in the input contract is evaluated for completion. In order to be completed, the item must be successfully assigned, i.e., no errors, and frame output (PREWO) must have been sent for the item. If the item is in jeopardy, completion may be blocked or allowed depending on information in the jeopardy action table. If the input contract does not specify individual items or range(s) of items, then completion will be attempted for all items currently in the order.

Once all requested completions have been attempted, the contract processor will check if this is a "final" completion. A completion is "final" when all items in the order are assigned and completed, or were previously canceled. A completion is also considered "final" when all items which have been assigned are complete and the Purge Option is "Y". That is, there are no pending assignments remaining which have not been completed and no items for which assignment failed (i.e., UST marked as an error). However, there may be items in the order which are not canceled, i.e., they are in the established state. A completion which is not a "final" completion is a "partial" completion.

If the completion being processed is found to be a "final" completion as described above, the order will be removed from the SWITCH system database. If the completion is a "partial" completion, the order remains in the SWITCH System database.

Frame output will be sent to FOMS following successful completion processing. If a partial completion was processed then the PCNWO to FOMS will identify each completed item. If the completion is found to be a final completion, then the PCNWO to FOMS will not identify all of the individual assemblies. The PCNWO contract will contain "header-only" information, i.e, a C1 header and a PCNWO section which includes the contract sequence number. If the order is removed from the SWITCH system database, then a PURGE=Y tag/value is included in the PCNWO to notify FOMS that the order is to be purged.

9.12.2.4 Break Assembly Cancellation

The following information is input to cancel a WAO to break assemblies:

— Wire Center (required)

— Order Number (required)

— Key Network Unit ID(s) *or* Item Number(s), single or range(s) (optional)

Each item identified in the input contract which is not completed will be canceled. If the input contract does not specify individual items or range(s) of items, then cancellation will be attempted for all items currently in the order.

A cancellation is considered a "final" cancellation when all items in the order have been canceled or were previously completed. Otherwise, the cancellation is considered a "partial" cancellation. Processing of a final cancellation results in the order being removed from the SWITCH system database.

Frame output contracts will be sent to FOMS following successful cancellation processing.

If a partial cancellation was processed, then a CANWO contract will be sent to FOMS identifying each canceled item for which frame output has previously been sent. If frame output has not been sent for any of the canceled items, then no CANWO contract is necessary (since FOMS has not yet received any frame work instructions for these assignments). Following the partial cancellation, the SWITCH system will also send a new establishment planning message to FOMS. This planning message will include the number of items remaining in the order, that is, the size of the order after being adjusted for the cancellation which has just been processed.

If a final cancellation was processed, then the CANWO to FOMS will not identify the individual items. The CANWO contract will contain "header-only" information, i.e, a C1 header and a CANWO section which includes the contract sequence number. The FOMS system then cancels any remaining items in the order. A CANWO contract will always be sent to FOMS following a final cancellation.

9.12.2.5 Break Assembly Rework Processing

While a break assembly assignment is pending, it may be reworked as a result of service order, work order or inventory activity. Any activity due prior to the WAO break assembly assignment can use the assembly that the WAO is attempting to break. Rework processing will be invoked for the WAO. The WAO must reevaluate the assembly being broken as of the time view of the assignment (the estimated completion date) to ensure that the assembly exists and is not part of a circuit/service.

If the assembly has been used in a circuit/service, that assembly can no longer be broken by the WAO. Upon reevaluation, the WAO will find that either the assembly is part of a circuit/service (MASM, PASM, PSSV), or the assembly no longer exists (TASM). In either case, the assembly cannot be broken. The WAO will output a notifier and cancel this item from the order (unless this is the *last* item in the order, in which case it will be marked as an error and must be manually canceled).

Note that if the order which used the assembly is canceled or changed such that the assembly is no longer in a circuit/service, the assembly will *not* be automatically replaced in the order.

If, upon reevaluation during rework, it is found that the assembly is not in a circuit/service, then the assembly engine will reassign the assembly being broken.

9.12.3 Create Assembly WAOs

WAOs to create assemblies will also be implemented as Multi-Pass Work Orders. Once the order has been established, subsequent establishment requests will be accepted to add additional items (i.e., assemblies to be created) to the order or change order level default information such as the order due date and frame due date.

9.12.3.1 Create Assembly Establishment

The following information is input to initially create (i.e., establish), add additional items, or change default order level data in a WAO to build assemblies:

— Wire Center (required)

— Order Function (create) (required when creating a new order)

— Order Number (optional when creating a new order, otherwise required)

— Order Due Date (required)

— Frame Due Date (optional)

— Frame Remark (optional)

— Creation Option (required when creating a new order)

— Connectivity (required when creating a new order with Creation Option 1, n/a with Creation Option 2 or 3).

— Key Network Unit Type (required when creating a new order)

— Key Network Unit ID(s) (required when creating a new order or adding to an existing order)

— User Name of Assembly to be created (required when creating a new order)

— Specific Functionality of Assembly to be created (optional when creating a new order)

— Default Assembly Attributes (optional)

1. Network Unit Selectability Scale
2. Assembly Remark

— Additional Network Unit Types and ID(s) (required if Creation Option 1 or 2, optional if Creation Option 3)

— Establishment Filtering Criteria (optional)

— Start Assignment Logic Override (optional)

— Allow Tie Pairs Indicator (optional for Creation Options 2 and 3)

— Estimated Completion Date (optional)

— Send Frame Output Override (optional)

— Establishment Line Count (optional)

— Assignment Line Count (optional)

— Additional assignment information (e.g., assembly attributes, selection criteria, network units to be included in the assemblies, etc.)

Each establishment input parameter is described below.

Wire Center

The user must identify the wire center in which the order exists (or will exist).

Order Function

This field identifies the function of this WAO (i.e., create). This field is required for new orders and may not be changed.

Order Number

The order number will be used to uniquely identify this WAO. It must be different than any other order in the SWITCH system database. Order number is optional. If no order number is entered, the SWITCH system will generate one. Any subsequent activity on this order must reference this order number to correctly identify the WAO in the SWITCH system.

Order Due Date

This field identifies the date the WAO is due to be completed. Subsequent establishment requests may be used to change this date. If the order due date is changed for a WAO, any assignments which already exist (or have been completed) will not be affected. Subsequent assignment requests will use the new order due date as the time view of the assignment (unless an ECD value was entered).

Frame Due Date

The frame due date specifies the date at which the frame will have all work for this order completed. If no frame due date is entered, the SWITCH system will create a frame due date which is the same as the order due date. This information is treated as a remark in the SWITCH system, that is, no processing for the Work Order depends on the value of this field. The frame due date will be stored in the Work Order and sent to FOMS as appropriate. Subsequent establishment requests may be used to change the frame due date. Frame due date is kept as an order level field. Changing frame due date does not affect (i.e., cause rework of) any previous assignments.

Frame Remark

The frame remark is specified for the entire order (order level field). The frame remark will be stored in the Work Order and sent to FOMS as appropriate. Subsequent establishment requests may be used to change a frame remark

Creation Option

This field indicates the creation option used by the assembly engine. Three creation options are available. For Creation Option 1, the user must specify all network units and physical connectivity. For Creation Option 2, the user must specify all network units. For Creation Option 3, the user must specify the key network unit, and selection criteria, including design data, and the assembly engine will create the requested assembly. Only TASMs and MASMs may be created using Option 3.

When using Option 3, the assembly engine will select network units as needed for the assembly, including switch ports, transmission equipment, tie pairs, etc. The user must enter the criteria needed for network unit selection. Also, if network units are identified that are found to be unnecessary based on the assembly rules, they will be discarded by the assembly engine.

Any of the assembly types (i.e., TASMs, MASMs, PASMs or PSSVs) may be created using Option 2. In this option, the user identifies the network units to be included in the assembly. The assembly engine will add tie pairs if necessary to satisfy the default connectivity rules. No design data are necessary, i.e., no validation is done. Network units to create assemblies using Option 2 may be entered individually or as ranges.

Any of the assembly types (i.e., TASMs, MASMs, PASMs or PSSVs) may be created using Option 1. In this option, the user must identify all network units to be included in the assembly, including tie pairs. No validation of design data or connectivity (other than frame appearance) will be done. Using this creation option no range input is allowed. That is, assemblies to be created by the order must be established one at a time: network unit ID(s) and physical connectivity. Tie pairs must be specified if needed[28].

Note that the creation option is *not* retained with the assembly. Once the assembly has been created, there is no record of which creation option was used to build the assembly.

Connectivity

When creation option 1 is selected, each assembly must be entered individually, including the physical connectivity of that assembly. For creation options 2 and 3, the user does not input any connectivity information.

Key Network Unit Type

This field identifies the type of network unit which will be used as the key to identify the assemblies created by the order. Once the key network unit type has been determined for an order, it may *not* be changed by subsequent passes of the order. Key network unit type is required when creating the order and may not be

28. Creation Option 1 input is similar to the input required for the UPDASM Inventory Work Session.

changed by any subsequent order activity. All created assemblies will include (at least) one network unit of the key network unit type.

Key Network Unit ID(s)

The user must enter IDs of network units of the key network unit type. The network units may be specified individually or as ranges. Switch ports may be entered as a masked ID. Cable Pairs may be specifically identified or input as CP * (meaning all CPs in the wire center).

The network units specified in the input will be evaluated to determine if they are not part of circuits and also not members of assemblies of the same type as that being created. In addition, a network unit may not be a member of both a MASM and a TASM. If the assemblies being created are TASMs, the network units may not also be members of MASMs. If the assemblies being created are MASMs, the network units may not also be members of TASMs.

Once a key network unit is found which is available to be included in the specified type of assembly, it must be evaluated against the input filter criteria. If the key network unit meets the criteria, then this network unit will be included in the work order (i.e., established).

If an establishment pass (PREWAO contract) is initiated to change default order level data on an existing order, (e.g., order due date), then key network unit ids need not be entered.

User Name of Assembly to be Created

The user name of the assembly is entered to define the type of assembly being created. A single create assembly order can create only one type of assembly (i.e., all assemblies created will have the same user name). Examples of assembly user names are DIP, DORM, EXHB, PBL, etc. User name is required and cannot be changed by subsequent passes of this order.

Specific Functionality of Assembly to be Created

The created assemblies may have a specific functionality. The specific functionality of the assembly is optional. If entered, all created assemblies will include this specific functionality. The value *cannot* be changed (or removed) on subsequent establishment or assignment passes. The username/specific functionality pair must be valid as defined in the *asm names* Reference Data Table.

Assembly Attributes

The attributes of the assemblies being created can be entered[29]. If not entered, default values will be obtained from the Assembly Attribute Table in SWITCH reference data (*asm names*). The assembly attributes which may be entered are listed below:

1. Network Unit Selectability Scale
2. Assembly Remark

Additional Network Unit Types and ID(s)

If creation option 1 is selected, then the user must identify all network units, both type and ID, to be included in the created assemblies. Network unit types can be repeated (e.g., the assembly can include 2 cable pairs). Range input is not allowed for creation option 1.

If the creation option 2 is selected, the user must identify all network units except tie pairs which are to be included in the created assemblies. For creation option 2, tie pairs will be added as needed and *cannot* be entered by the user.

Additional network unit types and IDs may also be entered for creation option 3. In this case (option 3), minimum input for a TASM or MASM is a cable pair ID and sufficient design data to select additional network units. Creation option 3, tie pairs will also be added as needed and *cannot* be entered by the user.

Establishment Filtering Criteria

During establishment, all key network units identified on input are eligible for inclusion in the Work Order. Optional establishment filter criteria will be evaluated to determine which network units are actually included as items in the order. Only those key network units which meet all establishment filter criteria will be included. In addition to the IDs of key network units, additional filtering criteria may be entered to further refine the scope of the WAO.

Refer to the network unit filter criteria available for WAOs to break assemblies for additional information.

Start Assignment Logic (SAL) Override

The SAL control parameter has a default value from SWITCH system reference data. The value of the parameter may be overridden by the user during an establishment pass. The overridden value will apply only to the establishment pass for which it was provided.

Allow Tie Pairs (ATP) Indicator

29. OSP Disconnect Status is an attribute of DIPs which is stored redundantly in the assembly body and in the network unit body of the cable pair. The value in the assembly body must be the same as that in the cable pair body. Since this value is determined by the cable pair, it may not be changed during WAO assembly creation.

The ATP parameter has a default value from SWITCH system reference data. ATP is evaluated during assignment to determine if tie pairs are allowed in the created assembly (options 2 and 3 only). The value of the parameter may be overridden by the user. If entered during establishment, the ATP value will be passed to assignment only if SAL=Y. If SAL=N, the ATP will be ignored during establishment.

Estimated Completion Date (ECD)

If no ECD is input, the ECD date will default to the order due date. The assembly engine uses the ECD date to determine the time view of the assignment in the SWITCH system database.

Send Frame Output (SFO) Override

A default value for SFO is defined in reference data. The user may override this value for the assignment pass being initiated. During establishment, this override only applies when the SAL parameter is "Y". If SAL is "Y" and the user enters an override value for SFO, this override value will be passed to the assignment request and will take precedence over the SFO value in reference data.

If SAL is "N", assignment will not be automatically attempted for the established network units, so an SFO override value will not be used.

Establishment Line Count

A line count may be entered to determine the maximum number of items to be added by an establishment pass. When a line count is entered, the establishment process will continue adding items until the number of items which have been added equals this input line count value, or until the input establishment range(s) are exhausted.

Assignment Line Count

A line count may be entered to determine the maximum number of assignments to be made by an assignment pass. When a line count is entered, the assignment process will continue creating assemblies until the number of assemblies which have been created equals this input line count value, or until the input assignment range(s) are exhausted.

Since this parameter is only valid during assignment processing, the assignment line count should be entered only when the SAL parameter is "Y". If SAL is "N", the assignment line count will not be used.

Additional Assignment Information

When creating assemblies, the user may specify assembly attributes at establishment time. Assembly attributes may be overridden during assignment.

For creation option 1, all physical connectivity information must be input during establishment. For creation option 3, the design data and network unit selection criteria may be entered during establishment. This will become the order level default information. If not overridden during an assignment request, these values will be used when creating the assemblies.

If the WAO specified by the input order number does not currently exist in the SWITCH system database, then the DLBB contract processor must create a new order. Also, if no order number is entered, the PREWAO contract processor will create a new (unique) order id for the WAO. The format of this order number is "Wmmddhhnnss" (as described above).

When a new WAO is established, i.e., the order does not exist in the SWITCH system database, the order will be added to the SWITCH system database. If the specified WAO Work Order already exists in the SWITCH system database, the PREWAO request is processed on the existing order. Items (i.e., network units) which are established in the Create WAO will be added to the UST. Only those key network units which meet all of the specified establishment filter criteria described above will be included in the order. The key network unit will be entered into the UST as the identifier of the assembly being created by the Create WAO, and will subsequently be used to locate the assembly in the UST.

If a network unit is created or changed after the WAO establishment pass, and this network unit meets all input establishment criteria, this network unit will *not* be automatically added to the order. Subsequent establishment requests must be executed to include additional network units (network units which were not present in the SWITCH system database, or did not meet the filtering criteria at the time of a previous establishment pass) as part of the order.

Likewise, if an order uses one of the established network units before the create assembly assignment has been processed, this item will *not* be automatically removed from the WAO. When the item is assigned, the assembly engine will determine if the network unit can be used to create the requested assembly.

Subsequent WAO establishment contracts will also be accepted to change order level information such as the order due date and the default assembly attributes. This type of request will *not* automatically change (rework) assemblies which have previously been created (i.e., assigned) but will become the default values for subsequent assignment requests.

Once all key network units identified in the PREWAO have been evaluated and those which meet the establishment criteria have been included in the order, the SAL parameter is checked to determine if the WAO assignment process is to be invoked.

If the establishment request was successful, the PREWAO contract processor will send an establishment planning message to FOMS (PREPWO contract) identifying the total number of assemblies which are in the WAO.

9.12.3.2 Create Assembly Assignment

The following information is input to assign a WAO to create assemblies:

- — Wire Center (required)
- — Order Number (required)
- — Key Network Unit ID(s) (optional)
- — Assignment Filtering Criteria (optional)
- — Selection Criteria (optional)
- — Assembly Attributes (optional)
- — Estimated Completion Date (ECD) (optional)
- — Allow Tie Pairs (ATP) Indicator (optional)
- — Send Frame Output (SFO) Override (optional)
- — Assignment Line Count (optional)
- — Purge Option (optional)

Each of the assignment input parameters is described below.

Wire Center

The user must identify the wire center in which the order exists.

Order Number

The order number must be entered to identify WAO for which assignment is requested.

Key Network Unit ID(s)

The user can enter the ID(s) of network units of the key network unit type (the items in the UST) for which assignment is requested. The network units may be specified individually or as a range (or ranges). If no network unit IDs are entered, assignment will be attempted for the entire order up the the assignment line count, if entered.

Assignment Filtering Criteria

The filtering criteria available for assignment is similar to the filter criteria available for the establishment pass of a WAO to create assemblies. Filtering assignments allows the user to create assemblies using network units with specific attributes during a given pass.

The assignment contract processor will determine which of the key network units meet the assignment filter criteria. If a key network unit meets the assignment filter criteria, it is passed to the assembly engine and an assembly will be created.

Selection Criteria

Selection criteria must be entered when creation option 3 is chosen. The selection criteria will be passed to the assembly engine and used to create the assembly. Default selection criteria may have been entered during establishment. These values may be overridden during an assignment pass.

Design Data:

Design data must be entered when creating TASMs or MASMs in the unconstrained mode (creation option 3). The following information constitutes the required set of design data needed for creating assemblies. Additional (optional) design data may be entered if desired.

1. Number of Conductors (required)
2. Grade of Service (required)
3. Class of Service (required)
4. Category (required)
5. C.O. Termination (required)

The required design data fields will be prepopulated as follows (unless user entered order-specific default values during establishment).

Number of Conductors:2

Grade of Service: 1

Class of Service: R

Category: V

C.O. Termination: S

Intelligent Controller ID:

In addition the user *must* specify the ID of the Intelligent Controller.

Network Unit Attributes

Attributes of the network units to be selected may be entered.

Assembly Attributes

1. Network Unit Selectability Scale

If the user wishes to create assemblies with a network unit selectability scale which is different than the default value in the *asm names* reference data table, a new default value (for assemblies created by this order only) may have been entered by an establishment pass.

The network unit selectability scale may be overridden during assignment processing. The value entered for the assignment pass will be used for assemblies which are created by that assignment pass only.

2. Specific Functionality of Assembly

   In some instances an assembly has specific functionality defined. The specific functionality of the assembly is optional. If a specific functionality is defined for the assemblies being created, a default value for the order must have been entered during an establishment pass. If provided, this value will be used for the newly created assemblies.

3. Assembly Remark

   Each assembly may have a remark associated with it. A default order level remark may be entered during an establishment request. If entered, this value will be the default remark used when creating assemblies via this Create Assembly Order.

   The assembly remark may be overridden during assignment processing. The value entered for the assignment pass will be used by assemblies which are created by that assignment pass only. The assembly remark override value will not affect the default value in reference data or the default value for this order. Subsequent assignment requests will use the default order level remark if one exists, unless a new override remark is entered.

Estimated Completion Date (ECD)

If no ECD is input, the ECD date will default to the order due date. The assembly engine uses the ECD date to determine the time view of the assignment in the SWITCH system database.

Allow Tie Pairs (ATP) Indicator

The ATP parameter has a default value from SWITCH system reference data. The value of the parameter may be overridden by the user during an assignment pass. The overridden value will apply only to the assignment pass for which it was provided.

Send Frame Output (SFO) Override

A default value for SFO is defined in reference data. The user may override this value for the assignment pass being initiated.

Assignment Line Count

A line count may be entered to determine the maximum number of assignments to be made by an assignment pass. When a line count is entered, the assignment process will continue creating assemblies until the number of assemblies which have been created equals this input line count value, or until the input assignment range(s) are exhausted.

Purge Option

When the Purge Option is "Y", the order will be removed from the database when all assignments made to date have been completed, regardless of how many items remain unassigned. This eliminates the need to explicitly cancel the remainder of the order once the required number of assemblies have been created. If any currently requested assignments failed (item is currently marked in the UST as an error), the purge will *not* be allowed.

Each key network unit referenced by the input contract will be evaluated against any filter criteria which was entered. If the key network unit meets all of the criteria (both inclusion and exclusion), then this item along with any additional information about the assembly to be created will be passed to the assembly engine. Some of the additional information was entered during establishment, e.g., other network units to be assembled with the key network unit. However, some of the information will be entered as part of the assignment pass input, e.g., assembly attribute overrides, estimated completion date, etc. The assembly engine will attempt to create the assembly as of the estimated completion date specified and with the appropriate attributes. If assignment was successful, the assigned item will be given an item number by the WAO assignment contract processor.

An assignment type planning message (PREPWO) is always sent following a successful assignment pass. The SFO parameter is evaluated to determine whether frame output should be sent following the assignment. If SFO is "Y" for this assignment pass, then frame output will be sent for all successfully created assemblies within the requested input range(s). This information is sent via a PREWO contract, or multiple PREWO contracts, if necessary.

If SFO is "N", then no frame output contracts (PREWOs) will be sent. The user can request frame output via the SWITCH system ULBB REQ FO work session or the RQF transaction in FUSA (contract REQWO).

9.12.3.3 Create Assembly Completion

Completion of pending assignments in a WAO will normally be requested via a PCNWAO contract from FOMS. However, the capability exists to initiate completion requests manually via the CMP WAO work session in the SWITCH system.

The following information is input to complete a WAO to create assemblies:

— Wire Center (required)

— Order Number (required)

— Key Network Unit ID(s) *or* Item Number(s), single or range(s) (optional)

Each item identified in the input contract is evaluated for completion. In order to be completed, the item must be successfully assigned, i.e., no errors, and frame output (PREWO) must have been sent for the item. If the input contract does not specify individual items or range(s) of items, then completion will be attempted for all items currently in the order.

Once all requested completions have been attempted, the contract processor will check if this is a "final" completion. Note that WAOs to create assemblies include the purge option, which allows a completion to be a "final" completion when all pending assignments are completed, regardless of the number of items which were never assigned. The completion is not "final" if there exist items in the order for which assignment failed (i.e., UST marked in error). A completion which is not a "final" completion is a "partial" completion.

If the completion being processed is found to be a "final" completion, the order will be removed from the SWITCH system database. A PCNWO contract will be sent to FOMS with header-only information to inform FOMS of the completion.

If a partial completion was processed, then the PCNWO to FOMS will identify each completed item via an OUTEQP aggregate. If the completion is a final completion, then the PCNWO to FOMS will not identify all of the individual assemblies which have been created. The PCNWO contract will contain "header-only" information, i.e., a C1 header and a PCNWO section which includes the contract sequence number. Based on this information, the FOMS system completes all assignments for which frame output has been received. If the order is removed from the SWITCH system database, then a PURGE=Y tag/value is included in the PCNWO to notify FOMS that the order is to be purged.

9.12.3.4 Create Assembly Cancellation

The following information is input to cancel a WAO to create assemblies:

— Wire Center (required)

— Order Number (required)

— Key Network Unit ID(s) *or* Item Number(s), single or range(s) (optional)

Each item identified in the input contract which is not completed will be canceled. If the input contract does not specify individual items or range(s) of items, then cancellation will be attempted for all items currently in the order.

A cancellation is considered a "final" cancellation when all items in the order have been canceled or were previously completed. Otherwise, the cancellation is considered a "partial" cancellation. When processing of a final cancellation is completed, the order is removed from the SWITCH system database.

Frame output contracts will be sent to FOMS following successful cancellation processing. If a partial cancellation was processed, then the CANWO to FOMS will identify each canceled item for which a PREWO has previously been sent. If frame output has not been sent for any of the canceled items, then no CANWO contract is necessary (since FOMS has not yet received any frame work instructions for these assignments). Following a partial cancellation, the SWITCH system will also send a new establishment planning message to FOMS. This planning message will include the number of items remaining in the order, that is, the size of the order after being adjusted for the cancellation which has just been processed.

If a final cancellation was processed, then the CANWO to FOMS will not identify the individual items. The CANWO contract will contain "header-only" information, i.e, a C1 header and a CANWO section which includes the contract sequence number. The FOMS system then cancels any remaining items in the order.

9.12.3.5 Create Assembly Rework Processing

While a create assembly assignment is pending, it may be reworked as a result of service order, work order, or inventory activity. An order which is due prior to the pending WAO create assembly assignment may use network units which are part of the assembly that the WAO is attempting to create. Rework processing will be invoked for the WAO. Since the order used network unit(s) which are part of the pending assembly, that assembly can no longer be created by the WAO. If the network units had been prespecified for the assembly, the assembly engine will attempt to use those same network units as part of rework processing. Since some of the network units are not available, the reworked assignment will fail. If the network units were selected by the SWITCH system (i.e., not prespecified), the assembly engine will attempt to select new network units to be used in the new assembly. The selection criteria which was used when originally creating (i.e., assigning) the assembly will also be used when reworking. If different network units will fulfill the requirements, the assembly engine will successfully create a pending assembly. If no network units can be found which meet the criteria, rework processing will fail. Since no correction passes exist for the order, the assembly for which rework failed will be automatically canceled from the WAO (unless this is the *last* item in the order, in which case it will be marked as an error and must be manually canceled).

The WAO rework routines will create new frame output (PREWO) messages for FOMS when rework is successful. The FOMS system will difference the output to determine if additional framework is necessary as a result of reworking the assignment.

9.12.4 Change Assembly WAOs

A multi-pass WAO change function will exist to support changing of switch ports in assemblies when the switch port is within the scope of a DTR and a switch port in the new intelligent controller ("TO" IC) has been overlaid onto the existing switch port (in the "FROM" IC). In addition, MASMs and TASMs which are not overlaid may also be modified. When the DTR cutover occurs, the switch ports in the "FROM" IC which are currently wired together with other network units as assemblies will no longer be active. The switch ports will be replaced by the overlaid switch ports in the "TO" IC, or by one picked by the assembly engine. The DTR process in the SWITCH system supports the transfer of circuits and services only. Assemblies are not included in the DTR order. Since the switch port change resulting from overlaid switch ports becomes effective as of the DTR cutover, the ability to reflect this change in the SWITCH system is necessary. The change function of WAOs will provide this capability, as well as the ability to choose new switch ports in the "TO" IC for TASMs and MASMs. The latter capability allows, for example, the transfer of DIPs from the "FROM" IC to the "TO" IC.

The WAO order to change the switch ports in assemblies is a Multi-Pass Work Order - it may be established, assigned, canceled, and completed incrementally. Once established, a subsequent establishment request will be accepted to add additional assemblies to the order, or to change default order information, e.g. order due date, frame due date[30]. Cancellation requests can be used to remove assemblies from the order. Assignment may be requested for all or some of the assemblies. Multiple assignment requests may be necessary to assign the entire order. Once assigned, the pending changed assemblies may be completed or canceled.

9.12.4.1 Change Assembly Establishment

The following information is input to initially create (i.e., establish) or add to an existing WAO to change assemblies:

- — Wire Center (required)
- — Order Number (optional when creating a new order, otherwise required)
- — Order Function (change) (required when creating a new order)
- — Order Due Date (required)
- — Frame Due Date (optional)
- — Frame Remark (optional)
- — DTR Order Number (required when creating a new order)
- — Key Switch Port ID(s) (required when creating a new order or adding to an existing order)
- — Start Assignment Logic Override (optional)

30. If the due date of a DTR is changed, it is recommended that the Change WAO(s) associated with the DTR be canceled and re-established with the new order due date.

— Send Frame Output Override (optional)

— Establishment Line Count (optional)

— Assignment Line Count (optional)

— Establishment Filters (optional)

Each of these establishment parameters is described below. All assemblies which include overlaid switch ports within the requested range will be established in the order.

Wire Center

The user must identify the wire center in which the order exists (or will exist).

Order Number

The order number will be used to uniquely identify this WAO. It must be different than any other order in the SWITCH system database. Order number is optional. If no order number is entered, the SWITCH system will generate one. Any subsequent activity on this order must reference this order number to correctly identify the WAO in the SWITCH system.

Order Function

This field identifies the function of this WAO (i.e., change). This field is required for new orders and may not be changed.

Order Due Date

This field identifies the date the WAO is due to be completed. For Change WAOs, this should be the same as the due date of the associated DTR.

Frame Due Date

The frame due date specifies the date at which the frame will have all work for this order completed. This information is treated as a remark in the SWITCH system, that is, no processing for the Work Order depends on the value of this field. The frame due date will be stored in the Work Order and sent to FOMS as appropriate. Subsequent establishment requests may be used to change the frame due date. Frame due date is kept as an order level field. Changing frame due date does not affect (i.e., cause rework of) any previous assignments.

Frame Remark

The frame remark is specified for the entire order (order level field). The frame remark will be stored in the Work Order and sent to FOMS as appropriate. Subsequent establishment requests may be used to change a frame remark but will not affect (i.e., cause rework of) any previous assignments.

DTR Order Number

The order number of the DTR for which this change assembly order is being created. The order number of the DTR is required when initially creating the WAO and may not be changed. A WAO change order corresponds to a single DTR. Multiple WAOs may be used to support a single DTR, but a single WAO may *not* support multiple DTR orders. If multiple DTRs exist in a wire center, separate WAO change orders must be created for each unique From-IC/To-IC pair.

Key Switch Port ID(s)

Since the change WAO only supports change of switch ports, the key network units *must* be switch ports. The IDs of the switch ports can be entered individually, in ranges, or as masked IDs. It is the responsibility of the user to identify all switch ports involved in overlay in order to successfully transfer all assemblies.

Start Assignment Logic (SAL) Override

The SAL control parameter has a default value from SWITCH system reference data. The value of the parameter may be overridden by the user during an establishment pass. The overridden value will apply only to the establishment pass for which it was provided.

Send Frame Output (SFO) Override

A default value for SFO is defined in reference data. The user may override this value for the assignment pass being initiated. During establishment, this override only applies when the SAL parameter is "Y". If SAL is "Y" and the user enters an override value for SFO, this override value will be passed to the assignment request and will take precedence over the SFO value in reference data.

If SAL is "N", assignment will not be automatically attempted for the established network units, so an SFO override value will not be used.

Establishment Line Count

A line count may be entered to determine the maximum number of items to be added to the order during an establishment pass. When a line count is entered, the establishment process will continue adding assemblies until the number of assemblies which have been added equals this input line count value, or until the input establishment range(s) are exhausted.

Assignment Line Count

A line count may be entered to determine the maximum number of assignments to be made by an assignment pass. When a line count is entered, the assignment process will continue changing assemblies until the number of assemblies which have been changed equals this input line count value, or until the input assignment range(s) are exhausted.

Since this parameter is only valid during assignment processing, the assignment line count should be entered only when the SAL parameter is "Y". If SAL is "N", the assignment line count will not be used.

Establishment Filtering Criteria

Establishment filtering criteria may be entered. The filters work identically to those for breaking assemblies, with two exceptions:

— assembly user name and specific functionality may change from pass to pass, whereas for a WAO to break assemblies, they are fixed.

— an assignment overlay filter is present for WAOs to modify assemblies, but is prohibited for WAOs to break assemblies. Note that this is an assignment filter only, and if SAL=N the value will be ignored.

If the WAO specified by the input order number does not currently exist in the SWITCH system database, then the DLBB contract processor must create a new order. Also, if no order number is entered, the PREWAO contract processor will create a new order id for the WAO. The format of this order number is "Wmmddhhnnss" (as described above).

When a new WAO is established, i.e., the order does not exist in the SWITCH system database, the order must be added to the SWITCH system database.

First, the "FROM" and "TO" ICs must be identified for the specified DTR order. If the DTR order does not currently exist, a notifier will be returned to the originator and processing will terminate.

If the DTR exists and overlay is in effect, then the WAO will be created in the SWITCH system database. All assemblies within the requested input range(s) which include a switch port on the "FROM" IC will be established in the order. The switch port which was used to locate the assembly will be entered into the UST as the identifier of the assembly which has been established in the Change WAO.

If the specified WAO Work Order already exists in the SWITCH system database, the PREWAO request is processed on the existing order. The input key switch ports will be evaluated as described above. Those that specify assemblies to be changed (i.e., assemblies which include switch ports in the "FROM" IC) will be added to the UST as new (additional) items.

Subsequent PREWAO contracts will also be accepted to change the order level default data, e.g., order due date. Changing the order due date will not affect any assignments which currently exist. Any future assignments will use the new order due date.

Once all key switch ports identified in the PREWAO have been evaluated and all appropriate assemblies have been included in the order, the SAL parameter is checked to determine if the WAO assignment process is to be invoked.

Note that no Estimated Completion Date exists for Change Assembly orders. DTRs in the SWITCH system do not allow estimated completion dates for circuits which are being transferred as part of the DTR order; therefore, the WAO Change function which supports the DTR does not allow estimated completion date values. All assignments are made as of the due date of the WAO.

If the establishment request was successful, then the PREWAO contract processor will send an establishment planning message to FOMS. This message (PREPWO contract) will identify the total number of assemblies which are in the WAO. Note that even though frame wiring is not necessary for assemblies with overlaid switch ports, that frame instructions will be sent anyway. The frame will be able to distinguish those items which require wiring, and those which do not.

9.12.4.2 Change Assembly Assignment

The following information is input to assign a WAO to change assemblies:

- — Wire Center (required)
- — Order Number (required)
- — Key Switch Port ID(s), single or range(s) (optional)
- — Assignment Filtering Criteria (optional)
- — Send Frame Output Override (optional)
- — Assignment Line Count (optional)

Each of these assignment parameters is described below.

Wire Center

The user must identify the wire center in which the order exists.

Order Number

The order number must be entered to identify WAO for which assignment is requested.

Key Switch Port ID(s)

The user can enter the ID(s) of the switch ports of the assemblies for which assignment is requested. The switch ports units may be specified individually or as a range (or ranges). If no network unit IDs are entered, assignment will be attempted for the entire order up to the assignment line count, if entered.

Assignment Filtering Criteria

Filtering assignments allows the user to change assemblies with specific attributes during a given pass. Assignment filtering criteria are optional.

Assignment filters may consist of *Assembly Attributes* and *Network Unit Types and Attributes*. Refer to the assignment filters available for break assembly assignment for a list of valid filters.

The overlay filter assignment filter may be used to control whether assemblies which are overlaid or not are assigned in the WAO.

Send Frame Output (SFO) Override

A default value for SFO is defined in reference data. The user may override this value for the assignment pass being initiated.

Assignment Line Count

A line count may be entered to determine the maximum number of assignments to be made by an assignment pass. When a line count is entered, the assignment process will continue changing assemblies until the number of assemblies which have been changed equals this input line count value, or until the input assignment range(s) are exhausted.

The assemblies containing the switch ports identified in the input range(s) are evaluated against the input assignment filter criteria.

If the ID of the switch port in the "FROM" IC is found in the switch port overlay reference data tables, the assembly engine will be invoked to replace the original switch port in all assemblies containing the switch port with the new (overlaid) switch port obtained from the reference data table. The new switch port will be prespecified to the assembly engine. The assembly engine will attempt to replace the switch port in the assemblies with the prespecified switch port (in the "TO" IC) using the same frame appearance. Since the frame location of the new and old switch ports is the same, the connectivity of the assembly should not be changed.

If the "FROM" IC switch port is not found in the switch port overlay table, then the assembly engine will be called with OE=? and the assembly engine will select a switch port in the "TO" IC. In this case the connectivity will change.

Since the assemblies were spare (i.e., not in a circuit), no validation of the new switch port (e.g., design data) will be done, with the exception of ensuring that the switch port is spare in the time view of the assignment. The new switch port will then replace the original switch port as of the order due date.

If assignment was successful, the assigned item will be given a unique item number by the WAO assignment contract processor.

After all assignments have been attempted for an assignment pass, frame output may be sent. An assignment type planning message (PREPWO) is always sent following any successful assignment pass. The assignment planning message will include the function of the WAO (change) which can indicate to the frame personnel that frame work is not necessary for this order.

The SFO parameter is evaluated to determine whether frame output should be sent following the assignment. If SFO is "Y", then frame output (PREWO) will be sent automatically. The frame output for changed assemblies will include an indicator that the old and new switch ports in the assembly/assemblies were overlaid (at the same frame location). This information is sent via a PREWO contract, or multiple PREWO contracts, if necessary.

If SFO is "N", then no frame output contracts (PREWOs) will be sent. The user can request frame output via the SWITCH system ULBB REQ FO work session or the RQF transaction in FUSA (contract REQWO).

9.12.4.3 Change Assembly Completion

The following information is input to complete all or part of a WAO to change assemblies:

— Wire Center (required)

— Order Number (required)

— Key Network Unit ID(s) *or* Item Number(s) (optional)

Each item identified in the input contract is evaluated for completion. The requirements for an item to be completed are:

- the item must be successfully assigned, i.e., without error
- frame output (PREWO) must have been sent for the item if the switch port was not overlaid

If the input contract does not specify individual items or range(s) of items, then completion will be attempted for all items currently in the order.

Once all requested completions have been attempted, the contract processor will check if this is a "final" completion. A completion is "final" when all items in the order are assigned and completed, or were previously canceled. A completion which is not a "final" completion is a "partial" completion. Note that the Purge Option is not available in WAOs to change assemblies.

Following completion of all requested assignments, a PCNWO frame output contract will be sent to FOMS.

If the completion being processed is found to be a "final" completion, the order will be removed from the SWITCH system database.

If a partial completion was processed then the PCNWO to FOMS will identify each completed item. If the completion is a found to be a final completion, then the PCNWO to FOMS will not identify all of the individual assemblies. The PCNWO contract will contain "header-only" information, i.e, a C1 header and a PCNWO section which includes the contract sequence number.

9.12.4.4 Change Assembly Cancellation

The following information is input to cancel a WAO to change assemblies:

— Wire Center (required)

— Order Number (required)

— Key Network Unit ID(s) *or* Item Number(s), single or range(s) (optional)

Each item identified in the input contract which is not completed will be canceled. If the input contract does not specify individual items or range(s) of items, then cancellation will be attempted for all items currently in the order.

A cancellation is considered a "final" cancellation when all items in the order have been canceled or were previously completed. Otherwise, the cancellation is considered a "partial" cancellation. When processing of a final cancellation is completed, the order is removed from the SWITCH system database.

Frame output contracts may be sent to FOMS following successful cancellation processing (CANWO). If a partial cancellation was processed, then the CANWO to FOMS will identify each canceled item for which a PREWO has previously been sent. If none of the items which have been canceled have been included in a PREWO contract to FOMS, then no CANWO contract is necessary. Following a partial cancellation, the SWITCH system will also send a new establishment planning message to FOMS. This planning message will include the number of items remaining in the order, that is, the size of the order after being adjusted for the cancellation which has just been processed.

If a final cancellation was processed, then the CANWO to FOMS will not identify the individual items. The CANWO contract will contain "header-only" information, i.e, a C1 header and a CANWO section which includes the contract sequence number. A CANWO contract will always be sent to FOMS following a final cancellation.

9.12.4.5 Change Assembly Rework Processing

While a change assembly assignment is pending, it may be reworked as a result of service order, work order, or inventory activity. An order which is due prior to the pending WAO change assembly assignment may use the assembly that the WAO is attempting to change. Rework processing will be invoked for the WAO. The assembly being changed must be reevaluated as of the time view of the assignment (the order due date) to ensure that the assembly is not part of a circuit/service. If a service order used the assembly in the circuit/service, that assembly can no longer be changed by the WAO. Upon reevaluation, the WAO will find that either the assembly is part of a circuit/service (MASM, PASM, PSSV), or the assembly no longer exists (TASM). In either case, the assembly cannot be changed. The WAO should output a notifier and cancel this item from the order (unless this is the *last* item in the order, in which case it will be marked as an error and must be manually canceled).

When an assembly is used in a circuit/service, the working circuit/service should be included as part of the DTR order.

9.13 Work Order Line and Station Transfers

A Work Order Line and Station Transfer (WOLST) is a BCC initiated action that moves the service on a working loop to a spare cable pair. This move is done to provide spare pairs for another work order such as a cable throw. Since WOLSTs are cable pair changes, they usually are created in LFACS and flow through to the SWITCH system, although they can be initiated from the SWITCH system ULBB.

Each WOLST moves a single service. The WOLST contract sent from LFACS is not sent as part of a related (dependent) work order or service order. It is merely a move of a single working service from one cable pair to another cable pair.

The SWITCH system may assign a new switch port due to the transfer of the service to Digital Loop Electronics (DLE) to an Integrated Digital Loop Carrier (IDLC) system, or Dedicated Inside Plant (DIP) assembly, or to simply support good frame utilization. Coordination is required between the Recent Change Memory Administration Center (RCMAC) personnel and the construction forces when the switch port, channel, or call reference value is changed. To reduce the coordination, the user can elect to establish a "temporary" digital bridge between the switch ports, channels, or call reference values. The existence of a digital bridge between the old and new switch ports, channels, or call reference values within the Intelligent Controller (IC) allows the translation changes to be performed in advance of the cable pair change. After the digital bridge is in place, the WOLST does not require any coordination between the two work groups and can be performed at any time. When the transfer is performed, the digital bridge can be removed.

WOLSTs are multi-pass work orders that have establishment, assignment, completion and cancellation contracts. Planning messages are sent to FOMS following WOLST establishment and assignment. A WOLST assignment can be put into jeopardy and completion can be blocked by a jeopardy condition.

WOLSTs use multi-pass work order flow controls and assignment controls. Flow control options are used for managing WOLST processes, i.e., WOLST assignment can be initiated automatically after establishment (SAL), and FOMS and MAS output may be sent automatically following assignment (SFO and STD). When automatic processing is not used, manual input is available to initiate each process. Default or manually entered assignment control options are also available for WOLSTs to inhibit or provide for switch port, channel, or call reference value changes.

After the WOLST field work is done, completions normally flow through to the SWITCH system from SOAC, although manual input is accepted from the ULBB. Flow through and manual cancellation may be received at any time after the LST is established.

9.13.1 WOLST Processing Overview

The SWITCH system processes that are used during the life of a WOLST are:

- **Establish WOLST** (PRELST)

  The PRELST contract is used to record the presence of a new WOLST in the SWITCH system. The PRELST contract contains an order number, a due date, a single OUT cable and pair and a single IN cable and pair. The IN pair may be given an optional resistance zone (RZ) or carrier zone (CZ) value. The contract also accepts overrides to the default flow control and assignment control options.

  The establishment will produce an establishment (ostat=e) planning message for FOMS (PREPWO).

  The PRELST process may result from flow-through SOAC input or from a manual ULBB input.

- **Assign WOLST** (ASGLST)

  The ASGLST contract is used to assign the transfer in the SWITCH system database and prepare the wiring information for FOMS and translation information for MAS, if necessary. This process may be triggered automatically on the completion of a PRELST contract or may be started manually from the ULBB.

  The ASGLST contract processor prepares an input to the SWITCH system assignment engine for the circuit being transferred. The result will be to either move the circuit reusing the existing switch port/channel/call reference value, move the circuit and assign a new switch port/channel/call reference value, or select a new switch port/channel/call reference value and assign a temporary digital bridge between the old and new switch ports/channels/call reference values. On completing the assignment, an assignment (ostat=a) planning message is sent to FOMS. Based on user-settable parameters, the output from the assignment process may be stored until requested, or sent immediately to FOMS and/or MAS.

- **Complete WOLST** (PCNLST)

  WOLST completion requests (PCNLST) will usually flow through from SOAC, although manual completion of the WOLST is permitted. Since a WOLST consists of a single item, a completion request is always considered a "total" completion. If an item is temporarily digitally bridged, the item will be unbridged before the item is completed. The appropriate translations data and frame output will be sent to MAS and FOMS, respectively. After the item is completed, the network units involved in the pending assignment take on their final status in the database. At this time the WOLST is removed from the SWITCH system database, although the WOLST number and due date are retained as a record of the last activity on the network unit.

If required translations data have not been sent to MAS, the completion will RMA. If frame output has not been sent to FOMS, based on a user-settable parameter (IFC), the completion request will either be rejected or allowed. Upon successful completion, a PCNWO contract is generated for FOMS so that FOMS may delete its record of the assignment.

When invoked from the SWITCH system ULBB, the user input screen is retained after the PCNLST contract is sent to the DLBB. This allows a series of LSTs to be completed by simply overwriting the information on the screen that was just processed.

- **Cancel WOLST** (CANLST)

  CANLST will usually flow through from SOAC although manual cancellation (via the SWITCH system ULBB) of the WOLST is permitted. Since a WOLST consists of a single item, a cancellation request is always considered a "total" cancellation. When cancellation is requested, the network units involved are returned to their original status and the order is removed from the SWITCH system database. A CANWO contract is generated for FOMS so that FOMS may update its record of the WOLST.

  If MAS has previously received TRM requests to change the switch ports/channels/call reference values or temporarily digitally bridge the switch ports/channels/call reference values of the item which is being canceled, a TRM update message will be sent following the cancellation request to restore the canceled item to its original state.

  When invoked from the SWITCH system ULBB, the user input screen is retained after the CANLST contract is sent to the DLBB. This allows a series of LSTs to be canceled by simply overwriting the information on the screen that was just processed.

9.13.1.1 Process Flow Control

BCC-settable parameters are used to provide maximum flexibility for each WOLST. The parameters are normally set to control WOLST flow at a wire center level (default values). Table 9-1 shows the work order control parameter (*wo order control*) to be delivered as default reference data. Users have the option of providing control values at the order level (overrides) for SAL (start assignment logic), STD (send translations data), SFO (send frame output), TDB (temporary digital bridging), and IFC (ignore frame output for completions). The manual overrides for SAL, STD, SFO, and TDB may be accomplished through either the PRELST or ASGLST contract. The manual override for the IFC parameter may be accomplished with the PCNLST contract. The parameters and their allowable setting provide for the following process flows:

1. **SAL** (Start Assignment Logic) Default value is "Y".
   a. SAL=N - Establish a WOLST (PRELST contract) and stop processing. Assignment will be initiated by a manual entry from the ULBB.
   b. SAL=Y - Start the ASGLST process immediately after completion of the PRELST process.
2. **SFO** (Send Frame Output) Default value is "Y".
   a. SFO=N - Do not sent FOMS frame output automatically on completion of the ASGLST contract. Frame output will be generated by a request from FUSA or the SWITCH system ULBB work session REQ FO (REQWO contract). Manual override of this parameter may be accomplished from the PRELST or the ASGLST screen.
   b. SFO=Y - Send frame output automatically on completion of the ASGLST contract.
3. **STD** (Send Translation Data) Default value is "N".
   a. STD=N - Do not send translations data to MAS automatically on completion of ASGLST processing. Translations data will be generated by a request from the RCMAC via FUSA or the SWITCH system ULBB work session REQ TRM (REQTRM contract).
   b. STD=Y - Send translations data to MAS automatically on completion of ASGLST processing if the WOLST assignment is MAS-affecting.
4. **SOS** (Send Output Simultaneously) Default value is "N".
   a. SOS=N - The REQWO contract produces only frame output. The REQTRM contract produces only MAS output.
   b. SOS=Y - Produce both frame and translation output at the same time on receipt of either a REQWO or REQTRM contract.
5. **TDB** (Temporary Digital Bridging) Default value is "N".
   a. TDB=N - Do not assign a temporary digital bridge for the item.
   b. TDB=Y - Assign a temporary digital bridge for the item, if applicable.
6. **IFC** (Ignore Frame Output for Completions) Default value is "N".
   a. IFC=N - Do not allow completions to process if frame output has not been sent to FOMS.
   b. IFC=Y - Allow completions to process regardless of whether or not frame output has been sent to FOMS.

User input is permitted to supersede the default values of the parameters for a specific transfer.

9.13.1.2 Switch Port Reuse Control

For WOLSTs which only involve the copper plant, BCC-settable parameters are used to provide switch port assignment flexibility for each transfer. Table 6-7 shows the Switch Port Reuse Control *(swpt reuse control)* table to be delivered as default reference data[31]. The scope of this table is global and possible instances can be by IC type, IC generic and IC ID. Wire center overrides of this table can exist.

BCC users may want to allow switch port reassignments for most types of service but prefer reuse in specific cases. The BCC-settable Switch Port CEC Exclusion table[32] is used for this purpose. See Table 6-6 for a sample of the table being delivered as default reference data. This table may be populated with various types of services, such as ISDN and MADN. If the assignment engine determines that the service being processed matches one of the values in this table, switch port reuse is attempted first and intra-wire center facility assignments will be made if required.

The switch port reuse control parameters and their allowable settings provide for the following:

1. **CSR** (Conditional Switch Port Reuse Preference)

   When a WOLST is assigned, the decision may be made to reuse the switch port, to assign a new switch port, or to assign a switch port given certain conditions. Therefore, the CSR parameter will have one of four values:

   a. CSR=E (exclude) - reuse of the working switch port is excluded when the CP is changed, and use of switch port assembled (MASM/TASM) to the new CP is attempted; if this fails, a new switch port is selected

   b. CSR=N (no) - use of switch port assembled (MASM/TASM) to the new CP is attempted first; if this fails, reuse of the working switch port is tried; if this fails, a new switch port is selected

   c. CSR=Y (yes) - reuse of the working switch port is attempted first, based on the value of the CIA parameter; if reuse of the working switch port is disabled or fails, the use of a switch port assembled to the new network unit (CP), if any, is attempted next; if this fails, a new switch port is selected

   d. CSR=R (reuse) - the switch port will be reused, if valid; if it is not, an RMA will be generated.

2. **CIA** (Candidate For Intra-wire center Facility Allowance)

31. Note: The Switch Port Reuse Control table is not applicable when performing a temporary digital bridging assignment.

32. Note: The Switch Port CEC Exclusion table is not applicable when performing a temporary digital bridging assignment.

This parameter determines whether the ASGLST contract processor will attempt to assign a new switch port to avoid intra-wire center facility assignments, or to reuse the working switch port and allow the assignment of intra-wire center facilities. The determination is based on the frame locations of the FROM and TO cable pairs. CIA only applies to simple circuits, (i.e., circuits that have a single cable pair and switch port).

a. CIA=Y - attempt reuse of the existing switch port even if it requires the assignment of intra-wire center facilities

b. CIA=N - do not reuse the working switch port if it requires the assignment of new intra-wire center facilities

The CIA parameter does not apply when the CSR parameter has a value of "E" (exclude reuse). It will apply only if CSR=Y, or if CSR=N *and* reuse of the existing switch port, although not preferred, needs to be attempted.

3. **CVO** (Critical Validations Only)

   a. CVO=Y (yes) - if the design data (cec) remains the same, switch port validations will be relaxed so that only critical validations (capacity, inventory availability, assignment limitations, assigned use vs. grade of service, load group exclusions, administrative group steering, TN-RSU mapping and reverse, denied, and extra-district spreading) will be performed. If the design data changes, all validations will be performed.

   b. CVO=N (no/null) - all validations will be performed whether the design data changes or not

The assignment control parameter logical flow is depicted in Figure 9-2. Refer to Section 6 for additional information regarding switch port reuse control.

9.13.1.3 Channel/Call Reference Value Reuse

When performing a WOLST within a DLE environment, the assignment process will attempt to reuse the route, and all channels and/or the call reference value whenever possible.

9.13.1.4 MAS Involvement

An entry for WOLSTs exist in the *mas involvement* table. The table determines whether output will be sent to MAS for items which which generate MAS-affecting changes. If the value is "N", then output will not be sent to MAS. If the value is "Y", then output will be sent to MAS. The default value is "Y".

9.13.1.5 Item Numbers

The item assigned in the WOLST will always be assigned item number 1 (it is the only item in the order).

9.13.2 SWITCH System-to-FOMS Interface for WOLSTs

The following contracts are used to transmit information to FOMS for a WOLST in the SWITCH system:

- PREPWO - Planning Message
- PREWO - Frame Output
- CANWO - Cancellation Notification
- PCNWO - Completion Notification

9.13.2.1 Planning Messages

The contract PREPWO is used to transmit planning information about the transfer to FOMS. It is produced to satisfy two conditions:

a. To notify the frame that the SWITCH system has received a new WOLST. This PREPWO (type "e" for establishment) is generated at the completion of the PRELST contract.

b. To notify the frame that assignments have been made in the SWITCH system database. This PREPWO is type "a" (for assignment). Wiring information may be sent automatically if SFO=Y or may be requested by FOMS via contract REQWO.

The planning message will contain:

1. The order number.
2. The identification of the FROM cable pair in the transfer.
3. The order due date.
4. The total number of circuits (either established or assigned), always 1 for WOLSTs.
5. The number of designed circuits (0 or 1).
6. The setting of the SAL, SFO, and IFC flow control parameters.
7. The estimated completion date used by this assignment pass. Returned in assignment planning messages only. For WOLSTs, the estimated completion date is *always* the order due date.

8. The item numbers assigned by the assignment pass (type "a" PREPWO only).

See Section 15 for details of the planning message.

9.13.2.2 Frame Output

The PREWO contract is used to send the frame output to FOMS for the pending WOLST assignment. The PREWO contract contains information for the WOLST assignment, indexed by the OUT cable pair. Each PREWO contract will include a sequence number. Sequence numbers will be included in all contracts sent to FOMS, except for planning messages. The sequence number will increment by one for each frame output contract sent for the order.

Each item in the PREWO contract will also include the item number assigned by the SWITCH system. This item number is also sent to MAS in the TRM contracts and can be used to facilitate coordination between the work centers.

If an assignment for which frame output has previously been sent is reworked, frame output will be sent via a new PREWO contract reflecting the updated assignment. Each PREWO contract will have a unique sequence number as described above.

9.13.2.3 Cancellation Notification

A Cancellation may be received after the WOLST is established. Corrections from LFACS are received as a CANLST contract followed by a new PRELST contract. Since there are no partial cancellations for WOLSTs, a cancellation request will always result in a CANWO contract to FOMS indicating that the order has been totally canceled (i.e., header-only information). There will be no new planning messages sent.

CANWO contracts will contain sequence numbers as described above.

9.13.2.4 Completion Notification

When a WOLST completion is processed in the SWITCH system, a PCNWO contract will be sent to notify FOMS of the completion. If the item is temporarily digitally bridged, it will be unbridged before it is completed. In this case, a PREWO contract will be sent to FOMS prior to the PCNWO contract. Since there are no partial completions for WOLSTs, the PCNWO sent to FOMS will contain header-only information (e.g., order number) to notify FOMS of the WOLST completion.

PCNWO contracts will contain sequence numbers as described above.

9.13.3 Establish a WOLST

The PRELST contract may flow-through from SOAC or result from manual ULBB input. Establishment results in the creation of the work order in the SWITCH system database, including a UST to control and monitor the item in the WOLST. The state of the circuit in the SWITCH system database is not affected by establishment processing.

Following establishment, the spare IN pair still shows as spare with no indication of pending work order activity. Likewise, the working OUT pair still shows as working. Establishment will produce an establishment (ostat=e) planning message for FOMS (PREPWO).

9.13.3.1 SOAC Input Interface

A WOLST from LFACS moves only a single circuit. The input contract includes a *C1 header and a single *LST section as defined in the SOAC/SWITCH System Interface Specification[33]. The information that the SWITCH system will receive in a PRELST contract includes:

1. The WOLST Order Number (the concatenation of the transfer number and the pair number from the OUT cable pair)
2. The WOLST Due Date.
3. The details on the circuit in the WOLST (a circuit identifier, OUT cable and pair, IN cable and pair, IN resistance zone, IN carrier zone).
4. LST=1, ITM=1 is always present. There is never an ITM=2.

9.13.3.2 Manual WOLST Establishment

When a PRELST contract is entered manually, the SWITCH system will receive the following information:

1. The WOLST Order Number (the concatenation of the transfer number and the pair number from the OUT cable pair). The order number is built to be consistent with the rules employed by LFACS. For example, if a series of circuits are moved by transfer LT01 and one of the circuits is working on cable 5, pair 319, the order number to transfer that circuit is LT01319.
2. An order due date (DD) indicating when the work must be completed.
3. An OUT cable and pair ID.

33. See "SOAC/SWITCH System Interface Specification," TM-OPT-020995.

4. An IN cable and pair ID.
5. An optional RZ or CZ may be entered for the IN pair.
6. Optional frame remarks.
7. Overrides to the Flow Control Parameters.
8. Overrides to the Assignment Control Parameters.

An error will be returned to the user in the following conditions:

1. the order number already exists.
2. either of the cable and pair IDs do not exist.

9.13.3.3 PRELST Processing

On receiving the PRELST contract, the SWITCH system will check to determine whether the WOLST order number exists.

If the order already exists, the order will remain as established and a notifier returned to the user indicating that the order exists and the input has been rejected (items cannot be added to an existing WOLST).

If the order does not exist, the SWITCH system will:

1. Create a work order in the SWITCH system database to store the following information:
   a. WOLST Order Number.
   b. LST Order Due Date.
   c. Frame remarks, if present.
   d. The details on the circuit in the WOLST which includes the circuit ID, the OUT cable pair and the IN cable pair, and the resistance and carrier zones.
2. Determine the status of the DCI (Database Check for Inconsistencies) parameter. A default value of "Y" (Yes) will be provided in the *wo order control* reference data table (See Table 9-1).

   The consistency check is necessary because LFACS may not always verify the status of the cable pairs in the transfer before sending the contract to the SWITCH system.

   a. If the DCI parameter is set to "Y" (Yes), the PRELST process will:
      — Verify that each FROM cable pair is working or is pending working in the database. Verify that each TO cable pair is spare or pending spare in the database. For transfers of party service on non-constrained circuits, the TO cable pair may be working in another multi-party circuit. This is necessary to

support implicit party reassociation as a result of the WOLST. For transfers of party service on constrained circuits, the TO cable pair must be spare. Reassociations will *not* be processed on constrained circuits during a WOLST.

— Set an indicator in the UST for the FROM cable pair if a discrepancy is found.

— Produce a notifier indicating the discrepancy.

b. If DCI is set to "N" (No), the inconsistency check will still be performed, the conflict indicator will be set in the UST, however, no notifier will be sent.

3. Produce a FOMS establishment planning message (PREPWO).
4. Determine the value of the Start Assignment Logic (SAL) parameter by:

a. Determining whether an override value has been set for this order number. If an override is present, user the override value. If an override is not present, use the default value from SWITCH system reference data table *wo order control* (see Table 9-1).

b. If the value indicates the WOLST will be assigned manually (SAL=N), PRELST processing terminates and the ASGLST contract must then be invoked by an entry from the ULBB.

c. If the value indicates the WOLST should be assigned automatically in the SWITCH system (SAL=Y), invoke the ASGLST contract at the completion of PRELST processing. Pass along the values of all overrides (e.g., SFO, STD, TDB) that have been entered.

9.13.4 Assign a WOLST

The WOLST assignment process (ASGLST contract) may be started automatically following completion of WOLST establishment (PRELST with SAL=Y), or manually via the SWITCH system ULBB ASG LST work session.

The ASGLST contract will generate an input to the SWITCH system assignment engine to move the circuit from the current working cable pair to the new cable pair.

The user-controllable temporary digital bridging (TDB) parameter will determine whether an attempt to assign a temporary digital bridge will be performed. If TDB=Y, the ASGLST contract processor will invoke the assignment engine to temporarily digitally bridge all applicable items. The following (non-applicable) items will not be candidates for temporary digital bridging:

— non-switched, designed, and party services

— members of series completion hunt, multi-line hunt, simulated facility, and centrex groups

— services with a non-qualifying assignment category for digital bridging[34]

— multi-leg circuits

— constrained circuits

— circuits with pending activity

— cable pair swaps

If TDB=N or the item is not a candidate for temporary digital bridging, the item will be assigned using the conventional WOLST method. the user-controllable assignment options will be passed to the assignment engine to determine if the existing switch port will be reused or if a new switch port assignment will be attempted (applicable to copper plant only).

Once assigned, the item in the WOLST is given item number 1. If the item is reworked, it will not be assigned a new item number.

The wiring information from the assignment process may be stored until requested (SFO=N), or sent immediately upon completion of the ASGLST contract. An assignment planning message, the type "a" PREPWO contract, will be generated for FOMS with information about this assignment pass.

Translations data will be sent to MAS only if the WOLST assignment is found to to be MAS-affecting (e.g., change of switch port, channel, call reference value, addition or removal of transmission equipment, establishment of a temporary digital bridge). The translations data from the assignment process may be stored until requested (STD=N), or sent immediately upon completion of the ASGLST contract.

Multi-pass work orders are considered "coordinated" work items. Therefore, if translations data for an item are sent to MAS (excluding dial transfers), it is held by MAS until notification to release the item (i.e, apply the translations to the IC) is received from the construction and/or the frame work forces. However, if an item is to be temporarily digitally bridged, this magnitude of coordination is not required. Therefore, MAS will release the translations to temporarily digitally bridge an item immediately upon receipt.

9.13.4.1 Assignment Initiated Automatically (SAL=Y)

When SAL=Y during PRELST processing, the assignment request is initiated automatically. Information necessary for assignment will be passed to the ASGLST contract processor from the PRELST processing. This information includes:

34. The Assignment Category Rule Set tables define whether an IC allows digital bridging based on the assignment category. The ASGLST contract processor will derive the assignment category for each item and compare it against the associated table to determine if the IC supports digital bridging for that particular assignment category.

1. The WOLST order number.
2. WOLST order due date.
3. Wire center ID.
4. An OUT cable and pair ID.
5. The circuit ID.
6. An IN cable and pair ID.
7. An optional resistance zone or carrier zone may be received for the IN pair.
8. Frame remarks.
9. Over values for any assignment or flow control parameters that may have been changed for this order.

9.13.4.2 ULBB Assignment Input Interface

When an ASGLST contract is started manually, the SWITCH system will receive the following information:

1. The order number.
2. The order due date (DD).
3. A circuit ID.
4. An OUT cable and pair ID.
5. An IN cable and pair ID.
6. A resistance zone or carrier zone may be entered for the IN pair.
7. Overrides to the control parameters.
8. Frame remarks.

9.13.5 Request Frame Output

Requests for frame work instruction information are received with the contract REQWO. The user invokes the REQWO contract via the REQ FO work session from the SWITCH system ULBB or the FUSA transaction RQF. The REQWO contract is used to provide frame output for circuits which were assigned with SFO=N (meaning the frame output was not sent automatically following assignment). The response is returned to FOMS using the PREWO contract.

If the item in the WOLST has not been assigned, the SWITCH system will return an exception notice to the requesting terminal.

Once output has been requested and sent for the item, subsequent changes to that assignment will be sent to FOMS automatically.

FOMS will detect when a related order has released a facility needed for a WOLST. If the frame work has not been reported complete, FOMS will package the information for the related order with the WOLST information so that the frame will not put the WOLST into jeopardy.

9.13.6 Request MAS Output

The REQTRM contract is used to generate translation information for MAS. The contract may be invoked by a manual input into the SWITCH system through the ULBB REQ TRM work session, or the FUSA transaction RQT. REQTRM is used to send translations data if the circuit was assigned with STD=N (meaning the translations data was not sent automatically following assignment).

The WOLST translation message is sent to MAS via SOAC only if the assignment is MAS-affecting. The response is sent to MAS in a PRETML contract. MAS-affecting changes made to the assignment (via rework) will be sent in a CORTML contract. See Section 14 for additional information on TRM processing.

9.13.7 Simultaneous FOMS and MAS Output

When output is requested for FOMS for a pending WOLST assignment, the user may request that TRM output also be sent to MAS for the item. Likewise, when output is requested for MAS for a pending WOLST assignment, the frame output may also be sent to FOMS at the same time. The control parameter SOS (Send Output Simultaneously) is evaluated during output request processing (either REQWO or REQTRM) to determine if the output is to be sent to both systems as a result of this request.

The following occurs when SOS=Y while processing a request for frame output (REQWO) and MAS output (REQTRM):

REQWO - When processing a request for FOMS output (contract REQWO), the item for which frame output has been requested will be screened for MAS involvement. If the assignment is MAS-affecting and TRM has not yet been sent for the item, the translation information will be sent to MAS in a PRETML contract.

REQTRM - When processing a request for MAS output (contract REQTRM), the assignment which is to be evaluated to determine if it is to be sent to MAS will be checked for FOMS output at the same time. Any frame output has not yet been sent for the item, it will be included in a PREWO contract and sent to FOMS.

When SOS=N, only the requested output will be sent, i.e., frame output will be sent as a result of REQWO and MAS output will be sent as a result of REQTRM.

Note that SOS is evaluated *only* when processing REQTRM or REQWO. It does not modify the action of SFO or STD, which are evaluated only when processing the assignment pass.

9.13.8 Order Interaction

There are two sources of order interaction. Temporary cable pair conflicts may be created by LFACS assignments or work order activity. These conditions will be accepted for WOLST establishment, detected by the database check for inconsistencies (DCI) process and reported to users for resolution.

The second source occurs in the SWITCH system when network unit selection rules are applied to inward order activity after determining that no completely spare units are available. The term "Order Interaction" implies that the selection process has the capability to continue searching for suitable network units even though they are involved in pending order activity. The order interactions that result require a unique set of rules. BCC-tunable rules provide for all types of order interactions (e.g. provisioning request with provisioning request, provisioning request with work order, or work order with work order).

If a temporarily digitally bridged item is reworked (by a prior provisioning request or work order), the item will be placed into error. An item which has pending activity can not be temporarily digitally bridged. Therefore, the item should be reassigned in the conventional WOLST mode, or reassigned as temporarily digitally bridged when there is no pending activity on the item.

A circuit which is temporarily digitally bridged will have an additional switch port. This does not depict the final state of the circuit when the bridge is removed. Therefore, any provisioning request or work order attempting assignment on a temporarily digitally bridged item will RMA/error. The temporarily digitally bridged item should be reassigned in the conventional WOLST mode to resolve the situation.

9.13.9 Cancel a WOLST

Cancellation requests will be accepted from the SWITCH system ULBB, or they may be generated by LFACS and flow through from SOAC. Any cancellation of a WOLST is a total cancellation (there is only one item in a WOLST).

A CANWO contract will be sent to FOMS following the cancellation processing. Since the order is removed from the SWITCH system database, no new establishment planning messages are sent.

If the SWITCH system has sent translation information to MAS for the item in the WOLST, a CORTML will be sent to "undo" any translation changes made as a result of the WOLST. See Section 14 for details of the TRM processing.

9.13.10 Complete a WOLST

Completion requests will be accepted from the SWITCH system ULBB, or they may be generated by LFACS and flow through from SOAC.

Via the SWITCH system ULBB, the PCNLST contract is accessed by a user entering the WOLST order number. If the order has been established and assigned, a prepopulated WOLST screen will be returned. Transfers that have not been assigned or are in jeopardy and therefore can not be completed, will not be returned. The completion request will will then be sent to the SWITCH system for those transfers which can be completed.

The SWITCH system will unbridge a temporarily digitally bridged WOLST item prior to completing it. The PCNLST contract processor will determine if the item is temporarily digitally bridged. If the item is temporarily digitally bridged, the assignment engine will be invoked to unbridge the item. The OUT cable pair will be removed from the circuit and the IN cable pair will remain in the circuit. Depending on the table settings, the OUT cable pair and switch port may be DIPed. If the item unbridges successfully, translations data to unbridge the item will be sent to MAS in a CORTML contract. Additionally, frame output will be sent to FOMS in a PREWO contract. After both outputs are sent, the item will be completed.

If IFC=N, the WOLST will be completed providing the item is assigned and output has been sent to FOMS and MAS (if required). If IFC=Y, the WOLST will be completed providing the item is assigned and any required output has been sent to MAS. After a WOLST is completed, the order is removed from the SWITCH system database. If the PCNLST contract is received from the ULBB, the user remains in the completion work session so that a series of LSTs may be completed.

The SWITCH system will automatically produce a PCNWO contract for FOMS.

9.13.11 WOLST/Pending Service Order Interaction and Sequencing

Due to the pending architecture of the SWITCH system database, work orders and service orders interact with each other. Work orders, specifically CPTs and WOLSTs, whose items (i.e., cable pairs) are also involved with pending service orders, and vice versa, will result in processing to take each into consideration. This may occur as part of normal processing or as a result of rework.

A result of this work order/service order interaction is that service orders may RMA due to an intervening work order. This can best be demonstrated by examples. Assume a WOLST with a due date of 4/1/93 and a service order with a due date of 5/1/93 exist. The service order is disconnecting the customer.

One of two scenarios can occur, but the end result is the same:

- The WOLST is received first, and the WOLST item changes cp1 to cp2. The service order (disconnecting service on cp1) arrives next. The SWITCH system database shows the customer working on cp2 as of the completion date of the work order and cp1 is spare in that time view. The service order input which the SWITCH system receives from SOAC shows the customer working on cp1. The SWITCH system database shows the customer working on cp2, so an RMA is generated since the database in not in agreement with the information sent from SOAC in the SWITCH system assignment request.
- The service order is received first, and the disconnect processes successfully. The WOLST is then received, causing the pending service order to rework resulting in an RMA condition.

The SWITCH system expects that both service orders and work orders will complete on their due date and processes accordingly (so when the frame work must be done for the service order, the correct facilities are reflected on the appropriate output document). If both do complete on their due date, in most cases the work order completion will result in an ACESO contract from SOAC. This contract will cause rework of the service order with the new cable pair information (TO pair) resulting in an assigned state[35].

Since work orders typically do not complete by their due date, however, a parameter exists which controls whether or not the service order will RMA in the above scenarios. The wire center-based parameter, so-wo-assign, in the wire center instance of the wc parms table (see Table 6-8wc in Section 6) controls this processing. This parameter was introduced to reduce the need to leave service orders in an RMA state waiting for either the ACESO contract from SOAC or reassignment of the work order item using the ECD date (see Section 9.6.13.1 for a discussion of the change ECD option).

The parameter will direct one of three scenarios to occur:

— so-wo-assign=Y - allow the service order to assign successfully

— so-wo-assign=N - do not allow the service order to assign successfully (i.e., RMA)

35. When a work order completes in LFACS, a search for any pending orders containing a facility involved on the work order is made (in LFACS). LFACS returns an unsolicited response to SOAC, updating the last response it had sent for this service order. SOAC in turn, processes the unsolicited response from LFACS and generates an ACESO contract to SWITCH. See Section 13 for a discussion of ACESO contracts.

— so-wo-assign=C - allow the service order to assign successfully only if the switch port/channel/call reference value remains the same on the prior work order (otherwise RMA if the switch port/channel/call reference value changes).

The first scenario results in the service order processing successfully even though the database does not agree with the service order input[36]. In addition, a notifier is issued to make the engineering work center aware that a pending work order exists which has impact on a future due dated service order. The second scenario results in an RMA. The third scenario may also result in an RMA (if there is a switch port/channel/call reference value change on the prior work order). This option to not assign successfully if there is a switch port/channel/call reference value change is offered to avoid complexity in the RCMAC. When a work order results in a MAS-affecting change (e.g., a switch port/channel/call reference value change), the STD parameter determines whether or not output is sent to MAS (or must be requested). Even if sent, there is no knowledge in the SWITCH system if the intelligent controller (IC) has been updated. If a service order is received or already exists with a later due date, any translation update as a result of the service order may reject in the IC (depending on whether or not the translation update from the work order has been applied). Therefore it was considered more worthwhile to tell the user (via the service order RMA) about the work order/service order interaction if there was a switch port/channel/call reference value change to allow the appropriate methods and procedures to be followed, coordinating the frame, outside plant and/or RCMAC work. Otherwise, no indication of this interaction would occur until possible rejects in the IC.

In the case where an item is in a temporarily digitally bridged state, any rework (by a prior provisioning request or work order), will result in the item being placed in error. An item which has pending activity can not be temporarily digitally bridged. Therefore, the item should be reassigned in the conventional WOLST mode, or reassigned temporarily digitally bridged when there is no pending activity on the item.

A circuit which is temporarily digitally bridged will have an additional switch port/channel/call reference value. This does not depict the final state of the circuit when the bridge is removed. Therefore, any provisioning request or work order attempting assignment on a temporarily digitally bridged item will RMA/error. The temporarily digitally bridged item should be reassigned in the conventional WOLST mode to resolve the situation.

As just discussed, interaction between service orders and WOLSTs may occur. The overall goal in dealing with these interactions is to manage the service order and WOLST due dates so that they "match" the real world as close as possible. This helps to minimize the occurrence of out-of-sequence conditions on the WOLST items. However, if the completion date of a WOLST item can not be determined, the WOLST should be positioned (assigned) with an Estimated Completion Date in the far future. This will help

36. For example, the database will show the circuit working on the TO cable pair (e.g., cp2). The service order input shows the circuit disconnecting from cp1. In this scenario (so-wo-assign = Y), processing will assume that the service order input should reflect that the circuit is disconnecting from cp2. This assumption will be made if a WOLST exists in an earlier time view that is changing cp1 to cp2.

to minimize the occurrence of out-of-sequence conditions on service orders. Positioning WOLST items in their proper sequence can be accomplished by canceling the WOLST and re-establishing and assigning it at the proper date.

9.13.11.1 Service Order Out of Sequence Completions

When a service order is completing before a WOLST work order with an earlier due date (out of sequence), the SWITCH system reassigns conflicting WOLST items to a time view later than the completing service order. See Section 9.13 for a discussion of service order out of sequence completion processing and WOLSTs.

9.13.11.2 WOLST Out-of-Sequence Completions

The SWITCH system database sequences assignments based on the estimated completion date or order due date input to the assignment engine. A completion for a WOLST may be received in the SWITCH system before (or after) the specified due date (i.e., out-of-sequence). Dependent order activity may be pending before and after the WOLST and may be impacted if an out of sequence completion is received.

Upon receipt of a PCNLST for an item that is involved in a prior pending order, the SWITCH system will attempt to move the WOLST assignment to the root time view (regardless of the order due date). If the assignment in the root time view does not require the selection of a new network unit, the SWITCH system will process the completion in the root time view. This will bring the database into agreement with the LFACS view and reflect the work that has been done. Any pending service or work orders are then free to process as required. If the assignment in the root time view requires the selection of a new network unit, the SWITCH system will process the completion, however, a notifier will be generated to reflect that the frame work performed may have differed from the frame output (work instructions). Figure 9-1 depicts the flow of the out-of-sequence completion processing.

If the assignment cannot be moved to the root time view, an error message will be generated and the WOLST item will be left in its previously assigned state. Manual methods should be used to allow the assignment of the WOLST item in the root time view, and the WOLST item should be manually assigned there and then manually completed. If necessary, the item can be canceled from the WOLST. When canceled, a CANWO contract will be sent to FOMS which could result in necessary wiring being removed (completion was previously attempted for this item so the wiring must be already done). A tag is sent in the CANWO contract to FOMS to indicate that a cancellation contract should be handled in FOMS as a completion contract (PCNWO). The RMV LST work session will accept input specifying that the cancellation is necessary to correct the database for an out-of-sequence WOLST completion.

If an out-of-sequence condition occurs on a temporarily digitally bridged item, the SWITCH system will attempt to reassign the item (temporarily digitally bridged) in the root time view. If the previous assignments can be maintained in the root time view, the SWITCH system will process the completion in the root time view, as described in the above section. If the previous assignments can not be maintained in the root time view, the completion will RMA.

9.13.12 Assignment Redundancy Management

An Assignment Redundancy Management (ARM) process is used to send common update information from the SWITCH system to SOAC. The ARM contract for WOLSTs, PCNLST, is created on partial or total completion of the LST. If the item in the WOLST involves a change of line switch port, carrier controller port, channel, call reference value, transmission equipment, bridge lifter, or miscellaneous equipment, a PCNLST will be sent to SOAC with a *WCOF section containing the assignment information.

See Section 14 for more information on ARM processing.

9.13.13 WOLST Administration

The contracts RPTWO and INQWO may be used to track the status of the transfer.

9.14 Out of Sequence Completions

9.14.1 Service Order/Work Order Out of Sequence Completions

When a service order is completing before a work order with an earlier due date (out of sequence), the SWITCH system reassigns conflicting Cable Pair Transfer (CPT), work order Line and Station Transfer (WOLST), Channel/CRV Transfer (CTR), Frame Transfer (FTR), and Switch Port Equipment Transfer (SET) items to a time view later than the completing service order. In the case where the item is part of a Jumper Activity Management (JAM) work order, the item will be canceled from the JAM. In the case where the item is part of a DTR, the results differ depending on the date the SO completion is being processed.

This section describes this service order out of sequence completion processing.

When a completion pass is received for an assigned service order, the SWITCH system processes the circuits, or work tasks, on the service order sequentially in the completion process. If a completion pass is received for a service order which is not assigned, the completion is rejected. For each work task processed during this completion, the SWITCH system determines if there are any CPT, WOLST, CTR, FTR, JAM, or SET items in an earlier time view than the completing service order which interact with any network unit involved in the work task on the service order. The CPT, WOLST, CTR, FTR, or SET items will be moved to a time view later than the service order, while preserving the original time sequence of the work orders. If the item is part of a JAM, the item will be canceled.

The CPT, WOLST, CTR, FTR, or SET item closest to the root view (before any pending work order or service order activity) is moved to a time view one day past the completing service order due date. Any other CPT, WOLST, CTR, FTR, or SET items due on that date are also moved to the new time view of one day past the service order due date.

The next item closer to the service order time view (or further from the root view), if any, is moved to a time view two days past the service order due date. Each of the following items in later time views are placed one day following the previous item until all CPT, WOLST, CTR, FTR, and SET items prior to the service order time view have been moved to time views later than the completing service order. All items which had the same due date, prior to being moved to a later time view, are moved to a time view with the same due date following the service order time view.

Dial Transfer (DTR) and other non-completing service order items which are in an earlier time view are not moved to a later time view than the completing service order because their due dates are critical. If the date the completion is processing is earlier than the DTR due date, the SO completion will **fail**, if the processing date is later than the DTR due date, the DTR will be **force-completed**. New MCT completions for MCTs processed later than the DTR due date will use the DTR view of the circuit. When these MCTs complete they will force complete the corresponding items in the DTR.

Wire Assembly Order (WAO) items are also not moved to a time view later than the completing service order because the completing service order may depend on an assembly created by the WAO.

As an example, consider three work order items (WO1, WO2, and WO3) and one service order delta (SO1) in time views prior to the time view of the completing service order (SO2). The work order items could be any combination of CPTs, WOLSTs, or SETs. WO1 and WO2 are due on the same day, May 5th, WO3 is due on May 15th, and SO1 and SO2 are due on May 10th and 20th, respectively. Upon receipt of the completion pass for SO2, the service order out of sequence completion processing moves WO1 and WO2 to a time view one day past the completing service order SO2 due date, or May 21st. WO3 is moved to a time view two days past the completing service order due date, or May 22nd. The due dates of the service orders are preserved. When SO2 is completed, SO1 is locked and the SWITCH system only accepts a completion pass for this service order.

When the work orders are moved to later time views, all service order (including the completing service order) and work order items at a time view later than the original time view of the earliest work order item which was moved (May 5th in the example) are reworked once. Upon rework of the deltas, except for the delta of the completing service order, new output is sent by the SWITCH system to FOMS and SOAC, if appropriate (e.g., MAS output will be sent to SOAC for a work order if the circuit is MAS-involved).

The service order which is being completed is reworked. Upon successful assignment, no output is sent by the SWITCH system to SOAC or FOMS for the completing service order. This applies to completing service orders being reworked in an out of sequence completion or in other situations (e.g., after an error condition). If the assignment engine does not select new network units during rework of the completing service order (by far the most common case where the original assignments input from LFACS are used, e.g., cp1), the service order completes silently. However, if the assignment engine selects one or more new network units (a rare case where neither the current nor original assignments on input can be used for the new version of a circuit for a change service order), a notifier (warning message) is output for the service order to the Loop Assignment Center (LAC). Information about the network units which were selected is included in the notifier.

In the very rare case that an error is encountered during rework of the service order being completed, an RMA is generated and the service order and work order items are returned to their original state (i.e., be returned to their original time views). This could possibly occur when the original assignments input from LFACS cannot be used and the assignment engine tries to select a network unit but there are no network units of that type available. In addition to the assignment engine error message, an error message is sent to SOAC to identify that an error was encountered while trying to move one or more interacting work orders to a later time view, preventing completion of this circuit on the service order. Both error messages are included in one PCNSO response contract to SOAC. Completion of all other work tasks on the completing service order is attempted by the SWITCH system using the same processing unless the error which was encountered was a database error. When a database error is encountered, the SWITCH system does not attempt completion processing on the other work tasks and the database rolls back to the original state prior to the out of sequence completion processing.

Following successful rework of the completing service order, work order and service order items which were at a time view following the original time view of the earliest work order item which was moved are reworked. For work order items whose time view is to be changed, the assignment date for the work order item is changed unless there is a database error (i.e., the date is changed if the rework is successful or there is an assignment engine error). If a database error is encountered on rework of any of the work order or service order items, the database is returned to its original state and the assignment dates of the work order items which were to be moved is not changed.

If rework of the completing service order is successful and the service order is reassigned, the work task is completed by the SWITCH system. When all circuits have been completed, the service order is completed.

9.14.2 DLE Out of Sequence Completions

In the DLE database model, slot nodes may contain more than one carrier controller port with each carrier controller port involving a different circuit. As a result, out of sequence completions present a unique situation when a slot is pending where: 1) there is activity on different circuits that share the same slot, and, 2) there are no nodes in common between the left and right sides of deltas other than the slot node.

For network units other than slot nodes, if there are two or more deltas associated with a node, and the last delta (i.e., the one with the latest assignment date) completes first (i.e., out of sequence), all prior deltas will be completed automatically. For example, a circuit pending on the first delta with a due date or assignment date of 5/1 will be completed automatically when the circuit on the second delta with a due date of 6/1 completes. Corrections or cancellations on the first delta can not be performed; only completed.[37] Slot nodes, however, require that only the circuit actually being completed is affected. Upon completion of the circuit on the "right-most" slot node, the completion process will examine the slots in a prior time view to determine if there are other pending circuits. If there are no nodes in common between the prior deltas and the current delta other than the slot node, the process will complete the requested circuit, and perform a rework of the other slot nodes. With this rework, all intermediate deltas will be retained and values on the pending change edge and the slot will be adjusted to reflect the current status of the slot in each remaining time view.

37. This scenario exists when all the deltas are service orders, or when the last delta is a work order (with the exception of CPTs and WOLSTs) and all the prior deltas are service orders.

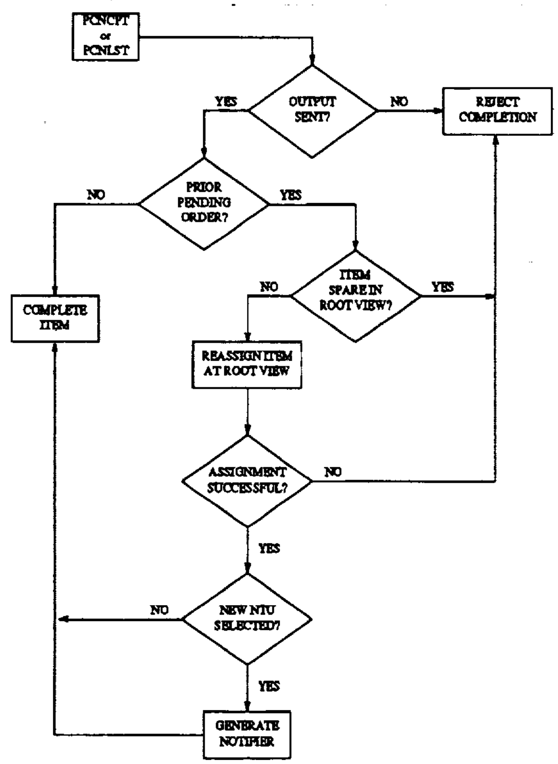

Figure 9-1. Out-of-Sequence CPT & WOLST Completion Flow

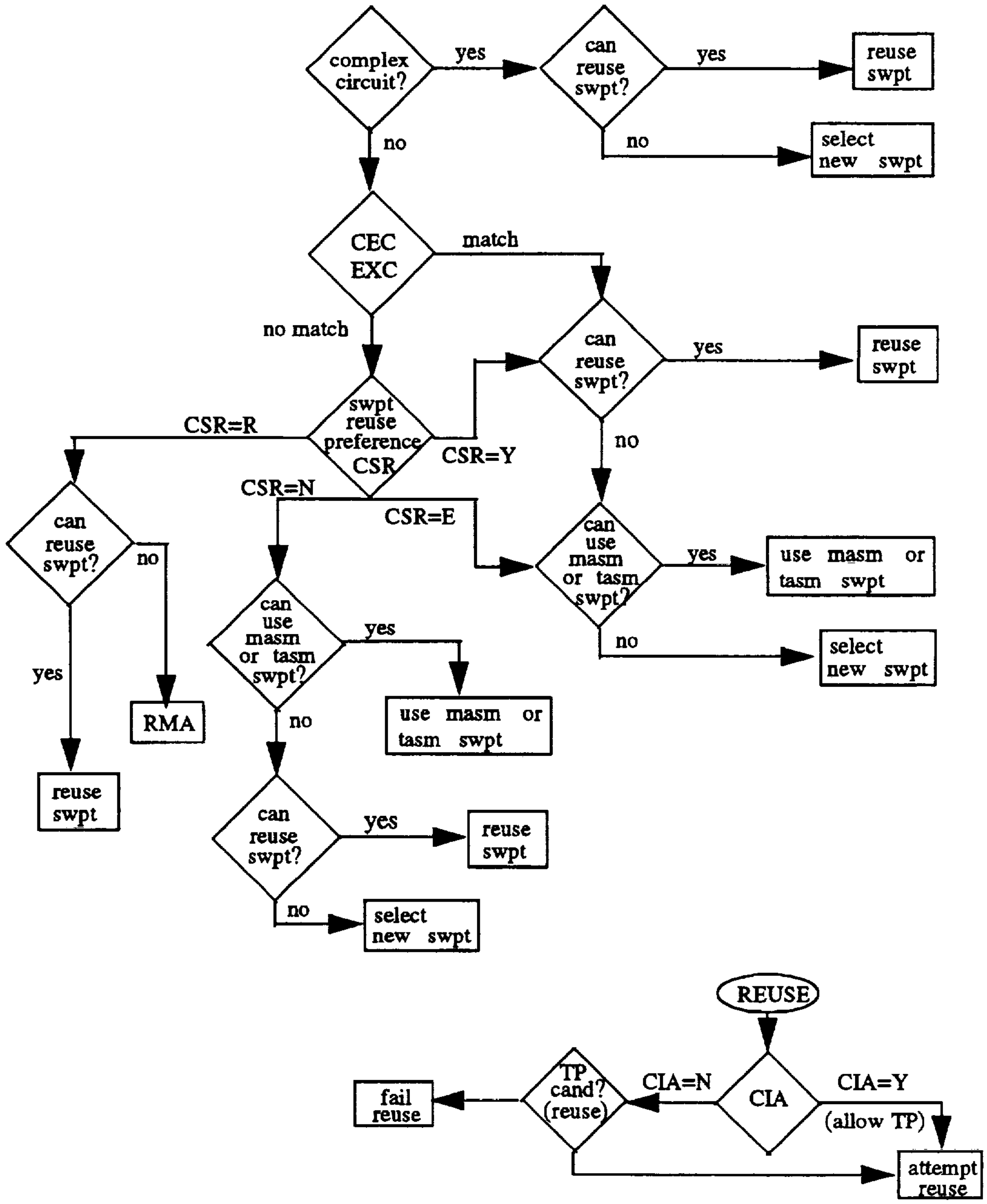

Figure 9-2. Work Order Switch Port Reuse Control

Table 9-1. Work Order Flow Control Parameters

ORD TYPE	PARAMETER								
	SAL	SOS	SFO	STD	DCI	ATP	TDB	IFC	RND
CPT	Y	N	Y	N	Y	-	N	N	-
CTR	N	N	N	N	-	-	-	N	-
FTR	N	N	Y	N	-	-	-	-	-
JAM	N	N	N	N	-	-	-	-	-
SET	N	N	N	N	Y	-	-	-	N
WOLST	Y	N	Y	N	Y	-	N	N	-
WAO	N	-	Y	-	-	N	-	-	N

SAL - Start Assignment Logic
SOS - Send Frame and Translation Output Simultaneously
SFO - Send Frame Output
STD - Send Translation Data
DCI - Database Check For Inconsistencies
ATP - Allow Tie Pairs
TDB - Temporary Digital Bridging
IFC - Ignore Frame Output for Completions
RND - Random (non-sequential) Establishment

Table 9-2. TN Intercept Values to MAS
(Global Reference Data name = mas tn intercept)

Instance = default IC
value
CTC
DTC

Table 9-3. TN Intercept Values to MAS
(Global Reference Data name = mas tn intercept)

Instance = dmc
value
CNT
DNT
CTC
DTC

SWITCH System DLBB Functional Product Specification

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10. CAPACITY ACTIVATION

The purpose of Capacity Activation is to create assignable network capacity using previously inventoried DLE network components (e.g., CC ports and switch ports). This requires the inventory of carrier circuits that contain those components and the resulting creation of channels and Call Reference Values (CRVs) that ride on those carrier circuits. The channels/CRVs can then be assigned for provisioning requests. Capacity Activation can involve carrier circuit additions, rearrangements or disconnections.

The need for Capacity Activation activity can be identified during the planning process, by capacity monitoring functions or by association with a change in network inventory, such as an engineering job to introduce new components.

Capacity Activation in the SWITCH System uses manual entry, correction, cancellation and completion of pending Carrier Orders to request activity. Flow-through output to other systems is not produced. All Carrier Orders for migrated DLE facilities must be manually entered into all other involved systems. Carrier Orders for DLE facilities that have not been migrated will continue to follow existing work and system flows.

Carrier Orders can be used to:

- create or delete Carrier Groups, called Bandwidths (BWs) in the database[1]
- change Carrier Group attributes,
- add or remove End Points for a FITL system,
- create carrier circuits and add them to existing Carrier Groups,
- delete carrier circuits and remove them from existing Carrier Groups,
- change carrier circuit attributes, and
- change components of existing carrier circuits.

A Carrier Order is composed of Items. Each Carrier Order Item has only one due date and will affect only one Carrier Group. The Carrier Order Item can include multiple carrier circuits for that Carrier Group but they must have the same due date. Different Items on the same Carrier Order can involve same or different Carrier Groups and be due on same or different dates.

A Carrier Order identifies a Carrier Group whose capacity may be managed by the SWITCH system. If capacity management in the SWITCH system is desired, the Carrier Order identifies carrier circuits to be created that are associated with the Carrier Group. If

1. A Carrier Group is a set of carrier circuits between the same end Controllers whose capacity should be managed together. The term Carrier Group will be used within this section when discussing functionality from a user perspective. Bandwidth or BW will be used when software requirements related to the database creation, modification or deletion are described. All Bandwidths between the same end Controllers are grouped together in the database and belong to a Path.

capacity management by the SWITCH system is not desired (e.g., the case of externally managed facilities where another system assigns facilities and administers capacity), the management type of the Carrier Group is non-managed and the Carrier Order does not include carrier circuits. However, knowledge of the existence of such a Carrier Group is maintained in the SWITCH System database for use during Service Activation.

When carrier circuits are included on the Carrier Order, Capacity Activation creates carrier circuits in the SWITCH database, using the prespecified components (i.e., Carrier Controller ports or Intelligent Controller switch ports) as well as other circuit attributes that were on the Carrier Order. Assignable carrier inventory is also created, using the management type of the Carrier Group (i.e., static, dynamic, mixed, proprietary) to determine whether regular channels, proprietary channels or call reference values (CRVs) are created.

Carrier-on-Carrier Capacity Activation provides the same functionality as described above, however, the composition of the carrier circuit is different. Although the Carrier-on-Carrier circuit contains some port or ports, at least one of the components of the circuit is a channel from a higher level carrier circuit that was previously Capacity Activated. Capacity is automatically removed from the higher level carrier circuit and Assignable inventory is created for the Carrier-on-Carrier circuit.

Once a Carrier Order Item is processed, the channel/CRV inventory that is created is available for assignment to customer provisioning requests, provided that the due date of the provisioning request is later than the due date of the Carrier Order Item. The channel inventory is also available to be pre-specified in other Carrier Order Items (to create Carrier-on-Carrier carrier circuits).

10.1 CA Architecture

Capacity Activation requires a blend of Assignment Engine and Inventory functionality that is unique within the SWITCH system. The Assignment Engine processes pending orders with all of the associated complexity involved in multiple order passes, order interactions and rework of other pending requests. It typically involves relatively small numbers of requests at one time. Inventory, on the other hand, creates/deletes large numbers of network units in the root view with mechanisms for managing multiple commit intervals and the ability to resume creation where the process left off if the contract is interrupted in mid-stream. It does not have to account for the cumulative affect of multiple orders on the inventoried attributes of network units. However, in Capacity Activation these two different processing models must operate concurrently in order to accomplish all of the required functions.

To do this, the module that processes the Capacity Activation contracts calls three major functional components; Assignment Engine, Inventory and Rework, in sequence as needed for each Carrier Order Item. Output generation is invoked to handle error conditions but requires no significant special functionality for Capacity Activation.

The Assignment Engine is responsible for the creation, change and removal of pending carrier circuits and their components and the creation of the BW and Path nodes. It also adds and removes End Points for a FITL system and changes the SCID attribute for a BW. The Assignment Engine uses the powerful composition rules and scoring tables (see Section 6) to validate the prespecified carrier circuit components.

Inventory is responsible for the creation and removal of root state channels and CRVs for and the updating of pending BW capacity and attributes. It also is responsible for removing BW and Path nodes.

Rework ensures that Carrier Order Items cannot complete if they are removing network units that are components of working customer or working/pending carrier circuits. Pending customer circuits are reworked to receive new components if necessary.

10.1.1 Capacity Activation Contracts

The following contracts are used for the management of Carrier Orders:

- WSICAO to inquire on a Carrier Order,
- PRECAO to submit the initial pass of a Carrier Order,
- CORCAO to correct a Carrier Order,
- CANCAO to cancel a Carrier Order,
- PCNCAO to complete a Carrier Order,
- REXCAO to reexecute a Carrier Order and
- SETOWT to unlock a Carrier Order.

Other contracts are used to inquire or report on the carrier circuits and network units involved in Capacity Activation:

- INQCAO to inquire on Carrier Orders,
- INQCKT to inquire on carrier circuits,
- IMMRTE to inquire on Carrier Group capacity,
- RPTCKT to report on carrier circuits,
- RPTNTU to report information on channel/CRV attributes,
- RPTCAO to report Carrier Group capacity and
- RPTRTE to report carrier circuit capacity.

10.1.2 Capacity Activation Work Sessions

The following ULBB Work Sessions are used for the management of Carrier Orders:

- BLD/COR CAO to enter or correct Carrier Orders,
- CAN CAO to cancel Carrier Orders,
- CMP CAO to complete Carrier Orders,
- REX CAO to reexecute Carrier Orders,
- UNLOK ORD to unlock Carrier Orders and
- INQ CAO to inquire on Carrier Orders.

Other ULBB Work Sessions are used to inquire or report on the carrier circuits and network units involved in Capacity Activation:

- INQ CKT to inquire on carrier circuits,
- IMM RTE to inquire on Carrier Group capacity,
- RPT CKT to report on carrier circuits,
- RPT NTU to report information on channel/CRV attributes,
- RPT CAO to report Carrier Group capacity and
- RPT RTE to report carrier circuit capacity.

10.1.2.1 CA Constraints

Capacity Activation has the following constraints:

- A carrier circuit cannot be upgraded to new design characteristics (e.g., digital data rate) directly. The work-around requires the following steps:
  - — "new" ports must be inventoried with a card type compatible with the desired digital data rate
  - — a Carrier Order must be entered to create a "new" Carrier Group whose "new" carrier circuits have the desired digital data rate and are composed of the "new" ports
  - — a Channel Transfer must be done to move existing customers from the "old" carrier circuits to the "new" carrier circuits (see Section 9.7 for a description of Channel Transfers)
  - — the "old" carrier circuits and Carrier Group must be removed
  - — the "old" ports must be removed

— optionally, the "new" ports, carrier circuits and carrier group can be renamed to match the originals

- Changes to Reference Data Tables that control the hierarchy and creation of channels (see Table 10-1, *chan rules*, and Table 10-2, *chan create unavailable*) will not directly affect carrier circuits that were already created. In other words, changes to a Reference Data Table do not automatically result in changes to carrier circuits already existing in the database.
- Once a Carrier Group is created, changes to the channel format will not be permitted, unless the change is required as a result of changing the management type. Channel format is used as a key to retrieve the proper instance of the *chan rules* and *chan create unavailable* tables.
- Once a Carrier Group is created, changes to management type will only be permitted if there are no future pending Carrier Orders for the Carrier Group. In addition, Carrier Orders will only be permitted if there is no previous pending Carrier Order that changes the management type for the Carrier Group.
- Changes to the due date of a Carrier Order Item affect all carrier circuits on the Carrier Order Item. The new due date cannot be before another Carrier Order Item affecting the same Carrier Group nor can it be later than another Carrier Order Item affecting the same Carrier Group. In other words, due date changes cannot "jump" over associated Carrier Order Items.
- Carrier Orders cannot be reworked. Therefore users must enter related Carrier Order Items in a logical sequence (i.e., removes before adds that use the same components). Carrier Circuits that do not use the same components have no such restriction.
- Completion of Service Orders or Carrier Orders that use pending CA inventory (channels or CRVs) will restrict the actions that are permissible for the Carrier Order Item that created the pending inventory. Once there are any working customer or pending/working carrier circuits using its inventory, the Carrier Order Item will only be permitted to be completed *unless* the working customer circuits are moved or the carrier circuits have new components specified. If these changes are accomplished, the Carrier Order Item can be changed, canceled or completed.
- Adds, changes or removals of the SCID (SONET Circuit Id) attribute and adds or removals of End Points on a FITL system are processed as a one-pass Carrier Order. If successful, the changes are applied immediately and affect all future pended Carrier Orders for that Carrier Group. If the order is unsuccessful, no changes are applied and the user must submit a new Carrier Order to do the requested action after the problem has been corrected.
- Carrier circuits to EDSXs are not supported.

- Completions of Carrier Orders for a Carrier Group must be done in sequence based upon their due dates, from oldest to newest. Cancellations can be done in any sequence.

10.1.3 Interaction With Other SWITCH System Processes

Due to the typically large number of channels/CRVs that can be created/removed with a Carrier Order Item, the actual running times of a particular capacity activation contract can be quite long. While running, other updating contracts are prevented from running. Users can manage these running times by limiting the number of carrier circuits to be included in a particular Carrier Order Item, but this may be inconvenient.

Therefore, a capability is available where Capacity Activation will "time share" with regular processing. This is accomplished by putting the Capacity Activation processing in a special wire center named "$LNG". While running in the $LNG wire center, these processes will actually process in the real target wire center but will co-operate with other contracts which queue up for the target wire center. Each Carrier Order Item will process until a commit interval is reached, and if, at the end of the commit interval another updator contract is queued for the target wire center, the Carrier Order Item will wait while the other contract processes. The other contract processor will work until it reaches a commit interval and then allows the Carrier Order Item to have another turn. This will continue until one or the other contracts have been fully worked. At that time, if there is still Capacity Activation processing to be done, the Carrier Order contract processor will have full access to the target wire center (until another contract is queued). Thus an incoming updator contract will have to wait only for one commit interval to be completed before having access to the target wire center.

10.2 CA Contract Processing

A separate CAO contract will be received for each Carrier Order Item. Carrier Order Items will be positioned earlier than Service Orders that are due on the same day to permit the assignment of the channel/CRV inventory for Service Orders due that day. Carrier Order Items (PRECAOs) can be inserted between other pending Carrier Orders for the same Carrier Group. Due date changes cannot change the relative position of multiple Carrier Order Items for the same Carrier Group. A work task is created for each carrier circuit in a Carrier Order. A status ("np" - not processed, "a" - assigned or "m" - manual) is kept for each stage of the work task.

10.2.1 PRECAO and CORCAO Contract Processor

When processing a PRECAO, if another PRECAO for the same Carrier Order Item already exists, the PRECAO will error because only one PRE pass of an order is permitted. Work tasks for PRECAOs are sequenced so that removes and changes are processed before builds.

The PRECAO control process invokes the Assignment Engine. If the Assignment Engine processes successfully, Rework is invoked. The database is committed following the successful completion of Rework. If the Assignment Engine is not successful, the database is rolled back. The database is then committed.

If the Assignment Engine has successfully completed, the Inventory process is invoked. Channels and/or CRVs are created for builds on the PRECAO, however they are not deleted for removals until the PCNCAO. If it is successful, Rework is invoked again and the database committed.

Processing of a CORCAO contract is very similar to processing for a PRECAO contract with the following differences. The Carrier Order must already exist and the previous pass has to be a PRE or a COR. CORCAO contracts may not contain carrier circuits if the PRECAO did not also contain at least one carrier circuit. In other words, when a PRECAO is a Carrier Group only change, subsequent CORCAO contracts must also be Carrier Group only changes.

10.2.1.1 Due Date Changes

When a CORCAO involves a due date change, the Carrier Order is moved to the new date as long as it does not require "jumping" over another Carrier Order for the Carrier Group. If it would require "jumping", the Carrier Order is left at the old due date and a message is provided that identifies the other Carrier Order Item number that is preventing the due date change. Pending SA circuits will be reworked if the CA due date is pushed out in the future and the SA due date is no longer later than the CA due date. Due date changes will not be allowed if any of the CA inventory is a component of a working customer or working/ pending carrier circuit.

10.2.1.2 One-pass PRECAO

A one-pass PRECAO contract is used when End Points (i.e., ONUs) are being added or removed from an existing FITL Carrier Group or when the SCID attribute is being added, changed or removed from an existing Carrier Group. When the contract processor receives the one-pass PRECAO contract, work tasks are created as described above and the database is committed. The Assignment Engine is called. If the Assignment Engine processes successfully, the database is committed and Inventory is called. If Inventory processes successfully, the database is committed. If errors are encountered in either process, cancellation logic is invoked. If both processes were successful, completion logic is invoked. If the completion encounters an error, the database is rolled back to the last commit point and then cancellation logic is invoked. If the completion is successful, the work tasks are removed.

10.2.2 CANCAO and PCNCAO Contract Processor

Processing of a CANCAO contract is very similar to processing for a PRECAO contract with the following differences. The Carrier Order must already exist and the previous pass has to be something other than a PCN (i.e., a PRE, COR or CAN). The original build work tasks are processed before remove work tasks (i.e., this is in the opposite order in which the work tasks were established). The Inventory process is invoked prior to the Assignment Engine so that it may remove channels/CRVs prior to removing the carrier circuit (NOTE: this is opposite the order of processing for PREs and CORs). The Inventory process will fail if it is asked to remove channels or CRVs that are in working customer or working/pending carrier circuits.

If there are multiple Carrier Order Items for the same Carrier Group, CANs can be done in any sequence.

Processing of a PCNCAO contract is very similar to processing for a PRECAO contract with the following differences. The Carrier Order must already exist and the previous pass must be PRE, COR or PCN. Only the Inventory process is invoked, not the Assignment Engine. The Inventory process will fail if it is asked to complete removal of channels or CRVs that are in a working customer or a working/pending carrier circuit.

If there are multiple Carrier Order Items for the same Carrier Group, PCNs must be done in sequence. If they are done out of sequence, an error is generated identifying the earlier Carrier Order Items.

10.2.3 REXCAO Contract Processor

Processing of a REXCAO contract is the same as that described for the contracts above with the following additions. A Carrier Order must already exist or else a screen validation error will be generated. The status of those work tasks that were previously "m" are set to "np".

10.2.4 SETOWT Contract Processor Impacts

Processing of a SETOWT contract for a Carrier Order is the same as current processing of a SETOWT for a Service Order. The SETOWT contract is executed from the UNLOK ORD work session which is used to permit additional processing for an order that has been locked as a result of an abnormal termination. A Carrier Order must already exist or else a screen validation error will be generated.

10.3 Assignment Engine Processing

The Assignment Engine will create, change and remove components and attributes of carrier circuits as a result of processing PRECAO, CORCAO and CANCAO contracts[2]. It will also create Bandwidths and Paths and change the end points of the Bandwidths[3] and Paths. See Section 6 for a more thorough description of the Assignment Engine.

10.3.1 Request Analysis

Request Analysis will accept Bandwidth and Route information when creating, changing or deleting Carrier Order Items. The external BW id is resolved to its internal id. External CC/IC ids in the Route are resolved to internal ids.

Actions for the BW are resolved. "In only" action codes in the contract are resolved to "builds", "Out only" action codes are resolved to "removes" and "both In and Out" actions are resolved to "changes". The external ids for the end Controllers of the BW are resolved to internal ids.

Actions for the Route must be resolved. If the input action for the Route is "replace" and the route does not exist in the database, the action for the input Route is "build". If the input action for the Route is replace and the route does exist in the database, the data is compared. If it is the same, the database is left as is. If the Routes are not the same, the database Route is set to "remove" and the input Route is set to "build".

10.3.1.1 Carrier Circuits

Request Analysis treats a carrier circuit in the same way that it treats customer circuits with some added functionality. Actions for the circuits in the contract must be resolved. "In only" action codes in the contract are resolved to "builds", "Out only" action codes are resolved to "removes" and "both In and Out" actions are resolved to "changes".

Request Analysis calculates the carrier circuit cost by retrieving the *carrier circuit cost* table (see Table 10-3) using the material as the instance key and unit as the row key[4]. The sum of the detail rate lengths (if more than one exists) is multiplied by the value from the

2. The Assignment Engine is not invoked for PCNCAO contracts.

3. A Bandwidth (BW) is the database representation for a Carrier Group.

4. If no table can be located, a warning message is provided.

carrier circuit cost cable. If present, the sum is also multiplied by the cost ratio. If for some reason a cost cannot be calculated (e.g., no detailed regulatory length or detailed regulatory unit entries or no table instance found), the carrier circuit cost attribute remains null in the carrier circuit.

The *asgn category map* table (see Table 6-1) is retrieved to determine assignment category. The "carrier" and "mptcar" assignment categories are used for Capacity Activation of carrier circuits.

10.3.2 BW Processing

When a BW is to be built, a pended BW node is created containing the appropriate attributes. The process will not error if the BW already exists; it will continue processing. If no Path node exists, it is created. Path edges are placed between the CCs and the BW and Path for use by Route Analysis. Path edges at the BW node point to the switch equipment group when the end Controller is an IC. Path edges at the Path node point to the IC rather than the switch equipment group. Path edges always point to a CC.

If the Carrier Group management type is "proprietary" or "not managed" there can only be one BW and one Path between the end points. The contract to build a subsequent BW will error. Also a contract to build a BW with a management type of "proprietary" or "not managed" will error if another BW already exists between those end points.

There are two types of BW changes in which the Assignment Engine is involved; adds/removals of End Points (i.e., ONUs) and adds/changes/removals of SCIDs. Both of these changes involve changes to Path edges and are submitted using the one-pass PRECAO contract.

Path edges are added or removed from the CCs if end points of the Carrier Group are being added or removed[5]. If the action for an end point is "build", the Path edges are built as described for a BW creation. If the action for an end point is "remove", the Path edges from that CC are removed and any edges at the BW or Path that include that CC are removed. If the CC has only one Path edge to a BW, a validation is performed prior to the actual removal of the edges to ensure that none of the CC ports at that CC are involved in pending or working circuits. If any CC ports are in circuits, an error is generated stating that the CC cannot be removed from the carrier circuit due to working/pending circuits.

10.3.3 Route Analysis

Section 6 provides a more detailed description of Route Analysis functionality. This section concentrates on functionality required to support Capacity Activation. Route Validation is

5. This would be done when an ONU needed to be added/removed from a passive optical splitter carrier circuit in a multi-point FTTL configuration.

one of the functions within the Route Analysis module that has special functionality for Capacity Activation.

Users will prespecify all of the components that are needed to create the carrier circuit. They will identify the full Route, including identification of the Origination and Destination Controllers[6]. If channels have been prespecified (i.e., Carrier-on-Carrier), Route Analysis will determine the Path id between the two Controllers. Unlike customer provisioning requests, Route Analysis will not ensure capacity on the Path. When channels are not prespecified, a null Path id will be used. Unlike customer provisioning requests, Route Analysis will NOT access the *ic cc connect map* Reference Data Table to determine whether there is a "Path" between the two Controllers.

The Route for a carrier circuit cannot "go through" a non-managed Path. The presence of a Path is only checked if channels are prespecified, otherwise the assumption is that swpts/CC ports have been prespecified. If no ports have been specified between two Controllers on the Route, and no channels were specified either, Composition Analysis will error.

10.3.4 Composition Analysis

Carrier circuits are only non-constrained and pre-specified. The "carrier" and "mptcar" assignment categories are used to identify the correct assignment category rules for the given IC (see Table 6-4) or the given CC (see Table 6-63, *asgn category rules cc* table,). As explained in Section 6, the Route is used to direct the retrieval and firing of assignment rules. Starting at the Destination and working toward the Origination, the rules for each IC/CC are fired, selecting or (in the case of CA) validating network units for each Route segment. The rules and associated control facts identify the number and kind of network units that are required for the circuit.

For carrier circuits all network units must be prespecified; none are selected. The prespecified network units are validated against the prespecified Route using the rules outlined below. Any validation failure will cause an error.

The "carrier" and "mptcar" assignment category rules are as follows:

- swptz rule -requires 1 switch port and 1 CC port controlled by the Adjacent Controller (used for all ICs)
- ccpty rule - if there is *no* Adjacent Controller, requires 1 CC port controlled by Controller for which the rules were retrieved. If there is an Adjacent Controller, requires a channel whose superchannel is a factor of a BW that is a factor of the identified Path (used by HDTs); if there is no Path id, the process will fail.

6. There will be no Origination Controller identified when the BW is in a FITL system. There will be one or more end points (representing the ONUs) plus the Destination Controller in that case.

- ccptz rule - requires 1 CC port controlled by itself and 1 CC port controlled by the Adjacent Controller or a channel whose superchannel is a factor of a BW that is a factor of the identified Path (used by all other CCs except EDSXs; EDSXs error because carrier circuits are not supported to EDSXs)

If there are network units left over when the rules for each Controller in the Route have been fired, the process will error.

10.3.4.1 Network Element Updates

As all network units for a given Path are validated, the need for Network Element Updates is determined in the exact same manner as for customer provisioning requests. When there is more than one Path and the CC is TSI (the tsi attribute in CC body is "y"), a NEP edge is placed between network units that have just been validated for the given CC and those that were validated for the previous Path that were controlled by the same CC. NEP edges for carrier circuits can be placed between channels and CC ports, channels and channels or CC ports and CC ports[7]. When the network units are "proprietary", the set of proprietary network units is not used and the previous set is saved. The network units from the next Controller are validated. If the next CC is TSI, the network units from that CC are placed in a NEP edge with the network units from the previous Path. Note that in this case the network units in the NEP edge will not be controlled by the same Controller.

10.3.5 NU Selection and Validation Impacts

The *swpt rule set* table (see Table 6-12) and *ccpt rule set* table (see Table 6-68,) are used to identify the scorable attributes for validating switch ports and CC ports (card type is the only scorable attribute for "carrier" and "mptcar" assignment categories, see Table 6-75). In addition to card type, switch ports and CC ports are validated to ensure that they have spare capacity and are not a component of a working customer or working/pending carrier circuit as of the due date of the Carrier Order Item and that they do not have an Assignment Limitation of "working", "withheld" or "na".

Channels do not have any scorable attributes for "carrier" and "mptcar" assignment categories (see *chan rule set*, Table 6-80). They are validated to ensure that they are of the proper assignment rate, that they have spare capacity, that neither they nor their "parent" channels are components of a working customer or working/pending carrier circuit as of the due date of the Carrier Order Item and that they do not have an Assignment Limitation of "working", "withheld" or "na".

7. Carrier circuits cannot contain CRVs as components so therefore there can be no NEP edges including CRVs for carrier circuits.

10.3.6 Database Updates

The route edge is updated with the Route information when it is marked "replace". The route edge information is removed when it is marked "remove".

When carrier circuits are being built or when ports are being added to the circuit, the switch ports and CC ports that are components of the circuit and that are controlled by the end Controllers of the BW are updated with the following information:

- BW internal id
- Path internal id
- carrier circuit cost
- dynamic indicator
- carrier circuit availability date using pending change update processing (upon completion this attribute is removed from the port body)

The carrier circuit availability date is also added to the super channel.

When carrier circuits are being built or when channels are being added to the circuit, the channels, CC ports and switch ports that are components of the circuit are updated for capacity usage as is done for customer provisioning requests (see Section 6). A newly built super channel will have its available capacity value set to "y". Pending change update processing is used to do a pending add.

When carrier circuits are being removed, the end Controller ports as well as the super channel are updated with the carrier circuit disconnect date, using pending change update processing. Channels that are components of the circuit are pended as spare and updated for pending disconnect usage as is done for customer provisioning requests. Pending change update processing is used to do a pending delete. Upon completion, all of the CA related attributes are removed from the port body.

When end point Controllers are being removed from the carrier circuit but the carrier circuit will remain[8], no carrier circuit disconnect date is populated.

10.4 CA Inventory Processing

CA Inventory is called for one work task at a time. For PRECAOs and CORCAOs, the Assignment Engine will have successfully processed so that the BW and Path exist, the carrier circuit/service exists, the switch ports, CC ports and channels are components (or are pended to be) of the circuit/service and database updates have been performed. For

8. This is a multi-point FITL configuration.

CANCAOs and PCNCAOs, the Assignment Engine has not yet processed, however, the database reflects the above contents from previous passes.

The CA Inventory Process analyzes the CA contract inputs and the current database state to determine which of the possible functions are required. The Inventory Process is responsible for:

- creating and removing channels and their edges,
- creating AIDs for channels,
- creating and removing CRVs and their association to their BW, and
- updating channel, BW and Path capacities.

10.4.1 Inventory Processing - PRECAO and CORCAO

When the BW is being *built or changed* and the Carrier Group management_type is "not-managed", nothing is required from the Inventory process.

When the BW is being *built* and the Carrier Group management_type is "dynamic"[9], CRVs will be created and the engineered capacity updated in the pending BW.

When the BW is being *changed*, pended BW and Path nodes will be updated with the changed attributes. It must be determined whether:

- End Points have been added or removed so that it can be determined whether additional or fewer channels should have an assignment limitation.
- the Carrier Group management_type has changed[10] (channels will be created or removed and CRVs will be created or removed as appropriate for the management type)
- assignment rate overrides have been added or removed.
  - — If an override has been added, then channels will be created at the identified assignment rate for all carrier circuits in the Carrier Order Item, provided that they don't already exist.
  - — If an override has been removed, channels will be removed at the identified assignment rate for all carrier circuits in the Carrier Order Item when the PCNCAO contract is processed.

9. A management_type of "dynamic" or "mixed" will only be allowed for carrier groups between controllers that are authorized for TR303. If a contract attempts to create a dynamic or mixed carrier group between controllers that are not authorized for TR303, the Inventory process will error.

10. Change of management type will only be permitted if there are no future pending BWs. If there are future pending BWs, the PRECAO or CORCAO contract will error.

- CRVs have been added or removed.
- engineered capacity has changed.

When the BW is being *removed*, BW and Path nodes will be pended to be deleted. Deletion of these nodes will not be accomplished until the PCNCAO is processed.

When a carrier circuit is present in the Carrier Order, some additional Inventory action may be required for that carrier circuit, depending on the management type of the Carrier Group and the action of the order as described in the next few paragraphs. When the Carrier Group management_type is "dynamic" or "non-managed", nothing further is required of the CA Inventory process.

When the carrier circuit action is *build* and the Carrier Group management_type is "static", "proprietary" or "mixed", channels will be created. When the carrier circuit action is *change* and the Carrier Group management_type is "static", "proprietary" or "mixed", it must be determined if end Controller ports[11] have been added or removed so that the activation edges from/to the superchannel and ports can be changed.

When the carrier circuit action is *remove* and the Carrier Group management_type is "static", "proprietary" or "mixed", the channels will be pended to be deleted. When the PCNCAO is received the channels will actually be removed.

10.4.2 Inventory Processing - CANCAO

The pending order can be canceled without a large number of updates when the CANCAO is received if the original action of the contract was to:

- add the Carrier Group
- remove the Carrier Group
- change the Carrier Group to remove assignment rates
- reduce Carrier Group capacity (for "dynamic" management types)
- change Carrier Group management_type to "non-managed"
- change Carrier Group SCID
- remove CRVs
- change carrier circuit attributes or remove carrier circuits

The CAO Inventory process must remove the previously created channels and CRVs, however, when the CANCAO is received when the previous action of the contract was to:

11. An end Controller port is defined as a switch port or CC port that is controlled by the Origination, Destination or any of the listed End Points

- add the carrier circuit (Carrier Group management_type of "static", "dynamic" or "mixed")
- change the Carrier Group to add assignment rates
- change Carrier Group management_type (other than to "non-managed")
- add CRVs

When the previous action of the contract was to add the Carrier Group, the process first checks to ensure that there are no existing or future carrier circuits left in the Carrier Group. If there are none, the Carrier Group is removed. The Path is also removed if it has no other Carrier Groups.

When the previous action of the contract was to increase Carrier Group capacity (for "dynamic" management types), a warning message will be given if the CANCAO results in the reduction of capacity on the Carrier Group such that the Utilization Factor is now 11.

10.4.3 Inventory Processing - PCNCAO

The pending order can be completed without a large number of updates when the PCNCAO is received, if the previous action of the contract was to:

- add the Carrier Group
- remove the Carrier Group
- increase Carrier Group capacity (for "dynamic" management types)
- change the Carrier Group to add assignment rates
- change Carrier Group management_type (other than to "non-managed")
- change Carrier Group SCID
- change carrier circuit attributes
- add the carrier circuit (Carrier Group management_type of "static", "dynamic" or "mixed")
- add CRVs

The CA Inventory process must physically remove the involved channels and CRVs when the PCNCAO is received, however, when the original action of the contract was to:

- change the Carrier Group to remove assignment rates
- change Carrier Group management_type to "non-managed"
- remove CRVs
- remove carrier circuits

When the previous action of the contract was to remove the Carrier Group, the process first checks to ensure that there are no existing or future carrier circuits left in the Carrier Group. Also, the Carrier Group must not belong to any IDCU collections[12]. If these conditions are met, the Carrier Group is removed. The Path is also removed if it has no other Carrier Groups.

When the previous action of the contract was to decrease Carrier Group capacity (for "dynamic" or "mixed" management types), a warning message will be given if the PCNCAO results in the reduction of capacity on the Carrier Group such that the Utilization Factor is now 11.

10.4.4 CA Inventory Channel Hierarchy

10.4.4.1 Adding Channels

When creating an entire channel hierarchy and no overrides are received, the *chan rules* table (see Table 10-1) must be accessed to determine the channel hierarchy, the number of children at each level and the levels at which to create channels. The *ddr transformation* table (see Table 6-67) is accessed to determine the assignment rate of the carrier service. The assignment rate of the carrier service is used to identify the channel hierarchy row to use to start. If user overrides are provided, they are used as overrides to the "Create Channels" column in the table[13]. All channels in a single branch of the channel hierarchy are built depth first from superchannel to lowest level within a commit interval. The number at each level is obtained from the *chan rules* table. When the Carrier Group management_type is "proprietary", the proprietary indicator in the channels is set to "y". AIDs are created and placed on the exid edge as described in Section 10.4.4.2. Both exids for each channel are put in the *inv ranges* table.

Once one branch is created, the process back-tracks up the tree in order to create all children for the next parent. When all parents and their children are created, the process back-tracks up the tree again to a grandparent and creates a new parent and all its children. This process continues until all channels have been created for the carrier circuit.

When an assignment rate is added to a carrier circuit that already has channels created, the existing channels must already have that channel hierarchy level in their name[14]. If the new

12. IDCU Collections can exist if the client-specific feature, tr303 dle isdn, is enabled.

13. If the overrides contain a level that is not found in the *chan rules* table, the process errors.

14. The SWITCH System does not support the ability to change generics (i.e., change channel hierarchies). If channel hierarchies have indeed changed, the user must inventory "new" ports, create a "new" Carrier Group with a different channel_format, create "new" carrier circuits using those "new" ports, do a CTR to move customers to the "new" facilities, remove the "old" carrier circuits and Carrier Group and, optionally, rename the "new" facilities with the "old" name.

assignment rate is in the channel hierarchy, channels will be created at that assignment rate. If it is not, the process will error.

When channels are created, the capacity in the assignment rate arrays must be updated in each parent channel in the hierarchy and in the Carrier Group, using pending change edges.

10.4.4.2 Channel AIDs

Access Identifiers (AIDs) must be associated with channels so that downstream systems can make the SWITCH system specified electronic cross connects. Capacity Activation will call the AID generation process (see Section 5.15) to create these AIDs. Each channel can have an AID for each CC to which it belongs[15]. When a carrier circuit's end points are a CC and an IC, then at most, one AID is associated with each channel built. When a carrier circuit has two CCs as its endpoints, then two AIDs may be generated for each channel, one associated with each CC.

The *aid chan rules* table (see Table 10-4) is used by the AID generation process to determine which channels get an associated AID[16] and the specific AIDs that will be generated. The instance keys used for the *aid chan rules* table are the CC model, the channel assignment rate, and the AID format name. The CC model(s) is obtained from the CC(s) at the end points of the carrier circuit, the assignment rate is obtained from the channels, and the AID format name is given as input on the Carrier Order. A separate AID format name must be input for each endpoint CC for which AIDs are to generated.

Capacity Activation generates an AID for each nonproprietary channel[17] built when there is an AID format entered on the Carrier Order. If the first AID to be generated should not equal the low AID in the *aid chan rules* table, then a starting AID must be given as input for each assignment rate. Up to two starting AIDs and assignment rates are allowed for each endpoint.

Once added, channel AIDs cannot be changed by Capacity Activation. Changes to these AIDs must take place through Update Network Unit (UPD NTU) work session (see Section 5.4).

10.4.4.3 Giving Channels Assignment Limitations

The *chan create unavailable* Reference Data Table is accessed and, if an instance is retrieved, it is used to calculate how many channels need an assignment limitation. Fast is

15. AIDs are never associated with an IC.

16. There are some CC vendors that will have sets of channels that do not get AIDs.

17. Proprietary channels do not have an associated AID format and therefore do not have associated AIDs.

used to find out how many channels already have assignment limitations in the Carrier Group.

If more channels need assignment limitations, the first parent channel is found that already has some children with assignment limitations. Assignment limitations are put on spare channels until the proper number is reached. If spares are exhausted before the proper number receive assignment limitations, the next parent channel is found that has children with assignment limitations. If all spares have been given assignment limitations and more are still needed, a warning message will be provided telling the user that there is insufficient capacity to add the identified CC(s) (all CCs on the PRECAO) and they should remove it. This is not an error condition, however.

If fewer channels need assignment limitations, the parent channel that has the fewest number of children with assignment limitations is found. Assignment limitations are removed from its children until the proper number of channels have assignment limitations. If all children for that parent channel have had their assignment limitations removed and more need to be removed, the parent channel with the next fewest assignment limitations is found and the process repeated.

10.4.4.4 Removing Channels

Channels in a carrier circuit are removed when CANCAO (when the PRECAO or CORCAO contract added the channels) or PCNCAO (when the PRECAO or CORCAO contract identified the channels to be removed) contracts are processed. The process starts at the lowest children to be removed and removes one entire branch of the hierarchy, keeping a list of all pending customer circuits and then commits the database, calling Rework. Both exids for each channel are removed from the *inv ranges* table.

If a channel is a component of a working customer or working/pending carrier circuit, the process will error and rollback to the last commit point. This means that some channels may have already been removed, leaving an incomplete channel hierarchy. Users will have to move the offending circuits or else enter a new Carrier Order Item to recreate the carrier circuit.

When removing channels that are components of breakable assemblies, the assembly is broken. If the channel is a component of a non-breakable assembly, the process will error.

When channels are removed, the capacity in the assignment rate arrays must be updated in each parent channel in the hierarchy and in the Carrier Group, using pending change edges.

10.4.5 CA Inventory CRVs

10.4.5.1 Add CRVs

When adding CRVs, the CRV nodes are created in the root state. The control edges of CRVs go to the end Controllers. If the switch port has a hyperedge to a Remote Unit[18] and to an IC, the control edge of the CRV to the IC will likewise be a hyperedge to the IC and the RU. A factor edge is placed to the BW.

Two exid edges are created, one for the CC-based name and one for the IC-based name. An entry is put in the *inv ranges* table for each name.

Creation of CRVs uses the standard inventory commit interval.

10.4.5.2 Remove CRVs

Root state CRVs are removed when processing a PCNCAO or CANCAO contract. The edges of CRVs are removed prior to the node. If a CRV is in a working customer circuit, the process errors and no CRVs are removed. When pending customer circuits use a CRV that is to be deleted, the pending customer circuit is reworked. Carrier circuits cannot use CRVs. Removal of CRVs uses the standard inventory commit interval.

The CRVs must also be removed from the *inv ranges* table.

10.5 CA Rework Processing

Carrier Order Items will not be reworked. Anything that tries to put a Carrier Order Item on the rework list will error identifying the Carrier Order Item that is involved.

Changes to certain attributes are propagated across time views but do not cause rework. These are called “allstate” attributes. Such attributes are remarks, HECIG, desirability and adsr. Cancellation of Carrier Order Items that set or changed these allstate attributes will not reset the allstate attribute back to its value prior to the Carrier Order Item. Users must manually create a new Carrier Order Item (or COR pass the first Carrier Order Item) to change the attributes back.

Pending customer circuits will be reworked if the components that they are using are being removed (either as a result of a PCN of an order removing that inventory or as a result of a CAN of an order that had created it).

18. This is a Remote Switching Unit and should not to be confused with a Remote Terminal which is a DLE Carrier Controller.

Pending customer circuits will be reworked if the CA due date is pushed out in the future. Due date changes will not be allowed if any of the CA inventory created by that Carrier Order Item is a component of a working customer or working/pending carrier circuit. CA due date changes will not be allowed if they would require a Carrier Order Item to "jump" over another Carrier Order Item for the same Carrier Group.

TABLE APPENDIX 10

Table 10-01.lc2. Channel Rules - LOC2
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 13.1)

Instance = loc2				
chan hier	hier rel	cktar num	create chan	create unavail
ds1	1	10	y	n
ds0	25	-	y	y

Table 10-01.md1. Channel Rules - MODE1
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 13.1)

Instance = mode1				
chan hier	hier rel	cktar num	create chan	create unavail
ds1	1	1	y	n
ds0	24	-	y	n

Table 10-01.md2. Channel Rules - MODE2
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 13.1)

Instance = mode2				
chan hier	hier rel	cktar num	create chan	create unavail
ds1	1	1	y	n
ds0	48	-	y	n

Table 10-01.sn. Channel Rules - SONET
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 13.1)

Instance = sonet				
chan hier	hier rel	cktar num	create chan	create unavail
oc48	1	1	n	n
oc12	4	1	n	n
oc3	4	1	n	n
ds3	3	1	y	n
vtg	7	1	n	n
ds1	4	1	y	n
ds0	24	-	y	n

Table 10-01.sn2. Channel Rules - SONET2
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 13.1)

Instance = sonet2				
chan hier	hier rel	cktar num	create chan	create unavail
oc3	1	1	y	n
ds3	3	1	y	n
ds1	28	1	y	n
ds0	24	-	y	n

Table 10-01.sn3. Channel Rules - SONET3
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 13.1)

Instance = sonet3				
chan hier	hier rel	cktar num	create chan	create unavail
oc12	1	1	y	n
ds3	12	1	y	n
ds1	28	1	y	n
ds0	24	-	y	n

Table 10-01.stp. Channel Rules - STARSP
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 13.1)

Instance = starsp				
chan hier	hier rel	cktar num	create chan	create unavail
ds1	1	8	y	n
ds0	24	-	y	n

Table 10-01.onu12. Channel Rules - ONU12
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 13.2)

Instance = onu12				
chan hier	hier rel	cktar num	create chan	create unavail
ds1	1	1	y	n
ds0	12	-	y	n

Table 10-01.h1. Channel Rules - HMX1
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 11.2)

Instance = hmx1				
chan hier	hier rel	cktar num	create chan	create unavail
ds1	1	8	y	n
ds0	28	-	y	n

Table 10-01.h2. Channel Rules - HMX2
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 11.2)

Instance = hmx2				
chan hier	hier rel	cktar num	create chan	create unavail
ds1	1	8	y	n
ds0	56	-	y	n

Table 10-01.h3. Channel Rules - HMX3
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 11.2)

Instance = hmx3				
chan hier	hier rel	cktar num	create chan	create unavail
ds1	1	8	y	n
ds0	84	-	y	n

Table 10-01.h4. Channel Rules - HMX4
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 11.2)

Instance = hmx4				
chan hier	hier rel	cktar num	create chan	create unavail
ds1	1	8	y	n
ds0	112	-	y	n

Table 10-01.h9. Channel Rules - HMX9
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 11.2)

Instance = hmx9				
chan hier	hier rel	cktar num	create chan	create unavail
ds1	1	8	y	n
ds0	256	-	y	n

Table 10-01.hfc1. Channel Rules - HFC2T1
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 13.1)

Instance = hfc2t1				
chan hier	hier rel	cktar num	create chan	create unavail
ds1	1	20	y	n
ds0	24	-	y	n

Table 10-01.hfc2. Channel Rules - HFC2T1
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 13.1)

Instance = hfc2t2				
chan hier	hier rel	cktar num	create chan	create unavail
ds1	1	20	y	n
ds0	32	-	y	n

Table 10-01.hfc3. Channel Rules - HFC2T1
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 13.1)

Instance = hfc2t3				
chan hier	hier rel	cktar num	create chan	create unavail
ds1	1	20	y	n
ds0	48	-	y	n

Table 10-01.ds2. Channel Rules - DS2
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 13.1)

Instance = ds2				
chan hier	hier rel	cktar num	create chan	create unavail
ds2	1	1	y	n
ds1	4	-	y	n
ds0	24	-	y	n

Table 10-01.sdv1. Channel Rules - SDV2T1
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 13.1)

Instance = sdv2t1				
chan hier	hier rel	cktar num	create chan	create unavail
ds1	1	4	y	n
ds0	24	-	y	n

Table 10-01.sdv2. Channel Rules - SDV2T2
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 13.1)

Instance = sdv2t2				
chan hier	hier rel	cktar num	create chan	create unavail
ds1	1	8	y	n
ds0	24	-	y	n

Table 10-01.ch96. Channel Rules - CHAN96
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 13.1)

Instance = chan96				
chan hier	hier rel	cktar num	create chan	create unavail
ds1	1	4	y	n
ds0	24	-	y	n

Table 10-01.ch288. Channel Rules - CHAN288
(Reference Data name = chan rules)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 13.1)

Instance = chan288				
chan hier	hier rel	cktar num	create chan	create unavail
ds1	1	12	y	n
ds0	24	-	y	n

Table 10-02. Determine Number of Channels to Make Unavailable
(Reference Data name = chan create unavailable)
(Instance Key = channel format)
(Scope = global)
(SCCS level = 13.1)

Instance = loc2		
chan hier	multiply endpts	add
ds0	6	16

Table 10-03c. Carrier Circuit Cost - COPPER
(Reference Data name = carrier circuit cost)
(Instance Key = material)
(Scope = global)
(SCCS level = 13.1)

Instance = copper	
unit	$
ft	.10
mi	528
kf	100
m	.33
km	330

Table 10-03.f. Carrier Circuit Cost - FIBER
(Reference Data name = carrier circuit cost)
(Instance Key = material)
(Scope= global)
(SCCS level = 13.1)

Instance = fiber	
unit	$
ft	.20
mi	1056
kf	200
m	.07
km	66

Table 10-03m. Carrier Circuit Cost - MIXED
(Reference Data name = carrier circuit cost)
(Instance Key = material)
(Scope = global)
(SCCS level = 13.1)

Instance = mixed	
unit	$
ft	.15
mi	792
kf	150
m	.50
km	49.50

Table 10-04.and. AID Channel Rules Table - ACCESS NODE

(Reference Data name = aid chan rules)

(Instance Key = cc_model)

(Scope = global)

(SCCS level = 13.1)

Instance: an

Row keys: aid_format asgn_rate
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment

an ds0
1-CE1-1-1-1
1-CE1-18-14-24
!1,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1!1,0!2#1,1
1
–
–

anu ds0
CO1-1-1
CO1-7-96
!3,0!1,0!1,1!1,0!2#1,1
8064
1-672,1345-8064
1-672,1344-8064

Table 10-04.dis. AID Channel Rules Table - DISCS

(Reference Data name = aid chan rules)
(Instance Key = cc_model)
(Scope = global)
(SCCS level = 13.1)

Instance: discs

Row keys: aid_format asgn_rate
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment

mode1 ds0
1-1
28-24
!2#1,1!1,0!2#1,1
1
–
–

mode2 ds0
1-1
28-48
!2#1,1!1,0!2#1,1
1
–
–

oc3 ds1 (OC3 aid format used when RDT to COT DS1s assigned to first STS of OC3)
1
84
!2#1,1
1
–
–

Instance: discs (cont'd)

oc3 ds0
1-1
28-24
!2#1,1!1,0!2#1,1
2016
673-2016
672-2016

oc3b ds1 (OC3b aid format used when RDT to COT DS1s assigned to 2nd STS of OC3)
1
84
!2#1,1
1
–
–

oc3b ds0
1-1
28-24
!2#1,1!1,0!2#1,1
2016
1-672, 1345-2016
1-672, 1344-2016

oc3c ds1 (OC3c aid format used when RDT to COT DS1s assigned to 3rd STS of OC3)
1
84
!2#1,1
1
–
–

oc3c ds0
1-1
28-24
!2#1,1!1,0!2#1,1
2016
1-1344
1-1344

Table 10-04.isc. AID Channel Rules Table - IISC
(Reference Data Name = aid chan rules)
(Instance Key = cc_model)
(Scope = global)
(SCCS level = 13.1)

Instance: iisc

Row keys: aid_format asgn_rate
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment

ds0m1 ds0
T0-1-1
T0-5-24
!2,0!1,0!1,1!1,0!2#1,1
1
–
–

ds0m2 ds0
T0-1-1
T0-5-48
!2,0!1,0!1,1!1,0!2#1,1
1
–
–

ds1 ds1
DS1FPT-1
DS1FPT-4
!6,0!1,0!1,1
1
–
–

Table 10-04.lc2. AID Channel Rules Table - LOC2

(Reference Data Name = aid chan rules)
(Instance Key = cc_model)
(Scope = global)
(SCCS level = 13.1)

Instance: loc2

Row keys: aid_format, asgn_rate
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment

loc2,ds0
oft-1-dg-1-ch-1
oft-4-dg-4-ch-24
!3,0!1,0!1,1!1,0!2,0!1,0!1,1!1,0!2,0!1,0!2#1,1
24
_
_

Table 10-04.ltp. AID Channel Rules Table - LTSP

(Reference Data Name = aid chan rules)
(Instance Key = cc_model)
(Scope = global)
(SCCS level = 13.2)

Instance: ltsp

Row keys: aid_format asgn_rate
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment

rt-oce ds0
rt1-oce-1-1-1
rt15-oce-12-28-24
!2,0!2#1,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1!1,0!2#1,1
24
–
–

rt-ocw ds0
rt1-ocw-1-1-1
rt15-ocw-12-28-24
!2,0!2#1,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1!1,0!2#1,1
24
–
–

rte-oce ds0
rte1-oce-1-1-1
rte15-oce-12-28-24
!3,0!2#1,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1!1,0!2#1,1
24
–
–

Instance: ltsp (cont'd)

rte-ocw ds0
rte1-ocw-1-1-1
rte15-ocw-12-28-24
!3,0!2#1,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1!1,0!2#1,1
24
–
–

rtw-oce ds0
rtw1-oce-1-1-1
rtw15-oce-12-28-24
!3,0!2#1,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1!1,0!2#1,1
24
–
–

rtw-ocw ds0
rtw1-ocw-1-1-1
rtw15-ocw-12-28-24
!3,0!2#1,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1!1,0!2#1,1
24
–
–

rt ds0
rt-1-1-1
rt-9-56-24
!3,0!1,0!1,1!1,0!2#1,1!1,0!2#1,1
24
–
–

cot-oce ds0
cot-oce-1-1-1
cot-oce-12-28-24
!3,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1!1,0!2#1,1
24
–
–

cot-ocw ds0
cot-ocw-1-1-1
cot-ocw-12-28-24
!3,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1!1,0!2#1,1

24

–

–

Instance: ltsp (cont'd)

cot ds0
cot-1-1-1
cot-9-56-24
!3,0!1,0!1,1!1,0!2#1,1!1,0!2#1,1
24
–
–

rt-oce ds1
rt1-oce-1-1
rt15-oce-12-28
!2,0!2#1,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1
28
–
–

rt-ocw ds1
rt1-ocw-1-1
rt15-ocw-12-28
!2,0!2#1,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1
28
–
–

rte-oce ds1
rte1-oce-1-1
rte15-oce-12-28
!3,0!2#1,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1
28
–
–

rte-ocw ds1
rte1-ocw-1-1
rte15-ocw-12-28
!3,0!2#1,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1
28
–
–

Instance: ltsp (cont'd)

rtw-oce ds1
rtw1-oce-1-1
rtw15-oce-12-28
!3,0!2#1,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1
28
–
–

rtw-ocw ds1
rtw1-ocw-1-1
rtw15-ocw-12-28
!3,0!2#1,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1
28
–
–

cot-oce ds1
cot-oce-1-1
cot-oce-12-28
!3,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1
28
–
–

cot-ocw ds1
cot-ocw-1-1
cot-ocw-12-28
!3,0!1,0!3,0!1,0!2#1,1!1,0!2#1,1
28
–
–

Table 10-04.s2t. AID Channel Rules Table - SLC2T

(Reference Data name = aid chan rules)
(Instance Key = cc_model)
(Scope = global)
(SCCS level = 13.1)

Instance key: slc2t

Row keys: aid_format asgn_rate
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment

slc2t ds3
m-1
m-3
!1,0!1,0!1,1
1
_
_

slc2t ds1
m-1-1-1
m-3-7-4
!1,0!1,0!1,1!1,0!1,1!1,0!1,1
28
_
_

slc2t ds0
vrtdp-1-1
vrtdp-7-96
!5,0!1,0!1,1!1,0!2#1,1
2016
673-2016
_

Instance: slc2t (cont'd)

slcm1 ds0
vrtdp-1-1
vrtdp-7-96
!5,0!1,0!1,1!1,0!2#1,1
2016
673-2016
–

slcm2 ds0
vrtdp-1-1
vrtdp-8-96
!5,0!1,0!1,1!1,0!2#1,1
2016
769-2016
–

ina ds0
inads0-1-1
inads0-28-24
!6,0!1,0!2#1,1!1,0!2#1,1
24
–
–

slc2t3 ds0
v3dp-1-1
v3dp-1-1536
!4,0!1,0!1,0!1,0!4#1,1
1
–
–

Table 10-04.fctr. AID Channel Rules Table - FCTR

(Reference Data name = aid chan rules)
(Instance Key = cc_model)
(Scope = global)

(SCCS level = 13.1)

Instance key: fctr

Row keys: aid_format asgn_rate
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment

fctr ds3
1-1
2-3
!1,1!1,0!1,1
1
_
_

fctr ds1
1-1-1-1
2-3-7-4
!1,1!1,0!1,1!1,0!1,1!1,0!1,1
28
_
_

fctr ds0
rdt008-1-1
rdt008-21-96
!6,0!1,0!2#1,1!1,0!2#1,1
2016
_
_

ina ds0
ina-1-1
ina-84-24
!3,0!1,0!2#1,1!1,0!2#1,1
24
_
_

Instance key: flm1

fctr ds3
1-1
2-3
!1,1!1,0!1,1
1
_
_

fctr ds1
1-1-1-1
2-3-7-4
!1,1!1,0!1,1!1,0!1,1!1,0!1,1
28
_
_

Table 10-04.hmx. AID Channel Rules Table - ADC HOMEWORX

(Reference Data name = aid chan rules)
(Instance Key = cc_model)
(Scope = global)
(SCCS level = 13.1)

Instance: hmx

Row keys: aid_format asgn_rate
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment

hmx ds0
ds1u1-1-1
ds1u7-4-24
!4,0!1,1!1,0!1,1!1,0!2#1,1
672
–
–

hmx ds1
ds1u1-1
ds1u7-4
!4,0!1,1!1,0!1,1
28
–
–

Table 10-04.sdv. AID Channel Rules Table - SDV2T

(Reference Data name = aid chan rules)
(Instance Key = cc_model)
(Scope = global)
(SCCS level = 13.1)

Instance: sdv2t

Row keys: aid_format asgn_rate
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment

ina ds0
inads0-1-1
inads0-56-24
!6,0!1,0!2#1,0!1,0!2#1,1
24
_
_

Table 10-04.nxt. AID Channel Rules Table - NEXT3

(Reference Data name = aid chan rules)
(Instance Key = cc_model)
(Scope = global)
(SCCS level = 13.1)

Instance: next3

Row keys: aid_format asgn_rate
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment

next3 ds1
ds1-1
ds1-24
!3,0!1,0!2#1,1
24
-
-

next3 ds0
ds0-1-1
ds0-24-24
!3,0!1,0!2#1,1!1,0!2#1,1
24
-
-

Table 10-04.umc48. AID Channel Rules Table - UMC48

(Reference Data Name = aid chan rules)
(Instance Key = cc_model)
(Scope = global)
(SCCS level = 13.1)

Instance: umc48

Row keys: aid_format asgn_rate
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment

rst ds0
rst1-TR81-1
rst15-TR87-96
!3,0!2#1,1!1,0!3,0!1,1!1,0!2#1,1
96
-
-

Table 10-04.umc. AID Channel Rules Table - UMC

(Reference Data Name = aid chan rules)
(Instance Key = cc_model)
(Scope = global)
(SCCS level = 13.1)

Instance: umc

Row keys: aid_format asgn_rate
low_aid
high_aid
parse_rule
num_in_series
no_aid
no_increment

cot ds0
let-TR81-1
let-TR87-96
!3,0!1,0!3,0!1,1!1,0!2#1,1
96
-
-

rst ds0
rst1-TR81-1
rst15-TR87-96
!3,0!2#1,1!1,0!3,0!1,1!1,0!2#1,1
96
-
-

SWITCH System DLBB Functional Product Specification

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11. CONVERSION

Conversion from COSMOS to the SWITCH system and FOMS environment is accomplished by:

1. extracting data from the COSMOS and SOAC data bases,
2. merging this data with other potential data sources (IC extracts etc.)
3. reformatting existing data and creating derived data, and
4. loading directly into the SWITCH system.

SWITCH system conversion software processes and organizes the data appropriately to drive four fundamental groups of data conversion:

- Wire center and reference data
- Circuit assembly and spare network units
- Pending service and work orders
- FOMS data transfer.

Conversion can optionally be accomplished in increments utilizing a load synchronization process.

The conversion process is discussed at a high level in the following sections.

11.1 Conversion Overview

Conversion consists of the following three phases which are described in subsequent paragraphs:

- Preconversion
  - — COSMOS Data Purification
  - — COSMOS Diagnostics & Diagnostic Shell
  - — Conversion Process Reference Data
  - — Trial Loads
  - — COSMOS Extract Shell
  - — Creation of Conversion Options Table
- Conversion Period
  - — Data Extract and Transport
  - — Data Conversion (In-Effect and Pending)

— Error Process

— SWITCH system Load

— FOMS Load

- Post-Conversion

At the time of conversion to the SWITCH system, it is assumed that COSMOS systems will be configured as Generic 17.2. Conversion will not take place during a dial, area, or frame transfer/jumper administration transfer due to the complexity of its processing and structure in the data base. Wire centers will be converted in their entirety.

11.2 Pre-Conversion

Pre-conversion refers to that time period before a wire center is migrated from COSMOS to the SWITCH system. Some activities performed during this period include planning, scheduling, and training of wire center personnel. Refer to the SWITCH System Strategic Transition Plan, TM-TAP-012379 for further information regarding these activities.

11.3 Process Overview

11.3.1 COSMOS Data Purification

Verification of circuit identifiers, loop termination identifiers, TDAS CLLI code for each IC, and special equipment (SE) formats should be completed prior to data conversion. Facility remarks should be reviewed and pending service and work orders should be current. Obsolete ICs and facilities, as a result of dial, area, or frame transfers, etc., should be removed from the existing data base. Executing cross audits with other systems, such as LFACS, will also be helpful in purifying the data.

Other preconversion activities include COSMOS data purification for the wire center, review of wire center data errors discovered during trial loads, and the creation of required Conversion Process reference data. Refer to the Conversion Processing Guide, BR 752-105-010

11.3.2 COSMOS Diagnostics and Diagnostic Shell

COSMOS diagnostics should be executed to check the validity and accuracy of all database pointers. For additional information, refer to the Conversion Processing documentation, BR 752-105-010.

Bellcore will supply a diagnostic shell that will detect and identify circuits with indications of dial, area or frame transfer activity. The transfer activity indicators must be resolved prior to conversion.

The diagnostic shell will also verify that 5ES switch port masking is correct for SWITCH system support of ISDN services.

11.3.3 Conversion Process of Reference Data

Preparation of the mainframe system would include the usual data base sizing, partition allocation, etc. to accept the new wire centers.

11.3.4 Extract Shell

COSMOS allows for representation of a variety of data in the same file with different formats. A PC conversion utility package that prepares a Conversion Options Table (COT) allows users to define the SE/GF record mapping to the SWITCH system.

SE/GF records can be converted as a circuit remark, translation data, miscellaneous equipment (ME), intelligent controller equipment (ICE), or an item designated for deletion. For more information on SE/GF mapping to the SWITCH system data base, refer to the Conversion Options Table (COT) documentation, SP-STS-000-089.

SWITCH system conversion software utilizes **16cos.ext**, a shell program that extracts SE and GF record data from COSMOS that is used to prepopulate fields in the Conversion Options Table (COT). The COT provides user ability to tune certain data for conversion and set conversion parameters. The SE data is used to prepopulate a COT record for each ID and for testing the COT table against the original COSMOS data after the editing process is completed. In addition to the SE record IDs, the COSMOS DS table entries for GF records is extracted to prepopulate COT table entries for each range of equipment inventoried as GFs.

The following additional data items are extracted:

- a unique list of the equipment class of service (ECS) from the COSMOS USOC table
- a unique list of assignable line/class of service USOCs from the COSMOS US table.
- IC data, from the COSMOS ES table consisting of:
  - — entity group and code
  - — entity name
- the CLLI code for each IC that has a TDAS data parameter in the PM file.
- a list of frames from the COSMOS FR table

The shell program will create UNIX/UTS file whose file name will be created by concatenating the **primary** NPANXX to the **$WC** variable that is obtained from the WC in which the user is currently logged. Upon execution of the shell the WCNPANNX will be displayed and the user will be prompted to continue or terminate in case the shell is being executed in an incorrect wire center.

Progress of the shell can be monitored by standard output of incremental messages. Additional data extracted includes:

- IC code
- IC group
- IC name
- IC CLLI code (when available in COSMOS)

Some of the data on the extract is used to validate user entries in the COT to assure proper conversion. These are:

- Frame ID (validates frame location entries on FE and ICE records.)
- Inventory parse rules versus COSMOS GF parse rules or manually entered parse rules.
- IC (validates for existing IC when specified in COT.)

Extracted data reduces the effort to edit the COT by prepopulating class entries such as frame location and IC for FE And ICE classes.

Conversion tunability is enhanced by provision of the ECS and USOC codes which are used to prepopulate class entries in the COT.

11.3.5 Conversion Options Table Processing

The COT provides user control for setting parameters that control conversion processes and allows the user to designate handling of specific SE and GF records by mapping their ID format to a conversion class. This section provides a high level description of the features supported by the COT and conversion software. Please refer to SP STS-000-089 for a detailed description and instructions.

11.3.5.1 IC Data Mapping

COT class **IC** is provided to supply the COSMOS IC Type, IC group and IC name to allow mapping of SFG inventory range, Host for Remote Unit indicator, IC generic, and the IC CLLI code. A single IC may also be indicated as the default value to be used by COT software to prepopulate the IC field in the ICE class entries. The following table provides an example of IC class records for a wire center composed of a 5ES IC, a 1ES IC and a remote unit hosted by the 1ES IC.

- **SFG INV**entory - Default ranges will be supplied for IC type and the SFG INV parameter will be set to Y in the IC WC parameter table. N or blank derives SFG INV = N in the IC WC parameter table.
- Host for **R**emote unit. Enter the COSMOS ID of the host IC for a remote unit. (e.g., E1, D0.)
- IC **GENERIC**
- IC **CLLI** code
- **R**emote **U**nit Type identifies the type of remote unit.
- **DEFAULT** indicates the IC should be used as the default IC for prepopulation of the IC column for ICE class records.
- **PSEUDO HOST** - the CLLI code, Exchange Key, and Host type of the host IC. This is only required for RUs whose host is located in a different wire center.

11.3.5.2 ECS Mapping to Various SWITCH System Data

COSMOS switch port attribute **ECS** provides a service specific code that can be used to map various SWITCH system attributes.

- **ADMFUNC** - Bellcore will supply default ECS to ADMFUNC mappings. The user may declare others or change the defaults.
- **Sublet Option** - Bellcore will supply a default value for the common ECS values. Residence type ECS values will be given Y, others will be N.
- **Card Type** - DMS-10 ICs may have different card types depending on the series of the hierarchy of the given switch port. Thus, entry of the series is required to provide correct mapping. Conversion software will recognize the series based on the format of the switch port ID and map appropriately.
- **ENC PROT**ocol - An attribute of a switch port that maps from an ECS specifically created for ISDN. AMI protocol = A, 2B1Q = B.
- **SIG**naling - The signaling attribute of a switch port can be specified to override normal conversion processing.
- Asgn **Cap** (assignment capacity) - Identifies the capacity of the switch port for a particular ECS.

The COT can also be used in place of control cards to set parameters such as SFG Inventory, IC CLLI code, IC generic, and host indicator for remote unit.

11.3.5.3 Automatic Assignment Option - AAO

Parameter class tag AUTO_ASG (AAO) provides the user option to designate ADSR=Y circuits as totally constrained. When this option is set, circuits having the ADSR=Y tag will also be converted with MAN_IND=TC for totally constrained.

11.3.5.4 Circuit Attributes - ATR

ATR class data maps to the specific tag=value as shown in the ATTR column. The data will be stored in the SWITCH system on the circuit assembly body.

11.3.5.5 COMMON LANGUAGE to SPF for TRE - CLEI Code

A specific functionality can be declared for TRE, based on the CLEI code that is stored in the COSMOS TE record. The current known TRE SPFs are:

- RE
- RE1

11.3.5.6 Connectivity Attributes - CON

The CON class converts target frame records as connectivity data with a connectivity type = T. No data base node is created for the target item.

11.3.5.7 Delete - DEL

When no match is found for an SE record, a conversion error message is generated, the SE ID is placed on the circuit as a remark, and the circuit is marked as process limited, meaning that subsequent change order activity will produce an RMA. If SE data is not required to be converted, this class can be applied to silently drop the SE record from the conversion process. (If connectivity is broken by removal of the SE, a conversion connectivity error will result.)

11.3.5.8 Frame Terminated Equipment - FE

Frame Equipment is physical equipment not associated with a specific IC. These items require a frame location.

11.3.5.9 Group Size - GSZ

GSZ is a translation attribute of a SFG. This data will be stored on the TRANS edge of an SFG group node. The data is found on circuits that are members of an SFG. When more than one GSZ is encountered for a group, only the last value will be kept.

11.3.5.10 Intelligent Controller Translation Data - ICT

ICT class will convert matches to TRANS data for the appropriate SVC or GRP TRANS edge, based on validation tables in the COT and SWITCH system application. Validation tables are provided that can be tuned as required on site.

11.3.5.11 Parameter Class

- CANLST = Y, The user can specify the treatment of LSTs that are associated with service orders. (The tag=value is sent with each conversion SOLST.)
- CTX_RCU = Y - Will generate centrex RCU table based on QU/GC record data.
- NO_PLIM = Y - Will not place a process limitation for circuits having SE records which are not matched in the COT.
- Assembly types are created based upon this table classification.
- other parameter classes (e.g., ctx-telno-type, use-4w-CPRM, no-auto-asgn, isdn-key=1, sch-htg-num, no-se-tc) are defined in SP-STS-000-089.

11.3.5.12 Remark Data - RMK

Circuit remarks are created for matches on this classification.

11.3.5.13 Simulated Facility Groups -SFG

Entry of supporting data is also required in the IC class of the COT.

11.3.5.14 Auxiliary TN Conversion - SRG

Directs conversion to discriminate between primary and secondary services for auxiliary TNs. If a circuit with a TN whose COSMOS status is AU has a switch port whose USOC value is matched to an SRG class entry in the COT, the TN will be converted as part of the primary service. If no match, the TN shall be converted as a secondary service.

11.3.5.15 Single Subscriber Carrier - SSC

Single subscriber carrier (SSC) can be administered in COSMOS either by SE records or TR records. For both SE and TR records a COT class to identify the SSCs by their ID format and assign a specific functionality is provided.

11.3.5.16 Shared Inventory - (SIT)

- An individual or range ID will derive the assignment limitation type and value WTH TKS in the SWITCH system data base for the NTU types BL, TP and TRE.

11.3.5.17 Frame Name Change - FNC

Conversion provides the capability to change the 3 character frame name. This is needed for cases where a single frame has different names in COSMOS and TIRKS. This class also allowed the user to declare their pseudo frames (**PF**), enter the frame CLLI code and designate a particular frame to be used to prepopulate frame location records for ME and ICE class records in the COT table.

All references to the old frame ID will be changed, including any frame specific data sent in the FOMS Pending Data (FPD) and COSMOS to FOMS (CTF) tapes.

FNC class allows the user to change the ID of a frame and to add the CLLI code for the frame.

COSMOS SE frame location data is not entered in some wire centers. Generally these wire centers are either single frame or have a dominant frame and tie pairs are not required for the majority of circuit configurations. The SWITCH system requires connectivity to be created for all network units and circuits. The default column can be used to designate a frame to be used as the default frame location for FE, ICE and CON class items whose COSMOS record does not have a frame location. The zone will default to 001.

F99=PF - The user can designate a frame or frames to be ignored/deleted during conversion. (These were pseudo frames for islc.)

Cannot rename a frame to a name that exists in the same wire center. All frame renames and pseudo frame markings are done on the Frame Entry Screen.

11.3.5.18 Intelligent Controller Equipment - ICE

AXE ICE equipment requires mapping of specific formats to inventoried ICE type network units in the SWITCH system. This feature requires a new COT Class (ICE). Conversion software will match the COSMOS ID, and create ICE inventory in the SWITCH system.

Conversion load and pending software will populate the ICE inventory based on the COT mappings.

Conversion supports one ICE class that represents supplemental equipment on an Ericsson AXE type switch. When an SE match is encountered or when the permanent remarks of an AXE OE matches the COT ICE format, an ICE will be converted as a member of a permanent assembly with the corresponding OE. Unassigned ICE inventory will be created based on the range entered in the table.

An optional CLEI value may be supplied.

A Specific Functionality must be entered for each range. The following values are valid :

- 2P - SSE for two party service
- 4P - SSE for four party service
- 8P - SSE for eight party service
- CN - SSE for coin service

Each SPF will have a default connectivity weight value of 80.

11.3.5.19 CODS 2 Side-By-Side Frame

The COT (Conversion Option Table) will be enhanced with a new field in the Frame Screen of the COT. This field will allow frame type to equal CODS2SIDE so that this frame type can be distinguished from a COSMIC 1 type. This value, if populated, will override the type in the COSMOS FR file.

11.3.5.20 USOC Class

This class allows the user to map a COSMOS USOC value to new Assignable Line (AL) and Class of Service (CS) values in the SWITCH system data base. In addition, a type service indicator can be updated to identify WATS USOCs as well as providing overrides for CATY, directionality, and/or Band for any USOC value.

11.3.5.21 COT Process for Applique Equipment

The design for scan points/distributor points and miscellaneous trunk equipment, commonly referred to as applique circuits, allows for permanent assemblies of ME nodes representing MT equipment to ME nodes representing scan points. These items are usually represented in COSMOS as SE records. The user can use current SE to ME conversion capabilities to convert the working elements to the SWITCH system.

Conversion will assemble a scan point to a miscellaneous trunk if the circuit being converted contains 2 ME records that match defined specific functionalities.

11.3.5.22 COT PC Software Enhancements

Miscellaneous enhancements to the COT PC software consist of the following:

- COT disk space requirements will be reduced by creating the COT upload file on demand.
- The COT table record that is loaded in COSMOS QQ file will be compressed to reduce disk requirements and improve communications efficiency.
- New validations will be provided to verify COT records conform to known format requirements and WC specific data.
- A tunable pop-up list of parse rules for ME conversion will be provided.
- A report of matches and mismatches will be provided.
- A default class declaration will be provided which allows the user to specify a class to be prepopulated on each COT record when loaded from COSMOS.
- The user will be able to specify the source and target drives for COT data transfer.
- Record cloning will help to reduce keying time and errors.
- New reports have been added to display data for each record class.

11.3.6 ISDN/PPSN Data Ports

A major feature of the SWITCH system is the handling of ISDN circuits. Part of this feature requires that conversion identify the "B", "D", or "O" channel port on COSMOS DP records. This identification is keyed off the value of the "PPSN SERV CAT" field. If the content of this field is "B", "D", or "O", then the channel is considered B channel, D channel, or On Demand B channel respectively. All other values are assumed to be Public Packet Switched Network (PPSN), and will loaded to the SWITCH system database as either ME or TRE equipment based on the existence of the PPSN_TRE parameter in the COT.

This requirement applies to COSMOS Release 17.2.

The conversion process requires that certain reference files exist containing data needed by the conversion process. In particular, the generation of CEC (Central Office Equivalence Code) for circuits in COSMOS requires that CEC reference files exist, generated from SOAC extracts of the SOAC Service Code Data Table and the SOAC USOC Table. A reference data extract is also required by the conversion process.

It is recommended that trial conversions and loads of all wire center data be performed prior to the actual conversion weekend. This will help to identify potential problems, provide an idea of the time that will be required for the actual conversion, and provide involved BCC personnel with experience in the conversion process.

11.3.7 Conversion Process Reference Data

The Conversion Process requires that a reference file be created for the SOAC Service Code and SOAC USOC Code files.

The conversion process requires an extract from the SWITCH system primary data dictionary (PDD). This extract is used in generation of conversion reference data table descriptions and several default tables. These default tables may be preset prior to conversion to drive creation of the appropriate table data.

The on-line SWITCH system, and Conversion Load functions require additional reference files and tables. Refer to the PLATFORM Data Dictionary/Reference Data Administration (DD/RDAS) guide, BR-752-106-030, for further information regarding required reference data, and the creation and maintenance of these tables.

11.3.8 System Interfaces

The SWITCH system receives information from, and provides information to other systems. Information that the SWITCH system provides to other systems reflects either inventory that the SWITCH system has assigned or updates for data administered by the SWITCH system.

Data passed across SWITCH system interfaces will be in Flexible Computer Interface Format (FCIF) messages. Conversion will use the SWITCH system and FOMS interface as a means of loading FOMS.

Refer to the SWITCH system and FOMS Communications Interface guide, BR-752-107-020, for further information regarding interface configurations.

11.3.9 ISDN Preconversion

ISDN data preparation is of particular importance. The conversion process supports conversion of ISDN circuits and services from the COSMOS 17.0 format (i.e. RF chains). This is no different than in prior releases.

The conversion process for 5ESS ISDN will use the COSMOS PY file format for creation of ISDN collection constructs and time slot usage data. The PY file is supported by the PATCH II provisioning method. Alternatively, a simulated PY file may be created from a

5ESS relations dump, DSLEQUIP, which is reformatted into a COSMOS PY file by a Bellcore supplied shell program.

11.4 Conversion Period

The conversion period refers to the time when the live cutover of a wire center from COSMOS to the SWITCH system occurs. Activities during this period consist of COSMOS data extraction and transport, conversion software processing, error processing, and the SWITCH system and FOMS load software processing.

11.4.1 Data Extract and Transport

The data extraction process from COSMOS will contain all parameters, entity attributes and statistics, equipment inventory, working and DIP circuits, pending order activity, etc. There should be a minimum of manual input required. However, where transactions exist on the SWITCH system, such as establishing spread groups or emergency assignment lists, it may be desirable to execute these transactions on the SWITCH system instead of porting the data from COSMOS. This eliminates the need to extract, reformat and process the data into the SWITCH system when use of a SWITCH system transaction may save time. The data extraction process will use either the TAPMAN or DT (disk-to-tape) format. The DT format copies an entire database file system regardless of the number of wire centers, from disk to tape on COSMOS (Release 17.x) UNIX® or UTS® based systems. The TAPMAN transaction can extract individual wire centers from a single machine.

Transmitting the data from COSMOS to the SWITCH system may be accomplished by use of magnetic tape or a networking arrangement. Use of 6250 bpi tapes enhance performance and reduce the number of tapes required as compared to 1600 bpi tapes. Arrangements for transporting magnetic tape to the SWITCH system location must also be a consideration. The media choice is a BCC decision which will be limited only by the SWITCH system hardware environment. Once the data has been extracted and transported from COSMOS, it will be input into the SWITCH system.

11.4.2 Data Conversion

Data conversion consists of the following conversion processing areas:

- Basic Conversion - This group of programs (VCCVCxx) is the core of the conversion process. The majority of data is passed through these programs.

- Pending Data Process - These programs (VCCVPxx) process all pending related data.

- Loader Process - The Loader programs (VCCVLxx) are run when the on-line SWITCH system is turned up. These programs load the converted data into the SWITCH system database.
- Error Process - The Error Process (VCCVExx) software provides error reports, error statistics (amount and type of errors detected), and a process for correcting and re-processing Critical data errors.

Figures 11-1 and 11-2 provide a high-level representation of the overall conversion process in four sections: CEC Reference File Build, the SWITCH system and FOMS Conversion Process (includes conversion, pending and loader processes), SWITCH System Error Process, and the FOMS Load.

11.4.2.1 Conversion Tools

There are several conversion tools and processes provided to help reduce the amount of manual work required by conversion personnel.

JCLGEN tool allows for generation and customization of conversion job control (JCL) execution decks. The process can generate various options, parameters and control cards for many wire centers within a COSMOS system.

The Conversion Options Table (COT) tool allows for user definition of mapping criteria for SE/GF COSMOS records. The tool is useful in reducing the amount of manual clean-up of these COSMOS records. In addition the COT provides the following capabilities:

- several run parameters may be set via the COT tool.
- COSMOS ECS can be mapped to several SWITCH system data base attributes.
- COSMOS USOC codes can be mapped to SWITCH system AL and CS data base attributes.

The conversion process provides the capability to perform automatic statistic verification across conversion and load jobs. This process can further reduce the amount of manual checkout required during the conversion process.

11.4.2.2 In-effect and Pending Data Conversion

The conversion process consists of translating the COSMOS data into SWITCH system structured data and formatting the data (into Load Interface Format or Conversion Contracts) such that it can be loaded into the SWITCH system database. In order to improve the efficiency of the load process, the data is categorized as follows:

- wire center data which includes parameters, tables, switching machine attributes, ranges of equipment identifiers, and group data.

- network unit (spares) data which includes network units which are not in any type of assembly.
- assembly data which includes working circuits and all assemblies.
- pending data for pending service orders, work orders and wire assembly orders.

The pending data process analyzes various COSMOS data fields and creates a current view of each facility in the data base. Facilities and circuits which have pending activity have one future view for each pending activity created. The current view that is derived for a circuit in the COSMOS database will result in inventory data being converted as network unit spares or assembly data. That is, for circuits that are pending in, the current view is one of spare inventory (i.e., the circuit doesn't exist yet) and will result in spare inventory being loaded. In this case, the future view (i.e., the selection of this inventory for the circuit) will be applied against this spare inventory.

For circuits that are pending out or pending change, the current view is one of a working circuit (i.e., the circuit exists) and will result in assembly data being loaded. In this case, the future view (i.e., the change or dismantling of the assembly) will be applied against the working circuit. Pending data (future view) will actually be loaded into the SWITCH system via contracts. These contracts will be built by the conversion process once pending views have been established. The conversion contracts will be processed by the SWITCH system application after all current view inventory has been loaded.

The following pending activities will be converted via the contract generator software:

Service Order to Service Order Conversion

All pending service orders, both flow through and non-flow through will be converted by either CONSO or CONINT contracts. CONINT contracts, (service orders with no AR record in COSMOS) can be optionally generated as CONSOs via a VCCVP08 run option.

Cable Throw to Cable Throw Work Order Conversion

Pending cable throws will be converted, with the exception of spare to spare cable items.

Past due or all CPT due dates can be optionally set to a future date via a VCCVP08 run option.

LET to SET Work Order Conversion

COSMOS LET (Line Equipment Transfers will be converted as SET (Switch port Equipment Transfers).

MCT to MCT Work Order Conversion

Multi-pass maintenance change ticket (MCT) work orders in COSMOS will be converted as single-pass MCT work orders in the SWITCH System.

LST to LST Work Order Conversion

COSMOS line and station transfer (LST) work orders will be converted as LST work orders in the SWITCH system.

DAE to Wire Assembly Order Conversion

The conversion contract generator will convert pending DIP Assembly Orders (DAE) in COSMOS to pending Wire Assembly Orders (WAO) in the SWITCH system.

Record Orders

Record orders, JAMs, and company initiated orders, as well as dial, frame, and area transfers are not supported by the application and should be removed or completed prior to conversion.

Following are the steps used in the conversion process:

- Preprocess Data
- Sort Data Into Categories
- Convert Into SWITCH system data structure
- Format:
  - — Into Load Interface (current view)
  - — Into conversion contracts (pending activity)

Figure 11-1 diagrams the steps and changes made to the data as it is being processed. The far left block represents one SWITCH system file containing the many COSMOS files (TN, OE, CP, etc.) as the data appeared when it was installed into the SWITCH system. All COSMOS files are not represented here and the order of the COSMOS files does not have any significance in the figure. However, there is a representative sampling of data for each category, such as: DS and ES for Wire Center Data, TN through TP for Spare Unit Data and Assembly Data, and SO for (Service Order) Pending Data. Each of the conversion steps is shown in Figure 11-1 and described in the following paragraphs.

Preprocess Data

The preprocess routine will more clearly identify each record within a COSMOS file. It will add the wire center name to each record since multiple wire centers may be converted at the same time. An explicit indicator of the record type (TN, OE, CP, etc.) will be prepended to each record. In addition, files containing supplementary data for each type of equipment inventory are merged together. For example, supplementary TN data resides in the VT file and will be merged with the TN file, record by record, for a total view of the TN data (TN+VT).

Sort Data Into Categories

Since the data has been preprocessed, it can be sorted into the data categories. Using the wire center, record type, and record pointers for the first facility in a chain, the data is sorted. The result, as shown in Figure 11-1, is one file with the data separated into categories but still in the original (COSMOS) format. The Spares are in an alphabetical order. The Assemblies, however, contain all components that belong with the specific circuits, DIPs, etc.

Convert Into SWITCH System Data Structure

This is the step when the converting of the COSMOS data structure into the SWITCH system data structure is accomplished. Currently conversion of this data is table driven and will allow flexibility in mapping differences. The conversion must allow for mapping of data items on a one-to-one, one-to-many and many-to-many basis.

Format Into Load Interface

While the data is undergoing conversion into the SWITCH system structure, it is being written to separate files by category of data using a specific load interface format. This format is the standard means of communicating the data from the overall conversion process (Figure 11-1) to the actual writing of the data to the data base through the load process (Figure 11-2).

The load interface files can be considered to be made up of packets. The packets are network units for the spare file and individual circuits for the assembly file. Due to the amount of data to be handled, a range of packets can be processed with a restart capability allowing for loading subsequent packets. This method allows the processing to be segmentized for ease in tracking its progress and in recovering from possible errors.

The size of load packets is user settable in the load jobs. For example, in offices with a greater degree of complexity, the user may determine that smaller packets are beneficial. Figure 11-2 diagrams the loader process.

11.4.3 Error Process

Errors can be encountered at various points in the conversion/load process. Errors will be categorized by type and severity, and by error processing and correction methodology. An Error Message File will contain all error conditions encountered during the conversion or loading phases of the COSMOS data. Another file, the Error Update File (EUF), contains the circuit assemblies where errors were encountered. It is possible that once corrections are made to the circuit assembly errors, the EUF file can be input back into the conversion process.

Errors encountered will be identified by an error number and circuit identification number. Errors will be classified according to their severity (e.g., critical, high, medium, low priority) depending on their impact to the conversion, load, or subsequent SWITCH system application processing. Various processing programs will provide the user with error statistics, lists of errors, circuit assembly errors, etc. These reports will allow the user to determine which errors must be fixed immediately or can be followed-up on after the conversion/load process.

11.4.4 SWITCH System Load

Once the SWITCH system structured data has been put into Load Interface Format, it will be loaded into the SWITCH system database. A loader will exist for each category of data (referred to as packets), as data in each requires a different type of processing. The packets of data must be written to the data base in the following sequence and, therefore, the loaders will be run in this sequence:

- wire center
- network unit (spares)
- assemblies
- pending data

Each loader has the same basic architecture and performs the same basic functions (with the exception of pending data). Each loader will read the input data from a packet, build it into the SWITCH system internal format and use the output to write the data to the SWITCH system database.

When to commit, or write to the database has a significant impact on the performance and efficiency of the loader process. The commit interval will be user-settable with recommendations made by Bellcore. These recommendations will be based on the conversion strategy employed, memory resources in the machine, and experience gained from prior conversions.

As previously mentioned, contracts will be used to load the pending order data into the SWITCH system database. The pending loader takes CONSO contract data and submits it to the SWITCH system DLBB for standard application processing. As each conversion service or work order contract is processed, a PREFO or PREWO contract will be generated and sent to FOMS.

11.4.5 FOMS Load

FOMS will be loaded via PREFO or PREWO contracts generated by the SWITCH system application as a result of processing CONSO/CONINT and conversion work order contracts. Additionally, non-SWITCH system affecting data (data from the COSMOS database that FOMS requires but the SWITCH system does not) will be handled by the SWITCH system conversion software. An example of non-SWITCH system affecting data is frame-related statuses of pending activity in the COSMOS database.

The non-SWITCH system affecting data will be provided by SWITCH system to FOMS[1] via two extract tapes. The first tape contains frame associated file data which FOMS is required to maintain for the frame. This data must be loaded into FOMS prior to the sending of PREFO contracts from the SWITCH system. The second tape contains frame status information for all pending circuits converted from COSMOS. This tape is processed after all PREFO contracts generated by the SWITCH system, have been processed by FOMS.

11.5 Post-Conversion

Post-conversion activity will include procedures to perform a pending activity audit, sample verifications and comparisons of data. This activity must ensure that the SWITCH system database reflect the contents of the COSMOS database (i.e., the same inventory and assignment data). Verification tools must be used to verify that the database has been converted correctly. Several tools (CHECKDB, PADDLE SCANDB and SCANDATA) can be used to verify database relationships, integrity, and content. Also, the EXT PDG process can be used to verify the existence of pending activity contracts between the SWITCH system and FOMS.

The pending activity audit is done by work session EXT PDG, which creates a list containing each pending service order and work order in the SWITCH system data base. The list is sent as an EXTPDG contract from the SWITCH system to FOMS. FOMS will compare the list to its data base and report discrepancies.

In addition a minimal number of SWITCH system transactions may be required such as generating new emergency assignment lists or establishing spread groups. For such items this may be more advantageous than extracting and reformatting the COSMOS data for input to the SWITCH system.

1. For more information on FOMS conversion see BR 752-105-010.

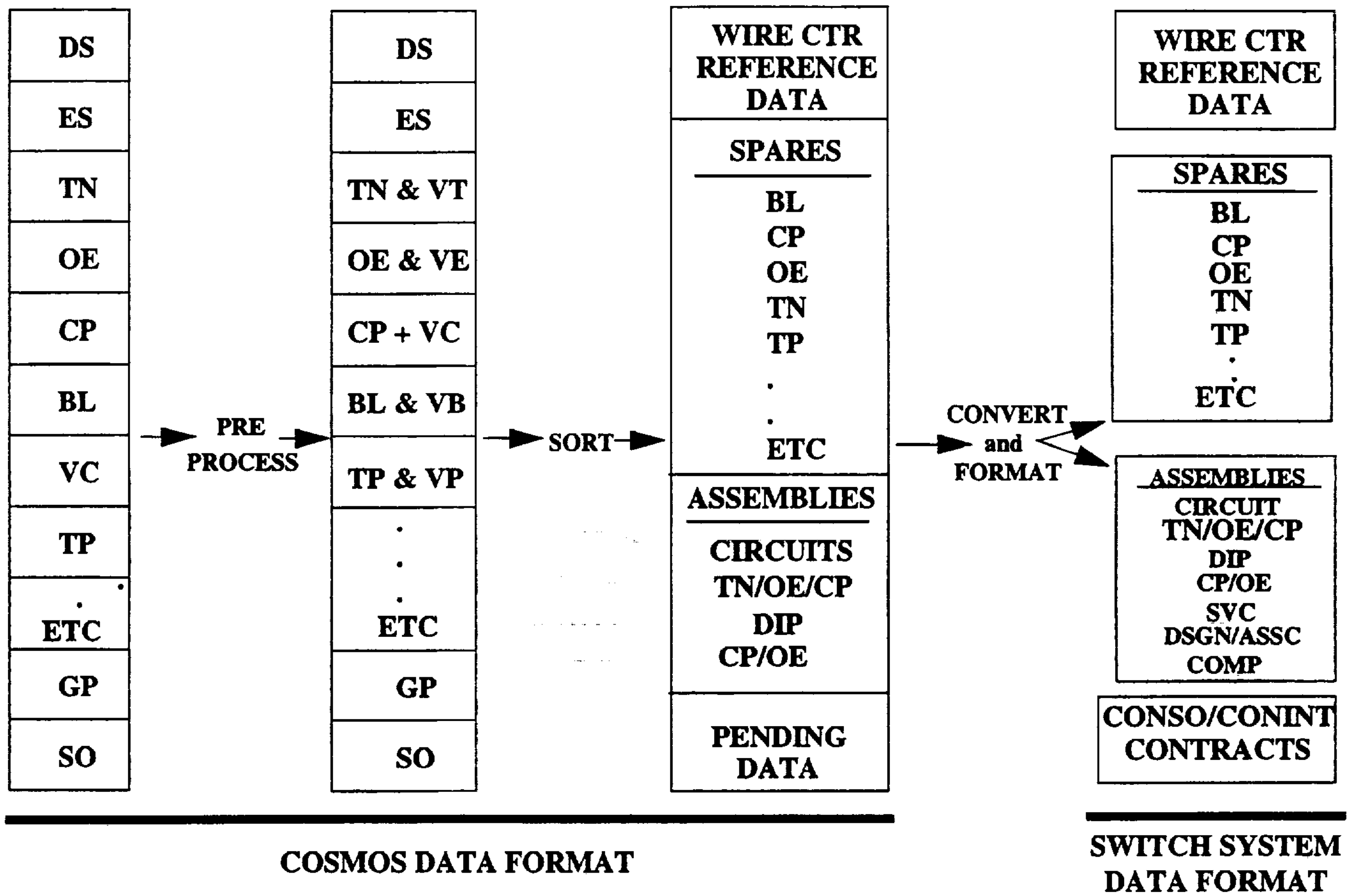

Figure 11-1. CONVERSION PROCESS

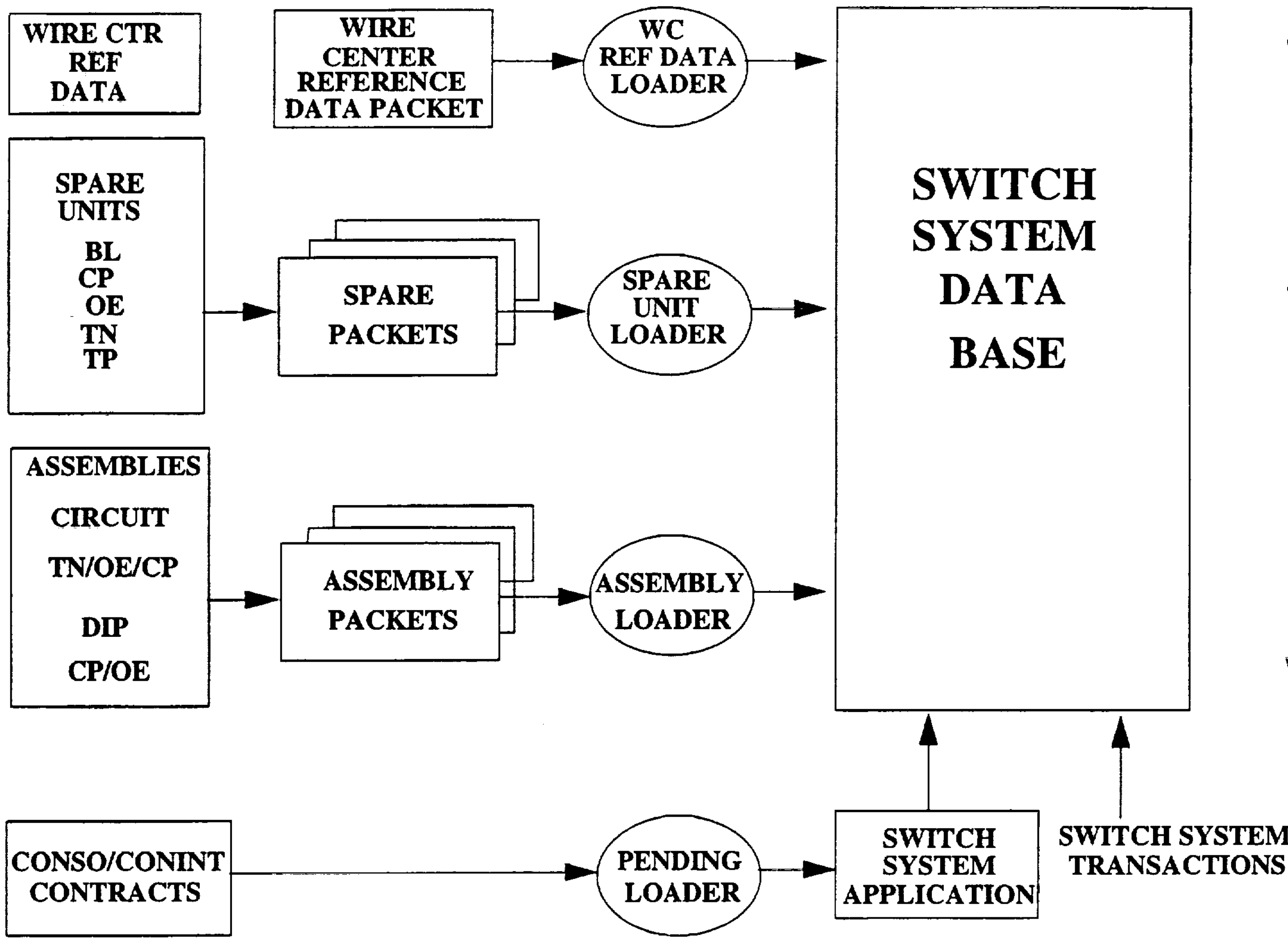

Figure 11-2. PACKAGE AND LOAD DATA BASE

SWITCH System DLBB Functional Product Specification

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12. BULK DATA PROCESSING

The purpose of this section is to describe some of the various bulk data processes that are provided by the SWITCH system. Bulk data is described as a large quantity of data to be processed by the SWITCH system. Bulk data can be output to TSO Datasets or to magnetic tape. Bulk data can also be received from SOAC. Bulk data applies to:

- Frame Layout Interfaces
- Traffic Data
- Translations Synchronization
- NPA Splits
- Wire Center Rename
- Interfaces to PVI (Planning View of Inventory)
- TN Extracts
- Return of Imported TNs

12.1 Frame Layout Interfaces

When companies add equipment to existing distributing frames, add new frames to an office, or add new modules to an existing frame, they may utilize the services of an outside vendor to provide the frame layout. This data must be made available to the SWITCH system for accurate assignments and inquiry purposes. The data for frame layout interfaces (FLI) is generally made available via magnetic tape from vendor products such as the PACE[1] or MELD programs.

PACE (Programs for Arrangement of Cables and Equipment) was the original set of programs to provide a layout of equipment on various types of distributing frames. It supports the layout of loop cables, tie cables and line equipment for 1ESS and 2ESS digital machines. Another utility which includes support of the digital switching machines is called MELD (Mechanized Engineering Layout for Distributing Frames). During the transition period of PACE to MELD there were certain guidelines when one or the other was required to be used. For example, if a company was adding 5ESS line equipment to an existing frame, the PACE programs were required because PACE had the history on the office. However, if the company was adding equipment onto a new frame, the MELD program was used. Once the data has been input, the PACE and MELD tapes are retained. If the database should be damaged and needs to be rebuilt, the frame data can be easily recovered from the tape if necessary. The SWITCH system will be capable of utilizing the

1. It is Bellcore's understanding that there is no work being done to enhance PACE and PACE users should be moving to using MELD.

data from either the PACE or MELD tapes. The SWITCH system will provide the user with the capability to input the frame location data for network units manually, when tape input is not available.

The three vendor products that will be supported are:

- PACE - Program for Arrangement of Cables and Equipment
- MELD - Mechanized Engineering and Layout for Distributing Frames
- FrameMate - formerly called ECHOs

Bellcore also has provided a generic tape interface[2] that will load frame termination data in bulk. This interface is the UPDFRT (Update Frame Termination) contract definition. A tape can be provided with data in the form of UPDFRT contract(s). The SWITCH system will read the tape and parse out each contract. These contracts will then be submitted for processing. For more details on how UPDFRT works see Section 5.

12.1.1 PACE

A frame description is one of the output tapes provided by PACE designed to be used as input to a mechanized assignment system such as the SWITCH system or COSMOS. This tape contains information about frame configurations, SWPT, IF, and CP frame locations, and an office location identifier (CLLI™ code). This tape is 800bpi, seven-bit non-parity ASCII, with a physical record length of 512. The tape has a logical record length of 64 characters.

PACE supports electro-mechanical ICs and the 1/1AESS and 2ESS ICs. A single PACE tape will accept no more than 4 frames. Initially this tape was designed to interface with COSMOS.

12.1.2 MELD

MELD is a magnetic tape output that provides distributing frame configuration and termination location data to be used to update the database used for mechanized administration of the frames involved.

This tape contains frame system configurations, frame configurations, and termination records for SWPTs, CPs, and TPs.

2. See SR-OPT-002882 for full details about this interface.

This tape is 800 or 1600 bpi with 64 byte (MTOS specifications) logical record lengths and 512 bytes (8 logical records) physical record length. All bytes are 8-bit upper case ASCII.[3]

MELD supports the following IC types that are also supported by the SWITCH system:

- 1/1A ESS
- 2/2BESS
- 5ESS
- AXE-10
- EWSD
- DMS-100

12.1.3 FrameMate

FrameMate is a magnetic tape output that provides distributing frame configuration and termination location data to be used to update the database used for mechanized administration of the frames involved. Since FrameMate is provided in a tape format the same as MELD, it will be processed the same as MELD.

This tape contains frame system configurations, frame configurations, and termination records for SWPTs, CPs, TPs, D4 channel plugs, 5A regs, 7A regs, and bridge lifters.

This tape is 800 or 1600 bpi with 64 byte logical record lengths and 512 bytes (8 logical records) physical record length. All bytes are 8-bit upper case ASCII.

FrameMate supports the following IC types that are also supported by the SWITCH system:

- 1/1A ESS
- 2/2BESS
- 5ESS
- AXE-10
- EWSD
- DMS-100
- DMS-10/400

3. There is an alternative MTOS MELD specification with 80 byte logical record lengths. This format is not supported.

12.1.4 SWITCH System Functionality for FLI Tape Pre-processing

The SWITCH system will read PACE and MELD formatted tapes for SWPTs for all stored program controlled ICs, cable pairs, and intra-wire center facilities. Data from these tapes will be extracted and translated into the SWITCH system contract for processing frame termination data (i.e., UPDFRT). The ability to manipulate the data on the tapes prior to processing in the SWITCH system will be provided through use of TSO (Time Share Option) datasets.

The frame layout interface process adds frame termination data to network unit inventory already in the database. It does not itself create inventory. In an inventory addition activity, such as IC growth, this process should be run after frame and NTU inventory have been created, but before any assignment activity.

The frame types currently supported for frame layout interface processing are:

- COSMIC (or frames that are assigned like COSMIC)
  - — COSMIC I and COSMIC II (includes Mini-COSMIC)
  - — block sizes 50, 64, 100, 128 and 200
- ESS Modular
- Conventional
- CODS2
  - — block size 200
  - — side-by-side configuration
  - — over-and-under configuration
- Digital Signal Cross-Connect
  - — DC - block size 10
  - — DX - block size 90
- Protector frames (associated with the above frames types)

12.1.5 PACE

The SWITCH system will support PACE input for the 1/1AESS and 2ESS ICs. The SWITCH system will accept the tape input and store it in a TSO dataset for subsequent review and manipulation. Once the client has determined that the data is valid, using a batch process, the SWITCH system will mechanically process the dataset into the required input data for UPDFRT contracts. The input (JCL) to the batch process will be one of the following three functions:[4]

- Add - to insert data in a blank location or replace current frame and zone.
- Delete - remove data from associated records
- "Blind" Replace - replace first accessed occurrence of frame termination data, regardless of status (i.e., spare, working), with new data.

Other input to the batch process will be the list of frame IDs that data is requested for, up to four frame IDs. Also required input will be the type (not SWITCH system type but PACE type) of ntus to process on (i.e. ESS, TPDF, CP, IFs, or ALL). Masking will be accepted and the ability to ignore records will also be supported.

The SWITCH system will allow multiple action type combinations. For example:

ADD/CPs

DELETE/IFs

ADD/SWPTS 5001-001-???

The PACE record formats are shown in Appendix 12A.

12.1.5.1 Steps to Run PACE

The following steps are describe the processing of a PACE tape.

1. Use a SWITCH system provided job to read the PACE tape into a TSO dataset. From there the tape can be viewed and edited with the TSO editor.
2. Once the dataset is validated, the user can run a BMP job providing the appropriate inputs (add, replace, frame IDs, etc.) to create UPDFRT contracts which are then processed by the contract processor.
3. The SWITCH system BMP process will parse the termination records into their piece parts and map the parts to the appropriate fields in the UPDFRT contract. Each record will equate to one or two contracts. Some of these piece parts will be merged (ID parts) and then used as input to the contract. Other piece parts will be ignored since the SWITCH system does not care about this data (e.g., remreed vs. fereed).

   The functions of the BMP process are:

   a. For each record the SWITCH system will have to calculate the frame ID from the module number by looking at the frame records for the given frame and choosing that frame which has the given module number. Sometimes it is not possible to

4. True Replace is a function that cannot be provided unless the tapes can provide the old location to be replaced because of the required contract input. A "blind" replace is provided as of SWITCH system release 1.8.

fully identify a frame by given information so an algorithm will be invoked to determine the appropriate frame ID.

Notice that this BMP process must have access to the database.

b. The SWITCH system will also have to calculate the zone number for the given termination using existing algorithms and the module number, side and frame type.

c. For each record the low and high ID will have to be calculated.

For cable pairs the low and high pair IDs are explicitly given.

For ESS SWPTs the concentration ratio helps determine the high end of the range.

The low end ends with "000" and the high end ends with "315" (4:1) or "703" (2:1).

d. For each record, the SWITCH system will have to determine if one UPDFRT contract or two UPDFRT contracts are to be built.

If for cable pairs the value of L[5] is 1, two contracts will be built. One contract for pairs 1 to 50, protector frame connector J. The second contract for pairs 51 to 100, protector frame connector J + 1.

For ESS swpts, if the value of F is 2, two contracts will be built. One contract for concentrator E and the other for concentrator E +1 with start termination of 3-01.

If the value of F is 4, one contract is built for a single concentrator.

12.1.6 MELD

The SWITCH system will support MELD (release 2.7.3 or higher) input in the MTOS format (64 byte records). The SWITCH system will accept the tape input and store it in a TSO dataset for subsequent review and manipulation. Once the client has determined that the data is valid, using a batch process, the SWITCH system will mechanically process the dataset's data into the required input data and format for UPDFRT contracts. The input to the batch process will be one of the following three modes: [6]

- Add - to insert data in a blank location or replace current frame and zone.
- Delete - remove data from associated records
- "Blind" Replace - replace first accessed occurrence of frame termination data, regardless of status (I.e., spare, working), with new data.

5. See Appendix 12A for ESS formats for description of "L, J, F, and E"

6. True Replace is a function that cannot be provided unless the tapes can provide the old location to be replaced because of the required contract input. A "blind" replace is provided as of SWITCH system release 1.8. Be aware that a "blind" replace, if used incorrectly, can greatly corrupt the database.

Other input to the batch process will be the list of frame IDs that data is requested for. Also required input will be the type of ntus to process on (i.e. OE, IF, CP, or ALL). Masking will be accepted and the ability to ignore records will also be supported.

The frame names on the tape may not be the frame IDs stored in the SWITCH system. The user will have to provide the SWITCH system equivalent ID at the time they edit the dataset or when they run the batch job via input JCL.

The MELD record formats are in Appendix 12B.

12.1.6.1 Steps to Run MELD

The following steps are describe the processing of a MELD tape.

1. The first thing the user will do is run a job to read the MELD tape into a TSO dataset. From there the tape can be viewed and edited using the TSO editor.
2. Once the dataset is validated, the user can run a batch job providing the appropriate inputs (add, replace, frame IDs, etc.) to create UPDFRT contracts which are then processed by the contract processor.
3. A SWITCH system batch job will process the dataset and parse the termination records into their piece parts and map the parts to the appropriate fields in the UPDFRT contract. Each record will equate to one or two contracts.
   a. The SWITCH system will also have to calculate the zone number for the given termination using existing algorithms and the module number, side and frame type.
   b. For each record, the pre-processor will have to determine if one UPDFRT contract or two UPDFRT contracts are to be built. The number of contracts depend upon the IC type, concentration ratios if appropriate, and the number of blocks.

      For #1/1AESS swpts, if the number of concentrators is two, the concentration ratio is 4:1, and the number of blocks (64 pair) is two, then two contracts will be built; one for each concentrator and block. One contract for concentrator E and the other for concentrator E +1 with start termination of 01-17 and block type of 128.

      For #5ESS swpts, if the number of concentrators is two and the number of blocks is two, two contracts will be built; one for each concentrator and block. One contract for concentrator E and the other for concentrator E + 1 with a start termination of 01-17 and block type of 128.

      For #1/1AESS, #2ESS and #5ESS swpts if the number of blocks is one, only one contract is required no matter how many concentrators are given.

      For cable pairs, if the number of blocks is two and they are fifty pair blocks and the range of cable pairs is 100, the blocks should be treated as one 100 pair block.

c. The SWITCH system will have to determine the low and high IDs of the ntus for each record on the tape and map the tape ID format into the SWITCH system SWPT format.

   For cable pairs the low and high pair IDs are explicitly given.

   For #1/1AESS swpts the concentration ratio helps determine the high end of the range. The low end ends with low concentrator and "000" and the high end ends with high concentrator and "315" (4:1) or "703" (2:1).

   Also if two contracts are required, the SWITCH system will determine the low and high IDs for each contract (Low and High IDs are for a single concentrator in the contract).

   #2ESS is the same as #1/1AESS

   For #5ESS swpts the low end is the low end concentrator ID followed by "0-00" and the high end ID is the high end concentrator followed by "1-73." If the network type is "K" then the alpha appended to the IDs is "I." If the network type is "A" then the alpha appended to the IDs is "K". If the network type is not "K" or "A", then the alpha appended to the IDs is "L".

   For AXE-10 ICs, the low and high end IDs are explicitly stated.

   For EWSD ICs, the low mod and high mod are given. The low end ID would then be low mod followed by "-00" and the high end is the high mod followed by "-07."

   For DMS-100 ICs, the low end id is given up to the LSG/LD equipment. To complete the low end id, the LCE should be followed with "00." The high end ID is given up to the high LCE. To complete the high end ID, the LCE should be followed by "31."

Appendix 12B shows an example of a MELD record for a set of 1ESS switch ports and the corresponding UPDFRT contract input that the record's data is mapped to.

12.1.7 FrameMate

FrameMate is Southwestern Bell's (SWBT) MELD-like product. FrameMate (release 1.0) will be provided to the SWITCH system in the same format as Lucent Technologies MELD tape. The SWITCH system will accept the tape input and store it in a TSO dataset for subsequent review and manipulation. Once the client has determined that the data is valid, using a batch process, the SWITCH system will mechanically process the dataset's data into the required input data and format for UPDFRT contracts. The input to the batch process will be one of the following three modes: [7]

- Add - to insert data in a blank location or replace current frame and zone.
- Delete - remove data from associated records
- "Blind" Replace - replace first accessed occurrence of frame termination data, regardless of status (I.e., spare, working), with new data.

Since FrameMate is in the same format as MELD tapes the steps to process it are exactly the same. Appendix 12B shows record formats for MELD that also apply to FrameMate.

12.1.8 INVENTORY FUNCTIONALITY

The output of the pre-processor is a series of UPDFRT contracts. These contracts will be processed by the UPDFRT contract processor.

12.1.9 Future Enhancements

There are several sub-features that may be provided in future SWITCH system releases for this feature. These sub-features have impact on other areas of the SWITCH system (e.g., assignment, inventory, etc.), or require enhancement to the tape input to be processed correctly. They are:

- MELD and PACE Replace option - requires enhancement to the tape input to provide both the old and new frame termination data.
- COSMIC Custom Frame - swpts share zones which has major impact on SWPT selection algorithms.
- COSMIC Flexible Frame - Lucent Technologies claims zoning doesn't apply which has major impact on SWPT selection algorithms.
- CODS Frame Type - Support is a future feature.
- Other Frame types - Other frame type support is a future feature.
- Other Equipment besides swpts, CPs, IFs (Ranging IDs may be difficult)

7. True Replace is a function that cannot be provided unless the tapes can provide the old location to be replaced because of the required contract input. A "blind" replace is provided as of SWITCH system release 1.8.

12.2 Traffic Data

In order to establish and maintain good load balance, the SWITCH system attempts to direct assignments to relatively lightly loaded equipment. To do this, the SWITCH system must receive load measurement data.

BCC personnel determine the frequency of the study periods for each wire center and IC. Studies are generally taken either every week or twice a month. Traffic data is generally collected for two hours per day, Monday through Friday. The data may be received by the SWITCH system via magnetic tape or file transfer. The SWITCH system may receive the data for an entire company on one tape or it may receive a few wire centers on one tape. The SWITCH system must validate all traffic data received using parameters established by the user.

Traffic interfaces are needed from both TIDE and TDAS for the SWITCH system. The TIDE interface is needed for 5ESS, DMS-100, EWSD, AXE-10, DMS-10, DCO, and 2ESS traffic data, including 5ESS ISDN data. The TDAS interface is needed for 1/1A ESS, 2ESS, and 3ESS traffic data.

While the SWITCH system needs to obtain traffic data from both TIDE and TDAS, it is desirable for the SWITCH system itself to only deal with a single traffic data format. A format converting preprocessor for the SWITCH system will convert TDAS data to a TIDE format, for entry into the SWITCH system by the SWITCH system and TIDE data interface.

The SWITCH system will receive traffic usage measurements from TIDE and TDAS by SWITCH system measurement group (except for the DMS-10, where some TIDE measurements need to be summed to obtain a measurement group value). Generally a measurement group is the same as a load group but it may be different, requiring the SWITCH system to allocate from measurement groups to load groups. For example, a generic 5E6 5ESS line unit may have the switch group (half grid) as the load group while the measurement group is the line unit.

The SWITCH system can accept traffic usage measurements that are not for measurement groups. These measurements are stored in TSO data sets (not the SWITCH system database), where they can be printed by the user as desired. These TSO data sets can be used to obtain remote terminal usage from the SWITCH system for EWSD ICs where the measurement group needs to be at the DLU level. They can also be used for 5ES ICs to obtain RT usage when the measurement group is set to the IDCU or DCLU level for the DLE model.

This section is concerned with the traffic data interfaces, that is, getting traffic usage measurements by measurement group into the SWITCH system database. Closely related topics which are also addressed here are:

- allocation of measurement group data to load groups, and
- updating adjusted CCS data with measured data by load group.

Another closely related topic, reports showing measured data, is discussed in the ULBB FPS.

The SWITCH system uses adjusted CCS or PPS by load group (similar to the use of estimated CCS by load group in COSMOS) to make assignments that achieve and maintain good load balance, in addition to considering other criteria such as short jumpers. These adjusted values per load group are updated in two ways:

1. When measured values are received, new adjusted values are generally set to a weighted average of the current adjusted values and the new measured values.
2. When assignments are made (inward or outward activity), the adjusted values are adjusted by an amount that depends on the usage category that is being added or disconnected.

A manual traffic data interface is also needed for the SWITCH system. This interface can be used for any IC not yet on TIDE or TDAS and whenever there is a failure of a mechanized interface. The SWITCH system provides a bulk traffic data input capability.

12.2.1 General Traffic Data Requirements for the SWITCH System

The SWITCH system:

1. Provides a stand-alone pre-processor on the SWITCH system host to convert from TDAS to TIDE format for 1/1AESS, 2ESS, and 3ESS ICs.
2. Accepts mechanized input of traffic data measurements in a TIDE format for 5ESS, DMS-100, EWSD, AXE-10, DMS-10, DCO, 2ESS, 1/1A ESS, and 3ESS ICs from tape or sequential data set on the SWITCH system host.
3. For a load division, accepts manual input of traffic data measurements by measurement group.
4. Maps from data collection 11-character CLLI code to related host and remote wire centers and SWITCH system IC IDs.
5. Maps from TIDE subgroups to SWITCH system measurement groups.
6. By IC instance and equipment type (e.g., LU, DCLU), accepts a user defined load group level.
7. By IC instance and equipment type (e.g., LU, DCLU), accepts a user defined measurement group level at the load group level or higher.
8. By measurement group, retains the existing measured value until overwritten with a valid value (or one that is high or low).
9. By load group, retains the existing measured value until overwritten with a valid value (or one that is high or low).

10. If a TIDE data set contains more than one data information section for a measurement group, accepts and uses the last valid value.
11. By IC generic (e.g., 5ESS 5E7 generic), maintains and uses for validation purposes, a user defined list of valid TIDE traffic section IDs (e.g., SG, LCG, SLC, and PSPH).
12. By IC generic and TIDE traffic section ID, maintains and uses for validation purposes, the user defined:
    a. valid traffic subgroup names.
    b. valid traffic keyword ID.
13. By measurement group, normalizes to determine the average hourly measured value by dividing the total measured value by the number of hours of valid data received.
14. By load division within each IC, maintains and uses user defined validation values for normalized measurement group data received over a mechanized interface:
    a. minimum acceptable traffic value.
    b. maximum acceptable traffic value.
    c. minimum acceptable number of hours of traffic data.
15. When the load group level is lower than the measurement group level, prorates the measurement group values to load groups according to the adjusted working load on each load group.
16. By measurement group, stores and displays the current measured traffic values, accepting manual overwrites without range validation, and prorating again to load groups if they are at a lower level.
17. By load group, stores and displays the current measured traffic values, accepting manual overwrites.
18. By IC, retains the source of data (TIDE, TDAS, or Manual), date created, and date entered into the SWITCH system.
19. By load group and measurement group, retains a data source indicator (mechanized or manual).
20. By traffic data file, notifies the user when traffic data is entered, providing (via the Load Balance report):
    a. source of data, date created, and date entered into the SWITCH system.
    b. count of ICs for which at least one measurement value was received.
    c. optionally, a list of ICs by the SWITCH system IC ID and/or CLLI code for which at least one measurement value was received.

d. optionally, a list of wire centers for which at least one measurement value was received.

21. Provides a notifier when traffic data is entered, providing by measurement group, the type of validation failure (insufficient hours, high, low, invalid traffic keyword), and showing the data value and the validation parameter with which it was compared. The notifier does not provide a count or list of measurement groups by type of validation failure.

12.2.2 Definitions

Several traffic terms used in the traffic data section are defined here:

Adjusted traffic values

By load group, the best current estimate of the true load on the group, including an estimate of the pending connect usage. Adjusted traffic values are adjusted at two times:

1. When measured data values are received, new adjusted values are formed from the measured values and the existing adjusted values.
2. When inward or outward activity in the load group takes places, an adjustment is made with the amount of the adjustment depending on the service that is being added or disconnected.

Adjusted working traffic values

By load group, the adjusted usage minus the pending connect usage.

Pending connect traffic values

By load group, the sum of pending connect values using estimated CCS/PPS values per switch port.

12.2.3 Allocation from Measurement Group to Load Groups

When the measurement group level is higher than the load group level, each measurement group value needs to be prorated to its constituent load groups. This prorating is done according to adjusted working usage values, as follows:

The prorated measured load for a load group is equal to the measured load for the measurement group, times the adjusted working usage value for the load group, divided by the sum of the adjusted working usage values for all the load groups contained in the measurement group.

12.2.4 Updating Adjusted CCS/PPS Data

Before describing the formulas for updating the adjusted traffic data with measured data, there are several general requirements:

- By load group, store and be able to display the current adjusted traffic values, accepting manual overwrites.
- By load division, provide the ability to use measured data to revise the adjusted data without recalculating the picket fence.
- By load division within each IC, determine new adjusted values using the previous adjusted values.
- By load division within each IC, maintain and use a user established adjustment factor.

When measured data values are received, the adjusted values are updated using the following method for the user specified load division:

The new adjusted value for the load group is the sum of:

— the smaller of the current Adjusted Working and the new Measured usage values,

— a user defined adjustment factor times the absolute difference between the current Adjusted Working and the new Measured usage values, and

— the Pending Connect usage.

12.2.5 Quality of Measurement Summary

As the traffic data is being entered into the SWITCH system database, the following quality of measurement values are set for each measurement group found on the traffic data set, and for the corresponding load groups:

- E (Error)

  There was an error when the last measured data for this measurement/load group was received from a mechanized interface. The error occurred in the traffic data section keyword ID.

  The old measured value is retained in the SWITCH system database.

- I (Insufficient)

  The most recent measured data for this measurement/load group was received when the last data for the IC was received from a mechanized interface. It was for an insufficient number of hours.

  The old measured value is retained in the SWITCH system database.

- H (High)

The most recent measured data for this measurement/load group was received when the last data for the IC was received from a mechanized interface. It was higher than the upper limit of the valid range.

The high value is placed in the SWITCH system database but will not be used to update the adjusted traffic values.

- L (Low)

  The most recent measured data for this measurement/load group was received when the last data for the IC was received from a mechanized interface. It was lower than the lower limit of the valid range.

  The low value is placed in the SWITCH system database but will not be used to update the adjusted traffic values.

- A (Acceptable)

  The most recent measured data was either:

  1. Received over a mechanized interface when the last data was received for that IC and had no problem detected, or
  2. Entered manually.

Three dates are stored by IC. They are the measurement end date, the date the TIDE or TDAS file was created, and the date the data was entered into the SWITCH system. When any of these dates is different for different measurement groups within an IC, the most recent date is stored for the IC.

Two measurement end dates are stored for each measurement group and load group. One is the date for the last valid data for the group; it is displayed on reports.

The other measurement end date stored for each measurement and load group is for the last data received for the group. It is used by the report process to determine whether or not data was received for the group when the last data was received for the IC. If the last received measurement end date for a group is earlier than the measurement end date for the IC, the group was missing when the last data was received for the IC, and the report process will change the quality of measurement for the group to:

- M (Missing)

  The measured data for this measurement/load group was missing when the last data was received from a mechanized interface.

  The old measured value is retained in the SWITCH system database.

The report process also changes the quality of measurement indicator from an "A" to a blank, to allow the problem groups to stand out better.

Following is a summary of the quality of measurement values for each condition that the user will see on reports:

Quality of Measurement	Problem Description	Measured Value Updated	Last Valid Measurement End Date Updated	Last Received Measurement End Date Updated
M (Missing)	Not requested	No	No	No
	Invalid traffic section			
	Invalid TIDE subgroup			
E (Error)	Invalid traffic keyword	No	No	Yes
I (Insufficient)	Insufficient hours	No	No	Yes
H (High)	Too high	Yes	No	Yes
L (Low)	Too low	Yes	No	Yes
blank	No problem detected	Yes	Yes	Yes

Use of the last received measurement end date by group enables the report process to determine which groups were missing without requiring the traffic interface to traverse the entire database to determine all the groups within the IC.

12.2.6 General TIDE Data Format

The TIDE data for a SWITCH system host will be available on one or more sequential data sets, either tape or disk (if placed on the SWITCH system MVS host by file transfer).

Each data set has one header section, one data information section for each measurement group, and one trailer section. The data are in FCIF format. The TIDE formats for the SWITCH system are similar to those for INPLANS. The main difference is that the SWITCH system uses the measurement end date instead of the measurement start date. TIDE has several required fields that are not needed by the SWITCH system, and the SWITCH system must ignore these.

While a data set will generally contain data for only one SWITCH system host, it may contain data for more than one. Each data set contains the data for one or more ICs, but may not contain data for all the measurement groups in any IC. In general, a data set will contain data for only a subset of the ICs on a SWITCH system host. The data information sections for an IC may or may not be grouped together.

12.2.6.1 TIDE file attributes

The TIDE file attributes are:

- RECFM=VB
- LRECL=23470
- BLKSIZE=23474

12.2.6.2 TIDE Header Section Format

The format for the TIDE header section is:

Tag/Delimiter	Description	Format
*HDR{	Header <1,1>	
CONTRACTID	Contract Name (SWNDS)	CHAR(8)
CONTRACTVER	Contract Version (1.0)	CHAR(8)
CONTRACTDT{	Creation Date/Time/Zone <1,1>	
DATE	Date (yyyymmdd)	CHAR(8)
TIME	Time (hhmmss)	CHAR(8)
ZONE	Time Zone (GMT)	CHAR(3)
}		
ORIGINATOR	NDS Orig Building Block Logical Addr	CHAR(12)
OVERSIONID	NDS Originator Version (2.2)	CHAR(8)
FMT	Format of Output (TVP.SW)	CHAR(8)
FMTVER	Format Version (1.0)	CHAR(8)
DESTINATION	Dest Building Block Logical Addr (SW)	CHAR(12)
}%		

All of the header fields are required by TIDE but some of them are not needed by the SWITCH system.

The contract name and contract version are not required by the SWITCH system.

The creation date must be stored by IC so it can be printed on any report containing measured data. The creation date stored for an IC should be the most recent creation date for data received for that IC. If data for an IC is received with a creation date that is earlier than the creation date that has already been stored in the SWITCH system database for that IC, the data should not be entered and a notice should be sent to the user.

The creation time and time zone are not required by the SWITCH system.

The originator building block logical address and originator version must be stored by IC so the source of the traffic data can be identified on reports.

The format of the output and the format version are not required by the SWITCH system.

Normally, a TIDE data set will contain data for only one SWITCH system host and the destination building block logical address should contain the name of the SWITCH system mainframe. Because of synchronization problems that may occur, for example when wire centers are transferred from one SWITCH system host to another, a data set may contain data for wire centers in more than one SWITCH system host. Destination validation will not be performed since the current SWITCH system architecture makes it difficult to perform and since a data set will sometimes contain data for more than one SWITCH system host.

12.2.6.3 TIDE Data Information Section Format

The format for the TIDE data information section is:

Tag/Delimiter	Description	Format
*DAINF{	Traffic Data by Group and Start Date <0,N>	
STWK	Study Week (yyyymmdd)	CHAR(8)
ED	Measurement End Date (yyyymmdd)	CHAR(8)
TU	Traffic Unit	CHAR(11)
STLB	Study Label	CHAR(10)
PI	Process Interval (Minutes)	CHAR(5)
SCH	Schedule Type	CHAR(1)
SEC	Section ID	CHAR(8)
SGINF{	Sub Group Info <1,N>	
SG	Sub Group Name	CHAR(8)
SGNO#	Sub Group ID as #	CHAR(11)
}		
KWS{	Keywords Info <1,N>	
KW	TIDE Keyword ID	CHAR(16)
ME{	Measurement Info <1,N>	
ET	Measurement End Time (hhmm)	CHAR(4)
AI	Actual Time Interval Represented by MV (Minutes)	CHAR(4)
MV	Measurement Value	CHAR(11)
}		
}		
}%		

A TIDE data information section is contained in two or more records. The first record contains everything up to but not including the KWS aggregate(s). Each KWS aggregate is in a separate record. For most IC types, there is only one KWS aggregate per data information section.

The study week is required by TIDE but is not needed by the SWITCH system.

The measurement end date needs to be stored by IC for use on reports. When dates are different for different measurement groups within an IC, the most recent date is stored for the IC.

When valid data is received for a measurement group, the last valid measurement end date stored for that measurement group and any corresponding load groups needs to be updated to the value just received. The last received measurement end date is always updated.

The data collection traffic unit identifies the IC(s). The SWITCH system must map the traffic unit (CLLI code) to the relevant host and remote SWITCH system IC identifiers. In general, traffic data needs to be sent to more than one wire center when a remote has its traffic data identified by the host CLLI code but is in a different wire center than the host. Traffic data for remotes for some IC types are identified by unique CLLI codes. For most of them, however, traffic data for remote units are sent to the SWITCH system identified by the host CLLI code.

The study label is required by TIDE and used to indicate which destination and format should be used for a TIDE study request. The SWITCH system will not use the study label.

The process interval specifies the number of hours of traffic data that were requested. Currently, it should always be 600 (i.e., ten hours). No validation should be performed, however. The user will detect an error in the process interval by manually determining that it is the cause of other errors, such as frequent insufficient hours.

The schedule type is required by TIDE but is not needed by the SWITCH system.

The SWITCH system should have a user tunable table to specify, by IC generic, the valid TIDE traffic data section IDs, and for each of the valid traffic sections:

- the subgroup names expected, and
- the keyword ID expected.

The SWITCH system will use the above table for validation purposes, rejecting non-conforming data with notification to the user. When the measurement group can be determined, an invalid keyword will be indicated by an error flag in the quality of measurement field for a measurement group and the corresponding load groups.

The SWITCH system must map the subgroup numbers for a TIDE data information section into a SWITCH system measurement group. For IC types, such as the DMS-100, for which the mapping is IC instance specific, a table needs to be provided so the user can enter the mapping.

The Actual Interval (AI) will be present for "TIDE" data obtained by converting TDAS data and for TIDE data, now that TIDE 4.0 has been deployed.

Traffic normalization is done by dividing the traffic value for the measurement group by the hours measured (the AI converted from minutes to hours).

After the traffic value has been normalized, it needs to be validated against the high and low range values stored in the database for measurement groups in the load division. Whether or not the value falls within the valid range, it is stored in the database for the measurement group and, if the load group level is lower than the measurement group level, prorated to the load groups in the measurement group. If the data is valid, the measurement end date of the relevant equipment group(s) also needs to be updated. Otherwise, the date is not changed and the appropriate quality of measurement flags are set to indicate high or low.

12.2.6.4 TIDE Trailer Section Format

The format for the TIDE trailer section is:

Tag/Delimiter	Description	Format
*TLR{	Trailer <1,1>	
FSECINF{	FCIF Section Info <2,N>	
FSECTP	FCIF Section Name	CHAR(16)
FSECCT	FCIF Section Count	CHAR(11)
}		
}%		

The trailer section data are not needed by the SWITCH system but should be used to check data integrity.

12.2.7 5ESS TIDE Data

Following are the section IDs, subgroup information, and keyword information for 5ESS measurement groups. An "n" in the following FCIF examples represents a specific value for a subgroup. Since TIDE suppresses leading zeros and blanks, the actual number of characters received will vary.

The SWITCH system default measurement group tables for 5ESS generics 5E6, 5E7, and 5E8 are shown in Tables 12-1, 12-2, and 12-3. For 5E9.1 and 5E9.2, the measurement group tables are shown in Tables 12-4 and 12-5. With SWITCH System Release 1.9.1, enhancements were made to the Measurement Group Table software to allow more than one id format for a specific measurement section. With the modification, the entire row serves as the row key. Therefore, the id formats in these default tables include entries for both the "M" and "G" OE types for the IDCU, IPID, and IRT measurement sections. The 5e10 default measurement group table is shown in Table 12-6. With the advent of the "K"

OE type (ISLU2), both the "I" and "K" id formats are included for the ISLU and LGC measurement sections. The 5e11 default measurement group table is shown in Table 12-7, showing the new "E" format for the AIU measurement section. The 5e12 default measurement group table is shown in Table 12-8, showing the new "A" format for the INEN measurement section.

12.2.7.1 5ESS Line Units (LU)

Traffic measurement data for 5ESS Line Units are from traffic data section 11 (LU, Line Unit Blocking). The measurement group is the Line Unit and the Line Unit specific portion of the TIDE data information section is:

```
SEC=LU;
SGINF{SG=SM;SGNO=n;}
SGINF{SG=LU;SGNO=n;}
KWS{KW=LUUSG;...
```

With 5E7 and later generics, 5ESS Line Unit usage data is also available by Switch Group (Half Grid) from traffic data section 144 (SG, Switch Group):

```
SEC=SG;
SGINF{SG=SM;SGNO=n;}
SGINF{SG=LU;SGNO=n;}
SGINF{SG=CONC;SGNO=n;}
SGINF{SG=SG;SGNO=n;}
KWS{KW=SGUSG;...
```

Because some users may not be able to handle the volume of traffic data required to provide Switch Group measurements, all 5ESS users should have the option of using either the Line Unit or the Switch Group as the measurement group level.

12.2.7.2 5ESS Integrated Services Line Units (ISLU)

The traffic measurement data for 5ESS ISLUs are from traffic data section 49 (ISLU, Integrated Services Line Unit). The measurement group is the ISLU and the TIDE data information section will include:

```
SEC=ISLU;
SGINF{SG=SM;SGNO=n;}
SGINF{SG=ISLU;SGNO=n;}
KWS{KW=ISLUUSG;...
```

where the above measurement is for total usage on T, U, and Z cards.

With 5E7 and later generics, 5ESS ISLU usage data is also available by Line Group Controller (LGC):

```
SEC=LGC;
SGINF{SG=SM;SGNO=n;}
SGINF{SG=ISLU;SGNO=n;}
SGINF{SG=LGC;SGNO=n;}
KWS{KW=LGCUSG;...
```

Because some users may not be able to handle the volume of traffic data required to provide LGC measurements, all 5ESS users should have the option of using either the ISLU or the LGC as the measurement group level.

12.2.7.3 5ESS Digital Carrier Line Units (DCLU)

If an IC has one or more DCLUs using the DLE model, the measurement group needs to be set to the DCLU level. Otherwise it can be set to either the DCLU or RT level.

When the RT is selected as the measurement group, data will be obtained from traffic data section 20 (SLC, SLC-96 Remote Terminal Measurements). The TIDE data information section will include:

```
SEC=SLC;
SGINF{SG=SM;SGNO=n;}
SGINF{SG=DCLU;SGNO=n;}
SGINF{SG=RT;SGNO=n;}
KWS{KW=RTUSG;...
```

If the DCLU is selected as the measurement group, data will be obtained from traffic data section 21 (DCLU, DCLU Measurements). The TIDE data information section will include:

```
SEC=DCLU;
SGINF{SG=SM;SGNO=n;}
SGINF{SG=DCLU;SGNO=n;}
KWS{KW=DCUSG;...
```

12.2.7.4 5ESS Integrated Digital Carrier Unit (IDCU)

If an IC has one or more IDCUs using the DLE model, the measurement group needs to be set to the IDCU level. Otherwise it can be set to either the IDCU or RT level.

When the RT is selected as the measurement group, data will be obtained from traffic data section 138 (IRT) for 5e8. This section will also be used for 5e9.1 if BWM 94-0036 has not been implemented). The TIDE data information section includes:

```
SEC=IRT;
SGINF{SG=SM;SGNO=n;}
SGINF{SG=IDCU;SGNO=n;}
SGINF{SG=RT;SGNO=n;}
KWS{KW=IRTTOTUSG;...
```

With 5e9.2 and 5e9.1 (if BWM 94-0036 has been implemented), RT (level 3) traffic measurements are obtained from section 143 (IDCU). The TIDE data information section includes:

```
SEC=IDCU;
SGINF{SG=SM;SGNO=n;}
SGINF{SG=IDCU;SGNO=n;}
SGINF{SG=RT;SGNO=n;}
KWS{KW=IDCTOTUSG;...
```

When the IDCU is selected as the measurement group, data will be obtained from traffic data section 139 (IPID). The TIDE data information section includes:

```
SEC=IPID;
SGINF{SG=SM;SGNO=n;}
SGINF{SG=IDCU;SGNO=n;}
KWS{KW=PIDTOTUSG;...
```

12.2.7.5 5ESS IDLC Network Equipment Number (INEN)

If an IC has one or more INENs using the non-DLE model, the measurement group needs to be set to the RT level.

Data will be obtained from traffic data section 222 (T303) for 5e12. The TIDE data information section includes:

```
SEC=T303;
SGINF{SG=SM;SGNO=n;}
SGINF{SG=DNUS;SGNO=n;}
SGINF{SG=RDT;SGNO=n;}
SGINF{SG=RDTL;SGNO=n;}
KWS{KW=T3TUSG;...
```

12.2.7.6 5ESS Digital Carrier Line Unit - 5 (DCLU-5)

Although TIDE has traffic data sections for DCLU-5 (70, SLC5; and 54, DCL5), no DCLU-5 equipment has been sold and it has been discontinued by the vendor. Therefore it does not need to be supported by the SWITCH system.

12.2.7.7 5ESS Protocol Handlers (PH)

The measurement group for the PPS data is the DSLG. The measurements are the X.25 measurements from traffic data section 68 (PSPH, ISDN Packet Switching Protocol Handler) plus the Q.931 measurements from traffic data section 52 (PH, ISDN Digital Subscriber Line Group).

The SWITCH system will use the SM, SHELF, and DSLG to identify the measurement group. The reason for using the DSLG instead of the PH is that the mapping of packet port to logical DSLG remains constant. On the other hand, the mapping of packet port to physical PH varies, depending on which PH on the shelf is currently designated spare. The 5ESS IC maintains the mapping of DSLG to PH and can accept translation assignments by SM, SHELF, DSLG, and port.

The TIDE PSPH and PH traffic sections have four levels, where the fourth level is really a pseudo-level. The third level is the DSLG and the fourth is the PH, another view of the same equipment. To get the measurement value by DSLG, the measurement values by DSLG and PH must be summed over PH. Since TIDE cannot perform this summation, the SWITCH system must do it. This summation is done by the TIDE reader so the SWITCH system software will not have to do any exception processing for the PPS data.

The data information sections received from TIDE include:

```
SEC=PSPH;
SGINF{SG=SM;SGNO=n;}
SGINF{SG=SHELF;SGNO=n;}
SGINF{SG=DSLG;SGNO=n;}
SGINF{SG=PH;SGNO=n;} KWS{KW=PSPHPCKT;ME{ET=hhmm;MV=packets}}
SEC=PH;
SGINF{SG=SM;SGNO=n;}
SGINF{SG=SHELF;SGNO=n;}
SGINF{SG=DSLG;SGNO=n;}
SGINF{SG=PH;SGNO=n;}
KWS{KW=PHPKSR;ME{ET=hhmm;MV=packets}}
```

The TIDE subgroups are sent sorted in ascending order. The measured value is the number of switched packets sent or received, and one-way PPS are obtained by dividing by 7200. The SM number indicates the PSU, since there is only one PSU per SM.

When the TIDE reader encounters the first X.25 data information section for a DSLG, it needs to accumulate the PPS for other data information sections with the same SM, SHELF, and DSLG (i.e., sum over PH, where there can be up to 16 PH sections per DSLG). This summed measurement value needs to be placed in a data information section that does not include a PH subgroup. Similarly, the AIs need to be summed as well. It is the data information section with the summed PPS values (and AIs) that is sent in the contract to the SWITCH system:

```
SEC=PSPH;
SGINF{SG=SM;SGNO=n;}
SGINF{SG=SHELF;SGNO=n;}
SGINF{SG=DSLG;SGNO=n;}
KWS{KW=PSPHPCKT;ME{ET=hhmm;MV=pps}}
```

Similarly, the TIDE reader sums the Q.931 data for each DSLG over the corresponding PHs to form:

```
SEC=PH;
SGINF{SG=SM;SGNO=n;}
SGINF{SG=SHELF;SGNO=n;}
SGINF{SG=DSLG;SGNO=n;}
KWS{KW=PHPKSR;ME{ET=hhmm;MV=pps}}
```

If the traffic data request into TIDE is not set up properly, either or both of the data sets may appear more than once in the traffic data for the IC. If that occurs, for the type of PPS data received first (X.25 or Q.931), the data stored is the first value received. For the other type of PPS data, the first value received will be added to the above.

12.2.7.8 5ESS Remote Switch Modules (RSM)

Traffic measurements for RSMs are received with the host CLLI code for relevant traffic sections (LU, ISLU, DCLU, etc.).

12.2.8 DMS-100 TIDE Data

Following are the section IDs, subgroup information, and keyword information for DMS-100 measurement groups. An "n" in the following FCIF example represents a specific value for a subgroup.

The traffic measurement data for DMS-100 Line Modules and Remote Line Modules are from traffic data section 58 (LMD, Local and Remote Line Module Traffic). The LMD section also provides ISDN and IDLC measurements. The measurement group is the Line Module (or Remote Line Module) and the LM/RLM specific portion of the TIDE data information section is:

```
SEC=LMD;
SGINF{SG=LMRLM;SGNO=n;}
KWS{KW=LMTRUG;...
```

The SWITCH system default measurement group table for the DMS-100 IC is shown in Table 12-9.

The LMD used by TIDE has values 1-199 and needs to be mapped by the SWITCH system to the SWITCH system hierarchy of LCE (Line Concentrating Equipment, values 0-99) and LCM (Line Concentrating Module, values 0-1). Because the LCE and LCM pairs are not unique among host and remotes, the remote unit ID (DMS-100 site ID) also needs to be included in the mapping. Since the mapping is different for different DMS-100 IC instances (and may even change when an IC changes from one generic to another), the SWITCH system must maintain a user-entered table by IC instance to perform this mapping. This mapping is accomplished by the measurement group map, which maps TIDE groups to SWITCH system measurement groups.

The TIDE IDLC measurements are by RDT (Remote Digital Terminal), or VRT (Virtual Remote Terminal) for RDTs that are divided into logical VRTs. With the SWITCH system DLE (Digital Loop Electronics) model, the TIDE groups need to be mapped and accumulated into the level 1 SCMs (Subscriber Carrier Modules). This is done via the measurement group map, using the same logic that is used to accumulate DMS-10 network loop measurements into SWITCH system measurement group values.

An example of the DMS-100 measurement group map is provided by Table 12-10. The measurement group ID for a host measurement group is the host ID, followed by the LCE, a dash, and the LCM. For a remote measurement group, the remote ID is inserted between the host ID and the LCE (e.g., 0a00-0).

While LMTRU is defined in the keyword document as the number of lines in cp_busy or cp_busy_deload state, it is actually a CCS value because of the way the lines are scanned.

12.2.9 EWSD TIDE Data

Starting with EWSD 9.0 ICs, the originating and terminating traffic values are available separately and need to be summed for each measurement group. The SWITCH system traffic measurement group is the Digital Line Unit (DLU), which may contain up to 1024 switch ports.

There will be one TIDE record for each DLU. The data is provided by the CDLU TIDE traffic data section, with keyword DLUOUSG providing the originating traffic usage in CCS and with keyword DLUTUSG providing the terminating traffic usage in CCS. The TIDE data information section includes:

```
SEC=CDLU;SGINF{SG=DLUID27;SGNO=n;}
KWS{KW=DLUOUSG;ME{ET=hhmm;AI=mmmm;MV=orig_ccs;}}
KWS{KW=DLUTUSG;ME{ET=hhmm;AI=mmmm;MV=term_ccs;}}
```

The default EWSD measurement group table is shown in Table 12-11.

For each DLU, the SWITCH system needs to combine the DLUOUSG and DLUTUSG values.

The number of hours of traffic data (the actual interval, AI) should normally be the same for the originating and terminating traffic values. Because they can be different, however, the following method should be used to combine ("sum") the values:

1. The average originating CCS per hour is calculated by dividing the DLUOUSG MV by the corresponding AI.
2. The average terminating CCS per hour is calculated by dividing the DLUTUSG MV by the corresponding AI.
3. The average CCS per hour for the measurement group is the sum of the average originating CCS per hour and the average terminating CCS per hour.

4. The number of hours of traffic data received (to be compared with the sufficient hours threshold to determine if the traffic data should be used) is the average of the AI for the originating value and the AI for the terminating value.

The originating and terminating values should be summed by the TIDE update function (UPDLBL), not by the TIDE reader. The summation is indicated by the TIDE Keyword table. This is a table that has three columns for keywords, separated by two columns for + and - operators. The EWSD ICs (and AXE-10 ICs) use of this table would be:

```
originating_keyword + terminating_keyword
```

Another possible use would be:

```
originating_keyword + terminating_keyword -
maintenance_keyword
```

Although no IC type is known for which it would be necessary to subtract out maintenance usage in order to get the usage desired for load balance purposes, it has been suggested by Bellcore traffic data experts, that this functionality may be needed. An additional column in the table would allow the measured value to be multiplied by a constant, in case it is necessary to normalize to CCS or PPS values.

The default EWSD TIDE Keyword table is shown in Table 12-12.

Starting with Release 9.0, the EWSD IC supports integrated SLC-96 systems, and recent EWSD releases can provide measurements at the SLC system level. These RT measurements can be obtained from the SWITCH system using the TSO data set capability described in Section 12.2.21.

Siemens EWSD Release APS 13 supports a TR-303 compliant IDT. Traffic data for the IDT is provided by the CIDT TIDE measurement section with keyword ORUSG providing the originating traffic usage and with TRUSG providing the terminating traffic usage (shown in Table 12-12).

The TIDE data information section includes:

```
SEC=CIDT;SGINF{SG=IDT;SGNO=n;}
KWS{KW=ORUSG;ME{ET=hhmm;AI=mmmm;MV=orig_ccs;}}
KWS{KW=TRUSG;ME{ET=hhmm;AI=mmmm;MV=term_ccs;}}
```

12.2.10 AXE-10 TIDE Data

Data at the SWITCH system measurement group level, the Extension Module Group (EMG), is available in the AXE-10 release 5.0 and later ICs. The EMG serves up to 2048 subscribers; it can be located at the host or in a remote. The originating and terminating CCS usage measurements are available separately and need to be combined for each measurement group. A multiplier is necessary to convert the data to CCS.

There is one TIDE record for each EMG. The measurement data is sent with record numbers rather than the ID of the EMG to which the data belongs. Therefore, a Measurement Group Map Table must be provided for AXE to map record numbers to their associated EMG IDs. Also, the exception table field of the Measurement Group Table must indicate that the Measurement Group Map Table is to be accessed. The general process in the SWITCH system is similar to that for the EWSD IC, where originating and terminating values also need to be combined.

The TIDE data information section includes:

```
SEC=SSD;SGINF{SG=TSB;SGNO=n;}
KWS{KW=EMGIUSG;ME{ET=hhmm;AI=mmmm;MV=orig_ccs;}}
KWS{KW=EMGOUSG;ME{ET=hhmm;AI=mmmm;MV=term_ccs;}}
```

The default AXE measurement group table is shown in Table 12-13. It is used to access the Measurement Group Map Table (Table 12-14) and the TIDE Keyword Table (Table 12-15).

12.2.11 DMS-10 TIDE Data

TIDE traffic data for the DMS-10 is per "network loop", an internal construct of the DMS-10 IC. The TIDE to SWITCH system mapping has two features of special interest:

1. Some measurement groups require aggregation over TIDE subgroups, requiring mapping and summing, and
2. Some measurement group levels are between SWITCH system hierarchy levels, utilizing SWITCH system supplementary group rules tables.

Traffic data is not now generally used for load balancing DMS-10 ICs. This is partly due to a lack of a mechanized interface between TIDE and COSMOS and partly because the DMS-10 traffic measurements available are not ideal for load balancing. DMS-10 load balancing in COSMOS uses theoretical CCS per service estimates (called estimated CCS per main station values), summed over the services in a load group. Because of the quality of the DMS-10 traffic measurements, some BCCs may choose to continue balancing their DMS-10 ICs using adjusted traffic values based entirely on theoretical traffic values.

This section describes the measurement groups and mapping that should be used by the SWITCH system when it utilizes the available traffic measurements to make load directed assignments. The mapping is accomplished by the measurement group map, which maps TIDE groups (DMS-10 network loops) to SWITCH system measurement groups.

The SWITCH system is able to accept and use traffic measurements for the following four DMS-10 equipment types:

- Line Concentrating Module (LCM)
- Remote LCM (RLCM)
- Host Peripheral Equipment Shelves (PESs)
- Remote PESs

Although the SWITCH system can inventory and assign SLC-96 switch ports using an SCM-10S module, it will not be able to use traffic measurements for this equipment. This is because the network loops for the SCM-10S terminate on the host module, while the bay number which provides the first two digits of the switch port ID is a bay at a remote site.

The structure of the DMS-10 traffic data is related to the hardware structure of the DMS-10 IC. The DMS-10 traffic data is from the DMS-10 network shelves. There is one TIDE data information section for each network loop (i.e., one for each DS-30A loop and one for each MLI loop). Each "loop" is an internal call-carrying component of the DMS-10 IC. In some cases, a DS-30A/MLI loop corresponds to a unique set of switch ports; in other cases, it does not. Therefore, these loops need to be mapped to SWITCH system measurement groups.

The network loop usage values include system data such as audits. These audits badly inflate peg counts but, because of their short holding times, they may not introduce excessive distortion in the CCS usage values available for use by the SWITCH system. A usage measurement value is defined as usage starting when the DMS-10 software reserves a diloop timeslot for a network connection and ending when it is returned to the idle state.

Maintenance usage measurements are also available but these measure the amount of time that the loop is placed in the maintenance status (faulty, man-made-busy, system-made-busy, or indirectly out-of-service). These maintenance values are not included in the standard usage measurements and do not need to be subtracted out.

To use the traffic measurements for load directed assignments in the SWITCH system requires summing over the DS-30A/MLI loops serving a unique set of switch ports. For the data to be of maximum value, each unique set of switch ports is chosen to be as small as possible.

12.2.11.1 DMS-10 DS-30A Interface

DS-30A loops are used for DMS-10 LCEs, SCM-10Ss, SCM-10Us, and LCE-based remotes (RLCMs, RSLM shelves, and RSLEs).

DS-30A loop data is provided by the DSA TIDE traffic data section, with keyword DSAUSG providing the DS-30A usage value. The TIDE data information section includes:

```
SEC=DSA;SGINF{SG=DSAID;SGNO=n;}
KWS{KW=DSAUSG;ME{ET=hhmm;AI=mmmm;MV=ccs;}}
```

12.2.11.2 DMS-10 Multiplex Loop Interface

MLI loops are used for DMS-10 analog peripheral shelves and several types of digital shelves (OCMs, SCMs, and DCMs).

MLI loop data is provided by the MLI TIDE traffic data section, with keyword MLIUSG providing the MLI usage value. The TIDE data information section includes:

```
SEC=MLI;SGINF{SG=MLIID;SGNO=n;}
KWS{KW=MLIUSG;ME{ET=hhmm;AI=mmmm;MV=ccs;}}
```

12.2.11.3 DMS-10 Reference Data Tables

The DMS-10 IC default measurement group table is shown in Table 12-16.

For DMS-10 equipment, the mapping from TIDE network loop to SWITCH system measurement group can be accomplished with the measurement group map. This is an exception table listed in the DMS-10 measurement group table. Because the mapping is specific to the hardware in the IC, an instance of the measurement group map is required for each DMS-10 IC.

The measurement group map can have up to 160 rows, one for each network loop in the DMS-10 IC. The TIDE network loops are integers, but some may be larger than 160. The mapping for DSA and MLI loops can be performed in a single table since a DMS-10 IC provides unique loop numbers over the combined set. TIDE also provides pack measurements in the DSA and MLI traffic data sections but these are not needed by the SWITCH system and are to be ignored.

Since supplementary group rules are used where needed, either the primary multiple group ID or the secondary multiple group ID can be used to specify the SWITCH system measurement group; the SWITCH system traffic measurement data interface does not need to work directly with supplementary group rules tables.

Table 12-17 provides an example of a DMS-10 measurement group map. There are four groups of rows in the example table, with the groups separated by double lines. The four groups are for host analog peripheral equipment, remote analog peripheral equipment, host LCAs, and remote LCAs. The measurement group ID is as follows:

- For a host analog measurement group, it consists of the host ID, two digits for the peripheral equipment bay, a dash, a digit for the shelf, and "pe".
- For a remote analog measurement group, the remote ID is inserted between the host ID and the PE bay.
- For a host series 400 LCA, it consists of the host ID, two digits for the LCE, a dash, a digit for the LCA, and a lower case "L".
- For a remote LCA, the remote ID is inserted between the host ID and the LCE.

12.2.11.4 DMS-10 Traffic Summation Method

The number of hours of traffic data (the actual interval, AI) should normally be the same for all of the DS-30A loops or MLI loops that need to be summed to get a measurement group value. They can be different, however. Because of that, the following method should be used to combine ("sum") the values for each DMS-10 equipment type for which such aggregation is necessary:

1. The average usage CCS per hour for each loop (DSAUSG or MLIUSG) is calculated by dividing the TIDE measurement value (MV) by the corresponding AI.
2. The total CCS per hour for the SWITCH system measurement group is the sum of the TIDE loop averages.
3. The measurement group number of hours of traffic data received (to be compared with the sufficient hours threshold to determine if the traffic data should be used) is the average of the AIs for the corresponding loops.

12.2.11.5 DMS-10 Analog Peripheral Equipment (PE)

Analog Peripheral Equipment is series 100/200/300 hardware that can still be used with 400-series software to provide line switch ports. A Peripheral Equipment Bay (PE) has 6 Peripheral Equipment Shelves (PES). The PE provides the first two digits of the switch port ID (SWITCH system level 1) and the PES provides the third digit (SWITCH system level 2).

The SWITCH system measurement group is an MLI loop, which serves two Peripheral Equipment Shelves. A DMS-10 IC can have up to 72 of these measurement groups (24 PEs, times 6 PESs per PE, divided by 2 PESs per MLI loop).

For analog peripheral equipment lines, one MLI loop provides 112 switch ports (2 PESs, times 14 packs per PES, times 4 circuits per pack).

The MLI loop falls between SWITCH system hierarchy levels. There are 2 PESs per MLI loop, and 3 MLI loops per PE. Since the MLI loop is the SWITCH system measurement group, PESs are mapped to MLI loops by a SWITCH system supplementary group rules table.

A Remote Equipment Module (REM) enables DMS-10 Peripheral Equipment to be remotely located by extending the MLI loops. One REM can have up to four Office Carrier Modules (OCM). Each OCM is served by one MLI loop and serves two remote shelves. The measurement group is therefore the same as for analog peripheral equipment at the host. That is, it is a MLI loop, which in this case also corresponds to an OCM in the host (and a corresponding RCM in the remote). The measurement group ID has the same format as for the host except that it is preceded by the remote ID.

12.2.11.6 DMS-10 Series 400 Equipment

Standard series 400 equipment consists of LCMs and RLCMs.

DMS-10 Line Concentrating Equipment (LCE) is 400-series hardware to provide analog subscriber lines. An LCE consists of two LCMs. Each LCM consists of two Line Concentrating Arrays (LCA). The LCE provides the first two digits of the switch port ID (SWITCH system level 1). While the LCM is not a part of the SWITCH system hierarchy, the LCA is. The LCA is a shelf of equipment; it provides the third digit of the switch port ID (SWITCH system level 2).

The LCM is a measurement group since it corresponds to the smallest set of switch ports for which traffic data can be obtained.

An LCM provides 640 switch ports (20 Line Subgroups, times 32 circuits per Line Subgroup). The network interface consists of four DS-30A loops. Therefore, DS-30A loops need to be mapped to LCMs and the traffic measurement values for the four loops serving an LCM need to be summed.

Since the LCM measurement group falls between SWITCH system hierarchy levels, LCAs need to be mapped to LCMs by a SWITCH system supplementary group rules table.

One way of providing standard LCE line cards remotely is via the remote RLCM, which is just like the host LCM with one exception. It is a SWITCH system measurement group which can be served by either 2 or 4 DS-30A loops. The RLCM traffic measurements are treated the same whether it is located in a remote LCE bay or in an OPM cabinet. The measurement group ID has the same format as for the LCM except that it is preceded by the remote ID.

12.2.12 DCO TIDE Data

The DCO IC does not require any special traffic data treatment by the SWITCH system. It does not require that originating and terminating values be summed and it does not require any special mapping or aggregating.

Through DCO Release 17.1 ICs, the measurement group had to be at the Line Switch level, since Line Group measurements were only available on an exception basis. With DCO Release 17.2 ICs, however, an entire office can be measured at the Line Group level. The SWITCH system will support both measurement levels.

The traffic data described below are used for hosts, remotes (including the RLS4000), and SLC systems (with an LG providing 90 lines per SLC system). The DCO IC does not support ISDN.

For DCO IC 17.2 and later generics, the default SWITCH system traffic measurement group is the Line Group, containing 90 switch ports. There will be one TIDE record for each Line Group, called LG in the SWITCH system and called RLG in TIDE (for Remote/

regular Line Group). The data is provided by the RLG TIDE traffic data section, with keyword RLGUSG providing the sum of originating and terminating traffic usage in CCS. The TIDE data information section includes:

```
SEC=RLG;SGINF{SG=RLS;SGNO=n;}SGINF{SG=RLG;SGNO=n;}
KWS{KW=RLGUSG;ME{ET=hhmm;AI=mmmm;MV=ccs;}}
```

For DCO IC 17.1, the default SWITCH system traffic measurement group is the Line Switch, containing 1080 switch ports. In this case, there will be one TIDE record for each Line Switch, called LLS (Local Line Switch) or RSF (Remote Line Switch Frame) in the SWITCH system and called RLS in TIDE (for Remote/regular Line Switch). The data is provided by the RLS TIDE traffic data section, with keyword RLSUSG providing the sum of originating and terminating traffic usage in CCS. The TIDE data information section includes:

```
KWS{KW=RLSUSG;ME{ET=hhmm;AI=mmmm;MV=ccs;}}
SEC=RLS;SGINF{SG=LS;SGNO=n;}
```

It is possible, although it does not seem likely, that a user may want to choose the Line Switch as the measurement group level even when DCO Release 17.2 Line Group measurements are available. Since TIDE can provide measurements at either level for 17.2, the user could change from the default level to the higher level if desired.

Table 12-18 shows the default DCO measurement group table, and Table 12-19 shows the default for generic 17.1 (and 16.0 and 17.0).

12.2.13 1/1A ESS 'TIDE' Data

The 'TIDE' data for 1/1A ESS ICs is actually TDAS data that has been converted to the TIDE format by a preprocessor described in a later section. Following are the section ID, subgroup information, and keyword information for 1/1A ESS measurement groups. Lower case letters in the following FCIF example represent specific values.

The traffic measurement data for 1/1A ESS hosts are from the LLN (Line Link Net) section. The measurement group is the concentrator and the relevant portion of the TIDE data information section is:

```
SEC=LLN;SGINF{SG=LLN;SGNO=n;}SGINF{SG=LSF;SGNO=n;}
SGINF{SG=BAY;SGNO=n;}SGINF{SG=CONC;SGNO=n;}
KWS{KW=LLNUSG;ME{ET=hhmm;AI=mmmm;MV=ccs;}}
```

The first part of the data information section, up to but not including the keyword section, is in one record. The keyword section is in a separate record.

Table 12-20 shows the 1/1A ESS default measurement group table.

12.2.14 2ESS TIDE Data

2ESS traffic data is available from either TDAS or TIDE. For data received from TIDE, the measurement group identification is encoded in the TIDE keyword and all of the usage data for an entire office is sent in one large data information section. The TIDE Reader will break up this large section into smaller 'TIDE sections', one per measurement group, with the measurement group identified by 'TIDE subgroups'. This will allow it to process normally in UPDLBL. Similarly the TDAS/TIDE Format Converter will convert the TDAS format to the 'TIDE' format.

TIDE data for most IC types consists of one data information section for each measurement group, with the measurement group identified by subgroup information aggregates. TIDE data for the 2ESS ICs, however, consists of one large data information section for the entire IC, with the measurement groups identified by keywords. To minimize the special processing required in the SWITCH system, a 2ESS 'TIDE' format has been defined which is like the format TIDE uses for most IC types.

The TIDE Reader will convert a TIDE data information section into the 'TIDE' format expected by the SWITCH system UPDLBL (update load balance) contract processor.

- For a 2ESS IC with 2:1 concentration, the measurement group is at the concentrator level, SWITCH system level 3.
- When the concentration ratio is 4:1, a measurement group consists of two concentrators, one from each of two concentrator groups. Because of the way the measurement groups are named in the SWITCH system, the traffic data entry process can map the 4:1 TIDE measurement groups to SWITCH system measurement groups just as if the concentration ratio were 2:1, and we still refer to the measurement group being at the concentrator level.

Since no load balance data is available for the 2ESS remotes, there is no measurement group level for the remotes.

There is one TIDE data information section for an IC. The TIDE traffic data section is NW (Network B-Link Usage). The keywords are NWxxGRPyy, which identify the usage in CCS for LTN xx and B-Link group yy, where the xx and yy ranges are described in the 2ESS TDAS format section.

For a maximum size 2ESS IC, there are 480 keywords (15 times 32). Because the subgroup information is encoded in the keyword, there are no TIDE subgroup information aggregates. The TIDE data information section includes:

```
SEC=NW;
KWS{KW=NW00GRP00;ME{ET=hhmm;AI=mmmm;MV=ccs;}}
KWS{KW=NW00GRP01;ME{ET=hhmm;AI=mmmm;MV=ccs;}}
  ...
KWS{KW=NW14GRP31;ME{ET=hhmm;AI=mmmm;MV=ccs;}}
```

A TIDE data information section is broken into more than one record. The first part of the data information section, up to but not including the first keyword section, is in one record. Then each keyword section is in a separate record.

The TIDE data information section only includes keyword sections for those measurement groups that are installed; usually there are fewer than 480 keyword sections.

The actual interval (AI) will appear in the 2ESS TIDE data prepared by the TDAS to TIDE format converter, just as for the 1/1A ESS. With TIDE 4.0, tapes received directly from TIDE also have AI.

12.2.15 2ESS 'TIDE' Data

The 2ESS 'TIDE' format described in this section is similar to the format that TIDE uses for most IC types. It is the output format used by both the Format Converter and the TIDE Reader.

There will be one 'TIDE' data information section for each SWITCH system measurement group. Each measurement group is identified by subgroup information sections and can be handled by the SWITCH system contract processor without the aid of an exception table.

Each 'TIDE' data information section includes:

```
SEC=SWITCHNW;
SGINF{SG=LTN;SGNO=ltn;}
SGINF{SG=CG;SGNO=cg;}
SGINF{SG=MG;SGNO=mg;}
KWS{KW=MGUSG;ME{ET=hhmm;AI=mmmm;MV=ccs;}}
```

The first part of the data information section, up to but not including the keyword section, is in one record. The keyword section is in a separate record.

The tags were named as follows:

1. The section name, SWITCHNW, was selected to indicate that this is the NW section as modified by the SWITCH system.
2. The first level subgroup name is LTN (Line Trunk Net) to correspond with the SWITCH system level 1.
3. The second level subgroup name is CG (Concentrator Group) to correspond with the SWITCH system level 2.
4. The third level subgroup name is MG (Measurement Group) to indicate that it corresponds with the default SWITCH system measurement group (consisting of 1 or 2 concentrators).
5. The keyword that applies to all 2ESS 'TIDE' data information sections is MGUSG, the measurement group usage (the usage for 1 or 2 concentrators).

For KW=NWxxGRPyy, the rules for determining the subgroup values are:

1. ltn = xx
2. cg = integer [(yy)/8]
3. mg = (yy) mod 8

Table 12-21 shows the 2ESS default measurement group table. Because the 'TIDE' data is subgroup-identified, with one data information section per measurement group, there is no need for an exception table.

12.2.16 3ESS 'TIDE' Data

While some 3ESS traffic data is available now from TIDE, the load balance data is not. It is unlikely that this data will ever be available from TIDE, since the BCCs would have to fund the changing of the data to a different traffic data collection schedule. Because of that, a 'TIDE' format has been defined that is compatible with the SWITCH system. The Format Converter will convert the 3ESS TDAS data into the 'TIDE' format for entry into the SWITCH system.

The 'TIDE' format should have one data information section for each concentrator. It will use traffic section CONC (Concentrator), keyword CONCUSG (Concentrator Usage), and subgroups CG (Concentrator Group) and CONC (Concentrator). The relevant portion of a 'TIDE' data information section will look like:

```
SEC=CONC;
SGINF{SG=CG;SGNO=xx;}SGINF{SG=CONC;SGNO=y;}
KWS{KW=CONCUSG;ME{ET=hhmm;AI=mmmm;MV=ccs;}}
```

The first part of the data information section, up to but not including the keyword section, is in one record. The keyword section is in a separate record.

Table 12-22 shows the 3ESS default measurement group table. The 3ESS SWITCH system measurement group table needs to have just one entry, similar to the table for the 1ESS ICs. No exception table is required.

12.2.17 General TDAS-to-TIDE Data Format Conversion

TDAS provides traffic data in a sequential data set, intended for use by COSMOS. The TDAS record format is a fixed-fielded 48-byte record. Most companies use tapes for the TDAS data but at least one company has developed a file transfer process to provide the data for COSMOS on disk.

In order for the SWITCH system to have only one mechanized traffic data interface (a tag-value interface) a pre-processor needs to be built to convert from the TDAS data format to the TIDE data format. This conversion needs to be provided for 1/1A ESS, 2ESS, and 3ESS ICs.

To minimize data transfer, the TDAS-to-TIDE format converter should run on the SWITCH system MVS host. The TDAS-to-TIDE format converter will accept a TDAS data set (tape or disk file) and will produce a TIDE format file on the SWITCH system MVS host.

If a TDAS data set contains traffic data for more than one SWITCH system host, it will be sent to each relevant SWITCH system host for conversion by a TDAS-to-TIDE format converter on each SWITCH system host. The TDAS-to-TIDE format converter will always convert the entire TDAS data set, without checking to see which ICs are on the local SWITCH system host.

Traditionally, the TDAS file creation date has been obtained from the tape standard label. Because a data set on disk does not have this standard label, the measurement end date of the first valid data record will be used as the TDAS file creation date. For consistency, the creation date will be set to the first measurement end date even for tapes that do have a standard label.

12.2.17.1 TDAS Record Format

The first three records on a TDAS tape with a standard label are 80-byte header records. These are not used by the SWITCH system.

TDAS data are in 512-byte blocks. Each contains ten 48-byte records, followed by a pad of 32 blanks. The format for the 48-byte TDAS record is:

Bytes	Description	Comments
1-11	CLLI code	IC ID, unique in United States (city, state, building, and traffic unit)
12-14	DCU code	Data Collection Unit (Ignored by COSMOS)
15-18	DCD number	Data Collection Device Number (Ignored by COSMOS)
19-21	User ID	Traffic measurement request code (03x, ignored by COSMOS)
22-25	End time	End time of data collection (e.g., 1500 for 1 p.m. to 3 p.m.)
26-30	End date	Julian date for which last data was requested (e.g., 90002 for 1/2/90)
31-33	Office type	IC type (e.g., 1ES for 1ESS ICs)
34-38	EMC (Equipment Measurement Code)	Measurement group ID (see 1ESS example below)

Bytes	Description	Comments
39	TUR flag	Always 1, indicating 100 second scans
40-45	CCS data	Total CCS for the measurement group for the week
46-48	Number of scans	36 times the number of hours of measurement data in CCS data field (e.g., 288 for 8 hours of data)

The TDAS file has one trailer record containing nines in the first eighteen bytes, followed by the record count and padded with nines.

12.2.18 1/1A ESS TDAS-to-TIDE Format Conversion

For a 1/1A ESS main (i.e., host), the TDAS measurement group ID is wwxyz, where:

A0 < ww < A9 indicates line link net 0 to 9

B0 < ww < B9 indicates line link net 10 to 19

20 < ww < 29 indicates line link net 20 to 29

30 < ww < 39 indicates line link net 30 to 39

0 <= x <= 7 indicates line switch frame 0 to 7

0 <= y <= 2 indicates bay 0 to 2

0 <= z <= 7 indicates concentrator 0 to 7.

The SWITCH system will not expect to see fields that are not used by the SWITCH system. Therefore, only those fields required by the SWITCH system should be placed in the TIDE format file. All of the data items are to be specified as character data, with leading blanks and zeros stripped. See the section on 1/1A 'TIDE' data for the maximum character count for each field.

The items to be placed in the TIDE format header for the 1/1A ESS are:

— DATE in CONTRACTDT - The date to be placed in the contract date field is the measurement end date obtained from the first valid data record, converted from the Julian date format to the TIDE yyyymmdd format.

— ORIGINATOR - "TDAS" to indicate that the source of the data is TDAS.

— OVERSIONID - The originator version should be set to the version number of the TDAS-to-TIDE format converter.

The items to be placed in the TIDE format information sections for the 1/1A ESS are:

— ED - The measurement end date is the TDAS end date, converted from Julian to yyyymmdd.

— TU - The traffic unit is the 11-character TDAS CLLI code.

— PI - The process interval should be set to "600" to indicate that 10 hours of data were requested.

— SEC - The section ID should be set to "LLN" to indicate that the data is for Line Link Nets.

— Four SGINF aggregates, determined from parsing the TDAS EMC, as follows:

1. Line Link Net:
   — SG - "LLN"
   — SGNO - the line link net number (0 through 31)
2. Line Switch Frame:
   — SG - "LSF"
   — SGNO - the line switch frame number (0 through 7)
3. Bay:
   — SG - "BAY"
   — SGNO - the bay number (0 or 1 for 2:1, 0 or 2 for 4:1)
4. Concentrator:
   — SG - "CONC"
   — SGNO - the concentrator number (0 through 7)

— KW - The TIDE keyword should be set to "LLNUSG".

— ET - The measurement end time (hhmm) should be set to the TDAS end time.

— AI - The actual interval, the hours measured (hhmm), should be set to TDAS number of scans divided by 36.

— MV - The measurement value should be set to the TDAS CCS data value.

The items to be placed in the TIDE format trailer section for the 1/1A ESS are:

Two FSECINF aggregates:

1. The header data:
   — FSECTP - "HDR" to indicate header section.
   — FSECCT - "1" to indicate one header section.
2. The data information section data:

— FSECTP - "DAINF" to indicate data information sections.

— FSECCT - A count of the number of data information sections on the file.

12.2.19 2ESS TDAS-to-'TIDE' Format Conversion

The TDAS data items are the same as for the 1ESS ICs except for the Office Type (bytes 31-33), which is "2ES", and the Equipment Measurement Code (EMC, bytes 34-38), which is:

Wxxyy, where W = C if the concentration is 2:1, and W = E if 4:1,
00 <= xx <= 14 gives the Line Trunk Net (LTN), and
00 <= yy <= 31 gives the B Link (concentrator group and concentrator).

The format conversion is similar to that for the 1ESS ICs. It is recommended that the Format Converter convert to the 'TIDE' format shown in the preceding section instead of to the true TIDE format. This is because:

1. it is more similar to the conversion used for the 1/1A ESS and for the 3ESS,
2. the TIDE Reader can accept either TIDE or 'TIDE' format, and
3. it results in less overall processing.

12.2.20 3ESS TDAS-to-'TIDE' Format Conversion

The TDAS data items are the same as for the 1ESS ICs except for the Office Type (bytes 31-33), which is "3ES", and the Equipment Measurement Code (EMC, bytes 34-38), which is:

E2xxy, where 01 <= xx <= 15 gives the A-link Net (Concentrator Group), and
0 <= y <= 1 gives the Concentrator.

The format conversion is similar to that for the 1ESS ICs. As with the 1ESS ICs, there is one 'TIDE' data information section for each measurement group. Each set of TDAS EMC xx and y values is entered into corresponding 'TIDE' subgroup numbers, as described in the previous section. Any leading zero on an "xx" value should be suppressed.

12.2.21 TSO Traffic Data Sets

The SWITCH system can accept traffic usage measurements that are not for measurement groups. These measurements are stored in TSO data sets (not the SWITCH system database), where they can be printed by the user as desired. These TSO data sets can be used to obtain remote terminal usage from the SWITCH system for EWSD ICs where the measurement and load groups need to be at the DLU level. They can also be used for 5ES

ICs to obtain RT usage when the measurement group is set to the IDCU or DCLU level for the DLE model. The SWITCH system can accept an asterisk placed in the ID format column of the measurement group table. When the UPDLBL contract processor encounters traffic data for an IC, with an asterisk in the ID format column, it writes that traffic data to a TSO data set for that IC. The TSO data set has a line for each TIDE traffic section, containing:

- IC (TIDE Traffic Unit, 11-character CLLI code)
- the group (the TIDE subgroups, e.g., DLU, SHELF, and MOD (mode))
- measurement end date
- number of hours measured (the TIDE actual interval divided by 60)
- measured CCS (the TIDE measurement value divided by the number of hours measured)

The user enters via JCL the highest one to four level(s) of the name to be used for all the TSO traffic data sets (e.g., tkstx05.ewsdrpt). Each IC will have its traffic data stored in a separate TSO data set, with the data set name distinguished by concatenating the internal wire center ID (e.g., hl) and the IC number (e.g., 1), separated by "@". For this example, the data set name would be:

```
tkstx05.ewsdrpt.hl@1
```

Each time new traffic data is read in for an IC, any new traffic data indicated by an asterisk will be appended to any data already stored in the TSO data set. The user will delete the file when it is no longer wanted. To obtain the traffic data history for an IC since the last time the file was deleted, the user will cause the TSO data set for that IC to be printed.

If the IC has remotes in other wire centers, the traffic data for the IC will be shown in a data set for each wire center for which it has a remote.

As an example, to use this feature to obtain an EWSD RT report, the user needs to add a line for the TIDE measurement section *slci* to the EWSD measurement group table and the EWSD TIDE keyword table. For this measurement section, an asterisk is placed in the ID format column of the measurement group table.

EWSD Measurement Group Table
measurement group (Instance = ewsd) (Scope = del/global)

meas sect	TIDE keyword	exception table	id format	subgrp1	subgrp2	subgrp3
cdlu	-	TIDE keyword	1110	dluid27		
slci	-	TIDE keyword	*	dlu	shelf	mod

EWSD TIDE tide keyword (Instance = ewsd) (Scope = del/global)						
TIDE Measurement Section	Keyword 1	+/-	Keyword 2	+/-	Keyword 3	Mult. by
cdlu	dluousg	+	dlutusg			
slci	slcusg	+	slctusg			

Following is an example of the TSO traffic data set for EWSD RTs.

IC		Group		Meas. end date	Hrs	Meas. CCS
CITYSTWCDS5	10	4	1	19940520	10	173
CITYSTWCDS5	10	5	1	19940520	10	156
CITYSTWCDS5	10	6	1	19940520	10	0
CITYSTWCDS5	20	4	1	19940520	10	195
CITYSTWCDS5	20	5	1	19940520	10	207
CITYSTWCDS5	20	6	1	19940520	10	0
...						

Limitations of the TSO traffic data sets are that:

- they require the user to print TSO data sets,
- they do not provide nicely formatted reports (e.g., they are not paginated), and
- estimated CCS, load factor, and capacity are not available because the groups are not load groups.

12.3 Translations Synchronization

12.3.1 Introduction

The SWITCH system is the repository and steward of corporate translation data. Prior to release 1.6 the only sources for translation data were SOAC and the ULBB. In release 1.6 and later, the SWITCH system can receive translation data from an IC. Translation Synchronization is the process of converting an extract of translation data from a stored program control intelligent controller (IC) into a defined contract format, and then processing that contract to audit or update translation data in the SWITCH system.

Translation Synchronization is desirable prior to a Dial Transfer, to insure that each customer's translations are correct before being moved to the new IC. Translation Synchronization may also be desirable after a conversion from COSMOS if all translations were not being stored in COSMOS.

Translation Synchronization was introduced in SWITCH System Release 1.6 for the Lucent Technologies 1/1AESS IC. Currently, only the 1/1AESS is supported, which takes care of a large majority of the anticipated Dial Transfers. [8]For SWITCH System Release 1.6.5, a generic interface that can support additional IC types is defined. Since the interface is generic and external, any external system containing accurate translation data could be used as a source, such as a BCC's CRIS system. Except for the 1/1AESS ICs, Bellcore will not provide the software to create the formatted contracts from the IC data. This reformatting can be done locally or by vendors.

This section presents the SWITCH system translation database synchronization process flow, details the requirements for the UPDTRN contract processor, which will do the comparisons and/or updates to the database, specifies the UPDTRN contract which provides the data for the Contract Processor, and introduces the UPDTRN Contract Auditor, which may be used as an output checker by a vendor developing extract processes for other IC types.

12.3.2 Background

The LIB69 tape replaces the COSMOS Database Load (DBL) tape. The SWITCH system stores and acts as steward for corporate translation data. Due to the fact that COSMOS did not store all translation data, the DBL tape did not include all the data. The LIB69 tape is commonly used by the TIRKS system. The LIB69 tape format is documented in Lucent Technologies Translation Guide for the 1/1A. [9]The LIB69 tape was analyzed and shown to contain all of the required translation data.

The LIB69 tape reader process converts the TG-1A format to an FCIF contract (specified below in Section 12.3.5). This UPDTRN contract is defined using a set of "generic" translation terms which will be standard for the UPDTRN contract.

The UPDTRN contract processor supports all the ICs supported by the SWITCH system. The LIB69 tape reader process supports the 1/1AESS IC only. Additional work would be required by a BCC or a third party vendor to develop tape readers for other IC types.

8. Most of the dial transfer activity is taking place in connection with moving off old 1/1AESS ICs onto newer technology ICs.

9. TG-1A, Translations Guide 1 ESS and 1A ESS Switch - 2 Wire, Lucent Technologies, March 1992.

12.3.2.1 Translation Data In the Database

Translation data in the SWITCH system database are represented as tag value pairs, or as attributes within one or more network units. For the most part, translation data is stored on the translation edge unchanged from the SOAC input contract. The UPDTRN contract represents a new path for translation data to enter the SWITCH system database and the representations of the data in the database should be consistent with data received from SOAC.

The BCCs have the ability to customize the SOAC tables and the resultant Custom Calling Features (CCFs). A problem could occur when a feature, stored in the SWITCH system database from SOAC, differs from the way the same feature is represented in the UPDTRN contract.

To handle this problem, reference tables are needed to transform tag values from the "generic" form to a BCC user specific form. See the process flow Section 12.3.3 below for more details.

Another problem occurs if SOAC sends packaged data. Packages are used as a shorthand for service order writers to specify a standard group of custom calling features. COSMOS accepts packages and expands them into their individual components, a process referred to as unbundling. COSMOS must be able to unbundle because it is responsible for sending Recent Change Words directly to MAS in some cases.

The SWITCH system will not be directly communicating with MAS and will, instead, send translation data to SOAC to be forwarded to MAS. This is known as Translation Redundancy Management (TRM) and is described in Section 14.

In order to preserve the integrity of the translation data in the SWITCH system database, packages should be expanded or unbundled before they are sent to the SWITCH system. This practice will allow the SWITCH system to process service orders that remove individual features independently from the other features in a package, a capability that COSMOS has today, and will allow the SWITCH system to compare the translation data recovered from an IC directly with that same data in the database without regard to how that data came to be placed into the database.

If a BCC wants the SWITCH system to correctly store and retrieve translation data, the BCCs SOAC USOC table should be modified to expand package USOCs to the individual features before that data is sent to the SWITCH system.

This change to the SOAC USOC table should not impact current COSMOS functionality and can be done well in advance of the conversion to the SWITCH system. This needs to become part of the SOAC planning process in advance of the transition from COSMOS to the SWITCH system.

12.3.2.2 LTID Data in the Database

Logical Terminal Identifiers (LTIDs) are used by DMS ICs to uniquely identify Basic Rate ISDN service appearances. LTIDs are treated like equipment in the SWITCH system database. The UPDTRN Contract Processor has the ability to load LTIDs into the database. This would be useful during a conversion from COSMOS to the SWITCH system of a wire center with DMS ISDN equipment.

12.3.3 Translation Synchronization Process Flow

The Translation Synchronization process for the 1/1AESS starts with a binary dump of translation data from the IC. For other IC types, the process starts with a file of UPDTRN contracts. The process culminates with:

1. An audit report that details where the database and the IC differ or,
2. An updated database, where most if not all circuits have translation data and LTIDs that match what is stored in the IC.

What follows is a more detailed look at the process. See Figure 12-1 for an overview of the process flow.

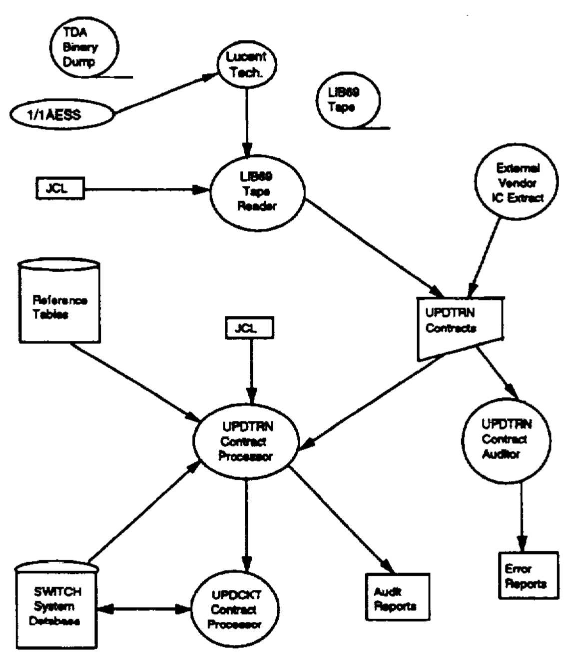

Figure 12-1. Process Flow

12.3.3.1 Dumping the IC's Memory

The BCC is responsible for dumping the contents of the IC's memory (a TDA dump for a 1/1A) to tape. This IC memory representation must be converted to a LIB69 tape by Lucent Technologies, before it can be processed by the SWITCH system.

12.3.3.2 Reading the LIB69 Tape

The SWITCH system is providing a LIB69 tape reader that will convert the 1/1A ESS LIB69 data into FCIF UPDTRN contracts. This does not exclude third party solutions that could read an IC and produce an UPDTRN contract. Third party solutions are required for IC types other than the 1/1AESS.

12.3.3.3 Generating Generic UPDTRN Contracts

The contract produced will have a single "generic" representation for customer features. IC translations data will be represented in the contract by <fid tag>=value or by CCF=value. Bellcore standard FIDs or CCF values will be used.

12.3.3.4 Generating User Specific UPDTRN Contracts

In those cases where the BCC has modified the SOAC USOC tables or provided company specific CCF values, the "generic" contract information must be changed. Two user tunable tables will allow the BCCs to accomplish this task. A third user tunable table is used to indicate special processing for certain tags. See Appendix 12C for table details.

12.3.3.5 Sorting Contracts by Wire Center

An Intelligent Controller may have several remote units, some of which may be in different wire centers. A wire center sort process within the LIB69 tape reader will be used to produce files of contracts that are all wire center specific.[10] These contracts should be modified to contain header information specific to the wire center they are targeted for.

10. Likewise, contracts produced by an external vendor must also be wire center specific.

12.3.3.6 Processing the UPDTRN Contracts

The final stage of the process flow is the Contract Processor, which will parse the incoming UPDTRN contract and either report the differences with the database or update the database.

12.3.4 UPDTRN Contract Processor

The UPDTRN Contract processor will be described in detail in the following sections. Verification levels, inputs, database actions, outputs, and update/audit rules are presented.

The UPDTRN Contract Processor is responsible for the following:

- Parsing the input contract.
- Comparing it to the equivalent SWITCH system database circuit (if it exists, error if not).
- Deciding if differences exist, and if differences exist then:
  - — Audit Mode: report the differences
  - — Update Mode: Change the database, where possible, to be the same as the input contract, or, print an error message.

The following sections define some terms and describe the inputs to the process, outputs generated by the process, what database effects should be accomplished and the rules that govern these effects, and error processing.

12.3.4.1 Verification Levels

To define some terms, there are 3 levels of verification that could take place:

1. Translation/LTID Level Verification - translations and components of a service in the contract are compared to the same service in the database.
2. Circuit Level Verification - whether each circuit in the contract contains the same services as the same circuit in the database.
3. IC Level Verification - whether the SWITCH system database contains all of the circuits represented in the UPDTRN contract and no others.

The scope of translations/LTIDs covered by UPDTRN is:

— Tags on the translation edge of primary/secondary services. (Level 1)

— Tags on the translation edge of groups. (Level 1)

— LTID values on the LTID network unit body. (Level 1)

— Associations of services to groups. (Level 2)

— Compositions of services to switch ports and TNs. (Level 2)

The UPDTRN Contract Processor will be able to handle the Translation/LTID Level (Level 1) and the Circuit Level (Level 2) verifications. That is, a verified service is one with no missing or extra tags or values and a verified circuit is one with no missing or extra services.

It is outside the scope of UPDTRN to verify that the SWITCH system database has no extra circuits. Level 3 involves verifying an entire IC, where a verified IC has no missing or extra circuits, and is not addressed.

12.3.4.2 Inputs

The Contract Processor is run as a BMP job. The following information should be provided:

- Update or Audit mode for translations. Entered on the JCL.
- Update or Audit mode for LTIDs. Entered on the JCL.
- Optional process control parameters. Entered on the JCL.
  - — START record within contract file. Default to the first record in the input file.
  - — STOP record within contract file. Default to the last record in the input file.
  - — Limit of the number of UPDCKT contracts to queue. If this limit is exceeded, the process will terminate.
- UPDTRN Contracts.
- Access to the SWITCH system reference data.
- Access to the SWITCH system database.

12.3.4.3 Input Data Formats

The SWITCH system expects the control group number to precede the actual OE ID. The UPDTRN Contract Processor will derive the control group number from the IC ID and prepend it to the switch port ID.

Likewise, the SWITCH system expects the IC type and ID to precede a group identification (e.g., HML 1ES.0.1). The UPDTRN Contract Processor will derive the IC type and ID from the EXID value of the IC in the *FILEHDR section and prepend it to the group ids. An IC can be identified by type and control group, by CLLI code, or by exchange key.

The 5ESS switch port identification is suffixed by a single alphabetic character (refer to Table 4A-9), which is used to identify the type of 5ESS equipment represented by the OE. This additional type is required to identify and validate the 5ESS OEs because in the 5ESS architecture the OE ID is only unique within each equipment type. The EXID value for an OE will include this alphabetic character at the end of the identification.

12.3.4.4 Effects on the SWITCH System Database

For a translation update request, the SWITCH system database should be modified such that the services in the database have translations that are synchronized with the service representations in the UPDTRN contract. If present on the translation edge, the TRMINC tag should be removed. The TRMINC flag indicates that the translations stored in the SWITCH database are in some way incomplete.

For an LTID update request, the SWITCH system database should be modified such that the services in the database have LTIDs that are synchronized with the service representations in the UPDTRN contract. The LTID update feature is intended to be used as a load vehicle for LTIDs into a "clean" database. If an LTID synchronization is attempted with LTIDs already in the database, the LTID in the UPDTRN contract cannot already exist in the SWITCH system database for any other service. If an LTID already exists on another service, the UPDCKT contract will error.

12.3.4.5 Updates and Audits

Each SYNCSVC section should have the following steps applied:

- Date Check - Skip any circuit that has been modified after the extract tape generation date.
- Circuit Verification - Verify circuit level correspondence. Circuits match when the database has the same services as the UPDTRN contract does. If there is a mismatch, generate an error message that states which circuit does not validate, the services stored in the database and the way the contract does not match. This includes:
  1. Having additional services that are not in the database, and
  2. Missing services that are in the database.
- Translation/LTID Verification - For each service, perform a "Translation/LTID Level Verification" by doing the following:
  1. Check the circuit identification: Values in the database should match those in the contract.
  2. Check the Service Node:
     A. Equipment: Values in the database should match those in the contract. No check is made for equipment in the database which is not in the contract. An

exception to this rule is made for Multi Line Hunt Group (MLHG) terminals. TNs on MLHG terminals are checked against TNs in the contract both ways.

B. Trans Edge: Values in the database should match those in the contract.

C. LTID Node: Value in the database should match the value in the contract.

3. Check the Group Node Trans Edge: Values in the database should match those in the contract.

Differences exist between the contract and the database if:

1. Either contains a tag/value that the other does not.
2. Tags match but values do not.

   Please Note: Some of the values in the SWITCH system database are built from default Centrex tables and are marked with a centrex-default-string ("ld") at the end of the tag. This string should be ignored while comparing the database and the contract values. If the contract and the database match, provision should be made to preserve the centrex-default-string in the updated translation edge data.

   Second Note: Check the individual tags against the "Tran Sync Special Processing" table to see if a tag requires any special processing (refer to Appendix 12C).

The location of translation data in the database is defined in Appendix 13A.

A similar check (excluding the LTID check) using the same steps should be done for each REC in the SYNCGRP section against the corresponding group.

- What to do - If the contract and the database are "different", then either an update should be done or a report should be prepared.

1. Updates

   Only update when there are **no** inconsistencies other than those tags that exist on the trans edge or LTIDs. In other words, all of the SWITCH system and MAS required translation data should match in order to proceed with an update. There are two exceptions to this rule. If SFGs are to be established in the "IC" (the value of the INV-SFG parameter is "Y") and there exists an SFG that matches the one in the contract and that is not associated with the service already, the UPDTRN Contract Processor will establish an association relation between the service and the SFG. If the UPDTRN contract contains a Series Completion Hunt (SCH) Group, and the SWITCH system database is missing the SCH node, the UPDTRN Contract Processor will build the SCH node and link the associated TNs with the group.

   Treatment of SFGs is provided in Translation Synchronization to support an easy migration of SFGs during a Dial Transfer. The SFGs would be moved from an IC where they were previously not inventoried to an IC where they will be inventoried. SFGs cannot be added automatically in the "TO IC" unless they are already identified in the "FROM IC". The procedure would be to create inventoried SFGs in the "FROM IC" and then run the Translation Synchronization process. SFGs associated in this way will automatically be picked up and moved to the "TO IC" in the Dial Transfer.

The special SCH treatment is included to provide a mechanism to load SCH groups after a conversion if SCH groups were not inventoried in COSMOS.

In all other cases, UPDTRN will only modify selected Mas Only and LTID data and will generate reports about SWITCH system and MAS required translation data that is different on an update run. Some Mas Only data is only available from SOAC and/or the ULBB. This data will remain unchanged by the UPDTRN Contract Processor. Tags in this category are included in the "preserve" column of the Tran Sync Special Processing table (see Appendix 12C).

As noted before the Translation Synchronization process will remove the TRMINC tag if it is present. The TRUNCATE tag should remain as it indicates that some of the data received from SOAC is incomplete.

The list of tags that can be modified is defined, in Appendix 13A, as those tags that have an input source of SYNCSVC or SYNCGRP FCIF sections. Also, as noted above, the centrex-default-string should be preserved on those tag/values where the value in the database matched the value in the contract.

The data to be modified will be associated with a service if a SYNCSVC section is being processed and will be associated with a group if a SYNCGRP section is being processed.

2. Audit Output

   Only generate an Audit Report when there are inconsistencies. Circuits that match the UPDTRN contract will be silently ignored. Audits are limited to the information in the contract. Report inconsistencies when tags in the contract contradict those same tags in the database.

   The output should include the elements of the contract that differ from the database and the entire SYNCSVC section as represented in the UPDTRN contract.

12.3.4.6 Outputs

The Contract Processor should produce the following information:

- Number of incoming services and groups.
- Number of services and groups in the database that match the contract.
- Number of services and groups that do not match the database.

- If an audit is requested, a report should be generated for those services that do not match, listing those elements from the contract that did not match the database representation of the service and the entire FCIF SYNCSVC section contents for the service.
- If a database update is requested:
  - — Generate and queue UPDCKT contracts to accomplish the updates.
  - — Output error messages if changes to the database cannot be accomplished.
- Periodically (under user control through JCL) output statistics giving the number of records processed, the number of updates submitted, and the current circuit or group being audited. These may be used to monitor the progress of the run and to aid in restarting the synchronization process if it terminates prematurely.

12.3.4.7 Tracking Errors from Other Contract Processors

The UPDTRN Contract Processor sends contracts to the UPDCKT Contract Processor to accomplish the work of updating the database. The users should be able to track any errors encountered by the UPDTRN or UPDCKT Contract Processors.

12.3.5 UPDTRN Contract

The UPDTRN contract is used to update translations for circuits and/or groups in the SWITCH system inventory.

The UPDTRN request is composed of the following sections:

- *C1 header section
- *PLHDR section (optional)
- *FILEHDR section
- *SYNCGRP section - optional
- *SYNCSVC section

Refer to Tables 12-23, 12-24, and 12-24 for layouts of the *FILEHDR, *SYNCSVC, and *SYNCGRP FCIF sections.

12.4 NPA Splits BMP

A Number Plan Area (NPA) is a geographical area within which telephone numbers (TN) are administered. In the North American Numbering Plan (NANP), each NPA is assigned a three digit area code, and each NPA can support approximately eight million working and spare TNs.

When an NPA's TN inventory approaches exhaust, it is assigned a new area code. Usually, an NPA split is performed in conjunction with the introduction of the new area code. An NPA split is the process by which an existing NPA is divided into two smaller NPAs; one NPA retains the existing area code, and the other is assigned a new area code. The area codes of working and spare TNs in the new NPA are changed to the new area code. The area codes of TNs must be changed in network elements as well as in all operations systems (OS).

An NPA split effects all areas of SWITCH system data -- the node database, service order and work order X-files (both input and extraction files), reference data (table and non-table data), the EIX database, and saved and scheduled work sessions. This section describes the batch message process (BMP) which changes the inventory database and service order and work order X-files. The actual procedures associated with performing an NPA Split are documented in *The SWITCH System Applications Administration Guide, Volume II.*

12.4.1 Input Reference Data Table

In the SWITCH system, NPA splits are specified by NPA NXX. That is, a list of old NPANXXs and the corresponding new NPANXXs are used as input to the NPA Split BMP. All data element in service order files, work order files, the node database, and the EIX database which contain an old NPANXXs are updated with the new NPANXX. The NPA Split BMP accesses the relevant data elements, compares each ones NPANXX to the list, and changes NPA if the NPANXX is on the change list.

The *rename* table is a global reference data table which will contain the change list. It has been designed for use with any batch- type rename process. This table consists of the following fields:

- **process_id** -- INSTANCE KEY -- 12 A/N -- used to identify which BMP is using this table. For an NPA split, the process key value will be "npasplit".
- **from_name** -- 25 A/N -- the name which must be changed. For an NPA split, each from_name will be an old NPANXX.
- **to_name** -- 25 A/N -- the name to which the from_name will be changed. For an NPA split, each to_name will be the new NPANXX.

The entire old NPANXX and new NPANXX must be included in each row of the table. An example of the input table is shown below:

```
ROW MAINT --------------- DD/RDAS TABLE DATA ---------------TOP OF
                               TABLE
                          COMMAND ===>
TABLE:    rename                         VERS: 5    STAT: PB   LOCK: NONE
SCOPE:    del/modgl   OVERRIDE:  INSTANCE  STAT: PB   LOCK: NONE
                      INSTANCE KEY: npasplit
******************************************************************
                                 **
  SEL      from_name                    to_name
           418332                       613332
           418335                       613335
           418342                       613342
           418348                       613348
```

12.4.2 Batch Processing Specifications

The NPA Split BMP will have the following functionality:

- ability to perform read only runs prior to conversion.
- abort and restart capability -- the ability to stop processing, and restart from the last database commit point.
- ability to provide in-progress status reports.
- production of a final output report that will describe the number of data elements modified, and list those that could not be updated.
- completion time of 36 hours or less
- update capability for all time views of the database

The SWITCH system will be responsible for updating the SWITCH system database only. There will be no process feeds to other systems.

12.4.3 Data Changes

The changes to the SWITCH system database which will be performed by the NPA Split BMP are described below:

12.4.3.1 Inventory Data Changes

The vast majority of data accessed by the BMP is stored in the node database. All relevant nodes attributes will be changed, including:

- Bodies for IC, RU, SVC, TNL, CWT, OW, SWT, TN and DTN, UN, and TKP nodes
- COMP edges for TN nodes
- DSGN edges for SVC nodes
- EX edges for EXT, IC, NXX, RSV, SVC, TN, and DTN nodes
- GEN edges for CWT nodes
- TRANS edges for CTX, HML, SCH, SFG and SVC nodes

Database updates fall into several major categories:

- telephone numbers and data telephone numbers,
- TN-like elements -- translations and service IDs
- exchange keys
- wire center IDs

A complete list of all node body and edge attributes are listed below:

Node Name	Loc	Attributes
CTX	TRANS	TRANS_DATA
HML	TRANS	TRANS_DATA
IC	BODY	EXCHG_KEY
	EX	EXIDVAL
	EIX DB	
NXX	EX	EXIDVAL
	EIX DB	
RU	BODY	EXCHG_VAL
SCH	TRANS	TRANS_DATA
SFG	TRANS	TRANS_DATA
SVC	BODY	SVC_ID
	DSGN	END_LOC
	TRANS	TRANS_DATA
	EX	EXIDVAL
		NPA

Node Name	Loc	Attributes
TN/DTN	BODY	DISC_LRN
	EX	EXIDVAL
		NPA
	COMP	LRN
	EIX DB	
	FAST DB	
TNL	BODY	TN_RANGE.NPA_NXX
		PREM_WC
EXT	EX	EXIDVAL
		TNPA
	EIX DB	
RSV	EX	EXIDVAL
		TNPA
	EIX DB	
CWT	BODY	DSNA
		CKT_ID
		OLD_CKT_ID
		OLD_DSNA
		TCID
	GEN	OLD_STID
		NEW_STID
OW	BODY	c1.WIRE_CTR
		rpi.C_ID
		rpi.L_ID
		rpi.H_ID
		rpi.NXX
		ri.res_lst_tu_rd
SWT	BODY	c1.WIRE_CTR
UN	BODY	FROM_CTID
		FROM_CKID
		TO_CTID
TKP	BODY	NEXT_LOC

12.4.3.2 Summary Data Changes

The only summary data table instances that require change are the TN and DTN instances of the *inv ranges* table. Table instances for each NXX and TN group must be examined for changes. The following fields will be changed by a BMP, for each instance of the table requiring update:

- absolute_hi_id
- range_lo_id
- range_high_id
- absolute_hi_id

In addition, all scopes of wire center level reference data will be updated to include the new NPA.

12.4.3.3 Service Order Data

NPA Split updates will occur in the X-file database, specifically in the following locations:

- Input X-files from SOAC must be updated: car_rec, masg_ckt, ace_rec, sdr_rec., etc.
- Output extraction TVO files. Changes must be made to group-, circuit- and tid-based files, and CIO files.

In order to insure that the BMP changes only those data elements associated with NPANXXs, the non-table reference data category *tn tags* will be accessed and checked.

12.4.3.4 Work Order Data

The following work order X-files require modification in an NPA split. For OWT Level Files

- GEN -- general input X-file
- SCP -- DTR scope X-file
- FTT -- temp input file
- ASP -- exception X-file
- RQW -- REQ WORP circuit list file
- WRP -- WORP segment X-file
- UST -- unit status table

For UWT level files, the following files require modification:

- CAO -- circuit analysis output X-file

- INP -- assignment engine input X-file
- ASM -- assembly X-file for Wire Assembly Orders
- PRE -- pre X-file for SETs, LSTs, and CPTs
- Delta extraction files -- All IC exchange keys, and external IDs, circuit aggregate circuit IDs, service IDs, and wire center IDs require change.
- Unit Status Tables for WAOs with the key NU type of TN.

12.4.4 Job Set Up

The NPA Split BMP will be controlled by a sequence of JCL cards. Job set up and execution will occur in the following manner:

- A sample EXEC deck will be delivered with the NPA split process. In the EXEC deck, the user will specify
  - — The wire center for which to run the BMP
  - — A destination statement for output from messages and reports
  - — An error threshold for termination
  - — A message threshold
  - — Processing mode -- inventoried vs. non-inventoried wire center
  - — Update instruction -- dry run or update
- Each wire center must be submitted from its own EXEC deck. The user will create an EXEC deck for each wire center submission.
- BMPs can be run in more than one wire center simultaneously.
- The user will be responsible for determining which wire centers to run concurrently.

12.4.5 Messages and Reports

The NPA Split BMP will provide in-progress status messages. They are described below:

- At the completion of conversion for a wire center, NPA Split will output the message "WIRE CENTER *ID* CONVERTED" where ID is the identification of the wire center.
- After XX records examined, NPA SPLIT will output the message "XX RECORDS EXAMINED", where XX is the user-defined message threshold listed in the JCL.

The user will specify the output destination printer through a JCL input card.

The NPA Split BMP will provide end-of-run reports. The end-of-run report will contain the following information:

- The number of data elements that were converted in a wire center.
- A list of NXXs that were present in a wire center but not converted because they were not specified in the input. This report feature will allow users to see if they have missed an NXX on input.
- A list of all data elements which could not be converted, either because they could not be accessed or updated. An appropriate ID and type will be provided for each data element.

12.4.6 Run Time

Because all other OS activities must be suspended until NPA update is complete, the NPA split BMP must execute quickly. NPA splits are performed over a weekend, and operational difficulties will result if conversion is not completed before the next business day. This means that the NPA splits BMP must perform all database updates (approximately 20 million updates) in approximately 36 hours.

12.4.7 Processing Modes

The NPA split BMP will run in one of two conversion modes for each wire center. The user will specify which conversion mode for each wire center. The conversion modes are described below:

- WCINV=Y -- In convert inventory mode, the BMP will change all instances of the old NPA to the new NPA when the old NPA is associated with an NXX listed in a user-defined reference data table.
- WCINV=N -- Data in a wire center which is not in the NPA split may contain references to data elements which have been updated. For example, a user served from wire center A, which is not part of the NPA split, may have a remote call forward number to wire center B, which is part of the split. The translation data associated with that service in wire center A must be converted if it is to remain accurate.

When the "NPA LNP support" feature is on, all LRN data will be updated regardless of the value of the WCINV parameter.

12.4.8 Dry Run Option

Before an NPA split is performed, users may wish to execute a dry run, to determine the approximate amount of time that BMP processing will require and to correct any database errors before the actual NPA split. The NPA Split feature will provide the user with the ability to perform a test update run.

When running a test update, the NPA Split feature will access all relevant data elements in the node database, summary data, etc. However, while running a test conversion, the NPA will not be changed.

In addition to the dry run option, the NPA Split feature provides the following "test run" functionality:

- The user can choose to convert only one wire center instead of all wire centers. This will allow a read/write test run on a small subset of the SWITCH system data.
- The user can input an error threshold at which processing will terminate. The BMP will record the last commit point and resume processing from that point, if restarted later.
- The user can stop the BMP process manually. Again, the last commit point will be recorded for restart.

12.5 Wire Center Rename BMP

The SWITCH system database is organized by wire center. Wire center IDs are used to determine the ownership of network units, the scope of reference data tables, the extent of contract processing, etc. Wire center is also a data element, which is stored in work order and service order X-files, and is stored in several nodes in the node database.

A wire center can have more than one name. For example, the CLLI code is a location identifier which is based on the name of the physical location of the wire center. The provisioning wire center name is based on the NPANXX of the TNs administered by the wire center. The SWITCH system uses an internal wire center ID for processing, and maps all other wire center names to this ID in the Wire Center (WC) non-table data category. Change of a wire center name in the WC category will insure that all contract with the new wire center name is the contract's C1 header will process correctly. However, this update will change no table scopes or data stored in the node database or in any X-files.

The internal wire center ID is not stored in SWITCH system. Instead, the provisioning wire center name is the "ID of choice" for storage in the node database and in X-files. A provisioning wire center may change name, for a variety of reasons, including creation of wire center clones for testing. When this occurs, the provisioning wire center ID must be changed in reference data, in the node database, and in the X-file database.

The tool for bulk changes of scopes for wire center levels tables is described in the *DD/RDAS Dialogs and Tools Guide* (BR 752-106-080).

The wire center rename BMP changes the provisioning wire center ID in the node database and in the X-file database.

12.5.1 Input Reference Data Table

The *rename* table is a global reference data table which will contain the change list. It has been designed for use with any batch- type rename process. This table is described completely in Section 12.4.1. Table usage for wire center rename is described below:

- **process_id** -- INSTANCE KEY -- 12 A/N -- used to identify which BMP is using this table. For a wire center rename, the process key value will be "wcrename".
- **from_name** -- 25 A/N -- the name which must be changed. For a wire center rename, the from_name will be the old wire center name, which is an NPANXX.
- **to_name** -- 25 A/N -- the name to which the from_name will be changed. For a wire center rename, the to_name will be the new wire center name, which is also an NPANXX.

The entire old NPANXX and new NPANXX must be included in each row of the table.

12.5.2 Inventory Data Changes

Two inventory nodes contain wire center as a data field:

- OW -- node body -- wire center (c1.WIRE_CTR)
- SWT -- node body -- wire center (c1.WIRE_CTR)

These nodes will be changed by a BMP. The BMP will read the *rename* table for input, access the changing wire center, and make the appropriate changes.

In addition, wire center information is stored with trunk pairs. Specifically, the next location of a trunk pair is stored in the next_loc field on the TKP body. A service containing a trunk pair stores the wire center ID of the circuit termination in the pfs field on its design edge.

Both the TKPs and the SVC nodes of services containing trunk pairs should be changed during a wire center rename; however, the wire center rename BMP will not update these data elements. The user will be responsible for determining which wire centers contain these trunk pairs. The user will run UPDNTU and UPDCKT to change the wire center values on the TKP and SVC nodes, respectively.

12.5.3 Service Order and Work Order Impacts

Output TVO files store the provisioning wire center ID in a wire center ID field. This field, found in both service order TVOs and work order TVOs, will be updated by the BMP.

Wire center IDs are not stored in service order input X-files.

The general input work order X-file must be changed.

12.6 Interfaces to PVI

Two interfaces are provided from the SWITCH system to PVI, the Planning View of Inventory. The first one is for counts of Network Access Lines (NALs) or switch ports, which are needed for planning and engineering equipment additions. The second one is for DLE data, which is needed for planning and engineering the local loop. There are four BMP jobs that are needed to extract the data, format it, and send it to PVI. The first job extracts the data and creates flat files. One of these files contains the NAL data and the other the DLE data. The user can request extraction of either file or both by specifying OPT='NAL', OPT='DLE', or OPT='ALL' using JCL. The first job is RUNID VCTXU01 and is documented in BR 752-109-308. The second job, for handling NAL data, takes the output file produced by the first, rearranges it, resolves the internal node IDs, optionally runs the Count Module to produce IC counts, and sends a notifier to PVI. It is RUNID VCTXU02, documented in BR 752-109-311. The count module can also be run as a separate job, as described in BR 190-710-645 (RUNID WPNU6450). The third job, for handling DLE data, takes the output file produced by the first, rearranges it, and generates a PVI "load" contract. It is RUNID VCTXU05, documented in BR752-109-318. The fourth job uses the Network Data Mover (NDM) to transfer files from the SWITCH system to PVI. It is RUNID VCTXU03, documented in BR 752-109-312. Some BCCs may prefer to use other means to transfer files, providing functionality equivalent to that provided by VCTXU03.

12.6.1 The Extract for PVI

An extract schedule specified in JCL will tell the SWITCH system when to extract the data for each wire center. It is expected that the wire centers will be partitioned into several jobs to spread the load out over much of the month, although each wire center would be run on about the same date each month. The count extract function extracts from the SWITCH system database a flat file containing the data needed to produce NAL counts. There are two basic extract schedule alternatives. The first is extracting by SWITCH system partition. This is more efficient than specifying individual wire centers and is done by putting PARTITION in the SYSIN data (e.g., PARTITION=A001;). The second is by listing desired wire centers. This provides more flexibility than specifying by partition and is done by putting WC control statements in the WC data, for example:

```
//STEP01.WC *
WC=WC8;
WC=908699;
/*
```

The scheduling process is able to extract both the NAL data and the DLE data or just one or the other. The choice of extract is made for each extract run and applies to all the wire centers in the extract. Most of the SWITCH system processing time for an extract is spent reading sequentially through the entire set of SWITCH system database records for those wire centers being extracted, in order to find the records that contain data that needs to be extracted. This means that:

1. the combined extract is expected to require only a modest increase in SWITCH system processing time compared to an extract for either NAL counts or DLE data, and
2. scheduling separate NAL and DLE extracts in the same month would take almost twice as much SWITCH system processing time as a combined extract would.

While different extract schedules may be optimum for NAL counts and DLE data, processing limitations may require some compromise. Detailed scheduling recommendations are beyond the scope of this document, but the following list provides an overview of the major considerations:

- Extracts for NAL counts:
  - — should have the wire centers scheduled so that each host and the associated remotes are extracted either on the same day or on days in the same part of the month, and
  - — should have the most critical or volatile wire centers scheduled near the end of each monthly cycle, so the data will be as current as possible when it becomes available to COER.
  - — are preferred to be taken in a two-week window each month, providing counts that are at most three weeks old at the time that they are available to COER,
- Extracts for DLE data may need to be spread out over the full month due to limitations on LFACS processing capacity and the need to synchronize the extracts from the SWITCH system and LFACS.
- If combined extracts were taken over the full month, the data for the most critical wire centers would still be as current as it would if the extracts were taken over a two-week period. The data for the least critical wire centers would be 15 days older, however.
- If weekend processing were available for LFACS, it might be possible to use combined extracts taken over less than the full month.
- If a 50% increase in SWITCH system processing were acceptable, compared to one set of combined extracts, then both the two-week NAL count objective and the full month DLE data objective could be met, as follows:
  - — All the wire centers could be extracted during the first half of the month, with all of the wire centers each day going to NAL counts and half going to DLE data.
  - — The half of the wire centers that did not get sent DLE data during the first half of the month could be rerun during the second half of the month, going only to DLE data.

- The considerations listed here are only guidelines and require obvious modification if some wire centers need to be extracted more often than once a month or if some do not need to be extracted every month.

12.6.2 NAL Count Interface

User defined counts are required by service, feature, equipment group, and administrative group. IC count options include excluding test lines, counting each party with party service as a NAL, and counting each distinctive ringing pattern as a NAL. This interface consists of three parts:

1. Extract of count data by service which is sent from the SWITCH system to a Count Module (see Appendix 12D for the interface contract),
2. Load group counts which are sent from the SWITCH system to PVI (see Appendix 12E), and
3. IC level counts which are sent from the Count Module to PVI (see Appendix 12F).

See Figure 12-2 for the NAL count flows. The Count Module is a BMP job expected to run on the SWITCH system machine unless the SWITCH system and PVI share DASD, in

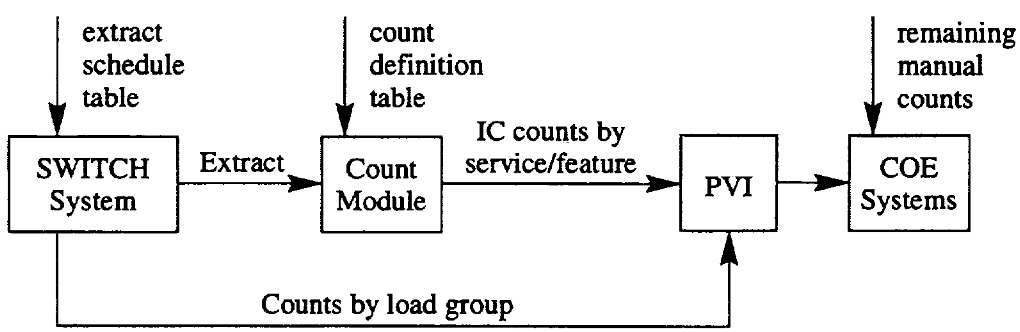

Figure 12-2. NAL Count Flows

which case it could be run on either. It uses IC type specific count definitions provided via JCL to obtain total IC counts from the count extract file:

- counts of ISDN, coin, centrex,
- counts by design data (e.g., pulsing), and
- counts by translations data (if kept in the SWITCH system; e.g., CLASS features).

The count module automatically provides the total count with the count name TOTAL. Other counts can be defined by user, using JCL with the FCIF format described in the following table:

FCIF Section			
*SECTION{TAGS}%	Description	Format	Note
*UDCT{	*User Defined Count Table*		
ICTYPE	IC (switch) type	7C	e.g., 5ES
CDEF{	*Count Definition*		*Several per count table*
CNTNAME	Count Name	10C	User defined alphanumeric
PROCOPT	Processing Option	5C	Primary &/or secondary
CRITERIA	*Criteria for count*		*Several are AND'ed*
OP	Operator for tag/value	2C	EQ, NE, IS, or NO
TAG	Tag name	80C	See following list
VALUE	Tag value	256C	If operator is EQ or NE
}	*End of criteria aggregate*		
}	*End of count definition*		
}%	*End of count table*		

An example of the use of the count definition is defining an IC count of POTS as not ISDN and not Centrex (the category of service on the design edge is not ISDN and the CTX tag is not present):

```
CDEF{
   CNTNAME=POTS;
   PROCOPT=PANDS;
   CRITERIA{
      OP=NE;
      TAG=DSGN.CT;
      VALUE=I;
   }
   CRITERIA{
      OP=NO;
      TAG=CTX;
   }
}
```

In the POTS count definition example, test (and notest) lines will be included unless they are explicitly excluded. To exclude them, the following criteria need to be added to the count definition:

```
CRITERIA{
      OP=NE;
      TAG=DSGN.CT;
      VALUE=T;
```

```
}
CRITERIA{
   OP=NE;
   TAG=DSGN.CT;
   VALUE=E;
}
```

There are four count definition processing options:

1. P - Primary service only (count is incremented by zero or one)
2. S - Secondary service only (count of zero, one, or more)
3. PORS - Primary or secondary service (zero or one)
4. PANDS - Primary and secondary service (zero, one, or more)

For each count definition, the processing option needs to be selected considering that in the SWITCH system, primary services are used for most services, each party in party service, and ISDN pipes. SWITCH system secondary services are used for each additional distinctive ringing pattern, ISDN bearer services and terminal profiles, and MADN. The count definition operators are:

- EQ - the tag has the value specified
- NE - the tag does not have the value specified
- IS - the tag exists
- NO - the tag does not exist

PVI can add and subtract counts produced by the count module to produce new counts. The load group counts include each DLE CRV and customer service channel as a count of one. CRVs and customer channels are included in the count extract file with a switch port type (tag UX) of CRV and CHAN, respectively. The load group counts are produced via "fast counts" of working switch ports (plus CRVs and customer service channels), while the IC counts are produced using the count extract of services. This results in several differences. The load group counts will not include additional parties on party service or additional distinctive ringing patterns. The counts of ISDN and suspended/sublet services may also be somewhat different.

12.6.3 DLE Data Interface

PVI will load the DLE data from the SWITCH system and provide retrieval contract access to the data. The first system identified as needing this data is the LEIS/LEAD (Loop) Engineering Assignment Data) database, because its current source of information (LFACS - Loop Facilities Assignment and Control System) may no longer have assignment and inventory control of DLE systems. See Figure 12-3 for the DLE data flows. The DLE interface contract is described on Appendix 12G. There is one header (HDR) section before the first wire center. The FCIF sections for a wire center are grouped together. Within a wire center, the FCIF sections are presented to the interface by the SWITCH system in the following order:

1. Wire Center (WCS)
2. Intelligent Controller (IC)
3. Remote Unit (RUS)
4. Switch Equipment Group (SWEQ)
5. Switch Port (SWPT)
6. Carrier Controller (CC)
7. Path (PATH)
8. Bandwidth (BW)
9. Carrier Controller Slot (SLOT)
10. Carrier Controller Port (CCPT)
11. Channel (CHAN)
12. Call Reference Value (CRV)
13. General Service (GSVC)
14. Cable Pair (CP)

There is one trailer (TLR) section after the last data section for the last wire center.

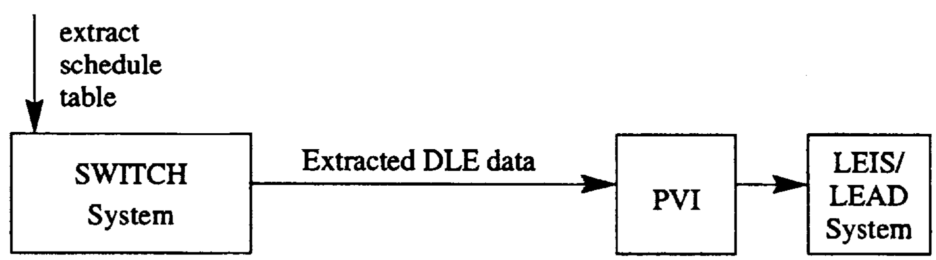

Figure 12-3. DLE Data Flows

12.7 TN Extract BMP

The TN Extraction BMP provides the capability to extract telephone numbers/data telephone numbers (TNs/DTNs) and related data from the SWITCH system into datasets.

This process is used when another system, such as MediaCore/Customer Number, assumes the administration of telephone numbers, and a mechanism is required for loading the telephone numbers into that system.

The TN Extraction BMP:

— provides the capability to specify and extract data for one or more wire centers in an entity, or for an entire entity

— invokes a PADDLE procedure that

- generates and submits SERQL (Structure Entity-Relationship Query Language) contracts to extract the TN data
- routes the extracted data of a wire center to three datasets, referred to as the TN data file, the TN relationships file, and the TN reference data file
- reports on the number of items extracted and routes the information to a dataset, referred to as the TN info file

— provides the capability to restart the BMP job for a specified set of wire centers, or beginning with the last wire center executed when an entire entity is processed

The procedures for executing the TN Extraction BMP are documented in BR 752-106-038, SWITCH System Application Administration Guide.

12.7.1 Datasets

The TN data file contains TNs/DTNs and their attributes. The TN relationships file contains the following data and related attributes associated with TNs/DTNs: intelligent controllers, remote units, centrex groups, series completion hunt groups, multi-line hunt groups, simulated facility groups, telephone number groups, telephone number lists, and reservations. The TN reference data file contains the following reference data associated with TNs/DTNs: *IC NXX* table, *TN Remote Map* table, *TN Aging* table, *MAS TN Intercept* table, and *TN Directory Dates* table. The TN info file contains counts on the number of items (i.e., TNs, DTNs, ICs, RUs, SCH groups, etc.) extracted.

The name of each dataset will begin with the the full path name of the dataset, followed by the character "x", followed by the specified wire center name and file type, as follows:

- <path name>.x<wc name>.tndata (e.g., tkpod99.x908699.tndata)
- <path name>.x<wc name>.tnrel (e.g., tkpod99.xwc18.tnrel)
- <path name>.x<wc name>.tnref
- <path name>.x<wc name>.tninfo

The TN data file, TN relationships file, and the TN info file will be in FCIF (Flexible Computer Interface Format) format and the TN reference data file will be in LIF (Load

Interface File) format. Each file will have a header section containing the following information:

— wire center names

— date of job execution

— time of job execution

— release of SWITCH System

— ID of user executing the job

12.8 Return Of Imported Telephone Numbers

TNs will be returned to the ILEC after aging by the CLEC. This will be accomplished via a contract from SOAC. It will only be processed if the LNP - TN Administration feature is activated. The contract will support either single or multiple TN return. The contract will include effective release date and customer disconnect date in addition to the id of each TN.

12.8.1 DLBB Processing

For each TN that passes validation a release date will be calculated based on the customer disconnect date passed in the RETTN contract, asgn_cata_disc from the data base and standard TN aging algorithms (see section 6.17).

The SWITCH system will accept from SOAC a RETTN contract, for return of exported TNs from a CLEC. The C1 Header for the Returning TN contract will follow the same format as used in other SOAC/SWITCH contracts The function code will be "RET" and the transaction type will be "TN".

Each Returning TN contract will contain one RETTN section with one REC aggregate for each TN. TN ranges within one REC will not be supported. The following fields will appear in the REC aggregate:

ACTION	Value will always be "RT" (required)
CDD	Customer Disconnect Date (8 numerics- required)
ERD	Effective Release Date (8 numerics - optional)
TN	Telephone Number (10 digit [npanxxnnnn], required)

Each Returning TN contract will contain one RETTN section with one REC aggregate for each TN.

12.8.1.1 Sample RETTN Section

```
*RETTN{
        REC{
                ACTION=RT;
                TN=7326997890;
                CDD=19960701;
                ERD=19970102;
        }
}%
```

12.8.2 Errors

The associated *RETTN* contract processor will consider the following to be error conditions:

- the TN does not exist
- the TN is working
- the TN does not have an assignment limit type=RST and value=EXP and is not selectable (*sel_ind=N*). (Note - This will be considered an error case to prevent erroneous messages from going to MAS on subsequent RLS TN).

If any of the TN(s) fail the above validation, contract processing will continue and an error will be returned to SOAC for the particular TN.

RETTN errors will be returned using a PREMSG function code/transaction type in the C1 header. (Today this used for other types of errors going back to SOAC such as errors from cable pair transfers.)

Each error message will have one REC aggregate within the MSG section. The following fields will appear in the REC aggregate:

- APSO Append Service order (always = "Y")
- MDST Message Destination Code (1-8 alpha-numeric) Obtained from Output Handler (OH) Notice Table

12.8.2.1 Sample Returning TN Error Message

```
*C1= PREMSG R12345678901    908699SWITCH SOAC            ;%
*MSG{
        REC{
                APSO=Y;
```

```
            MDST=SOA-PRT;
            }
        TEXT=
(Error message contents)
}%
```

Table 12-1. 5ESS 5E6 Measurement Group Table

measurement group (Instance = 5es;5e6) (Scope = del/global)							
Meas Sect	**TIDE keyword**	**exc tbl**	**id format**	**subgrp 1**	**subgrp 2**	**subgrp 3**	**subgrp 4**
dclu	dcusg		111-2s	sm	dclu		
islu	isluusg		111-2i	sm	islu		
lu	luusg		111-2l	sm	lu		
ph	phpksr		111-2-33	sm	shelf	dslg	
psph	psphpckt		111-2-33	sm	shelf	dslg	

Table 12-2. 5ESS 5E7 Measurement Group Table

measurement group (Instance = 5es;5e7) (Scope = del/global)							
Meas Sect	**TIDE keyword**	**exc tbl**	**id format**	**subgrp1**	**subgrp2**	**subgrp3**	**subgrp4**
dclu	dcusg		111-2s	sm	dclu		
islu	isluusg		111-2i	sm	islu		
lgc	lgcusg		111-233i	sm	islu	lgc	
lu	luusg		111-2l	sm	lu		
ph	phpksr		111-2-33	sm	shelf	dslg	
psph	psphpckt		111-2-33	sm	shelf	dslg	
sg	sgusg		111-234l	sm	lu	conc	sg
slc	rtusg		111-233s	sm	dclu	rt	

Table 12-3. 5ESS 5E8 Measurement Group Table

measurement group (Instance = 5es;5e8) (Scope = del/global)							
Meas Sect	TIDE keyword	exc tbl	id format	subgrp1	subgrp2	subgrp3	subgrp4
dclu	dcusg		111-2s	sm	dclu		
ipid	pidtotusg		111-2g	sm	idcu		
ipid	pidtotusg		111-2m	sm	idcu		
irt	irttotusg		111-233g	sm	idcu	rt	
irt	irttotusg		111-233m	sm	idcu	rt	
islu	isluusg		111-2i	sm	islu		
lgc	lgcusg		111-233i	sm	islu	lgc	
lu	luusg		111-2l	sm	lu		
ph	phpksr		111-2-33	sm	shelf	dslg	
psph	psphpckt		111-2-33	sm	shelf	dslg	
sg	sgusg		111-234l	sm	lu	conc	sg
slc	rtusg		111-233s	sm	dclu	rt	

Table 12-4. 5ESS 5E9.1 Measurement Group Table

measurement group (Instance = 5es;5e9.1) (Scope = del/global)							
Meas Sect	TIDE keyword	exc tbl	id format	subgrp1	subgrp2	subgrp3	subgrp4
dclu	dcusg		111-2s	sm	dclu		
idcu	idctotusg		111-233g	sm	idcu	rt	
idcu	idctotusg		111-233m	sm	idcu	rt	
ipid	pidtotusg		111-2g	sm	idcu		
ipid	pidtotusg		111-2m	sm	idcu		
irt	irttotusg		111-233g	sm	idcu	rt	
irt	irttotusg		111-233m	sm	idcu	rt	
islu	isluusg		111-2i	sm	islu		
lgc	lgcusg		111-233i	sm	islu	lgc	
lu	luusg		111-2l	sm	lu		
ph	phpksr		111-2-33	sm	shelf	dslg	
psph	psphpckt		111-2-33	sm	shelf	dslg	
sg	sgusg		111-234l	sm	lu	conc	sg
slc	rtusg		111-233s	sm	dclu	rt	

Table 12-5. 5ESS 5E9.2 Measurement Group Table

measurement group (Instance = 5es;5e9.2) (Scope = del/global)							
Meas Sect	TIDE keyword	exc tbl	id format	subgrp1	subgrp2	subgrp3	subgrp4
dclu	dcusg		111-2s	sm	dclu		
idcu	idctotusg		111-233g	sm	idcu	rt	
idcu	idctotusg		111-233m	sm	idcu	rt	
ipid	pidtotusg		111-2g	sm	idcu		
ipid	pidtotusg		111-2m	sm	idcu		
islu	isluusg		111-2i	sm	islu		
lgc	lgcusg		111-233i	sm	islu	lgc	
lu	luusg		111-222l	sm	lu		
ph	phpksr		111-2-33	sm	shelf	dslg	
psph	psphpckt		111-2-33	sm	shelf	dslg	
sg	sgusg		111-22234l	sm	lu	conc	sg
slc	rtusg		111-233s	sm	dclu	rt	

Table 12-6. 5ESS 5E10 Measurement Group Table

measurement group (Instance = 5es;5e10) (Scope = del/global)							
Meas Sect	TIDE keyword	exc tbl	id format	subgrp1	subgrp2	subgrp3	subgrp4
dclu	dcusg		111-2s	sm	dclu		
idcu	idctotusg		111-2233g	sm	idcu	rt	
ipid	pidtotusg		111-22g	sm	idcu		
islu	isluusg		111-2i	sm	islu		
islu	isluusg		111-22k	sm	islu		
lgc	lgcusg		111-2233k	sm	islu	lgc	
lgc	lgcusg		111-233i	sm	islu	lgc	
lu	luusg		111-222l	sm	lu		
ph	phpksr		111-2-33	sm	shelf	dslg	
psph	psphpckt		111-2-33	sm	shelf	dslg	
sg	sgusg		111-22234l	sm	lu	conc	sg
slc	rtusg		111-233s	sm	dclu	rt	

Table 12-7. 5ESS 5E11 Measurement Group Table

measurement group (Instance = 5es;5e10) (Scope = del/global)							
Meas Sect	**TIDE keyword**	**exc tbl**	**id format**	**subgrp1**	**subgrp2**	**subgrp3**	**subgrp4**
aiu	aiuusg		111-222e	sm	aiu		
dclu	dcusg		111-2s	sm	dclu		
idcu	idctotusg		111-2233g	sm	idcu	rt	
ipid	pidtotusg		111-22g	sm	idcu		
islu	isluusg		111-2i	sm	islu		
islu	isluusg		111-22k	sm	islu		
lgc	lgcusg		111-2233k	sm	islu	lgc	
lgc	lgcusg		111-233i	sm	islu	lgc	
lu	luusg		111-222l	sm	lu		
ph	phpksr		111-2-33	sm	shelf	dslg	
psph	psphpckt		111-2-33	sm	shelf	dslg	
sg	sgusg		111-222341	sm	lu	conc	sg
slc	rtusg		111-233s	sm	dclu	rt	

Table 12-8. 5ESS 5E12 Measurement Group Table

measurement group (Instance = 5es;5e10) (Scope = del/global)							
Meas Sect	TIDE keyword	exc tbl	id format	subgrp1	subgrp2	subgrp3	subgrp4
t303	t3tusg		111-2-33-4444a	sm	dnus	rdt	rdtl
aiu	aiuusg		111-222e	sm	aiu		
dclu	dcusg		111-2s	sm	dclu		
idcu	idctotusg		111-2233g	sm	idcu	rt	
ipid	pidtotusg		111-22g	sm	idcu		
islu	isluusg		111-2i	sm	islu		
islu	isluusg		111-22k	sm	islu		
lgc	lgcusg		111-2233k	sm	islu	lgc	
lgc	lgcusg		111-233i	sm	islu	lgc	
lu	luusg		111-222l	sm	lu		
ph	phpksr		111-2-33	sm	shelf	dslg	
psph	psphpckt		111-2-33	sm	shelf	dslg	
sg	sgusg		111-222341	sm	lu	conc	sg
slc	rtusg		111-233s	sm	dclu	rt	

Table 12-9. DMS-100 Measurement Group Table

measurement group (Instance = dmc) (Scope = del/global)				
Meas Sect	TIDE Keyword	exception table	id format	subgrp1
lmd	lmtrug	measurement group map	-	lmrlm

Table 12-10. DMS-100 Measurement Group Map Table Example

measurement group map (Instance = dmc;ic dmc.0) (Scope = del/modin)	
TIDE Group Number	**SWITCH System Measurement group**
0	000-0
1	000-1
2	0a00-0
3	0013sc
4	0a006smr
5	0013sm

Table 12-11. EWSD Measurement Group Table

measurement group (Instance = ewsd) (Scope = del/global)				
Meas Sect	**TIDE Keyword**	**Exception Table**	**ID Format**	**subgrp1**
cdlu	-	TIDE keyword	1110	dluid27
cidt	-	TIDE keyword	1110	idt

Table 12-12. EWSD TIDE Keyword Table

tide keyword (Instance = ewsd) (Scope = del/global)						
TIDE Measurement Section	**Keyword 1**	**+/-**	**Keyword 2**	**+/-**	**Keyword 3**	**Mult. by**
cdlu	dluousg	+	dlutusg			
cidt	orusg	+	trusg			

Table 12-13. AXE Measurement Group Table

measurement group (Instance = axe) (Scope = del/global)				
Meas Sect	**TIDE Keyword**	**Exception Table**	**ID Format**	**subgrp1**
ssd	-	meas group map, TIDE keyword	-	tsb

Table 12-14. AXE Measurement Group Map Table Example

measurement group map (Instance = axe;ic axe.1) (Scope = del/modin)	
TIDE Group Number	**SWITCH System Measurement group**
1	1000
2	1001
3	1002
4	1003
5	1004
:	:
:	:
51	1050

Table 12-15. AXE TIDE Keyword Table

tide keyword (Instance = axe) (Scope = del/global)						
TIDE Measurement Section	**Keyword 1**	**+/-**	**Keyword 2**	**+/-**	**Keyword 3**	**Mult. by**
ssd	emgiusg	+	emgousg			100

Table 12-16. DMS-10 Measurement Group Table

measurement group (Instance = dmx) (Scope = del/global)				
Meas Sect	**TIDE Keyword**	**Exception Table**	**ID Format**	**subgrp1**
dsa	dsausg	measurement group map	-	dsaid
mli	mliusg	measurement group map	-	mliid

Table 12-17. DMS-10 Measurement Group Map Table Example

measurement group map (Instance = dmx;ic dmx.4) (Scope = del/modin)	
TIDE Group DSA/MLI Number	**SWITCH System Measurement group**
32	401-1pe
15	4102-1pe
18	403-11
35	403-11
102	403-11
134	403-11
76	4204-11
175	4204-11

Table 12-18. DCO Measurement Group Table for 17.2 and later

measurement group (Instance = dco) (Scope = del/global)					
Meas Sect	**TIDE Keyword**	**Exception Table**	**ID Format**	**subgrp1**	**subgrp2**
rlg	rlgusg		111-22	rls	rlg

Table 12-19. DCO Measurement Group Table for 17.1 (same for 17.0 & 16.0)

measurement group (Instance = dco;17.1) (Scope = del/global)				
Meas Sect	**TIDE Keyword**	**Exception Table**	**ID Format**	**subgrp1**
rls	rlsusg		111	ls

Table 12-20. 1ESS Measurement Group Table

measurement group (Instance = 1es) (Scope = del/global)							
Meas Sect	**TIDE Keyword**	**Exceptio n Table**	**ID Format**	**subgrp1**	**sugbrp2**	**subgrp3**	**subgrp4**
lln	llnusg		11-234	lln	lsf	bay	conc

Table 12-21. 2ESS Measurement Group Table

measurement group (Instance = 2es) (Scope = del/global)						
Meas Sect	**TIDE Keyword**	**Exception Table**	**ID Format**	**subgrp1**	**subgrp2**	**subgrp3**
switchnw	mgusg		11-23	ltn	cg	mg

Table 12-22. 3ESS Measurement Group Table

measurement group (Instance = 3es) (Scope = del/global)					
Meas Sect	**TIDE Keyword**	**Exception Table**	**ID Format**	**subgrp1**	**subgrp2**
conc	concusg		11-2	cg	conc

Table 12-23. *FILEHDR Section

The FCIF description of the *FILEHDR section is as follows:

*FILEHDR Request Section	Appearances	Notes
*FILEHDR{		
IC{	1	1
EXNM	1	
EXID	1	
}		
GENDATE	1	2
GENTIME	1	3
}		

Notes:

1. IC will identify the intelligent controller to be updated or audited.
2. GENDATE will be set to the date that the supporting binary tape was generated in the IC. Format of the date is "YYYYMMDD". (e.g. 19920622 represents June 22, 1992)
3. GENTIME will be set to the time of day that the supporting binary tape was generated in the IC.

Table 12-24. *SYNCSVC Section

The FCIF description of the *SYNCSVC section for circuits is as follows<%%%fix>:

*SYNCSVC Request Section	Appearances	Notes
*SYNCSVC{		
REC{	1+	1
CTL{	opt	
CTID	opt	2
STID	opt	2
CTIDR	opt	2
}		
ACL{	1	
SATTR{	opt	
CHNA	opt	
DBRG	opt	
DNP	opt	
PRIM	opt	
PTY	opt	
SVCIND	opt	13
}		
DSGN{	opt	
BAND	opt	
BCN	opt	
BS1	opt	
BS2	opt	
BSD	opt	
CLS	opt	
CSEL	opt	
ESL	opt	
LKBAND	opt	
MDPK	opt	
MTER	opt	
ODBAND	opt	
ODBRQ	opt	
ODBU	opt	

*SYNCSVC Request Section	Appearances	Notes
PUL	opt	
SIG	opt	
}		
EQP{	1+	6
EXNM	1	8
EXID	1	7
USE	1	9
}		
OTHER{		10
TC	opt	11
TSP	opt	12
}		
TRANS{	opt	14
}		
GRP{	opt	3
EXNM	1	4
EXID	1	5
PILOTTN	1	5
}		
}		
}		
}%		

Notes:

1. There will be one SYNCSVC section for each circuit that is being updated by the contract. Each REC aggregate supports updates to one service, primary or secondary.
2. Either the CTID tag or both the STID and CTIDR tags must be present. If the STID is present the CTIDR tag must also be present and have as its value the CTID that is associated with that STID.
3. The GRP aggregate identifies centrex group, multiline hunt group, series complete hunt group and/or SFG group id.
4. The EXNM will indicate the type of group identified and can have values "SCH", "HML", "CTX" and "SFG".

5. The EXID and PILOTTN tags are mutually exclusive. If EXNM="SCH" then EXID will not be present and the PILOTTN tag will contain the pilot telephone number of the associated series complete hunt group. Otherwise, EXID will be present and will contain the group number only (without IC type and ID) of the external ID of the group.
6. The EQP aggregate is used for equipment needed by the service.
7. EXID represents the external id of the equipment.
8. EXNM represents the NTU name of the equipment.
9. USE represents the usage of the NTU. For example OE or POE for switch ports, NHN for non hunt number, PTN for plant test number, TN for telephone number.
10. The OTHER aggregate is used for those tags that don't fit anywhere else.
11. TC is for Transfer of Calls and is stored on the TN node body.
12. TSP is for Telecommunications Service Priority and is stored on the Circuit node body.
13. SVCIND will only be set if the service is suspended in the IC. Sublet information is not available.
14. The translation tags are defined in Appendix 13A.

Table 12-25. *SYNCGRP Section

The *SYNCGRP section view for the UPDTRN contract request is as follows:

*SYNCGRP Request Section Description	Appearances	Notes
*SYNCGRP{	opt	
REC{	1+	
CTL{		
EXID	opt	1
EXNM	1	2
PILOTTN	opt	1
}		
ACL{		
TRANS{		7
}		
EQP{	opt	3
EXID	1	4
EXNM	1	5
USE	1	6
}		
}		
}		
}%		

Notes:

1. The EXID and PILOTTN tags are mutually exclusive. If EXNM="SCH" then EXID will not be present and the PILOTTN tag will contain the pilot telephone number of the associated series complete hunt group. Otherwise, EXID will be present and will contain the group number only (without IC type and ID) of the external ID of the group.
2. The EXNM will indicate the type of group identified and can have values "SCH", "HML", and "SFG".
3. The EQP aggregate is used for additional equipment needed by the group.
4. EXID represents the external id of the equipment.
5. EXNM represents the NTU name of the equipment.

6. USE represents the usage of the NTU. For example SLEN for an OE, SCTN or TLI for a TN.

7. The translation tags are defined in Appendix 13A.

Appendix 12A: PACE FORMATS

The PACE format functions as follows:

Table 12A-1. PACE Record Descriptions

Record 1 is the tape identification record[a]
Record 2 identifies the number of frames, the number of modules on those frames, and frame type (COSMIC I or II)
Record 3 identifies if a tie pair distributing frame exists and the low and high numbered module if it does.
Record 4 through the next to last record contain termination information for the various network units on those frames.
The last record begins with END to signify the end of tape.

a. SWITCH does not process on these records

12A.1 PACE Records 1-3

RECORD 1

1ST◊◊AAABB...BBCC.....CC

AAA = Issue number on T-140 Drawing
BBB = T-140 Drawing number (16 characters)
CC..CC = Name and address of office (45 characters)

RECORD 2

COS◊◊AA$B_1B_1B_2B_2B_3B_3B_4B_4$ ◊◊ . . .◊◊C AA = number of COSMIC/COSMIC II frames
B_iB_i = number of modules in frame i
C = 0 (COSMIC frame)
C = 1 (COSMIC II frame)
There are 48 blanks between the B and C fields

RECORD 3

TPF◊◊ABBCC A = 0 (no Tie Pair DF exists)
A = 1 (Tie Pair DF exists)
BB = Low numbered TPDF Mod
CC = High Numbered TPDF Mod

12A.2 PACE CP Record Format

The format is as follows:

OP◊◊◊AAAAABBBBCCCCDDEEFFGHIIIJKL◊◊◊ . . .◊M

AAAAA = Cable ID
BBBB = Low pair on block
CCCC = High pair on block
DD = COSMIC/COSMIC II module
EE = COSMIC/COSMIC ii shelf
FF = COSMIC/COSMIC II block
G = COSMIC/COSMIC II side
H = ◊ for COSMIC II
H = 1 for Modular protector frame
H = 2 Other protector frame (e.g., DSPF)
III = Protector frame vertical
III = ◊ for COSMIC II

J = A side A of DSPF J = B side B of DSPF J =V vertical side of conventional MDF J = ◊ any other PF arrangement
K = PF connector number
K = ◊ for COSMIC II
L = ◊ for COSMIC II MDF
L = 1 indicates two sequential 50 pair PF connectors for 100 pair complement
L = 2 indicates one 100 pair connector for 100 pair complement

31 blanks between L and M

M = 0 indicates record was generated during previous PACE run
M = 1 indicates record was generated from this tape

12A.3 PACE ESS Formats

ESS◊◊ABBCDEFGGHHIIJKL◊◊◊ . . .◊M
A = Control Group
BB = Line Link Network
C = Line Switch Frame
D = Bay
E = Concentrator
F = Line concentration Ratio 2 or 4
GG = COSMIC/COSMIC II module
HH = COSMIC/COSMIC II shelf
II = COSMIC/COSMIC II block
J = COSMIC/COSMIC II side

K = 0 indicates LLN is fereed
K = 1 indicates LLN is remreed
L = 0 64 pair block L = 1 128 pair block (left) L = 2 128 pair block (right)
43 blanks between L and M fields
M = 0 if this record was created during a previous PACE run
M = 1 if this record was created on this tape

12A.4 PACE TPDF Formats

TPDF◊AAAABBBBCCCCDDEEFFGHHIIJJK◊◊◊ . . .◊L
AAAA = Cable ID
BBBB = Low pair on block
CCCC = High pair on block
DD = TPDF module
EE = TPDF shelf
FF = TPDF block
G = TPDF side
HH = COSMIC/COSMIC II module
II = COSMIC/COSMIC II shelf
JJ = COSMIC/COSMIC II block
K = COSMIC/COSMIC II side
there are 32 blanks between K and L
L = 0 if this record was created from a previous PACE run
L = 1 if this record was created by this tape.

12A.5 PACE Format For Ties to Other Distributing Frames

TIES◊AAAABBBBCCCCDDDDEFFFGHIIJJKKLLM◊◊◊ . . .◊N
AAAA = Frame ID
BBBB = Tie cable ID
CCCC = Low pair of tie cable complement
DDDD = High pair of tie cable complement
E = 1 (conventional MDF)
FFF = Vertical of other frame
G = alphanumeric character of shelf on other frame
H = 1 if tie pairs terminate on horizontal side
H = 2 if tie pairs terminate on vertical side
II = blanks
JJ = COSMIC/COSMIC II module
KK = COSMIC/COSMIC II shelf
LL = COSMIC/COSMIC II block
M = COSMIC/COSMIC II side

There are 26 blanks between M and N
N = 0 if this record was created from a previous PACE run
N = 1 if this record was created by this tape.

Appendix 12B: MELD FORMATS

The MELD format functions as follows:

Table 12B-1. MELD Record Descriptions

Record 1 is the tape identification record[a]
Record 2 identifies the address of the office the tape applies to
Record 3 identifies the frame system ID
Record 4 identifies the frame records
Record 5 through next to last record identifies termination data for the ntus by type and IC type
The last record begins with END to signify the end of tape.

a. The SWITCH system does not process these records

12B.1 MELD Record 1

RI	BASE#	CLLI	Unused	MELD VERSION	ORIGINATION
W1◊	aaaa◊	aaaabbcc	25 blanks	12 blanks	abbccddeeff

RI = W1 for 1st record

Base# = AT&T region base number for wire center (office)

CLLI = Common Language Location Identifier by place, state, building

Origination a = ◊ (Blank)
bb = Month
cc = Date
dd = Year
ee = Hour
ff = Minute

12B.2 MELD Record 2-3

RECORD 2

RI	OFFICE NAME	STREET	CITY	STATE	ORIGINATION
W2◊	aaaaaaaaaaaaaaaa	aaaaaaaaaaaaaaaa	aaaaaaaaaaaaaaaa	aa	abbccddeeff

RI = W2 indicates 2nd record

Office Name, Street, City, and State = The office's address

Origination = see record 1

RECORD 3

RI	COMPLEX ID	T-DRAWING	SIZE	UNUSED	ORIGINATION
FC	aaaaaaaaaabbbb	NO:aaaaaaaaaaaaaaaa/bbb	aa	12 blanks	abbccddeeff

RI = FC (Frame system record)

Complex ID = Frame system ID by name and number

T-Drawing = Drawing Number and issue

Size = how many frames in the system

Origination = see record 1

12B.3 MELD Frame Record Format

RI	FWK	ID,MODE & SIZE	NUMB'RG	FRM SYS	LOC	N/A	Orig
FL	aaa◊◊	Faabbbbccc	◊aaa◊bbb	aaaaaaaaaabbbb	◊◊aa	11 ◊s	abbccddeeff

RI - Record Identification (FL = Frame Line-up Record)

FWK - Frame Type

C1A = COSMIC 1A DF	M.P = Modular PF (mixed density)
C1C = Custom COSMIC	M1P = Modular PF (low density)
C1D = COSMIC DF	M2P = Modular PF (high density)
C2A = COSMIC IIA DF	T1D = Conventional DF (dbl side)
C2C = Custom COSMIC II	T2D = Conventional DF (sgl side)
C2D = COSMIC II DF	T1P = Conventional PF (sgl side)
C2E = Custom COSMIC IIED	T2P = Conventional PF (dbl side)
C2T = COSMIC II TPDF	MG4 = COSMIC II MINI DF
E1D = ESS Modular Df (8')	MG5 = COSMIC II MINI DF
E2D = ESS Modular DF (7')	xxx = Other type PF or DF
I1B = Interconnection Bay	
I2B = Interconnection Bay	

ID, MODE & SIZE -

Faa: CLLI Plant unit code [Fxx]
bbbb: MELD Engineering Mode

- SMDF - Subscriber Main DIstributing Frame
- TPDF - Tie Pair DIstributing Frame
- PF◊◊ - Protector Frame
- ◊◊◊◊ - Other

ccc: Frame lineup size (total mods/verticals/bays right justified with leading zeros)

NUMBERING

aaa: frame starting unit number (mod/vert/bay)
bbb: frame ending unit number (mod/vert/bay)

FRM SYS

a-a: Frame system ID
b-b: Frame system number

Location - either floor ID (aa) or blank

Orig - identifies the origination time of most recent MELD run by month, day, year, hour, minute.

12B.4 MELD CP Record Formats

RI	SYS	CABLE ID	PAIRS	DF1 LOC	DF2 LOC	ORIGINATION
aa	◊◊◊◊◊	aaaaaaaaaa	aaaabbbb	aaabbbcdeeffgh	aaabbbcdeeffgh	abbccddeeff

RI - Record Identification LC = Loop Cable
LX = Loop Carrier (PGS Universal Derived Pairs)
TP = Tie Pairs

SYSTEM - unused

CABLE ID - Up to ten alpha-numeric characters for LC and LX with USER ENTERED zeros if required and for TP up to five characters with USER ENTERED zeros if required.

PAIRS aaaa: low cable pair ID (right justified with leading zeros)
bbbb: High cable pair ID (right justified with leading zeros)

DF1 and DF2 LOC - See table 1

ORIGINATION - same as frame records

12B.5 ESS MELD Formats

RI	SYSTEM	PRINC. ID	CONC/LGS	DF1 LOC	DF2 LOC	ORIGINATION
LE	aabcd	abcccccddd	◊◊aa◊◊bb	aaabbbcdeeffgh	◊◊◊◊◊◊◊◊◊◊	abbccddeeff
LE	aabcd	abcccccddd	◊aac◊bbd[a]	aaabbbcdeeffgh	◊◊◊◊◊◊◊◊◊◊	abbccddeeff
LE	aabcd	abcccccddd	◊a◊bb◊cc[b]	aaabbbcdeeffgh	◊◊◊◊◊◊◊◊◊◊	abbccddeeff

a. For ISLU2 only

b. For AIU only

R I - Record Identification (LE for line equipment

)

Table 12B-2. SYSTEM

Record ID	Definition	1ESS	2ESS	5ESS
aa:	IC Type	E1	E2	E5
b:	Network Type	F = Ferreed	F = Ferreed	B = J5D004AB LU
		R = Remreed	R = Remreed	C = J5D004AC LU
				D = J5D004AD LU
				K = J5D004AK ISLU
				A = J5D004A-1 ISLU2
				U = J8G000AA-1 AIU
c:	conc ratio/5ESS ISLU cabling option	2 = 2:1	2 = 2:1	4 = 4:1
		4 = 4:1	4 = 4:1	6 = 6:1
				8 = 8:1
				0 = 10:1 for network type D
				2 = 2-wire for network type U
				For (R)ISLU(2)s only
				2 = 2-wire cabling
				0 = 2-wire (16 ckt) cabling for network type A
d:	LNI Usage	◊	◊	4 = 4-wire cabling for network types K and A
				◊ = no LNI used
				L = LNI used
PRINCIPAL ID				
a:	CLEI Entity designator	C	E	D
b:	IC ID	[0-9]	[0-9]	[0-9,A-Z]
ccccc:	Network ID	[LLNnn}	[LTNnn]	[SMnnn]
ddd:	Sub-net ID	[LSn]	[CGn]	[LUn] for regular LUs
				[ISn] for ISLUs
				[nnn] for SLUs
				[Tnn] for ISLU2s
				[RIn] for RISLUs
				[nnn] for AIUs

CONCENTRATORS/LINE GROUPS

	1ESS	2ESS	5ESS LU/SLU CONCs	5ESS ISLU/RISLU LGCs	5ESS ISLU2 LGs
aa: Low Conc/LG	nn	n◊	n◊	nn	nn
c: Low Line Pack					n
bb: High Conc/LG	nn	n◊	n◊	nn	nn
d: High Line Pack					n

LINE PACKS

	5ESS AIU LINE PACKS
a: AP code	C for coin LPC
	Z for analog LPZ
bb: Low Line Pack	nn
cc: High Line Pack	nn

DF1 LOCATION - see table 1

DF2 LOCATION - unused

ORIGINATION - same as Frame records

12B.6 AXE-10 MELD Formats

RI	SYS	PRINC. ID	LICs	DF1 LOC	DF2 LOC	ORIGINATION
LE	EA◊◊◊	aabbbLSMcc	Laaa-bbb	aaabbbcdeeffgh	◊◊◊◊◊◊◊◊◊◊	abbccddeeff

RI - Record Identification (LE for line equipment)

SYSTEM
EA - Designates AXE-10 IC Type

PRINCIPAL ID

aa: IC ID	[0-9,A-Z]
bbb: Equipment Module Group	[000-999]
cc: Line Switch Module	[00-15]

LINE INTERFACE CIRCUITS

aaa: Low LIC	[000-127]
bbb: High LIC	[000-127]

DF1 LOCATION - see table 1

DF2 LOCATION - unused

ORIGINATION - see frame record

12B.7 EWSD MELD Format

RI	SYS	PRINC. ID	SHELF	DF1 LOC	DF2 LOC	ORIGINATION
LE	SE◊◊◊	aaDLUbbbb◊	SaMbb-cc	aaabbbcdeeffgh	◊◊◊◊◊◊◊◊◊◊	abbccddeeff

RI - Record Identification (LE for line equipment)

SYSTEM
SE: Designates EWSD IC Type

PRINCIPAL ID

aa: Digital IC ID	[0-9,A-Z]
bbbb: Digital Line Unit	[0000-9999]

SHELF

a: Shelf ID	[0-7]
bb: Low MOD	[00-15]
cc: High MOD	[00-15]

DF1 LOCATION - see table 1

DF2 LOCATION - unused

ORIGINATION - see frame record

12B.8 DMS100 MELD Formats

RI	SYS	PRINC. ID	LINE GROUPS	DF1 LOC	DF2 LOC	ORIGINATION
LE	EN◊aa	abcccddefg	aaabb-cc	aaabbbcdeeffgh	◊◊◊◊◊◊◊◊◊◊	abbccddeeff

RI - Record Identification (LE for line equipment)

SYSTEM
EN: Designates DMS-100 IC Type aa: IC Version LM = Line Module Equipment Version
LC = Line Concentrator Equipment Version
LI = ISDN Line Concentrator Equipment version
LE = ISDN Enhanced Line Concentrator Equipment Version

PRINCIPAL ID

VERSION	LM	LC	LI	LE
a: CLEI IC designator	N	N	N	N
b: IC ID	[0-9,A-Z]	[0-9,A-Z]	[0-9,A-Z]	[0-9,A-Z]
ccc: Network designator	LME	LCE	LCI	LCM
dd: Network ID	[00-99]	[00-99]	[00-99]	[00-99]
e: Network part designator	B	M	I	M
f: Network part ID	[0-9]	[0-9]	[0-9]	[0-9]
g: Network ID/Hundreds (NID/C)	[0-9]	[0-9]	[0-9]	[0-9]
LINE GROUP IDS				
aaa: Grouping designator	LD◊	LSG	LSG	LSG
bb: Low Line Group ID ("-" delimits low and high group IDs)	[00-99]	[00-99]	[00-99]	[00-99]
cc: High Line Group ID	[00-99]	[00-99]	[00-99]	[00-99]

DF1 LOCATION - see table 1

DF2 LOCATION - unused

ORIGINATION - see frame record

Appendix 12C: TRANSLATIONS SYNCHRONIZATION TABLES

12C.1 Sync CCF Mapping Table

The "sync ccf mapping" table, will contain a one to one mapping from the standard CCF values to BCC specific ones. This allows the BCC to use different CCF values than the standard ones. These values must be recognized by the SOAC and MAS systems at the BCC as well.

A process will scan the incoming UPDTRN contract for CCF values, and check them against the "Sync CCF Mapping" table for a match on the "generic" value (left side of the table). If a match is found the CCF value from the right side of the table should replace the "generic" value.

Sync CCF Mapping Table		
CCF "Standard" Value	**BCC Specific Value**	**Comments**
esm	cfu	call fwd

Example:

```
ccf=esm would map to ccf=cfu
```

12C.1.1 Sync FID Mapping Table

The "sync fid mapping" table, will contain a mapping from ""<tag>=Y" to a CCF value. This allows the BCC to decided whether a particular service feature will be represented by the FID or by the CCF value.

The tags processed against this table are: cfu, chd, ean, fls, cd and ccd. These tags (in the form <tagname>=Y), in the contract should be matched against tagnames in the "Sync FID Mapping" table (found on the left side of the table). If any matches are found, the <tagname>=Y tag/value pair should be replaced by a CCF=tablevalue pair, where the tablevalue is taken from the right side of the table.

Sync FID Mapping Table		
FID "Standard" Value	**BCC Specific Value**	**Comments**
chd	eab	call hold
fls	fls	free line service
ean	ean	conference calling

Example:

```
chd=y would map to ccf=eab
ean=y would map to ccf=ean
```

12C.1.2 Tran Sync Special Processing Table

The "Tran Sync Special Processing" table will contain a user tunable list of tagnames and the special processing that is required for each tagname. The table is initially populated, for the 1/1AESS, with those tags that were in the the former internal Sync Preserve Tag Table. The Tran Sync Special Processing Table is a WC based table with instance keys of IC type, generic, and tag level. [1]The "preserve" column means to validate the tag and its value if the tag is on the contract, but silently retain the tag in the data base if it is not on the contract. Tags that cannot be recovered from an IC would be included in this column. The "suppress validation" column means to silently suppress validation of this tag whether it appears in the contract or in the data base. "Suppress validation" implies that the tag is preserved in the data base. The "suppress update" column means to validate the tag both ways [2]and print out any discrepancies, but do not update the translation tag even if the run request is for update. Tags which can be recovered from the IC, but whose values may be legitimately different from that in the data base are included in this column. An example might be LCC from a non-ESS IC.

Tran Sync Special Processing			
Tag	**Preserve**	**Suppress Validation**	**Suppress Update**
BAAD	X		
HTG	X		
HTID	X		
SFGALL	X		
BAAD	X		
CEG	X		
LCC	X		
MAUSOC	X		
PKG	X		
TLI	X		
SFGALL	X		
TRUNCATE	X		

1. Tag level refers to the group level or the service level.
2. I.e., recognize tag omissions in either the data base or the IC, and tag value differences.

Tran Sync Special Processing			
Tag	**Preserve**	**Suppress Validation**	**Suppress Update**
AA	X		
BTNCC	X		
CD	X		
CFNACC	X		
CFNCI	X		
CFNBACC	X		
CFNBCI	X		
CFNDACC	X		
CFNDCI	X		
CFUOV	X		
INT	X		
NPS	X		
PORT	X		
RCYC	X		
RLK	X		
TC	X		
TPL	X		
TSP	X		

Appendix 12D: COUNT DATA EXTRACT

Count Data Extract by Service Interface Contract between the SWITCH System and the Count Module One header section is provided for each count data extract file.

Table 12D-1. Count Extract File Header FCIF Section

FCIF Section *SECTION{TAGS}%	Description	Format	R/O/CO Flag	Note
*HDR{				Header Section
CONTRACTID	Contract Name (SWCM)	8 C	R	<1> SWITCH sys. to CM
CONTRACTVER	Contract Version (1.0)	8 C	R	<1>
ORIGINATOR	SWITCH System logical address	8 C	R	<1>
DESTINATION	Count Module logical adrs (CM)	12 C	R	<1>
SWENTITY	SWITCH system entity	2 C	R	<1>
SWEXTRACT	SWITCH system extract ID	8 C	R	<1> Unique for BCC
EXTDATE	Extract Date (yyyymmdd)	8 C	R	<1>
}%				<1>

An FCIF section is provided for each primary service, with aggregates for design data, translations data, switch port(s), and any secondary services. Switch equipment group data is provided for each switch port. To reduce redundancy, switch port data will not be repeated under secondary services. The design data is described in Appendix 6B.

Table 12D-2. Count Extract File Service FCIF Section

FCIF Section *SECTION{TAGS}%	Description	Format	R/O/CO Flag	Note
*SVC{				(Primary) Service Section
IC	Intelligent Controller	11 C	R	CLLI-11 code
IT	Technology Type	4 C	R	IC or switch type
NSG	Technology Generic	6 C	O	IC or switch generic
CTX	Centrex group ID	18 C	O	<0,1>
HML	Multiline hunt group ID	18 C	O	<0,1>
SFG	SFG group ID	18 C	O	<0,1>
DSGN{			R	Design Data Aggregate
NC	Number of Conductors	1 C	R	<1>
GS	Grade of Service	1 C	O	<0,1>
CS	Class of Service	1 C	O	<0,1>

FCIF Section *SECTION{TAGS}%	Description	Format	R/O/CO Flag	Note
CT	Category of Service	1 C	R	<1>
COT	Central Office Termination	1 C	R	<1>
PLS	Pulsing	1 C	O	<0,1>
B1	B1 Channel Service	4 C	O	<0,1>
B2	B2 Channel Service	4 C	O	<0,1>
BD	D Channel Service	5 C	O	<0,1>
CO	CO Administrative Type	5 C	O	<0,1>
BR	Bearer Capability Name	8 C	O	<0,1>
AL	Assignable Line USOC	5 C	O	<0,1>
CL	Class of Service USOC	5 C	O	<0,1>
}				<1>
TRANS{			O	Translation Data Aggregate
AA	Alternate Answering	150 C	O	<0,1>
...	see Att. B for list of trans. tags			
XXTR	XX Trigger for Adv. Intel.	150 C	O	<0,1>
}				<0,1>
SWPT{			R	Switch Port Aggregate
RU	Remote CLLI	11 C	O	<0,1>
UX	Switch Port Type	10 C	R	<1>
CT	Card Type	8 C	O	<0,1>
HCT	Hierarchy Category	8 C	O	<0,1>
AM	Administrative Constraint	14 C	O	<0,1>
AD	Assignment Category	10 C	O	<0,1>
ADNLPARTY	Additional Party	1 C	O	<0,1> "Y" for all but one
SWEQ{			R	Switch equipment aggregate
EXID	Equip Grp ID (MDF Adrs)	50 C	R	<1>
HL	Hierarchy Level	2 C	R	<1>
SI	Spread Group Indicator	1 C	O	<0,1>
LY	Load Group Indicator	1 C	O	<0,1>
MS	Measurement Group Indicator	1 C	O	<0,1>

FCIF Section *SECTION{TAGS}%	Description	Format	R/O/CO Flag	Note
}				<1,N_SWEQs>
}				<1,N_SWPTs>
SSVC{			O	Secondary Switch Port Aggregate
DSGN{			R	Design data aggregate
}				<1>
TRANS{			O	Translation data aggregate
}				<0,1>
}				<0,N_SSVCs>
}%				<1,N_PSVCs>

For a secondary service, the only required attribute is the category of service. Some translation tag values can be 150 characters, although most of them are much shorter. Also, some translation tags, such as CCF, can have multiple occurrences, <0,N>. For ISDN service, up to four switch ports may be used, the OE (DSL) and up to three POEs. One trailer section is provided for each count data extract file. It lists the number of each type of count data aggregate in the file.

Table 12D-3. Count Extract File Trailer FCIF Section

FCIF Section *SECTION{TAGS}%	Description	Format	R/O/CO Flag	Note
*TLR{				Trailer Section
FSECINF{			R	FCIF Section Info
FSECNM	FCIF Section Name	8 C	R	<1>
FSECCT	FCIF Section Count	8 C	R	<1>
}				<2,3>
}%				<1>

Appendix 12E: LOAD GROUP COUNTS INTERFACE

Load Group Counts Interface Contract between the SWITCH System and PVI The load group count file header includes the date that the data was extracted from the SWITCH system data base:

Table 12E-1. Load Group Count File Header FCIF Section

FCIF Section *SECTION{TAGS}%	Description	Format	R/O/CO Flag	Note
*HDR{				Header Section
CONTRACTID	Contract Name (SWPVI)	8 C	R	<1> SWITCH sys. to PVI
CONTRACTVER	Contract Version (1.0)	8 C	R	<1>
ORIGINATOR	SWITCH System logical address	8 C	R	<1>
DESTINATION	PVI logical address (PVI)	12 C	R	<1>
SWENTITY	SWITCH system entity	2 C	R	<1>
SWEXTRACT	SWITCH system extract ID	8 C	R	<1> Unique for BCC
EXTDATE	Extract Date (yyyymmdd)	8 C	R	<1>
}%				<1>

The load group counts are sent to PVI in a count data section in equipment group aggregates.

Table 12E-2. Load Group Count File Count Data FCIF Section

FCIF Section *SECTION{TAGS}%	Description	Format	R/O/CO Flag	Note
*CD{				IC Count Data Section
IC	Intelligent Controller	11 C	R	CLLI-11 code
IT	Technology Type	4 C	R	IC or switch type
NSG	Technology Generic	6 C	O	IC or switch generic
EQCNT{			R	Counts by Load Group
EQPT	Load Group ID	50 C	R	
LEV	Load Group Level	1 C	R	
CNT{				NAL Counts
CN	Count Name (NAL)	10 C	R	
CV	Count Value	10 C	R	
}				<1>

FCIF Section *SECTION{TAGS}%	Description	Format	R/O/CO Flag	Note
}				<1,N_load_groups>
}%				<1,N_ICs>

The load group count file trailer lists the number of count data aggregates in the file:

Table 12E-3. Load Group Count File Trailer FCIF Section

FCIF Section *SECTION{TAGS}%	Description	Format	R/O/CO Flag	Note
*TLR{				Trailer Section
FSECINF{			R	FCIF Section Info
FSECNM	FCIF Section Name	8 C	R	<1>
FSECCT	FCIF Section Count	8 C	R	<1>
}				<2,3>
}%				<1>

Appendix 12F: IC LEVEL COUNTS CONTRACT

IC Level Counts Interface Contract between the Count Module and PVI The count file header includes the date that the data was extracted from the SWITCH system data base. The SWITCH system logical address originating the extract (SWORIG) is obtained from the SWITCH system logical address (ORIGINATOR) in the header of the count extract file.

Table 12F-1. IC Count File Header FCIF Section

FCIF Section *SECTION{TAGS}%	Description	Format	R/O/CO Flag	Note
*HDR{				Header Section
CONTRACTID	Contract Name (CMPVI)	8 C	R	<1> Count Module to PVI
CONTRACTVER	Contract Version (1.0)	8 C	R	<1>
ORIGINATOR	Count Module logical address	12 C	R	<1>
DESTINATION	PVI logical address (PVI)	12 C	R	<1>
SWORIG	SWITCH system log. add. originating extract	8 C	R	<1>
SWENTITY	SWITCH system entity	2 C	R	<1>
SWEXTRACT	SWITCH system extract ID	8 C	R	<1> Unique for BCC
EXTDATE	Extract Date (yyyymmdd)	8 C	R	<1>
}%				<1>

The IC counts are sent to PVI in IC count aggregates in the Count Data section.

Table 12F-2. IC Count File Count Data FCIF Section

FCIF Section *SECTION{TAGS}%	Description	Format	R/O/CO Flag	Note
*CD{				IC Count Data Section
IC	Intelligent Controller	11 C	R	CLLI-11 code
IT	Technology Type	4 C	R	IC or switch type
NSG	Technology Generic	6 C	O	IC or switch generic
ICCNT{			O	IC Counts (from Def. Table)
CN	Count Name	10 C	CO	MU in PVI
CV	Count Value	10 C	CO	
}				<1,N_ic_counts>
}%				<1,N_ICs>

12F.1 Count Data Example:

Although this example shows both equipment group and IC counts in the same section, the files are separate and a count data section would have either EQCNT or ICCNT aggregates, but not both.

```
*CD{
 IC=HOLMJNHODS5;IT=5ES;NSG=9.1;
 EQCNT{EQPT=1010-251L;LEV=4;
  CNT{CN=NAL;CV=26;}}
 ICCNT{CN=CENTREX;CV=286;}
 ICCNT{CN=POTS;CV=12345;}
}%
```

Note: When Holmdel changes to 9.2 in the SWITCH system data base, the above example will produce the CD section in the FCIF file as shown below:

```
*CD{
 IC=HOLMJNHODS5;IT=5ES;NSG=9.2;
 EQCNT{EQPT=1010-00251L;LEV=4;
  CNT{CN=NAL;CV=26;}}
 ICCNT{CN=CENTREX;CV=286;}
 ICCNT{CN=POTS;CV=12345;}
}%
```

The count file trailer lists the number of count data aggregates in the file:

Table 12F-3. IC Count File Trailer FCIF Section

FCIF Section *SECTION{TAGS}%	Description	Format	R/O/CO Flag	Note
*TLR{				Trailer Section
FSECINF{			R	FCIF Section Info
FSECNM	FCIF Section Name	8 C	R	<1>
FSECCT	FCIF Section Count	8 C	R	<1>
}				<2,3>
}%				<1>

Appendix 12G: DLE DATA EXTRACT INTERFACE TO PVI

This appendix describes the DLE Data Extract Interface Contract between the SWITCH System and PVI. All items listed in the interface contract are to be extracted whenever they are found in the SWITCH system data base. The allowable number of occurrences for a tag or aggregate is shown relative to the section unless it is in an aggregate, in which case it is relative to the aggregate. If the number of occurrences for a tag is <1>, the corresponding FCIF section or aggregate should not be provided on the interface unless a value for that tag is present. The interface contract shows the SWITCH system data base grit location from which each data item is extracted. The body is indicated by the type (e.g., chan, for nubod of type = chan). When more than one edge of a given type can exist from a node, the destination node type is shown in brackets before the edge. For example, a channel between a CC and an IC can have two external edges, denoted here by [cc]exedg and [ic]exedg to distinguish them. For ICs and RUs, mapping is performed to provide the external ID on the interface; internal ID grit locations are marked with an asterisk to indicate that this mapping needs to be performed. There will be one header FCIF section.

Table 12G-1. Header (HDR) FCIF Section

FCIF Section *SECTION{TAGS}%	Description	Format	R/O/CO Flag	Note
*HDR{		<1>		Header Section
CONTRACTID	8C	<1>		Contract Name (WPNLOAD)
CONTRACTVER	8C	<1>		Contract Version (4.1)
CONTRACTDT{		<1>		Contract Date & Time
DATE	8C	<1>		Contract Date (yyyymmdd)
TIME	8C	<1>		Contract Time (hhmmss)
ZONE	3C	<1>		Time Zone (GMT)
}				
ORIGINATOR	8C	<1>		Orig. logical address (e.g., SWITCH sys. adrs.)
OVERSIONID	8C	<1>		Originator Version (1.8)
DESTINATION	12C	<1>		Dest. logical address (e.g., PVI adrs.)
SWEXTRACT	20C	<1>		Originating system extract ID (unique for BCC)
}%				

There will be one FCIF section for each wire center, including wire centers without DLE.

Table 12G-2. Wire Center (WCS) FCIF Section

FCIF Section *SECTION{TAGS}%	Format	No. of Occur.	SWITCH System Grit Location	Note
*WCS{		<1,N>		wire center data
WCE	6C	<1>		wire center ID (external, prwc)
WCR	4C	<1>		wire center reference ID (internal, PRIM)
DLE	1C	<1>		"Y" if there is a CC in the WC, "N" otherwise
ENT	1C	<1>		SWITCH system entity
}%				

There will be one FCIF section for each IC. Remote units are not included here but in the following section.

Table 12G-3. Intelligent Controller (IC) FCIF Section

FCIF Section *SECTION{TAGS}%	Format	No. of Occur.	SWITCH System Grit Location	Note
*IC{		<0,N>		IC data
WCE	6C	<1>		wire center ID (external, prwc)
SNM	11C	<1>	ic.exedg.exidval	IC ID (switch name) (external, clli-11)
IT	7C	<1>	ic.ic_type	IC type (e.g., 5es)
NSG	6C	<1>	ic.generic	IC software generic (e.g., 5e9.2)
}%				

There will be one FCIF section for each remote unit. The wire center to be provided is that of the remote unit, not that of the host IC.

Table 12G-4. Remote Unit (RUS) FCIF Section

FCIF Section *SECTION{TAGS}%	Format	No. of Occur.	SWITCH System Grit Location	Note
*RUS{		<0,N>		RU data
WCE	6C	<1>		wire center ID (external, prwc)
RU	11C	<1>	ru.exedg.exidval	RU ID (external, clli-11)
SNM	11C	<1>	*ru.hostedg.idx	host IC ID (switch name) (external, clli-11)
}%				

There will be one FCIF section for each switch equipment group. The IC ID (SNM) will be obtained from the factor edge if the equipment group is at the highest level and if SNM is not available from the fsum edge. The RUs will be suppressed if more than one are found for a group (the group is in the host and subtending groups are in different RUs). The SWEQ section data enables PVI to determine the IC that the equipment group is a part of as well as the remote unit, if any, that it is a part of.

Table 12G-5. Switch Equipment Group (SWEQ) FCIF Section

FCIF Section *SECTION{TAGS}%	Format	No. of Occur.	SWITCH System Grit Location	Note
*SWEQ{		<0,N>		SWEQ data
WCE	6C	<1>		wire center ID (external, prwc)
SWEQI	16C	<1>	sweq.id	SWEQ ID (internal)
SWEQE	70C	<1>	sweq.exedg.exidval	SWEQ ID (external, canonical)
SNM	11C	<0,1>	*sweq.fsumedg.idx	IC ID (switch name) (external, clli-11)
			*sweq.factredg.idx	
RU	11C	<0,1>	*sweq.fsumedg.idx	RU ID (external, clli-11)
HL	2C	<1>	sweq.hier_level	hierarchy level
TOSWEQI	16C	<0,1>	sweq.factredg.idx	ID of higher level SWEQ (internal,
				(not provided for highest level)
}%				

There will be one FCIF section for each switch port rated higher than DS0. DS0 switch ports are not included on the interface.

Table 12G-6. Switch Port (SWPT) FCIF Section

FCIF Section *SECTION{TAGS}%	Format	No. of Occur.	SWITCH System Grit Location	Note
*SWPT{		<0,N>		SWPT data
WCE	6C	<1>		wire center ID (external, prwc)
SWPTI	16C	<1>	swpt.id	SWPT ID (internal)
SWPTE	70C	<1>	swpt.exedg.exidval	SWPT ID (external, canonical)
SWEQI	16C	<1>	swpt.factredg.idx	SWEQ ID that provides SWPT (internal)
SNM	11C	<1>	*swpt.cntrledg.idx	IC ID (switch name) (external, clli-11)
RU	11C	<0,1>	*swpt.cntrledg.idy	RU ID (external, clli-11)
AM	14C	<0,1>	swpt.admin_constraint	administrative constraint
CT	8C	<0,1>	swpt.card_type	card type
DR	1C	<0,1>	swpt.data_rate	data rate
CAD	8C	<0,1>	swpt.cr_avl_dt	carrier circuit available date
CDD	8C	<0,1>	swpt.cr_disc_dt	carrier circuit disconnect date
DI	1C	<0,1>	swpt.dyn_ind	dynamic indicator (y, n, or null)
}%				

There will be one FCIF section for each carrier controller.

Table 12G-7. Carrier Controller (CC) FCIF Section

FCIF Section *SECTION{TAGS}%	Format	No. of Occur.	SWITCH System Grit Location	Note
*CC{		<0,N>		CC data
WCE	6C	<1>		wire center ID (external, prwc)
CCI	16C	<1>	cc.id	CC ID (internal)
CCE	70C	<1>	cc.exedg.exidval	CC ID (external, canonical)
CCT	4C	<0,1>	cc.cc_type	CC type (adm, cot, dcs, edsx, hdt, onu, rt)
CA	50C	<0,1>	cc.cc_addr	CC address
CG	6C	<0,1>	cc.cc_gen_id	CC generic
CL	11C	<0,1>	cc.cc_clli	CC clli
CH	8C	<0,1>	cc.cc_hecig	CC HECIG
CM	7C	<0,1>	cc.cc_model	CC model (ref. data instance key)
TID	20C	<0,1>	cc.target_id	target identifier
TSI	1C	<0,1>	cc.tsi_ind	tsi indicator (y/n)
ADR	6C	<0,10>	cc.avail_drp_rt	available drop rates
BW{		<0,N>		bandwidth information
BWI	16C	<1>	cc.[bw]path.idx	bandwidth ID (internal)
}				
PATH{		<0,N>		path information
PATHI	16C	<1>	cc.[path]path.idx	path ID (internal)
}				
RM	60C	<0,1>	cc.rmk	remarks
CCPTR{		<0,N>		cc port range information
RNGLO	70C	<1>		"inv ranges" table reference data
RNGHI	70C	<1>		"inv ranges" table reference data
}				
}%				

Logical 2-way edges are implemented as two 1-way edges in the SWITCH system data base. Therefore, when 2-way path edges are used to connect Path and Bandwidth nodes to CCs, two 1-way path edges are found at the Path or Bandwidth node, each pointing to a CC. If there are two path edges from a node, the same SCID will be on both; the SCID can be obtained from either edge. The first CC encountered will be sent with its internal ID following the SCCI1 tag. If there is a path edge to another CC, its internal ID will be sent following the SCCI1 tag. There will be one FCIF section for each path node in the SWITCH system data base.

Table 12G-8. Path (PATH) FCIF Section

FCIF Section *SECTION{TAGS}%	Format	No. of Occur.	SWITCH System Grit Location	Note
*PATH{		<0,N>		path data
WCE	6C	<1>		wire center ID (external, prwc)
PATHI	16C	<1>	path.id	path ID (internal)
TY	4C	<1>	path.pathedg.typex	type of terminating node (ic/cc)
SNM	11C	<0,1>	*path.pathedg.idx	IC ID (switch name) (external, clli-11)
CCI	16C	<0,1>	path.pathedg.idx	CC ID (internal)
SCID	6C	<0,1>	path.pathedg.scid	SONET carrier circuit ID
SCCI1	16C	<0,1>	path.pathedg1.idx	first CC ID (internal)
SCCI2	16C	<0,1>	path.pathedg2.idx	second CC ID (internal)
MNI	1C	<0,1>	path.mng_ind	management indicator (p, n, null)
}%				

There will be one FCIF section for each bandwidth node in the SWITCH system data base.

Table 12G-9. Bandwidth (BW) FCIF Section

FCIF Section *SECTION{TAGS}%	Format	No. of Occur.	SWITCH System Grit Location	Note
*BW{		<0,N>		bandwidth data
WCE	6C	<1>		wire center ID (external, prwc)
BWI	16C	<1>	bw.id	bandwidth ID (internal)
BWE	70C	<1>	bw.exedg.exidval	bandwidth ID (external, canonical)
SWEQI	16C	<0,1>	bw.pathedg.idx	SWEQ ID bandwidth termination (internal)
CCI	16C	<0,1>	bw.pathedg.idx	CC ID bandwidth termination (internal)
SCID	6C	<0,1>	bw.pathedg.scid	SONET carrier circuit ID
SCCI1	16C	<0,1>	bw.pathedg1.idx	first CC ID (internal)
SCCI2	16C	<0,1>	bw.pathedg2.idx	second CC ID (internal)
PATHI	16C	<1>	bw.factredg.idx	ID of associated path (internal)
INF	5C	<0,1>	bw.intc_stand	interface standard (TR303, TR008)
MNT	4C	<0,1>	bw.mng_type	management type
CAP{		<0,7>		capacities
AR	6C	<1>	bw.cap.ar	assignment rate (e.g., ds3, ds1, ds0)
ECP	6C	<0,1>	bw.cap.eng_cap	engineered capacity (CCS)
ACP	6C	<0,1>	bw.cap.asgn_cap	CCS assigned
ASC	6C	<0,1>	bw.cap.asm_cap	CCS assembled
ALM	6C	<0,1>	bw.cap.alim_cap	CCS w/ asgnmt limitations
NCP	6C	<0,1>	bw.cap.nsel_cap	non-selectable CCS
DCP	6C	<0,1>	bw.cap.disc_cap	CCS pending disconnect
UF	2C	<0,1>	bw.cap.util_fac	utilization factor
}				
RTA	6C	<0,7>	bw.route_ar	ARs with route available capacity
DSA	6C	<0,7>	bw.disc_ar	ARs w/ pending disconnect spare
OR	20C	<0,1>	bw.ord_num	order number

DD	8C	<0,1>	bw.due_date	scheduled due date
RM	60C	<0,1>	bw.rmk	remarks
CRVR{		<0,N>		bw crv range information
RNGLO	70C	<1>		"inv ranges" table reference data
RNGHI	70C	<1>		"inv ranges" table reference data
}				
}%				

There will be one FCIF section for each carrier controller slot.

Table 12G-10. Carrier Controller Slot (SLOT) FCIF Section

FCIF Section *SECTION{TAGS}%	Format	No. of Occur.	SWITCH System Grit Location	Note
*SLOT{		<0,N>		slot data
WCE	6C	<1>		wire center ID (external, prwc)
SLOTI	16C	<1>	slot.id	slot ID (internal)
SLOTE	70C	<1>	slot.exedg.exidval	slot ID (external, canonical)
CCE	55C	<1>	slot.exedg.cc_id	CC ID (external)
NC	2C	<0,1>	slot.num_ckt	slot number of circuits allowed
WRC	2C	<0,1>	slot.wrk_ckt	working circuits on slot
EQI	1C	<0,1>	slot.eqp_ind	slot equipped indicator (y/n)
PLH	8C	<0,1>	slot.plug_hecig	plug-in HECIG
}%				

There will be one FCIF section for each carrier controller port.

Table 12G-11. Carrier Controller Port (CCPT) FCIF Section

FCIF Section *SECTION{TAGS}%	Format	No. of Occur.	SWITCH System Grit Location	Note
*CCPT{		<0,N>		CC port data
WCE	6C	<1>		wire center ID (external, prwc)
CCPTI	16C	<1>	ccpt.id	CCPT ID (internal)
CCPTE	70C	<1>	ccpt.exedg.exidval	CCPT ID (external, canonical)
CCE	55C	<1>	ccpt.exedg.cc_id	CC ID (external)
AX	45C	<0,1>	ccpt.exedg.aidx	access identifier for CC
SLOTI	16C	<1>	ccpt.contedg.idx	slot ID (internal)
AM	14C	<0,1>	ccpt.admin_constraint	administrative constraint (s, o)
CT	8C	<0,1>	ccpt.card_type	card type (pots, coin, uvg, bri, bri4, ou, ...)
CAD	8C	<0,1>	ccpt.cr_avl_dt	carrier circuit available date
CDD	8C	<0,1>	ccpt.cr_disc_dt	carrier circuit disconnect date
DI	1C	<0,1>	ccpt.dyn_ind	dynamic indicator (y, n, or null)
EN	4C	<0,1>	ccpt.encode	encoding protocol (e.g., 2b1q)
SIG	1C	<0,1>	ccpt.signaling	signaling (not expected to be used)
CTP	11C	<0,1>	ccpt.cc_term_pt	EDSX where ccpt terminates
RTF	1C	<0,1>	ccpt.rt_flg	receive/transmit flag
ADR	1C	<0,1>	ccpt.adsr	designed services indicator
AC	6C	<0,1>	ccpt.asgn_cap	assignment capacity
AU	6C	<0,1>	ccpt.asgn_use	capacity used
AVC	1C	<0,1>	ccpt.avail_cap	available capacity (y/n)
AL{		<0,6>		assignment limitations
LT	4C	<1>	ccpt.al.lim_type	limitation type
LV	4C	<1>	ccpt.al.lim_val	limitation value
}				
}%				

There will be one FCIF section for each channel, including super channels. Each CC-to-CC channel (including super channels) has one hyperedge indicating both CCs. Each CC-to-IC channel has an ex edge indicating the CC. The lowest level CC-to-IC channels also have an ex edge indicating the IC. CC-to-IC super channels have a control-by hyperedge that indicates the IC and any RU.

Table 12G-12. Channel (CHAN) FCIF Section

FCIF Section *SECTION{TAGS}%	Format	No. of Occur.	SWITCH System Grit Location	Note
*CHAN{		<0,N>		channel data
WCE	6C	<1>		wire center ID (external, prwc)
CHANI	16C	<1>	chan.id	channel ID (internal)
CHANCCE	70C	<1>	chan.[cc]exedg.exidval	chan ID for CC (external, canonical)
CCI1	16C	<1>	chan.[cc]exedg.idx	CC ID (internal)
AX	45C	<0,1>	chan.[cc]exedg.aidx	access identifier for CC
CCI2	16C	<0,1>	chan.[cc]exedg.idy	other CC ID (internal)
AY	45C	<0,1>	chan.[cc]exedg.aidy	access identifier for other CC
CHANICE	70C	<0,1>	chan.[ic]exedg.exidval	chan ID for IC (ext., canonical, not for super chan.)
SNM	11C	<0,1>	*chan.[ic]exedg.idx	IC ID (sw. name) (ext., clli-11, not for super chan.)
SNM	11C	<0,1>	*chan.[ic]cntrledg.idx	IC ID (sw. name) (ext., clli-11, for super chan.)
RU	11C	<0,1>	*chan.[ic]cntrledg.idy	RU ID (ru. name) (ext., clli-11, for super chan.)
AR	6C	<0,1>	chan.ar	assignment rate (e.g., ds3) (not for super channels)
PROP	1C	<0,1>	chan.prop_ind	proprietary indicator (y/n)
AC	6C	<0,1>	chan.asgn_cap	assignment capacity
AU	6C	<0,1>	chan.asgn_use	capacity used
AVC	1C	<0,1>	chan.avail_cap	available capacity (y/n)
CAP{		<0,7>		capacities
AR	6C	<1>	chan.cap.ar	assignment rate (e.g., ds3, ds1, ds0)
ECP	6C	<0,1>	chan.cap.eng_cap	engineered capacity (e.g., 28)
ACP	6C	<0,1>	chan.cap.asgn_cap	channels assigned
ASC	6C	<0,1>	chan.cap.asm_cap	channels assembled

ALM	6C	<0,1>	chan.cap.alim_cap	channels w/ asgnmt limitations
NCP	6C	<0,1>	chan.cap.nsel_cap	non-selectable channels
DCP	6C	<0,1>	chan.cap.disc_cap	channels pending disconnect
}				
SPA	6C	<0,7>	chan.spare_ar	ARs with spare capacity
DSA	6C	<0,7>	chan.disc_ar	ARs w/ pending disconnect spare
AL{		<0,6>		assignment limitations
LT	4C	<1>	chan.al.lim_type	limitation type
LV	4C	<1>	chan.al.lim_val	limitation value
}				
OR	20C	<0,1>	chan.ord_num	order number
DD	8C	<0,1>	chan.due_date	scheduled due date
RM	60C	<0,1>	chan.rmk	remarks
CHANR{		<0,N>		channel range information
RNGLO	70C	<1>		"inv ranges" table reference data
RNGHI	70C	<1>		"inv ranges" table reference data
}				
}%				

There will be one FCIF section for each CRV.

Table 12G-13. Call Reference Value (CRV) FCIF Section

FCIF Section *SECTION{TAGS}%	Format	No. of Occur.	SWITCH System Grit Location	Note
*CRV{		<0,N>		CRV data
WCE	6C	<1>		wire center ID (external, prwc)
CRVI	16C	<1>	crv.id	CRV ID (internal)
CRVCCE	70C	<1>	crv.[cc]exedg.exidval	CRV ID for CC (external, canonical)
CCE	55C	<1>	crv.[cc]exedg.cc_id	CC ID (external)
CRVICE	70C	<1>	crv.[ic]exedg.exidval	crv ID for IC (external, canonical)
SNM	11C	<1>	*crv.[ic]cntrledg.idx	IC ID (switch name) (external, clli-11)
RU	11C	<0,1>	*crv.[ic]cntrledg.idy	RU ID (ru name) (external, clli-11)
BWI	16C	<1>	crv.factredg.idx	ID of associated bandwidth (internal)
AC	6C	<0,1>	crv.asgn_cap	assignment capacity
AU	6C	<0,1>	crv.asgn_use	capacity used
AVC	1C	<0,1>	crv.avail_cap	available capacity (y/n)
AL{		<0,6>		assignment limitations
LT	4C	<1>	crv.al.lim_type	limitation type
LV	4C	<1>	crv.al.lim_val	limitation value
}				
OR	20C	<0,1>	crv.ord_num	order number
DD	8C	<0,1>	crv.due_date	scheduled due date
RM	60C	<0,1>	crv.rmk	remarks
}%				

There will be one FCIF section for each assembly (type SVC or ASM) which has at least one CCPT. Data is to be provided for both carrier and customer services, as well as assemblies. For specification of the grit location, "as" is used to mean either "svc" or "asm". When there is more than one route edge in a circuit, a General Service (GSVC) record should be created for each one. Each GSVC record is identified with an external ID (SVCE). If there is no termination ID code on a route edge, the external ID will be the external service ID, without anything appended (and with no added delimiter). If there are one or more components of the route edge termination code, then the external ID will consist of the external service ID, with the 4 components of the route edge termination ID code all appended, separated with the ":" delimiter:

a. DPA - different premise address
b. CKL - circuit location
c. LTI - loop termination ID
d. SGN - CLCI segment number

For example, a circuit leg that is identified by a CLCI segment number could appear as "CKT 2015556666::::3".

Table 12G-14. General Service (GSVC) FCIF Section

FCIF Section *SECTION{TAGS}%	Format	No. of Occur.	SWITCH System Grit Location	Note
*GSVC{		<0,N>		general service data (ASMs &
				carrier and customer SVCs)
WCE	6C	<1>		wire center ID (external, prwc)
TY	4C	<1>	as.type	assembly type (svc or asm)
SVCI	18C	<0,1>	svc.id†	SVC ID (internal)
SVCE	70C	<0,1>	svc.exedg.exidval†	SVC ID (external, canonical)
ASMI	16C	<0,1>	asm.id	ASM ID (internal)
BWI	16C	<1>	svc.assocedg.idx	ID of assoc. BW (internal) (carrier ckt only)
SF	14C	<0,1>	as.spec_func	specific low level function
DLCT	4C	<0,1>	svc.exedg.dlct	dialect (first one in SWITCH system DB)
CRI	1C	<0,1>	svc.cr_ind	carrier circuit indicator (y, null)
CC	7C	<0,1>	svc.cr_cost	carrier circuit cost
CR	4C	<0,1>	svc.cr_cost_rto	carrier circuit cost ratio
MT	1C	<0,1>	svc.material	carrier system material (c, f, m)
DT{		<0,3>		detailed regulatory info
DL	6C	<0,1>	svc.dt.det_reg_len	detailed regulatory length

DA	4C	<0,1>	svc.dt.det_reg_area	detailed regulatory area
}				
DU	2C	<0,1>	svc.det_reg_unit	detailed regulatory unit (ft,mi,kf,m,km)
AC	4C	<0,1>	asm.asm_cat	assembly category (e.g., pasm)
OD	3C	<0,1>	asm.osp_disconnect	outside plant disc. status
CCPT{		<1,N>		CC port(s) used by svc or asm
CCPTI	16C	<1>	as.[ccpt]compedg.idx	CCPT ID (internal)
}				
SWPT{		<0,N>		switch port(s) used
SWPTI	16C	<1>	svc.[swpt]compedg.idx	SWPT ID (internal)
}				
CHAN{		<0,N>		channel(s) used
CHANI	16C	<1>	as.[chan]compedg.idx	channel ID (internal)
}				
CRV{		<0,N>		CRV(s) used
CRVI	16C	<1>	as.[crv]compedg.idx	CRV ID (internal)
}				
SEQ{		<0,1>		service component sequence data
CDI	16C	<0,1>	svc.routedg.cc_dest	CC destination
BDE	11C	<0,1>	svc.routedg.bldg_dest	building destination
RDI	16C	<0,1>	(* if IC)svc.routedg.rte_dest	route destination
OPI	16C	<0,1>	svc.routedg.org_pnt	origin point
NX{		<1,16>		next identifier
SQN	2C	<1>	*derived*	sequence number (1, 2, ...)

GIDI	16C	<1>	svc.routedg.next.grp_intid	group internal identifier
PIDI	16C	<0,1>	svc.routedg.next.path_intid	path internal identifier
}				
}				
}%				

† One GSVC section per DLE leg of a multi-route circuit, with the following appended to the external service ID:

:svc.routedg.tid.dpa:svc.routedg.tid.ckl:svc.routedg.tid.lti:svc.routedg.tid.sgn
Dash and 1 character (1-9, a-z) are appended to multi-DLE leg internal service ID.

There will be one FCIF section for each cable pair (type = CP) that uses the DLE model (cp.spec_func = cc).

Table 12G-15. Cable Pair (CP) FCIF Section

FCIF Section *SECTION{TAGS}%	Format	No. of Occur.	SWITCH System Grit Location	Note
*CP{		<0,N>		cable pair data
WCE	6C	<1>		wire center ID (external, prwc)
CPI	16C	<1>	cp.id	cable pair ID (internal)
CA	10C	<1>	cp.exedg.cable	cable
PR	4C	<1>	cp.exedg.pair	pair
ASM{		<0,N>		assembly information
ASMI	16C	<1>	cp.[asm]compedg.idx	assembly ID (internal)
}				
SVC{		<0,N>		service information
SVCI	16C	<1>	cp.[svc]compedg.idx	service ID (internal)
}				
}%				

There will be one trailer FCIF section, listing the FCIF section types contained in the file and providing a count of the number of sections of each type.

Table 12G-16. Trailer (TLR) FCIF Section

FCIF Section *SECTION{TAGS}%	Format	No. of Occur.	SWITCH System Grit Location	Note
*TLR{		<1>		trailer information
FSECINF{		<3,16>		FCIF section information
FSECTP	8C	<1>		FCIF section type
FSECCT	8C	<1>		FCIF section count
}				
}%				

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13. SOAC AND SWITCH SYSTEM PROVISIONING INTERFACE

The SWITCH system must both receive information *from* other systems and provide information *to* other systems. One of the systems with which the SWITCH system will have an on-line interface is SOAC (Service Order Analysis and Control system). The interface with SOAC has two parts: an interface for provisioning requests and an interface for data redundancy management.

During the provisioning process, assignment and translation data needs to be sent to SOAC. Section 7 discusses the automatic and manual provisioning process in general. Section 6 explains the common assignment functions used by provisioning. Section 13 describes the functional design of the contracts for sending assignment and translation data to SOAC. [1] Generally, the information that the SWITCH system receives *from* SOAC across the SOAC and the SWITCH System Provisioning interface relates to circuit terminations that are to be added, disconnected, or rearranged as a result of customer-initiated provisioning requests. Information that the SWITCH system provides *to* SOAC across the SOAC and the SWITCH System Provisioning interface reflects inventory that the SWITCH system has assigned for support of provisioning requests.

The on-line provisioning interface between the SWITCH system and SOAC will also be used for the SWITCH system to pass data to SOAC so that SOAC can pass it to MAS. "MAS" (Memory Administration System) is the generic name used throughout this section to refer to systems that provide recent change messages to the line side of intelligent controllers. The MARCH system and RMAS are examples of two such systems, although equivalent systems may also receive the data described here. SOAC will be the intermediary system for transmission of translation data from the SWITCH system to MAS. MAS uses the translation data to create recent change messages for the line side of intelligent controllers.

The current SOAC/MAS interface does not provide MAS with translation data for all provisioning requests. SOAC sends translation data to MAS on provisioning requests that are processed in AUTO mode. [2]The COSMOS "back door" provides translation data in formatted recent change messages directly to MAS on provisioning requests which are assigned in INT and TDO mode. [3]Since the SWITCH system will adhere to OSSP to the extent possible, it will not have a "back door" to send translation data directly to MAS on INT and TDO mode provisioning requests, and on AUTO mode, when an "unexpected translation response" needs to be sent. This capability will be added to the SOAC and the

1. Refer to BR 752-106-040, "SWITCH System Contracts Directory", for details about the contracts.

2. On AUTO mode, when the SWITCH system needs to send "unexpected" translation data to MAS, the SWITCH system provides the translation data for the provisioning request. The "unexpected translation responses" are discussed in Section 13.2.4.

3. These processing modes are described in Section 7 of this document.

SWITCH system interface so that the SWITCH system can pass translation data to SOAC, for SOAC to pass to MAS.

Data will be passed across the SOAC and the SWITCH system provisioning interface in FCIF (Flexible Computer Interface Format). For both non-design and design provisioning requests, data will be sent by the SWITCH system as it is generated. The SOAC and the SWITCH system interface will use TOP/X.25 protocol on point-to-point links using Permanent Virtual Circuits.

The SOAC and the SWITCH System Provisioning interface will be used for many purposes: (1) to enable SOAC to obtain the assignments from the SWITCH system that are needed to build the assignment section of the provisioning request and to update downstream systems; (2) to enable SOAC to pass F1 updates to the SWITCH system so that the SWITCH system can update its data base with F1 cable pair assignments from LFACS; (3) to replace the "back door" that currently exists between COSMOS and MAS for MAS to obtain translation data on INT and TDO mode provisioning requests; (4) to provide remote administration systems with data need to update network elements; and (5) to enable the TIRKS system to obtain assignments for design circuits that are needed to build the WORD document.

The SOAC and the SWITCH System Provisioning interface is composed of several contracts. In the remainder of Section 13, the functional design and contracts for the SOAC and the SWITCH system interface will be described in detail.

13.1 Determining the SWITCH System Involvement

For line side provisioning requests, SOAC determines when to send messages across the SOAC and the SWITCH system interface to the SWITCH system. There are several conditions under which SOAC will send messages to the SWITCH system. Each condition is described briefly below. Detailed flows and discussion of the Provisioning Contracts involved are contained in the sections that follow.

1. Information that SOAC has parsed from the provisioning request indicates that both outside plant assignments and central office assignments or certain translation data are required for the provisioning request. In this case, SOAC will request assignments from both LFACS and the SWITCH system. LFACS provides the outside plant assignments, and the SWITCH system provides the central office assignments [4]and, if required, translation data.

4. With the migration of digital loop electronics from LFACS to the SWITCH system, the central office "boundary" has been moved out into the loop. The SWITCH system will make assignments on digital loop carrier systems out to the last electronic device before the copper plant begins (the LFACS "meetpoint").

2. Information that SOAC has parsed from the provisioning request indicates that only central office assignments or certain translation data are required for the provisioning request. In this case, SOAC will request assignments from the SWITCH system only. The SWITCH system provides the central office assignments and, if required, translation data.

3. SOAC has received an assignment request response from LFACS with the addition, change, or deletion of F1 cable pairs when SOAC has not previously determined that the SWITCH system is involved with the provisioning request. For F1 updates, the SWITCH system updates its data base, and may or may not provide central office assignments and/or translation data, based upon reference data parameters.

4. SOAC has received a cancellation on a provisioning request for which the SWITCH system previously accepted a message. [5]SOAC sends a cancellation to the SWITCH system so that the SWITCH system can cancel the provisioning request from its data base.

5. SOAC has received a completion on a provisioning request for which the SWITCH system previously accepted a message. SOAC sends the completion to the SWITCH system so that the SWITCH system can change the status of the assignments for the provisioning request from pending to working.

6. SOAC has received record information that the SWITCH system needs to update its data base. SOAC sends the record information to the SWITCH system. The SWITCH system updates its data base.

7. SOAC has received an outside plant assignment change from LFACS. SOAC sends the assignment change to the SWITCH system. The SWITCH system generates central office assignments (new or reused) and, if required, new translation data.

8. SOAC has received a route change (destination or next segment change) from the TIRKS system for a designed circuit provisioned on digital loop electronics that is administered in the SWITCH system. SOAC sends the assignment change to the SWITCH system. The SWITCH system generates central office assignments (new or reused).

The provisioning requests that can be processed through the SOAC and the SWITCH system interface are N (New connect request), C (Change request), D (Disconnect request), F (From request), T (To request), and R (Record request). The interface is capable of handling provisioning requests on precompletion (PRE), correction (COR), cancellation (CAN), and completion without correction (PCN) passes. [6]In addition, the interface handles assignment changes (ACE) and single-pass record orders (ROR).

5. "Accepted" means either (1) the provisioning request was successfully processed by the SWITCH system, or (2) the provisioning request errored but was kept in the data base.

6. Completion with correction (CPC) passes are sent to the SWITCH system as PCN passes, and SOAC outputs an RMA notice telling the user that the pass is a CPC.

The SOAC and the SWITCH system Provisioning interface is a wire center based, request-response interface. Messages between SOAC and the SWITCH system will be on a per pass basis. In the normal case, SOAC will send the SWITCH system one assignment request (AR) per wire center. The AR is packaged into a wire center "envelope" -- that is, everything within the AR will be collected by wire center. Within the wire center "envelope", the data is packaged by CTID (Circuit Termination Identifier). In most cases, the SWITCH system will respond by sending SOAC one assignment request response (ARR) per wire center. The ARR will be packaged into a wire center "envelope". Data within the wire center "envelope" will be packaged by CTID.

An "unexpected assignment response" will be sent to SOAC when assignment information for a CTID changes and no specific AR for that CTID was received from either SOAC on AUTO mode processing, or the ULBB on INT mode. An unexpected assignment response will be sent in the following cases: adding a leg to a multi-leg circuit which results in assignment changes affecting other legs (for example a bridge lifter, switch port or CRV change) for which no AR was received from SOAC; a switch port, channel (integrated into the IC), or CRV reassignment on a multi-service circuit (e.g. MADN, ISDN) for which an AR from SOAC was not received for all the services. SOAC will process the unexpected assignment information, include it in the Assignment Section and update downstream systems.

13.2 TRM Processing for Provisioning Requests

"Translation Redundancy Management" (TRM) is the name of the processing that the SWITCH system will perform to provide translation data to SOAC for MAS. Translation data is defined as any data that the SWITCH system must send to SOAC for MAS. There are two types of translation data:

- SWITCH system-and-MAS data -Translation data that is used in SWITCH system processing.
- MAS-only data -Translation data that is needed to update translations in the IC only. In most cases, this data will only be returned in TRM contracts (e.g., on INT or TDO mode orders).

TRM in the SWITCH system includes the functionality for input, storage, and output of translation data. This functionality is tunable so that, within limits, new MAS-only data can be handled without a new software release. [7]

Tunability is accomplished via tables or other reference data. In this section, such tables or reference data are collectively referred to as "tables". There are tables at each stage of the TRM flow in the SWITCH system. In order for the SWITCH system to handle new MAS-

7. The SWITCH System tunability will handle only new MAS-only data. The capability to handle new SWITCH system-and-MAS data without a new release may be added later.

only data, the new data must be entered in each of these tables. The following general strategy for tunability will be followed:

For input of data through the User Layer Building Block (ULBB), a table will validate data that is entered onto screens. Both the SWITCH system-and-MAS and MAS-only data will be validated. For the ULBB to accept new MAS-only data, the new data must be added to this table. For input from SOAC, however, there is no analogous table in the SWITCH system. There are, however, tables in SOAC which must be tuned for SOAC to send new MAS-only data to the SWITCH system.

Regardless of the input source (SOAC or ULBB), the input contract definitions contained in the Data Dictionary must be updated to include the new MAS-only data. Otherwise, the SWITCH system will not be able to accept new MAS-only data that appears in input contracts.

Directing MAS-only data contained in input contracts to storage in the data base will be done via the *transedg* (Translation edge) definition in the Data Dictionary. The *transedg* definition will specify which MAS-only data items will be stored. New MAS-only data must be added to the *transedg* definition so that the SWITCH system will recognize the data to store it. Storage of the SWITCH system-and-MAS data will be hard coded.

The SWITCH System Common Output process will generate output contracts. Tables will specify what data goes into the output contract. New MAS-only data items must be added to these tables so that the SWITCH system can place the new data into the appropriate output contracts.

Details on input, storage, output, and tunability of translation data are given in the remainder of this section.

13.2.1 Input of Translation Data for Provisioning Requests

There are two ways to input translation data for provisioning requests: automatically, through the SOAC and the SWITCH system interface, and manually, through the ULBB. [8]

SOAC Input

On AUTO mode provisioning requests, the translation data that applies to the provisioning request can be taken from the contracts from SOAC. This translation data will be stored in the SWITCH system for subsequent return in TRM contracts. Then, if the mode of the provisioning request subsequently changes to INT or TDO, or if "unexpected translation responses" on AUTO mode need to be sent (see Section 13.2.4), the translation data is already in the SWITCH system for the service.

8. Translation data may also be stored in the SWITCH system database as a result of the conversion process. At conversion, translation data which is stored in COSMOS will be moved to the SWITCH system. This section does *not* address conversion.

When an order is transitioned from AUTO mode to INT or TDO mode, and no prior ARs have been received from SOAC and none have been manually established in the SWITCH system, SOAC may send a Skeletal Provisioning Request contract (PRESOS) to the SWITCH system. This contract will be used by the SWITCH system as information only. The contract will be used to prepopulate work session screens and reduce the amount of data entry required when manually establishing assignment requests for INT or TDO mode orders.

In either of these situations, only the remaining translation data that applies to the provisioning request will need to be manually entered for the inward activity. If a provisioning request with outward activity (D, F, or C type provisioning request) is subsequently received, all translation data needed by MAS will probably be in the SWITCH system database. Still, the SWITCH system will provide the capability for the user to review translation data and to make changes as appropriate.

Data items in contracts from SOAC will not be validated, since it is assumed that contracts from SOAC are valid.

The SWITCH system will be able to accept new MAS-only data items from SOAC without a new release and correctly process them if SOAC places the new MAS-only data items in the ACL for the main (switched) leg of the circuit in the appropriate message section. No new aggregates (e.g., a TRAN aggregate) are required. Table changes in SOAC are required for SOAC to place the new data into appropriate contracts to the SWITCH system.

Manual Input

When a provisioning request is manually established in the SWITCH system (in INT or TDO mode), the amount of translation data that will have to be manually entered varies. For example on N type provisioning requests, most if not all translation data must be manually entered. On C and R type provisioning requests that add a service or change an existing service, only the translation data for the new service or for the modified service must be manually entered. For C type provisioning requests that withdraw an existing service, the translation data needed by MAS will probably already be in the SWITCH system.

Sources of translation data are a service order image, [9]LMOS, and intelligent controllers. In general, the SWITCH system-and-MAS data will be entered on screens where the

9. A service order image *must* be available to the user for INT and TDO mode provisioning requests if the SWITCH system is expected to process TRM on INT and TDO mode provisioning requests *or* if the SWITCH system is not expected to process TRM on INT and TDO mode provisioning requests but provisioning request processing will be used to load translation data into the database. If a provisioning request becomes INT or TDO mode in SOAC, one option is to tune SOAC exception tables so that a service order image is output with the RMA notice. Another option is to obtain a service order image via the INQ SO transaction into SOAC. If the provisioning request becomes INT or TDO mode in the SWITCH system, the SWITCH system will place the APSO (Append Service Order Flag) tag in the *MSG section of the RMA to SOAC. This will cause SOAC to output a service order image with the RMA notice.

SWITCH system needs it for its own processing. MAS-only data will be entered on translation screens. The SWITCH system will allow the user to enter translation data as tag data. "Tag data" refers to the format of the data needed for the input contract. The SWITCH system will validate the data by accessing a validation table.

Scripts will map the screen data to the input contract. The manual service provisioning and inventory contracts that will include MAS-only data in the SWITCH system are WSIPRV, PREINT, CORINT, PRETDO, CORTDO, WSICKT, UPDCKT, and ASGSO. [10]MAS-only data in work session contracts (WSIPRV, WSICKT) will be in tag-tag/tag-value format [11]and will be aggregated on a circuit basis. MAS-only data in input contracts (PREINT, CORINT, PRETDO, CORTDO, UPDCKT, ASGSO) will be in tag-value format and will also be aggregated on a circuit basis.

New MAS-only data items can be entered on the screens without requiring screen changes. In order for the ULBB to accept new MAS-only data, however, the new data must be added to the validation table. Tag names for new MAS-only data items should be the same as the tag names for the same new MAS-only data items in SOAC and the SWITCH system interface contracts.

13.2.2 Contract Definition

The SWITCH System Data Dictionary contains definitions of all input contracts. The definitions specify every data item that is allowed to appear in every input contract. In order for the SWITCH system to accept new MAS-only data, new data items must be added to the appropriate input contract definitions in the data dictionary.

13.2.3 Storing Translation Data for Provisioning Requests

This section contains the functional design for storage of translation data in the SWITCH system. These specifications apply regardless of the input source (SOAC or ULBB).

In the SWITCH system, there will be two ways to route data items to the appropriate place in the data base for storage. The mechanism used depends on whether a tag is existing or new, whether the SWITCH system needs the data for its own processing, *and*, for the latter, whether current the SWITCH system processing can be used or new processing (and, hence, a new release) is required. The rules are:

10. Translation data cannot be changed on the ASGSO contract.

11. That is, for each tag and value, there will be an aggregate that contains two tags and values. The value of one tag in the aggregate will be the *tag name* for the MAS-only data item. The value of the other tag in the aggregate will be the *value* for the MAS-only data item. For example, the tag and value "PIC=ATT" will appear in work session contracts as "TRDATA{TRTAG=PIC;TRVAL=ATT;}". This structure reduces the performance impact of tunability.

1. Existing tags (i.e., tags known to the SWITCH system at the time of a release):
   - MAS-only tags - storage is tunable.
   - the SWITCH system-and-MAS tags for which current processing is sufficient - storage is hard coded.
2. New tags (i.e., tags added in between releases):
   - MAS-only tags - storage is tunable.
   - the SWITCH system-and-MAS tags for which current processing is sufficient - storage is hard coded.
   - the SWITCH system-and-MAS tags for which new processing is needed - a new release is needed.

Appendix 13A contains the list of translation tags supported by the SWITCH system. An entry exists for each SWITCH system-and-MAS tag (i.e., used in SWITCH system processing) and each MAS-only tag (i.e., needed to update translations in the IC only). This data will be sent to the SWITCH system by SOAC and the ULBB.

Translation data will be stored in the SWITCH system in accordance with the Circuit-Service Model. The SWITCH system-and-MAS data (e.g., TN) will be stored in the database where the SWITCH system needs to access this data for its own processing. MAS-only data (e.g., CCF) will be stored on translation edges associated with primary services, secondary services, and groups. Data which will appear on translation edges can be determined by the contents of the Storage field in (Appendix 13A) for each entry (e.g., PSVC/TRNSL - translation edge off of a primary service).

The FXF GRIT structure for translation edges will consist of identifiers, a buffer, and filler. The MAS-only data will be stored in the buffer in tag-value pair format. The data in the buffer will be as accessible to the SWITCH system processing (e.g., accessible for output on contracts to SOAC, inquiries, and reports) as is data stored elsewhere in the SWITCH system. This includes new MAS-only data items that are added in between releases.

A *transedg* definition exists in reference data to allow service provisioning and inventory flows to determine which MAS-only tags should be stored. In order for the SWITCH system to handle new MAS-only tags, the new tags must be included in the *transedg* definition.

13.2.4 Determining MAS Involvement for Provisioning Requests

The SWITCH system is required to know when translation data for a provisioning request must be sent to SOAC for MAS.

On AUTO mode, an "unexpected translation response" will be sent to SOAC when a switch port, channel (integrated into the IC) or CRV for a circuit/service changes and no translation data for MAS has been built by SOAC. An unexpected switch port change could happen in the following cases: adding a leg to a multi-leg circuit, adding a secondary service to a MADN group or on an LST. The SWITCH system will send a TRM response for all MAS involved services within the request. The unexpected TRM sections can be included in the following contracts: PRESO, CORSO, ACESO. These contracts are discussed in Section 13.3. SOAC will process the TRM sections, including the unexpected response, and will send a translation package to MAS based on the TRM data.

For INT and TDO mode provisioning requests, the SWITCH system will screen all services on provisioning requests for current MAS involvement based on whether MAS cares about a provisioning request (this is known as "MAS Cares", for short) and whether the data of interest to MAS on the provisioning request is different ("MAS is Different", for short). "MAS Cares" means that:

- The service involves a stored program control intelligent controller (e.g., DMS-100 IC, 1ESS IC).
- The user-settable MAS Involvement Table in the SWITCH system reference data indicates that the SWITCH system should perform TRM processing for the particular provisioning request mode for the stored program control intelligent controller. [12] Table 13-1 contains an example of this table.
- The service involves switched service (i.e., there is a line switch port and/or a TN associated with the service(s) on the provisioning request).

"MAS is Different" means that the translation data for the current pending view of the service (the right side of the delta) is different from the translation data for the in-effect view of the service (the left side of the delta). [13]This includes both the SWITCH system-and-MAS data and MAS-only data.

The SWITCH system will keep track of whether the previous pass of a provisioning request was MAS involved. This knowledge will be used in combination with "MAS Cares" and "MAS is Different" to determine the action to be taken. Table 13-2 shows the actions that the SWITCH system will take for different combinations of "MAS Cares", "MAS is Different", and "Involved Last Pass".

Correction passes may change services that were *not* MAS involved on a prior pass to MAS involved. When this occurs, the SWITCH system will send a COR contract to SOAC. SOAC will use the COR contract from the SWITCH system to create a PRE contract to MAS.

Correction passes may also change services that were MAS involved on a prior pass to *not* MAS involved. The action taken by the SWITCH system will depend on whether *all* or

12. Note that the user *must* set the table the same for TRM processing for the particular provisioning request mode for all stored program control intelligent controllers in a wire center.

13. The SWITCH system will not perform pass-to-pass differencing. On INT and TDO mode provisioning requests, SOAC will do pass-to-pass differencing.

just *some* services on the provisioning request have changed to be no longer MAS involved. If the correction pass changes *all* services to be no longer MAS involved, the SWITCH system will send a COR contract to SOAC that contains only a header and *TMIS section. The *TMIS section will contain only the trmoc tag and the can=y flag. SOAC will use the COR contract from the SWITCH system to create a COR contract to MAS.

If the correction pass changes *some* but not all services to MAS not involved, the SWITCH system will send a COR contract to SOAC. The COR contract will have the normal structure but will omit the REC aggregate for any services that have changed to MAS not involved. SOAC will use the COR contract from the SWITCH system to create a COR contract to MAS. [14]

13.2.5 Output of Translation Data for Provisioning Requests

On MAS-involved INT mode provisioning requests, the SWITCH system will return to SOAC the central office assignments *and* any translation data for MAS. The SWITCH system will place the translation data in new sections that will be added to the INT mode ARR. On MAS-involved TDO mode provisioning requests, the SWITCH system will return to SOAC *only* translation data for MAS. The SWITCH system will place the translation data in a new message that will be added to the existing SOAC and the SWITCH system interface.

Note that not every translation data item will be output for every INT or TDO mode provisioning request. Only the translation data items that apply to the specific provisioning request and are present in the data base will be output. On multi-leg circuits, the SWITCH system will pass translation data to SOAC on the legs of the circuit against which the SWITCH system received the translation data on input. [15]There will be zero or more instances of translation data per INT or TDO mode provisioning request, each instance corresponding to a wire center on the provisioning request.

The SWITCH System Common Output process will generate output contracts. In brief, Common Output involves extracting the data from the data base and creating output contracts. During extraction, *all* data that applies to a service will be retrieved. All data on translation edges will be extracted in bulk. Therefore, no changes to extraction are required to retrieve new MAS-only data that is added in between the SWITCH system releases.

During creation of output contracts, data that should not appear in particular contracts will be dropped. [16]Adding and removing MAS-only translation tags is done via tables. New

14. See BR 752-106-040, "SWITCH System Contracts Directory," for full details on the contents of contracts containing translation data.

15. Since MAS requires that translation data be sent *only* on the switched leg of multi-leg circuits, service order writing practices must ensure that translation data appears *only* against the switched leg. Such writing practices should already be in place in BCCs currently using the SOAC/MAS interface.

MAS-only data items must be added to these tables so that the SWITCH system will not drop the new data when creating output contracts.

In most cases, there will be symmetry between input path, storage, and output path. Input tags will be routed to the correct node or node/edge based on the section of the input contract in which they appear. Tags will be output based on where they are stored in the data base. This means, for example, that for SOAC input, tags appearing in the *CAR section will be stored at the primary services level and output in the *TRMC section. Tags appearing in the *SDR section of a SOAC contract will be stored at the secondary services level and will be output in the *TRMS section. Tags appearing in the *HML section of a SOAC contract will be stored with the multiline hunt group and output in the *THML section. Tags appearing in the *SCH section of a SOAC contract will be stored with the series completion hunt group and output in the *TSCH section.

There are a few cases where there is asymmetry (i.e., a tag appears in both the *CAR and *SDR sections, but is output either *only* in *TRMC or *only* in *TRMS). When this occurs, the SWITCH system input and output tables will be tuned to block input and output of MAS-only tags from sections in which they do not belong for TRM purposes.

Most of the translation data items which the SWITCH system will pass to SOAC for MAS, if they apply to INT and TDO provisioning requests, do not require reformatting. This means that the SWITCH system will output these data items exactly as they are input. There are, however, a few translation data items that require reformatting. These data items are:

- PUL - Pulsing

  The SWITCH system receives the PUL tag from SOAC and the ULBB. If PUL=J, then the SWITCH system must output the TTC=Y tag-value pair to SOAC for MAS. If PUL is not J, the SWITCH system will not output the TTC tag to SOAC for MAS.

- SIG - Signaling

  The SWITCH system receives the SIG tag from SOAC and the ULBB. If SIG=L, then the SWITCH system must output the LPS=Y tag-value pair to SOAC for MAS. If SIG=G, then the SWITCH system must output the GST=Y tag-value pair to SOAC for MAS. If SIG is not L or G, the SWITCH system will not output the LPS or GST tags to SOAC for MAS.

- SER - Series Telephone Number

  The Series Telephone Number is input to the SWITCH system behind a TN tag in the *SCH section for series completion hunt groups. It must be output for MAS behind a SER tag in the *TSCH section. No change to the tag value is required.

- AU - Assignable Line USOC, CS - Class of Service USOC

16. Refer to BR 752-106-040, "SWITCH System Contracts Directory," for details about the content of output contracts.

The Recent Change USOC (RCU) tag is sent to SOAC for MAS. The SWITCH system derives the value for the RCU tag from the AU value for the service, or from the CS value if AU is not present.

13.2.6 Suspend/Sublet/Restore Responses

Suspend, sublet, and restore processing are described in Section 6. The responses to SOAC following suspend, sublet, and restore requests are described in this section. By providing a means to flow suspend, sublet and restore requests through MAS, it is possible to process with no manual intervention. Assuming the suspended switch port, channel, or CRV is valid for the sublet, the SWITCH system will reuse the switch port, channel, or CRV from the suspended service in the sublet service, and no frame work is necessary. If MAS can automatically process suspend, sublet and restore requests, then no RCMAC intervention is required.

As a result of a suspend request, the service is normally *suspended* in the IC. The switch port, channel, or CRV is still associated with the suspended service and may not be used for another (i.e., sublet) service. In this situation, subsequent sublet requests which attempt to use the switch port, channel, or CRV of the suspended service will result in an RMA condition.

The SWITCH system provides two ways to achieve flow-through of suspend/sublet orders in MAS. They both involve sending a remove/build TRM response to MAS for the suspended service. By disconnecting the suspended service, a subsequent sublet request which reuses the switch port, channel, or CRV of the suspended service flows through MAS. The TRM for suspend column in the *MAS Involvement* Table (see Table 13-1) controls which way flow-through will be achieved.

1. The suspended service may be automatically disconnected in response to a suspend request so that the sublet request may reuse the switch port, channel, or CRV of the suspended service without manual intervention in the RCMAC (the switch port, channel, or CRV is made spare following the suspend, and is therefore available for the sublet service). A TRM section containing *disconnect* information is returned to SOAC to be sent to MAS in response to a suspend request.

   The SWITCH System will also have the capability to provide sufficient information on restore responses to allow MAS to automatically restore a suspended service which has been disconnected. The restore request can flow through MAS even if the switch port, channel, or CRV in the circuit had been changed during sublet processing. A TRM section containing *new connect* information is returned to SOAC to be sent to MAS in response to a restore request.

   This method is employed if TRM is set to "S" for suspend. For continuity between releases, this method is employed also if TRM is set to "Y" which is equivalent to "S". All future references in this section to TRM for suspend will indicate "S".

2. The suspended service may be automatically disconnected at the time of a sublet request. A TRM section containing *disconnect* information for the suspend and new connect information for the sublet is returned to SOAC to be sent to MAS in response to an inward sublet request. In this case, the TRM section contains two RECs, one for the suspend (identified by SUSPEND=Y in the CTL aggregate) and one for the sublet (identified by SUBLET=Y in the CTL aggregate). The CTL aggregate includes the UCHG tag with a value of UEXP to indicate that there is unexpected TRM information in the section.

   A TRM section containing *new connect* information for the suspend and disconnect information for the sublet is returned to SOAC to be sent to MAS in response to an outward sublet request. The SWITCH System will also have the capability to provide sufficient information on sublet disconnect responses to allow MAS to automatically rebuild the suspended service which has been disconnected. This will allow a future restore request with a change action response to flow through MAS. The switch port, channel, or CRV just disconnected from the sublet is used for the suspend without further SWITCH system validation.

   This method is employed if TRM is set to "L" for sublet.

The second method is the only one that will achieve flow-through in MAS for those BCCs that have a policy of leaving soft dial tone in place on a suspended service. If the first method is attempted in these cases, MAS will disconnect the suspended service preventing the service from being changed to soft dial tone.

TRM for suspended service may be turned "on" and "off" in the SWITCH system via the *MAS involvement* reference data table. If TRM is turned "on", the entry in the table indicates whether TRM processing for MAS flow through must be performed at the time of the suspend request (value of "S") or at the time of the sublet request (value of "L"). See Section 14 for a description of the *MAS involvement* table.

13.2.6.1 Responses Following Suspend Processing

In the SWITCH system there are two *sublet options* available to a service which is suspended for both incoming and outgoing calls. If the *sublet option* is "Y" (Yes), then sublet services are allowed for this suspended service. If the *sublet option* is "N" (No), then sublet services are *not* allowed for this suspended service. See Section 6 for information regarding suspend processing in the SWITCH system.

The responses which are sent from the SWITCH system to SOAC following suspend requests are determined by the sublet option value and the TRM for suspend value in the *MAS involvement* table. Each case is described below.

- No Sublet Allowed (*Sublet Option* = *N*) or TRM set to "N" or "L"

Upon completion of processing of a flow-through suspend request in the SWITCH system in which the sublet option is "N" or TRM for suspend is "N" or "L", a PRESO service order response is sent to SOAC indicating that the suspend has been successfully processed.

If the suspend request was initiated via the SWITCH System ULBB (INT or TDO mode), the SWITCH system will send a standard TRM response to SOAC indicating that the suspend has been successfully processed.

In both cases, the translation packet sent to MAS will request that the service be suspended in the IC.

- Sublet Allowed (*Sublet Option* = *Y*) and TRM for suspend is "S"

Upon completion of processing of a flow-through suspend request in the SWITCH system in which the sublet option indicates that sublet requests are allowed for the suspended service, a PRESO service order response will be sent to SOAC indicating that the suspend has been successfully processed.

In addition, if TRM for suspended service is set to "S" in the SWITCH system, TRM sections containing disconnect information will be returned to SOAC to be sent to MAS.

If TRM for suspended service is set to "S" for the particular IC on which the suspended service resides, then the additional (unexpected) TRM sections will be included in the PRESO response to SOAC. The translation data provided in the TRM sections will be used to create a translation packet (TP) for MAS. Following suspend processing, this information will result in a disconnect of the suspended service in the IC. The sublet option is returned in the TRM response to inform MAS that this disconnect request is in support of a suspend service order.

By disconnecting the suspended service, a sublet request which reuses the switch port, channel, or CRV of the suspended service will flow through MAS. No manual intervention is necessary to disconnect the suspended service in order to connect the sublet service.

Note that if TRM for suspended service is "N" in the SWITCH system, then the TRM sections will not be returned. In this case, the response to SOAC will indicate that the service is to be suspended in the IC, not disconnected. A subsequent sublet which reuses the suspended switch port, channel, or CRV will require manual intervention in MAS to disconnect the suspended service and connect the sublet service. For the flow-through aspects of suspend/sublet/restore, TRM must be set to "L" or "S" (or "Y") in the SWITCH system.

If the suspend request was initiated via the SWITCH System ULBB (INT or TDO mode) and TRM is set to "S", the SWITCH system will send a TRM response to SOAC containing disconnect requests for the suspended service(s). The sublet option value will be returned to indicate to MAS that this disconnect request is in support of a suspend service order which will allow sublet services. SOAC will create a disconnect translation message for MAS from the TRM message.

Note that for both flow-through and INT/TDO mode suspend orders in which the sublet option is "Y", the information provided via TRM sections will be used to inform MAS that a disconnect is to be processed in the IC, even though the original suspend service order was a Change request.

13.2.6.2 Responses Following Sublet Processing

Sublet orders will only be accepted on services which have been suspended both incoming and outgoing, *and* have a sublet option of "Y".

The SWITCH system will first attempt to use the switch port, channel, or CRV in the suspended circuit for the sublet request. If the switch port, channel, or CRV was made available following suspend processing (i.e., it was disconnected via the TRM information), the sublet new connect request can successfully flow through MAS.

If the switch port, channel, or CRV in the circuit does not validate for the sublet, a new switch port, channel, or CRV will be selected for the sublet service and the switch port, channel, or CRV which is currently in the circuit will become spare. Since the switch port, channel, or CRV which was selected for the sublet service was spare, this sublet new connect can also flow through MAS.

Following a sublet request, the response to SOAC is a request to *build* the sublet service. Following flow-through processing, the PRESO will be a normal build request for the sublet service. Following INT/TDO mode processing, the TRM response will also contain a normal build request for the sublet service.

If TRM is set to "L" the TRM section contains two RECs, one for the suspend (identified by SUSPEND=Y in the CTL aggregate) and one for the sublet (identified by SUBLET=Y in the CTL aggregate). The CTL aggregate includes the UCHG tag with a value of UEXP to indicate that there is unexpected TRM information in the section. Full suspend information cannot be returned in the suspend REC if the suspended service has any secondary services associated with it or any hunting. If either secondary services or hunting exist for the suspended service, a MASUS tag is included in the CTL aggregate. The MASUS tag has a value of either "SEC" if there are secondary services, or "HTG" if there is hunting. If both secondary services and hunting are present, two MASUS tag/values are returned. The MASUS tag informs MAS that information about the suspended service is missing. MAS must then work the order manually.

A request to disconnect a sublet in the SWITCH System will be processed as a normal disconnect. The response to SOAC (either flow-through or INT/TDO mode) will indicate that the sublet service has been disconnected. The translation packet sent to MAS will request that the sublet service be disconnected in the IC.

If TRM is set to "L", the response is analogous to the sublet new connect response. Two RECs are returned in a TRM section to SOAC, one for the suspend and one for the sublet. If secondary services or hunting exists for the suspended service, the MASUS tag is included in the response. MAS uses the suspend REC to rebuild the suspended service after disconnecting the sublet service.

13.2.6.3 Responses Following Restore Processing

When a request to restore suspended service is received, processing in the SWITCH system will be dependent on the sublet option which was in effect at the time of the suspend request and the value of TRM for suspend in the *MAS involvement* table.

- No Sublet Allowed (*Sublet Option = N*) or TRM=N or L

  As part of the restore processing, the switch port, channel, or CRV in the circuit at the time of the restore request will be validated for the service being restored. If the switch port, channel, or CRV does not validate, a new switch port, channel, or CRV will be selected. The id of the switch port, channel, or CRV will be returned to SOAC in the response.

  Upon completion of processing of a flow-through restore request in the SWITCH system, a PRESO service order response (change order) will be sent to SOAC indicating that the suspended service has been restored (change from suspended state to working state). The switch port, channel, or CRV of the restored service will be identified (note that this may be a different switch port, channel, or CRV than is currently in the suspended service).

  If the restore request was initiated via the SWITCH system ULBB (INT or TDO mode), the SWITCH system will send a TRM response to SOAC requesting that the suspended service be restored (i.e., a change request).

- Sublet Allowed (*Sublet Option = Y*) and TRM=S

  If the sublet option was "Y" for this service and the value of TRM is "S" during the processing of the suspend request, then the circuit in the IC was disconnected via the TRM response sent following the suspend. Therefore, the request to restore the suspended service must provide MAS with sufficient information to recreate (i.e., rebuild) the suspended service, including any changes to the telephone number and design and translation data which were made while the service was suspended. This information will be sent via TRM sections in the response to SOAC which will be used to create the translation message for MAS.

  When restoring the suspended service, the SWITCH system will attempt to validate the switch port, channel, or CRV which is currently part of the suspended circuit. This may not be the switch port, channel, or CRV of the original suspended service (it may have been changed during sublet processing). If the switch port, channel, or CRV in the circuit does not validate for the service being restored, a new switch port, channel, or CRV will be selected.

Upon completion of processing of a flow-through restore request in the SWITCH system, a PRESO service order response will be sent to SOAC indicating that the suspended service has been restored. It will identify the old and new switch ports, channels, or CRVs if a new switch port, channel, or CRV had been selected.

In addition, if TRM is set to "S" in the SWITCH system, TRM sections will be returned to SOAC to be used in creating the translation message for MAS. The unexpected TRM sections will contain a request to build the restored service. It will contain all design and translation information needed by MAS to recreate the original suspended service (plus any changes made while the service was suspended).

If the restore request was initiated via the SWITCH system ULBB (INT or TDO mode) and TRM is set to "S", the SWITCH system will send a TRM response to SOAC requesting that the suspended service be rebuilt (i.e., a new connect request). The sublet option value will be returned to indicate to MAS that this new connect request is in support of a restore order for a suspended service which allowed sublet services.

Note that if TRM is set to "N" or "L" in the SWITCH system, then the TRM sections will not be returned. In this case, the response to SOAC will indicate that the service is to be restored in the IC, not processed as a new connect request. If TRM is "N" and a sublet had caused the suspended service to be disconnected, the request to restore suspended service fails in the IC. If TRM is "L" and a sublet had caused the suspended service to be disconnected, the request to restore suspended service will flow-through in the IC because the sublet disconnect response reestablished the suspended service.

Note that for both flow-through and INT/TDO mode restore orders in which the sublet option is "Y", the TRM information will be used to inform MAS that a new connect is to be processed in the IC, even though the original restore service order was a Change request.

13.2.6.4 Activity on Suspended Services

1. Suspended Only, No Sublet

   A suspended service with no working sublet is treated as a working service when service order or work order activity is requested. That is, any change activity on the suspended service is validated using normal validation rules. If the switch port, channel, or CRV of the suspended service is not valid for a change request, a new switch port, channel, or CRV will be selected.

   Special processing is done for SOAC and MAS responses based on the sublet option.

   - No Sublet Allowed (*Sublet Option = N*) or TRM = N or L

If the sublet option is "N" or TRM is set to "N" or "L", normal responses (including auto mode responses, INT/TDO responses, and work order TRM responses) will be returned to SOAC. If the change is MAS affecting, SOAC will send a translation message to MAS to process a change against the suspended service. This may include TN changes, design or translation data changes, or switch port, channel, or CRV changes.

- Sublet Allowed (*Sublet Option = Y*) and TRM = S

If the sublet option is "Y" and TRM is set to "S", then the suspended service was disconnected in the IC following the suspend request. In this situation, the SWITCH system will still allow any change to process against the service suspended in the SWITCH system database. All changes will be validated using normal validation rules. A new switch port, channel, or CRV will be selected if necessary. Following the changes, the circuit will be left in the "suspended state". Since the service has been disconnected, MAS cannot process changes to the service. An indicator will be returned to SOAC to be sent to MAS to inform MAS that no change is necessary in the IC for this request. The response to SOAC will include the tag, "ICCHG", with a value of "N" for each service which was suspended/disconnected. This tag will be copied by SOAC to the translation message for MAS and will inform MAS that no work need be done for this request.

If the change activity was initiated by an INT or TDO mode service order or a work order, the TRM response sent to SOAC for MAS will reflect the requested change, but the ICCHG=N tag and value will be included in the TRM sections. SOAC will copy this tag and value into the translation packet created for MAS to inform MAS that this request requires no action in the IC.

Upon restoring the suspended service, any changes made while the service was suspended will be included in the request to recreate the suspended service.

2. Suspended Service with Sublet Service

   - Service Order Activity on Suspended Service with TRM=S

     Responses for MAS for changes made to the suspended service will include the ICCHG=N tag/value to inform MAS that the change is not to be applied to the IC (since the service was disconnected to allow sublet).

   - Service Order Activity on Suspended Service with TRM=N or L

     The change information will be returned to SOAC and MAS via the flow-through SOAC responses or TRM responses (INT/TDO mode service orders) and must be applied to the IC as appropriate. The ICCHG=N indicator is *not* returned in these responses.

   - Service Order and Work Order Activity on Sublet Service

The change information will be returned to SOAC and MAS via the flow-through SOAC responses or TRM responses (INT/TDO mode service orders and work orders) and must be applied to the IC as appropriate. The ICCHG=N indicator is *not* returned in these responses.

- Work order activity affects the sublet only. No TRM message is returned for the suspend if a sublet is present.

13.2.7 Responses Following F and T Orders

Unexpected translations responses for Related and DUAL F and T orders will only include secondary services that were in the Assignment Request and those responses will use the CTC that was present in the Assignment Request rather than determining it based upon the database.

Unexpected TRM output for secondary services on F and T orders should only include secondary services in the *SDR section , not all secondary services in the circuit.

When TRM is included in the output, the CTC for each secondary service in the *TRMS section for a Related or DUAL F or T order should match the CTC that was in the *SDR section for that secondary service.

13.3 Provisioning Contracts

Section 13.3 discusses all contracts that are used in the SOAC and the SWITCH system Provisioning interface. This includes *all* processing, not just the processing that is needed to pass translation data to SOAC for MAS.

Several Provisioning Contracts are used for SOAC and the SWITCH system interface processing. [17]These contracts support processing of central office assignments, F1 updates, and line side translation data for MAS. The contracts are:

- Establish and Assign Provisioning Request (PRESO)
- Establish Skeletal Provisioning Request (PRESOS)
- Establish and Assign INT Mode Provisioning Request (PREINT)
- Establish and Assign TDO Mode Provisioning Request (PRETDO)
- Correct Provisioning Request (CORSO)
- Correct INT Mode Provisioning Request (CORINT)

17. See BR 752-106-040, "SWITCH System Contracts Directory," for details about the contents of the Provisioning Contracts.

- Correct TDO Mode Provisioning Request (CORTDO)
- Assignment Change for Provisioning Request (ACESO)
- Complete Provisioning Request (PCNSO)
- Cancel Provisioning Request (CANSO)
- Record Only Provisioning Request (RORSO)

Except for the PRESOS and PCNSO contract, the SWITCH system will use all of the above provisioning request contracts to pass translation data to SOAC for MAS. SOAC and the SWITCH system interface processing under each Provisioning Contract is described in detail in the remainder of this section.

13.3.1 Establish and Assign Provisioning Request

The message that the SWITCH system receives from SOAC under the Establish and Assign Provisioning Request Contract is called a PRESO AR. [18]The SWITCH system will receive a PRESO AR from SOAC on the first pass of a provisioning request that requires central office involvement [19]for a wire center. The SWITCH system will accept a PRESO AR from SOAC if:

- the SWITCH system has no knowledge of the provisioning request; that is,
  - — the SWITCH system has not yet received a PRESO AR for that provisioning request from SOAC, or
  - — All PRESO ARs sent to the SWITCH system from SOAC previously for that provisioning request were returned to SOAC with an error deleted status.

Acceptance Processing

If the conditions for acceptance for a PRESO AR are met, the SWITCH system will validate the AR input, combine the circuit termination level data in the AR into a circuit level Work Task, [20]generate central office assignments, and mark the status of the assignments in the data base as pending. To generate responses to the PRESO AR, the

18. Though not a fitting acronym for the Establish and Assign Provisioning Request contract, "PRESO" is used to preserve continuity and minimize changes to the SOAC interface. This same comment applies to the other contracts that are used in the SOAC and the SWITCH system Provisioning interface.

19. A provisioning request is central office involved if (1) central office and loop (if digital loop electronics exist in the SWITCH system) assignments are required from the SWITCH system, (2) the SWITCH system must be updated with F1 assignments from LFACS, or (3) the SWITCH system must provide translation data for MAS.

20. "Circuit termination level data" refers to data associated with a loop. "Circuit level data" refers to data associated with a set of loops that make up a circuit.

SWITCH system will decompose the circuit level Work Task assignments into circuit termination level assignments.

If the conditions for acceptance for a PRESO AR are met, and the SWITCH system can successfully complete all necessary processing, responses to the PRESO AR will be:

- A solicited PRESO ARR to SOAC containing the value "a" (assigned) in the status field of the header and the central office assignments for the provisioning request.
- An Establish Frame Output (PREFO) contract to FOMS, if the SWITCH system determines that FOMS is involved with the provisioning request (see Section 15.6.1) for details on contracts sent to FOMS for provisioning requests). [21]

If the conditions for acceptance for a PRESO AR are met, but the SWITCH system cannot complete all processing necessary to provide assignments for the provisioning request, the response to the PRESO AR will be:

- A solicited PRESO ARR to SOAC containing the value "m" (error kept) in the status field of the header and information about the error condition(s). The SOAC response reaction will be to output the RMA notice to the location designated in BCC-modifiable tables.

There are additional validation criteria for provisioning requests containing circuits involved in a Centrex group: [22]

- the Centrex Group Id (CTX) is included in the contract and
  - — the Centrex Group Id is uniquely known to the SWITCH system. If the Group Id is not unique to the SWITCH system, the SWITCH system will attempt to determine the intelligent controller (IC) involved based upon the TN on the provisioning request. If the attempt to establish uniqueness fails, [23]the contract cannot be processed.
  - — If it is for a Regular or Combined Centrex group, the TN on the provisioning request is a member of the Centrex Group. TNs are not members of Multi-Variety Package type Centrex Groups. If the client specific TN Suppression feature is activated for the wire center, this validation does not apply.[24]

21. Also see BR 752-106-040, "SWITCH System Contracts Directory".

22. Centrex group involvement can be determined if the Centrex Group Id is on the contract, the TN on the circuit is a member of one or more Centrex group(s), or the hunt group is associated with a Centrex group.

23. This may happen if two Combined Centrex groups in the same family exist with the same Group Id but reside on two different ICs within a wire center. This should occur infrequently.

24. When the client specific TN Suppression feature is activated for the wire center, the SWITCH system does not associate spare TNs with a Centrex group, i.e.; the Telephone Number Group (TNG) node and the "used" by Centrex Group relationship do not exist.

- If the IDP is included in the contract, it matches the IDP of the Centrex group.

If a provisioning request containing circuits in a Centrex group fails any of these validations, the response to the PRESO AR will be:

- A solicited PRESO ARR to SOAC containing the value "m" (error kept) in the status field of the header and information about the error condition(s). The SOAC response reaction will be to output the RMA notice to the location designated in BCC-modifiable tables.

There are additional/changed validation criteria for F & T provisioning requests. The input contract will RMA if:

- both DUAL=Y and NRID=Y appear in the same Action Line (ACL) aggregate of the *CAR or *SDR section,
- the request is a DUAL F or T (DUAL=Y) and the circuit does *not* exist in the wire center data base (in either a past or present time view) and the *dual-t-nockt-rma* parameter in the *wc parms* table is set to y.
- a related-non-DUAL T has been received before its associated F order and the *relt-out-of-seq-rma* parameter in the *wc parms* table is set to y. If the parameter is set to N, the out of sequence T order will *not* RMA.
- the request is an unrelated T (NRID=Y), and the circuit *has* a present time view.

Failure Conditions

If the conditions for acceptance for a PRESO AR are not met, the response to the PRESO AR will be:

- A solicited PRESO ARR to SOAC containing the value "d" (error deleted) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

In some cases where the SWITCH system returned a PRESO ARR to SOAC with an error status in the status field of the header, the SWITCH system manual transactions may be used to resolve the errors and restart processing in the SWITCH system. The manual transactions represent user-initiated contracts that the SWITCH system receives from the ULBB. (See section 7 for a full description of the SWITCH system manual assignment.)

If, in using the manual transactions, the user opts for inner loop processing, then the output of the user-initiated contract is a set of responses to the first contract (here, the Establish and Assign Provisioning Request contract). In using the manual transactions to clear the error(s), the user may also opt for INT or TDO mode processing. Processing under PREINT and PRETDO mode contracts is described in sections 13.3.3 and 13.3.4, which follow.

If the user-initiated contract represents inner loop processing and results in successful assignment of the provisioning request, responses will be the same as described above for

PRESO acceptance processing *except* that the PRESO ARR will be *unsolicited* rather than solicited.

If the user-initiated contract represents inner loop processing but does not resolve all errors on the PRESO AR or results in new errors, responses will be:

- An unsolicited PRESO ARR to SOAC containing the value "m" (error kept) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

Additional contracts will then be initiated to resolve the errors and generate all the responses described above that result from successful processing of the user-initiated contract.

If SOAC receives a correction pass or a cancellation pass of the provisioning request before the error condition is resolved, SOAC will initiate a Correct Provisioning Request contract or a Cancel Provisioning Request contract to the SWITCH system. These contracts will supersede the error resolution activity, and the SWITCH system will not return further responses to SOAC under the Establish and Assign Provisioning Request contract.

Additional Responses

Additional responses to an Establish and Assign Provisioning Request that was successfully assigned may be generated as a result of:

- the SWITCH system manual transactions that change pending assignments (e.g., an ACESO contract from the ULBB or FUSA (Frame User assignment System Access) against a provisioning request for which PRESO was the most recent contract), or
- the SWITCH system automatic rework of pending assignments. (e.g. unsolicited PRESO)

These represent subsequent contracts for the provisioning request. The output of these subsequent contracts is a set of responses to the first contract (here, the Establish and Assign Provisioning Request Contract).

If the subsequent contract results in successful processing of the provisioning request, responses will be:

- An unsolicited PRESO ARR to SOAC containing the value "a" (assigned) in the status field of the header and the central office assignments for all circuits on the provisioning request against which the ACE was received.
- Another Establish Frame Output (PREFO) contract to FOMS, if an Establish Frame Output contract has been previously sent to FOMS for the provisioning request (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).

If the subsequent contract was an ACESO from the ULBB and does not result in successful assignments, the response will be:

- An unsolicited PRESO ARR to SOAC containing the error status in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

If the subsequent contract was an ACESO from the FUSA and does not result in successful assignments, no response will be sent to SOAC.

Additional contracts will then be initiated to resolve the errors and generate all the responses described above that result from successful processing of the subsequent contract.

Responses to a successfully-assigned Establish and Assign Provisioning Request may also result when the SWITCH system receives jeopardy contracts from FOMS. The two jeopardy contracts that the SWITCH system may receive are Establish Frame Jeopardy (PREJEO) and Cancel Frame Jeopardy (CANJEO). The Jeopardy Action Table will determine the action that the SWITCH system will take. When the SWITCH system receives a PREJEO contract, the SWITCH system will check the Jeopardy Action Table. If the Jeopardy Action Table indicates that the SWITCH system should notify SOAC *and* the most recent response to SOAC was a PRESO ARR, the response will be:

- An unsolicited PRESO ARR to SOAC containing the value "j" (jeopardy) in the status field of the header. The response will contain a header and the central office assignments for all circuits on the provisioning request.

If the Jeopardy Action Table indicates that the SWITCH system should send an RMA notice to SOAC *and* the most recent response to SOAC was a PRESO ARR, the response will be:

- An unsolicited PRESO ARR to SOAC containing the value "m" (error kept) in the status field of the header. The response will contain a header and a *MSG section. The *MSG section will contain the data that the SWITCH system received from FOMS in the *JEO section of the PREJEO contract.

When the SWITCH system receives a CANJEO contract *and* the SWITCH system used a PRESO ARR to notify SOAC of the jeopardy, the response will be:

- An unsolicited PRESO ARR to SOAC containing the value "a" (assigned) in the status field of the header. The response will contain a header and the central office assignments for all circuits on the provisioning request.

See Section 15.8.1 and Section 15.8.2 for details on jeopardy processing for provisioning requests.

13.3.2 Establish Skeletal Provisioning Request

The message that the SWITCH system receives from SOAC under the Establish Skeletal Provisioning Request Contract is called a PRESOS AR. This AR is different from other

ARs in that it will be used by the SWITCH system as information only and will not invoke any assignment processing. Also, no response to the PRESOS AR is returned to SOAC by the SWITCH system.

A PRESOS AR will be sent to the SWITCH system by SOAC when an order is transitioned from AUTO mode to INT or TDO mode (see section 7 for scenarios when this occurs). This contract will be used to establish order level information in the SWITCH System Database. This information is used to prepopulate work session screens to reduce the amount of data entry required when manually establishing assignment requests for INT or TDO mode orders (and no prior ARs have been received from SOAC and none have been manually established in the SWITCH system).

The SWITCH system will receive a PRESOS AR from SOAC on the first pass of a provisioning request that requires central office involvement for a wire center. The SWITCH system will accept a PRESOS AR from SOAC if:

- the SWITCH system has no knowledge of the provisioning request; that is,
  - — the SWITCH system has never received a PRESO AR or PRESOS AR for that provisioning request from SOAC, and none have been manually established, or
  - — All PRESO ARs sent to the SWITCH system from SOAC previously for that provisioning request were returned to SOAC with an error deleted status.

Acceptance Processing

If the conditions for acceptance for a PRESOS AR are met, the SWITCH system will validate AR input, and combine the circuit termination level data in the AR into circuit level Work Tasks. No assignment processing will take place and no response will be returned to SOAC or FOMS.

Failure Conditions

If the SWITCH system has knowledge of the order from receipt of a prior contract or user input, the PRESOS AR will be ignored. If the PRESOS AR cannot be established, a warning message will be generated in a PREMSG contract to SOAC. This is not considered a normal response to the initial PRESOS contract request.

13.3.3 Establish and Assign INT Mode Provisioning Request

In some cases where the SWITCH system returned a PRESO ARR to SOAC with an error status in the status field of the header, the SWITCH system manual transactions may be used to change the mode of the provisioning request from AUTO to INT, resolve the errors, and restart processing in the SWITCH system. The SWITCH system manual transactions may also be used when no PRESO AR has been received from SOAC or a PRESOS AR has been received from SOAC. This occurs when a provisioning request errors in SOAC or LFACS before the assignment request is sent to the SWITCH system. In some cases, when this occurs and the order is transitioned to INT mode, SOAC will send a request to the SWITCH system. SOAC outputs an RMA to the location designated in BCC-modifiable tables. If resolution of the error requires INT mode processing, the SWITCH system manual transactions are used to create the provisioning request in the SWITCH system.

In either case, the manual transactions represent user-initiated contracts that the SWITCH system receives from the ULBB. If, in using the manual transactions, the user opts for INT mode processing, then the output to the user-initiated contract is a set of responses to a null Establish and Assign INT Mode Provisioning Request contract. (There is no request part to the Establish and Assign INT Mode Provisioning Request contract because the contract was not originated by SOAC.)

Acceptance Processing

When a contract is received from the ULBB that requires INT mode processing and results in successful assignment of the provisioning request, responses will be:

- An unsolicited PREINT ARR to SOAC containing the value "a" (assigned) in the status field of the header and the central office assignments for the provisioning request.
- Translation data to SOAC for MAS, if the SWITCH system determines that translation data is required (see section 13.2.4). This will be included in translation message sections in the PREINT ARR.
- An Establish Frame Output (PREFO) contract to FOMS, if the SWITCH system determines that FOMS is involved with the provisioning request (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).

Failure Conditions

When a contract is received from the ULBB that requires INT mode processing but does not result in successful assignment, the response will be:

- An unsolicited PREINT ARR to SOAC containing the value "m" (error kept) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

Additional contracts will then be initiated to resolve the errors and generate all the responses described above that result from successful processing of the user-initiated contract.

If SOAC receives a correction pass for the provisioning request before the error condition is resolved and before the provisioning request has been set to INT mode in SOAC, SOAC will initiate a Correct Provisioning Request contract to the SWITCH system. If SOAC receives a correction pass for the provisioning request before the error condition is resolved and after the provisioning request has been set to INT mode in SOAC, SOAC will not initiate a Correct Provisioning Contract to the SWITCH system. (Instead, SOAC will send an RMA notice to the location designated in BCC-modifiable tables.) If SOAC receives a cancellation pass for the provisioning request before the error condition is resolved, SOAC will initiate a Cancel Provisioning Request contract to the SWITCH system. These contracts will supersede the error resolution activity, and the SWITCH system will not return further responses to the Establish and Assign INT Mode Provisioning Request Contract.

Additional Responses

Additional responses to an Establish and Assign INT Mode Provisioning Request that was successfully assigned may be generated as a result of:

- the SWITCH system manual transactions that change pending assignments (e.g., an ACESO contract from the ULBB or FUSA against a provisioning request for which PREINT was the most recent contract), or
- the SWITCH system automatic rework of pending assignments.

These represent subsequent contracts for the provisioning request. The output of these subsequent contracts is a set of responses to the first contract (here, the Establish and Assign INT Mode Provisioning Request Contract).

If the subsequent contract was due to rework and results in successful processing of the provisioning request, responses will be:

- An unsolicited PREINT ARR to SOAC containing the value "a" (assigned) in the status field of the header and the central office assignments for all circuits on the provisioning request.
- Translation data to SOAC for MAS, if the SWITCH system determines that translation data is required (see section 13.2.4). This will be included in translation message sections in the PREINT ARR.
- Another Establish Frame Output (PREFO) contract to FOMS, if an Establish Frame Output contract has been previously sent to FOMS for the provisioning request (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).

If the subsequent contract was due to rework and does not result in successful assignments, the response will be:

- An unsolicited PREINT ARR to SOAC containing the error status in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

If the subsequent contract was an ACESO from the ULBB and results in successful processing of the provisioning request, responses will be:

- An unsolicited CORINT ARR to SOAC containing the value "a" (assigned) in the status field of the header and the central office assignments for all circuits on the provisioning request.

- Translation data to SOAC for MAS, if the SWITCH system determines that translation data is required (see section 13.2.4). This will be included in translation message sections in the CORINT ARR.
- Another Establish Frame Output (PREFO) contract to FOMS, if an Establish Frame Output contract has been previously sent to FOMS for the provisioning request (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).

If the subsequent contract was an ACESO from the ULBB and does not result in successful assignments, the response will be:

- An unsolicited CORINT ARR to SOAC containing the error status in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

If the subsequent contract was an ACESO from the FUSA and does not result in successful assignments, no response will be sent to SOAC.

Additional contracts will then be initiated to resolve the errors and generate all the responses described above that result from successful processing of the subsequent contract.

Responses to a successfully-assigned Establish and Assign INT Mode Provisioning Request may also result when the SWITCH system receives jeopardy contracts from FOMS. The two jeopardy contracts that the SWITCH system may receive are Establish Frame Jeopardy (PREJEO) and Cancel Frame Jeopardy (CANJEO). The Jeopardy Action Table will determine the action that the SWITCH system will take. When the SWITCH system receives a PREJEO contract, the SWITCH system will check the Jeopardy Action Table. If the Jeopardy Action Table indicates that the SWITCH system should notify SOAC *and* the most recent response to SOAC was a PREINT ARR, the response will be:

- An unsolicited PREINT ARR to SOAC containing the value "j" (jeopardy) in the status field of the header. The response will contain a header and the central office assignments for all circuits on the provisioning request. If the provisioning request is MAS involved, the response will also contain translation message sections.

If the Jeopardy Action Table indicates that the SWITCH system should send an RMA notice to SOAC *and* the most recent response to SOAC was a PREINT ARR, the response will be:

- An unsolicited PREINT ARR to SOAC containing the value "m" (error kept) in the status field of the header. The response will contain a header and a *MSG section. The *MSG section will contain the data that the SWITCH system received from FOMS in the *JEO section of the PREJEO contract.

When the SWITCH system receives a CANJEO contract *and* the SWITCH system used a PREINT ARR to notify SOAC of the jeopardy, the response will be:

- An unsolicited PREINT ARR to SOAC containing the value "a" (assigned) in the status field of the header. The response will contain a header and the central office assignments for all circuits on the provisioning request. If the provisioning request is MAS involved, the response will also contain translation message sections.

See Section 15.8.1 and Section 15.8.2 for details on jeopardy processing for provisioning requests.

13.3.4 Establish and Assign TDO Mode Provisioning Request

In some cases where the SWITCH system returned a PRESO ARR to SOAC with an error status in the status field of the header, the SWITCH system manual transactions may be used to change the mode of the provisioning request from AUTO to TDO, resolve the errors, and restart processing in the SWITCH system. The SWITCH system manual transactions may also be used when no PRESO AR has been received from SOAC or a PRESOS AR has been received from SOAC. This occurs when a provisioning request errors in SOAC or LFACS before the assignment request is sent to the SWITCH system. In some cases, when this occurs and the order is transitioned to TDO mode, SOAC will send a request to the SWITCH system. SOAC outputs an RMA to the location designated in BCC-modifiable tables. If resolution of the error requires TDO mode processing, the SWITCH system manual transactions are used to create the provisioning request in the SWITCH system.

In either case, the manual transactions represent user-initiated contracts that the SWITCH system receives from the ULBB. If, in using the manual transactions, the user opts for TDO mode processing, then the output to the user-initiated contract is a set of responses to a null Establish and Assign TDO Mode Provisioning Request contract. (There is no request part to the Establish and Assign TDO Mode Provisioning Request contract because the contract was not originated by SOAC.)

Acceptance Processing

When a contract is received from the ULBB that requires TDO mode processing and results in successful assignment of the provisioning request, responses will be:

- Translation data to SOAC for MAS using an unsolicited PRETDO Contract, if the SWITCH system determines that translation data is required (see section 13.2.4). The translation data will be contained in translation message sections in the PRETDO ARR.
- An Establish Frame Output (PREFO) contract to FOMS, if the SWITCH system determines that FOMS is involved with the provisioning request (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).
- A notice containing the assignments to the SWITCH system printer via the ULBB.

Note that no central office assignments are returned to SOAC on provisioning requests that are processed in TDO mode.

Failure Conditions

When a contract is received from the ULBB that requires TDO mode processing but does not resolve all errors on the PRESO AR or results in new errors, the response will be:

- An unsolicited PRETDO response to SOAC containing the value "m" (error kept) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.
- A SWITCH system error notice containing information about the error condition to the SWITCH system printer.

Additional contracts will then be initiated to resolve the errors and generate all the responses described above that result from successful processing of the user-initiated contract.

If SOAC receives a correction pass for the provisioning request before the error condition is resolved and before the provisioning request has been set to TDO mode in SOAC, SOAC will initiate a Correct Provisioning Request contract to the SWITCH system. If SOAC receives a correction pass for the provisioning request before the error condition is resolved but after the provisioning request has been set to TDO mode in SOAC, SOAC will not initiate a Correct Provisioning Contract to the SWITCH system. (Instead, SOAC will send an RMA notice to the location designated in BCC-modifiable tables.) If SOAC receives a cancellation pass of the provisioning request before the error condition is resolved, SOAC will initiate a Cancel Provisioning Request contract to the SWITCH system. These contracts will supersede the error resolution activity, and the SWITCH system will not return further responses to the Establish and Assign TDO Mode Provisioning Request Contract.

Additional Responses

Additional responses to an Establish and Assign TDO Mode Provisioning Request that was successfully assigned may be generated as a result of:

- the SWITCH system manual transactions that change pending assignments (e.g., an ACESO contract from the ULBB or FUSA against a provisioning request for which PRETDO was the most recent contract), or
- the SWITCH system automatic rework of pending assignments.

These represent subsequent contracts for the provisioning request. The output of these subsequent contracts is a set of responses to the first contract (here, the Establish and Assign TDO Mode Provisioning Request Contract).

If the subsequent contract was due to rework and results in successful processing of the provisioning request, responses will be:

- Translation data to SOAC for MAS using an unsolicited PRETDO contract, if the SWITCH system determines that translation data is required (see section 13.2.4). The translation data will be contained in translation message sections in the PRETDO ARR.
- Another Establish Frame Output (PREFO) contract to FOMS, if an Establish Frame Output contract has been previously sent to FOMS for the provisioning request (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).
- A notice containing the assignments for all circuits on the provisioning request to the SWITCH system printer via the ULBB.

If the subsequent contract was due to rework and does not result in successful assignments, the response will be:

- An unsolicited PRETDO response to SOAC containing the error status in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.
- A SWITCH system error notice containing information about the error condition to the SWITCH system printer.

If the subsequent contract was an ACESO from the ULBB and results in successful processing of the provisioning request, responses will be:

- Translation data to SOAC for MAS using an unsolicited CORTDO contract, if the SWITCH system determines that translation data is required (see section 13.2.4). The translation data will be contained in translation message sections in the CORTDO ARR.
- Another Establish Frame Output (PREFO) contract to FOMS, if an Establish Frame Output contract has been previously sent to FOMS for the provisioning request (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).
- A notice containing the assignments for all circuits on the provisioning request to the SWITCH system printer via the ULBB.

If the subsequent contract was an ACESO from the ULBB and does not result in successful assignments, the response will be:

- An unsolicited CORTDO response to SOAC containing the error status in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.
- A SWITCH system error notice containing information about the error condition to the SWITCH system printer.

If the subsequent contract was an ACESO from the FUSA and does not result in successful assignments, no response will be sent to SOAC.

Additional contracts will then be initiated to resolve the errors and generate all the responses described above that result from successful processing of the subsequent contract.

Responses to a successfully-assigned Establish and Assign TDO Mode Provisioning Request may also result when the SWITCH system receives jeopardy contracts from FOMS. The two jeopardy contracts that the SWITCH system may receive are Establish Frame Jeopardy (PREJEO) and Cancel Frame Jeopardy (CANJEO). When the SWITCH system receives a PREJEO contract *and* the most recent response to SOAC was a PRETDO ARR, the SWITCH system will *not* send a response to SOAC. [25]When the SWITCH system receives a CANJEO contract *and* the most recent response to SOAC was a PRETDO ARR, the SWITCH system will check the Jeopardy Action Table. If the Jeopardy Action Table indicates that the SWITCH system should notify SOAC *and* the provisioning request is MAS involved, the response will be:

- An unsolicited PRETDO ARR to SOAC containing the value "a" (assigned) in the status field of the header. The response will contain a header and translation message sections.
- A notice containing the assignments for all circuits on the provisioning request to the SWITCH system printer via the ULBB.

If the Jeopardy Action Table indicates that the SWITCH system should notify SOAC *but* the provisioning request is *not* MAS involved, the response will be:

- A notice containing the assignments for all circuits on the provisioning request to the SWITCH system printer via the ULBB.

See sections 15.8.1 and 15.8.2 for details on jeopardy processing for provisioning requests.

13.3.5 Correct Provisioning Request

The message that the SWITCH system receives from SOAC under the Correct Provisioning Request Contract is called a CORSO AR. the SWITCH system will accept a CORSO AR from SOAC if:

- the SWITCH system has previously accepted a PRESO AR for that provisioning request.
- the SWITCH system has previously accepted a CORSO AR for that provisioning request with a correction suffix less than the correction suffix of the current CORSO AR.

25. SOAC does not maintain jeopardy status on TDO mode provisioning requests. SOAC will error if the SWITCH system sends a message to establish a jeopardy on a TDO mode provisioning request.

- the SWITCH system has previously accepted a CORSO AR for that provisioning request with the same correction suffix, and the version number for the current CORSO AR is greater than or equal to the previous version number.

The CORSO AR contains information for all circuit terminations that were on the PRESO AR or CORSO AR that the SWITCH system previously received from SOAC for the provisioning request. The circuit terminations that have been added, deleted, or changed will have a COR tag associated with them in the AR.

Acceptance Processing

If the conditions of acceptance for a CORSO AR are met, the SWITCH system will validate the AR input and combine the circuit termination level data in the AR into a circuit level Work Task. The processing that the SWITCH system will perform on the CORSO AR depends on the state of the data base for the provisioning request. If the data base status for the provisioning request is assigned (i.e., the previous PRESO AR or CORSO AR for the provisioning request processed successfully), the SWITCH system must process only the circuit terminations that have an associated COR tag or for which the CTID has changed.

If the data base status for the provisioning request at error (i.e., the request is at RMA), the SWITCH system must difference all circuit terminations on the CORSO AR against the data base to see which circuit terminations were assigned before the error on the previous PRESO AR or CORSO AR occurred. For circuit terminations that were assigned before the previous PRESO AR or CORSO AR error occurred, the SWITCH system will retrieve the assignments from the data base for these circuit terminations. For circuit terminations that were not assigned before the previous PRESO AR or CORSO AR error occurred and for circuit terminations that have changed, the SWITCH system will perform the appropriate processing. The assignments will be marked in the data base as pending. To generate responses to the CORSO AR, the SWITCH system will decompose the circuit level Work Task assignments into circuit termination level assignments.

If the conditions of acceptance for a CORSO AR are met, and the SWITCH system can successfully complete all necessary processing, responses to the CORSO AR will be:

- A solicited CORSO ARR to SOAC containing the value "a" (assigned) in the status field of the header. The CORSO ARR will also contain all central office assignments for the provisioning request, whether changed by the CORSO or not. The ARR will *not* contain any information for circuit terminations on the CORSO AR that were withdrawn.
- An Establish Frame Output (PREFO) contract to FOMS, if the SWITCH system determines that FOMS is involved with the provisioning request (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).

If the conditions of acceptance for a CORSO AR are met, but the SWITCH system cannot complete all processing necessary to provide assignments for the provisioning request, the response to the CORSO AR will be:

- A solicited CORSO ARR to SOAC containing the value "m" (error kept) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

There are additional validation criteria for provisioning requests containing circuits involved in a Centrex group: [26]

- the Centrex Group Id (CTX) is included in the contract and
  - the Centrex Group Id is uniquely known to the SWITCH system. If the Group Id is not unique, the SWITCH system will attempt to determine the intelligent controller (IC) involved based upon the TN on the provisioning request. If the attempt to establish uniqueness fails, [27]the contract cannot be processed.
  - If it is for a Regular or Combined Centrex group, the TN on the provisioning request is a member of the Centrex Group. TNs are not members of Multi-Variety Package type Centrex Groups. If the client specific TN Suppression feature is activated for the wire center, this validation does not apply.
- If the IDP is included in the contract, it matches the IDP of the Centrex group.

If a provisioning request containing circuits in a Centrex group fails any of these validations, the response to the CORSO AR will be:

- A solicited CORSO ARR to SOAC containing the value "m" (error kept) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

There are additional/changed validation criteria for F & T provisioning requests. The input contract will RMA if:

- both DUAL=Y and NRID=Y appear in the same Action Line (ACL) aggregate of the *CAR or *SDR section,
- the request is a F or a DUAL T (DUAL=Y) and the circuit does *not* exist in the wire center data base (in either a past or present time view) and the *dual-t-nockt-rma* parameter in the *wc parms* table is set to y. For related-non-DUAL T orders, a service with the same EXID *may*, but does not necessarily have to, exist in the time view that is in effect at the due date of the order.the request is an unrelated T (NRID=Y), and the circuit *has* a present time view.

Failure Conditions

26. Centrex group involvement can be determined if the Centrex Group Id is on the contract, the TN on the circuit is a member of one or more Centrex group(s), or the hunt group is associated with a Centrex group.

27. This would happen if two Combined Centrex groups in the same family exist with the same Group Id but reside on two different ICs within a wire center. This should occur infrequently.

If the conditions of acceptance for a CORSO AR are not met, the response to the CORSO AR will be:

- A solicited CORSO ARR to SOAC containing the value "d" (error deleted) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

In some cases where the SWITCH system returned a CORSO ARR to SOAC with an error status in the status field of the header, the SWITCH system manual transactions may be used to resolve the errors and restart processing in the SWITCH system. The manual transactions represent user-initiated contracts that the SWITCH system receives from the ULBB.

If, in using the manual transactions, the user opts for inner loop processing, then the output of the user-initiated contract is a set of responses to the first contract (either the Establish and Assign Provisioning Request Contract or the Correct Provisioning Request Contract). In using the manual transactions to clear the error(s), the user may also opt for INT or TDO mode processing. Processing under CORINT and CORTDO mode contracts is described in sections 13.3.5 and 13.3.6, which follow.

If the user-initiated contract represents inner loop processing and results in successful assignment of the provisioning request, the response will depend on the last non-ACE request from SOAC. If the last non-ACE request from SOAC was a PRESO, the response will be the same as described in section 13.3.1 for PRESO acceptance processing *except* that the PRESO ARR will be *unsolicited* rather than solicited. If the last non-ACE response from SOAC was a CORSO, the response will be the same as described above for CORSO acceptance processing *except* that the CORSO ARR will be *unsolicited* rather than solicited.

If the user-initiated contract represents inner loop processing but does not resolve all errors on the CORSO AR or results in new errors, the response will depend on the last non-ACE request from SOAC. If the last non-ACE request from SOAC was a PRESO, the response will be:

- An unsolicited PRESO ARR to SOAC containing the value "m" (error kept) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

If the last non-ACE request from SOAC was a CORSO, the response will be:

- An unsolicited CORSO ARR to SOAC containing the value "m" (error kept) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

Additional contracts will then be initiated to resolve the errors and generate all the responses described above that result from successful processing of the user-initiated contract.

If SOAC receives another correction pass or a cancellation pass of the provisioning request before the error condition is resolved, SOAC will initiate another Correct Provisioning Request contract or a Cancel Provisioning Request contract to the SWITCH system. These contracts will supersede the error resolution activity, and the SWITCH system will not return further responses to SOAC under the current Correct Provisioning Request contract.

Additional Responses

Additional responses to a Correct Provisioning Request that was successfully assigned may be generated as a result of:

- the SWITCH system manual transactions that change pending assignments (e.g., an ACESO contract from the ULBB or FUSA against a provisioning request for which CORSO was the most recent contract), or
- the SWITCH system automatic rework of pending assignments.

These represent subsequent contracts for the provisioning request. The output of these subsequent contracts is a set of responses to the first contract (here, the Correct Provisioning Request Contract).

If the subsequent contract results in successful processing of the provisioning request, responses will be:

- An unsolicited CORSO ARR to SOAC containing the value "a" (assigned) in the status field of the header and the central office assignments for all circuits on the provisioning request.
- An Establish Frame Output (PREFO) contract to FOMS, if an Establish Frame Output contract has been previously sent to FOMS for the provisioning request (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).

If the subsequent contract was an ACESO from the ULBB and does not result in successful assignments, the response will be:

- An unsolicited CORSO ARR to SOAC containing the error status in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

If the subsequent contract was an ACESO from the FUSA and does not result in successful assignments, no response will be sent to SOAC.

Additional contracts will then be initiated to resolve the errors and generate all the responses described above that result from successful processing of the subsequent contract.

Responses to a successfully-assigned Correct Provisioning Request may also result when the SWITCH system receives jeopardy contracts from FOMS. The two jeopardy contracts that the SWITCH system may receive are Establish Frame Jeopardy (PREJEO) and Cancel Frame Jeopardy (CANJEO). The Jeopardy Action Table will determine the action that the

SWITCH system will take. When the SWITCH system receives a PREJEO contract, a check of the Jeopardy Action Table will be made. If the Jeopardy Action Table indicates that the SWITCH system should notify SOAC *and* the most recent response to SOAC was a CORSO ARR, the response will be:

- An unsolicited CORSO ARR to SOAC containing the value "j" (jeopardy) in the status field of the header. The response will contain a header and the central office assignments for all circuits on the provisioning request.

If the Jeopardy Action Table indicates that the SWITCH system should send an RMA notice to SOAC *and* the most recent response to SOAC was a CORSO ARR, the response will be:

- An unsolicited CORSO ARR to SOAC containing the value "m" (error kept) in the status field of the header. The response will contain a header and a *MSG section. The *MSG section will contain the data that the SWITCH system received from FOMS in the *JEO section of the PREJEO contract.

When the SWITCH system receives a CANJEO contract *and* the SWITCH system used a CORSO ARR to notify SOAC of the jeopardy, the response will be:

- An unsolicited CORSO ARR to SOAC containing the value "a" (assigned) in the status field of the header. The response will contain a header and the central office assignments for all circuits on the provisioning request.

See section 15.8.1 and 15.8.2 for details on jeopardy processing for provisioning requests.

13.3.6 Correct INT Mode Provisioning Request

In some cases where the SWITCH system returned a CORSO ARR to SOAC with an error status in the status field of the header, the SWITCH system manual transactions may be used to change the mode of the provisioning request from AUTO to INT, resolve the errors, and restart processing in the SWITCH system. Because a CORSO AR was received from SOAC, the manual transactions represent user-initiated contracts that the SWITCH system receives from the ULBB. When the user, in using the manual transactions, sets the mode to INT, then the output to the user-initiated contract is a response to a null Correct INT Mode Provisioning Request Contract. (There is no request part to the Correct INT Mode Provisioning Request contract because the contract was not originated by SOAC.)

Responses may also be initiated by the SWITCH system when no CORSO AR is received from SOAC. If the previous pass of a provisioning request was processed as INT mode, all subsequent correction passes for that provisioning request will error in SOAC before assignment request processing occurs. Here, SOAC outputs an RMA to the location designated in BCC-modifiable tables. The SWITCH system manual transaction is used to input the correction pass of the INT mode provisioning request into the SWITCH system. The manual transaction represents a user-initiated contract from the ULBB. The output to the contract is a response to a null Correct INT Mode Provisioning Request contract. (There is no request part to the Correct INT Mode Provisioning Request contract because the contract was not originated by SOAC.)

Acceptance Processing

When a contract is received from the ULBB that requires INT mode processing and results in successful assignment of the provisioning request, responses will be:

- An unsolicited CORINT ARR to SOAC containing the value "a" (assigned) in the status field of the header and the central office assignments for the provisioning request.
- Translation data to SOAC for MAS, if the SWITCH system determines that translation data is required (see section 13.2.4). This will be included in translation message sections in the CORINT ARR.
- An Establish Frame Output (PREFO) contract to FOMS, if the SWITCH system determines that FOMS is involved with the provisioning request (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).

Failure Conditions

When a contract is received from the ULBB that requires INT mode processing but does not resolve all errors on the CORSO AR or results in new errors, the response will be:

- An unsolicited CORINT ARR to SOAC containing the value "m" (error kept) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

Additional contracts will then be initiated to resolve the errors and generate all the responses described above that result from successful processing of the user-initiated contract.

If SOAC receives a correction pass for the provisioning request before the error condition is resolved and before the provisioning request has been set to INT mode in SOAC, SOAC will initiate a Correct Provisioning Request contract to the SWITCH system. If SOAC receives a correction pass for the provisioning request before the error condition is resolved but after the provisioning request has been set to INT mode in SOAC, SOAC will not initiate a Correct Provisioning Contract to the SWITCH system. (Instead, SOAC will send an RMA notice to the location designated in BCC-modifiable tables.) If SOAC receives a cancellation pass of the provisioning request before the error condition is resolved, SOAC will initiate a Cancel Provisioning Request contract to the SWITCH system. These contracts will supersede the error resolution activity, and the SWITCH system will not return further responses to the Correct INT Mode Provisioning Request Contract.

Additional Responses

Additional responses to a Correct INT Mode Provisioning Request that was successfully assigned may be generated as a result of:

- the SWITCH system manual transactions that change pending assignments (e.g., an ACESO contract from the ULBB or FUSA against a provisioning request for which CORINT was the most recent contract), or
- the SWITCH system automatic rework of pending assignments.

These represent subsequent contracts for the provisioning request. The output of these subsequent contracts is a set of responses to the first contract (here, the Correct INT Mode Provisioning Request Contract).

If the subsequent contract results in successful processing of the provisioning request, responses will be:

- An unsolicited CORINT ARR to SOAC containing the value "a" (assigned) in the status field of the header and the central office assignments for all circuits on the provisioning request.
- Translation data to SOAC for MAS, if the SWITCH system determines that translation data is required (see section 13.2.4). This will be included in translation message sections in the CORINT ARR.
- A Establish Frame Output (PREFO) contract to FOMS, if an Establish Frame Output contract has been previously sent to FOMS for the provisioning request (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).

If the subsequent contract was an ACESO from the ULBB and does not result in successful assignments, the response will be:

- An unsolicited CORINT ARR to SOAC containing the error status in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

If the subsequent contract was an ACESO from the FUSA and does not result in successful assignments, no response will be sent to SOAC.

Additional contracts will then be initiated to resolve the errors and generate all the responses described above that result from successful processing of the subsequent contract.

Responses to a successfully-assigned Correct INT Mode Provisioning Request may also result when the SWITCH system receives jeopardy contracts from FOMS. The two jeopardy contracts that the SWITCH system may receive are Establish Frame Jeopardy (PREJEO) and Cancel Frame Jeopardy (CANJEO). The Jeopardy Action Table will determine the action that the SWITCH system will take. When the SWITCH system receives a PREJEO contract, the SWITCH system will check the Jeopardy Action Table. If the Jeopardy Action Table indicates that the SWITCH system should notify SOAC *and* the most recent response to SOAC was a CORINT ARR, the response will be:

- An unsolicited CORINT ARR to SOAC containing the value "j" (jeopardy) in the status field of the header. The response will contain a header and the central office assignments for all circuits on the provisioning request. If the provisioning request is MAS involved, the response will also contain translation message sections.

If the Jeopardy Action Table indicates that the SWITCH system should send an RMA notice to SOAC *and* the most recent response to SOAC was a CORINT ARR, the response will be:

- An unsolicited CORINT ARR to SOAC containing the value "m" (error kept) in the status field of the header. The response will contain a header and a *MSG section. The *MSG section will contain the data that the SWITCH system received from FOMS in the *JEO section of the PREJEO contract.

When the SWITCH system receives a CANJEO contract *and* the SWITCH system used a CORINT ARR to notify SOAC of the jeopardy, the response will be:

- An unsolicited CORINT ARR to SOAC containing the value "a" (assigned) in the status field of the header. The response will contain a header and the central office assignments for all circuits on the provisioning request. If the provisioning request is MAS involved, the response will also contain translation message sections.

See section 15.8.1 and 15.8.2 for details on jeopardy processing for provisioning requests.

13.3.7 Correct TDO Mode Provisioning Request

In some cases where the SWITCH system returned a CORSO ARR to SOAC with an error status in the status field of the header, the SWITCH system manual transactions may be used to change the mode of the provisioning request from AUTO to TDO, resolve the errors, and restart processing in the SWITCH system. Because a CORSO AR was received from SOAC, the manual transactions represent user-initiated contracts that the SWITCH system receives from the ULBB. When the user, in using the manual transactions, sets the mode to TDO, then the output to the user-initiated contract is a response to a null Correct TDO Mode Provisioning Request Contract. (There is no request part to the Correct TDO Mode Provisioning Request contract because the contract was not originated by SOAC.)

Responses may also be initiated by the SWITCH system when no CORSO AR is received from SOAC. If the previous pass of a provisioning request was processed as TDO mode, all subsequent correction passes for that provisioning request will error in SOAC before assignment request processing occurs. Here, SOAC outputs an RMA to the location designated in BCC-modifiable tables. The SWITCH system manual transaction is used to input the correction pass of the TDO mode provisioning request into the SWITCH system. The manual transaction represents a first contract from the ULBB. The output to the contract is a response to a null Correct TDO Mode Provisioning Request contract. (There is no request part to the Correct TDO Mode Provisioning Request contract because the contract was not originated by SOAC.)

Acceptance Processing

When a contract is received from the ULBB that requires TDO mode processing and results in successful assignment of the provisioning request, the responses will be:

- Translation data to SOAC for MAS using an unsolicited CORTDO Contract, if the SWITCH system determines that translation data is required (see section 13.2.4). The translation data will be contained in translation message sections in the CORTDO ARR.
- An Establish Frame Output (PREFO) contract to FOMS, if the SWITCH system determines that FOMS is involved with the provisioning request (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).
- A notice containing the assignments to the SWITCH system printer via the ULBB.

Note that no central office assignments are returned to SOAC on provisioning requests that are processed in TDO mode.

Failure Conditions

When a contract is received from the ULBB that requires TDO mode processing but does not resolve all errors on the CORSO AR or results in new errors, the response will be:

- An unsolicited CORTDO ARR to SOAC containing the value "m" (error kept) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.
- A SWITCH system error notice containing information about the error condition to the SWITCH system printer.

Additional contracts will then be initiated to resolve the errors and generate all the responses described above that result from successful processing of the user-initiated contract.

If SOAC receives another correction pass for the provisioning request before the error condition is resolved and before the provisioning request has been set to TDO mode in SOAC, SOAC will initiate another Correct Provisioning Request contract to the SWITCH system. If SOAC receives a correction pass for the provisioning request before the error condition is resolved but after the provisioning request has been set to TDO mode in SOAC, SOAC will not initiate a Correct Provisioning Contract to the SWITCH system. (Instead, SOAC will send an RMA notice to the location designated in BCC-modifiable tables.) If SOAC receives a cancellation pass of the provisioning request before the error condition is resolved, SOAC will initiate a Cancel Provisioning Request contract to the SWITCH system. These contracts will supersede the error resolution activity, and the SWITCH system will not return further responses to the Correct TDO Mode Provisioning Request Contract.

Additional Responses

Additional responses to a Correct TDO Mode Provisioning Request that was successfully assigned may be generated as a result of:

- the SWITCH system manual transactions that change pending assignments (e.g., an ACESO contract from the ULBB or FUSA against a provisioning request for which CORTDO was the most recent contract), or
- the SWITCH system automatic rework of pending assignments.

These represent subsequent contracts for the provisioning request. The output of these subsequent contracts is a set of responses to the first contract (here, the Correct TDO Mode Provisioning Request Contract).

If the subsequent contract results in successful processing of the provisioning request, responses will be:

- Translation to SOAC for MAS using an unsolicited CORTDO contract, if the SWITCH system determines that translation data is required (see section 13.2.4). The translation data will be contained in translation message sections in the CORTDO ARR.
- An Establish Frame Output (PREFO) contract to FOMS, if an Establish Frame Output contract has been previously sent to FOMS for the provisioning request (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).
- A notice containing the assignments for all circuits on the provisioning request to the SWITCH system printer via the ULBB.

If the subsequent contract was an ACESO from the ULBB and does not result in successful assignments, the response will be:

- An unsolicited CORTDO ARR to SOAC containing the error status in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.
- A SWITCH system error notice containing information about the error condition to the SWITCH system printer.

If the subsequent contract was an ACESO from the FUSA and does not result in successful assignments, no response will be sent to SOAC.

Additional contracts will then be initiated to resolve the errors and generate all the responses described above that result from successful processing of the subsequent contract.

Responses to a successfully-assigned Correct TDO Mode Provisioning Request may also result when the SWITCH system receives jeopardy contracts from FOMS. The two jeopardy contracts that the SWITCH system may receive are Establish Frame Jeopardy (PREJEO) and Cancel Frame Jeopardy (CANJEO). When the SWITCH system receives a PREJEO contract *and* the most recent response to SOAC was a CORTDO ARR, the SWITCH system will *not* send a response to SOAC. [28]When the SWITCH system receives a CANJEO contract *and* the most recent response to SOAC was a CORTDO ARR, the SWITCH system will check the Jeopardy Action Table. If the Jeopardy Action Table indicates that the SWITCH system should notify SOAC *and* the provisioning request is MAS involved, the response will be:

- An unsolicited CORTDO ARR to SOAC containing the value "a" (assigned) in the status field of the header. The response will contain a header and translation message sections.
- A notice containing the assignments for all circuits on the provisioning request to the SWITCH system printer via the ULBB.

If the Jeopardy Action Table indicates that the SWITCH system should notify SOAC *but* the provisioning request is *not* MAS involved, the response will be:

- A notice containing the assignments for all circuits on the provisioning request to the SWITCH system printer via the ULBB.

See sections 15.8.1 and 15.8.2 for details on jeopardy processing for provisioning requests.

13.3.8 Assignment Change for Provisioning Request

The message that the SWITCH system receives from SOAC under the Assignment Change for Provisioning Request Contract is called an ACESO AR. This contract is used when a change has been made to an LFACS-assigned F1 cable pair or TIRKS/FEPS-determined route. [29]The LFACS change may be due to an attribute associated with the F1 cable pair (e.g. RZ, CZ) or the F1 cable pair itself changes. The TIRKS/FEPS routing change can be a change to a building location (BLDG) or next segment data (NXFAC) or carrier controller location (CCDST) sent to the SWITCH system via SOAC for non-switched design services provisioned on digital loop electronics in the SWITCH system. Note that an LFACS-initiated cable pair change can also result in a CCDST or BLDG change which may result in a NXFAC data change.

The SWITCH system will accept an ACESO AR from SOAC if:

- The last AR accepted by the SWITCH system for the provisioning request was a PRESO AR, PREINT AR, PRETDO AR, CORSO AR, CORINT AR, CORTDO AR or ACESO AR, and
  - — the correction suffix of the ACESO AR is equal to the suffix for the last accepted AR, and
  - — the version number of the ACESO AR is the same as the version number for the last accepted AR.

28. SOAC does not maintain jeopardy status on TDO mode provisioning requests. SOAC will error if the SWITCH system sends a message to establish a jeopardy on a TDO mode provisioning request.

29. ACE contracts follow normal change processing as discussed throughout Section 6.

For AUTO mode provisioning requests, the ACESO AR contains an old and new section (i.e., ACL). If there is a cable pair change only, the old section would contain the "old" cable pair information and the new section would contain the "new" cable pair information. The "old" cable pair information refers to the state of the cable pair on the last response returned to SOAC. The "new" cable pair information refers to the state of the cable pair as a result of the assignment change. Note that the cable pair in the ACE could be the inward or outward cable pair on the pending provisioning request. [30]If there is a routing change only, the old section would contain the "old" CCDST, BLDG, or NXFAC information and the new section would contain the "new" CCDST, BLDG, or NXFAC information. The "old" information refers to the routing information the SWITCH system received on the last request from SOAC which was used by the SWITCH system to make assignments on digital loop electronics. The "new" information refers to the new routing information sent to SOAC from TIRKS/FEPS as a result of a change to the routing guidelines.

If a cable pair change in LFACS results in a routing change from TIRKS/FEPS, the "old" section will contain the old cable pair information and the old routing data (if applicable) and the "new" section will contain the new cable pair information and the new routing data (if applicable). [31]For INT and TDO mode provisioning requests, the ACESO AR contains new information only (i.e. a new ACL only). In this case, an ACESO AR will only contain new routing data if a cable pair change was made in LFACS. In the INT mode case, an ACESO AR will be sent to the SWITCH system as a result of routing changes only. In the TDO mode case, no ACESO AR will be sent. Instead, a notifier will be output in SOAC indicating that new routing information was sent by the TIRKS system.

If the SWITCH system receives the RTF flag from SOAC, the SWITCH system will validate that there is a R (Receive) or T (Transmit) pair identified for the "out" cable pair and "in" cable pair. It will validate that the RTF tag is the same for both. If both the receive and transmit pairs in a four-wire circuit are defective, the ACE contract will contain a separate REC aggregate for each cable pair.

Acceptance Processing

If the conditions of acceptance for an ACESO AR are met, the SWITCH system will validate the AR input and combine the circuit termination level data in the AR into a circuit level Work Task.

The processing that the SWITCH system will do on the ACESO AR depends on the state of the data base for the provisioning request. If the data base status for the provisioning

30. An outward cable pair on a provisioning request (as a result of a disconnect request or change request where the cable pair is changing) will only be ACE'ed as a result of a completion of a cable throw or work order LST which changes the cable pair (see Section 9). The more common occurrence is an ACE against an inward cable pair as a result of the CHG LASG transaction in LFACS.

31. A cable pair change may result in a change from copper to digital loop electronics or vice versa, and routing data is only applicable when a design service is being provisioned on digital loop electronics in the SWITCH system. Therefore the routing data will only appear if a cable pair is on digital loop electronics.

request is assigned (i.e., the previous PRESO, CORSO, PREINT, CORINT, PRETDO, CORTDO or ACESO AR for the provisioning request processed successfully), the SWITCH system will check the ACESO AR to see if there is new F1 data or routing data that would require new central office assignments. If new assignments are needed, the SWITCH system will generate the new central office assignments and mark the status of the new assignments in the data base as pending. If no new assignments are needed, the SWITCH system will return the existing assignments to SOAC.

If the data base status for the provisioning request is at error (i.e., the request is at RMA), the SWITCH system will check to see if there is new F1 data or routing data that would requires new central office assignments. If new assignments are needed, the SWITCH system will generate them. The SWITCH system determines whether the request can be marked "pending" (i.e., the ACESO AR corrected the RMA condition), or whether the request is still at error (either due to pre-existing or new conditions).

If a new line switch port is assigned as a result of a cable pair change, the "out" switch port will be given a "null" assignment limitation, since it is presumed that the change is not due to a jeopardy or defective condition.

To generate responses to the ACESO AR, the SWITCH system will decompose the circuit level Work Task assignments into circuit termination level assignments. Processing will associate the due date received from SOAC with both the due date and the change date of the "in" cable pair.

If the conditions of acceptance for an ACESO AR are met and the provisioning request is assigned, responses to the ACESO AR depend on the mode of the provisioning request.

1. AUTO mode:
   - A solicited ACESO ARR to SOAC containing the value "a" (assigned) in the status field of the header and central office assignments for all circuit terminations in the provisioning request against which the ACESO AR was received.
   - An Establish Frame Output (PREFO) contract to FOMS, if there was a previous Frame Output Contract to FOMS for the provisioning request against which the ACESO AR was received (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).
2. INT mode:
   - A solicited ACESO ARR to SOAC containing the value "a" (assigned) in the status field of the header and central office assignments for all circuit terminations in the provisioning request against which the ACESO AR was received.
   - Translation data to SOAC for MAS, if the provisioning request against which the ACESO AR was received is MAS involved. This will be included in translation message sections in the ACESO ARR.

- An Establish Frame Output (PREFO) contract to FOMS, if there was a previous Frame Output Contract to FOMS for the provisioning request against which the ACESO AR was received (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).

3. TDO mode:

   - Translation data to SOAC for MAS using an ACESO contract, if the provisioning request against which the ACESO AR was received is MAS involved. The ACESO ARR will be solicited and will contain the value "a" (assigned) in the status field of the header. The translation data will be included in translation message sections in the ACESO ARR. [32]
   - An Establish Frame Output (PREFO) contract to FOMS, if there was a previous Frame Output Contract to FOMS for the provisioning request against which the ACESO AR was received (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).
   - A notice containing the assignments to the SWITCH system printer via the ULBB.

If the conditions of acceptance for an ACESO AR are met but the SWITCH system cannot complete all processing necessary to provide assignments for the provisioning request, the response to the ACESO will be:

- A solicited ACESO ARR to SOAC containing the value "m" (error kept) status in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

Failure Conditions

If the conditions of acceptance for an ACESO AR are not met, the response to the ACESO AR will be:

- A solicited ACESO ARR containing the value "d" (error deleted) in the status field of the header and information about the error condition(s). SOAC will output the RMA to the location designated in BCC-modifiable tables.

In some cases where the SWITCH system returned an ACESO ARR to SOAC with an error status in the status field of the header, the SWITCH system manual transactions may be used to resolve the errors and restart processing in the SWITCH system. The manual transactions represent user-initiated contracts. If the manual transaction results in a provisioning contract (CORSO, CORINT, or CORTDO) to the SWITCH system, the output will be a set of responses to that provisioning contract, as described in the following paragraphs.

32. If the TDO mode provisioning request against which the ACESO AR was received is not MAS involved, then *no* ACESO ARR will be returned to SOAC.

If the user-initiated contract used to resolve the ACESO error(s) is a CORSO, and it results in successful assignment of the provisioning request involved in the ACESO, responses will be:

- An unsolicited CORSO ARR to SOAC containing the value "a" (assigned) in the status field of the header and central office assignments for all circuit terminations in the provisioning request against which the ACESO AR was received.

If the user-initiated contract used to resolve the ACESO error(s) is a CORSO, but it does not resolve all errors or results in new errors, the response will be:

- An unsolicited CORSO ARR to SOAC containing the value "m" (error kept) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

Additional contracts will then be initiated to resolve the errors and generate responses as described here for the user-initiated contracts.

If the user-initiated contract used to resolve the ACESO error(s) is a CORINT, and it results in successful assignment of the provisioning request involved in the ACESO, responses will be:

- An unsolicited CORINT ARR to SOAC containing the value "a" (assigned) in the status field of the header and central office assignments for all circuit terminations in the provisioning request against which the ACESO AR was received.

If the user-initiated contract used to resolve the ACESO error(s) is a CORINT, but it does not resolve all errors or results in new errors, the response will be:

- An unsolicited CORINT ARR to SOAC containing the value "m" (error kept) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

Additional contracts will then be initiated to resolve the errors and generate responses as described here for the user-initiated contracts.

If the user-initiated contract used to resolve the ACESO error(s) is a CORTDO, and it results in successful assignment of the provisioning request involved in the ACESO, responses will be:

- An unsolicited CORTDO ARR to SOAC containing the value "a" (assigned) in the status field of the header and central office assignments for all circuit terminations in the provisioning request against which the ACESO AR was received.

If the user-initiated contract used to resolve the ACESO error(s) is a CORTDO, but it does not resolve all errors or results in new errors, the response will be:

- An unsolicited CORTDO ARR to SOAC containing the value "m" (error kept) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

Additional contracts will then be initiated to resolve the errors and generate responses as described here for the user-initiated contracts.

If SOAC receives a correction pass or a cancellation pass of the provisioning request before the error condition on the ACESO AR is resolved, SOAC will initiate a Correct Provisioning Request contract or a Cancel Provisioning Request contract to the SWITCH system. These contracts will supersede the error resolution activity occurring on the ACESO AR, and the SWITCH system will not return further responses to SOAC resulting from ACESO error resolution.

Jeopardies from FOMS

Responses to a successfully-assigned Assignment Change for Provisioning Request may also result when the SWITCH system receives jeopardy contracts from FOMS. The two jeopardy contracts that the SWITCH system may receive are Establish Frame Jeopardy (PREJEO) and Cancel Frame Jeopardy (CANJEO). The action that the SWITCH system will take depends on the mode of the provisioning request.

1. AUTO and INT mode:

   When the SWITCH system receives a PREJEO contract for an AUTO or INT mode provisioning request, the SWITCH system will check the Jeopardy Action Table. If the Jeopardy Action Table indicates that the SWITCH system should notify SOAC *and* the most recent response to SOAC was an ACESO ARR, the response will be:

   - An unsolicited ACESO ARR to SOAC containing the value "j" (jeopardy) in the status field of the header. The response will contain a header and central office assignments for all circuit terminations in the provisioning request against which the ACESO AR was received.

   If the Jeopardy Action Table indicates that the SWITCH system should send an RMA notice to SOAC *and* the most recent response to SOAC was an ACESO ARR, the response will be:

   - An unsolicited ACESO ARR to SOAC containing the value "m" (error kept) in the status field of the header. The response will contain a header and a *MSG section. The *MSG section will contain the data that the SWITCH system received from FOMS in the *JEO section of the PREJEO contract.

2. TDO mode:

   When the SWITCH system receives a PREJEO contract for a TDO mode provisioning request, the SWITCH system will *not* send a response to SOAC. [33]

33. SOAC does not maintain jeopardy status on TDO mode provisioning requests. SOAC will error if the SWITCH system sends a message to establish a jeopardy on a TDO mode provisioning request.

When the SWITCH system receives a CANJEO contract *and* the SWITCH system used an ACESO ARR to notify SOAC of the jeopardy, the response depends on the mode of the provisioning request.

1. AUTO mode:
   - A solicited ACESO ARR to SOAC containing the value "a" (assigned) in the status field of the header and central office assignments for all circuit terminations in the provisioning request against which the ACESO AR was received.
   - An Establish Frame Output (PREFO) contract to FOMS, if there was a previous Frame Output Contract to FOMS for the provisioning request against which the CANJEO contract was received (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).
2. INT mode:
   - A solicited ACESO ARR to SOAC containing the value "a" (assigned) in the status field of the header and central office assignments for all circuit terminations in the provisioning request against which the ACESO AR was received.
   - Translation data to SOAC for MAS, if the provisioning request against which the ACESO AR was received is MAS involved. This will be included in translation message sections in the ACESO ARR.
   - An Establish Frame Output (PREFO) contract to FOMS, if there was a previous Frame Output Contract to FOMS for the provisioning request against which the CANJEO contract was received (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).
3. TDO mode:
   - Translation data to SOAC for MAS using an ACESO contract, if the provisioning request against which the ACESO AR was received is MAS involved. The ACESO ARR will be solicited and will contain the value "a" (assigned) in the status field of the header. The translation data will be included in translation message sections in the ACESO ARR.

     If the TDO mode provisioning request against which the ACESO AR was received is *not* MAS involved, then the SWITCH system will *not* return an ACESO ARR to SOAC.
   - An Establish Frame Output (PREFO) contract to FOMS, if there was a previous Frame Output Contract to FOMS for the provisioning request against which the CANJEO contract was received (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).
   - A notice containing the assignments to the SWITCH system printer via the ULBB.

13.3.9 Complete Provisioning Request

The message that the SWITCH system receives from SOAC under the Complete Provisioning Request Contract is called a PCNSO AR. SOAC will send a PCNSO AR to the SWITCH system on both completion (PCN) and completion with correction (CPC) passes. [34]SOAC will send the SWITCH system a PCNSO AR for provisioning requests assigned in AUTO and INT mode and for provisioning requests assigned in TDO mode where the involved wire centers were specified in SOAC using the SET TDO transaction. The SWITCH system will accept a PCNSO AR from SOAC if:

- the SWITCH system has previously accepted an AR for the provisioning request, and
  - — the correction suffix of the PCNSO AR is greater than the suffix for the previously retained contract for the provisioning request, or
  - — the correction suffix of the PCNSO AR is equal to the previous suffix and the version number is greater than the previous version number, or
  - — if a correction suffix does not exist, the version number must be greater than the previous version number.

The PCNSO AR consists of a header only.

Acceptance Processing

If the conditions of acceptance for a PCNSO AR are met, the SWITCH system will validate the AR input. The processing that the SWITCH system will do on the PCNSO AR depends on the state of the data base for the provisioning request. If the data base status for the provisioning request is assigned (i.e., the previous PRESO, CORSO, or ACESO AR for the provisioning request processed successfully), the SWITCH system will update the status of the assignments. If the data base status for the provisioning request is at error, the SWITCH system will return an error to SOAC because provisioning requests with error statuses in the SWITCH system cannot be completed. If the provisioning request is not in the SWITCH system data base, no error will be returned to SOAC.

If the conditions of acceptance for a PCNSO AR are met and the data base status for the provisioning request prior to receipt of the PCNSO AR is assigned, responses to the PCNSO AR will be:

- A solicited PCNSO ARR to SOAC containing the value "p" (processed successfully) in the status field of the header.
- A Complete Frame Output (PCNFO) contract to FOMS, if the SWITCH system considers FOMS to be involved with the provisioning request. (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests). [35]

34. For CPC passes, SOAC will also output an RMA notice to the location designated in BCC-modifiable tables. The notice identifies the pass as a completion with correction.

Note that no translation data is sent to SOAC for MAS under the Complete Provisioning Request contract.

If the conditions of acceptance for a PCNSO AR are met but the data base status for the provisioning request prior to receipt of the PCNSO AR is at error, the response to the PCNSO AR will be:

- A solicited PCNSO ARR to SOAC containing the value "d" (error deleted) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

If the conditions of acceptance for a PCNSO AR are met but the SWITCH system cannot perform all processing necessary to complete the provisioning request, the response to the PCNSO AR will be:

- A solicited PCNSO ARR to SOAC containing the value "m" (error kept) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

Failure Conditions

If the conditions of acceptance for a PCNSO AR are not met because the provisioning request is not in the data base, the response to the PCNSO AR will be:

- A solicited PCNSO ARR containing the value "p" (processed successfully) in the status field of the header and a warning message. SOAC will output the warning to the location designated in BCC-modifiable tables.

If the conditions of acceptance for a PCNSO AR are not met because of the correction suffix or version number, the response to the PCNSO AR will be:

- A solicited PCNSO ARR containing the value "d" (error deleted) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

If the SET TDO transaction was not used to specify the involved wire centers in SOAC and the pass type of the provisioning request is CPC, SOAC will output a RMA notice to the location designated in BCC-modifiable tables. The provisioning request must be completed manually in the SWITCH system via the ULBB. If the SET TDO transaction was not used to specify the involved wire centers in SOAC and the pass type of the provisioning request is PCN, SOAC will not output a RMA notice. The SWITCH system provides a manual completion capability to complete TDO mode provisioning requests. In cases where a provisioning request is completed manually, no PCNSO ARR will be sent to SOAC.

In cases where the SWITCH system returned a PCNSO ARR to SOAC with an error status in the status field of the header, the SWITCH system manual transactions may be used to

35. Also see BR 752-106-040, "SWITCH system System Contracts Directory".

complete the provisioning request in the SWITCH system. The manual transactions represent user-initiated contracts, the output of which is a set of responses to the first contract (here, the Complete Provisioning Request contract).

If the user-initiated contract results in successful processing of the PCNSO AR, the response will be the same as described above for PCNSO acceptance processing *except* that the PCNSO ARR will be *unsolicited* rather than solicited.

13.3.10 Cancel Provisioning Request

The message that the SWITCH system receives from SOAC under the Cancel Provisioning Request Contract is called a CANSO AR. SOAC will send the SWITCH system a CANSO AR for provisioning requests assigned in AUTO and INT mode and for provisioning requests assigned in TDO mode where the involved wire centers were specified in SOAC using the SET TDO transaction. The SWITCH system will accept a CANSO AR from SOAC if:

- The SWITCH system has previously accepted an AR for the provisioning request, and
  - — the correction suffix of the CANSO AR is greater than the suffix for the previously retained provisioning request, or
  - — the correction suffix of the CANSO AR is equal to the previous suffix and the version number is greater than or equal to the previous version number, or
  - — if a correction suffix does not exist, the version number must be greater than the previous version number.

The CANSO AR consists of a header only.

Acceptance Processing

If the conditions of acceptance for the CANSO AR are met, the SWITCH system will validate the AR input and cancel the provisioning request in its data base.

If the conditions of acceptance for the CANSO AR are met, responses to the CANSO AR will be:

- A solicited CANSO ARR to SOAC containing the value "p" (processed successfully) in the status field of the header.
- A Cancel Frame Output (CANFO) contract to FOMS, if the SWITCH system considers FOMS to be involved with the provisioning request (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests). [36]

Note that no translation data is sent to SOAC for MAS under the Cancel Provisioning Request contract.

36. Also see BR 752-106-040, "SWITCH system System Contracts Directory".

If the conditions of acceptance for the CANSO AR are met but the SWITCH system cannot perform all processing necessary to cancel the provisioning request, the response to the CANSO AR will be:

- A solicited CANSO ARR to SOAC containing the value "m" (error kept) in the status field of the header and information about the error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

Failure Conditions

If the conditions of acceptance for the CANSO AR are not met, responses to the CANSO AR will be:

- a solicited CANSO ARR containing the value "p" (processed successfully) in the status field of the header and a warning message. SOAC will output the warning to the location designated in the BCC-modifiable tables.

On TDO mode provisioning requests where the involved wire centers were not specified in SOAC using the SET TDO transaction, SOAC does not generate a CANSO AR. Instead, SOAC outputs an RMA notice to the location designated in BCC-modifiable tables. and the provisioning request must be canceled manually in the SWITCH system. No CANSO ARR will be sent to SOAC.

In cases where the SWITCH system returned a CANSO ARR to SOAC with an error status in the status field of the header, the SWITCH system manual transactions may be used to cancel the provisioning request in the SWITCH system. The manual transactions represent user-initiated contracts, the output of which is a set of responses to the first contract (here, the Cancel Provisioning Request contract).

If the user-initiated contract results in successful processing of the CANSO AR, the response will be the same as described above for CANSO acceptance processing *except* that the CANSO ARR will be *unsolicited* rather than solicited.

13.3.11 Record Only Provisioning Request

The message that the SWITCH system receives from SOAC under the Record Only Provisioning Request Contract is called a RORSO AR. Record Orders ("R" Orders) are used by some BCCs to pass service order denials/restorals and PIC (Predesignated Interexchange Carrier) changes to the SWITCH system. Some BCCs will also be using "R" Orders to pass service order CCF (Custom Calling Features) changes to the SWITCH system.

The RORSO contract contains both inward and outward actions (CTC ="C") like a change order. The SWITCH system will update its data base accordingly. Since RORSO contracts are single pass contracts, the SWITCH system automatically completes the order (the order does not pend in the SWITCH system data base). On RORSO contracts, MAS needs to be told what translations to take out and what translations to put in. Therefore, the SWITCH system will process an RORSO contract like a change and send both in and out translation data to SOAC.

Since RORSO contracts are single pass contracts, there are no acceptance conditions based on previous passes, except that the order should not already exist in the SWITCH System.

Successful Processing

If processing of the RORSO contract is successful, the SWITCH system will update its data base with the information contained in the RORSO AR. Responses to the RORSO AR will be:

- A solicited RORSO ARR to SOAC containing the value "p" (processed successfully) in the status field of the header.
- Translation data to SOAC for MAS as part of the RORSO AR, if required. This will be included in the RORSO ARR.
- An Establish Frame Output (PREFO) contract to FOMS (see Section 15.6.1 for details on contracts sent to FOMS for provisioning requests).

Failure Conditions

If the processing of the RORSO contract is not successful (e.g. the circuit does not exist in the data base), the response to the RORSO AR will be:

- A solicited RORSO ARR to SOAC containing the value "d" (error deleted) in the status field of the header and information about error condition(s). SOAC will output the RMA notice to the location designated in BCC-modifiable tables.

In cases where the SWITCH system returned a RORSO ARR to SOAC with an error status in the status field of the header, the SWITCH system UPD CKT (Update Circuit) work session may be used to update the SWITCH system data base with the changed information.

13.4 Cancellation and Completion of Service Order LSTs

The SWITCH system will allow: cancellation and completion of the SO and SOLST at the same time; separate cancellation of the SOLST both before and after the SO is canceled; and separate completion of the SOLST both before the SO is completed and after the SO is canceled. The SWITCH system will process a SO and SOLST cancellation based on the value of the CANLST tag that comes from SOAC in the *LST section of PRESO, CORSO, and ACESO contracts. When there is activity against a SO and/or SOLST, the SWITCH system will inform FOMS. MAS must be informed of cancellations of SOLSTS involving a switch port change.

There are six cases that apply to SOLST cancellations and completions. The flows for each are discussed in detail in the sections that follow.

13.4.1 Both SO and SOLST Canceled

The SWITCH system will process SO and SOLST cancellations based on the value of the CANLST tag that comes from SOAC in the *LST section of PRESO, CORSO, and ACESO contracts. If CANLST=Y, the SWITCH system will cancel both the SO and SOLST simultaneously when the SWITCH system receives a CANSO contract from SOAC. The SWITCH system will continue to respond to the CANSO contract with the *C1 Header only. SOAC will send MAS a CANSO contract recapping the last message sent to MAS regarding the SO. Since the *LST sections sent to MAS include the CANLST tag, MAS will cancel those LSTs which contain "CANLST=Y".

If the SWITCH system previously sent contracts to FOMS for the SO and SOLST, the SWITCH system will send FOMS a CANFO contract. The CANFO will contain a *FO section with only the sequence number. (This is the current structure of CANFO.) FOMS will cancel both the SO and SOLST.

13.4.2 SOLST Canceled Before SO

The SWITCH system will receive an ACESO contract from SOAC to cancel a SOLST before the SO is canceled. The SWITCH system will continue to respond to the ACESO contract with the associated SOLSTs (*LST sections) that are not being withdrawn, if any. On INT/TDO modes (since *TLST sections are sent to MAS), SOAC will generate withdrawals for those SOLSTs that are not in the SWITCH system response. However, on AUTO mode, unless unexpected translation responses are sent, SOAC will not generate withdrawals for those SOLSTs that are not in the SWITCH system response. If no withdrawals are sent to MAS, the RCMAC will still get this information when coordinating LSTs with the frame personnel, since FOMS withdraws the SOLSTs based on the SWITCH system response to an ACESO contract.

If the SWITCH system previously sent contracts to FOMS for the SO and SOLST, the SWITCH system will send FOMS a PREFO contract. If all SOLST items are canceled, the SWITCH system will not generate a *LST section for the PREFO. If some but not all SOLST items are canceled, the SWITCH system will include a *LST section in the PREFO. If there is no *LST section, FOMS will cancel *all* SOLST items. If there is an *LST section in the PREFO, FOMS will cancel the SOLST items that do *not* appear in the *LST section.

13.4.3 SO Canceled Before SOLST

If CANLST=N, the SWITCH system will cancel the SO and leave the SOLST in its data base when the SWITCH system receives a CANSO contract from SOAC. The SWITCH system will continue to respond to the CANSO contract with the *C1 Header only. SOAC will send MAS a CANSO contract recapping the last message sent to MAS regarding the

SO. Since the *LST sections sent to MAS include the CANLST tag, MAS will not cancel those LSTs which contain "CANLST=N".

If the SWITCH system previously sent contracts to FOMS for the SO and SOLST, the SWITCH system will send FOMS a CANFO contract. The CANFO will contain a *FO section with the sequence number and a *LST section. The *LST section will contain a CKT (Circuit) aggregate for each SOLST item that is still pending.

13.4.4 SOLST Canceled After SO

The SWITCH system will receive a CANSOL contract from the ULBB to cancel the SOLST after the SO is canceled. Since SOAC cannot accept an unrequested CANSOL contract, until SOAC sends CANSOL contracts to the SWITCH system, there will be no flow to MAS. When the SOLST is canceled in LFACS and no contract is sent to SOAC, the RCMAC needs to be notified. If the RCMAC is not notified, they will still get this information when coordinating LSTs with the frame personnel, since FOMS is notified when a CANSOL contract is executed by the SWITCH system.

If the SWITCH system previously sent contracts to FOMS for the SO and SOLST, the SWITCH system will send FOMS a CANFOL contract. The CANFOL will contain a *FO section with the sequence number and a *LST section. The *LST section will contain a CKT aggregate for each SOLST item that is still pending. FOMS will cancel the SOLST items that do *not* appear in the *LST section. If there is no *LST section, FOMS will cancel *all* SOLST items.

13.4.5 Both SO and SOLST Completed

The SWITCH system will receive a PCNSO contract from SOAC to complete the SO and SOLST simultaneously.

If the SWITCH system previously sent contracts to FOMS for the SO and SOLST, the SWITCH system will send FOMS a PCNFO contract. The PCNFO will contain a *FO section with only the sequence number. (This is the current structure of PCNFO.) FOMS will complete both the SO and SOLST.

The SWITCH system will *not* generate a contract to SOAC for MAS, since MAS does not get completions.

13.4.6 SOLST Completed Before SO or After SO Canceled

The SWITCH system will receive a PCNSOL contract from the ULBB to complete the SOLST before the SO completes or after the SO is canceled.

If the SWITCH system previously sent contracts to FOMS for the SO and SOLST, the SWITCH system will send FOMS a PCNFOL contract. The PCNFOL will contain a *FO section with the sequence number and a *LST section. The *LST section will contain a CKT aggregate for each SOLST item that is still pending. FOMS will complete the SOLST items that do *not* appear in the *LST section. If there is no *LST section, FOMS should complete *all* SOLST items.

The SWITCH system will *not* generate a contract to SOAC for MAS, since MAS does not get completions.

Table 13-1. SAMPLE MAS INVOLVEMENT TABLE

IC	Pr. Req. Mode					Work Order/Inventory Transaction Type									
	AUTO	INT	TDO	CIO	SUS	MCT	TNA	SET	LST	CPT	JAM	DTR	FTR	ATR	CTR
IC1	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
IC2	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
IC3	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
IC4	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y
IC5	N	N	N	N	N	Y	Y	Y	Y	Y	Y	Y	Y	N	Y

Key:

AUTO = AUTO mode provisioning request (unexpected response)
INT = INT mode provisioning request
TDO = TDO mode provisioning request
CIO = CIO mode provisioning request
SUS = Suspended service with sublet allowed
MCT = Maintenance Change
TNA = TN Aging order (Release TN)
SET = Switch port Equipment Transfer
LST = Work Order (non-service order) Line and Station Transfer
CPT = Cable Pair Transfer
JAM = Jumper Activity Management
DTR = Dial Transfer
FTR = Frame Transfer
ATR = Area Transfer
CTR = Channel/CRV Transfer

Table 13-2. SWITCH SYSTEM SCREENINGFOR MAS INVOLVEMENT

Case No.	Involved Current Pass		Involved Last Pass	Action
	MAS Cares	MAS is Different		
1	N	N (n/a)*	N	No message
2	N	N (n/a)	Y	Cancellation message; SOAC sends msg. to MAS
3	N	Y (n/a)	N	No message
4	N	Y (n/a)	Y	Cancellation message; SOAC sends msg. to MAS
5	Y	N	N	No message
6	Y	N	Y	Cancellation message; SOAC sends msg. to MAS
7	Y	Y	N (n/a)	Message; SOAC sends msg. to MAS
8	Y	Y	Y (n/a)	Message; SOAC differences: Msg. to MAS if needed

* n/a = Screening on this criterion is not needed for this case.

Appendix 13A: TAG DESCRIPTIONS

Appendix 13A lists all the tags which are supported in the SWITCH System for use by MAS, OPS/INE, and ILAS. This list includes IC translation tags, CC cross connect tags, and SWITCH system processed tags. It also includes tags which are defined for the Bulk Translation Output TAGTMART and BTOEXT interfaces.

13A.1 TAG LIST DESCRIPTION

The attached provides a description of the tags which are supported by the SWITCH System. The following information is provided:

Name: The tag name; tags are listed in order by this field.

Full Name: The expanded name of the tag.

Description: An English description of the tag or the FID from which the tag is derived.

Input: A list of the contract paths which may contain the tag. These contracts include service orders, work orders, and inventory contracts, including Translation Synchronization inputs.

If the tag name in the input contract is different from the tag name which is used to identify the tag in the list, the tag name in the contract appears following the path name in parentheses. For example, CAR.REC.ACL (SCTN) would appear in the entry for the STN (Screening Telephone Number) tag if the screening TN is sent to the SWITCH System behind the SCTN (Screening Telephone Number) tag.

If the tag information is not provided via an input contract, this field will describe how the value is obtained (e.g., "SWITCH System creates", "SWITCH System assigns", and "SWITCH System derives").

Storage: The location in which the tag is stored in the SWITCH System database is identified. Following the storage location in parentheses is the input path from which the information is obtained. The following conventions are used to identify storage locations in the SWITCH System database:

- PSVC/DSGN - design edge off of a primary service
- SSVC/DSGN - design edge off of a secondary service
- PSVC/TRNSL - translation edge off of a primary service

- SSVC/TRNSL - translation edge off of a secondary service
- GRPBOD(xxx)/TRNSL - translation edge off of a group, where xxx identifies the type of group (e.g., HML for multi-line hunt groups, SCH for series completion hunt groups, CTX for Centrex groups, and SFG for simulated facilities groups).
- NUBOD(xxx)/EXID - this indicated that the value of the tag is stored as an external ID of the network unit of type xxx (e.g., TN, Switch Port (SWPT)). If applicable, the appropriate comp_usage is also identified.
- ASMBOD(xxx)(field_name) - the value is stored in the field in the assembly body named "field_name". The xxx identifies the type of assembly body (e.g., CKT for circuit, PSVC for primary service, or SSVC for secondary service). This convention is also used for other database bodies, such as NUBOD(CP) and NUBOD(SWPT).

TRM Output: The TRM output shows the contract path in each TRM section in which the tag may be returned to SOAC. Following the path in parentheses is the SWITCH System database location used to obtain the data.

If the TRM output is sent following a different tag than used to store the data in the SWITCH System, the output tag is shown in parentheses. An "n/a" indicates that the tag is not returned to SOAC via TRM contracts.

Tag Usage: Indicates whether the tag is included in a BTO extract tape (either TAGTMART or BTOEXT), is an IC translation tag, is processed (as opposed to just stored) by the SWITCH system, or is a CC cross-connect tag (CC XCN).

If the name in the TAGTMART definition is different from the input or storage name, the TAGTMART tag is shown in parentheses.

IC Type: Indicates the type of IC (or all ICs) the tag is valid for. GP means general purpose. This does not preclude the tag from being sent to the SWITCH system for other IC types. In general, SOAC does not distinguish the tags sent to the SWITCH system by IC type.

Multiple: Values are:

- "Y" means that the tag may appear multiple times for the service or group.
- "N" means that the tag may appear at most one time for a service or group.

For tags that are stored on a translation edge and cannot have multiple appearances (Multiple = N), the SWITCH System database stores the most recent value of the tag that was received.

Short/Long: Values are:

- "S" indicates a tag whose value will always be short (25 characters or less).
- "L" indicates a tag whose value may be long (longer than 25 characters).

Characters: This field indicates the character set or character set format:

- "N" indicates that the value consists of digits (0, 1,..., 9).
- "A" indicates that the value consists of letters (a, b,..., z).
- "Low"- "high" indicates the range of valid character lengths; e.g., "1-8AN".
- A restricted code set is indicated in double quotes. For example, "Y" means that the only valid value is the letter Y.

TN: Values are:

- "Y" means that the tag value may contain a telephone number.
- "N" means that the tag value never contains a telephone number.

The only tags that need to be examined for Numbering Plan Area (NPA) splits or other orders that change TNs (e.g., Area Transfers) are those for which TN = Y.

Source: The Source field indicates the FID that the tag is derived from if the FID name and tag name differ. It also includes the other related tags that are derived from the FID.

Notes: If a tag is sent to MAS for all work orders, including non-Dial Transfer work orders, that is indicated as a note. Such a tag is sometimes referred to as a "short form" tag.

The notes field is used to provide any additional information concerning input, storage, output, and special relationships with other tags.

Name:	AA
Full Name:	Alternate Answering
Description:	A possible feature of the multi-line variety package, alternate answering specifies the number of rings to be completed before the Alternate Answering feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT (8)
TN:	N
Source:	From MVP FID.
Notes:	

Name:	AAB
Full Name:	Auto Answer Back
Description:	Indicates the auto answer back feature which allows any incoming call to the primary directory number to be automatically answered through a hands-free unit.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	AAK
Full Name:	ACD Answer Agent Key
Description:	Indicates the ACD Group identifier and the ACB supervisor subgroup of the agent to be picked up on the supervisor's station equipped with the Answer Agent Feature.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	ABS
Full Name:	Authorized Bearer Services
Description:	Identifies the exceptions associated with a DMS-100 BCS 28 or 29 service
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	3-7A
TN:	N
Source	
Notes:	Characters changed for 3.0

Name:	**ACBK**
Full Name:	Automatic Callback
Description:	Indicates that the automatic call back features are to be provided. Each ACBK feature will have its own tag.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**ACDG**
Full Name:	ACD Group and Subgroup
Description:	Indicates the Automatic Call Distribution Group number and ACD subgroup.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS, DMS
Multiple:	N
Short/Long:	S
Characters:	1-20 USOTEXT
TN:	N
Source:	
Notes:	IC Type and Characters revised for 2.5.

Name:	**ACDI**
Full Name:	ACD Agent Incalls Option
Description:	Indicates the agent's INCALLS option for Automatic Call Distribution.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**ACDR**
Full Name:	ACD Agent Not Ready Option
Description:	Indicates the ACD agent's station is equipped with ACD Not Ready Option.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	ACLS
Full Name:	Accounting Class Packet Service
Description:	Indicates the accounting class which is used for network operations to define the accounting class parameters for a Packet Service customer.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	ACNT
Full Name:	Account Code 5ESS
Description:	Specifies the account code feature name an optional feature attributes to be assigned to a line in a 5ESS office
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	ACOS
Full Name:	Additional Call Offering Services
Description:	The type of additional call offering service to be provided and the total number of calls which can be supported for this ISDN user over a standard interface.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	3-36 USOTEXT
TN:	N
Source:	
Notes:	Characters changed for 3.0

Name:	ACP
Full Name:	Attendant Camp On
Description:	Indicates in a DMS-100 switch, that the attendant has the capability of queuing an incoming call to a busy line. When the busy line becomes idle, it automatically rings and is connected to the waiting call.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From ACP FID.
Notes:	New for 1.6.5.

Name:	ACPFN
Full Name:	Attendant Camp On Feature (ACP FID)
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From ACP FID.
Notes:	New for 1.6.5.

Name:	ACRG
Full Name:	Access Code Restriction Group
Description:	The access treatment for an individual line, hunt group, or 2-party line served by 1AESS
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	ACSR
Full Name:	Automatic Customer Station Rearrangement
Description:	Identifies the ACSR feature group name and inhibit condition assigned to an ISDN digital subscriber line in a 5ESS Generic 5E5.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	ACTN
Full Name:	Access Telephone Number for Modem Pooling
Description:	Specifies the analog telephone number for access into a modem pool arrangement that allows termination to ISDN packet telephone number, and the cross-reference to the modem pool lead hunt number.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5. The SOAC/SWITCH System Interface Specification, Issue 6, dated March 1, 1992 shows ACTN as a multiple appearing tag in the CAR section, but not in the SDR section. The SOAC/ SWITCH System Interface Specification, Issue 11, dated August 1995 shows ACTN as a multiple appearing tag in both the CAR and SDR sections.

Name:	**ACTU**
Full Name	Active User
Description:	Identifies an active user condition on a digital subscriber line.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**ACVT**
Full Name:	Attendant Control of Voice Terminals
Description:	Indicates the attendant control of voice terminals feature name and optional feature attributes to be assigned to a line in a 5ESS office. This is a cross-reference FID.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**ADP**
Full Name:	Advanced Intelligent Network Multi-Location Dialing Plan Extension Number
Description:	Indicates the Advanced Intelligent Network (AIN) dialable number used for multi-location extension dialing.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N (just an extension number)
Source:	
Notes:	New for 1.6.5.

Name:	**ADRPAT**
Full Name:	Abbreviated Ringing or Delay Pattern
Description:	This FID is associated with the 5ESS intelligent controller.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From CAPP FID.
Notes:	New for 1.6.5.

Name:	**ADRTIME**
Full Name:	Abbreviate/Delay Ringing Time
Description:	This FID is associated with the 5ESS intelligent controller.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From CAPP FID.
Notes:	New for 1.6.5.

Name:	**ADSI**
Full Name:	Analog Display Services Interface Feature
Description:	Indicates that there is an interface that provides feature specific status, prompting and list information to the user through visual displays. This feature allows the customer to enter editing commands.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From ADSI FID.
Notes:	New for 1.7.

Name:	**AEMK**
Full Name:	ACD Answer Emergency Key Option Supervisor
Description:	Indicates the ACD group identifier and the ACD supervisor subgroup of agents that will originate emergency calls to the supervisor's station equipped with the Answer Emergency option.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**AFCO**
Full Name:	Additional Functional Calls Option
Description:	Identifies the number of additional functional call appearances of the same telephone number. This is specifically for DMS-100 with BCS-34 switching generic.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5. This tag was added to SOAC 18.7 via change control.

Name:	**AFRDP**
Full Name:	Automatic Flexible Routing Dialing Plan
Description:	Identifies the flexible routing dialing plan assigned to a directory number in a stored program control switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	1-4N
TN:	N
Source:	From ARS FID.
Notes:	New for 1.7.

Name:	**AGA**
Full Name:	Associated Group Assignment
Description:	The Integrated Services Digital Network (ISDN) interface (pipe) Associated Group Indicator (AGI) to which the bearer service is assigned and restricts the level of service provided to that set of DNs.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**AGI**
Full Name:	Associated Group Indicator
Description:	*TL1, FETEX-150®* The Associated Group Indicator on an Integrated Services Digital Network (ISDN) interface (pipe) and the number of B-channels assigned to each Associated Group *5ESS®* The group to which a "Demand" B-channel user on a standard ISDN interface has been assigned *DMS-100* The Associated Group and call type per Logical Terminal Identifier (LTID)
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, 5ESS, DMS-100
Multiple:	Y
Short/Long:	S
Characters:	1-7 USOTEXT
TN:	N
Source:	
Notes:	Description, IC Type and Characters changed for 3.0

Name:	**AID**
Full Name:	Access Identifier
Description:	AID is the access identifier of the channel or cc port. Found on the NEP edge.
Input:	SWITCH system creates
Storage:	NUBOD(CCPT)/EXID aidx, aidy
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	n/a
Multiple:	N
Short/Long:	L
Characters:	1-45 AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**AID**
Full Name:	Automatic Identified Outward Dialing
Description:	Identifies that AIOD (Automated Identified Outward Dialing) Trunk Number (Talking Path) index is assigned to a PBX or Centrex-CU Trunk. It is used with a PBX or Centrex station number to indicate that the AIOD feature is applicable.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"11-4AN
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**AIN**
Full Name:	Advanced Intelligent Network Access
Description:	This tag identifies a user as having access to AIN in the 5E6, 5E8, 5E9, BCS 35, DMS-100 and TL1 switches. This tag will be sent only if the AIN FID is used to supply the triggers for these switches.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From AIN FID.
Notes:	New for 1.6.5.

Name:	**AINDNGRP**
Full Name:	AIN Directory Number Group
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT (7-20)
TN:	N
Source:	From AIN FID.
Notes:	New for 1.6.5. Changed for 2.0 (Changed character set from short to long).

Name:	**AINGRP**
Full Name:	AIN Group
Description:	Indicates the group of the 5ESS Advanced Intelligent Network.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	USOTEXT (6-29)
TN:	N
Source:	From AIN FID.
Notes:	Changed from Short to Long for 2.0. New for 1.6.5.

Name:	AINOVER
Full Name:	Advanced Intelligent Network Override
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	USOTEXT (1-46)
TN:	N
Source:	From AIN FID.
Notes:	New for 1.6.5.

Name:	ALEK
Full Name:	Analog Line Electronic Key Telephone Service
Description:	That an analog line is part of an EKTS and the line's capabilities.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	3-12AN
TN:	N
Source:	
Notes:	New for 1.6.5. Changed for 1.8.

Name:	ALF
Full Name:	Allowed Class Feature
Description:	Indicates the Custom Local Area Signaling Service (CLASS) feature that is allowed or disallowed to be assigned to a directory number.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	ALTF
Full Name:	Automatic Link Transfer
Description:	Indicates whether or not a user, on a 5E10 DSL, is allowed to comply with a request for automatic link transfer with ISDN/PCS interworking and AIN
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.9.

Name:	**ALUSOC**
Full Name:	Assignable Line USOC
Description:	
Input (as AU):	CAR.REC.ACL.CEC SDR.REC.ACL.SEC
Storage:	PSVC/DSGN (from CAR.REC.ACL.CEC) SSVC/DSGN (from SDR.REC.ACL.SEC)
TRM Output:	n/a
Tag Usage:	BTO TAGTMART
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	The SWITCH System receives Assignable line USOC as AU; it stores it as ALUSOC and puts ALUSOC on BTO BTO TAGTMART extacts. It is not sent to MAS via TRM contracts.

Name:	**AP**
Full Name:	Alerting Pattern
Description:	The alerting pattern for the DN. Indicates the assignment of a call appearance of a Directory Number/Call Type to a corresponding identifier that is used between the customer equipment and the switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	1A
TN:	N
Source:	From CAPI FID.
Notes:	New for 1.7.

Name:	**APIC**
Full Name:	Audio Predesignated Interexchange Carrier
Description:	Indicates a PIC for Audio bearer capability.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	USOTEXT (3-4)
TN:	N
Source:	
Notes:	New for 1.9.

Name:	**APID**
Full Name:	Application Processor Identification
Description:	Identifies the application processor identification and the business customer identification (BCID) for message center multiline hunt groups serviced by a 5ESS.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**ARC**
Full Name:	Automatic Recall
Description:	Indicates whether the customer is assigned the Automatic Recall feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	1-8AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**AREA**
Full Name:	Detailed Regulatory Area Descriptor
Description:	AREA is the detailed regulatory area descriptor found in the primary service node of the carrier circuit.
Input:	SWITCH system creates
Storage:	ASMBOD(PSVC) detail/det_reg_area
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	n/a
Multiple:	Y
Short/Long:	S
Characters:	1-4 AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**ARS**
Full Name:	Automatic Route Selection
Description:	Identifies the automatic route selection group name and feature name assigned to a directory number in the 5ESS Switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**ASC**
Full Name:	CC associations
Description:	ASC indicates the kind of associations needed at the CC and will contain 2 XCC aggregates. One XCC will contain AID and CCLOC information and the other XCC will contain CRVID and CCLOC information
Input:	SWITCH system creates
Storage:	Derived
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	
Multiple:	
Short/Long:	n/a
Characters:	n/a
TN:	N
Source:	
Notes:	New for 1.8.

Name:	ASI
Full Name:	Advanced Service Interface Feature
Description:	Indicates that access to an Intelligent Peripheral (IP) network element is to be provided to a directory number served by a 5ESS switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	Y
Short/Long:	L
Characters:	USOTEXT (1-31)
TN:	Y
Source:	
Notes:	Multiple and TN changed to "Y" for 2.0. New for 1.6.5.

Name :	ASLS
Full Name :	ACD Status Lamps Feature
Description :	Indicates the agent status lamp feature on the supervisor's set and whether the supervisor has the capability to monitor the agent's secondary directory number or the key number of the agent's secondary directory number
Input :	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage :	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output :	TRMS.REC.ACL (from SSVC/ TRNSL)
Tag Usage :	BTO TAGTMART, BTO FCIF, IC translation
IC Type :	All
Multiple :	N
Short/Long :	S
Characters :	20-23 USOTEXT
TN :	Y (sometimes)
Source :	
Notes :	Characters and TN changed for 3.0

Name:	ATH
Full Name:	Authorization Code
Description:	Identifies the authorization code feature name and optional feature attributes to be assigned to a line in a DMS-100 or 5ESS Switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS, 5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	ATLG
Full Name:	Simplified Message Desk Interface (SMDI) Automatic Logon
Description:	Indicates whether the line is equipped with the SMDI automatic logon capability.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**ATN**
Full Name:	Attendant Telephone Number
Description:	Indicates the attendant mailbox telephone number to which an incoming call to a voice messaging service is to be routed.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT (8-14)
TN:	Y
Source:	
Notes:	

Name:	**ATSU**
Full Name:	Automatic Terminal Setup
Description:	Indicates Automatic Terminal Setup.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From ATSU FID.
Notes:	New for 1.6.5.

Name:	**AU**
Full Name:	Assignable Line USOC
Description:	Identifies the assignable line USOC.
Input:	CAR.REC.ACL.CEC SDR.REC.ACL.SEC
Storage (as ALUSOC):	PSVC/DSGN (from CAR.REC.ACL.CEC) SSVC/DSGN (from SDR.REC.ACL.SEC)
TRM Output (as ALUSOC):	n/a
Tag Usage:	BTO FCIF
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	The SWITCH System receives Assignable line USOC as AU; it stores it as ALUSOC and puts ALUSOC on BTO BTO TAGTMART extracts. It is not sent to MAS via TRM contracts.

Name:	**AUC**
Full Name:	Authorization Code Indicator
Description:	Indicates whether or not the 5ESS 5E5 feature may be implemented via an authorization code. The switch default setting is "N".
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y" | 1A
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**AUD**
Full Name:	Automatic Dial
Description:	Indicates that a DMS-100 line is equipped with Automatic Dial feature that allows a station user to assign a frequently called number, account code, or authorization code to a feature key.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART (AUDIAL), BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	L
Characters:	"Y" I 5-28AN
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**AUDIAL**
Full Name:	Automatic Dial
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	See AUD.

Name:	**AUDNA**
Full Name:	Automatic Terminal Setup DN Appearance ID - Audio
Description:	Identifies the directory number appearance audio (circuit switched voice).
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From ATSU FID.
Notes:	New for 1.6.5. Changed for 1.8.

Name:	**AUL**
Full Name:	Automatic Line
Description:	Identifies the telephone number that is automatically dialed when a subscriber of 5ESS or DMS-100 Automatic Line feature goes off hook.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS, 5ESS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	Y
Source:	From AUL FID.
Notes:	New for 1.6.5.

Name:	**AULDA**
Full Name:	Automatic Line Dial Access Code
Description:	Identifies the number that is automatically dialed when a subscriber of 5ESS or DMS-100 Automatic Line feature goes off hook.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS, 5ESS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT (1-2)
TN:	N
Source:	From AUL FID.
Notes:	New for 1.6.5.

Name:	**AUQTY**
Full Name:	Automatic Terminal Setup DN Appearance Quantity - Audio
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From ATSU FID.
Notes:	New for 1.6.5. Changed for 1.8.

Name:	**AUTODISP**
Full Name:	Automatic Display
Description:	
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From TTYD FID (DMS-100).
Notes:	New for 1.6.5. Not sent by SOAC 18.8 but sent by SOAC 18.7 and may still be in SWITCH System data base.

Name:	**AUTOHOLD**
Full Name:	Auto Hold
Description:	Identifies a terminal option attribute in a 5ESS Switcher.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y" | 1A
TN:	N
Source:	From TTYP FID (5ESS).
Notes:	New for 1.6.5.

Name:	**BAAD**
Full Name:	Band Advance
Description:	Identifies automatic overflow of terminating calls to another Access Service WATS Access Line (WAL) group when the first group has exceeded its call capacity. Provided in association with two or more WAL groups.
Input:	GRP.REC.ACL HML.REC.ACL SCH.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(SFG)/TRNSL (from GRP.REC.ACL, see Notes, from SCH.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL) GRPBOD(SCH)/TRNSL (from SCH.REC.ACL)
TRM Output:	TSCH.REC.ACL (from GRPBOD(SCH)/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5. IC translation data for SFG. Supports WATS processing. *GRP section created by the SWITCH system in the DLBB for flow-through orders and in the ULBB for orders that require manual assistance (and inventory). If the SFG tag and a GSZ tag are in the same CAR.REC.ACL, a *GRP section is created and the SFG is assigned before associating this line with the SFG. A *GRP section may also be created from the *CAR.REC information to change the translation data on the SFG. A *CAR.REC with a SFG tag but no GSZ tag means that this line should be associated with the SFG, but the SFG is not modified.

Name:	**BAND**
Full Name:	Band Identification
Description:	Identifies the end office customer line service screening for a WATS Access Line (WAL). Provides the ability to verify that a customer has dialed a called party address (by screening the called NPA and/or NXX).
Input:	CAR.REC.ACL.CEC SDR.REC.ACL.SEC SYNCSVC.REC.ACL.DSGN
Storage:	PSVC/DSGN (from CAR.REC.ACL.CEC) SSVC/DSGN (from SDR.REC.ACL.SEC)
TRM Output:	TRMC.REC.ACL (from PSVC/DSGN) TLST.REC.ACL (from PSVC/DSGN) TRMS.REC.ACL (from SSVC/DSGN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed data (design data)
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	Alphabetic or numeric
TN:	N
Source:	
Notes:	

Name:	**BCE**
Full Name:	Bridged Call Exclusion Option
Description:	Indicates the Bridged Call Exclusion terminal option for multibutton service on an ISDN line served by a TL1 switch.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	"Y" or "N"
TN:	N
Source:	From TTYT FID (TL1).
Notes:	New for 1.6.5.

Name:	BCGP
Full Name:	Bulk Calling Line Identification (BCLID) User Group
Description:	Indicates the user group name, group attributes and attribute values for the Bulk Calling Line Identification feature in a 5ESS switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT (10-23)
TN:	N
Source:	
Notes:	New for 2.0.

Name:	BCI
Full Name:	Bulk Calling Line Usage Guide Indicator
Description:	Indicates usage will be recorded when the BCLID (Bulk Calling Line Identification) feature is activated.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	

Name:	BCN
Full Name:	Bearer Capability Name
Description:	Identifies the type of bearer capability service for ISDN TL1 or DMS-100, BCS 28 or later.
Input:	SDR.REC.ACL.SEC SYNCSVC.REC.ACL.DSGN (Used for validation; not stored)
Storage:	SSVC/DSGN (from SDR.REC.ACL.SEC)
TRM Output:	TRMS.REC.ACL (from SSVC/DSGN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	TL1, DMS
Multiple:	
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5. Needed for the provisioning of ISDN services in DMS100.

Name:	BDL
Full Name:	Billing Detail
Description:	Indicates that a customer receives billing usage detail per Data Telephone Number (DTN) and optionally on the called number on a Public Packet Switching Network (PPSN) service or ISDN packet service.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	Y (sometimes)
Source:	
Notes:	New for 1.6.5.

Name:	BFG
Full Name:	BRCS Feature Group Name
Description:	Identifies the group name of a specific set of BRCS (Business/Residence Custom) features assigned to a DMS-100 or 5ESS office line.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS, 5ESS
Multiple:	N
Short/Long:	S
Characters:	1-16 USOTEXT
TN:	N
Source:	From BFG FID.
Notes:	Characters changed for 3.0

Name:	BFGU
Full Name:	BRCS Feature Group Unique Identifier
Description:	Indicates uniqueness in a BRCS feature group.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From BFG FID.
Notes:	New for 1.6.5.

Name:	BGDN
Full Name:	Basic Business Group Directory Number
Description:	Indicates the abbreviated number or intercom number to use within the BBG for calling the Directory Number or Directory Number/Call Type.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	1-8AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	BGI
Full Name:	Bulk Calling Line Identification Group Identifier
Description:	Indicates the multiline hunt group, Centrex group or PBX DID (Direct Inward Dialing) trunk group is equipped with the BCLID (Bulk Calling Line Identification) feature.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	BLF
Full Name:	Busy Lamp Field Option
Description:	Indicates the directory number that is monitored using the Busy Lamp Field option.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	BLK1
Full Name:	Blocking 1
Description:	Credit card, collect or third party interLATA calls are allowed when using alternate carriers from lines that are presubscribed to a particular carrier, while non-operator (1+) interLATA calls are denied.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	BN
Full Name:	Billing Telephone Number
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	See BTN.

Name:	BNN
Full Name:	Bridged Night Number
Description:	Indicates the telephone number for bridge night numbers in a DMS-100 switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	BOE
Full Name:	Bridged Originating Equipment
Description:	
Input:	SWITCH system assigns
Storage:	NUBOD(SWPT)/EXID
TRM Output:	TRMC.REC.ACL.BOE(ID) (from NUBOD(SWPT)/EXID) TLST.REC.ACL.BOE(ID) (from NUBOD(SWPT)/EXID)
Tag Usage:	BTO TAGTMART (BOE), BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	

Name:	**BRG**
Full Name:	Bridged Telephone Number
Description:	Indicates the bridged telephone number on a party line circuit.
Input:	SWITCH system determines
Storage:	NUBOD(TN)/EXID
TRM Output:	TRMC.REC.ACL (from NUBOD(TN)/ EXID) TLST.REC.ACL (from NUBOD(TN)/ EXID) TRMS.REC.ACL (from NUBOD(TN)/ EXID)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	

Name:	**BRIG**
Full Name:	Basic Rate ISDN Customer Group
Description:	Indicates the name of the Basic Rate ISDN Customer Group
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	Y
Short/Long:	S
Characters:	3-18 USOTEXT
TN:	N
Source:	
Notes:	New for 3.0

Name:	**BRP**
Full Name:	Bridging Arrangement Transmission Path Direction
Description:	Identifies the transmission path direction of a specific location on a multi-point data circuit.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**BRS**
Full Name:	Bridging Arrangement Transmission Selection Type
Description:	Identifies the type of bridging selected for transmission of data between stations on a multi-point circuit.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**BS1**
Full Name:	Channel B1 Service
Description:	Indicates the type of ISDN service to which the user has access.
Input:	CAR.REC.ACL.CEC SYNCSVC.REC.ACL.DSGN (Used for validation; not stored)
Storage:	PSVC/DSGN (from CAR.REC.ACL.CEC)
TRM Output:	TRMC.REC.ACL (from PSVC/DSGN) TLST.REC.ACL (from PSVC/DSGN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	3-5AN
TN:	N
Source:	From BS FID.
Notes:	New for 1.6.5. Needed for the provisioning of ISDN pipes. Sent to MAS for all ISDN work orders (a "short form" tag).

Name:	**BS2**
Full Name:	Channel B2 Service
Description:	Indicates the type of ISDN service to which the user has access.
Input:	CAR.REC.ACL.CEC SYNCSVC.REC.ACL.DSGN (Used for validation; not stored)
Storage:	PSVC/DSGN (from CAR.REC.ACL.CEC)
TRM Output:	TRMC.REC.ACL (from PSVC/DSGN) TLST.REC.ACL (from PSVC/DSGN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	3-5AN
TN:	N
Source:	From BS FID.
Notes:	New for 1.6.5. Needed for the provisioning of ISDN pipes. Sent to MAS for all ISDN work orders (a "short form" tag).

Name:	**BSCR**
Full Name:	Business Customer Identification (BCID) Number Screening
Description:	Whether or not the BCID Screening is provided for voice messaging service multiline hunt group served by the 5ESS switch.
Input:	HML.REC.ACL SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(HML)/TRNSL
TRM Output:	THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**BSD**
Full Name:	Channel D Service
Description:	Indicates the type of ISDN service to which the user has access.
Input:	CAR.REC.ACL.CEC SYNCSVC.REC.ACL.DSGN (Used for validation; not stored)
Storage:	PSVC/DSGN (from CAR.REC.ACL.CEC)
TRM Output:	TRMC.REC.ACL (from PSVC/DSGN) TLST.REC.ACL (from PSVC/DSGN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	2-5AN
TN:	N
Source:	From BS FID.
Notes:	New for 1.6.5. Needed for the provisioning of ISDN pipes. Sent to MAS for all ISDN work orders (a "short form" tag).

Name:	**BTN**
Full Name:	Billing Telephone Number
Description:	Indicates the account number to which all charges are to be billed when charges are not to be billed to the number shown in the TN Block in the Fielded Identification Section.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART (BN), BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	From BTN FID.
Notes:	

Name:	**BTNCC**
Full Name:	Billing Telephone Number Customer Code
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From BTN FID.
Notes:	

Name:	**BVI**
Full Name:	Busy Verification Inhibit
Description:	Indicates that the directory number not be verified for a busy condition.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**BW**
Full Name:	Bandwidth Aggregate
Description:	Bandwidth information
Input:	SWITCH system creates
Storage:	NUBOD(BW) derived
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	
Multiple:	
Short/Long:	n/a
Characters:	n/a
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**BYL**
Full Name:	Busy Limit
Description:	The limit of calls that can be terminated to this specific TL1 or 5ESS Standard ISDN packet multiline hunt member before being marked busy.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, 5ESS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**BYM**
Full Name:	Busy Monitor
Description:	Indicates whether or not the ISDN directory number appears on the attendant console station busy field. This FID was implemented with the 5ESS generic 5E5.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y" | 1A
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	CACH
Full Name:	Call Appearance Call Handling
Description:	Identifies the call appearance call handling terminal option for a multibutton service on an ISDN line served by a TL1 switch.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	"Y" or "N"
TN:	N
Source:	From TTYT FID (TL1).
Notes:	New for 1.6.5.

Name:	CAG
Full Name:	ACD Supervision Call Agent Option
Description:	Indicates that the ACD supervisor's set is equipped with the Call Agent option.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	CAL
Full Name:	Customer Alerting
Description:	Indicates the capability of activating and deactivating the stutter tone on subscriber's line. This tag is used to support the Ericcson switch type.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	CALLEXCL
Full Name:	Call Appearance Exclusion
Description:	Identifies a call appearance designation on a multiple appearance terminal for primary and secondary line numbers, or multiline hunt group terminal numbers service by a 5ESS.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From CAPP FID.
Notes:	New for 1.6.5.

Name:	CAN
Full Name:	Cancel
Description:	
Input:	SWITCH system derives
Storage:	n/a
TRM Output:	TMIS
Tag Usage:	n/a
IC Type:	All
Multiple:	n/a
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	This tag is returned when the entire order is no longer MAS involved.

Name:	CAPI
Full Name:	Call Appearance Identifier
Description:	Indicates the assignment of a call appearance of a Directory Number/Call Type to a corresponding identifier that is used between the customer equipment and the switch, and the alerting pattern for the DN.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	CAPP
Full Name:	Call Appearance
Description:	Identifies a call appearance designation on a multiple appearance terminal for primary and secondary line numbers, or multiline hunt group terminal numbers served by a 5ESS.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From CAPP FID.
Notes:	New for 1.6.5.

Name:	CAPS
Full Name:	Call Appearance Sequence
Description:	Indicates the call appearance ringing sequence in which calls are to be presented for a directory number.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	CAR
Full Name:	Call Send
Description:	Identifies whether the station line identified can send Message Waiting signals to another station within the customer's group in a DMS-100 switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	CAS
Full Name:	Call Screening Code Assignment
Description:	Indicates the Screening Code Assignment for Operator Services Systems (OSS) Selective Class Of Call Service.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	CAT
Full Name:	Customer Access Treatment
Description:	Identifies the access treatment code assigned to a Centrex station line.
Input:	CAR.REC.ACL SDR.REC.ACL Data Dictionary (Centrex RCU table) SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL or Centrex RCU table) SSVC/TRNSL (from SDR.REC.ACL or Centrex RCU table)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART (CT), BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	Centrex groups are created in the SWITCH system via inventory. Some default translation data for a Centrex group is defined in SWITCH system reference data, in the Centrex Recent Change USOC Table. The RCU Table can be created for an IC type, IC id or individual group instance. When the SWITCH system receives a provisioning request for a Centrex line, data on the order is used to populate the translation edge of the primary or secondary service. If CAT is not specified on the order, the value from the Centrex RCU table is used.

Name:	CC
Full Name:	Carrier Controller Aggregate
Description:	
Input:	SWITCH system creates
Storage:	GRPBOD(CC)/EXID
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	n/a
Multiple:	
Short/Long:	n/a
Characters:	n/a
TN:	N
Source:	
Notes:	New for 1.8.

Name:	CCD
Full Name:	Conference Calling Denied
Description:	Identifies that an 5ESS Centrex Service station is denied conference calling.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	

Name:	CCF
Full Name:	Custom Calling Features
Description:	Identifies the features associated with a line.
Input:	CAR.REC.ACL.CEC SDR.REC.ACL.SEC SYNCSVC.REC.ACL.TRANS Data Dictionary (Centrex RCU table)
Storage:	PSVC/TRNSL (from CAR.REC.ACL.CEC or Centrex RCU table) SSVC/TRNSL (from SDR.REC.ACL.SEC or Centrex RCU table)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	

Name:	CCHG
Full Name:	Channel Unit Mounting HECIG
Description:	CCHG is a channel unit mounting HECIG which will apply for the entire CC
Input:	SWITCH system creates
Storage:	GRPBOD(CC) cc_hecig
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	n/a
Multiple:	
Short/Long:	S
Characters:	8AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	CCLA
Full Name:	CCLA address of the CC (RLA)
Description:	
Input:	SWITCH system creates
Storage:	GRPBOD(CC) cc_addr
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	
Multiple:	
Short/Long:	L
Characters:	1-50 AN
TN:	
Source:	
Notes:	New for 1.8.

Name:	CCLOC
Full Name:	CC Location
Description:	11 character CLLI location of the CC.
Input:	SWITCH system creates
Storage:	GRPBOD(CC) cc_clli
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	
Multiple:	
Short/Long:	S
Characters:	11AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**CCMOD**
Full Name:	CC Model
Description:	CCMOD is a descriptor of the CC used for access to CC specific reference data. (reference data instance key)
Input:	SWITCH system creates
Storage:	GRPBOD(CC) cc_model
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	
Multiple:	
Short/Long:	S
Characters:	1-7 AN
TN:	
Source:	
Notes:	New for 1.8.

Name:	**CCPT**
Full Name:	Channel Controller Port Aggregate
Description:	
Input:	SWITCH system creates
Storage:	NUBOD(CCPT)
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	n/a
Multiple:	
Short/Long:	
Characters:	
TN:	
Source:	
Notes:	New for 1.8.

Name:	**CCTERM**
Full Name:	EDSX CLLI code
Description:	CCTERM is CLLI code of an EDSX if this port connects to an EDS
Input:	SWITCH system creates
Storage:	NUBOD(CCPT) cc_term_pt
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	
Multiple:	
Short/Long:	S
Characters:	11AN
TN:	
Source:	
Notes:	New for 1.8.

Name:	**CCWI**
Full Name:	Call Completion Without Intercept Message Service
Description:	Indicates an intercepted call is to be completed to the new number without the calling party receiving an intercept message.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	GP
Multiple:	N
Short/Long:	S
Characters:	1A
TN:	N
Source:	
Notes:	New for 2.0.

Name:	**CD**
Full Name:	Convenience Dialing
Description:	Indicates this line has the convenience dialing feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART (CONV_DIAL), BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From MVP FID.
Notes:	

Name:	**CDND**
Full Name:	Call Directory Number Delivery
Description:	Indicates the feature of called directory number delivery is available on FGC or FGD.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CDP**
Full Name:	Centrex Dialing Pattern
Description:	
Input:	ULBB (See notes.)
Storage:	GRPBOD(CTX)/TRNSL
TRM Output:	n/a
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	
TN:	N
Source:	
Notes:	Stored on translation edge of Centrex group when entered via the ULBB. Centrex translations do not flow through to MAS so this tag is not returned via TRM.

Name:	**CEG**
Full Name:	Control Group
Description:	Identifies the control group (NPA+NXX+X) associated with an individual circuit. This is derived by SOAC processing and transmitted to MAS.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SCH.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL) GRPBOD(SCH)/TRNSL (from SCH.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL) TSCH.REC.ACL (from GRPBOD(SCH)/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	Y
Source:	
Notes:	Changed for 1.8. CEG will be created upon conversion from COSMOS and maintained as an IC translation tag from SOAC. Sent to MAS for all work orders (a "short form" tag.

Name: CFBE
Full Name: Call Forwarding Busy Line Number - Calls Originate Externally
Description:
Input: CAR.REC.ACL
SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: PSVC/TRNSL (from CAR.REC.ACL)
SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMC.REC.ACL (from PSVC/TRNSL)
TLST.REC.ACL (from PSVC/TRNSL)
TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: All
Multiple: N
Short/Long: L
Characters: 1-32AN
TN: Y
Source: From CFBE FID.
Notes: New for 1.6.5. Changed for 1.8.

Name: CFBECI
Full Name: Call Forwarding Busy Line Number - Calls Originate Externally Control Indicator
Description: Indicates the telephone number or station number, outside of the customer group, to which calls are forwarded when the called number is busy (for the Call Forwarding Busy/Don't Answer - Internal and External Split feature.)
Input: CAR.REC.ACL
SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: PSVC/TRNSL (from CAR.REC.ACL)
SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMC.REC.ACL (from PSVC/TRNSL)
TLST.REC.ACL (from PSVC/TRNSL)
TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: All
Multiple: N
Short/Long: S
Characters: Alphabetic
TN: N
Source: From CFBE FID.
Notes: New for 1.6.5.

Name: CFBEDA
Full Name: Call Forwarding Busy Line Number - Calls Originate Externally Dial Access Code
Description: Indicates the telephone number or station number, outside of the customer group, to which calls are forwarded when the called number is busy, (for the Call Forwarding Busy/Don't Answer - Internal and External Split feature.)
Input: CAR.REC.ACL
SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: PSVC/TRNSL (from CAR.REC.ACL)
SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMC.REC.ACL (from PSVC/TRNSL)
TLST.REC.ACL (from PSVC/TRNSL)
TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: All
Multiple: N
Short/Long: S
Characters: 1-10AN
TN: N
Source: From CFBE FID.
Notes: New for 1.6.5.

Name: CFBEN
Full Name: Call Forwarding Number Busy Line External
Description: Indicates the telephone number or station number, outside of the customer group, to which calls are forwarded when the called number is busy (for the Call Forwarding Busy/Don't Answer - Internal and External Split feature.)
Input: CAR.REC.ACL
SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: PSVC/TRNSL (from CAR.REC.ACL)
SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMC.REC.ACL (from PSVC/TRNSL)
TLST.REC.ACL (from PSVC/TRNSL)
TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: DMS
Multiple: N
Short/Long: S
Characters: 4-18N
TN: Y
Source: From CFBE FID.
Notes: Changed for 1.8. New for 1.7.

Name:	**CFBI**
Full Name:	Call Forwarding Busy Line Number - Calls Originate Internally
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	1-32AN
TN:	Y
Source:	From CFBI FID.
Notes:	New for 1.6.5. Changed for 1.8.

Name:	**CFBICI**
Full Name:	Call Forwarding Busy Line Number - Calls Originate Internally Control Indicator
Description:	Indicates the telephone number or station number, outside of the customer group, to which calls are forwarded when the called number is busy (for the Call Forwarding Busy/Don't Answer - Internal and External Split feature.)
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From CFBI FID.
Notes:	New for 1.6.5.

Name:	**CFBIDA**
Full Name:	Call Forwarding Busy Line Number - Calls Originate Internally Dial Access Code
Description:	Indicates the telephone number or station number, outside of the customer group, to which calls are forwarded when the called number is busy (for the Call Forwarding Busy/Don't Answer - Internal and External Split feature.)
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	1-10AN
TN:	N
Source:	From CFBI FID.
Notes:	New for 1.6.5.

Name:	**CFBIN**
Full Name:	Call Forwarding Number Busy Line Internal
Description:	Indicates the telephone number or station number, outside of the customer group, to which calls are forwarded when the called number is busy (for the Call Forwarding Busy/Don't Answer - Internal and External Split feature.)
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	4-18N
TN:	Y
Source:	From CFBE FID.
Notes:	Changed for 1.8. New for 1.7.

Name:	**CFBL**
Full Name:	Call Forwarding Busy Line
Description:	Indicates the Call Forwarding Busy Line feature and options to be assigned to a directory number served by a Stored Program Control Switch (SPCS).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CFBO**
Full Name:	Call Forwarding - Busy Line Options
Description:	Indicates the screening class of service options and the number of simultaneous calls that may be forwarded for a Call Forwarding Busy Line.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CFBS**
Full Name:	Call Forwarding Busy Station
Description:	Indicates the custom calling feature that allows automatic routing of intercom calls to a preselected line when the called number is busy.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	**CFD**
Full Name:	Call Forwarding Denied
Description:	Indicates the line has been denied access to the call forwarding feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CFDA**
Full Name:	Call Forwarding Don't Answer
Description:	Indicates the Call Forwarding Don't Answer Feature and options to be assigned to a directory number served by a Stored Program Control Switch (SPCS).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CFDE**
Full Name:	Call Forwarding Don't Answer Number - Calls Originate Externally
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	1-32AN
TN:	From CFDE FID.Y
Source:	
Notes:	New for 1.6.5. Changed for 1.8.

Name:	**CFDECI**
Full Name:	Call Forwarding Don't Answer Number - Calls Originate Externally Control Indicator
Description:	Indicates the telephone number or station number outside of the customer group to which calls are forwarded when the called number does not answer (for the call forwarding busy/don't answer - internal and external split feature.)
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From CFDE FID.
Notes:	New for 1.6.5.

Name:	**CFDEDA**
Full Name:	Call Forwarding Don't Answer Number - Calls Originate Externally Dial Access
Description:	Indicates the telephone number or station number outside of the customer group to which calls are forwarded when the called number does not answer (for the call forwarding busy/don't answer - internal and external split feature.)
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	1-10AN
TN:	N
Source:	From CFDE FID.
Notes:	New for 1.6.5.

Name:	CFDEN
Full Name:	Call Forwarding Number Don't Answer External
Description:	Indicates the telephone number or station number outside of the customer group to which calls are forwarded when the called number does not answer (for the call forwarding busy/don't answer - internal and external split feature.)
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	4-18N
TN:	Y
Source:	From CFDE FID.
Notes:	Changed for 1.8. New for 1.7.

Name:	CFDI
Full Name:	Call Forwarding Don't Answer Number - Calls Originate Internally
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	1-32AN
TN:	Y
Source:	From CFDI FID.
Notes:	New for 1.6.5. Changed for 1.8.

Name:	CFDICI
Full Name:	Call Forwarding Don't Answer Number - Calls Originate Internally Control Indicator
Description:	Indicates the telephone number or station number in the same customer group to which calls are forwarded when the called number does not answer (for the call forwarding busy/don't answer - internal and external split feature.)
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From CFDI FID.
Notes:	New for 1.6.5.

Name:	CFDIDA
Full Name:	Call Forwarding Don't Answer Number - Calls Originate Internally Dial Access
Description:	Indicates the telephone number or station number in the same customer group to which calls are forwarded when the called number does not answer (for the call forwarding busy/don't answer - internal and external split feature.)
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	1-10AN
TN:	N
Source:	From CFDI FID.
Notes:	New for 1.6.5.

Name:	CFDIN
Full Name:	Call Forwarding Number Don't Answer Internal
Description:	Indicates the telephone number or station number in the same customer group to which calls are forwarded when the called number does not answer (for the call forwarding busy/don't answer - internal and external split feature.)
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	4-18N
TN:	Y
Source:	From CFDE FID.
Notes:	Changed for 1.8. New for 1.7.

Name:	CFDO
Full Name:	Call Forwarding - Don't Answer Options
Description:	Indicates the screening class of service for the Call Forwarding Do Not Answer line, and the number of calls that may be forwarded simultaneously and the time period in which they may be forwarded.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	CFDS
Full Name:	Call Forwarding Don't Answer Station
Description:	Indicates the custom calling feature that allows automatic routing of intercom calls to a preselected line when the called number does not answer.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	CFE
Full Name:	Additional Number of Simultaneous Calls - Calls Forwarded Intergroup
Description:	Indicates the intergroup limit for the number of simultaneous calls forwarded through a Centrex station.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From CMCF FID.
Notes:	New for 1.6.5.

Name:	CFF
Full Name:	Call Forwarding From Number
Description:	Indicates the telephone number or station number from which calls are forwarded.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	CFFP
Full Name:	Call Forward Fraud Prevention Override
Description:	Indicates the calling dial plan restrictions that may be overridden and the number of times a forward-to-DN (whose dial plan has been overridden) can be programmed.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS-100
Multiple:	N
Short/Long:	S
Characters:	17-23 USOTEXT
TN:	N
Source:	
Notes:	New for 3.0

Name:	CFGP
Full Name:	ISDN Attendant Configuration Group Name
Description:	Indicates the Terminal Configuration Group Name of an ISDN Attendant terminal.
Input:	HML.REC.ACL SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	CFI
Full Name:	Additional Number of Simultaneous Calls - Calls Forwarded Intragroup
Description:	Indicates the Intragroup limit for the number of simultaneous calls forwarded through a Centrex station.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From CMCF FID.
Notes:	New for 1.6.5.

Name:	**CFK**
Full Name:	Call Forward Per Key on Electronic Business Set
Description:	Indicates the Call Forward Per Key option is assigned to the key.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CFMD**
Full Name:	Call Forwarding Programming - Secondary MADN Number
Description:	Indicates that the secondary MADN members in the DMS-100 switch have the ability to program the Call Forwarding feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CFN**
Full Name:	Call Forwarding Number
Description:	Indicates the telephone number to which calls are forwarded. *Beginning in SOAC Release 19.0, this tag will no longer be created from the CFN FID (see CFNN). However, the CFN tag will remain in the interface for transition purposes.*
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	1-33AN
TN:	Y
Source:	From CFN FID.
Notes:	Changed for 1.8.

Name:	**CFNACC**
Full Name:	Call Forwarding Number Access and Calling Codes
Description:	Indicates the telephone number to which calls are forwarded.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	1-10N
TN:	N
Source:	From CFN FID.
Notes:	

Name:	**CFNB**
Full Name:	Call Forwarding Number - Busy Line
Description:	Indicates the telephone number to which calls are forwarded when the called number is busy and when the CFNB number is different from the CFND number. *Beginning in SOAC Release 19.0, this tag will no longer be created from the CFNB FID (see CFNBN). However, the CFNB tag will remain in the interface for transition purposes.*
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	1-33AN
TN:	Y
Source:	From CFNB FID.
Notes:	Changed for 1.8.

Name:	**CFNBACC**
Full Name:	Call Forwarding Number - Busy Line Access and Calling Codes
Description:	Indicates the telephone number to which calls are forwarded when the called number is busy and when the CFNB number is different from the CFND number (note
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	1-10N
TN:	N
Source:	From CFNB FID.
Notes:	

Name:	**CFNBCI**
Full Name:	Call Forwarding Number - Busy Line Control Indicator
Description:	Indicates the telephone number to which calls are forwarded when the called number is busy and when the CFNB number is different from the CFND number (note
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From CFNB FID.
Notes:	

Name:	**CFNBN**
Full Name:	Call Forwarding Number - Busy Line
Description:	Indicates the telephone number to which calls are forwarded when the called number is busy and when the CFNB number is different from the CFND number (note
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	4-18AN
TN:	Y
Source:	From CFNB FID.
Notes:	Changed for 1.8. New for 1.7.

Name:	CFNCI
Full Name:	Call Forwarding Number Control Indicator
Description:	Indicates the telephone number to which calls are forwarded.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From CFN FID.
Notes:	New for 1.6.5.

Name:	CFND
Full Name:	Call Forwarding Number - Don't Answer
Description:	Indicates the telephone number to which calls are forwarded when the called station does not answer and when the CFND number is different from the CFNB number.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	1-34AN
TN:	Y
Source:	From CFND FID.
Notes:	Changed for 1.8.

Name:	CFNDACC
Full Name:	Call Forwarding Number - Don't Answer Access and Calling Codes
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	1-10N
TN:	N
Source:	From CFND FID.
Notes:	

Name:	CFNDCI
Full Name:	Call Forwarding Number - Don't Answer Control Indicator
Description:	Indicates the telephone number to which calls are forwarded when the called station does not answer and when the CFND number is different from the CFNB number. (Note
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From CFND FID.
Notes:	New for 1.6.5.

Name:	CFNDN
Full Name:	Call Forwarding Number - Don't Answer
Description:	Indicates the telephone number to which calls are forwarded when the called station does not answer and when the CFND number is different from the CFNB number. (Note
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	4-18AN
TN:	Y
Source:	From CFND FID.
Notes:	Changed for 1.8. New for 1.7.

Name:	CFNN
Full Name:	Call Forwarding Number
Description:	Indicates the telephone number to which calls are forwarded.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	4-18AN
TN:	Y
Source:	From CFN FID.
Notes:	Changed for 1.8. New for 1.7.

Name:	CFSO
Full Name:	Call Forwarding Simultaneous/Screening Options
Description:	Indicates the subscriber's line is equipped with the Call Forwarding Simultaneous/ Screening option.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	CFTB
Full Name:	Call Forwarding Busy Timed
Description:	Indicates the number of seconds before a forwarded call is routed for treatment, and the type of treatment
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	L
Characters:	7-37 USOTEXT
TN:	N
Source:	
Notes:	New for 2.5.

Name:	CFTD
Full Name:	Call Forwarding Don't Answer Timed
Description:	Indicates the number of seconds before a forwarded call is routed for treatment, and the type of treatment
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	L
Characters:	7-37 USOTEXT
TN:	N
Source:	
Notes:	New for 2.5

Name:	CFU
Full Name:	Call Forwarding Unlimited
Description:	Indicates the line is equipped to permit the transfer of intercom calls as well as incoming calls.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS.
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"0" or "B" or "D"
TN:	N
Source:	From CFU FID.
Notes:	

Name:	CFUOV
Full Name:	Call Forwarding Unlimited Override Account
Description:	Indicates the line is equipped to permit the transfer of intercom calls as well as incoming calls.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" or "N"
TN:	N
Source:	From CFU FID,
Notes:	

Name:	CFV
Full Name:	Call Forwarding Variable
Description:	Indicates the Call Forwarding Variable feature and options to be assigned to a directory number served by a Stored Program Control Switch (SPCS).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CFW**
Full Name:	Call Forwarding
Description:	Indicates the optional feature attributes to be assigned to a line in a 5ESS, EWSD, or DMS-100.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 5ESS
Multiple:	Y
Short/Long:	L
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	**CGA**
Full Name:	Closed User Group Authority
Description:	Indicates the International Closed User Group number or Interlock Code.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	13-33 USOTEXT
TN:	N
Source:	
Notes:	New for 2.5.1

Name:	**CHD**
Full Name:	Call Hold
Description:	Indicates the line has the call hold feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From CHD FID.
Notes:	

Name:	**CHDRES**
Full Name:	Call Hold (Data from CHD FID)
Description:	Indicates the line has the call hold feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	1-9A
TN:	N
Source:	From CHD FID.
Notes:	Changed for 1.8.

Name:	CHL
Full Name:	Channel Aggregate
Description:	Channel Information
Input:	SWITCH system creates
Storage:	NUBOD(CHL)
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	
Multiple:	
Short/Long:	
Characters:	
TN:	
Source:	
Notes:	New for 1.8.

Name:	CHNA
Full Name:	Channel Number
Description:	Indicates the channel number which has been assigned to an ISDN facility or has been preassigned on the service order.
Input:	SDR.REC.ACL
Storage:	ASMBOD(SSVC)
TRM Output:	TRMC.REC.ACL.POE TLST.REC.ACL.POE TRMS.REC.ACL.POE
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	
Characters:	"B1" or "B2" or "D"
TN:	N
Source:	
Notes:	Sent to MAS for all work orders (a "short form" tag).

Name:	CIDC
Full Name:	Caller ID With Call Waiting
Description:	Indicates that the line is equipped with the Caller ID with Call Waiting feature which provides the calling number delivery and calling name delivery following the call waiting tone. The valid values for this tag are Y (Yes) or N (No).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y" or "N"
TN:	N
Source:	
Notes:	New for 1.7.

Name:	CIDS
Full Name:	Calling Identity Delivery and Suppression
Description:	Indicates that the originating subscriber is allowed to deliver or block all calling identity items (i.e., both number and name) for a particular call.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS
Multiple:	N
Short/Long:	L
Characters:	2-29A
TN:	N
Source:	
Notes:	IC Type, Characters and Short/Long changed for 3.0

Name:	CIF
Full Name:	ACD Supervisor Controlled Interflow Option
Description:	Indicates the ACD group name for the ACD supervisor's Controlled Interflow option key.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	CIL
Full Name:	Call Indicator Lamp
Description:	Indicates the call indicator lamp number on a Centrex console which is assigned to give incoming call identification for listed directory number, dial 0, recall, tie lines, foreign exchange line, WATS, etc.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	

Name:	CIN
Full Name:	Customer Identification Number
Description:	Customer identification.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	GP
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From MVP FID.
Notes:	New for 1.6.5.

Name:	CLFC
Full Name:	ACD Call Forcing
Description:	Indicates the Call Forcing capability for a line equipped with the Automatic Call Distribution feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	CLS
Full Name:	Class of Service
Description:	Identifies a special services circuit where the Common Language Circuit Identifier is in serial number format.
Input:	CAR.REC.ACL.CEC SDR.REC.ACL.SEC SYNCSVC.REC.ACL.DSGN
Storage:	PSVC/DSGN (from CAR.REC.ACL.CEC) SSVC/DSGN (from SDR.REC.ACL.SEC)
TRM Output:	TRMC.REC.ACL (from PSVC/DSGN) TLST.REC.ACL (from PSVC/DSGN) TRMS.REC.ACL (from SSVC/DSGN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	"R" or "B" or "C"
TN:	N
Source:	
Notes:	

Name:	CLSP
Full Name:	ACD Agent Call Supervisor Option
Description:	Indicates the ACD agent's station is equipped with the Call Supervisor option and key.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	CLSS
Full Name:	Calling Line Side Supervision
Description:	The analog line served by the 5ESS is equipped with a feature that allows the switch to provide battery reversals to an intelligent Customer Premises Equipment (CPE) e.g., PBX.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	CLST
Full Name:	Cluster Feature Name
Description:	Indicates Cluster Feature Name and optional attributes and values assigned to a 5ESS Directory Number.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	L
Characters:	1-35AN
TN:	N
Source:	
Notes:	New for 1.7.

Name:	**CMI**
Full Name:	Call Completion Intercept Referral Service
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CNAB**
Full Name:	Calling Name Delivery Block
Description:	Indicates that the originating subscribers do not allow their name to be displayed at the called party station.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	2-11A
TN:	N
Source:	
Notes:	Changed for 1.8. New for 1.7.

Name:	**CNAM**
Full Name:	Calling Name Delivery
Description:	Indicates the user is subscribed to Calling Name Delivery, a terminating service, which provides calling name information to the called user.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	1-11AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**CNDB**
Full Name:	Calling Number Delivery Blocking
Description:	Indicates that the originating subscriber has control, on a per call basis, over the availability of their telephone number for display at the called party station.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS
Multiple:	Y
Short/Long:	S
Characters:	"Y"|1-8AN
TN:	N
Source:	
Notes:	Changed for 1.7.

Name:	**CNDI**
Full Name:	Calling Name Display
Description:	Indicates the network name and calling name to be displayed on the electronic telephone sets equipped with the display feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CNDP**
Full Name:	Calling Name Delivery - Peripheral Host
Description:	Provides for the delivery of the calling party's name via intelligent peripheral host (LIDB) to subscriber CPE. The calling party's name can be derived from the main listing, auxiliary, or reseller account information.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	GP
Multiple:	N
Short/Long:	S
Characters:	1-20AN
TN:	N
Source:	
Notes:	New for 1.7.

Name:	**CNDT**
Full Name:	Calling Number Delivery Option - Terminating
Description:	Indicates whether an AMA record is to be created at the terminating station when a calling number is delivered to that station.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CNSL**
Full Name:	Console
Description:	Indicates the directory number or multiline hunt terminal number terminates in a Centrex attendant console for a Siemens Switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	COD
Full Name:	Cutoff on Disconnect
Description:	That a DMS-100 line is equipped with the cutoff on disconnect option which forces the calling party to be cutoff upon disconnect.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name :	COL
Full Name :	Chart Column Number
Description :	Indicates the special chart column number, different than that associated with the Line Class Code (LCC) of the service, that is to be assigned to a service out of a 1/1AESS™ switch
Input :	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage :	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output :	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage :	BTO TAGTMART, BTO FCIF, IC translation
IC Type :	1AESS
Multiple :	N
Short/Long :	S
Characters :	1-4N
TN :	N
Source :	
Notes :	New for 3.0

Name:	COPY
Full Name:	Copy Options
Description:	Indicates whether or not options should be copied to secondary members of an extension bridging group.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	1A
TN:	N
Source:	
Notes:	New for 2.5.1

Name:	COIC
Full Name:	Contention for Incoming Calls
Description:	Indicates whether or not called user terminals are allowed to contend for a call terminating at the ISDN interface.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CONV_DIAL**
Full Name:	Convenience Dialing
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	See CD.

Name:	**COR**
Full Name:	Correction Code
Description:	Indicates the type of difference detected between the prior and current service order pass or assignment response.
Input:	SWITCH system derives
Storage:	n/a
TRM Output:	TRMC.REC.CTL TRMS.REC.CTL TSCH.REC.CTL THML.REC.CTL
Tag Usage:	N/A
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"A" or "M" or "W"
TN:	N
Source:	
Notes:	The SWITCH system determines the COR tag values based on pass-to-pass differencing of the assignment. Applies to Work Orders only. Sent to MAS for all work orders (a "short form" tag).

Name:	**COTO**
Full Name:	Customer Originated Trace Option
Description:	Indicates the subscriber has the capability to request an automatic trace of the last call received and whether an Automatic Message Accounting (AMA) record is to be created.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CP**
Full Name:	Cable Pair
Description:	
Input:	CAR.REC.ACL.LOOP.F1 LST.REC.ACL.F1
Storage:	NUBOD(CP)/EXID
TRM Output:	n/a
Tag Usage:	BTO TAGTMART, BTO FCIF
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	2-15AN
TN:	N
Source:	
Notes:	This information is included on the BTO Tapes but is *not* returned to MAS via TRM contracts. Changed in 2.0 to eliminate IC translation inclusion in Tag Usage.

Name:	**CPBR**
Full Name:	Call Pickup Billing Records Attribute
Description:	Indicates the Call Pickup Billing Records Attribute Value (TL1). The valid code sets for this tag are
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From CPG FID.
Notes:	New for 1.6.5.

Name:	**CPDN**
Full Name:	Calling Party Default DN
Description:	The Calling Party Default DN for each call type on an Integrated Services Digital Network (ISDN) interface (pipe).
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	**CPEPREF**
Full Name:	Ringing Preference
Description:	Indicates a terminal option attribute of ringing preference.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From TTYP FID (5ESS).
Notes:	New for 1.6.5.

Name:	**CPG**
Full Name:	Call Pickup Group
Description:	Indicates the call pickup group number for a line.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From CPG FID.
Notes:	

Name:	**CPG2**
Full Name:	Call Pickup Group Two
Description:	Indicates the call pickup group number for a line.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From CPG FID.
Notes:	New for 1.6.5.

Name:	**CPG3**
Full Name:	Call Pickup Group Three
Description:	Indicates the call pickup group number for a line.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From CPG FID.
Notes:	New for 1.6.5.

Name:	**CPG4**
Full Name:	Call Pickup Group Four
Description:	Indicates the call pickup group number for a line.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From CPG FID.
Notes:	New for 1.6.5.

Name:	**CPNB**
Full Name:	Calling Party Number Billing Number
Description:	Indicates the ISDN directory number or trunk group has been assigned the capability to receive calling party number/ billing number delivery from the public network or calling party number delivery from a PBX.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CPNC**
Full Name:	Calling Party Number Call Control
Description:	The Calling Party call control and screening parameters, which include Calling Party Number Provision Necessary (CPNPN), Screening of Calling Party Number (SCPN), and Calling Party Number Discard Control (CPNDC).
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CPND**
Full Name:	Calling Party Number Delivery
Description:	Indicates whether or not the calling party number delivery feature is provided.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	1-41A
TN:	N
Source:	
Notes:	Changed for 1.8. New for 1.6.5.

Name:	**CPNP**
Full Name:	Calling Party Number Presentation
Description:	Indicates whether or not Calling Party Number Presentation is allowed on this directory number.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" | 1-12A
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CPNS**
Full Name:	Calling Party Number Screening
Description:	Indicates whether or not Calling Party Number Screening is to be provided to a 5ESS ISDN directory number or ISDN Primary Rate Trunk Group.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y" or "N"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CPNT**
Full Name:	Calling Party Number Delivery Type
Description:	Indicates whether one or two calling party numbers are to be delivered
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CPRN**
Full Name:	Call Path Restoration Number
Description:	Indicates the telephone number for the Call Path Restoration option for Datapath® service in the DMS-100 switch which allows call re-origination.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	Y
Source:	From CPRN FID.
Notes:	New for 1.6.5.

Name:	**CPRNDA**
Full Name:	Call Path Restoration Number Dial Access Code
Description:	Indicates the dial access code for the telephone number for the Call Path Restoration option for Datapath service in the DMS-100 switch which allows call re-origination.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	From CPRN FID.
Notes:	New for 1.6.5.

Name:	**CPUN**
Full Name:	Call Pickup Notification
Description:	Indicates whether or not the call pickup notification option is provided for the specified pickup group number for this Terminal Service Profile (TSP) in a TL1 switch.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CPUO**
Full Name:	Call Pickup Originating
Description:	Indicates the call pickup originating feature name and feature attributes for a line in a TL1 or 5ESS.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, 5ESS
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CPUT**
Full Name:	Call Pickup Terminating
Description:	Indicates the call pickup terminating feature name and feature attributes for a line in a TL1 or 5ESS.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, 5ESS
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CRBL**
Full Name:	Call Reference Busy Limit
Description:	Indicates the total number of call references that the switch will allow to be active concurrently for a given DN/CT (Directory Number/Call Type).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	1-4N
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**CRCD**
Full Name:	Call Redirection Call Deflection
Description:	Indicates the Call Redirection and Call Deflection parameters subscribed to for X.25 Packet Mode Data calls.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	5-20AN
TN:	N
Source:	
Notes:	New for 1.7.

Name:	**CRDTYP**
Full Name:	Card Type
Description:	CRDTYP is the Card Type occupying the slot of which the CCPT is a factor. The card type is used for plug optioning.
Input:	SWITCH system creates
Storage:	NUBOD(CCPT) card_type
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	2-6 AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**CRID**
Full Name:	Carrier ID
Description:	Carrier ID of the CC the CHNL or CRV rides on.
Input:	SWITCH system creates
Storage:	GRPBOD(CC)/EXID
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	
Multiple:	
Short/Long:	L
Characters:	6-41 AN
TN:	
Source:	
Notes:	New for 1.8.

Name:	**CRIT**
Full Name:	Criteria Attribute
Description:	Indicates the criteria attribute when the calling and forwarding DNs are checked to determine whether they are in the same customer group and may be delivered to the SMDI.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	3A
TN:	N
Source:	From SCDN FID.
Notes:	IC Type and Characters revised for 2.5. See also CRIT, RESDIR, RESINDIR, IBNDIR, IBNINDR

Name:	**CRO**
Full Name:	Complete With Related Order
Description:	Indicates the service order type and number of up to three related service orders that must be completed with the service order being processed.
Input:	PKT
Storage:	xfile
TRM Output:	TMIS
Tag Usage:	n/a
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	

Name:	**CRV**
Full Name:	Call Reference Value Aggregate
Description:	The CRV aggregate represents the Call Reference Value (a value that uniquely identifies the Cable Pair or OE being dynamically associated with a Time Slot).
Input:	SWITCH system creates
Storage:	Derived
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	n/a
Multiple:	N
Short/Long:	L
Characters:	
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**CRVID**
Full Name:	CRV id
Description:	the external ID as found on the exid edge.
Input:	SWITCH system creates
Storage:	NUBOD(CRV)/EXID
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	
Multiple:	
Short/Long:	S
Characters:	3-7 AN
TN:	
Source:	
Notes:	New for 1.8.

Name:	**CRX**
Full Name:	Call Request Exempt
Description:	Indicates whether the station line designated is or is not exempt from receiving Message Waiting signals from another station within the customer's group in a DMS-100 switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y" or "N"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CS**
Full Name:	Class of Service USOC
Description:	Identifies the class of service associated with the service order. The class of service in the OCTL aggregate on Assignment and Cancellation Messages must match the class of service which was sent in the Planning Message. NSDB will propagate the CS tag from the OCTL aggregate down to the termination aggregates.
Input:	CAR.REC.ACL.CEC SDR.REC.ACL.SEC
Storage:	PSVC/DSGN SSVC/DSGN
TRM Output:	n/a
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	This information is included in BTO Tapes but is *not* sent to MAS via TRM contracts.

Name:	**CSEL**
Full Name:	Channel Selection
Description:	The Standard ISDN user who is served by the 5ESS has subscribed to the "common DN with multiple packet services" option.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.DSGN (Used for validation; not stored)
Storage:	PSVC/DSGN (from CAR.REC.ACL) SSVC/DSGN (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/DSGN) TLST.REC.ACL (from PSVC/DSGN) TRMS.REC.ACL (from SSVC/DSGN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	Changed in 1.6.5 (was IC translation data, stored in PSVC/TRNSL and SSVC/TRNSL).

Name:	**CSGP**
Full Name:	Customer Group Identifier
Description:	Identifies the Electronic Key Telephone System (EKTS) customer group.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	1-4N
TN:	N
Source:	
Notes:	New for 1.7.

Name:	**CSL**
Full Name:	Change Speed Calling Group List
Description:	Identifies the change speed calling group list in DMS and ESS switch types.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	

Name:	**CSMI**
Full Name:	Call Screening, Monitoring and Intercept (CSMI) For Network Based Answering Service
Description:	Indicates that the call screening, monitoring and intercept feature is assigned to the line.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT (7-53)
TN:	N
Source:	
Notes:	New for 2.0.

Name:	**CSO**
Full Name:	Circuit Switched Channel Options
Description:	Identifies the quantity of B channels allowed for use and which B channel is assigned to ISDN circuit switched bearer service.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CSR**
Full Name:	Centrex Station Rearrangement
Description:	Identifies the centrex station rearrangement in a 1/1AESS and DMS-100 switch types.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CT**
Full Name:	Customer Access Treatment
Characters:	Alphabetic
TN:	N
Source:	
Notes:	See CAT.

Name:	**CTID**
Full Name:	Circuit ID
Description:	Identifies the Bellcore USO circuit termination identifier.
Input:	CAR.REC.CTL CAR.REC.ACL LST.REC.CTL LST.REC.ACL SYNCSVC.REC.CTL
Storage:	ASMBOD(PSVC)/EXID
TRM Output:	TRMC.REC.ACL (from ASMBOD(PSVC)/EXID) TRMC.REC.CTL (from ASMBOD(PSVC)/EXID) TLST.REC.ACL (from ASMBOD(PSVC)/EXID) TLST.REC.CTL (from ASMBOD(PSVC)/EXID)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	L
Characters:	CTID format
TN:	Y (sometimes)
Source:	
Notes:	Sent to MAS for all work orders (a “short form” tag).

Name:	**CTDA**
Full Name:	Carrier Toll Denied -- IntraLATA
Description:	Indicates that the line or lines are to be denied intraLATA calling for the IC indicated.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	L
Characters:	3-150 USOTEXT
TN:	N
Source:	
Notes:	New for 2.5.

Name:	**CTDE**
Full Name:	Carrier Toll Denied -- InterLATA
Description:	Indicates that the line or lines are to be denied interLATA calling for the IC indicated.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	L
Characters:	3-150 USOTEXT
TN:	N
Source:	
Notes:	New for 2.5.

Name:	**CTIDR**
Full Name:	Circuit ID Reference
Description:	Identifies for each service, a reference back to the circuit on which the selective ringing service, MADN or ISDN service will ride.
Input:	SDR.REC.CTL SDR.REC.ACL
Storage:	See CTID.
TRM Output:	TRMS.REC.ACL (from ASMBOD(PSVC)/EXID) TRMS.REC.CTL (from ASMBOD(PSVC)/EXID)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	L
Characters:	CTID format
TN:	Y (sometimes)
Source:	
Notes:	Identifies the primary service with which a secondary service is associated. Sent to MAS for all work orders (a "short form" tag).

Name:	**CTINTRA**
Full Name:	Call Transfer Option Type (FC)
Description:	Indicates the call transfer option type of flexible calling options associated with a DMS-100 switch type.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From FC FID.
Notes:	New for 1.6.5.

Name:	**CTINTRA2**
Full Name:	Call Transfer Option Type for ISDN Simultaneous Flexible Calling
Description:	Indicates the call transfer option type of ISDN simultaneous flexible calling options associated with a DMS-100 switch type.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From FC2 FID.
Notes:	New for 3.0

Name:	CTT
Full Name:	Client Telephone Number Type
Description:	Which directory number will be sent to the voice mail system in the event of multiple call forwarding legs when served by the 5ESS switch.
Input:	HML.REC.ACL SCH.REC.ACL CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(HML)/TRNSL (from HML.REC.ACL) GRPBOD(SCH)/TRNSL (from SCH.REC.ACL) PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	THML.REC.ACL (from GRPBOD(HML)/TRNSL) TSCH.REC.ACL (from GRPBOD(SCH)/TRNSL) TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	CTX
Full Name:	Customer/Business Group Identifier
Description:	Indicates the Customer Group Identifier assigned in a stored program control switch.
Input:	CAR.REC.ACL SDR.REC.ACL SCH.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	GRPBOD(CTX)/EXID
TRM Output:	TRMC.REC.ACL (from GRPBOD(CTX)/EXID) TLST.REC.ACL (from GRPBOD(CTX)/EXID) TRMS.REC.ACL (from GRPBOD(CTX)/EXID) TSCH.REC.ACL (from GRPBOD(CTX)/EXID)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT (1-8)
TN:	N
Source:	
Notes:	Changed for 1.8. The Centrex ID is input via the inventory transaction when the group is created in the SWITCH system database. It is referenced on provisioning requests in the *CAR, *SDR and *SCH sections. When creating output, the Centrex ID must be obtained from the EXID of the Centrex GRPBOD. Sent to MAS for all work orders (a "short form" tag).

Name: CUG
Full Name: Closed User Group (CUG) Options
Description: Indicates a closed user group option for a DMS-100, TL1 or 5ESS switch type. Elements 10 through 15 may appear in a series up to eleven times in combination with element 7 and 8 and/or element 9.
Input: CAR.REC.ACL
SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: PSVC/TRNSL (from CAR.REC.ACL)
SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMC.REC.ACL (from PSVC/TRNSL)
TLST.REC.ACL (from PSVC/TRNSL)
TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: TL1, DMS, 5ESS
Multiple: N
Short/Long: L
Characters: USOTEXT
TN: N
Source:
Notes: New for 1.6.5.

Name: CUI
Full Name: Closed User Group Interlock Code
Description: Indicates a particular multilocation business group within an area wide Centrex arrangement and the network used by the group in a Siemens Switch.
Input: CAR.REC.ACL
SDR.REC.ACL
SCH.REC.ACL
SYNCSVC.REC.ACL.TRANS
SYNCGRP.REC.ACL.TRANS
Storage: PSVC/TRNSL (from CAR.REC.ACL)
SSVC/TRNSL (from SDR.REC.ACL)
GRPBOD(SCH)/TRNSL (from SCH.REC.ACL)
TRM Output: TRMC.REC.ACL (from PSVC/TRNSL)
TLST.REC.ACL (from PSVC/TRNSL)
TRMS.REC.ACL (from SSVC/TRNSL)
TSCH.REC.ACL (from GRPBOD(SCH)/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: TL1
Multiple: N
Short/Long: S
Characters: Numeric
TN: N
Source:
Notes: New for 1.6.5.

Name: CUR
Full Name: Channel Unit Remote
Description: Indicates the remote terminal (RT) channel unit in the Digital Loop Carrier System which is assigned to the loop. In SOAC 18.6, if there is a fiber distribution system channel assigned by LFACS, the line terminal status corresponding to the channel unit located at the distribution terminal will be defined using this tag.
Input: CAR.REC.ACL
Storage: PSVC/TRNSL (from CAR.REC.ACL)
TRM Output: TRMC.REC.ACL (from PSVC/TRNSL)
TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: DMS-100
Multiple: N
Short/Long: S
Characters: 3-10AN
TN: N
Source:
Notes: Changed for 1.8. New for 1.7. This tag comes from LFACS, not a Service Order. It is the LTS (line terminal status) code. This tag will be removed in a future release when this capability is handled as part of DLE.

Name: CWCA
Full Name: Call Waiting Call Appearance
Description: Indicates the next consecutive number of the call appearance identifier.
Input: CAR.REC.ACL
SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: PSVC/TRNSL (from CAR.REC.ACL)
SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMC.REC.ACL (from PSVC/TRNSL)
TLST.REC.ACL (from PSVC/TRNSL)
TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: TL1
Multiple: N
Short/Long: S
Characters: 1-2N
TN: N
Source: From ACWT FID. See also CWTAM
Notes: New for 1.9.

Name:	CWD
Full Name:	Dial Call Waiting
Description:	Indicates the DMS-100 switch that intragroup call waiting can be imposed by the user dialing a feature activation code.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	CWDX
Full Name:	Call Waiting Deluxe
Description:	Indicates that the line is equipped with the Call Waiting Deluxe feature for the 1AESS switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	1AESS
Multiple:	Y
Short/Long:	S
Characters:	1-9 USOTEXT or "Y"
TN:	N
Source:	
Notes:	New for 1.9. Multiple and Characters revised for 2.5

Name:	CWTAM
Full Name:	Call Waiting Analog
Description:	Indicates that the TL1 switch domain value is standard.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	4A
TN:	N
Source:	From CWTG FID. See also CWCA
Notes:	New for 1.9. Characters and Source revised for 2.5

Name:	CWTG
Full Name:	Call Waiting
Description:	Indicates the call waiting feature names and optional feature attributes.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	1-100 USOTEXT
TN:	N
Source:	
Notes:	Description, IC Type and Characters revised for 2.5.

Name:	**CXR**
Full Name:	Call Transfer Options
Description:	Indicates the type of call transfer capability on a per station basis that the subscriber specified.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CXRO**
Full Name:	Call Transfer Originating Options
Description:	Indicates the originating options for CUSTOM type of call transfer when the controller is the originator of the call.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CXRR**
Full Name:	Call Transfer Recall Options
Description:	Indicates that the station is equipped with the call transfer recall option.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**CXRT**
Full Name:	Call Transfer Terminating Options
Description:	Indicates the terminating options for CUSTOM type of call transfer when the controller is the originator of the call.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**DAG**
Full Name:	Data Accumulation Group
Description:	Identifies the group number assigned to a Centrex-CO lines associated with the Data Accumulation Group (DAG). This data is required to associate a DAG with the Multiline group. Usually only one DAG is assigned to one Multiline group.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART. BTO FCIF. IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**DASK**
Full Name:	ACD Supervisor Display Agents Summary Option
Description:	Indicates the ACD group name for the ACD supervisor's Display Agents Summary option key.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**DBRG**
Full Name:	Digital Bridging Indicator
Description:	The appearance of this tag indicates that a digital bridge exists between originating equipment (OEs) within the switch.
Input:	SWITCH system derives SYNCSVC/REC/ACL/SATTR
Storage:	COMPEDG between service node and switch port (digital_brg attribute)
TRM Output:	TRMC.REC.ACL.OE (from COMPEDG) TRMC.REC.ACL.BOE (from COMPEDG) TLST.REC.ACL.OE (from COMPEDG) TLST.REC.ACL.BOE (from COMPEDG)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	Sent to MAS for all work orders (a "short form" tag).

Name:	**DCFS**
Full Name:	Direct Call Fast Select
Description:	Indicates the Fast Select feature information for a Direct Call.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	3-5A
TN:	N
Source:	
Notes:	New for 1.8. Character format changed from long to short for 2.0

Name:	DCH
Full Name:	D Channel Handler Channel Number
Description:	Identifies the number for the D channel handler that is used when packet service terminates on the D channel.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	1-2N
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	DCHL
Full Name:	ISDN Line Drawer Channel Number
Description:	Indicates the Basic Rate ISDN Line Drawer channel number for D-Channel Packet Service working in a DMS-100 remote switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	3 USOTEXT
TN:	N
Source:	
Notes:	New for 2.5.1

Name:	DCLS
Full Name:	Digital Subscriber Line (DSL) Class of Service
Description:	Identifies a point to point or multipoint digital subscriber line. This FID was implemented with the 5ESS Generic 5E5.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	DCP
Full Name:	Directed Call Pickup
Description:	Indicates Directed Call Pickup features provided to a subscriber and the type of billing record the subscriber requests to record the use of Directed Call Pickup.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	5-19A
TN:	N
Source:	
Notes:	New for 1.7.

Name:	**DCPK**
Full Name:	Directed Call Park
Description:	Identifies that a DMS-100 single line Centrex station has the capability of parking one call against a valid telephone number in the same system, from where it may later be retrieved by any station.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**DCPS**
Full Name:	Direct Call Packet Size
Description:	Indicates the packet sizes to be used for the Direct Call.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	6-8AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**DCR**
Full Name:	Digital Carrier Rate
Description:	Digital Carrier Rate
Input:	SWITCH system creates
Storage:	NUBOD(CHAN) data_rate
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	
Multiple:	N
Short/Long:	S
Characters:	3-6 AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**DCRD**
Full Name:	Direct Call Internetwork Call Redirection and Deflection Prevention
Description:	Indicates the direct call will not be redirected or deflected if the alternate DN is on a network that is different from the network of the calling DN.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.8.

Name:	DCT
Full Name:	Digital Access Cross Connect System Circuit Termination
Description:	Identifies a flexible service account number and network configuration indicator.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	Y (with valid NPA and fictitious central office code)
Source:	
Notes:	New for 1.6.5.

Name:	DCTC
Full Name:	Direct Call Throughput Class
Description:	Indicates the Throughput Class speeds for the Direct Call.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	6-9AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	DCUG
Full Name:	Direct Call Closed User Group
Description:	Indicates the Closed User Group associated with the Direct Call feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	6-11AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	DCWS
Full Name:	Direct Call Window Size
Description:	Indicates the window size values for Direct Call.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	5-7AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**DDF**
Full Name:	From Order Due Date
Description:	
Input:	PKT
Storage:	xfile
TRM Output:	TMIS
Tag Usage:	n/a
IC Type:	n/a
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From FDD FID.
Notes:	

Name:	**DDN**
Full Name:	Dialable Directory Number
Description:	Indicates the calling party telephone number is delivered to the called party in the exact form required for the called party to return the call.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**DDT**
Full Name:	To Order Due Date
Description:	
Input:	PKT
Storage:	xfile
TRM Output:	TMIS
Tag Usage:	n/a
IC Type:	n/a
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From TDD FID.
Notes:	

Name:	**DDU**
Full Name:	Datapath Data Unit
Description:	Indicates the data speed and the protocol for a DMS-100 Data Unit.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**DENY**
Full Name:	Deny Class Feature
Description:	Indicates the customer is denied access to a feature that is universally available in the DMS-100 switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL SSVC/TRNSL
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	Y
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	DENYI
Full Name:	Deny Incoming Calls Indicator
Description:	Indicates that a DMS-100 integrated business network number is denied incoming calls from outside of the Business Group (Centrex).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL SSVC/TRNSL
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From DIN FID.
Notes:	New for 1.6.5.

Name:	DID
Full Name:	Direct Inward Dialing
Description:	Identifies that a trunk or line is to be used for direct inward dialed calls and may or may not have a telephone number assigned. When the DID FID appears without data, it is not considered a primary line identifier. It is used with a PBX or Centrex-station number to indicate that the DID feature is applicable.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" or 1-4N
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	DIF
Full Name:	Digital Facilities
Description:	Indicates where the availability of parallel facilities exist, the customer has requested digital facilities for the specific service.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	DIFI
Full Name:	Different ACD Group and Subgroup
Description:	Indicates the supervisor ACD group and subgroup for the Make Set Busy override capability are different from the agent ACD group and subgroup for the INCALLS capability.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**DIN**
Full Name:	Deny Incoming Calls
Description:	Indicates that a DMS-100 integrated business network number is denied incoming calls from outside of the Business Group (Centrex).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	From DIN FID.
Notes:	New for 1.6.5.

Name:	**DIS**
Full Name:	Display
Description:	Identifies a terminal option attribute value in a 5ESS switcher.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y" | 1A
TN:	N
Source:	From TTYP FID (5ESS).
Notes:	New for 1.6.5.

Name:	**DISP**
Full Name:	Display Feature Name
Description:	Indicates a display feature name for a line served by a 5ESS.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**DLC**
Full Name:	Delivery, Diagnostic and Alignment Confirmation
Description:	Indicates the framing structure delivery, diagnostic, and extended packet sequencing alignment option designated for X.25 and X.75 access lines in a public packet switch network.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**DMSRID**
Full Name:	Default Message Service System Identification
Description:	Indicates the Default Message Service System Identification for a Message Waiting Indication provider.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	10N
TN:	N
Source:	From MWIP FID, see also MWIC, MWIDGID, MWIMAX.
Notes:	New for 1.8.

Name:	**DNA**
Full Name:	Automatic Terminal Setup DN Appearance ID - ODB or DPKT
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From ATSU FID.
Notes:	Changed for 1.8. New for 1.6.5.

Name:	**DND**
Full Name:	Do Not Distribute Flag
Short/Long:	S
Characters:	Alphabetic or Numeric
TN:	N
Source:	
Notes:	See TDND.

Name:	**DNIC**
Full Name:	Destination Network Identification Code
Description:	Indicates the code for routing over a particular X.25 or X.75 interface providing gateways to other InterLATA/Interstate packet switched networks or data bases.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**DNP**
Full Name:	Deny Non-Payment
Description:	Indicates that the account is denied for non-payment of charges. The code sets for the DNP FID (and the corresponding tag values) are
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.SATTR
Storage:	ASMBOD(PSVC) [*deny_flag*] (from CAR.REC.ACL) ASMBOD(SSVC) [*deny_flag*] (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from ASMBOD(PSVC) [*deny_flag*]) TLST.REC.ACL (from ASMBOD(PSVC) [*deny_flag*]) TRMS.REC.ACL (from ASMBOD(SSVC) [*deny_flag*])
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	"DI" or "DO" or "DB"
TN:	N
Source:	
Notes:	Changed for 1.6.5

Name:	**DNR**
Full Name:	Directory Number Reference
Description:	Indicates the logical Directory Number that this Directory Number/Call type corresponds to and which relates to the FID TCGN (Terminal Configuration Group Name).
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	1-3N
TN:	N
Source:	
Notes:	New for 1.7.

Name:	**DNSS**
Full Name:	Directory Number Screening Set Option
Description:	Indicates whether or not the option to use DN screening sets per Terminal Service Profile (TSP) will be used for this TSP.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" or "N"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**DOR**
Full Name:	Deny Originating Service
Description:	Indicates a subscriber line which cannot originate outgoing calls.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**DP**
Full Name:	Distributor Point
Description:	Indicates the number of the distributor point assigned to lines requiring a signal upon origination and at termination of a connection.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	

Name:	**DPG**
Full Name:	Dialing Plan Group
Description:	Indicates the dialing plan group used to provision centrex lines in a 5ESS switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**DPIC**
Full Name:	Data-Predesignated Interexchange Carrier
Description:	Indicates the customer selection of an interexchange carrier for Public Packet Switching Network (PPSN) or ISDN Circuit Mode Date service.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	DMS, TL1
Multiple:	Y
Short/Long:	S
Characters:	3-10 AN
TN:	N
Source:	
Notes:	Multiple and Characters changed for 2.5.1

Name:	**DPICCH**
Full Name:	Data - Predesignated Interexchange Carrier Choice
Description:	Indicates that the customer's selection of an interexchange carrier for data is changing
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	1A
TN:	N
Source:	From DPIC FID.
Notes:	New for 3.0

Name:	**DPRC**
Full Name:	Direct Call Packet Reverse Charge
Description:	Indicates that reverse charging is sent in the call request for the Direct Call.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**DPTN**
Full Name:	Data Plant Test Number
Description:	Indicates the data plant test number that is preassigned for test access to the customer's data set.
Input:	CAR.REC.ACL SDR.REC.ACL
Storage:	NUBOD(TN)/EXID, comp_usage=DPTN (from CAR.REC.ACL or SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from NUBOD(TN)/ EXID, comp_usage=DPTN) TLST.REC.ACL (from NUBOD(TN)/ EXID, comp_usage=DPTN) TRMS.REC.ACL (from NUBOD(TN)/ EXID, comp_usage=DPTN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	

Name:	**DQS**
Full Name:	ACD Supervisor Display Queue Station Option
Description:	Indicates the ACD group identifier and the ACD supervisor subgroup for the Display Queue Status option.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	5-20AN
TN:	N
Source:	
Notes:	Changed for 1.7.

Name:	**DQT**
Full Name:	ACD Supervisor Display Queue Threshold
Description:	Indicates the ACD group identifier and ACD supervisor subgroup for the Display Queue Threshold option.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	5-20AN
TN:	N
Source:	
Notes:	Changed for 1.7.

Name:	**DR**
Full Name:	Detailed Regulatory Information Aggregate
Description:	DR is the detailed regulatory information aggregate. There may be up to 3 occurrences of the DR aggregate.
Input:	SWITCH system creates
Storage:	Derived
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	n/a
Multiple:	N
Short/Long:	n/a
Characters:	n/a
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**DR**
Full Name:	Distinctive Ringing
Description:	Indicates the multi-variety package distinctive ringing feature on a DMS-100 switch type.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From MVP FID.
Notes:	

Name:	**DRG**
Full Name:	Distinctive Ringing
Description:	Indicates the distinctive ringing feature name and optional features to be assigned to a line in a 5ESS.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**DRDT**
Full Name:	Distinctive Ringing and Waiting Tone
Description:	Indicates the centrex features of distinctive ringing to indicate the source of calls to idle line and distinctive tone to indicate the source of calls to busy lines equipped with Call Waiting on DMS-100 and 1/1AESS switch types.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" | 1-10A
TN:	N
Source:	
Notes:	

Name:	**DRUT**
Full Name:	Detailed Regulatory Unit.
Description:	Detailed Regulatory unit. Represents the units of distance being measured. Found in the primary service node of the carrier circuit.
Input:	SWITCH system creates
Storage:	ASMBOD(PSVC) det_reg_unit
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	n/a
Multiple:	N
Short/Long:	S
Characters:	2A
TN:	N
Source:	
Notes:	New for 1.8.

Name:	DSA
Full Name:	Distribution and Supplemental Assignment
Description:	Indicates a the type of service which identifies a service order that needs special distribution and/or supplemental assignment criteria.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	DSC
Full Name:	Digital Service Center Location
Description:	Indicates a the common language location identification (CLLI) for a digital service center.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	DSGN
Full Name:	Default Service Group Name
Description:	Identifies an ISDN digital subscriber line which includes E911 and ACSR capabilities on a 5ESS 5E5 switch type.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	DSK
Full Name:	Message Desk Number
Description:	Indicates the message desk that has a Message Desk interface feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	

Name:	DSNA
Full Name:	Digital Service Network Assignment (Pipe Id)
Description:	Identifies the facility that is to be used for the assignment of ISDN services. It is also transmitted if detected on COLAN service termination, if it is coded as a circuit termination to relate the service to the circuit.
Input:	CAR.REC.CTL CAR.REC.ACL SDR.REC.CTL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.CTL (from SSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	11-27 USOTEXT
TN:	N
Source:	
Notes:	Characters revised for 2.5. Input in both CTL and ACL aggregates of SDR.REC. Output in both CTL and ACL aggregates of TRMS.REC. Value from CAR.REC.ACL stored on translation edge of primary service. Value from SDR.REC.ACL stored on translation edge of secondary service. Sent to MAS for all work orders (a "short form" tag).

Name:	DTCI
Full Name:	D Packet Throughput Class Indication
Description:	The Throughput Class of a 5ESS Standard ISDN D Channel when the Channel Selection option is provisioned.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	DTE
Full Name:	Data Terminal Equipment Backup
Description:	Identifies the backup data terminal equipment number for call redirection on a PPSN service.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	**DTF**
Full Name:	Dial Tone First
Description:	Identifies the a Public communication line is equipped with dial tone first feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	

Name:	**DTM**
Full Name:	Deny Terminating Service
Description:	Identifies a line on a 5ESS, DMS-100 or EWSD that cannot receive any incoming calls.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**DTN**
Full Name:	Data Terminal Number
Description:	Identifies a terminal number used to access a non-voice PPSN service.
Input:	CAR.REC.ACL SDR.REC.ACL
Storage:	NUBOD(TN)/EXID, comp_usage=DTN (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from NUBOD(TN)/EXID, comp_usage=DTN) TLST.REC.ACL (from NUBOD(TN)/EXID, comp_usage=DTN) TRMS.REC.ACL (from NUBOD(TN)/EXID, comp_usage=DTN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	

Name:	**DTSP**
Full Name:	Default Terminal Service Profile
Description:	Indicates whether or not a given Terminal Service Profile (TSP) entry is for a default TSP in a TL1, DMS-100 or 5ESS switch.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y" or "N"
TN:	N
Source:	
Notes:	New for 1.6.5. Characters allowed changed from "Y" or "S" back to "Y" or "N" for 2.0.

Name:	DUAL
Full Name:	Dual Service Flag
Description:	Identifies a telephone number is working with an uninterrupted service at both the "from" address and the "to" address at the same time.
Input:	CAR.REC.ACL SDR.REC.ACL
Storage:	xfile
TRM Output:	TRMC.REC.ACL (from xfile) TLST.REC.ACL (from xfile) TRMS.REC.ACL (from xfile)
Tag Usage:	SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	Indicates DUAL F & T service.

Name:	DUIF
Full Name:	Data Unit Interface Functions
Description:	Indicates the Data Unit Interface function conventions; such as EIA (Electronics Industry Association) Interface conventions.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from CAR.REC.ACL) TLST.REC.ACL (from CAR.REC.ACL) TRMS.REC.ACL (from SDR.REC.ACL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	DUSO
Full Name:	Data Unit Set Up Options
Description:	Indicates the Data Unit Options for speed, format, and data length.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from CAR.REC.ACL) TLST.REC.ACL (from CAR.REC.ACL) TRMS.REC.ACL (from SDR.REC.ACL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**EAN**
Full Name:	Station Controlled Conference Arrangement
Description:	Identifies a Centrex station line in an TL1, 1/1AESS or DMS-100 switch that is equipped with the station controlled conference arrangement feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, 1/1AESS, DMS
Multiple:	N
Short/Long:	S
Characters:	"Y" | 1-3A
TN:	N
Source:	
Notes:	

Name:	**EDGP**
Full Name:	Electronic Directory System User Group
Description:	Identifies the user group name, group attributes, and attribute values for the electronic directory system feature in a 5ESS switch.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**EDNA**
Full Name:	EKTS Display Attribute Name
Description:	Indicates whether display information should be sent for an EKTS member.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	1A
TN:	N
Source:	From CAPI FID, see also CAPI, AP.
Notes:	New for 1.8.

Name:	**EDS**
Full Name:	Electronic Directory Service
Description:	Identifies the Electronic Directory Service feature list number, feature name, attribute name and attribute values assigned to a line in a 5ESS office.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	EF
Full Name:	Equipment Features
Description:	
Input:	SWITCH System Inventory transactions
Storage:	NUBOD(SWPT)
TRM Output:	n/a
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" | "N"
TN:	N
Source:	
Notes:	Essential/non-essential switch port information. This tag is not returned in TRM messages to MAS, it is output on BTO tapes only. See also ESL (essential service line).

Name:	EGMA
Full Name:	EWSD Unbundled MVP Service Attributes
Description:	Indicates the service attributes of the Multiline Variety Package of the EWSD.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	EWSD
Multiple:	N
Short/Long:	L
Characters:	USOTEXT (6-26)
TN:	N
Source:	From MVP FID.
Notes:	New for 2.0.

Name:	EKTS
Full Name:	Electronic Key Telephone Service Option
Description:	Identifies the Electronic Key Telephone Service option for a multibutton service on an ISDN line serviced by a TL1 switch.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	"Y" or "N"
TN:	N
Source:	From TTYT FID (TL1).
Notes:	New for 1.6.5.

Name:	EKTSV
Full Name:	Electronic Key Telephone Service
Description:	Indicates than an Electronic Key Telephone Service (EKTS), which allows a certain set of features to be available, is provided to the Directory Number. Also indicates that billing records parameters for the features allowed with the EKTS.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	"Y" | 1-9AN
TN:	N
Source:	From EKTS FID.
Notes:	New for 1.6.5.

Name:	**EMK**
Full Name:	ACD Agent Emergency Key Feature
Description:	Indicates the Emergency Key on the ACD Agent's station.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**EN**
Full Name:	Entity (IC ID)
Description:	
Input:	SWITCH system assigns
Storage:	GRPBOD(IC)/EXID
TRM Output:	n/a
Tag Usage:	BTO TAGTMART, BTO FCIF
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	3-11AN
TN:	N
Source:	
Notes:	This information is included on BTO Tapes but is not sent to MAS on TRM contracts.
IC Type:	All
Source:	

Name:	**EPO**
Full Name:	Enhanced Professional Office
Description:	Indicates that Enhanced Professional Office capabilities are assigned and are to be associated with the indicated EPO position number.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	1-5 N
TN:	N
Source:	
Notes:	New for 2.5.

Name:	**EQC**
Full Name:	Equipment Class
Description:	The equipment class for Basic Rate ISDN
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	1N
TN:	N
Source:	
Notes:	New for 3.0

Name:	ERCO
Full Name:	Executive Ringer Cutoff
Description:	Indicates the ISDN circuit switched bearer service Directory Number has been equipped with the Executive Ringer Cutoff feature.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5

Name:	ESDN
Full Name:	Enhanced Secondary Directory Number
Description:	The secondary directory number type and ringing type for the SDN feature in the DMS-100 switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	ESL
Full Name:	Essential Service Line
Description:	Indicates if the circuit requires essential line service which would receive a central office equipment which provides line load control.
Input:	CAR.REC.ACL.CEC SDR.REC.ACL.SEC SYNCSVC.REC.ACL.DSGN
Storage:	PSVC/DSGN (from CAR.REC.ACL.CEC) SSVC/DSGN (from SDR.REC.ACL.SEC)
TRM Output:	TRMC.REC.ACL (from PSVC/DSGN) TLST.REC.ACL (from PSVC/DSGN) TRMS.REC.ACL (from SSVC/DSGN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed data (design data)
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	See also EF (essential/non-essential switch port) and FT (Customer Features). Changed for 1.6.5

Name:	ESTN
Full Name:	Enhanced Service Telephone Number
Description:	Indicates the telephone number that allows an end user access to enhanced services.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	

Name:	EWO
Full Name:	Engineering Work Order ID
Description:	
Input:	PKT.REC
Storage:	WOBOD(OW)
TRM Output:	TMIS
Tag Usage:	n/a
IC Type:	n/a
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	Used to identify the CPT or WO LST (together with the transfer number). Sent to MAS for all work orders (a "short form" tag).

Name:	EWOTS
Full Name:	Enhanced WATS Options
Description:	Indicates the InterLATA dialing and the Service Area Code dialing options allowed for Enhanced WATS.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From EWO FID.
Notes:	New for 1.6.5. Sent from SOAC to MAS as EWOTS.

Name:	EXAO
Full Name:	ACD Extended Agent Observe
Description:	Indicates the supervisor's ability to observe calls presented on the INCALLS key of any agent or supervisor in any Automatic Call Distribution Group within the same customer group.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	"Y" | 1-33A
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**EXK**
Full Name:	Exchange Key
Description:	Indicates the switching equipment for the subscriber's service.
Input:	CAR.REC.ACL SDR.REC.ACL SCH.REC.ACL HML.REC.ACL
Storage:	See Notes below. NUBOD(SWPT)/FCTREDG GRPBOD(IC)/EXEDG GRPBOD(IC)
TRM Output:	TRMC.REC.ACL.OE TRMC.REC.ACL.BOE TRMC.REC.ACL.POE TLST.REC.ACL.OE TLST.REC.ACL.BOE TLST.REC.ACL.POE TRMS.REC.ACL.OE TRMS.REC.ACL.POE THML.REC.ACL TSCH.REC.ACL
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	Numeric
TN:	Y
Source:	
Notes:	Exchange key is selected by the SWITCH system, however, selection may be driven by the input in the CAR/SDR.REC.ACL. Once selected, the exchange key is stored on the factorization edge from the switch port to the IC. The exchange key is also stored on the EXEDG of the IC as well as in the GRPBOD of the IC. When a switch port in a TRM response is on a remote switching unit, the exchange key must be that of the RU. If the switch port is not on a remote switching unit, the exchange key of the IC must be returned. Sent to MAS for all work orders (a "short form" tag).

Name:	**FAA**
Full Name:	ACD Forced Agent Availability Option
Description:	Indicates the Forced Agent Availability option which allows the supervisor to force an agent from the Not Ready state to the Ready state for receiving ACD calls.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**FAFI**
Full Name:	Feature Activator Feature Indicator
Description:	Indicates the feature activator and feature indicator values.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	Y
Short/Long:	L
Characters:	1-80 AN
TN:	N
Source:	
Notes:	Characters revised for 2.5. New for 1.8.

Name:	**FANI**
Full Name:	Flexible Automatic Number Generation
Description:	That certain Interexchange Carrier provided services are equipped to transmit information digits on specific call types to identify the calling station. Also, the originating line class of translations on Exchange service.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	"Y" or 1-7N
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**FC**
Full Name:	ISDN Flexible Calling
Description:	*MS-100* Indicates that the functional logical terminal is equipped with the ISDN Flexible Calling Feature *TL1* Indicates the Billing Record type for a DN or the FC features assigned to a Terminal Service Profile (TSP)
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS, TL1
Multiple:	N
Short/Long:	S
Characters:	1-2N
TN:	N
Source:	From FC FID.
Notes:	Description and IC Type changed for 3.0

Name:	**FCA**
Full Name:	Feature Control Ability
Description:	Indicates whether or not a given Electronic Key Telephone (EKTS) Terminal Service Profile (TSP) for an ISDN Basic Rate Interface can activate an assigned feature.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	3-11 USOTEXT
TN:	N
Source:	
Notes:	Tag Usage, IC Type, Multiple and Characters changed for 3.0

Name:	**FCATTR**
Full Name:	ISDN Flexible Calling Attributes
Description:	Indicates any attributes associated with the Flexible Calling feature which are not incorporated into any of the other FC-derived tags
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	4-17 USOTEXT
TN:	N
Source:	
Notes:	IC Type, Short/Long and Characters changed for 2.5.1

Name:	**FCB**
Full Name:	ISDN Flexible Calling Billing Record
Description:	Indicates the type of billing attribute to be used for a TL1 type switch.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	1-4A
TN:	N
Source:	From FC FID.
Notes:	Description, Tag Usage and IC Type changed for 3.0

Name:	**FCDROP**
Full Name:	Drop Conference Member
Description:	Indicates a flexible calling option to drop a conference member
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS,TL1
Multiple:	N
Short/Long:	S
Characters:	1-2N
TN:	N
Source:	From FC FID.
Notes:	New for 1.6.5.

Name:	**FCOPT**
Full Name:	Call Transfer Option Type
Description:	Indicates the call transfer option of the flexible call feature in a TL1 or DMS-100 BCS 28 or later generic switch type.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS,TL1
Multiple:	N
Short/Long:	S
Characters:	3-7A
TN:	N
Source:	From FC FID.
Notes:	New for 1.6.5.

Name:	**FCORIG**
Full Name:	ISDN Flexible Calling Originating Options
Description:	Indicates the originating options for the CUSTOM type of Call Transfer.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS,TL1
Multiple:	N
Short/Long:	S
Characters:	8-13A
TN:	N
Source:	From FC FID. See also CTINTRA, FC, FCDROP, FCOPT, FCXFER, FCB, FCATTR, FCTERM.
Notes:	New for 1.9.

Name:	**FCSZ**
Full Name:	Flow Control Size - Packet Service
Description:	Indicates the throughput size, packet size, and window size for Packet Service (LAPB).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	5-54 USOTEXT
TN:	N
Source:	
Notes:	Multiple and Characters changed for 2.5.1

Name:	**FCTERM**
Full Name:	ISDN Flexible Calling Terminating Options
Description:	Indicates the terminating options for the CUSTOM type of Call Transfer.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS, TL1
Multiple:	N
Short/Long:	S
Characters:	8-13A
TN:	N
Source:	From FC FID. See also CTINTRA, FC, FCDROP, FCOPT, FCXFER, FCB, FCATTR, FCTERM.
Notes:	New for 1.9.

Name:	**FCTRANS**
Full Name:	Transfer Call
Description:	Indicates the Transfer Call flexible calling option for a DMS-100 for the NA008 generic or later
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS, TL1
Multiple:	N
Short/Long:	S
Characters:	1-2N
TN:	N
Source:	From FC FID
Notes:	New for 3.0. Since certain call transfer options function differently in the NA008 generic for DMS-100 than for earlier generics, this new tag has been created to identify the same information for the NA008 generic as the FCXFER tag did in the earlier generics.

Name:	**FCTYPE**
Full Name:	Call Transfer Option Type
Description:	Indicates the type of call transfer option for a flexible calling feature
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS, TL1
Multiple:	N
Short/Long:	S
Characters:	3A
TN:	N
Source:	
Notes:	New for 3.0

Name:	**FCXFER**
Full Name:	Transfer Call
Description:	Indicates the terminating options for CUSTOM type of call transfer when the controller is the originator of the call.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS,TL1
Multiple:	N
Short/Long:	S
Characters:	1-2N
TN:	N
Source:	From FC FID.
Notes:	New for 1.6.5.

Name:	**FC2**
Full Name:	ISDN Simultaneous Flexible Calling
Description:	Indicates the conference size of the simultaneous flexible call feature in a TL1 or DMS-100 BCS 28 or later generic switch type
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	1-2N
TN:	N
Source:	
Notes:	New for 3.0

Name:	FC2DROP
Full Name:	Drop Conference Member for ISDN Simultaneous Flexible Calling
Description:	Indicates an ISDN simultaneous flexible calling option to drop a conference member
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	1-2N
TN:	N
Source:	From FC2 FID
Notes:	New for 3.0

Name :	FC2ORIG
Full Name :	ISDN Simultaneous Flexible Calling Originating Options
Description :	Indicates the originating options for the CUSTOM type of Call Transfer for ISDN Simultaneous Flexible Calling
Input :	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage :	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output :	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage :	BTO TAGTMART, BTO FCIF, IC translation
IC Type :	DMS
Multiple :	N
Short/Long :	S
Characters :	8-13A
TN :	N
Source :	From FC2 FID
Notes :	New for 3.0

Name :	FC2OPT
Full Name :	Call Transfer Option Type for ISDN Simultaneous Flexible Calling
Description :	Indicates the call transfer option of the simultaneous flexible call feature in a DMS-100 BCS 28 or later generic switch type
Input :	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage :	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output :	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage :	BTO TAGTMART, BTO FCIF, IC translation
IC Type :	DMS
Multiple :	N
Short/Long :	S
Characters :	3-7A
TN :	N
Source :	From FC2 FID
Notes :	New for 3.0

Name :	FC2TERM
Full Name :	ISDN Simultaneous Flexible Calling Terminating Options
Description :	Indicates the terminating options for the CUSTOM type of Call Transfer for ISDN Simultaneous Flexible Calling
Input :	SDR.vREC.ACL SYNCSVC.REC.ACL.TRANS
Storage :	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output :	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage :	BTO TAGTMART, BTO FCIF, IC translation
IC Type :	DMS
Multiple :	N
Short/Long :	S
Characters :	8-13A
TN :	N
Source :	From FC2 FID
Notes :	New for 3.0

Name :	FC2TRANS
Full Name :	Transfer Call for ISDN Simultaneous Flexible Calling
Description :	Indicates the terminating options for CUSTOM type of call transfer for ISDN simultaneous flexible calling when the controller is the originator of the call
Input :	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage :	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output :	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage :	BTO TAGTMART, BTO FCIF, IC translation
IC Type :	DMS
Multiple :	N
Short/Long :	S
Characters :	1-2N
TN :	N
Source :	
Notes :	New for 3.0

Name:	FDD
Full Name:	Frame Due Date
Description:	Identifies the F type service order due date when it differs from the T type service order due date.
Input:	PKT
Storage:	xfile (off circuit work task - for Service Orders) WOBOD(OW) (for Work Orders)
TRM Output:	TMIS
Tag Usage:	n/a
IC Type:	n/a
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From FCD FID.
Notes:	Frame due date is not used in SWITCH system processing. It is passed to FOMS and MARCH as appropriate. Sent to MAS for all work orders (a "short form" tag).

Name:	FDT
Full Name:	Frame Due Time
Description:	Identifies the time of day on the due date the service order is to be worked at the frame.
Input:	CAR.REC.CTL CAR.REC.ACL SDR.REC.CTL SDR.REC.ACL
Storage:	xfile (off circuit work task - for Service Orders)
TRM Output:	TRMC.REC.ACL (from xfile for SOs) TLST.REC.ACL (from xfile for SOs) TRMS.REC.ACL (from xfile for SOs)
Tag Usage:	n/a
IC Type:	n/a
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	From FDT FID.
Notes:	Frame due time is sent to FOMS and MAS. FDT is not input to the SWITCH system flow-through for work orders. FDT is not returned to MAS for work orders.

Name:	FKL
Full Name:	Feature Key List
Description:	Indicates the key numbers assigned to a DMS-100 GSF feature which permits a customer to activate/deactivate that feature from a single key.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT (5-13)
TN:	N
Source:	
Notes:	New for 1.9.

Name:	**FLNG**
Full Name:	Foreign Language Code
Description:	Indicates the foreign language code used to identify the language of the voice dialing service audiotext messages that are played to the customers
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**FLS**
Full Name:	Free Line Service
Description:	Indicates that calls to certain telephone company official numbers result in no charge to the calling party.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	

Name:	**FNC**
Full Name:	Feature Name - Customer Changeable
Description:	Indicates a list of one or more customer changeable switch features and when required, the associated feature attributes.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	

Name:	**FNM**
Full Name:	Feature Name
Description:	The FNM FID indicates a list of one or more switch features and when required, associated feature attributes for 5ESS, DMS-100 and EWSD switch types. The LFNM FID indicates a list of one or more switch features and when required, associated feature attributes for 1/1AESS, 5ESS, DMS-100 and EWSD switch types.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 5ESS, 1/1AESS
Multiple:	Y
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	From FNM and LFNM FIDs.
Notes:	

Name:	FRK
Full Name:	Frame Remarks
Description:	Indicates any additional comments associated with the time of day an order is to be worked or coordinated at the frame.
Input:	CAR.REC.CTL CAR.REC.ACL SDR.REC.CTL SDR.REC.ACL
Storage:	xfile (off circuit work task - for Service Orders) WOBOD(OW) (for Work Orders)
TRM Output:	TRMC.REC.ACL (from xfile for SOs, from WOBOD(OW) for WOs) TLST.REC.ACL (from xfile for SOs, from WOBOD(OW) for WOs) TRMS.REC.ACL (from xfile for SOs, from WOBOD(OW) for WOs)
Tag Usage:	n/a
IC Type:	n/a
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	From FDT FID.
Notes:	Frame remarks are sent to FOMS and MAS. FRK is not input to the SWITCH system flow-through for work orders.

Name:	FRL
Full Name:	Facility Restriction Number
Description:	Identifies that a centrex station line in an electronic switching machine is equipped to override the facility restriction level when a specified access code is dialed.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	

Name:	FRLS
Full Name:	Force Release Indicator
Description:	Indicates a link-affecting parameter is being changed.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	1A
TN:	N
Source:	
Notes:	New for 2.5.1

Name:	FS
Full Name:	Fast Select Options
Description:	Identifies the fast select options available to X.25, X.75 and asynchronous in a public packet switch network.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"|0-20A
TN:	N
Source:	
Notes:	Characters changed for 2.5.1

Name: **FSZ**
Full Name: Frame Size
Description: Indicates the frame size of information sent over a frame relay network.
Input: CAR.REC.ACL
SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: PSVC/TRNSL (from CAR.REC.ACL)
SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMC.REC.ACL (from PSVC/TRNSL)
TLST.REC.ACL (from PSVC/TRNSL)
TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: GP
Multiple: N
Short/Long: S
Characters: 2-4N
TN: N
Source:
Notes: New for 1.9.

Name: **FT**
Full Name: Customer Features
Description: Indicates the pass of the service order. On Planning orAssignment Messages, the FT is "PRE" or "COR". On Cancellation Messages, the FT is "CAN". The FT value in the C0 header will be the value of the FT field in the originating C3 header. On Completion Messages, the FT is "PCN". On Completion with Correction Messages, the FT is "CPC". On Assignment Changes, the FT is "ACE". On assignment messages sent as a result of the Bulk Reexecute transaction, the FT is "REX". The FT is "PCN" for all work order messages.
Input: SWITCH System Inventory transactions
Storage: PSVC/DSGN
TRM Output: n/a
Tag Usage: BTO TAGTMART, BTO FCIF
IC Type: n/a
Multiple: N
Short/Long: S
Characters: 4
TN: N
Source:
Notes: This tag is output on BTO Tapes. It is not sent to MAS in TRM contracts. The tag is 4 characters, each for a particular feature: 1. pulsing (touchtone/rotary), 2. range/not range extension, 3. essential/non-essential (customer feature, *not* switch port feature), 4. signalling (ground/loop start).

Name: **FXRKEY**
Full Name: Fast Transfer for Electronic Sets Key Number
Description:
Input: SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: DMS
Multiple: N
Short/Long: S
Characters: Numeric
TN: N
Source: From FXR FID.
Notes: New for 1.6.5. Not sent by SOAC 18.8 but sent by SOAC 18.7 and may still be in SWITCH system data base. Not forwarded to MAS by SOAC 18.8.

Name: **FXRRCL**
Full Name: Fast Transfer for Electronic Sets Recall Name
Description: Indicates the recall attribute name for the electronic business set that is equipped with the Fast Transfer option for the DMS-100 switch.
Input: SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: DMS
Multiple: N
Short/Long: S
Characters: "Y" or "N"
TN: N
Source: From FXR FID.
Notes: New for 1.6.5.

Name:	**FXRTIM**
Full Name:	Fast Transfer for Electronic Sets Timer Attribute Value
Description:	Indicates the timer attribute value for the electronic business set that is equipped with the Fast Transfer option for the DMS-100 switch.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From FXR FID.
Notes:	New for 1.6.5.

Name:	**FZI**
Full Name:	Frame Time Zone Indicator
Description:	Indicates time zone for the time of day an order is to be worked or coordinated at the frame.
Input:	CAR.REC.CTL CAR.REC.ACL SDR.REC.CTL SDR.REC.ACL
Storage:	xfile (off circuit work task - for Service Orders)
TRM Output:	TRMC.REC.ACL (from xfile for SOs) TLST.REC.ACL (from xfile for SOs) TRMS.REC.ACL (from xfile for SOs)
Tag Usage:	n/a
IC Type:	n/a
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From FDT FID.
Notes:	Frame time zone indicator is sent to FOMS and MAS. FZI is not input to the SWITCH system flow-through for work orders.

Name:	GIAC
Full Name:	Group Intercom All Calls
Description:	Indicates the group intercom all call group number.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	GIC
Full Name:	Group Intercom
Description:	Identifies group intercom information.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT (5-21)
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	GOER
Full Name:	Group Option Enhanced Ringing
Description:	The Primary Directory Number (DN) of the Residence Distinctive Alerting Service (Enhanced Ringing) feature has the group option. This allows the Primary DN to activate/deactivate terminating features for any secondary DN in the Enhanced Ringing group, which has the same features as the Primary DN.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	GSF
Full Name:	Provision Service Order via GSF Interface
Description:	Indicates to provision ISDN service order via the GSF interface and not the DMS-100 proprietary interface.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.9.

Name:	GST
Full Name:	Ground Start
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	See SIG.

Name:	GSZ
Full Name:	Group Size
Description:	Indicates the limit of the switch simulated facility group (SFG) or customer facility group (CFG).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(SFG)/TRNSL (see notes)
TRM Output:	TRMC.REC.ACL (from GRPBOD(SFG)/TRNSL) TLST.REC.ACL (from GRPBOD(SFG)/TRNSL) TRMS.REC.ACL (from GRPBOD(SFG)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	Changed for 1.6.5. IC translation data for SFG. Supports WATS processing. *GRP section created by the SWITCH system in the DLBB for flow-through orders and in the ULBB for orders that require manual assistance (and inventory). If the SFG tag and a GSZ tag are in the same CAR.REC.ACL, a *GRP section is created and the SFG is assigned before associating this line with the SFG. A *GRP section may also be created from the *CAR.REC information to change the translation data on the SFG. A *CAR.REC with a SFG tag but no GSZ tag means that this line should be associated with the SFG, but the SFG is not modified. Sent to MAS for all work orders (a "short form" tag).

Name:	HDA
Full Name:	Hunt Deactivate
Description:	The Standard ISDN packet multiline hunt member can be temporarily deactivated from the hunt sequence of the hunt group.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" | 1A
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	HECIG
Full Name:	Human Equipment Catalog Item Group ID
Description:	HECIG is the plug-in Human Equipment Catalog Item Group ID and is one of the slot attribute
Input:	SWITCH system creates
Storage:	GRPBOD(SLOT) plug_hecig
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	8AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	HGCS
Full Name:	Hunting Group Class of Service
Description:	Indicates the class of service (features) options that are applicable to a multiline hunt group in a EWSD central office for a Siemens switch.
Input:	HML.REC.ACL SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	HGTT
Full Name:	Hunt Group Terminal Type
Description:	Indicates the type of MLHG terminal (TER) in a TL1 switch and the identity of the call appearance of a directory number (DN), to which the hunt terminal applies when the type of ISDN MLHG terminal (TER) is a call appearance.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	2-6AN
TN:	N
Source:	
Notes:	New for 1.7.

Name:	**HI**
Full Name:	Home Intercom/Single Line Variety Package
Description:	Indicates the Home Intercom/Single Line Variety Package feature has been assigned to an end user's single directory number in a TL1 IC, or selective ringing service with multiple directory numbers, when served by the 5ESS (5e6 or later version) or the Single Line Variety Package (SLVP) for the DMS-100.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART (HINT), BTO FCIF, IC translation
IC Type:	TL1, DMS, 5ESS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**HINT**
Full Name:	Home Intercom/Single Line Variety Package
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	See HI

Name:	**HK**
Full Name:	Hold Key Indicator
Description:	Indicates the number for the hold key on a terminal for an ISDN service.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**HLN**
Full Name:	Hot Line Service Number
Description:	Indicates the telephone number that is automatically dialed when the subscriber goes off hook.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT (3-18)
TN:	Y
Source:	From HLN FID.
Notes:	

Name:	**HLNDA**
Full Name:	Hot Line Service Number Dial Access
Description:	Indicates the dial access for the telephone number that is automatically dialed when the subscriber goes off hook.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT (1-2)
TN:	N
Source:	From HLN FID.
Notes:	

Name:	**HML**
Full Name:	Hunting-Multiline Group Number
Description:	Identifies a multi-line hunting group identifier in the multi-line hunt group hunting sequence.
Input:	HML.REC.CTL HML.REC.ACL CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	GRPBOD(HML)/EXID PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	THML.REC.CTL (from GRPBOD(HML)/EXID) THML.REC.ACL (from GRPBOD(HML)/EXID) TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From HML FID.
Notes:	Sent to MAS for all work orders (a "short form" tag).

Name:	**HNTF**
Full Name:	Hunting Notification
Description:	The Called Line Address Modification Notification (CLAMN) procedures used by the 5ESS Standard ISDN packet multiline hunt group number.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**HPF**
Full Name:	Hunting-Preferential List
Description:	Indicates that a specific 1/1AESS, DMS-100 or EWSD hunting telephone number has a preferential hunt list and the preferential hunt sequence is applicable.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 1/1AESS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From HPF FID.
Notes:	

Name:	**HPT**
Full Name:	Preferential Hunting List
Description:	Indicates that a specific 1/1AESS, DMS-100 or EWSD hunting telephone number preferential hunt sequence is applicable.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 1/1AESS
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From HPT FID.
Notes:	

Name:	**HTB**
Full Name:	Hunting - Bridge Night Numbers
Description:	Indicates the bridge night number sequence and the central office and line numbers that belong to each reference in a DMS-100.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	**HTC**
Full Name:	Hunting - Circular
Description:	Indicates the multi-line hunt group or series completion/directory number hunt group is equipped for the circular hunt type of hunting arrangement.
Input:	HML.REC.ACL SCH.REC.ACL SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(HML)/TRNSL (from HML.REC.ACL) GRPBOD(SCH)/TRNSL (from SCH.REC.ACL)
TRM Output:	THML.REC.ACL (from GRPBOD(HML)/TRNSL) TSCH.REC.ACL (from GRPBOD(SCH)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	Changed for 1.6.5. Sent to MAS for all work orders (a "short form" tag).

Name:	**HTCT**
Full Name:	Multiline Hunt Terminal Call Type
Description:	Indicates the Call Type that may be handled by an ISDN multiline hunt terminal (TER).
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	2-3A
TN:	N
Source:	
Notes:	New for 1.7.

Name:	**HTER**
Full Name:	Hunting Terminal
Description:	Identifies a hunting terminal number in the multi-line hunt group hunting sequence.
Input:	HML.REC.ACL SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(HML)/TRNSL
TRM Output:	THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From HML FID.
Notes:	New for 1.6.5. The series of HTER tags identify the hunt sequence for the Multi-Line Hunt Group. The tags are stored on the translation edge in the same order in which they were received in the *HML section. They are returned in the THML section in this same sequence. Sent to MAS for all work orders (a "short form" tag).

Name:	**HTG**
Full Name:	Hunting Sequence Non-Multiline Group (SCH)
Description:	Indicates the hunting sequence identifier of the non-multi-line group.
Input:	SCH.REC.CTL SCH.REC.ACL CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(SCH)/TRNSL (from SCH.REC.ACL) PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TSCH.REC.CTL (from GRPBOD(SCH)/TRNSL) TSCH.REC.ACL (from GRPBOD(SCH)/TRNSL) TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic or Numeric
TN:	N
Source:	From HTG FID.
Notes:	Changed for 1.8. HTG identifies the SCH group within the *service order*. If a circuit belongs to multiple SCH groups, only one HTG need be identified, i.e., it is not necessary to identify all SCHs to which the circuit belongs, any one is sufficient. Sent to MAS for all work orders (a "short form" tag).

Name:	**HTID**
Full Name:	Hunting Identification
Description:	Indicates the unique identification for a hunt group on a service order. An HTID is needed when two hunt groups, each served out of a different FSO appear on the same service order. The HTID for each will be different according to the first rule above.
Input:	HML.REC.CTL HML.REC.ACL SCH.REC.CTL SCH.REC.ACL SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(HML)/TRNSL (from HML.REC.ACL) GRPBOD(SCH)/TRNSL (from SCH.REC.ACL)
TRM Output:	THML.REC.CTL (from GRPBOD(HML)/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL) TSCH.REC.CTL (from GRPBOD(SCH)/TRNSL) TSCH.REC.ACL (from GRPBOD(SCH)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	Y
Source:	From HML and HTG FIDs.
Notes:	Sent to MAS for all work orders (a "short form" tag).

Name:	**HTY**
Full Name:	Hunting Type
Description:	Indicates the type of hunting arrangement associated with a 1/1AESS, 5ESS, DMS-100 or EWSD multi-line hunt group.
Input:	HML.REC.ACL SCH.REC.ACL SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(HML)/TRNSL (from HML.REC.ACL) GRPBOD(SCH)/TRNSL (from SCH.REC.ACL)
TRM Output:	THML.REC.ACL (from GRPBOD(HML)/TRNSL) TSCH.REC.ACL (from GRPBOD(SCH)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	Sent to MAS for all work orders (a "short form" tag).

Name: IAMA
Full Name: ISDN AMA
Description: Indicates the call types and group name for signaling and supplementary service capabilities that are to be billed for ISDN service in the TL1 or DMS-100 switch.
Input: SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: TL1, DMS
Multiple: Y
Short/Long: S
Characters: USOTEXT
TN: N
Source:
Notes: New for 1.6.5. This FID was added to SOAC 18.7 via change control.

Name: IBNDIR
Full Name: Integrated Business Network Direct Call Attribute
Description: Indicates the "IBN direct call attribute" when the calling and forwarding DNs are checked to determine whether they are in the same customer group and may be delivered to the SMDI.
Input: SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: IC translation
IC Type: DMS
Multiple: N
Short/Long: S
Characters: 5-7 A
TN: N
Source: From SCDN FID.
Notes: New for 2.5. See also CRIT, RESDIR, RESINDIR, OTHR, and IBNINDIR.

Name: IBNINDIR
Full Name: Integrated Business Network Indirect Call Attribute
Description: Indicates the "IBN indirect call attribute" when the calling and forwarding DNs are checked to determine whether they are in the same customer group and may be delivered to the SMDI.
Input: SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: IC translation
IC Type: DMS
Multiple: N
Short/Long: S
Characters: 3-7 A
TN: N
Source: From SCDN FID.
Notes: New for 2.5. See also CRIT, RESDIR, RESINDIR, OTHR, and IBNDIR.

Name: IC
Full Name: Intelligent Controller Aggregate
Description: IC will contain information relevant to equipment that is associated with the IC as opposed to a CC (carrier controller) in the circuit.
Input: SWITCH system creates
Storage: Derived
TRM Output: n/a
Tag Usage: BTO FCIF, CC XCN
IC Type:
Multiple:
Short/Long:
Characters:
TN:
Source:
Notes: New for 1.8.

Name:	ICCHG
Full Name:	IC Change Indicator
Description:	
Input:	SWITCH system derives
Storage:	See Notes.
TRM Output:	TRMC.REC.CTL TLST.REC.CTL TRMS.REC.CTL
Tag Usage:	n/a
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"N"
TN:	N
Source:	
Notes:	This tag is sent when TRM is sent following service order activity on a suspended service which has a sublet option of YES. The tag indicates that the change is not to be applied in the IC at this time (however, output to MAS could not be suppressed). If the service is suspended with a sublet option of YES, the tag/value ICCHG=N will be sent in any TRMC.RECs and TRMS.RECs for the suspended service. This tag will NOT be supported by SOAC 18.7. Sent to MAS for all work orders (a "short form" tag).

Name:	ICE
Full Name:	IC Equipment
Description:	Indicates the Intelligent Controller equipment assigned to the party line or coin service.
Input:	SWITCH system assigns
Storage:	NUBOD(ICE)/EXID
TRM Output:	n/a
Tag Usage:	BTO TAGTMART, BTO FCIF
IC Type:	All
Multiple:	
Short/Long:	
Characters:	
TN:	N
Source:	
Notes:	This information is output on BTO Tapes but is not returned to MAS in TRM contracts.

Name:	ICFB
Full Name:	Call Forwarding Busy Line Inhibit Option
Description:	Indicates the Inhibit Make Busy option and the Inhibit Line Busy Line option for a line equipped with Call Forwarding Busy Line.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	ICG
Full Name:	Intercom Groups Option
Description:	Identifies the Intercom Groups Option for a multibutton service on an ISDN line served by a TL1 switch.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	5-15N
TN:	N
Source:	From TTYT FID (TL1).
Notes:	New for 1.6.5.

Name:	ICI
Full Name:	Incoming Call Identifier
Description:	Indicates the type of incoming call that an attendant console will answer.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	ICM
Full Name:	Intercom Feature
Description:	In a DMS-100 switch type it indicates the number of a predesignated terminal that can be directly accessed when the customer has ISDN. In a 5ESS switch type it indicates the intercom feature name, and optional attributes and values assigned to an ISDN directory number.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS, 5ESS
Multiple:	Y
Short/Long:	L
Characters:	USOTEXT
TN:	Y
Source:	From ICM FID.
Notes:	New for 1.6.5.

Name:	ICMC
Full Name:	ISDN Intercom Call Appearance
Description:	Indicates the intercom group and optional attributes and values assigned to a 5ESS (5E9 or later) ISDN terminal call appearance.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	5ESS
Multiple:	Y
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	ICMFN
Full Name:	Intercom Feature Name
Description:	In a DMS-100 switch type it indicates the number of a predesignated terminal that can be directly accessed when the customer has ISDN. In a 5ESS switch type it indicates the intercom feature name, and optional attributes and values assigned to an ISDN directory number.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS, 5ESS
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	From ICM FID.
Notes:	New for 1.6.5.

Name: ICMGRP
Full Name: Intercom Feature Group
Description: In a DMS-100 switch type it indicates the number of a predesignated terminal that can be directly accessed when the customer has ISDN. In a 5ESS switch type it indicates the intercom feature name, and optional attributes and values assigned to an ISDN directory number.
Input: SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: DMS, 5ESS
Multiple: Y
Short/Long: L
Characters: USOTEXT
TN: N
Source:
Notes: New for 1.6.5. From ICMGRP.

Name: ICOMR
Full Name: Terminal Type - TL1 Switch (FID name)
Description: Indicates the Intercom terminal options for multibutton service on an ISDN line served by a TL1 IC.
Input: SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: TL1
Multiple: Y
Short/Long: S
Characters: "Y" or "N"
TN: N
Source: From TTYT FID.
Notes: New for 1.7.

Name: ICPK
Full Name: ISDN Capability Package
Description: Indicates the identity of the ISDN capability package which was ordered and the CPE identifier and whether additional features were provided outside the package.
Input: SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC Translation
IC Type: TL1
Multiple: N
Short/Long: L
Characters: 1-26AN
TN: N
Source:
Notes: New for 1.8.

Name: ID
Full Name: Identifier
Description: Indicates the facility identification. The facility type is based on the aggregate in which this tag appears.
Input: SWITCH System derives
Storage: EXID
TRM Output: TRMC.REC.ACL.BOE
TRMC.REC.ACL.OE
TRMC.REC.ACL.POE
TRMS.REC.ACL.POE
TLST.REC.ACL.BOE
TLST.REC.ACL.OE
TLST.REC.ACL.POE
Tag Usage: SWITCH system processed
IC Type: All
Multiple: N
Short/Long: L
Characters: USOTEXT
TN: N
Source:
Notes: Sent to MAS for all work orders (a "short form" tag).

Name:	IDG1
Full Name:	Intercom Dialing Plan Group - Positions 10-19
Description:	Indicates the telephone number (TN) list for Positions 10-19 of an ISDN two digit intercom group served by a 5ESS switch.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	IDG2
Full Name:	Intercom Dialing Plan Group - Positions 20-29
Description:	Indicates the telephone number (TN) list for Positions 20-29 of an ISDN two digit intercom group served by a 5ESS switch.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	IDG3
Full Name:	Intercom Dialing Plan Group - Positions 30-39
Description:	Indicates the telephone number (TN) list for Positions 30-39 of an ISDN two digit intercom group served by a 5ESS switch.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	IDG4
Full Name:	Intercom Dialing Plan Group - Positions 40-49
Description:	Indicates the telephone number (TN) list for Positions 40-49 of an ISDN two digit intercom group served by a 5ESS switch.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	IDG5
Full Name:	Intercom Dialing Plan Group - Positions 50-59
Description:	Indicates the telephone number (TN) list for Positions 50-59 of an ISDN two digit intercom group served by a 5ESS switch.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	IDG6
Full Name:	Intercom Dialing Plan Group - Positions 60-69
Description:	Indicates the telephone number (TN) list for Positions 60-69 of an ISDN two digit intercom group served by a 5ESS switch.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	IDG7
Full Name:	Intercom Dialing Plan Group - Positions 70-79
Description:	Indicates the telephone number (TN) list for Positions 70-79 of an ISDN two digit intercom group served by a 5ESS switch.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	IDG8
Full Name:	Intercom Dialing Plan Group - Positions 80-89
Description:	Indicates the telephone number (TN) list for Positions 80-89 of an ISDN two digit intercom group served by a 5ESS switch.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	**IDG9**
Full Name:	Intercom Dialing Plan Group - Positions 90-99
Description:	Indicates the telephone number (TN) list for Positions 90-99 of an ISDN two digit intercom group served by a 5ESS switch.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	**IDGP**
Full Name:	Intercom Dialing Plan Group
Description:	Identifies a telephone number list for positions 8-9 of an ISDN one or two digit intercom group served by a 5ESS switch.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	**IDP**
Full Name:	Individualized Dialing Plan
Description:	Indicates an individualized dialing plan feature and optional attribute names and their values assigned to a line in a TL1 or 5ESS office.
Input:	CTX.REC.ACL.GRPATTR CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	GRPBOD(CTX) PSVC/TRNSL SSVC/TRNSL
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, 5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	From IDP FID.
Notes:	New for 1.6.5. IC translation data when input in CAR.REC.ACL or SDR.REC.ACL. Stored in database (GRPBOD(CTX)) when Centrex is created via inventory transaction (uses CTX.REC.ACL.GRPATTR).

Name:	**IDPNAME**
Full Name:	Individualized Dialing Plan Name
Description:	
Input:	CTX.REC.ACL.GRPATTR CAR.REC.ACL SDR.REC.ACL
Storage:	n/a
TRM Output:	n/a
Tag Usage:	n/a
IC Type:	n/a
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	From IDP FID.
Notes:	New tag in SOAC 18.7 that contains just the IDP name. The SWITCH system did not do anything with the IDPNAME tag in release 1.6.

Name:	**IFTYP**
Full Name:	Type of Signalling
Description:	IFTYP type of signalling for Litespan-2000® (TR057, TR008, or TR303)
Input:	SWITCH system creates
Storage:	Derived from IC network unit.
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	
Multiple:	N
Short/Long:	S
Characters:	5AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**ILDN**
Full Name:	Interlata Calls Denied
Description:	Indicates the customer is denied access to InterLATA dialine, including Business Group level PIC.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**INC**
Full Name:	Incomplete Information Indicator
Description:	
Input:	SWITCH system derives
Storage:	n/a
TRM Output:	TRMC.REC.CTL
Tag Usage:	n/a
IC Type:	n/a
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	Used when the switch port changes during F & T processing in the SWITCH system. This tag informs SOAC and MAS that the information that has been sent is incomplete with respect to the changed switch port.

Name :	**INHB**
Full Name :	Inhibit Busy Line Office Trigger
Description :	Indicates the office-wide provisioning of the Originating Busy Line Office Trigger is inhibited for this particular line
Input :	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage :	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output :	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage :	BTO TAGTMART, BTO FCIF, IC translation
IC Type :	5ESS
Multiple :	N
Short/Long :	S
Characters :	1A
TN :	N
Source :	
Notes :	New for 3.0

Name :	INHN
Full Name :	Inhibit No Answer Office Trigger
Description :	Indicates the office-wide provisioning of the Originating No Answer Office Trigger is inhibited for this particular line
Input :	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage :	PSVC/TRNSL (from SDR.REC.ACL)
TRM Output :	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage :	BTO TAGTMART, BTO FCIF, IC translation
IC Type :	All
Multiple :	N
Short/Long :	S
Characters :	1A
TN :	N
Source :	
Notes :	New for 3.0

Name:	INT
Full Name:	Intercom Number
Description:	Indicates the line number assigned to a line or revertive calling capability.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" | 1-18AN
TN:	Y (if a 1/1A ESS IC has a call transfer code)
Source:	
Notes:	

Name:	IOC
Full Name:	Input/Output Channel
Description:	Indicates the Input-Output Channel number needed for the provisioning of Message Desk or Bulk Calling Line Identification features.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From IOC FID.
Notes:	

Name:	IOCSMDI
Full Name:	Input/Output Channel Simplified Message Desk Interface
Description:	Indicates the Input-Output Channel number needed for the provisioning of Message Desk or Bulk Calling Line Identification features.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	From IOC FID.
Notes:	New for 1.6.5.

Name:	**IRR**
Full Name:	Inhibit Ring Reminder Option
Description:	Indicates the line is equipped with the Inhibit Ring Reminder option which turns off the ring reminder that occurs when call forwarding is invoked.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**ISHG**
Full Name:	ISDN Attendant HML Group Number
Description:	Indicates the number of the attendant's console which can monitor and answer calls for a specific ISDN directory number.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**ISI**
Full Name:	Intelligent Services Interface Option
Description:	Indicates that the ISDN Logical Terminal subscribes to a switch-host communications line using Q.931 signaling.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**ISWO**
Full Name:	Intraswitch Originally Called Directory Number (OCDN)
Description:	Indicates that the Message Service Center is sent the intraswitch OCDN instead of the interswitch.
Input:	HML.REC.ACL SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(HML)/TRNSL(from HML.REC.ACL)
TRM Output:	THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.9.

Name:	ITEMNUM
Full Name:	Work Order Item Number
Description:	
Input:	SWITCH system derives.
Storage:	xfile (WO Unit Status Table)
TRM Output:	TRMC.REC.CTL (from WO UST) TRMS.REC.CTL (from WO UST)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	n/a
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	This value is assigned to the transfer unit by the SWITCH System Work Order when the work order assignment is successful. The value is passed to FOMS and MAS for coordination of work. Sent to MAS for all work orders (a "short form" tag).

Name:	ITM
Full Name:	LST Item Number
Description:	Identifies a particular item within an LST record.
Input:	LST.REC.CTL
Storage:	SOBOD(OW)
TRM Output:	TLST.REC.CTL (from SOBOD(OW))
Tag Usage:	n/a
IC Type:	n/a
Multiple:	M
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	This value is assigned by LFACS to an LST item and sent to the SWITCH system with the service order. The value is stored in the service order work task. It is sent to notify SOAC/MAS of unexpected switch port reassignment as a result of a SO LST.

Name:	ITN
Full Name:	In Telephone Number
Description:	
Input:	PKT
Storage:	xfile
TRM Output:	TMIS
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	

Name:	**K56DNA**
Full Name:	Automatic Terminal Setup DN Appearance ID - 56K
Description:	Identifies the directory number appearance 56K - Circuit Switched Data.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From ATSU FID.
Notes:	Changed for 1.8. New for 1.6.5.

Name:	**K56QTY**
Full Name:	Automatic Terminal Setup DN Appearance Quantity - 56K
Description:	Identifies the quantity of directory number appearance audio.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From ATSU FID.
Notes:	Changed for 1.8. New for 1.6.5.

Name:	**K64DNA**
Full Name:	Automatic Terminal Setup DN Appearance ID - 64K
Description:	Identifies the directory number appearance 64K - Circuit Switched Data.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From ATSU FID.
Notes:	Changed for 1.8. New for 1.6.5.

Name:	**K64QTY**
Full Name:	Automatic Terminal Setup DN Appearance Quantity - 64K
Description:	Identifies the quantity of directory number appearance 64K - circuit switched data.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From ATSU FID.
Notes:	Changed for 1.8. New for 1.6.5.

Name:	**KEY**
Full Name:	Key Designation
Description:	Identifies an associated key list, or feature, as applicable, associated with an electronic telephone or ISDN terminal in 5ESS, TL1, or DMS-100 switch types.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 5ESS
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From KEY FID.
Notes:	New for 1.6.5. IC translation Data.

Name:	**KEYLST**
Full Name:	Key List
Description:	Identifies an associated key list associated with an electronic telephone or ISDN terminal in 5ESS, TL1 or DMS-100 switch types.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 5ESS
Multiple:	N
Short/Long:	S
Characters:	1-2AN
TN:	N
Source:	
Notes:	New for 1.6.5. Changed for 1.8.

Name:	**KSH**
Full Name:	Keyset Short Hunt
Description:	Indicates that keyset short hunt option is assigned to directory number appearances on a set on a DMS-100 switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	3-17 USOTEXT
TN:	Y (sometimes)
Source:	
Notes:	Characters changed for 3.0

Name:	**LAPC**
Full Name:	Audio Predesignated Intralata Carrier
Description:	The predesignated IntraLATA Carrier for the Audio, 3.1 kHz, Bearer Capability for an ISDN Basic Rate Interface (BRI)
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	3-4 USOTEXT
TN:	N
Source:	
Notes:	New for 3.0

Name:	**LASS**
Full Name:	Local Area Signaling Service
Description:	Indicates the Custom Local Area Signaling Service (CLASS) feature type and its optional attributes that are assigned to a directory number served by the EWSD or DMS-100. This FID has the option of being cross-referenced.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 5ESS
Multiple:	Y
Short/Long:	L
Characters:	USOTEXT
TN:	Y (sometimes)
Source:	
Notes:	New for 1.6.5.

Name:	**LC**
Full Name:	Line Class Code
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	See LCC.

Name:	LCC
Full Name:	Line Class Code
Description:	Indicates the originating and terminating restrictions, or combinations of restrictions, for a line in a stored program controlled switch.
Input:	CAR.REC.ACL SDR.REC.ACL CAR.REC.ACL.CEC CAR.REC.ACL.SEC Data Dictionary (Centrex RCU table) SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL or Centrex RCU table) SSVC/TRNSL (from SDR.REC.ACL or Centrex RCU table)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART (LC), BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT (1-8)
TN:	N
Source:	
Notes:	If the *rcu-derive-from-LCC* parameter in the WC Parameter Table is set to "Y", the LCC tag is suppressed for TRMC/TLST/TRMS. Centrex groups are created in the SWITCH system via inventory. Some default translation data for a Centrex group is defined in SWITCH system reference data, in the Centrex Recent Change USOC Table. The RCU Table can be created for an IC type, IC id or individual group instance. When the SWITCH system receives a provisioning request for a Centrex line, data on the order is used to populate the translation edge of the primary or secondary service. If LCC is not specified on the order, the value from the Centrex RCU table is used. Sent to MAS for all work orders (a "short form" tag).

Name:	LCDR
Full Name:	Local Call Detail Recording/Detail Billing
Description:	Indicates that a detailed AMA record is to be generated on all originating answered and unanswered calls from this Message Rate directory number when the Local Call Detail Recording or Detail Bill Recording option is assigned.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	LCL
Full Name:	Logical Channel Layout
Description:	Indicates the maximum number of channels and the allocation (high to low range) of the channels associated with an X.25 and X.75 access line in a PPSN or packet service on TL1, DMS-100 or 5ESS ISDN.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 5ESS
Multiple:	N
Short/Long:	L
Characters:	5-49 USOTEXT
TN:	N
Source:	
Notes:	Characters changed for 2.5.1

Name:	**LCP**
Full Name:	Local Charging Prevention
Description:	The Local Charging Prevention option is provisioned on the packet bearer service for Basic Rate ISDN served by the TL1 or 5ESS switch.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, 5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y" or "N"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**LDDN**
Full Name:	LAPD D-Channel Default Directory Number
Description:	The Default DN for LAPD access on the D-Channel of an Integrated Services Digital Network (ISDN) interface (pipe).
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name: :	**LDDR**
Full Name: :	Long Distance Distinctive Ringing
Description: :	Supports the Long Distance Distinctive Ringing feature.
Input: :	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage: :	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output :	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: :	BTO TAGTMART, BTO FCIF, IC translation
IC Type: :	All
Multiple: :	Y
Short/Long: :	S
Characters: :	"Y" | 1-4A
TN: :	N
Source: :	
Notes: :	Description, IC Type, and Multiple changed for 2.5.1

Name:	**LDPC**
Full Name:	Data-Predesignated Intralata Carrier
Description:	Indicates the customer selection of an intralata carrier for ISDN Circuit Mode Data service.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT (3-8)
TN:	N
Source:	
Notes:	New for 2.0.

Name :	**LDPCCH**
Full Name :	Data - Predesignated IntraLATA Carrier Choice
Description :	Indicates that the customer's selection of an intraLATA carrier is changing
Input :	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage :	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output :	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage :	BTO TAGTMART, BTO FCIF, IC translation
IC Type :	DMS, TL1
Multiple :	N
Short/Long :	S
Characters :	1A
TN :	N
Source :	From LDPC FID
Notes :	New for 3.0

Name:	**LET**
Full Name:	Loop Extension Type
Description:	Indicates the type of loop extension used and the presence of the near and far repeater units for DATAPATH Service.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5. IC translation Data.

Name:	**LGTH**
Full Name:	Carrier Circuit Length
Description:	LGTH is the length of the carrier circuit in units of DRUT.
Input:	SWITCH system creates
Storage:	ASMBOD(PSVC) detail/det_reg_len
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	n/a
Multiple:	Y
Short/Long:	S
Characters:	3-6 AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**LHT**
Full Name:	Last Hunt Terminal
Description:	Indicates the highest terminal number in a 1/1A, 2 or 3 ESS which is hunted to from each hunting telephone number in a multiline hunt group.
Input:	HML.REC.ACL CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(HML)/TRNSL (from HML.REC.ACL) PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	THML.REC.ACL (from GRPBOD(HML)/TRNSL) TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, 1/1AESS
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**LHTN**
Full Name:	Linear Hunt Telephone Number
Description:	A packet terminal directory number that provides additional start hunt capabilities in an ISDN packet multiline hunting arrangement.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.EQP
Storage:	COMPEDG between service node and DTN (comp_usage = LHTN) (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from COMPEDG)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	Y
Source:	
Notes:	New for 1.6.5. This tag is also defined in the CAR.REC.ACL and TRMC/TLST.REC.ACL aggregates in the SOAC/SWITCH Interface Specification. However, it is not expected that LHTN will be sent to SWITCH in the CAR.REC.ACL. If it is, it will be ignored. LHTN will never be returned in TRMC/TLST sections.

Name:	**LPICCH**
Full Name:	Predesignated IntraLATA Carrier for Leased Network Trunk Type Choice
Description:	Indicates that the customer's selection of an intraLATA carrier for leased network trunks is changing
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	1AESS, 5ESS, DMS, TL1
Multiple:	N
Short/Long:	S
Characters:	1A
TN:	N
Source:	From LPIC FID.
Notes:	New for 2.5.1. Characters changed for 3.0

Name:	**LKBAND**
Full Name:	Link Level Band Parameter
Description:	Indicates the link level parameters associated with an X.25 (LAP or LAPB) and X.75 terminal interface used on a PPSN service, or packet on ISDN served by TL1, DMS-100, or 5ESS type IC.
Input:	SDR.REC.ACL.SEC SYNCSVC.REC.ACL.DSGN (Used for validation; not stored)
Storage:	SSVC/DSGN (from SDR.REC.ACL.SEC)
TRM Output:	TRMS.REC.ACL (from SSVC/DSGN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	TL1, DMS, 5ESS
Multiple:	
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From LKLP FID.
Notes:	New for 1.6.5.

Name:	**LKLC**
Full Name:	Link Level Parameters D-Channel
Description:	The data link (Layer 2) counter parameters for an Integrated Services Digital Network (ISDN) D-channel basic rate interface (pipe).
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	L
Characters:	6-29AN
TN:	N
Source:	
Notes:	Changed for 1.7.

Name:	**LKLD**
Full Name:	Link Level Parameters D-Channel
Description:	The data link (Layer 2) parameters for an Integrated Services Digital Network (ISDN) D-Channel basic rate interface (pipe) in a generic stored program controlled switch.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT (3-9)
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**LKLP**
Full Name:	Link Level Parameters
Description:	Indicates the "link level" parameters associated with an X.25 or X.75 terminal interface used on a PPSN service or packet service on an ISDN served by a TL1, DMS-100 or 5ESS type IC.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	From LKLP FID.
Notes:	New for 1.6.5.

Name:	**LKLT**
Full Name:	Link Level Parameters D-Channel Timers
Description:	The data link (Layer 2) timer parameters for an Integrated Services Digital Network (ISDN) D-channel basic rate interface (pipe).
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**LN**
Full Name:	LATA Name
Description:	
Input:	Wire Center Reference Data Table or Manual input
Storage:	Wire Center Reference Data Table
TRM Output:	n/a
Tag Usage:	BTO TAGTMART, BTO FCIF
IC Type:	n/a
Multiple:	N
Short/Long:	
Characters:	
TN:	N
Source:	
Notes:	This information is included on BTO Tapes but is not returned to MAS in TRM contracts.

Name:	**LNID**
Full Name:	Line Identification
Description:	Indicates the line identification feature name to be assigned to a line in a 5ESS.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**LNR**
Full Name:	Last Number Redial
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" I 1A
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**LNTT**
Full Name:	Leased Network Trunk Type
Description:	A basic Rate ISDN line belongs to a leased network and optional Network Control Point (NCP) query functions.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**LOB**
Full Name:	ACD Line of Business Option
Description:	Indicates the ACD group name for the ACD supervisor's line of business option.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name: **LOR**
Full Name: Overflow to Route Index
Description:
Input: HML.REC.ACL
SCH.REC.ACL
SYNCGRP.REC.ACL.TRANS
Storage: GRPBOD(HML)/TRNSL (from HML.REC.ACL)
GRPBOD(SCH)/TRNSL (from SCH.REC.ACL)
TRM Output: THML.REC.ACL (from GRPBOD(HML)/TRNSL)
TSCH.REC.ACL (from GRPBOD(SCH)/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: All
Multiple: N
Short/Long: S
Characters: 1-4N
TN: N
Source:
Notes: New for 1.6.5.

Name: **LPIC**
Full Name: Predesignated Intralata Carrier for Leased Network Trunk Type
Description: The customer's selection of an IntraLATA carrier.
Input: CAR.REC.ACL
SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: PSVC/TRNSL (from CAR.REC.ACL)
SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMC.REC.ACL (from PSVC/TRNSL)
TLST.REC.ACL (from PSVC/TRNSL)
TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: All
Multiple: N
Short/Long: S
Characters: 3-4 USOTEXT
TN: N
Source:
Notes: Characters revised for 2.5.

Name: **LPS**
Full Name: Loop Start
Short/Long: S
Characters: "Y"
TN: N
Source:
Notes: See SIG.

Name: **LRPA**
Full Name: Intralata Recognized Private Operating Agency
Description: Indicates the customer preselection of a recognized private operating agency (RPOA) who provides the transit network for X.25 and X.75 access gateways to other intralata Public Packet Switched Networks (PPSN).
Input: CAR.REC.ACL
SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: PSVC/TRNSL (from CAR.REC.ACL)
SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMC.REC.ACL (from PSVC/TRNSL)
TLST.REC.ACL (from PSVC/TRNSL)
TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: TL1
Multiple: N
Short/Long: S
Characters: 4N
TN: N
Source:
Notes: New for 2.0.

Name:	**LSDN**
Full Name:	Listed Directory Number
Description:	Indicates that the number is a listed number and queuing features may be applied.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	1A
TN:	N
Source:	
Notes:	New for 1.7.

Name:	**LSEL**
Full Name:	Line Selection Options - Originating and Terminating
Description:	Indicates the originating and terminating line selection options for the Centrex station that overrides the off-hook automatic selection of the primary directory number.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**LST**
Full Name:	Line and Station Transfer Number
Description:	
Input:	LST.REC.CTL
Storage:	SOBOD(OW)
TRM Output:	TLST.REC.CTL (from SOBOD(OW))
Tag Usage:	
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	This value is assigned by LFACS to an LST and sent to the SWITCH system with the service order. The value is stored in the service order work task. It is sent to notify SOAC/MAS of unexpected switch port reassignment as a result of a SO LST.

Name:	**LTCL**
Full Name:	Logical Terminal Class
Description:	
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From LTCL FID.
Notes:	New for 1.6.5.

Name:	**LTCLCS**
Full Name:	Logical Terminal Class Circuit Switched
Description:	
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From LTCL FID.
Notes:	New for 1.6.5.

Name:	**LTCLPS**
Full Name:	Logical Terminal Class Packet Switched
Description:	
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From LTCL FID.
Notes:	New for 1.6.5.

Name:	**LTDF**
Full Name:	Local Terminal Definition
Description:	The number of incoming and outgoing calls allowed over the trunk group and the number of B channels associated with the trunk group for Primary Rate Access (PRA) ISDN or the bearer capabilities for a Basic Rate ISDN 2B channel logical terminal.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	2-7 USOTEXT
TN:	N
Source:	
Notes:	Characters changed for 3.0

Name:	**LTCLVER**
Full Name:	Logical Terminal Class Version
Description:	Identifies the logical terminal class for a DMS-100 ISDN logical terminal.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	From LTCL FID.
Notes:	New for 1.6.5.

Name:	**LTG**
Full Name:	Line Treatment Group Number
Description:	Indicates the line treatment group number assigned to a line served by a DMS-100 switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**LTID**
Full Name:	Logical Terminal Identifier
Description:	Indicates the logical terminal identifier for ISDN service for a DMS-100 switch type.
Input:	SDR.REC.ACL (if preassigned) Assigned by SWITCH System (if needed and not preassigned) SYNCSVC.REC.ACL.EQP (Used for validation, and stored)
Storage:	NUBOD(LTID)
TRM Output:	TRMS.REC.ACL (from NUBOD(LTID))
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	Changed in 1.6.5 (was IC translation data, stored in SSVC/TRNSL). Sent to MAS for all work orders (a "short form" tag).

Name:	MADN
Full Name:	Multiple Appearance Directory Number Call Arrangement/Indicator
Description:	Identifies the call arrangement and/or the primary/secondary appearance indicator associated with a multiple appearance directory number feature.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	MAMISC
Full Name:	Manual Assistance Miscellaneous
Description:	Indicates that MAS should RMA this message.
Input:	SWITCH system derives
Storage:	See Notes.
TRM Output:	TMIS
Tag Usage:	n/a
IC Type:	n/a
Multiple:	Y
Short/Long:	S
Characters:	1-8AN, "OECHG" | "EMPAGG"
TN:	N
Source:	
Notes:	New for 1.7. Used in a non-DTR WO TRM message to indicate that MAS should RMA this message. It is sent for rework if a switch port or TN is changed by a service order (including a sublet order) or if a secondary service is added or deleted by a service order. TN changes and secondary service driven rework result in a "change" message with an empty ACL aggregate (either "old" or "new").

Name:	MANEXCL
Full Name:	Manual Exclusion
Description:	Identifies the call appearance designation on a multiple appearance terminal for primary and secondary line numbers, or multiline hunt group terminal numbers served by a 5ESS.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From CAPP FID.
Notes:	New for 1.6.5.

Name:	MANUAL
Full Name:	Manual or Automatic control of cross connects
Description:	MANUAL is set to Y when the cross connections are to be done manually.
Input:	SWITCH system creates
Storage:	Derived
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	n/a
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.8.

Name:	MASUS
Full Name:	Manual Assistance Suspend
Description:	
Input:	SWITCH system derives
Storage:	See Notes.
TRM Output:	TRMC.REC.CTL
Tag Usage:	n/a
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	"SEC" or "HTG"
TN:	N
Source:	
Notes:	New for 1.6.5. Used in the SUSPEND record of a response to a sublet service order to indicate a secondary service or hunting. Multiple occurrences can indicate both secondary service and hunting. See also SUBLET and SUSPEND.

Name:	MAUSOC
Full Name:	MAS MA USOC (MA Detection for Dial Transfer - USOC Table)
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	MAXB
Full Name:	Maximum Number of B Channels
Description:	Indicates the maximum number of B channels to be used on a demand basis for circuit switched services on BRA ISDN.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	MB
Full Name:	Mini Bridge Lifter
Description:	
Input:	SWITCH system assigns
Storage:	NUBOD(CP)/PHYAPEDG
TRM Output:	n/a
Tag Usage:	BTO TAGTMART, BTO FCIF
IC Type:	All
Multiple:	
Short/Long:	
Characters:	
TN:	N
Source:	
Notes:	This information is output on BTO Tapes but is not returned to MAS in TRM contracts.

Name:	**MBA**
Full Name:	Make Busy Application
Description:	Identifies the Make Busy Application Sets and the controlling terminal for ISDN multiline hunt group terminals (TER).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	L
Characters:	8-27AN
TN:	N
Source:	
Notes:	New for 1.7.

Name:	**MBCT**
Full Name:	Make Busy Call Termination Type
Description:	Indicates the call termination to be given for a Make Busy Scan Point, Make Busy Subgroup or Make Busy Terminal served by a 5ESS.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	"Y" | 39-64AN
TN:	N
Source:	
Notes:	New for 1.6.5. IC translation Data.

Name:	**MBG**
Full Name:	Multi-Switch Business Group Number
Description:	Indicates the number of the multi-switch business (Centrex) group sharing a common dialing plan.
Input:	CAR.REC.ACL SDR.REC.ACL SCH.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(SCH)/TRNSL (from SCH.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) TSCH.REC.ACL (from GRPBOD(SCH)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, 5ESS
Multiple:	N
Short/Long:	S
Characters:	1-8AN
TN:	N
Source:	
Notes:	Changed for 1.7.

Name:	**MBK**
Full Name:	Make Set Busy Option
Description:	Indicates the Make Busy Key (MBK) line option for a line equipped with Call Forwarding Busy.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**MBTN**
Full Name:	Mail Box Telephone Number
Description:	Identifies the telephone number for the end user's mailbox on enhanced services.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	

Name:	**MCLD**
Full Name:	Modified Calling Line Disconnect Override
Description:	The feature that forces an end user to go off hook before placing subsequent calls is overridden on a per line basis when served by a 5ESS or 1/1AESS.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS, 1/1AESS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**MCFI**
Full Name:	Multiple Number Call Forward Inhibit
Description:	Indicates that call forwarding is inhibited on all dependent directory numbers associated with a primary number served by the 1/1AESS and 5ESS, or on the individual dependent directory numbers served by the DMS-100or TL1 type IC.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 5ESS, 1/1AESS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	

Name:	**MDNOLP**
Full Name:	MADN Options Lamp
Description:	Indicates the options for Multiple Appearance Directory Number (MADN) Single Call Arrangement.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From MDNO FID.
Notes:	New for 1.6.5.

Name:	**MDNOREL**
Full Name:	MADN Options
Description:	Indicates the options for Multiple Appearance Directory Number (MADN) Single Call Arrangement.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From MDNO FID.
Notes:	New for 1.6.5.

Name:	**MDP**
Full Name:	Modem Pooling Logical Definition
Description:	Identifies the modem pooling parameters for a multiline hunt group in a DMS-100 or 5ESS ISDN environment.
Input:	HML.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(HML)/TRNSL (from HML.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	THML.REC.ACL (from GRPBOD(HML)/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS, 5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**MDPK**
Full Name:	Maximum D Channel Packet Users
Description:	Indicates the maximum number of users allowed X.25 Packet Switching Service on a D channel of a BRA DSL.
Input:	CAR.REC.ACL.CEC SYNCSVC.REC.ACL.DSGN (Used for validation; not stored)
Storage:	PSVC/DSGN (from CAR.REC.ACL.CEC)
TRM Output:	TRMC.REC.ACL (from PSVC/DSGN) TLST.REC.ACL (from PSVC/DSGN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	TL1, 5ESS
Multiple:	
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**MDR**
Full Name:	Message Detail Recording
Description:	Identifies the message detail recording feature name and optional feature attributes to be assigned to a line in a 5ESS office.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	MILTIME
Full Name:	Military Time
Description:	Identifies a terminal option attribute name in a 5ESS switcher.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y" | 1A
TN:	N
Source:	From TTYP FID (5ESS).
Notes:	New for 1.6.5.

Name:	ML1
Full Name:	Multiline Variety Package List One
Description:	Indicates the Multiline Variety Package list, relating a single dialed digit to an assigned telephone number.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	Numeric
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	ML2
Full Name:	Multiline Variety Package List Two
Description:	Indicates the Multiline Variety Package list, relating a two digit dialed number to an assigned telephone number.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	Numeric
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	MLG
Full Name:	Multiline Non-Hunt Group Number
Description:	Identifies a multiline Non-hunting group identifier in the multiline non-hunt group hunting sequence.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	

Name:	**MLHI**
Full Name:	Multiline Hunt Group Information
Description:	Allows for a Multiline Hunt Group at the Terminal (TSP) level. When MLHG is provisioned on the Terminal (TSP), the TN which is associated with the bearer service may be considered a non-hunt number. It is necessary to provide a reference to the MLHG to define the Terminal (TSP) MLHG associated with the bearer service.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	L
Characters:	26-36AN
TN:	N
Source:	
Notes:	New for 1.7.

Name:	**MPBR**
Full Name:	Multi-Party Bridge Group
Description:	Indicates the number of the Multi-Party Bridge Group for the Multi-Party Bridge option in the DMS®-100 switch
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	8-12N
TN:	Y
Source:	
Notes:	Characters changed for 3.0

Name:	**MPH**
Full Name:	Multiple Position Hunt (MPH) Console
Description:	Indicates the MPH console and console line to which a station user is assigned.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**MPS**
Full Name:	Maximum Packet Size
Description:	The maximum packet size for packet services on an Integrated Services Digital Network (ISDN) interface.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**MRF**
Full Name:	MADN Ring Forward
Description:	Identifies the ringing options for MADNs with the Single Call Arrangement (SCA) feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**MRFM**
Full Name:	MADN Ring Forward Manual
Description:	Indicates a key designation and associated key list for the MADN Ring Forward manual option.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**MSB**
Full Name:	ACD Agent Make Set Busy Option
Description:	Indicates the ACD agent's station is equipped with the Make Set Busy option.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" I 1A
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	MSBO
Full Name:	Make Set Busy (MSB) Override
Description:	Indicates that the ACD supervisor has the capability to override the Make Set Busy feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	MSGP
Full Name:	Message Service System User Group
Description:	Identifies the user group name, group attributes and attribute values for the Message service system failure in a 5ESS switch.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	MSS
Full Name:	Message Service System
Description:	Identifies the Message Service System feature name and optional feature attributes to be assigned to a line in a TL1, DMS-100 or 5ESS office. This FID, when appearing left-handed, is a cross-reference FID.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 5ESS
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	Y (if selected as an EWSD message desk center group name)
Source:	
Notes:	New for 1.6.5.

Name:	MTCR
Full Name:	Maximum Terminal Call References
Description:	Indicates the maximum number of non-call associated Call Reference values allowed for a Terminal (TSP).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	1-2N
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**MTER**
Full Name:	Maximum Number of Terminals
Description:	Indicates the maximum number of terminals on a DSL.
Input:	CAR.REC.ACL.CEC SYNCSVC.REC.ACL.DSGN (Used for validation; not stored)
Storage:	PSVC/DSGN (from CAR.REC.ACL.CEC)
TRM Output:	TRMC.REC.ACL (from PSVC/DSGN) TLST.REC.ACL (from PSVC/DSGN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**MUSI**
Full Name:	Music On Hold - Line Interface Maximum Connections
Description:	Indicates the number of maximum connections allowed to the audio source line used for the Music on Hold feature.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**MVP**
Full Name:	Multiline Variety Package
Description:	Identifies that a combination of features provided by multiline variety package and the residence service variety package is associated with the circuit.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	GRPBOD(CTX) PSVC/TRNSL SSVC/TRNSL
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	GP
Multiple:	N
Short/Long:	S
Characters:	"Y" | 5-24AN
TN:	Y (if an EWSD MVP group master number, or if a TL1 or FETEX-150 IC has a shared list)
Source:	
Notes:	Value entered in the SWITCH system database (GRPBOD(CTX)) by inventory transaction when Centrex group is created/ modified. Stored on translation edge of service when received in CAR.REC.ACL or SDR.REC.ACL.

Name:	MWC
Full Name:	Multiway Calling
Description:	Identifies the multi-way calling feature names and optional line attributes to be assigned to a line in a 5ESS office. This FID is a cross-reference and a multiple-purpose FID.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	USOTEXT
TN:	Y (sometimes)
Source:	
Notes:	New for 1.6.5.

Name:	MWI
Full Name:	Message Waiting Indicator
Description:	Identifies a line (e.g., Centrex) provisioned with message waiting indication of Automatic Message Desk Interface.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	"Y"|1-55 USOTEXT
TN:	N
Source:	
Notes:	Characters changed for 3.0For all FID code set values except the new value "T", Service Descriptor tags will also be sent by SOAC to the SWITCH System in the CEC aggregate. When the FID code set value is "T", SOAC will send the MWI tag with the value "T", but will send the MWI tag with the value "L" to all other downstream OS systems which receive this tag.

Name:	MWIC
Full Name:	Message Waiting Indicator Control
Description:	Indicates that Message Waiting Indicator Control is present.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From MWIP FID, see also MWIDGID, MWIMAX, DMSRID.
Notes:	New for 1.8.

Name:	**MWIDGID**
Full Name:	Message Waiting Indicator Control Default Group Identifier
Description:	Indicates the default provider of the Message Waiting Indicator.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	1-10AN
TN:	N
Source:	From MWIP FID, see also MWIC, MWIMAX, DMSRID.
Notes:	New for 1.8.

Name:	**MWIMAX**
Full Name:	Message Waiting Indicator Control Maximum Number of Outstanding Transactions
Description:	Indicates the maximum number Of outstanding transactions for message waiting indication.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	1-4N
TN:	N
Source:	From MWIP FID, see also MWIC, MWIDGID, DMSRID.
Notes:	New for 1.8.

Name:	**MXK**
Full Name:	Maximum Number of Keys
Description:	Identifies the maximum number of keys used to activate features on a terminal on an Integrated Service Digital Network (ISDN) service.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	NBC
Full Name:	Number of B Channels on an ISDN Interface
Description:	Indicates the number of B channels that are assigned for the ISDN interface.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	1N
TN:	N
Source:	
Notes:	New for 1.8.

Name:	NBR
Full Name:	Number of Appearances
Description:	Identifies the call appearance number on a multiple appearance terminal.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From CAPP FID.
Notes:	New for 1.6.5.

Name:	NCF
Full Name:	Number of Calls Forwarded
Description:	
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	NCKT
Full Name:	Number of Circuits
Description:	NCKT is the absolute number of circuits allowed on the slot.
Input:	SWITCH system creates
Storage:	GRPBOD(SLOT) num_ckt
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	1-2 N
TN:	N
Source:	
Notes:	New for 1.8.

Name:	NDT
Full Name:	No Double Connect/Data Call Protection
Description:	Indicates that a DMS-100 or EWSD line is equipped with a feature that prohibits any interruption or "hits" to the line when the line is in a busy state during data transmission.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	NEP
Full Name:	Network Element Provisioning Aggregate
Description:	NEP provides Network Element Provisioning data to remote administration systems. This aggregate reflects the actions needed to be taken to update the NE at service activation time. Each NEP will have XCN aggregates or an ASC aggregate but not both.
Input:	SWITCH system creates
Storage:	Derived
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	
Multiple:	
Short/Long:	
Characters:	
TN:	
Source:	
Notes:	New for 1.8.

Name:	NFA
Full Name:	Network Facility Access
Description:	Indicates that the subscriber line has the ability for a direct connection between the line and an Intelligent Processor via an NFA trunk.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT (3-101)
TN:	N
Source:	
Notes:	Changed for 1.7. Changed for 2.0 (primary service only).

Name:	NHN
Full Name:	Non-Hunting Number
Description:	Indicates the non-hunting telephone number in an ESS multi-line hunting group.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.EQP
Storage:	NUBOD(TN)/EXID, comp_usage=NHN
TRM Output:	TRMC.REC.ACL (from NUBOD(TN)/EXID, comp_usage=NHN) TLST.REC.ACL (from NUBOD(TN)/EXID, comp_usage=NHN) TRMS.REC.ACL (from NUBOD(TN)/EXID, comp_usage=NHN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	Changed for 1.6.5. Sent to MAS for all work orders (a "short form" tag).

Name:	NONI
Full Name:	Integrated Services Digital Network (ISDN) Non-Initializing Terminal
Description:	Indicates that the Basic ISDN pipe is allowed to have one non-initializing functional terminal.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.7.

Name:	NPANXX
Full Name:	NPANXX Association Table
Description:	
Input:	JCL Input
Storage:	n/a
TRM Output:	n/a
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	Provides the association between a particular NXX and NPA.

Name:	NPI
Full Name:	Numbering Plan Indicator
Description:	Indicates the numbering plan that is used as part of the Data Telephone Number (DTN).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from CAR.REC.ACL) TLST.REC.ACL (from CAR.REC.ACL) TRMS.REC.ACL (from SDR.REC.ACL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5. IC translation Data.

Name:	NPIC
Full Name:	Predesignated international calls carrier
Description:	Indicates the customer's selection of an international calls carrier or the explanation of why no carrier is designated.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	3-14 USOTEXT
TN:	N
Source:	
Notes:	New for 2.5.1

Name:	NPICCH
Full Name:	Predesignated international calls carrier change
Description:	Indicates that the customer's selection of an international calls carrier is changing.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	1A
TN:	N
Source:	
Notes:	New for 2.5.1

Name:	NPS
Full Name:	Non Payer Screening
Description:	Identifies the line or lines that are to be denied interLATA calling for the IC indicated (or, in an equal access office, denied for all ICs subscribing to the feature).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic or Numeric
TN:	N
Source:	
Notes:	

Name:	NPT
Full Name:	Network Provided Tones
Description:	Indicates whether or not the switch should apply normal call processing tones and announcements in-band, over a connected ISDN Basic Rate Interface B-channel for speech and 3.1 KHz audio calls originated by the user.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" or "N"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	NRG
Full Name:	Number of Rings
Description:	Indicates after which ring a line with Monthly Call Answering Service will be answered. NRG appears only when the customer requests the telephone be answered after any ring other than after the standard third ring.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	

Name:	NSV
Full Name:	Night Service Fixed
Description:	Indicates the number to which calls are transferred in a night service fixed arrangement.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	NSVC
Full Name:	ACD Night Service
Description:	Indicates the ACD group identifier for the Night Service option on the Supervisor's station.
Input:	SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5. Changed for 1.8.

Name:	NSVY
Full Name:	Night Service (client specific)
Description:	Indicates the TN for night service.
Input:	CAR.REC.ACL SDR.REC.ACL
Storage:	PSVC/COMP (to TN) (from CAR.REC.ACL) SSVC/COMP (to TN) (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/COMP) TLST.REC.ACL (from PSVC/COMP) TRMS.REC.ACL (from SSVC/COMP)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	12USOTEXT (NPA-NXX-XXXX)
TN:	Y
Source:	
Notes:	New for 1.9.

Name:	NTER
Full Name:	Non-Hunting Terminal
Description:	Identifies a non-hunt terminal in a multiline hunt or non-hunt group.
Input:	HML.REC.ACL SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From HML FID.
Notes:	Changed for 1.6.5. Sent to MAS for all work orders (a "short form" tag).

Name:	NTF
Full Name:	Notification Class of Service
Description:	An incoming X.25 virtual call may be terminated to the ISDN packet bearer service by the switch initiating a B channel or logical link on the D channel using Q.931 procedures on the D channel.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	NT1
Full Name:	Network Termination Type
Description:	Indicates the type of line card that should be assigned, overriding the normal NT1 type assignment.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT (3-6)
TN:	N
Source:	
Notes:	New for 2.0.

Name:	NUI
Full Name:	Network User Identification
Description:	Indicates the Network User Identification capabilities provided for a subscriber.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS, TL1
Multiple:	N
Short/Long:	S
Characters:	5-8A
TN:	N
Source:	
Notes:	IC Type changed for 2.5.1

Name:	NUMC
Full Name:	Number of Call Appearances
Description:	
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	1-2N
TN:	N
Source:	From KEY FID.
Notes:	New for 1.6.5.

Name:	**NUPB**
Full Name:	Nailed Up Packet Mode Data B-Channel Number
Description:	Indicates the nailed up B-channels available to a Directory Number (DN) for packet mode data.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	1N
TN:	N
Source:	
Notes:	New for 2.0.

Name:	**NWI**
Full Name:	Network Element Work Instruction
Description:	NWI network element work instruction (PLACE, REMOVE, REUSE, LEAVE).
Input:	SWITCH system creates
Storage:	Derived
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	n/a
Multiple:	N
Short/Long:	S
Characters:	1-6 A
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**OBS**
Full Name:	Automatic Call Distribution (ACD) Agent Observe
Description:	The supervisor's ability to observe calls presented on the INCALLS key of any agent within the same ACD group.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	Y (if "Flexible Observe - DN" option is chosen)
Source:	
Notes:	New for 1.6.5.

Name:	**OCR**
Full Name:	Order Coordination Required
Description:	Identifies condition when orders need to be coordinated as set manually in COSMOS.
Input:	SWITCH system derives.
Storage:	n/a
TRM Output:	TRMC.REC.ACL.OE TLST.REC.ACL.OE TRMS.REC.ACL.OE
Tag Usage:	
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	OCR=Y will be returned only when a FDT (frame due date) exists. Only applies to Service Orders, i.e., (does not apply to Work Orders).

Name:	**ODBAND**
Full Name:	On-Demand B Channel Bands
Description:	Indicates the band level assigned to each On-Demand B (ODB) channel.
Input:	CAR.REC.ACL.CEC SYNCSVC.REC.ACL.DSGN (Used for validation; not stored)
Storage:	PSVC/DSGN (from CAR.REC.ACL.CEC)
TRM Output:	TRMC.REC.ACL (from PSVC/DSGN) TLST.REC.ACL (from PSVC/DSGN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	L
Characters:	USOTEXT (numeric plus separators)
TN:	N
Source:	From ODBU FID.
Notes:	New for 1.6.5.

Name:	**ODBR**
Full Name:	On-Demand B Channel Restrictions
Description:	Indicates the number of B-channels and their restrictions per call type per DN.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT (5-8)
TN:	N
Source:	From ODBR FID.
Notes:	New for 1.6.5.

Name:	**ODBRQ**
Full Name:	Quantity of On Demand B-Channels
Description:	Indicates the number of Integrated Services Digital Network (ISDN) on demand B-channels that can simultaneously be engaged in calls for a directory number (DN).
Input:	SDR.REC.ACL.SEC SYNCSVC.REC.ACL.DSGN
Storage:	SSVC/DSGN (from SDR.REC.ACL.SEC)
TRM Output:	TRMS.REC.ACL (from SSVC/DSGN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	5ESS, TL1
Multiple:	N
Short/Long:	S
Characters:	1N
TN:	N
Source:	From ODBR FID.
Notes:	Changed for 1.7. Changed for 2.0 (numeric character set). SWITCH system processing done for 5ESS only.

Name:	**ODBRT**
Full Name:	On Demand B-Channels Type and Quantity
Description:	Indicates the number of Integrated Services Digital Network (ISDN) on demand B-channels that can simultaneously be engaged in calls for a directory number (DN).
Input:	SDR.REC.ACL.SEC SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL.SEC)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	1-11USOTEXT
TN:	N
Source:	From ODBR FID.
Notes:	New for 1.7.

Name:	**ODBU**
Full Name:	On-Demand B POEs Required
Description:	Indicates the total quantity of On-Demand B (ODB) channel packet services to be provisioned on a Basic Rate Access DSL and the band level assigned to each ODB service.
Input:	CAR.REC.ACL.CEC SYNCSVC.REC.ACL.DSGN (Used for validation; not stored)
Storage:	PSVC/DSGN (from CAR.REC.ACL.CEC)
TRM Output:	TRMC.REC.ACL (from PSVC/DSGN) TLST.REC.ACL (from PSVC/DSGN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From ODBU FID.
Notes:	New for 1.6.5.

Name:	**ODN**
Full Name:	Line Overflow to Directory Number
Description:	Identifies the directory number on a DMS switch to which line hunting overflows. USO only requires an entry of 4-8 numeric characters.
Input:	HML.REC.ACL SCH.REC.ACL CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(HML)/TRNSL (from HML.REC.ACL) GRPBOD(SCH)/TRNSL (from SCH.REC.ACL) PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	THML.REC.ACL (from GRPBOD(HML)/TRNSL) TSCH.REC.ACL (from GRPBOD(SCH)/TRNSL) TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	12-14N
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	**OE**
Full Name:	Originating Equipment
Description:	Identification of the switch port.
Input:	SWITCH system assigns
Storage:	NUBOD(SWPT)/EXID
TRM Output:	TRMC.REC.ACL.OE(ID) (from NUBOD(SWPT)/EXID) TLST.REC.ACL.OE(ID) (from NUBOD(SWPT)/EXID) TRMS.REC.ACL.OE(ID) (from NUBOD(SWPT)/EXID)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	

Name:	**OEDN**
Full Name:	Originating Equipment Directory Numbers
Description:	Indicates the Directory Numbers which have been assigned to the Originating Equipment for this ISDN BRI.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	7-10 USOTEXT
TN:	Y
Source:	
Notes:	New for 2.5.

Name:	**OER**
Full Name:	Originating Equipment Reference
Description:	Identifies the originating equipment reference associated with the circuit.
Input:	SWITCH system assigns
Storage:	NUBOD(SWPT)/EXID
TRM Output:	TRMS.REC.ACL.OE (from NUBOD(SWPT)/EXID)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	Sent to MAS for all work orders (a "short form" tag).

Name:	**OMI**
Full Name:	Operations Measurement Index
Description:	Indicates the operations measurement index number assigned in DMS-100 offices for remote call forwarding.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**ONETOUCH**
Full Name:	One Touch
Description:	Identifies a terminal option attribute name in a 5ESS switcher.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y" | 1A
TN:	N
Source:	From TTYP FID (5ESS).
Notes:	New for 1.6.5.

Name:	**ORM**
Full Name:	Originating Mark One
Description:	Indicates the digit translation process for routing administration of a line served by a Siemens switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**OSVC**
Full Name:	Other Service
Description:	Indicates that there is another service on a suspend/sublet circuit.
Input:	SWITCH system derives.
Storage:	See Notes.
TRM Output:	n/a
Tag Usage:	CC XCN
IC Type:	n/a
Multiple:	N
Short/Long:	S
Characters:	"Y" | "C"
TN:	N
Source:	
Notes:	New for 1.8. Used by NSDB to help decide what to send to OPS/INE. "Y" means no XCN work required. "N" means XCN work required.

Name:	**OTHR**
Full Name:	Otherwise Attribute
Description:	Indicates the "otherwise attribute" when the calling and forwarding DNs are checked to determine whether they are in the same customer group and may be delivered to the SMDI.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	5-6A
TN:	N
Source:	From SCDN FID.
Notes:	IC Type and Characters revised for 2.5. Se also CRIT, RESDIR, RESINDIR, IBNDIR, and IBNINDIR.

Name:	**OTN**
Full Name:	Out Telephone Number
Description:	
Input:	PKT
Storage:	xfile
TRM Output:	TMIS
Tag Usage:	n/a
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	8-12Numeric
TN:	Y
Source:	
Notes:	

Name:	**OVL**
Full Name:	Overlap Outpulsing
Description:	Indicates that Feature Group D service is equipped with the overlap outpulsing feature. Indicates the Automatic Call Distribution Group number and ACD subgroup.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**PACD**
Full Name:	Provision A Card
Description:	Indicates an "A" type card should be assigned overriding the normal card assignment.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL))
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	1-2A
TN:	N
Source:	
Notes:	New for 2.0.

Name:	**PARO**
Full Name:	Parity Options
Description:	Indicates the parity options for asynchronous access lines on a Public Packet Switched Network (PPSN) or Data Over Voice Service.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From PARO FID.
Notes:	New for 1.6.5.

Name:	**PAROL**
Full Name:	Parity Options
Description:	Indicates the parity options for asynchronous access lines on a Public Packet Switched Network (PPSN) or Data Over Voice Service.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From PARO FID.
Notes:	New for 1.6.5.

Name:	**PASC**
Full Name:	Personal Communications Access Service - C Interface
Description:	Indicates for the 5E10 that the user on a DSL has the ISDN/PCS interworking type of personal communications access service via AIN.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	4A
TN:	N
Source:	
Notes:	New for 1.9.

Name:	**PBCD**
Full Name:	Provision B Card
Description:	Indicates that a "B" type card should be assigned overriding the normal card assignment.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	GP
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**PBG**
Full Name:	Packet Switching Data Business Group Number
Description:	Indicates a business grouping that distinguishes intra versus inter-grouping ISDN packet calls on the AMA billing records.
Input:	HML.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(HML)/TRNSL (from HML.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	THML.REC.ACL (from GRPBOD(HML)/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**PCA**
Full Name:	Privacy Change Allowed Option
Description:	Identifies the Privacy Change Allowed Option for a multibutton service on an ISDN line served by a TL1 switch.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	"Y" or "N"
TN:	N
Source:	From TTYT FID (TL1).
Notes:	New for 1.6.5.

Name:	**PCB**
Full Name:	Packet Network Calling Options
Description:	Indicates the network call options available for Asynchronous X.25 and X.75 access lines in a Public Packet Switched Network (PPSN) or packet service on a stored program controlled switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	1-67 USOTEXT
TN:	N
Source:	
Notes:	IC Type and Characters changed for 2.5.1

Name:	**PCP**
Full Name:	Packet Custom Profile
Description:	Indicates a value which represents a predefined packet service profile and other discrete options.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5. IC translation Data.

Name:	**PD**
Full Name:	Last change date of the Cable Pair
Description:	
Input:	SWITCH system updates
Storage:	NUBOD(CP)
TRM Output:	n/a
Tag Usage:	BTO TAGTMART, BTO FCIF
IC Type:	n/a
Multiple:	N
Short/Long:	
Characters:	
TN:	N
Source:	
Notes:	This information is output on BTO Tapes only. It is not returned to MAS via TRM contracts.

Name:	**PDC**
Full Name:	Packet Auto/Direct Call Options
Description:	Indicates the auto/direct call options available for access lines in a Public Packet Switching Network (PPSN), or the TL1 ISDN Direct Call Options.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	N
Short/Long:	L
Characters:	12-47AN
TN:	Y
Source:	
Notes:	New for 1.8.

Name:	**PDD**
Full Name:	Packet Mode Data on D-Channel
Description:	Indicates the switch should offer terminating packet mode data calls, incoming to the indicated DN (Directory Number), on the D-Channel.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	"Y"| "N"
TN:	N
Source:	
Notes:	New for 1.8.Name

Name :	PFEA
Full Name :	Power Feature
Description :	Indicates whether the user of a Meridian™ business set with display is allowed to add, change, or delete features and feature key assignments or the name associated with his/her directory number and network.
Input :	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage :	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output :	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage :	BTO TAGTMART, BTO FCIF, IC translation
IC Type :	DMS
Multiple :	N
Short/Long :	S
Characters :	4-18A
TN :	N
Source :	
Notes :	New for 3.0

Name:	PFG
Full Name:	Private Facilities
Description:	Identifies the Private Facilities Group Name assigned to a station line in a 5ESS office.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	PFX
Full Name:	Prefix - Call Forwarding
Description:	Indicates whether or not the switch is to append a prefix digit to the Call Forwarding number when the customer is served by a 1AESS.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	1AESS
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	PGI
Full Name:	Packet Group Identifier
Description:	Indicates the identity of the packet group, which contains the X25 parameters, for this packet service.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	5-9AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**PGSC**
Full Name:	Pair Gain System Configuration
Description:	Indicates the configuration of the pair gain system, e.g., IDLC.
Input:	CAR.REC.ACL
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS-100
Multiple:	N
Short/Long:	S
Characters:	1A
TN:	N
Source:	
Notes:	Changed for 1.8. New for 1.7. This tag comes from LFACS, not a Service Order. This tag will be removed in a future release when this capability is handled as part of DLE.

Name:	**PGST**
Full Name:	Pair Gain System Type
Description:	Identifies the type of pair gain system from which a pair is derived.
Input:	CAR.REC.ACL
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS-100
Multiple:	N
Short/Long:	S
Characters:	3-10AN
TN:	N
Source:	
Notes:	Changed for 1.8. New for 1.7. This tag comes from LFACS, not a Service Order. This tag will be removed in a future release when this capability is handled as part of DLE.

Name:	**PHD**
Full Name:	Permanent Hold
Description:	Indicates the feature that allows a DMS-100 station user to put an active call on hold an return the handset to the cradle.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**PHI**
Full Name:	Packet Handler Interface Number
Description:	Indicates the number of signaling terminal card used as the packet handler interface for terminals with packet service on the D channel.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**PHL**
Full Name:	Packet Handler Link - ISDN
Description:	Indicates the DS1 link to the packet handler for B channel packet switched service which terminates on a Integrated Service Digital Network Digital Subscriber Line.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**PHML**
Full Name:	Hunting MultiLine Group Number (of the primary call appearance)
Description:	This FID is used when the STID of the service does not contain sufficient information (HML & TER). This can apply only to an ISDN secondary call appearance logical line.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From PHML FID.
Notes:	New for 1.6.5.

Name:	**PIC**
Full Name:	Predesignated Interexchange Carrier
Description:	Indicates the customer's selection of interexchange carrier or the explanation of why no carrier is designated. PICX FID indicates the numeric identification for the customer's choice, or no choice of an interexchange carrier.
Input:	CAR.REC.ACL SDR.REC.ACL CTX.REC.ACL.GRPATTR (inventory) SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(CTX) (from CTX.REC.ACL.GRPATTR)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic or Numeric
TN:	N
Source:	
Notes:	

Name:	**PICCH**
Full Name:	Predesignated Interexchange Carrier
Description:	Indicates the customer's selection of an Interexchange carrier or the explanation of why no carrier is designated.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	3-4 USOTEXT
TN:	N
Source:	From PIC FID
Notes:	New for 3.0

Name:	**PID**
Full Name:	Personal Identification for Remote Access
Description:	Indicates a randomly assigned personal identification number associated with remote access call forwarding or other central office features.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	

Name:	**PKG**
Full Name:	Package Name
Description:	Identifies the package name of a package USOC.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	

Name:	**PKTDNA**
Full Name:	Packet Switched Data Directory Number Appearance
Description:	Indicates the packet DN appearance identifier for a given DN on an ISDN terminal.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	1-3N
TN:	N
Source:	From ATSU FID.
Notes:	Changed for 1.8. New for 1.7.

Name:	PKTQTY
Full Name:	Packet Switched Data Quantity of Directory Number Appearances
Description:	Indicates the quantity of packet DN appearances for a given DN on an ISDN terminal.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	1-2N
TN:	N
Source:	From ATSU FID.
Notes:	Changed for 1.8. New for 1.7.

Name:	PLCC
Full Name:	Public Packet Switch Line Class Code
Description:	Identifies the originating and terminating restrictions or combinations of restrictions for a line in a Public Packet Switch Network (PPSN) or packet services on 5ESS-ISDN or TL1 type IC.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, 5ESS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	PMDS
Full Name:	Public Message Delivery Service
Description:	Indicates the service options for Public Message Delivery Service for public communications.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	PN
Full Name:	Primary Number
Description:	Identifies the primary telephone number assigned to key one of a TL1, 1/1AESS, 5ESS or DMS-100 electronic telephone set. The PN FID will appear without data when used to denote the primary line for selective ringing.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 5ESS, 1/1AESS
Multiple:	N
Short/Long:	S
Characters:	"Y" or 8-19N
TN:	Y
Source:	
Notes:	

Name:	**PNHN**
Full Name:	Packet Non Hunt Number
Description:	Identifies the non-hunting data terminal number assigned to an ISDN packet bearer service that is a member of a multiline hunt group in a Stored Program Controlled Switch.
Input:	SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.EQP
Storage:	COMPEDG between service node and DTN (comp_usage = PNHN) (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from COMPEDG)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5. This tag is also defined in the CAR.REC.ACL, HML.REC.ACL, TRMC/TLST.REC.ACL, and THML.REC.ACL aggregates in the SOAC/SWITCH Interface Specification. However, it is not expected that PNHN will be sent to SWITCH in the CAR.REC.ACL or the HML.REC.ACL. If it is, it will be ignored. PNHN will never be returned in TRMC/TLST or THML sections.

Name:	**POE**
Full Name:	Packet Originating Equipment
Description:	
Input:	SWITCH system assigns
Storage:	NUBOD(SWPT)/EXID
TRM Output:	TRMC.REC.ACL.POE(ID) (from NUBOD(SWPT)/EXID) TLST.REC.ACL.POE(ID) (from NUBOD(SWPT)/EXID) TRMS.REC.ACL.POE(ID) (from NUBOD(SWPT)/EXID)
Tag Usage:	BTO TAGTMART (POE), BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	

Name:	**POER**
Full Name:	Packet Originating Equipment Reference
Description:	Identifies the POE assigned to the pipe. This tag applies only to Basic Rate Access ISDN.
Input:	SWITCH system assigns
Storage:	NUBOD(SWPT)/EXID
TRM Output:	TRMS.REC.ACL.POE (from NUBOD(SWPT)/EXID)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	Sent to MAS for all work orders (a "short form" tag).

Name:	**POID**
Full Name:	ACD Position Identifier
Description:	Indicates that the INCALLS key will have a position identification number for management reports and the position identification number on the ACD.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT (1-14)
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**PORT**
Full Name:	Port Identification
Description:	Identifies the port number assigned for identification
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	

Name:	**PPB**
Full Name:	Permanent Packet on B Channel
Description:	Indicates that permanent packet B1 or B2 is associated with this user on a BRA DSL.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**PR**
Full Name:	Prevent Access to 10XXX Dialing
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	See PROX.

Name:	**PRAX**
Full Name:	Packet Switched Rate Area Exception
Description:	Identifies that there is a difference in rates within an exchange.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**PRC**
Full Name:	Packet Network Reverse Charging Options
Description:	Identifies the reverse charging acceptance options on a Public Packet Switching Network (PPSN), or for Packet Mode Data on an ISDN Basic Rate Interface.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	"Y"|1-3 AN
TN:	N
Source:	
Notes:	Description, Multiple and Characters changed for 2.5.1

Name:	**PRIM**
Full Name:	Primary/Secondary Switch Port Indicator (Digital Bridging)
Description:	The primary/lead or secondary/associated originating equipment for the digital bridge.
Input:	SWITCH system derives
Storage:	COMPEDG between service node and switch port (digital_brg attribute)
TRM Output:	TRMC.REC.ACL.OE (from COMPEDG) TRMC.REC.ACL.BOE (from COMPEDG) TLST.REC.ACL.OE (from COMPEDG) TLST.REC.ACL.BOE (from COMPEDG)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	Sent to MAS for all work orders (a "short form" tag).

Name:	**PRIV**
Full Name:	Privacy
Description:	Indicates that the calling party telephone number is restricted from being displayed to the called party on all calls.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" | 1A
TN:	N
Source:	
Notes:	New for 1.6.5. Changed for 1.8.

Name:	**PRK**
Full Name:	Call Park
Description:	Identifies in a TL1 or DMS-100 switch, that a station is allowed to park one call against its own telephone number.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS
Multiple:	N
Short/Long:	S
Characters:	"Y" | 5A
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**PRO**
Full Name:	Priority Originating Feature
Description:	Indicates that the priority originating feature is associated with Outgoing Trunk queueing feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**PROF**
Full Name:	Digital Subscribe Line Level Profile
Description:	Indicates the type of ISDN service to which the user has access.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From BS FID.
Notes:	New for 1.6.5.

Name:	**PROP8**
Full Name:	Multiline Variety Package (FID name)
Description:	Indicates the combination of features provided with the MVP and the Residence Service Variety Package (indicates that the MVP service is unbundled in the switch).
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From MVP FID.
Notes:	New for 1.7.

Name:	**PROX**
Full Name:	Prevent Access to 10XXX Dialing
Description:	Identifies that the customer is denied access to 10XXX dialing.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART (PR), BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	

Name:	**PRP**
Full Name:	Cable Pair Permanent Remarks
Description:	
Input:	SWITCH System Inventory
Storage:	NUBOD(CP)
TRM Output:	n/a
Tag Usage:	BTO TAGTMART, BTO FCIF
IC Type:	n/a
Multiple:	
Short/Long:	
Characters:	
TN:	N
Source:	
Notes:	This information is included on BTO Tapes only. It is not returned to MAS in TRM contracts.

Name:	**PSAP**
Full Name:	Public Safety Answering Point
Description:	Indicates PSAP options that may be assigned to a digital trunk, line, or hunt group.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	"Y" I 1-63AN
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**PSO**
Full Name:	Packet Switch Options
Description:	Identifies the arrangement of optional multiline hunt or permanent virtual circuit features associated with a Public Packet Switching Network (PPSN) Service or a permanent virtual circuit options for 5ESS-ISDN packet service.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	**PTER**
Full Name:	Hunting Terminal Number (of the primary call appearance)
Description:	Indicates the hunting terminal number. The PHML FID is required for a particular case where the STID for the service will not contain sufficient information. This applies only to an ISDN secondary appearance logical line when the primary call appearance is in HML/TER format, when the primary call appearance has no associated TN, and the PN FID data and the TLI data are identical.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From PHML FID.
Notes:	New for 1.6.5.

Name:	**PTLI**
Full Name:	Packet (DTN) Telephone Line Indicator
Description:	Indicates the pilot number of an ISDN packet multiline hunt group served by a TL1, DMS-100 or 5ESS.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) REQEDG between HML node and DTN (comp_usage = PTLI) (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL(from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from REQEDG)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 5ESS
Multiple:	N
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	**PTN**
Full Name:	Plant Test Number
Description:	Specifies the plant test number that is preassigned to a service order when the telephone number assigned to a service cannot be used for testing purposes.
Input:	CAR.REC.ACL SDR.REC.ACL
Storage:	NUBOD(TN)/EXID, comp_usage=PTN
TRM Output:	TRMC.REC.ACL (from NUBOD(TN)/EXID, comp_usage=PTN) TLST.REC.ACL (from NUBOD(TN)/EXID, comp_usage=PTN) TRMS.REC.ACL (from NUBOD(TN)/EXID, comp_usage=PTN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	

Name:	**PTW**
Full Name:	Provision Two-Wire
Description:	Indicates that the circuit is to be provisioned as 2-wire when wiring information cannot be determined from the USOC.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	GP
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.7.

Name:	**PTY**
Full Name:	Party Designation
Description:	Identifies the party position of the service.
Input:	SWITCH system derives
Storage:	ASMBOD(PSVC)
TRM Output:	TRMC.REC.ACL.OE (from ASMBOD(PSVC)) TLST.REC.ACL.OE (from ASMBOD(PSVC))
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	Sent to MAS for all work orders (a "short form" tag).

Name:	**PUL**
Full Name:	Pulsing
Description:	
Input:	CAR.REC.ACL.CEC SDR.REC.ACL.SEC SYNCSVC.REC.ACL.DSGN (Used for validation; not stored)
Storage:	PSVC/DSGN SSVC/DSGN
TRM Output:	TRMC.REC.ACL(TTC=Y) (from PSVC/DSGN) TLST.REC.ACL(TTC=Y) (from PSVC/DSGN) TRMS.REC.ACL(TTC=Y) (from SSVC/DSGN)
Tag Usage:	BTO TAGTMART (See FN for equipment features), BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	
TN:	N
Source:	
Notes:	New for 1.6.5. See FN for equipment features.

Name:	**PVPB**
Full Name:	Permanent Virtual Circuit Packet Billing Options
Description:	Indicates the billing option selected for Permanent Virtual Circuit.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	L
Characters:	17-84 USOTEXT
TN:	N
Source:	
Notes:	New for 2.5.1

Name:	**PVPO**
Full Name:	Permanent Virtual Circuit Packet Options
Description:	Indicates the packet options available for a PVC (Permanent Virtual Circuit).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	DMS, TL1
Multiple:	N
Short/Long:	L
Characters:	5-122 AN
TN:	N
Source:	
Notes:	IC Type, Short/Long and Characters changed for 2.5.1

Name:	**PVPS**
Full Name:	Permanent Virtual Circuit Maximum Packet Size
Description:	The maximum packet size for a permanent virtual circuit (PVC) packet service on an Integrated Services Digital Network (ISDN) interface.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	6-17AN
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**PVTC**
Full Name:	Permanent Virtual Circuit Throughput Class Features
Description:	The default throughput class values for a permanent virtual circuit (PVC) packet service on an Integrated Services Digital Network (ISDN) interface.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	6-18AN
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**PVWS**
Full Name:	Permanent Virtual Circuit Window Size
Description:	The permanent virtual circuit (PVC) window size for a packet service on an Integrated Services Digital Network (ISDN) interface.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	5-36AN
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**PWI**
Full Name:	Plug Work Instruction
Description:	PWI is plug work instructions (PLACE, REMOVE, REUSE, LEAVE, TLEAVE, AOD)
Input:	SWITCH system creates
Storage:	Derived
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	1-6 A
TN:	N
Source:	
Notes:	New for 1.8.

Name:	QBS
Full Name:	ACD Query Busy Station
Description:	Indicates that supervisor station has a query busy station feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" | 6A
TN:	N
Source:	From QBS FID.
Notes:	New for 1.6.5.

Name:	QBSTN
Full Name:	Query Busy Station Number
Description:	Indicates that supervisor station has a query busy station feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	Y
Source:	From QBS FID.
Notes:	New for 1.6.5.

Name:	QCK
Full Name:	Quick Conference Key Option
Description:	Indicates the Quick Conference option assigned to the station.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	QFN
Full Name:	Queue Feature Number
Description:	Indicates the queue number where the queue feature exists.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	

Name:	**QMT**
Full Name:	Queue Monitor
Description:	Indicates whether or not the CPE terminal is a DSL (Digital Subscriber Loop) monitor for multiline hunt queues.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**QP**
Full Name:	Queue Parameters
Description:	Indicates the Queue feature name and optional feature attributes to be assigned to a Multiline Hunt Group served by a 5ESS, or the queue name and optional attributes and values assigned to the queue feature which is associated with a Multiline Hunt Group served by an EWSD or with a Single Line Hunt Group served by a DMS-100.
Input:	GRP.REC.ACL HML.REC.ACL CAR.REC.ACL SDR.REC.ACL SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(SFG)/TRNSL (from GRP.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from GRPBOD(SFG)/TRNSL) TLST.REC.ACL (from GRPBOD(SFG)/TRNSL) TRMS.REC.ACL (from GRPBOD(SFG)/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	Y (sometimes)
Source:	
Notes:	New for 1.6.5. Supports WATS processing (SWITCH system release 1.5).

Name:	**QTD**
Full Name:	Query Time and Date
Description:	That an electronic business set is equipped with the Query Time and Date option for the DMS-100 switch.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y" or 1-2N
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**QTY**
Full Name:	Automatic Terminal Setup DN Appearance Quantity - ODB or DPKT
Description:	Indicates the quantity associated with an equipment or testing USOC.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From ATSU FID.
Notes:	Changed for 1.8. New for 1.6.5.

Name:	**RAG**
Full Name:	Ring Again
Description:	Identifies that a DMS-100 line is equipped with a ring again feature that allows a station user to be notified when a busy number is idle and the number is automatically redialed.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**RAX**
Full Name:	Rate Area Exception
Description:	Identifies that there is a difference in rates within an exchange.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y" or 1-2N
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**RBV**
Full Name:	Remote Busy Verify Trunk Group Number
Description:	The ISDN attendant's Remote Busy Verify Trunk Group Number (RBV TGN) in a 5ESS switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**RCU**
Full Name:	Recent Change USOC
Description:	Identifies the USOC to determine the ESS line class code. It is the assignable line USOC or, if an assignable USOC does not appear on the service order, it is the class of service USOC.
Input:	SWITCH system derives Data Dictionary (Centrex RCU table)
Storage:	
TRM Output:	TRMC.REC.ACL (from AU on PSVC/DSGN) (see Notes) TLST.REC.ACL (from AU on PSVC/DSGN) (see Notes) TRMS.REC.ACL (from AU on SSVC/DSGN) (see Notes)
Tag Usage:	BTO TAGTMART (US), BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	RCU is derived from the AU value, if present for the service, else from the CS value. If the *rcu-derive-from-LCC* parameter in the WC Parameter Table is set to "Y", the LCC value from the PSVC/TRNSL or SSVC/TRNSL is output behind the RCU tag for TRMC/TLST/TRMS. Centrex groups are created in the SWITCH system via inventory. Some default translation data for a Centrex group is defined in SWITCH system reference data, in the Centrex Recent Change USOC Table. The RCU Table can be created for an IC type, IC id or individual group instance. Sent to MAS for all work orders (a "short form" tag).

Name:	**RCYC**
Full Name:	Ringing Cycle
Description:	Identifies the ringing cycle option selected by the customer for call forwarding in a TL1, DMS-100, 1/1AESS or 5ESS office.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 1/1AESS,5ESS
Multiple:	N
Short/Long:	S
Characters:	1-2Numeric
TN:	N
Source:	From MVP FID.
Notes:	IC translation Data.

Name:	**RESDIR**
Full Name:	Residential Direct Call Attribute
Description:	Indicates the "residential direct call attribute" when the calling and forwarding DNs are checked to determine whether they are in the same customer group and may be delivered to the SMDI.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	5-7 A
TN:	N
Source:	From SCDN FID.
Notes:	New for 2.5. See also CRIT, IBNDIR, IBNINDIR, OTHR, and RESINDIR.

Name:	**RESINDIR**
Full Name:	Residential Indirect Call Attribute
Description:	Indicates the "residential indirect call attribute" when the calling and forwarding DNs are checked to determine whether they are in the same customer group and may be delivered to the SMDI.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	3-7 A
TN:	N
Source:	From SCDN FID.
Notes:	New for 2.5. See also CRIT, IBNDIR, IBNINDIR, OTHR, and RESDIR.

Name:	**RK**
Full Name:	Release Key Identifier
Description:	Identifies the number for the release key on a terminal on an ISDN-like service.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**RLC**
Full Name:	Remote Location Code
Description:	Indicates the Common Language Location Identification (CLLI) code of a remote location.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**RLK**
Full Name:	Release Link
Description:	Indicates a release link feature required for provisioning of Direct Station Selection on vendor supplied Centrex consoles.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**RMB**
Full Name:	Random Make Busy Key Number
Description:	Identifies the random make busy key number and the associated multiline hunt terminals made busy by its use.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	Y (if number identifier is "TN")
Source:	
Notes:	

Name:	**RMBID**
Full Name:	Random Make Busy Key Number Identifier
Description:	
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	
Source:	From RMB FID??
Notes:	New for 1.6.5. Not sent to MAS (5-3-93 SOAC/MAS interface spec draft)

Name:	**RMCT**
Full Name:	Receive Maximum Combined Throughput
Description:	The receive rate of Maximum Combined Throughput for the 5ESS Standard ISDN packet services.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**RMID**
Full Name:	Remote Message Indicator
Description:	Indicates the subscriber has the ability to check for new messages on their Voice Messaging Service by calling the subscribed station from a remote station
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	7A
TN:	N
Source:	
Notes:	New for 3.0

Name:	**RMP**
Full Name:	Restrict Multipoint Digital Subscriber Line
Description:	Indicates that the multipoint is restricted to one active user.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**RNAM**
Full Name:	Redirecting Name Delivery
Description:	Indicates the user is subscribed to Redirecting Name Delivery, a terminating service, which provides the original called name, when available, to the called user.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	1-11AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**RND**
Full Name:	Redirecting Number Delivery Feature
Description:	Indicates whether a number should be delivered to user equipment on an incoming call.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS, TL1
Multiple:	N
Short/Long:	L
Characters:	"*RND" I USOTEXT (1-45)
TN:	N
Source:	
Notes:	Changed for 1.9 (USOTEXT char set). Changed for 1.8. Changed for 1.7.

Name:	**RNIC**
Full Name:	Routed Network Identification Code
Description:	Identifies the destination network identification code (DNIC) used for routing over a particular X.75 interface when served by an SL-10 switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	RNP
Full Name:	Ringing Pattern
Description:	Identifies the selected ringing pattern for Auto Call Back and Distinctive Ringing Services in a 5ESS, 1/1AESS and DMS-100 office.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	

Name:	RO
Full Name:	Related Order
Description:	Indicates the service order type and number of up to three related service orders that do not need to be completed with the service order being processed.
Input:	PKT
Storage:	xfile
TRM Output:	TMIS
Tag Usage:	n/a
IC Type:	n/a
Multiple:	N
Short/Long:	S
Characters:	4-14 USOTEXT
TN:	N
Source:	
Notes:	Characters revised for 2.5.

Name:	ROE
Full Name:	Remote Originating Equipment
Description:	Specifies that the assigned OE is remote.
Input:	SWITCH system assigns
Storage:	NUBOD(SWPT)/EXID
TRM Output:	TRMC.REC.ACL.OE(ID) (from NUBOD(SWPT)/EXID) TRMC.REC.ACL.BOE(ID) (from NUBOD(SWPT)/EXID) TLST.REC.ACL.OE(ID) (from NUBOD(SWPT)/EXID) TLST.REC.ACL.BOE(ID) (from NUBOD(SWPT)/EXID) TRMS.REC.ACL.OE(ID) (from NUBOD(SWPT)/EXID)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	There is also an ROE tag in the TRM sections. The value of the tag is "Y" if the identified OE is a remote OE. Sent to MAS for all work orders (a "short form" tag).

Name:	ROH
Full Name:	Inhibit Receive Off-Hook Tone
Description:	Indicates a line that does not have "receiver off-hook" tone applied in permanent signal operations.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**ROL**
Full Name:	Ring on Line
Description:	
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT (1-30)
TN:	Y (sometimes)
Source:	
Notes:	New for 1.6.5.

Name:	**RPA**
Full Name:	Repeated Alert Feature
Description:	That the subscriber's set is equipped with the DMS-100 switch Repeated Alert feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**RPOA**
Full Name:	Recognized Private Operating Agency
Description:	Indicates the customer preselection of a Recognized Private Operating Agency which supplies the transit network for X.25 and X.75 access gateways to other InterLATA/Interstate Packet Switched Networks (PPSN).
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS, TL1
Multiple:	N
Short/Long:	L
Characters:	1-30 USOTEXT
TN:	N
Source:	
Notes:	IC Type, Short/Long and Characters changed for 2.5.1

Name:	**RPOE**
Full Name:	Remote Packet Originating Equipment
Description:	Indicates a Packet Originating Equipment assignment at a remote switching unit.
Input:	SWITCH system assigns
Storage:	NUBOD(SWPT)/EXID (see notes)
TRM Output:	TRMC.REC.ACL.POE (from NUBOD(SWPT)/EXID) TLST.REC.ACL.POE (from NUBOD(SWPT)/EXID) TRMS.REC.ACL.POE (from NUBOD(SWPT)/EXID)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	The value of the RPOE tag is "Y" if the identified POE is a remote POE.

Sent to MAS for all work orders (a "short form" tag).

Name:	**RST**
Full Name:	Restoral of Denied Service
Description:	Indicates that a service that has been denied for non-payment can be restored.
Input:	CAR.REC.ACL SDR.REC.ACL
Storage:	xfile (saved input)
TRM Output:	TRMC.REC.ACL (determined from xfile) TLST.REC.ACL (determined from xfile) TRMS.REC.ACL (determined from xfile)
Tag Usage:	SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	

Name:	**RT**
Full Name:	TN Remarks
Description:	Identifies a route number to be used when traveling to the living unit to install the needed facilities.
Input:	SWITCH system inventory
Storage:	NUBOD(TN)
TRM Output:	n/a
Tag Usage:	BTO TAGTMART, BTO FCIF
IC Type:	n/a
Multiple:	
Short/Long:	
Characters:	
TN:	N
Source:	
Notes:	This information is included on BTO Tapes only. It is not returned to MAS on TRM contracts.

Name:	**RTI**
Full Name:	Route Index
Description:	Identifies the dialed number to a particular trunk group in a central office.
Input:	CTX.REC.ACL.GRPATTR CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	GRPBOD(CTX) (from CTX.REC.ACL.GRPATTR) NUBOD(TN) (from CAR.REC.ACL or SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from NUBOD(TN)) TLST.REC.ACL (from NUBOD(TN)) TRMS.REC.ACL (from NUBOD(TN))
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	Centrex groups are created in the SWITCH system via inventory. When the SWITCH system receives a provisioning request for a Centrex line, data on the order is used to provide information for the primary or secondary service.

Name:	**RTNS**
Full Name:	Reserve Telephone Number Seasonal
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL
Storage:	
TRM Output:	n/a
Tag Usage:	n/a
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	Not a translation tag.

Name:	**RTZ**
Full Name:	Rate Zone
Description:	Indicates the rate zone for proper exchange service assignment.
Input:	CAR.REC.ACL
Storage:	n/a
TRM Output:	n/a
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	3AN
TN:	N
Source:	
Notes:	New for 1.7 as an input tag from SOAC. The Rate Zone *on input from this tag* is not stored. It is used to control TN selection. Rate Zone can be found in reference data (IC NXX table) (see RZ). It is not sent to MAS on TRM contracts.

Name:	**RUF**
Full Name:	Reuse Facilities
Description:	Indicates that this circuit was assigned in COSMOS or the SWITCH system as a reuse condition.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**RUS**
Full Name:	Restricted Casual Use
Description:	Identifies a central office is restricted from casual use (i.e. usage sensitive) features.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	GP
Multiple:	N
Short/Long:	S
Characters:	"Y" | 1-5 USOTEXT
TN:	N
Source:	
Notes:	Changed for 1.9 (USOTEXT char set).

Name:	**RVC**
Full Name:	Reverse Charging Allowed
Description:	Indicates that reverse charging is allowed on a Packet Network.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" | "N"
TN:	N
Source:	From PRC FID, see also PRC, RVCAC.
Notes:	IC Type changed for 2.5.1

Name:	**RVCAC**
Full Name:	Reverse Charging Accepted
Description:	Indicates that reverse charging is accepted on a Packet Network.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" | "N"
TN:	N
Source:	From PRC FID, see also PRC, RVC.
Notes:	IC Type changed for 2.5.1

Name:	**RXA**
Full Name:	Remote Administration System
Description:	RXA remote administration system responsible for updating the network element
Input:	SWITCH system creates
Storage:	Derived from reference data table *rxa derivation*.
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	n/a
Multiple:	N
Short/Long:	S
Characters:	1A
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**RXAI**
Full Name:	Remote Administration, ILAS
Description:	RXAI = Y indicates that ILAS is involved in the remote administration of this circuit
Input:	SWITCH system creates
Storage:	Derived from reference data table *rxa derivation*.
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	n/a
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**RXAO**
Full Name:	Remote Administration, NSDB,OPS/INE
Description:	RAXO = Y indicates that NSDB should receive this information to forward to OPS/INE, which is involved in the remote administration of this circuit
Input:	SWITCH system creates
Storage:	Derived from reference data table *rxa derivation*.
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	n/a
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**RZ**
Full Name:	Rate Zone
Description:	Identifies the geographic area in terms of subscriber loop resistance limits. These limits are used to determine the CO equipment necessary to meet supervision, transmission, and signaling requirements. The following code sets are known in LFACS although others may be specified - 8=0-865Ω, 12=866-1200Ω, 13=1201-1300Ω, 16=1301-1600Ω, 18=1601-1800Ω, 28=1801-2800Ω, 36=2801-3600Ω.
Input:	n/a
Storage:	SWITCH System Reference Data (IC NXX table)
TRM Output:	n/a
Tag Usage:	BTO TAGTMART
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	This information is returned on BTO Tapes only. It is not sent to MAS on TRM contracts. (See RTZ).

Name:	SBN
Full Name:	Special Billing Number
Description:	Indicates a special billing number not specifically associated with a TN.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	8-12N
TN:	Y
Source:	
Notes:	New for 1.9.
Name:	SC
Full Name:	Suspension of Service
Short/Long:	S
Characters:	"Y" or "T" or "O"
TN:	N
Source:	
Notes:	See SUS.

Name:	SCAI
Full Name:	Switch Computer Application Interface
Description:	That the ISDN Logical Terminal subscribes to a switch-host communications link using Q.931 signaling.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	SCF
Full Name:	Speed Calling Feature Name
Description:	Indicates the Speed Calling feature name and optional feature attributes to be assigned to a line in a TL1, or 5ESS office (5E6 or later version).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, 5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	Y (sometimes)
Source:	
Notes:	New for 1.6.5.

Name:	SCG
Full Name:	Speed Calling Group
Description:	Identifies the speed calling group number and may also indicate the line number to which a No. 1/1AESS, No. 2ESS, No. 5ESS Centrex-CO, DMS-10 or DMS-100 station line belongs. It also may indicate toll denial application.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMX, DMS, 5ESS,2ESS,1/1AESS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N (unless used as a speed call group name)
Source:	
Notes:	

Name:	SCG1
Full Name:	Speed Calling Group Single Digit
Description:	Indicates the speed calling group number for single digit speed calling in the 2/2BESS switch and may also indicate group members line numbers. This is a cross referenced FID.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	SCH
Full Name:	Series Completion Hunt Group Pilot TN
Description:	
Input:	SDR.REC.ACL [as TN]
Storage:	GRPBOD(SCH)/TRNSL [TN]
TRM Output:	TSCH.REC.ACL(SER) (from GRPBOD(SCH)/TRNSL) TRMC.REC.ACL (from NUBOD(TN)/EXID, comp_usage=TN) TLST.REC.ACL (from NUBOD(TN)/EXID, comp_usage=TN) TRMS.REC.ACL (from NUBOD(TN)/EXID, comp_usage=TN)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	Changed for 1.8. The hunt sequence is returned in the *TSCH section via the SER tag (See TN). This tag is used to provide the *pilot TN only* on BTO tapes.

Name:	SCL1
Full Name:	Speed Calling List One
Description:	Indicates the Speed Calling List, relating a single dialed digit to an assigned telephone number.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	Numeric
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	SCL2
Full Name:	Speed Calling List Two
Description:	Indicates the Speed Calling List, relating a two digit dialed number to an assigned telephone number.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	Numeric
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	SCLF
Full Name:	Service Call Forwarding
Description:	Indicates that the Selective Call Forwarding feature is assigned to a subscriber in a Stored Program Controlled Switch (SPCS).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	"FR" | 2-61AN
TN:	Y (sometimes)
Source:	
Notes:	New for 1.6.5.

Name:	SCN2
Full Name:	Screening Number List Two
Description:	Indicates the CLASS screening number list 2 which is assigned to a CLASS features second DN (Directory Number).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	9-17AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	SCN3
Full Name:	Screening Number List Three
Description:	Indicates the CLASS screening number list 3 which is assigned to a CLASS features third DN (Directory Number).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	9-17AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	SCN4
Full Name:	Screening Number List Four
Description:	Indicates the CLASS screening number list 4 which is assigned to a CLASS features fourth DN (Directory Number).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	TL1
Multiple:	Y
Short/Long:	S
Characters:	9-17AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	SCND
Full Name:	Secondary Calling Name Display - AIN
Description:	Indicates the calling name, other than the listed named, that is to be delivered to a remote display terminal via an Advanced Intelligent Network (AIN) element.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	SCNL
Full Name:	Screening Number List
Description:	Indicates the CLASS or Advanced Intelligent Network (AIN) screening number lists that are assigned to a directory number.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	Y
Short/Long:	L
Characters:	USOTEXT (4-32)
TN:	Y
Source:	
Notes:	New for 1.6.5. Changed for 1.9 (Long data format).

Name:	SCPA
Full Name:	Service Control Point Allowed
Description:	Indicates that the ISDN End User is allowed to receive messages from the Advanced Intelligent Network (AIN) Service Control Point (SCP).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 2.0.

Name:	SCRJ
Full Name:	Selective Call Rejection
Description:	Indicates the Selective Call Rejection feature is assigned to a subscriber.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	2A
TN:	N
Source:	
Notes:	New for 1.9.

Name:	SCTN
Full Name:	Screening Telephone Number
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	From STN FID.
Notes:	See STN.

Name:	SCX
Full Name:	Screening Index
Description:	Identifies the secondary index into the 5ESS line class code table for outwats service.
Input:	GRP.REC.ACL CAR.REC.ACL SDR.REC.ACL SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(SFG)/TRNSL (from GRP.REC.ACL)
TRM Output:	TRMC.REC.ACL (from GRPBOD(SFG)/TRNSL) TLST.REC.ACL (from GRPBOD(SFG)/TRNSL) TRMS.REC.ACL (from GRPBOD(SFG)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5E
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5. IC translation Data.

Name:	SDSA
Full Name:	Special Delivery Service Activate/ Deactivate
Description:	Indicates that the subscribers have the ability to activate/deactivate the Special Delivery Service option on their line.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	0-8 USOTEXT
TN:	N
Source:	
Notes:	New for 2.5.1

Name:	SDSV
Full Name:	Special Delivery Service - Voice Messaging
Description:	Indicates the Special Delivery Service feature that provides the caller with the option to invoke message delivery when the called party is busy or does not answer. The actual voice message delivery is offered from the Voice Messaging System.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.9.

Name:	SEQ
Full Name:	Sequence Number
Description:	The SEQ tag represents the sequence in which the IC and CCs will be connected along the path from the F1 cable pair and the OE. If no CCs are present then the SEQ tag will not be populated.
Input:	SWITCH system creates
Storage:	Derived from analysis of the circuit. One end of the circuit is designated the terminating end and gets SEQ=1. The rest follow sequentially.
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	1-2 N
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**SER**
Full Name:	Series Telephone Number
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	From HTG FID.
Notes:	See TN. Sent to MAS for all work orders (a "short form" tag).

Name:	**SETC**
Full Name:	Copyset Option
Description:	Indicates the setmodel option name assigned to a group of directory number options to be copied to this line/LTID using that setmodel option name.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	DMS-100
Multiple:	N
Short/Long:	L
Characters:	9-40AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**SETM**
Full Name:	Setmodel
Description:	Identifies the setmodel option name assigned to a group of directory number options that may be copied to another line/ LTID using that setmodel option name.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	L
Characters:	9-40AN
TN:	N
Source:	
Notes:	New for 1.7.

Name:	**SETQ**
Full Name:	Set Query Options
Description:	Indicates the electronic business display set is equipped with the Inspect and Reason Display options.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	11-15AN
TN:	N
Source:	
Notes:	New for 1.6.5. Changed for 1.8.

Name:	SFG
Full Name:	Simulated Facility Group Identifier
Description:	Identifies the simulated/virtual facilities group identifier and may also indicate the group number that is associated with a line or register.
Input:	GRP.REC.ACL CAR.REC.ACL SDR.REC.ACL SYNCGRP.REC.CTL
Storage:	GRPBOD(SFG)/EXID (from GRP.REC.ACL)
TRM Output:	TRMC.REC.ACL (see note below) TLST.REC.ACL (see note below) TRMS.REC.ACL (see note below).
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	Note that the SOAC/SWITCH System Interface Spec (Issue 6, March 1, 1992) defines both SFG and SFGALL as 0+ appearances, which implies that these tags can have multiple occurrences. However, since these tags are not aggregated, if these tags appear multiple times, it will be impossible for the SWITCH System to correlate the SFGALL tag with the correct SFG tag for placement on the SFG group translation edge. Sent to MAS for all work orders (a "short form" tag).

Name:	SFGALL
Full Name:	Simulated Facility Group Data
Description:	
Input:	GRP.REC.ACL CAR.REC.ACL SDR.REC.ACL SYNCGRP.REC.ACL.TRANS SYNCSVC.REC.ACL.TRANS
Storage:	GRPBOD(SFG)/TRNSL (from GRP.REC.ACL) PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (see note below) TLST.REC.ACL (see note below) TRMS.REC.ACL (see note below)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5. SFGALL is returned to SOAC in TRM contracts identifying the SFG information needed by MAS. SFGALL will be populated with the value of the SFGALL tag on the translation edge of the SFG group body (GRPBOD(SFG)/TRNSL), if present. If this tag is not found (either not available following conversion or translation transformation), then the value returned behind the SFGALL tag will be the external SFG id (GRPBOD(SFG)/EXID). Note that the SOAC/SWITCH System Interface Spec (Issue 6, March 1, 1992) defines both SFG and SFGALL as 0+ appearances, which implies that these tags can have multiple occurrences. However, since these tags are not aggregated, if these tags appear multiple times, it will be impossible for the SWITCH System to correlate the SFGALL tag with the correct SFG tag for placement on the SFG group translation edge. Sent to MAS for all work orders (a "short form" tag).

Name:	SH1
Full Name:	Share Speed Call List One
Description:	Identifies the telephone number of a line whose 1 digit speed calling list is to be shared with another line.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	

Name:	SH2
Full Name:	Share Speed Call List Two
Description:	Indicates the telephone number of a line whose 2-digit speed calling list is to be shared with another line.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	

Name:	SHA
Full Name:	Stop Hunt Application
Description:	Identifies the Stop Hunt Application Sets and the controlling terminal for ISDN multiline hunt group terminals (TER).
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	L
Characters:	8-27AN
TN:	N
Source:	
Notes:	New for 1.7.

Name:	SHR
Full Name:	Shared Voice Dialing Service Directory
Description:	Identifies the primary telephone number of the voice dialing service directory that may be shared between two or more telephone numbers.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	SHU
Full Name:	Stop Hunting
Description:	Indicates that the station terminal number or telephone number is equipped with the Stop Hunt feature and identifies the key number.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	1-20 USOTEXT
TN:	Y (sometimes)
Source:	
Notes:	Characters changed for 3.0

Name:	SHUID
Full Name:	Stop Hunting Identifier
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	From SHU FID??
Notes:	New for 1.6.5. Not sent to MAS (5-3-93 SOAC/MAS interface spec draft)

Name:	SIG
Full Name:	Signaling
Description:	Indicates the OEC signaling identifying the type of signaling used on some switched services.
Input:	CAR.REC.ACL.CEC SDR.REC.ACL.SEC SYNCSVC.REC.ACL.DSGN (Used for validation; not stored)
Storage:	PSVC/DSGN (from CAR.REC.ACL.CEC) SSVC/DSGN (from SDR.REC.ACL.SEC)
TRM Output:	TRMC.REC.ACL(GSTILPS) (from PSVC/DSGN) TLST.REC.ACL(GSTILPS) (from PSVC/DSGN) TRMS.REC.ACL(GSTILPS) (from SSVC/DSGN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	
TN:	N
Source:	
Notes:	New for 1.6.5. BTO TAGTMART (See FT for equipment features), IC translation Output in TRM as GST=Y or LPS=Y based on value of SIG.

Name:	SIGD
Full Name:	Remote Call Forwarding Signaling Enhancement
Description:	Indicates that the Remote Call Forwarding (RCF) Directory Number (DN) and the reason for redirection will be forwarded when the RCF DN forwards calls to a remote directory number.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y" 1 1A
TN:	N
Source:	
Notes:	Changed for 1.8. New for 1.7.

Name:	**SITE**
Full Name:	Site
Description:	This is an additional identifier used to differentiate between a DMS host and remote switching unit. This is needed because the exchange keys used for host/remote situations are not unique in the DMS switches. This data is also transmitted to MAS.
Input:	UNIT.REC.ACL.NTU.UATTR.SITEID
Storage:	GRPBOD(IC)
TRM Output:	TRMC.REC.ACL.OE (from GRPBOD(IC)) TRMC.REC.ACL.BOE (from GRPBOD(IC)) TLST.REC.ACL.OE (from GRPBOD(IC)) TLST.REC.ACL.BOE (from GRPBOD(IC)) TRMS.REC.ACL.OE (from GRPBOD(IC))
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	Populated via inventory transaction. Sent to MAS for all work orders (a "short form" tag).

Name:	**SLEN**
Full Name:	Screening Line Equipment Number
Description:	Identifies a screening OE associated with an STN.
Input:	GRP.REC.ACL CAR.REC.ACL SDR.REC.ACL SYNCGRP.REC.ACL.EQP
Storage:	"Requires" edge between switch port and SFG.
TRM Output:	TRMC.REC.ACL (from NUBOD(SWPT)/EXID, comp_usage=SLEN) TLST.REC.ACL (from NUBOD(SWPT)/EXID, comp_usage=SLEN) TRMS.REC.ACL (from NUBOD(SWPT)/EXID, comp_usage=SLEN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From STN FID.
Notes:	Changed for 1.6.5. For WATS only.

Name:	**SLNG**
Full Name:	Secondary Language
Description:	Indicates that the switch recorded messages and other switch dialogue will be presented to the subscriber in the switch secondary language rather than the primary language.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	SLOT
Full Name:	SLOT aggregate
Description:	contains slot information.
Input:	SWITCH system creates
Storage:	GRPBOD(SLOT)
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	All
Multiple:	
Short/Long:	
Characters:	
TN:	
Source:	
Notes:	New for 1.8.

Name:	SLUS
Full Name:	Subscriber Line Usage Study
Description:	Indicates a subscriber Line Usage Study is in effect and a detailed AMA record is to be generated on this line.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" | 4A
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	SMCT
Full Name:	Send Maximum Combined Throughput
Description:	The send rate of maximum combined throughput for the 5ESS standard ISDN packet services.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	SMD
Full Name:	Simplified Message Desk
Description:	Indicates that a Hunt Group Line is part of a Simplified Message Desk Center.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	"Y" | 1-5A
TN:	N
Source:	
Notes:	Changed for 1.8. New for 1.7.

Name:	**SMDG**
Full Name:	Simplified Message Desk Interface Universal Call Distribution Group Parameters
Description:	Indicates the option parameters for the Simplified Message Desk interface Universal Call Distribution.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**SOR**
Full Name:	Station Originating Restriction Group
Description:	Indicates the Station Origination Restriction Group number.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	1-11AN
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**SORC**
Full Name:	Station Originating Restriction Controller
Description:	Indicates the Central Office line that is the Station Originating Restriction Controller and the group number that is being controlled.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**SP**
Full Name:	Scan Point
Description:	Indicates the scan point number in an ESS, TL1 or DMS-100 office that is associated with such services as a random make busy key, a stop hunt key, carrier group alarm circuits, group altering line busy circuits, and mobile radio circuits.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS, 5ESS, 1/1AESS
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	

Name:	**SPD**
Full Name:	Speed of Data Transmission
Description:	Identifies the speed of data transmission and line load value, e.g., Data Over Voice X.25 Service in a PPSN, ISDN B channel Packet Service, or 800 Service Direct Access to SMS.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**SPDN**
Full Name:	Semi-Permanent Access to Packet Handler Default DN
Description:	The default DN to use for each ISDN B-channel specified as having Semi-Permanent Access to the Packet Handler (SPAPH).
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	Numeric
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	**SPDNA**
Full Name:	Automatic Terminal Setup DN Appearance ID - Speech
Description:	Identifies the directory number appearance speech - Circuit Switched Voice.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From ATSU FID.
Notes:	Changed for 1.8. New for 1.6.5.

Name:	**SPID**
Full Name:	Service Profile Identifier
Description:	Indicates the Service Profile Identifier of an ISDN terminal. A SPID is present on all ISDN service orders and will provide a terminal level grouping.
Input:	SDR.REC.CTL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.CTL (from SSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	Y (sometimes)
Source:	
Notes:	New for 1.6.5. Sent to MAS for all ISDN work orders (a "short form" tag).

Name:	**SPPH**
Full Name:	Semi-Permanent Access to Packet Handler Function for the B-channel
Description:	Indicates the B-channel which is nailed up to the Packet Handler and the XSG that services each B-channel.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	3-5N
TN:	N
Source:	
Notes:	New for 2.0.

Name:	**SPQTY**
Full Name:	Automatic Terminal Setup DN Appearance Quantity - Speech
Description:	Identifies the quantity of directory number appearance speech - circuit switched voice.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) GRPBOD(HML)/TRNSL (from HML.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	From ATSU FID.
Notes:	Changed for 1.8. New for 1.6.5.

Name:	**SRE**
Full Name:	Service Exchange Number - Packet Service
Description:	Indicates the service exchange number for packet service.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**SRT**
Full Name:	Set Up Response Time
Description:	Indicates that the response time option for 5ESS ISDN packet bearer service is to be "set up" or activated.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**SRT1**
Full Name:	Station Ring Transfer Destination 1
Description:	Indicates the first destination, defined by the TSPID (Terminal Service Profile Identifier) value, which identifies the first EKTS (Electronic Key Telephone Service) terminal that is receiving alerting for calls to this DN when Station Ring Transfer is enabled.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	**SRT2**
Full Name:	Station Ring Transfer Destination 2
Description:	Indicates the second destination, defined by the TSPID (Terminal Service Profile Identifier) value, which identifies the second EKTS (Electronic Key Telephone Service) terminal that is receiving alerting for calls to this DN when Station Ring Transfer is enabled.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	**SRT3**
Full Name:	Station Ring Transfer Destination 3
Description:	Indicates the third destination, defined by the TSPID (Terminal Service Profile Identifier) value, which identifies the third EKTS (Electronic Key Telephone Service) terminal that is receiving alerting for calls to this DN when Station Ring Transfer is enabled.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	**STB**
Full Name:	Stop Bit
Description:	Indicates the number of "Stop Bits" transmitted to indicate the end of transmitted data for an Asynchronous access line in a Public packet Switched Network (PPSN) or Data Over Voice Service.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**STH**
Full Name:	Stats 24 Hours
Description:	
Input:	HML.REC.ACL CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(HML)/TRNSL (from HML.REC.ACL) PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	THML.REC.ACL (from GRPBOD(HML)/TRNSL) TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**STID**
Full Name:	Service Termination Identifier
Description:	Identifies a service termination for an ISDN or MADN service riding on a channel on the pipe. The existence of an ISDN or MADN service USOC on a service order is the key to determining when SOAC should build an STID.
Input:	SDR.REC.ACL SYNCSVC.REC.CTL
Storage:	ASMBOD(SSVC)/EXID (from SDR.REC.ACL)
TRM Output:	TRMS.REC.CTL (from ASMBOD(SSVC)) TRMS.REC.ACL (from ASMBOD(SSVC))
Tag Usage:	BTO TAGTMART, BTO FCIF
IC Type:	All
Multiple:	N
Short/Long:	
Characters:	STID format
TN:	Y (sometimes)
Source:	
Notes:	Sent to MAS for all work orders (a "short form" tag).

Name:	**STN**
Full Name:	Screening Telephone Number
Description:	Indicates the telephone number assigned in a 1/1A ESS office to provide special call routing and/or billing arrangements.
Input:	GRP.REC.ACL (SCTN) CAR.REC.ACL (SCTN) SDR.REC.ACL (SCTN) SYNCGRP.REC.ACL.EQP (Used for validation; not stored)
Storage:	"Requires" edge between TN and SFG.
TRM Output:	TRMC.REC.ACL(STN) (from NUBOD(TN)/EXID, comp_usage=STN) TLST.REC.ACL(STN) (from NUBOD(TN)/EXID, comp_usage=STN) TRMS.REC.ACL(STN) (from NUBOD(TN)/EXID, comp_usage=STN)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	1/1AESS
Multiple:	
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	**SUBA**
Full Name:	Sub Address
Description:	Indicates the sub address reservation number, type, and optional terminating priority call types for call appearances on a terminal served by a 5ESS.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	5-56 USOTEXT
TN:	N
Source:	
Notes:	IC Type, Short Long and Characters changed for 3.0

Name:	**SUBL**
Full Name:	Sublet
Description:	Identifies the sublet telephone number associated with the circuit or that this circuit is a sublet circuit.
Input:	CAR.REC.ACL
Storage:	ASMBOD(PSVC)(SVC_IND) (from CAR.REC.ACL)
TRM Output:	n/a
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	

Name:	**SUBLET**
Full Name:	Sublet
Description:	
Input:	SWITCH system derives
Storage:	See Notes.
TRM Output:	TRMC.REC.CTL
Tag Usage:	n/a
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5. Used in the SUBLET record of a response to a sublet service order to indicate that the record is for the sublet service. See also SUSPEND and MASUS.

Name:	**SUBLOPT**
Full Name:	Sublet Option
Description:	
Input:	Data Dictionary (Sublet Option Table)
Storage:	ASMBOD(PSVC) (from Sublet Option Table)
TRM Output:	TRMC.REC.CTL (from ASMBOD(PSVC)) TLST.REC.CTL (from ASMBOD(PSVC)) TRMS.REC.CTL (from ASMBOD(PSVC))
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	
Characters:	
TN:	N
Source:	
Notes:	Note: This tag was not supported in SOAC 18.7. Sent to MAS for all work orders (a "short form" tag).

Name:	**SUPP**
Full Name:	Suppress Network Name Identification Information
Description:	Indicates that the network name identification is to be suppressed.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	L
Characters:	1-28AN
TN:	N
Source:	
Notes:	Changed for 1.7.

Name:	**SUPR**
Full Name:	ACD Supervisor Option
Description:	Indicates the ACD group identifier and the ACD supervisor subgroup of the ACD station equipped with the Supervisor option.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**SUS**
Full Name:	Suspension of Service
Description:	Indicates that a customer has requested that all or part of the service be temporarily disconnected and all equipment left in place for future restoral.
Input:	CAR.REC.ACL SDR.REC.ACL
Storage:	ASMBOD(PSVC)[*svc_ind*] (from CAR.REC.ACL) ASMBOD(SSVC) [*svc_ind*] (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from ASMBOD(PSVC) [*svc_ind*]) TLST.REC.ACL (from ASMBOD(PSVC) [*svc_ind*]) TRMS.REC.ACL (from ASMBOD(SSVC) [*svc_ind*])
Tag Usage:	BTO TAGTMART (SC), BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	"Y" or "T" or "O"
TN:	N
Source:	
Notes:	Changed for 1.6.5 (Had input from SYNCSVC.REC.ACL.TRANS). Sent to MAS for all work orders (a "short form" tag).

Name:	**SUSPEND**
Full Name:	Suspend
Description:	
Input:	SWITCH system derives
Storage:	See Notes.
TRM Output:	TRMC.REC.CTL
Tag Usage:	n/a
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5. Used in the SUSPEND record of a response to a sublet service order to indicate that the record is for the suspended service. See also SUBLET and MASUS.

Name:	**SUTN**
Full Name:	Subgroup Telephone Number
Description:	Indicates the directory number of a multiple position hunt subgroup which is assigned answering capabilities for specific Call Types.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name:	**SVCG**
Full Name:	Service Group Name
Description:	Indicates the name associated with the Service Group Option.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC Translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	1-16AN
TN:	N
Source:	
Notes:	New for 1.8.

Name:	**SVID**
Full Name:	Service Identification
Description:	Provides a secondary identification for ISDN and MADN services. There are two major types, telephone set services and packet-switched terminal services.
Input:	SDR.REC.ACL
Storage:	ASMBOD(SSVC) (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from ASMBOD(SSVC))
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	
Short/Long:	
Characters:	CTID format
TN:	Y (sometimes)
Source:	
Notes:	SVID is stored in the body from the input request. The SWITCH system does *not* process on this information. Sent to MAS for all work orders (a "short form" tag).

Name:	**TALIST**
Full Name:	Trigger Assignment List
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	USOTEXT (31-37)
TN:	N
Source:	From AIN FID.
Notes:	New for 1.6.5.

Name:	**TBO**
Full Name:	Terminating Billing Option
Description:	Indicates that an automatic message accounting (AMA) record will be created when a call terminates on the line.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	15-24AN
TN:	N
Source:	
Notes:	New for 1.7.

Name:	**TC**
Full Name:	Transfer of Calls
Description:	Identifies the telephone number(s) to which the calls to an intercepted telephone number are to be referred.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.OTHER
Storage:	NUBOD(TN) (from CAR.REC.ACL) NUBOD(TN) (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from NUBOD(TN)) TLST.REC.ACL (from NUBOD(TN)) TRMS.REC.ACL (from NUBOD(TN))
Tag Usage:	BTO TAGTMART (TRCL), BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" or "N"
TN:	N
Source:	From TC FID.
Notes:	Changed for 1.6.5. Sent to MAS for all work orders (a "short form" tag).

Name:	**TCF**
Full Name:	Throughput Class Features
Description:	Indicates the Throughput Class features assigned to a packet service on an ISDN interface.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	L
Characters:	6-34AN
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**TCGN**
Full Name:	Terminal Configuration Group Name
Description:	Indicates the terminal configuration group name.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	USOTEXT (1-87)
TN:	N
Source:	
Notes:	New for 1.6.5. Changed for 1.9 (Long data format).

Name:	**TCOS**
Full Name:	Terminal Service Profile Classes of Service
Description:	Indicates the Terminal Service Profile Classes of Service (TSPCOS) to be assigned to a Terminal Service Profile (TSP) in an EWSD switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	USOTEXT (3-8)
TN:	N
Source:	
Notes:	New for 2.0.

Name:	**TCP**
Full Name:	Transfer of Calls for a Specific Period
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL
Storage:	NUBOD(TN) (from CAR.REC.ACL or SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from NUBOD(TN)) TLST.REC.ACL (from NUBOD(TN)) TRMS.REC.ACL (from NUBOD(TN))
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT (3-10)
TN:	N
Source:	
Notes:	Used to determine aging date of a disconnect TN.

Name:	**TCTN**
Full Name:	Transfer of Calls Telephone Number
Description:	Identifies the telephone number(s) to which the calls to an intercepted telephone number are to be referred.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	GP
Multiple:	N
Short/Long:	S
Characters:	3-12N
TN:	Y
Source:	From TC FID.
Notes:	IC translation Data.

Name:	**TD**
Full Name:	Last Change Date of TN
Description:	
Input:	SWITCH system determines
Storage:	NUBOD(TN)
TRM Output:	n/a
Tag Usage:	BTO TAGTMART, BTO FCIF
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	14AN
TN:	N
Source:	
Notes:	This tag is output on BTO tapes only. It is not sent to MAS via TRM contracts.

Name:	**TDBRG**
Full Name:	Temporary Digital Bridge
Description:	
Input:	SWITCH System derives
Storage:	n/a
TRM Output:	TRMC.REC.CTL
Tag Usage:	SWITCH system processed
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	Short form. New for 1.6.5. Sent to MAS for all work orders (a "short form" tag).

Name:	**TDN**
Full Name:	Toll Calls Denied
Description:	Indicates that a subscriber line is restricted from making toll calls.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5. IC translation Data.

Name:	**TDND**
Full Name:	TRM Do Not Disturb Group
Description:	Indicates a do not disturb group in a TL1 or DMS-100 switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	TL1, DMS
Multiple:	N
Short/Long:	S
Characters:	Alphabetic or Numeric
TN:	N
Source:	From DND FID.
Notes:	New for 1.6.5. IC translation Data. SOAC converts DND to TDND to send to the SWITCH system. The SWITCH system sends TDND to SOAC, which then converts TDND to DND to send to MAS.

Name:	**TDTE**
Full Name:	Trusted Data Terminal Equipment Options
Description:	Indicates the additional X.25 features that can be provisioned on permanent packet on the ISDN B1 or B2 Channels when the data terminal equipment accessing the 5ESS switch is considered to be part of the network and not customer premise equipment.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	Y
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**TEI**
Full Name:	ISDN Terminal End Point Identifier
Description:	Indicates the customer provided identifier for a terminal on a given ISDN service.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	1-13AN
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**TER**
Full Name:	Terminal Number - Multiline Group
Description:	Indicates terminal numbers in a stored program control switch's multiline hunt and multiline non-hunt group numbers in No. 1/1A, 2, 3, and 5ESS, TL1 or DMS-100.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART (TR), BTO FCIF, IC translation
IC Type:	TL1, DMS, 1/1AESS,5ESS
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5. Sent to MAS for all work orders (a "short form" tag).

Name:	**TERL**
Full Name:	Terminal Limit
Description:	Identifies the maximum number of non-EKTS or non-MLHG terminals that can share the Terminal Service Profile (TSP) in a TL1 switch.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**TFN**
Full Name:	Throughput Class Features
Description:	Indicates that throughput class negotiation and flow control parameter negotiation are assigned to the customer.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	3-8AN
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**TFS**
Full Name:	ISDN Terminal Feature Support
Description:	Indicates the code which specifies the capabilities of an ISDN terminal or terminal adapter.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**TGID**
Full Name:	Terminal Group Name
Description:	Indicates the Terminal Group Name used to provision centrex lines in a 5ESS Office.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) RMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**TGP**
Full Name:	Trunk Group Name
Description:	Indicates the Trunk Group Number. It can be either a 1-4 numeric character identifier or a CLLI code.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**TGS**
Full Name:	Terminal Group/Station Restriction
Description:	Indicates the terminal group/station restriction feature name and optional feature attributes to be assigned to a line in a 5ESS switch.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**TIID**
Full Name:	Trigger Item Identifier
Description:	Indicates the AIN trigger that occurs when the SSP determines that it must query the SCP to continue processing a call.
Input:	CAR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS, DMS-100, TL1
Multiple:	N
Short/Long:	S
Characters:	1-11AN
TN:	N
Source:	
Notes:	New for 1.7.

Name:	**TKS**
Full Name:	Terminal Key System
Description:	Identifies a terminal option attribute name in a 5ESS switcher.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	"Y" | 1A
TN:	N
Source:	From TTYP FID (5ESS).
Notes:	New for 1.6.5.

Name:	**TLC**
Full Name:	Time and Line Charge Quotation
Description:	Indicates that the customer's line(s) or trunk(s) is(are) equipped for automated time and line charge collection and quotation systems and or optional exclusion.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" | 1-13AN
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	TLI
Full Name:	Telephone Line Identifier
Description:	Indicates the telephone number component of the primary line identifier and the pilot number of a multiline hunt.
Input:	CAR.REC.ACL SDR.REC.ACL HML.REC.ACL MLG.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL) REQEDG between HML node and TN (comp_usage = TLI) (from HML.REC.ACL) not stored (from MLG.REC.ACL)
TRM Output:	TRMC.REC.ACL (from REQEDG or PSVC/TRNSL) TLST.REC.ACL (from REQEDG or PSVC/TRNSL) TRMS.REC.ACL (from REQEDG or SSVC/TRNSL) THML.REC.ACL (from REQEDG)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation data when input via CAR and SDR RECs, SWITCH system processed data when input via GRP or HML RECs.
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	New for 1.6.5. Sent to MAS for all work orders (a "short form" tag).

Name:	TN
Full Name:	Telephone Number
Description:	Identifies the telephone number associated with the circuit as retained in the LFACS/COSMOS or the SWITCH system data bases.
Input:	SCH.REC.ACL CAR.REC.ACL SDR.REC.ACL SYNCGRP.REC.ACL.TRANS
Storage:	GRPBOD(SCH)/TRNSL (from SCH.REC.ACL) NUBOD(TN)/EXID, comp_usage=TN (from SCH.REC.ACL, CAR.REC.ACL, SDR.REC.ACL)
TRM Output:	TSCH.REC.ACL(SER) (from GRPBOD(SCH)/TRNSL) TRMC.REC.ACL (from NUBOD(TN)/EXID, comp_usage=TN) TLST.REC.ACL (from NUBOD(TN)/EXID, comp_usage=TN) TRMS.REC.ACL (from NUBOD(TN)/EXID, comp_usage=TN)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation, SWITCH system processed
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	Type(TN)
TN:	Y
Source:	
Notes:	See also SCH. Sent to MAS for all work orders (a "short form" tag).

Name:	TNNX
Full Name:	New Telephone Number
Description:	
Input:	PKT
Storage:	xfile
TRM Output:	TMIS
Tag Usage:	n/a
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	Y
Source:	
Notes:	

Name:	TOD
Full Name:	Time of Day
Description:	Identifies the time of day feature name and optional feature attributes to be assigned to a line in a 5ESS.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	L
Characters:	USOTEXT
TN:	Y (as a code list name)
Source:	
Notes:	New for 1.6.5.

Name:	TOE
Full Name:	Translation Switch Port (2-Party Switch Port)
Description:	The translations originating equipment tag is generated as the result of two-party and coin service processing in the SWITCH system.
Input:	SWITCH system assigns
Storage:	NUBOD(SWPT)/EXID
TRM Output:	TRMC.REC.ACL.OE (from NUBOD(SWPT)/EXID) TLST.REC.ACL.OE (from NUBOD(SWPT)/EXID)
Tag Usage:	BTO TAGTMART, BTO FCIF; SWITCH system processed
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	USOTEXT (12-13)
TN:	N
Source:	
Notes:	The TOE is derived during output generation for party 2 in a Siemens Two-Party circuit.

Name:	TPL
Full Name:	Trunk Pulsing
Description:	Identifies the type of trunk pulsing on DID trunks which terminate in a customer owned PBX.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	

Name :	TPTN
Full Name :	Temporary Provisioning Telephone Number
Description :	Indicates the temporary telephone number that is used in the provisioning process on cutovers from analog to Basic Rate ISDN.
Input :	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage :	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output :	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage :	BTO TAGTMART, BTO FCIF, IC translation
IC Type :	All
Multiple :	N
Short/Long :	S
Characters :	8-12 USOTEXT
TN :	Y
Source :	
Notes :	New for 3.0

Name:	TR
Full Name:	Terminal Number - Multiline Group
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	See TER.

Name:	**TRCL**
Full Name:	Transfer of Calls
Short/Long:	S
Characters:	"Y" or "N"
TN:	N
Source:	
Notes:	See TC.

Name:	**TRE**
Full Name:	Transmission Equipment
Description:	Specifies the transmission equipment that was assigned.
Input:	SWITCH system assigns
Storage:	NUBOD(TRE)/EXID
TRM Output:	TRMC.REC.ACL (from NUBOD(TRE)/EXID) TLST.REC.ACL (from NUBOD(TRE)/EXID) TRMS.REC.ACL (from NUBOD(TRE)/EXID)
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	L
Characters:	USOTEXT
TN:	N
Source:	
Notes:	Sent to MAS for all work orders (a "short form" tag).

Name:	**TRMERR**
Full Name:	DTR Translation Data Error Indicator
Description:	
Input:	SWITCH system creates
Storage:	Translation edge (of primary or secondary service, or group body): PSVC/TRNSL SSVC/TRNSL GRPBOD(HML)/TRNSL GRPBOD(SCH)/TRNSL
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) TSCH.REC.ACL (from GRPBOD(SCH)/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	This tag is created by the translation data transformation process in the event of an error condition. The value of TRMERR is the name of the translation tag that caused the error during transformation. Users are expected to correct the information prior to creating TRM output. If the tag is found on a translation edge, it will be sent to SOAC for MAS in the appropriate TRM section.

Name:	**TRMINC**
Full Name:	TRM Incomplete Indicator
Description:	
TRM Output:	
Input:	Data Dictionary (Centrex RCU Table)
Storage:	PSVC/TRNSL (from Centrex RCU Table) SSVC/TRNSL (from Centrex RCU Table)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	

Name:	**TRMINCC**
Full Name:	Translation Data Incomplete Indicator
Description:	
Input:	SWITCH system creates
Storage:	Translation edge (of primary or secondary service, or group body): PSVC/TRNSL SSVC/TRNSL GRPBOD(HML)/TRNSL GRPBOD(SCH)/TRNSL
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) TSCH.REC.ACL (from GRPBOD(SCH)/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	This tag is not being used now. In the future, this tag could be created during conversion from COSMOS. It is expected that it would be removed during the translation synch process. However, if the tag is found on any translation edge, it will be sent to SOAC for MAS in the appropriate TRM section.

Name:	**TRMMA**
Full Name:	DTR Translation Data Manual Assistance Indicator
Description:	
Input:	SWITCH system creates
Storage:	Translation edge (of primary or secondary service, or group body): PSVC/TRNSL SSVC/TRNSL GRPBOD(HML)/TRNSL GRPBOD(SCH)/TRNSL
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL) TSCH.REC.ACL (from GRPBOD(SCH)/TRNSL) THML.REC.ACL (from GRPBOD(HML)/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	This tag is created during the translation data transformation process. It indicates that the tag name which is the value of the TRMMA tag requires manual transformation. It is expected that users will correct the information prior to creating TRM output. However, if the tag is found on any translation edge, it will be sent to SOAC for MAS in the appropriate TRM section.

Name:	**TRMOC**
Full Name:	TRM Order Classification
Description:	
Input:	SWITCH system creates
Storage:	n/a
TRM Output:	TMIS
Tag Usage:	n/a
IC Type:	
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	Order classification is same as last three letters of contract name, e.g. TMC, TMD, etc. Value for Auto mode (unexpected responses) TRM from Service Orders is TMX. Sent to MAS for all work orders (a "short form" tag).

Name:	**TRUNCATE**
Full Name:	Tag Truncation Indicator
Description:	
Input:	CAR.REC.ACL SDR.REC.ACL
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	Intended to indicate a tag whose value SOAC truncated due to buffer length; not planned for implementation in SOAC 18.8.

Name:	**TSP**
Full Name:	Telecommunications Service Priority
Description:	Identifies that this circuit requires the provisioning and restoration priority subject to National Security Emergency Preparedness (NSEP) procedures. Prior to the implementation of the TSP FID, companies can alias the existing RSP (Restoration Priority) FID to TSP. Both FIDs should not appear on one service order.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.OTHER
Storage:	ASMBOD(CKT) (from CAR.REC.ACL or SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from ASMBOD(CKT)) TLST.REC.ACL (from ASMBOD(CKT)) TRMS.REC.ACL (from ASMBOD(CKT))
Tag Usage:	BTO TAGTMART, BTO FCIF, SWITCH system processed
IC Type:	All
Multiple:	
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	Changed for 1.6.5.

Name:	**TSPD**
Full Name:	Terminal Service Profile Identifier
Description:	The Terminal Service Profile Identifier associates particular physical terminals or ISDN sets in the service order to a profile (or terminal service data).
Input:	SDR.REC.ACL
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	USOTEXT (1-23)
TN:	Y (sometimes)
Source:	
Notes:	New for 1.6.5.

Name:	**TTA0022**
Full Name:	Aries 22 Key Add-on
Description:	
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From TTYD FID (DMS-100).
Notes:	New for 1.6.5. Not sent by SOAC 18.8 but sent by SOAC 18.7 and may still be in SWITCH System data base.

Name:	**TTA0200**
Full Name:	Aries Display Option
Description:	
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From TTYD FID (DMS-100).
Notes:	New for 1.6.5. Not sent by SOAC 18.8 but sent by SOAC 18.7 and may still be in SWITCH System data base.

Name:	**TTC**
Full Name:	Dual Tone Multifrequency Flag
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	See PUL.

Name:	**TTDISP**
Full Name:	Display - Business Sets
Description:	
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From TTYD FID (DMS-100).
Notes:	New for 1.6.5. Not sent by SOAC 18.8 but sent by SOAC 18.7 and may still be in SWITCH System data base.

Name:	**TTEKTS**
Full Name:	Electronic Key Telephone Set
Description:	
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From TTYD FID (DMS-100).
Notes:	New for 1.6.5. Not sent by SOAC 18.8 but sent by SOAC 18.7 and may still be in SWITCH System data base.

Name:	**TTEXT**
Full Name:	P Set Extension
Description:	
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From TTYD FID (DMS-100).
Notes:	New for 1.6.5. Not sent by SOAC 18.8 but sent by SOAC 18.7 and may still be in SWITCH System data base.

Name:	**TTM518**
Full Name:	18 Button Add-on Unit - Meridian™
Description:	
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From TTYD FID (DMS-100).
Notes:	New for 1.6.5. Not sent by SOAC 18.8 but sent by SOAC 18.7 and may still be in SWITCH System data base.

Name:	**TTM536**
Full Name:	36 Button Add-on Unit - Meridian
Description:	
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	From TTYD FID (DMS-100).
Notes:	New for 1.6.5. Not sent by SOAC 18.8 but sent by SOAC 18.7 and may still be in SWITCH System data base.

Name:	**TTP**
Full Name:	Tone Type
Description:	Indicates the selected tone type for automatic route selection in a 5ESS.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	TTYD
Full Name:	Terminal Type DMS-100 Switch
Description:	Identifies the type of terminal and its options for multibutton service on an ISDN line served by a DMS-100 switch.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	L
Characters:	2-33 USOTEXT
TN:	N
Source:	
Notes:	Characters changed for 3.0

Name:	TTYP
Full Name:	Terminal Type
Description:	Identifies the type of terminal for a multi-button service on a ISDN line served by a 5ESS.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From TTYP FID (5ESS).
Notes:	New for 1.6.5.

Name:	TWC
Full Name:	Three Way Calling
Description:	Indicates that a subscriber line has the flat rate three way calling feature or the usage sensitive three way calling feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	Y
Short/Long:	S
Characters:	"Y" | 2A
TN:	N
Source:	
Notes:	New for 1.6.5. Changed for 1.8.

Name:	TWN
Full Name:	Throughput Class and Flow Control Designation
Description:	Identifies the throughput class and flow control (including window size and packet size) subscriber designation available (for X.25 LAP, X.25 LAPB and X.75 access line service) on a Public Packet Switched Network (PPSN), or packet service on ISDN.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS, 5ESS
Multiple:	N
Short/Long:	L
Characters:	3-65 USOTEXT
TN:	N
Source:	
Notes:	Description and Characters changed for 2.5.1

Name:	**TYPEKTS**
Full Name:	Terminal Type
Description:	Identifies the type of terminal for a multi-button service on a ISDN line served by a 5ESS.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	5ESS
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	From TTYP FID (5ESS).
Notes:	New for 1.6.5.

Name:	**UCD**
Full Name:	Uniform Call Distribution
Description:	Indicates the group number assigned to an electronic PBX station line in a uniform call distribution group. An associated station line number will appear in the UCD entry following the group number on only the controlling station line. When the FID appears left-hand, it identifies the group number and the electronic PBX station line number of each line in the group.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	L
Characters:	"Y" | 1-28AN
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**UCHG**
Full Name:	Unexpected Change Notifier
Description:	
Input:	SWITCH system derives
Storage:	n/a
TRM Output:	TRMC.REC.CTL TLST.REC.CTL TRMS.REC.CTL
Tag Usage:	n/a
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"UEXP"
TN:	N
Source:	
Notes:	This tag identifies the CTIDs/STIDs for which SOAC has not built any SOAC/ MAS interface message. If present, the value is "UEXP" to indicate that this message is unexpected.

Name:	**UCPN**
Full Name:	User Provided Unscreened Calling Party Number (CPN)
Description:	Indicates that the User Provided Unscreened CPN from the Personal Communications (PCS) Network should be sent to the Emergency Service Bureau (ESB) instead of the Network Provided Number or the Default CPN.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.9.

Name:	**UCR**
Full Name:	Unidentified Call Rejection
Description:	The called directory number that will reject the incoming call when the calling directory number is marked private.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	US
Full Name:	Recent Change USOC
Short/Long:	S
Characters:	USOTEXT
TN:	N
Source:	
Notes:	See RCU

Name:	USG
Full Name:	Component Usage Value
Description:	USG component usage value for 3DS0 ISDN (non-integrated case) (B1|B2|D)
Input:	SWITCH system creates
Storage:	Derived via NEP derivation algorithm.
TRM Output:	n/a
Tag Usage:	BTO FCIF, CC XCN
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"B1" | "B2" | "D"
TN:	N
Source:	
Notes:	New for 1.8.

Name:	USID
Full Name:	User Service Identifier
Description:	Indicates the User Service Identifier value used in layer 3 protocol in a TL1 switch.
Input:	SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	TL1
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	UUS
Full Name:	User to User Signaling
Description:	Indicates the type of delivery of user to user signaling available on an ISDN bearer service.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Alphabetic
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	UUT
Full Name:	User to User Signaling Transfer
Description:	Indicates that the switch should accept and transfer user to user information from the user equipment on the interface during call origination.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	"Y" | 1-11AN
TN:	N
Source:	
Notes:	New for 1.6.5.

Name:	**VERS**
Full Name:	Version Issue
Description:	Indicates the version and issue of the protocol by the terminals in the DMS-100 GSF architecture.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	1N
TN:	N
Source:	
Notes:	New for 2.0.

Name:	**VMAN**
Full Name:	Voice Message Assistance Number
Description:	Identifies the telephone number used to access operator like services provided by an enhanced service provider.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	All
Multiple:	N
Short/Long:	S
Characters:	Numeric
TN:	Y
Source:	
Notes:	New for 1.6.5.

Name: WICL
Full Name: Enhance WATS Interexchange Carrier
Description: Indicates the WATS Interexchange Carrier and band set for Enhanced WATS service.
Input: CAR.REC.ACL
SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: PSVC/TRNSL (from CAR.REC.ACL)
SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMC.REC.ACL (from PSVC/TRNSL)
TLST.REC.ACL (from PSVC/TRNSL)
TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: DMS
Multiple: N
Short/Long: L
Characters: 6-64 USOTEXT
TN: N
Source:
Notes: IC Type, Short/Long and Characters changed for 2.5.1

Name: WLN
Full Name: Warm Line Service Number
Description: Indicates the telephone number which is automatically called by the DMS-100 switch at the expiration of a predetermined time interval, when the originating customer goes off-hook.
Input: CAR.REC.ACL
SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: PSVC/TRNSL (from CAR.REC.ACL)
SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMC.REC.ACL (from PSVC/TRNSL)
TLST.REC.ACL (from PSVC/TRNSL)
TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: DMS
Multiple: Y
Short/Long: S
Characters: USOTEXT
TN: Y
Source:
Notes: New for 1.6.5.

Name: WLT
Full Name: Warm Line Timeout
Description: Indicates the number of seconds that must elapse before the DMS-100 switch sets up the connection for a warm line service number.
Input: CAR.REC.ACL
SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: PSVC/TRNSL (from CAR.REC.ACL)
SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMC.REC.ACL (from PSVC/TRNSL)
TLST.REC.ACL (from PSVC/TRNSL)
TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: DMS
Multiple: N
Short/Long: S
Characters: Numeric
TN: N
Source:
Notes: New for 1.6.5.

Name: WSPS
Full Name: Window Size and Packet Level Sequencing
Description: Indicates the incoming and outgoing window size and packet level sequencing for a packet service on an ISDN interface.
Input: SDR.REC.ACL
SYNCSVC.REC.ACL.TRANS
Storage: SSVC/TRNSL (from SDR.REC.ACL)
TRM Output: TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage: BTO TAGTMART, BTO FCIF, IC translation
IC Type: All
Multiple: Y
Short/Long: L
Characters: 5-34AN
TN: N
Source:
Notes: New for 1.6.5. Changed for 1.8.

Name:	**WUC**
Full Name:	Wake-Up Call Feature
Description:	Indicates that the subscriber's line is equipped with the DMS-100 switch Wake-up call feature.
Input:	CAR.REC.ACL SDR.REC.ACL SYNCSVC.REC.ACL.TRANS
Storage:	PSVC/TRNSL (from CAR.REC.ACL) SSVC/TRNSL (from SDR.REC.ACL)
TRM Output:	TRMC.REC.ACL (from PSVC/TRNSL) TLST.REC.ACL (from PSVC/TRNSL) TRMS.REC.ACL (from SSVC/TRNSL)
Tag Usage:	BTO TAGTMART, BTO FCIF, IC translation
IC Type:	DMS
Multiple:	N
Short/Long:	S
Characters:	"Y"
TN:	N
Source:	
Notes:	New for 1.6.5.

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14. Redundancy Management Interface & Bulk Output

The SWITCH system is the steward of certain data that is needed by Operations Process Systems (OPS). When work order contracts modify the in-service circuit database, then OPS must be informed. This process is know as redundancy management. Within Provisioning, the SWITCH system may obtain work order contracts either flow-through from other systems, such as SOAC, or through manual transactions into the SWITCH System ULBB (User Layer Building Block) or FUSA (Frame User SWITCH System Access).

SOAC is the redundancy process controller for Provisioning. There will be a SOAC/ SWITCH System Redundancy Management interface.[1] The interface will be used to pass work order information from SOAC to the SWITCH system and to pass assignment and translation information that is needed to update downstream systems from the SWITCH system to SOAC. The downstream systems that must receive data from the SWITCH system through SOAC are:

- Memory Administration System (MAS) system.
- LFACS
- LMOS
- NSDB
- TIRKS®

The SOAC/SWITCH System Redundancy Management interface is based upon the common update function for LMOS/NSDB and LFACS that exists in the current SOAC/ COSMOS interface. This mainly involves assignment data and is known as Assignment Redundancy Management (ARM).

Functionality has been added to the interface to replace the "back door" that currently exists between COSMOS and MAS for MAS to obtain translation data on certain service orders and work orders. This involves translation data and is known as Translations Redundancy Management (TRM).

"MAS" (Memory Administration System) is the generic name used throughout this section to refer to systems that provide recent change messages to the line side of intelligent controllers . The MARCH® system and RMAS are examples of two such systems, although equivalent systems may also receive the data described here. SOAC will be the intermediary system for transmission of translation data from the SWITCH system to MAS. MAS uses the translation data to create recent change messages for the line side of intelligent controllers.

1. See BR 752-106-040, "SWITCH System Contracts Directory," for details about the contents of SOAC/ SWITCH System Redundancy Management interface contracts.

See Section 9 of this document for a description of work order processing in the SWITCH system.

Data will be passed across the SOAC/SWITCH system redundancy management interface in FCIF (Flexible Computer Interface Format). The SOAC/SWITCH system redundancy management interface will use TOP/X.25 protocol on point-to-point links using Permanent Virtual Circuits.

Data redundancy management in the SWITCH system deals with two kinds of data:

1. Inventory/assignment (ARM) data owned by the SWITCH system.

   When inventory/assignment data that is owned by the SWITCH system changes, other Provisioning and OPS systems that also maintain this data must be informed. Work order contracts will be used to input the work orders into the SWITCH system. Intervening contracts in the SWITCH system may be used to process the changes before Assignment Redundancy Management (ARM) contracts are generated and sent to SOAC. SOAC then will inform the Provisioning and OPS systems that must receive the changes. This part of the interface has historically been called Common Update.

   Service order contracts are used to input company initiated orders into the SWITCH system. ARM contracts for company initiated orders are not provided for in the current release of the SWITCH system.

2. Translation (TRM) data owned by the SWITCH system.

   When work orders or company initiated orders affect services that have translation data, OPS systems that need the translation data must be informed. Work order contracts will be used to input the work orders into the SWITCH system. Intervening contracts in the SWITCH system may be used to process the changes before Translation Redundancy Management (TRM) contracts are generated and sent to SOAC. SOAC will then inform the OPS systems that must receive the changes.

   Service order contracts are used to input company initiated orders into the SWITCH system. TRM contracts for company initiated orders are generated and immediately sent to SOAC.

The following sections will discuss SWITCH system involvement in redundancy management: 14.1, "Determining SWITCH System Involvement," 14.2, "Determining ARM Involvement for Work Orders," 14.3, "ARM Contracts," 14.4, "Determining MAS Involvement for Work Order TRM," 14.5, "TRM Contracts," 14.6, "Work Order TRM Processing," 14.7, "Dial and Area Transfer TRM Processing," 14.8, "Company Initiated Order TRM Processing," and 14.9, "Dial/Area Transfer Bulk Translations Output," .

To complete the discussion of Bulk Translations Output, 14.10, "General Extracts Bulk Translations Output," is also included. General Extract BTO extracts are used to provide SWITCH system database extracts to other systems.

14.1 Determining SWITCH System Involvement

Work orders will be created in the SWITCH system in one of two ways: flow-through and manually. Flow-through creation in the SWITCH system is by FCIF contracts from SOAC across the SOAC/SWITCH System interface. SOAC will send messages to the SWITCH system for work orders on which SOAC detects a change in F1 data (the data held in common by LFACS and the SWITCH system) in a message that it received from LFACS. Manual creation of Work Orders is via SWITCH System work sessions, which create FCIF contracts from a ULBB. Company Initiated Orders (CIOs) will be created in the SWITCH system manually in a similar fashion, described in Section 7.

The SOAC/SWITCH System Redundancy Management interface is an order-based interface. Messages for a work order will be on a per transfer unit or per item basis and will contain only the items being established or withdrawn. Messages for a CIO will be for the entire order.

The SWITCH system will send Redundancy Management messages to SOAC which are used to inform downstream systems of changes to network units that are assigned by the SWITCH system, e.g.: switch ports, call reference values, and carrier controller ports.[2] The SWITCH system must send messages to SOAC for work orders created both flow-through from SOAC and manually in the SWITCH system, and for CIOs created manually in the SWITCH system. However, not all work orders or CIOs require that a Redundancy Management message be sent to SOAC. Table 14-1 shows which SWITCH system work orders or CIOs must send Redundancy Management messages to SOAC.

There are two types of Redundancy Management Contracts that the SWITCH system will use to pass redundancy management information to SOAC: Assignment Redundancy Management (ARM) contracts, and Translation Redundancy Management (TRM) contracts. ARM Contracts will be used to pass assignment information that is needed to update other Provisioning and OPS systems from the SWITCH system to SOAC (this is also known as "Common Update"). TRM Contracts will be used to pass translation information from the SWITCH system to SOAC for MAS.

14.3, "ARM Contracts," and 14.5, "TRM Contracts," describe the contracts for redundancy management.

14.2 Determining ARM Involvement for Work Orders

Assignment Redundancy Management (ARM) is the name of the processing that the SWITCH system will perform to provide assignment data to SOAC for provisioning and

2. If a change involves only the F1 cable pair and is not a TN swap, then no Redundancy Management message will be sent to SOAC because F1 cable pairs are not assigned by the SWITCH system. In such a case, ARM contracts will be originated in LFACS.

operation systems, such as LMOS and NSDB. This process is called Common Update in SOAC.

Order Type	ARM Contracts	TRM Contracts
SET, JAM	PCNLET	PRETME/CORTME
CPT	PCNCPT[a]	PRETMC/CORTMC[b]
WOLST	PCNLST	PRETML/CORTML
CTR	PCNCTR	PRETMW/CORTMW
FTR	PCNFTR	PRETMW/CORTMW
DTR	(BTO extract)	PRETMD/CORTMD and (BTO Extract)
MCT	PREMCT	PRETMM
CIO	-	PRETMO/CORTMO
TN Swap	PRESWP	-
Release TN	-	PRETMA[c]
ATR	(BTO extract)	PRETMR/CORTMR and (BTO Extract)

Table 14-1. ARM/TRM Contracts

a. ARM contracts are sent to SOAC only if the work order changes a switch port, carrier controller port, channel, call reference value, transmission equipment, miscellaneous equipment, ICE, or bridge lifter

b. TRM contracts are sent to SOAC only if the SWITCH system determined that one or more items of the work order or one or more circuits of the CIO are MAS-affecting.

c. If the client specific TN Suppression feature is activated for a wire center, a TN Aging work order is not allowed and thus, no PRETMA contracts will be generated. The activation of the TN Suppression feature means another Operation Support System (e.g., MediaCore/Customer_Number™) performs the TN administration functionality such as Release TN

The SWITCH system is required to know when assignment data for a work order must be sent to SOAC for downstream systems. The determination as to whether to send ARM data is made following the completion of item(s) in the work order. For switch port equipment transfers, jumper activity management, cable pair transfers, work order line and station transfers, and maintenance change tickets, the SWITCH system sends ARM data only if one or more of the following items have changed: switch port, carrier controller ports, transmission equipment, miscellaneous equipment, bridge lifter, or intelligent controller equipment. If the work order involves DLE facilities, the data will include cross connects and/or associations which are to be performed in the Network Element.

For telephone number swaps, the SWITCH systems sends ARM data only if the cable pair changes.

14.3 ARM Contracts

The following contracts will be used to pass inventory/assignment data that is owned by the SWITCH system to SOAC. The work orders for which these contracts will be initiated are shown in Table 14-1. Messages sent under these contracts are sent following completion of the work order.

- Switch Port Equipment Transfer ARM (PCNLET)
- Jumper Activity Management ARM (PCNLET)
- Cable Pair Transfer ARM (PCNCPT)
- Maintenance Change Ticket ARM (PCNMCT)
- Work Order Line and Station Transfer ARM (PCNLST)
- Channel/Call Reference Value Transfer ARM (PCNCTR)
- Frame Transfer ARM (PCNFTR)
- TN Swap ARM (PRESWP)

SOAC/SWITCH system interface processing under each ARM Contract is described in detail in the remainder of Section 14.3.

14.3.1 Switch Port Equipment Transfer ARM

The Switch Port Equipment Transfer ARM (PCNLET)[3] contract will be a response to the Complete Switch Port Equipment Transfer (PCNSET) Contract that will complete the switch port equipment transfer (SET) in the SWITCH system. The SWITCH system will receive the PCNSET contract from FOMS across the SWITCH system/FOMS application-to-application interface or from the ULBB.

3. Even though the SWITCH system has adopted the name "Switch Port Equipment Transfer" in place of "Line Equipment Transfer", the ARM contract name will not change. Changing the ARM contract name would involve a programming change in LMOS, at cost to the regions.

14.3.2 Jumper Activity Management ARM

The Jumper Activity Management ARM (PCNLET)[4] contract will be a response to the Complete Jumper Activity Management (PCNJAM) Contract that will complete the JAM in the SWITCH system. The SWITCH system will receive the PCNJAM contract from FOMS across the SWITCH system/FOMS application-to-application interface or from the ULBB.

14.3.3 Cable Pair Transfer ARM

On CPTs that change a line switch port, carrier controller port, channel, call reference value, transmission equipment, miscellaneous equipment, ICE, or bridge lifter, the CPT ARM (PCNCPT) contract will be a response to the Complete Cable Pair Transfer (PCNCPT) contract that will complete the CPT the SWITCH system. The SWITCH system will receive the PCNCPT contract from either SOAC or the ULBB. If a CPT does not change a line switch port, carrier controller port, channel, call reference value, transmission, miscellaneous equipment, ICE, or bridge lifter, then the PCNCPT ARM contract will not be sent to SOAC.

14.3.4 Maintenance Change Ticket ARM

On MCTs that change a line switch port, carrier controller port, channel, call reference value, transmission equipment, miscellaneous equipment, ICE, or bridge lifter, the MCT ARM (PCNMCT) contract will be a response to the MCT (PREMCT) contract that will create the MCT in the SWITCH system. The SWITCH system will receive the PREMCT contract from either SOAC or the ULBB. If an MCT does not change a line switch port, carrier controller port, channel, call reference value, transmission equipment, miscellaneous equipment, ICE, or bridge lifter, then the PCNMCT ARM contract will not be sent to SOAC.

14.3.5 Work Order Line and Station Transfer ARM

On WOLSTs that change a line switch port, carrier controller port, channel, call reference value, transmission equipment, miscellaneous equipment, ICE, or bridge lifter, the WOLST ARM (PCNLST) contract will be a response to the Complete LST (PCNLST) contract that will complete the WOLST in SWITCH system. The SWITCH system will receive the PCNLST contract from either SOAC or the ULBB. If a WOLST does not change a line switch port, carrier controller port, channel, call reference value, transmission

4. The PCNLET contract is used for SETs as well as for JAMs.

equipment, miscellaneous equipment, ICE, or bridge lifter, then the PCNLST ARM contract will not be sent to SOAC.

14.3.6 Channel/Call Reference Value Transfer ARM

The Channel/Call Reference Value Transfer ARM (PCNCTR) contract will be a response to the Complete Channel/Call Reference Value Transfer (PCNCTR) Contract that will complete the CTR in the SWITCH system. The SWITCH system will receive the PCNCTR contract from the ULBB.

14.3.7 Frame Transfer ARM

The Frame Transfer ARM (PCNFTR) contract will be a response to the Complete Frame Transfer (PCNFTR) Contract that will complete the FTR in the SWITCH system. The SWITCH system will receive the PCNFTR contract from FOMS across the SWITCH system/FOMS application-to-application interface or from the ULBB.

14.3.8 TN Swap ARM

The TN Swap ARM (PRESWP) contract will be a response to the TN Swap contract (PRESWP) that will create a TN swap in the SWITCH system. The SWITCH system will receive the PRESWP contract from the ULBB or from an external system, normally CCSS via FUSA, that meets our contract interface. A PRESWP ARM contract will be sent to SOAC when the TN swap is performed in the SWITCH system if the TN Swap involves an F1 cable pair change. If the TN Swap does not involve a F1 cable pair change, then no PRESWP ARM contract will be sent to SOAC.

14.4 Determining MAS Involvement for Work Order TRM

Translation Redundancy Management (TRM) is the name of the processing that the SWITCH system will perform to provide translation data to SOAC for MAS. For work orders and CIOs, TRM consists of determining MAS involvement and sending translation data.

The SWITCH system is required to know when translation data for a work order or a CIO must be sent to SOAC for MAS. The SWITCH system will screen all services on work orders and CIOs for current MAS involvement based on whether MAS cares about a work order (this is known as "MAS Cares", for short) and, for maintenance change tickets, cable pair transfers, non-service order line and station transfers, channel/call reference value transfers, frame transfers, and CIOs, on whether the switch port, channel, call reference value, or TN has changed ("MAS is Different", for short).

"MAS Cares" means that:

- The service affects a stored program control intelligent controller (e.g. DMS 100, 1ESS).
- The user-settable *mas involvement* table in the SWITCH system indicates that the SWITCH system should perform TRM processing for the particular work order type or CIO for the particular stored program control intelligent controller. Table 13-1 of Section 13 contains an example of this table.
- The service involves switched service (i.e., there is a line switch port, channel, call reference value and/or a TN associated with the service(s) on the work order or CIO).

The SWITCH system will keep track of whether the previous pass of a multi-pass work order was MAS-affecting. This knowledge is used in combination with "MAS Cares" and "MAS is Different" to determine the action to take on the current pass. The actions that the SWITCH system will take are the same as for provisioning requests. See Table 13-2 of Section 13 for the actions taken by the SWITCH system for different combinations of "MAS Cares", "MAS is Different", and "Involved Last Pass".

14.5 TRM Contracts

The contracts discussed in this section will be used to pass translation data from the SWITCH system to SOAC on work orders and CIOs. SOAC will then pass the translation data to MAS. The work orders and CIOs for which these contracts will be initiated are shown in Table 14-1. The client-specific TRM to an Alternate Destination feature allows TRM contracts for work orders to be routed to an alternate destination, such as a dataset or printer, as describe in Section 14.5.1.

The contracts under which translation data is sent to SOAC are called Translation Redundancy Management (TRM) contracts. The contracts are:

- Establish Maintenance Change TRM (PRETMM)
- Establish Release TN (TN Aging) TRM (PRETMA)
- Establish Switch Port Equipment Transfer TRM (PRETME)
- Correct Switch Port Equipment Transfer TRM (CORTME)
- Establish Jumper Activity Management TRM (PRETME)
- Correct Jumper Activity Management TRM (CORTME)
- Establish Cable Pair Transfer TRM (PRETMC)
- Correct Cable Pair Transfer TRM (CORTMC)

- Establish Work Order Line and Station Transfer TRM (PRETML)
- Correct Non-Service Order Line and Station Transfer TRM (CORTML)
- Establish Dial Transfer TRM (PRETMD)
- Correct Dial Transfer TRM (CORTMD)
- Establish Company Initiated Order TRM (PRETMO)
- Correct Company Initiated Order TRM (CORTMO)
- Establish Area Transfer TRM (PRETMR)
- Correct Area Transfer TRM (CORTMR)
- Establish Frame Transfer TRM (PRETMW)
- Correct Frame Transfer TRM (CORTMW)
- Establish Channel/Call Reference Value Transfer TRM (PRETMW)
- Correct Channel/Call Reference Value Transfer TRM (CORTMW)

These contracts are sent either upon request or at assignment time. Messages sent under TRM contracts will not affect generation and routing of other types of messages to SOAC (e.g. messages created under Assignment Redundancy Management contracts). It should be noted that the first message for a multi-pass work order will have a function type of "PRE" and any subsequent messages for that order will have a function type of "COR".

14.5.1 Alternate Destination

The client-specific TRM to an Alternate Destination feature allows TRM contracts for work orders to be routed to an alternate destination, such as a dataset or printer, instead of to MAS via SOAC. This provides the capability to deliver TRM messages to a specific work group which maintains the translations update for a given work order or work order type. As an example, a work group may exist which is dedicated to performing translations updates associated with DTRs. The TRM to an Alternate Destination feature provides a mechanism for routing the DTR TRM messages to that work group.

The reference data parameter, tad (for Translations Redundancy Management Alternate Destination suffix), of the wo order control table, in conjunction with the string, "SOAC", is used to specify the dest_code (destination code) for a given work order or work order type. That is, the dest_code is obtained by concatenating the string, "SOAC", with the (upper case) value of the tad parameter. As an example, if the value of the tad parameter is "a1", then the dest_code will be "SOACA1". The dest_code is a field of the oh destination table which maps to an edest (end destination) and edest_type (end destination type). For further details on the output handling tables and procedures of the SWITCH system, refer to BR 752-106-035, "SWITCH System DD/RDAS Reference Data" and BR 752-106-038, "SWITCH System Application Administration Guide - Volume 1".

14.6 Work Order TRM Processing

This section describes the TRM interface for single-pass work orders including MCTs, and Release TN (TN Aging) contracts, and for multi-pass work orders including CPTs, SETs, JAMs, CTRs, FTRs, and WOLSTs. TRM for DTRs and ATRs is described in Section 14.7 and TRM for CIOs is described in Section 14.8.

The TRM contract interface supports sending translation data for CPTs, SETs, JAMs, CTRs, FTRs, and WOLSTs following

— assignment, cancellation, or correction passes,

— rework resulting from a service order or another work order, or

— user initiated requests for TRM.

The contract interfaces described in this section are intended to support multi-pass work order *change* processing, i.e., CPTs, SETs, JAMs, CTRs, FTRs, and WOLSTs. The interfaces which support MCT and Release TN single-pass work orders are also included.

The contracts used to support TRM for multi-pass work orders are PRETM*x* and CORTM*x* where the value of *x* is determined by the type of work order being processed. Specifically, PRETMC/CORTMC contracts are sent for CPTs, PRETME/CORTME contracts are sent for SETs and JAMs, PRETMW/CORTMW contracts are sent for CTRs and FTRs, and PRETML/CORTML contracts are sent for WOLSTs. For single-pass work orders, a PRETMM contract will be sent with translation data from MCTs and a PRETMA contract will be used to send MAS the telephone numbers which are to be released as a result of Release TN order.

The multi-pass work orders (i.e., CPTs, SETs, JAMs, CTRs, FTRs, and WOLSTs) which are supported by the TRM procedures defined in this section will not change translation data associated with a circuit. These transactions will not create or disconnect circuits. The service orders which build or remove circuits will send the appropriate translation information to MAS to correctly create or remove the circuit. Therefore, in most cases it is not necessary for a multi-pass work order to send the complete translation data for a circuit to MAS. However, these multi-pass work orders may change the switch port, channel, call reference value associated with a circuit. When the switch port, channel, call reference value assignment is changed, MAS must be notified, but only needs sufficient data to execute the change. The data needed by MAS for a switch port, channel, call reference value change is less than the full translation data needed to initially construct the service.[5] Refer to Section 13.2.5 for information on the derivation of the RCU value for MAS.

In addition to changes to switch port, channel, or call reference value assignments, some work orders (i.e., CPTs, SETs, FTRs, WOLSTs, and MCTs)[6] may add, remove, or change transmission equipment (TRE) on a circuit. The addition, removal, or change of TRE is considered a MAS-affecting change. The contract definitions which support switch port/ channel/call reference value changes will also support adding, removing, or changing TRE on a circuit.

14.6.1 The TRM Interface for the TN Aging Work Order

TN Aging (or Release TN) is a single pass work order in the SWITCH system. The output to MAS from one TN Aging work order may be sent via several PRETMA contracts. Each PRETMA contract is independent of all other PRETMA contracts. Each contract contains the information needed by MAS to age multiple TNs.

If the client specific TN Suppression feature is activated for the wire center, a TN Aging work order is not allowed.

14.6.2 The TRM Interface for Maintenance Change Tickets

MCTs are implemented in the SWITCH system as single pass work orders. Each MCT whose assignment is MAS-affecting will send a PRETMM contract to MAS.

14.6.3 The TRM Interface for Multi-Pass Work Orders

TRM information may be sent to MAS following work order assignment, cancellation and correction passes. TRM messages from work orders are sent only if the assignment is found to be MAS-affecting. In addition, work order parameters exist which define when the SWITCH system will send translation data to MAS. These parameters are described in Section 14.6.5, "Control Parameters".

If output to MAS is not sent automatically by the work order, then translation data must be explicitly requested via the REQTRM or REQWO contract. The REQ TRM work session in the SWITCH system or the rqt transaction in FUSA initiates the REQTRM contract to request that translation data be sent to MAS.[7] The MARCH system will provide the capability to access FUSA, eliminating the need for the user to log out of the MARCH system and then log into FUSA.

5. A significant by-product of this fact is that TRM for switch port, channel, call reference value changes within an Intelligent Controller does not require full translation data to be stored in the SWITCH system database.

6. JAMs and CTRs will not add, remove, or change TRE to a circuit.

7. The REQ FO work session in the SWITCH system or the rqf transaction in FUSA initiates the REQWO contract to request that frame output be sent to FOMS.

The contract interface for TRM for multi-pass work orders will consist of a single PRETM*x* contract per work order followed by multiple CORTM*x* contracts.

The first MAS-affecting assignment or request for a TRM contract for an order results in the sending of a PRETM*x* contract. For any subsequent MAS-affecting assignments, cancellations, corrections, rework processing or TRM requests that result in a TRM message, the SWITCH system will send the translation information via a CORTM*x* contract. It is assumed that all previously sent TRM requests for a circuit have been sent to the IC (i.e., they are not pending in MAS), so each update is sent as a new change request to MAS.

If a circuit or group was created via a TRM contract, it is considered "MAS active". A circuit or group is also considered "MAS active" if it was evaluated for MAS output as a result of a user initiated request, but a TRM contract was not sent because it was determined that a translation update was not necessary at the time of the request.

14.6.4 MAS Involvement

Translation data is sent to MAS from work orders only for assignments which are found to be MAS involved. The *mas involvement* table is defined by order type (e.g. CPT, SET) and intelligent controller. This table is referenced by a work order to determine if MAS can process the order type for a specific intelligent controller. Once it is determined that MAS can process the order, MAS involvement for CPTs, CTRs, FTRs, and WOLSTs is based on whether or not a new switch port, channel, or call reference value has been assigned for the circuit, or if transmission equipment has been added to or removed from the circuit. SET and JAM assignments are always MAS-affecting since a new switch port is always assigned. The SWITCH system will compare the circuit before and after the assignment to determine if it is MAS-affecting. If any value which is sent to MAS in a work order TRM message (i.e., any tag in the FCIF contract definition), is changed as a result of the work order, then the assignment is considered MAS-affecting.

For all work orders, if an assignment is not MAS-affecting, no translation data is sent to MAS for that assignment. However, once translation data has been sent for a MAS-affecting assignment, cancellation of that assignment must also be sent to MAS. Following rework or correction processing, the MAS involvement check must be done again since the new assignment may have changed the previous assignment, and possibly changed information that MAS is concerned about. It may have been determined following the original assignment that it was not necessary to notify MAS, however, on subsequent rework or correction processing, the assignment may now be MAS-affecting. In this case, MAS must be notified of the translation data changes from the correction or rework. Likewise, if the original assignment is MAS-affecting, it is possible that a rework or correction pass could have changed the assignment so that it is no longer MAS-affecting. In this situation, MAS must be sent a request to restore the circuit to its original state.

14.6.5 Control Parameters

Several work order control parameters are used to determine when translation data should be sent to MAS. Default values for the parameters are set in reference data tables in the SWITCH system. Initial control parameter default values will be provided and can be changed by the BCCs to meet their business needs (see Section 9). The control parameter values can be overridden for a particular work order pass by the user via the ULBB. If no override values are entered, the control parameter value will be retrieved from the reference data tables to be used as default values.

The reference data tables which contain the control parameter default values are defined at the wire center level, which implies that the parameter default values may be different for each wire center. Within the tables, the user has the ability to define default values for each order type, that is, one set of default values may be defined for CPTs, a second set of values for SETs, a third set of values for JAMs, a fourth set of values for CTRs, a fifth set of values for FTRs, and a sixth set of default values for WOLSTs. The lowest level of granularity possible for setting parameter default values is the order level.

The control parameters available are:

1. **STD** - Send Translation Data

   This parameter is evaluated during the *initial assignment request for a transfer unit only*. Valid values for STD are Y (YES) and N (NO):

   Y: Translation data will be sent to MAS immediately following assignment if it is determined that the assignment is MAS-affecting. Also, if an assignment is not MAS-affecting following assignment, but becomes MAS-affecting as a result of a subsequent Work Order correction pass or rework processing, then the translation data for this assignment will be sent to MAS automatically following the correction or rework processing.

   N: Translation data will not be sent to MAS following assignment. Also, translation data will not be sent automatically following a MAS-affecting correction or rework unless TRM has been previously requested for this transfer unit. Instead, the translations data will be "saved" and considered for output when the REQTRM contract processor is invoked. (See 14.6.6.4, "User Initiated Requests for Work Order TRM," for details)

2. **SOS** - Send Output Simultaneously

   This parameter is evaluated during processing of requests for TRM or frame output. Valid values for SOS are Y (YES) and N (NO):

   Y: When processing a request for Frame Output, any TRM output not yet sent will also be included in a TRM contract to MAS for items within the requested range(s). When processing a request for TRM, Frame Output will also be sent to FOMS for items within the requested range(s). Since the SWITCH system automatically sends TRM updates for assignments which have previously been sent to MAS, only new TRM assignments will be sent to MAS as a result of a request for output. Likewise, the SWITCH system automatically sends frame output updates for assignments which have previously been sent to FOMS, so only those assignments which have not yet been sent to FOMS will be sent following a request for output.

N: When processing a request for frame output, no additional output will be sent to MAS. When processing a request for TRM output, no additional output will be sent to FOMS.

14.6.6 TRM Processing for Multi-Pass Work Orders

Multi-pass work orders include CPTs, SETs, JAMs, CTRs, FTRs, and WOLSTs. MAS-affecting assignments for multi-pass work orders are defined as those assignments which change switch ports, channels, call reference values, or add or remove transmission equipment. DTRs and ATRs are considered multi-pass work orders and *all* translation data must be included in the TRM contract to MAS. DTR/ATR processing and contracts are described in Section 14.7.

Multi-pass work order processing consists of sending one PRETM*x* and multiple CORTM*x* contracts to MAS for each work order in the SWITCH system database. A PRETM*x* contract will be sent following the first MAS-affecting assignment or upon request for TRM. Any translation data sent as a result of subsequent MAS-affecting assignments, cancellations, corrections, rework, or TRM requests will be sent via a CORTM*x* contract. The TRM output created from each pass is described below.

14.6.6.1 Assignment

Following assignment in the SWITCH system, translation data may be sent automatically for each assigned transfer unit which is found to be MAS-affecting. The STD (Send Translation Data) parameter is evaluated by the contract processor after each assignment pass. If STD is Y, translation data will automatically be sent for any MAS-affecting assignments within the input range via a PRETM*x* or CORTM*x* contract. If STD is N, no translation data will be sent for the transfer units which were assigned, and TRM must then be explicitly requested.

When STD is Y and a transfer unit which has been assigned is found to be MAS-affecting, the circuit associated with the transfer unit will be included in a TRM message to MAS. The primary service and all of its secondary services are included in the contract. If no messages have been previously sent to MAS for the Work Order, the contract sent is a PRETM*x* contract. All subsequent messages sent to MAS for the Work Order will be CORTM*x* contracts.

The change contract will recap the circuit's translation information before the pass (assignment pass) for which this TRM contract is being created.[8] It will also contain the new translation information, i.e., the circuit's translation data following the assignment in the SWITCH system database.

14.6.6.2 Correction/Rework

Once an assignment is pending in the SWITCH system database, the user may change the assignment through a work order correction pass.

If a service order[9] affects a circuit which is pending in a work order and is due before the work order, then the pending work order assignment will be reworked as necessary to update the assignment to reflect changes made by the service order. If the *service order* changes a customer's TN or causes a change to the switch port, channel, or call reference value, a previous PRETMx or CORTMx contract for the work order that is waiting on a MAS queue for frame coordination will error when sent to the IC, because the service order will have already changed the state of the circuit in the IC by the time that the work order messages are processed.[10] To alert the RCMAC personnel of this situation, a control tag (MAMISC) is included with the rework contract. MAS can then respond to the MAMISC tag by erroring the contract and requesting manual action before the work order recent change messages are sent to the IC.

Following rework or WO correction passes, the work order must determine if it is necessary to send a TRM contract to MAS with the new or updated translation data. Table 14-2 describes the factors involved in making this decision, such as whether or not translation data has previously been sent for an assignment.

	MAS Involved		TD Changed	TRM	New/ Updated
Case	Before COR/ Rework	After COR/ Rework	By COR/ Rework	Active?	TRM
1	Y	Y	Y	Y	Y

Table 14-2. TRM Processing Following Rework or Correction

8. This is also true for rework and correction passes, described in separate sections.
9. Inventory transactions and work orders due before the pending work order will also cause the pending work order to rework.
10. Since DTR and ATR messages are normally routed directly to the IC in "immediate mode" and are not placed in a queue, MAMISC tags are not used for TRM messages generated by these order types.

	MAS Involved		TD Changed	TRM	New/ Updated
2	Y	Y	N	Y	N
3	N	Y	-	N	N
4	N	Y	-	Y	Y
5	Y	N	-	Y	Y
6	Y	Y	-	N	N
7	Y	N	-	N	N
8	N	N	-	N	N

Table 14-2. TRM Processing Following Rework or Correction

In table 14-2, "TRM Active" is Y (yes) in the following cases:

- STD was Y during initial assignment pass for this transfer unit.
- A request for TRM has been processed for this transfer unit.

If MAS has already been sent translation data for an assignment, then the SWITCH system must determine if it is necessary to send updated translation data as a result of the correction or rework processing. MAS must be sent new translation data if the correction or rework caused a change to the information previously sent to MAS. The SWITCH system will compare the previous assignment data sent to MAS with the assignment information following the correction/rework to determine if a MAS-affecting change occurred. If a MAS-affecting change is detected (Case 1), a CORTM*x* contract will be generated for MAS with information about the modified circuit.

CORTM*x* contracts which are sent to MAS (immediately or upon request), provide updates to circuits as they appear following the last TRM message sent to MAS for that circuit.

If the Correction/Rework did not change any MAS-affecting information (Case 2), then it is not necessary to send additional information to MAS.

If no translation data has been sent to MAS for a transfer unit because its assignment was not MAS-affecting, and the assignment is changed via a correction pass or rework, the MAS involvement check must be performed again as though this were a new assignment. The original translation data, that is, the data before any assignments were made from the work order, and the translation data following the correction or rework will be compared to determine if MAS must now be notified of this assignment. If the assignment is now found to be MAS-affecting (Cases 3 and 4), output will be sent if STD was Y when this transfer unit was initially assigned, or if this transfer unit has been part of a previous TRM request (i.e., TRM is "active"). If the transfer unit has not been part of a TRM request and STD was N during initial assignment, (i.e., TRM is not "active"), then no TRM output will be sent following the rework or correction (Case 3). If TRM is "active" for the transfer unit (Case 4), the assignment will be included a PRE/CORTM*x* contract. If TRM contracts have previously been sent for the order, the new information will be sent via a CORTM*x* contract, otherwise the information is sent in a PRETM*x* contract.

If translation data has been sent for a transfer unit which is no longer MAS-affecting following a correction or rework pass (Case 5), the SWITCH system will send a CORTM*x* to MAS which will request that the circuit be returned to its original state. The CORTM*x* to make this change will be sent immediately upon processing the correction/rework which caused the assignment to no longer be MAS-affecting.

If MAS output has not been sent for a MAS-affecting assignment (Cases 6, 7, and 8), then no updates will be sent to MAS following a correction pass or rework regardless of MAS involvement due to the correction or rework.

14.6.6.3 Cancellation

When a cancellation request is processed by a work order in the SWITCH system, MAS must be notified of the cancellation only if translation data had previously been sent for a canceled transfer unit. Like other changed assignments (i.e., corrected or reworked), the canceled assignment will be sent via the CORTM*x* contract. The information needed by MAS to change the circuit back to its original (pre-Work Order) state, (effectively canceling any previous changes) must be included in the CORTM*x* contract.

If TRM has already been sent to MAS for a canceled transfer unit, the change request for the cancellation will always be sent to MAS immediately upon processing of the cancellation request in the SWITCH system. If MAS has not yet been sent any TRM requests for the canceled transfer unit, then no additional information will be sent to MAS.

14.6.6.4 User Initiated Requests for Work Order TRM

Users will be able to request that the SWITCH system send translation data to MAS via the REQTRM contract using the FUSA transactions rqt , or the SWITCH System ULBB work sessions REQ TRM[11]. The TRM request specifies the work order ID and the transfer unit(s) for which TRM is requested. A transfer unit may be identified by any network unit in the circuit, or by the work order item number.

Upon receipt of the REQTRM contract, the SWITCH system will check the status of each transfer unit for which output has been requested. Transfer units which have been assigned in the SWITCH system and are found to be MAS-affecting, but for which TRM has not been sent will be included in the TRM contract.

11. Note that translations may also be sent if the SOS parameter in the *wo order control* table is set to "Y and the FUSA rqf transaction or the REQ FO work session is executed. (See 14.7.10.1)

If MAS-affecting assignments exist in the work order within the requested range(s), the translation data for the assigned circuits will be included in either a PRETM*x* or CORTM*x* contract. If no TRM has yet been sent for this Work Order, the contract will be a PRETM*x*. If TRM has previously been sent for this Work Order, the contract will be a CORTM*x*.

14.6.6.5 FOMS and MAS Output Synchronization

During processing of a REQTRM contract (REQ TRM work session or rqt transaction in FUSA), the SOS (Send Output Simultaneously) parameter is evaluated to determine if the corresponding frame output is to be sent to FOMS. If SOS=Y, then each transfer unit within the requested range will also be considered for frame output. In other words, if SOS=Y, any assigned transfer unit within the requested range for which frame output has not been sent will be included in a PREWO contract to FOMS. If frame output for a transfer unit has already been sent to FOMS, it will not be sent again as a result of the REQTRM.

The SOS parameter is also used during processing of a REQWO request to send frame output to determine if the associated translation data should be sent to MAS. If a request is received for frame output (REQWO contract), and SOS=Y, then all of the MAS-affecting assigned transfer units within the requested range which have not yet been sent to MAS are included in a PRE/CORTM*x* contract to MAS.

14.6.7 Recap of Hunt Group Information

If translation data for work order assignments are sent to MAS, the SWITCH system must also send the hunt group information for all circuits included in that contract.

14.6.8 Sequencing of TRM Contracts

For work order TRM to function correctly it is necessary to ensure that the messages sent to MAS are processed in the proper sequence. The required processing sequence is defined as the order in which the messages were *sent* from the SWITCH system to SOAC. It is possible that the messages will not *arrive* in MAS in this sequence. If two messages that affect the same circuit arrive in MAS out of sequence, incorrect processing may occur. To avoid this, a method of defining the processing sequence of messages has been defined.

TRM will be sent to MAS from a work order as a single PRETM*x* contract followed by as many CORTM*x* contracts as necessary to send all additions and changes to the order. Since the PRETM*x* will be the first contract sent to MAS, it will always have sequence number 0001. All CORTM*x* contracts will contain sequence numbers defined by the SWITCH system. The sequence number is in the *C1 header of each contract and will be incremented by 1 for each CORTM*x* contract sent from the SWITCH system for a particular order.

14.7 Dial and Area Transfer TRM Processing

This section describes the TRM interface for DTRs and ATRs in the SWITCH system. The interface defined will support sending TRM contracts from DTRs and ATRs following

- — assignment, cancellation, or correction passes,
- — rework resulting from a service order or another work order, or
- — user initiated requests for TRM.

In addition, the TRM interface can be used to update information previously provided to the new IC via a Bulk Translations Output (BTO) extract (see Section 14.9).

The TRM contract interfaces described in this section are intended to support DTR and ATR processing. The contracts used to provide translation messages for DTRs are PRETMD and CORTMD. The contracts used to provide translation messages for ATRs are PRETMR and CORTMR.

While CPTs, SETs, JAMs, CTRs, FTRs, and WOLSTs will not change translation data associated with a circuit, DTR and ATR processing *can*. The service orders which change translation data, or build or remove circuits in the "FROM" IC will send the appropriate translation information to MAS to correctly change, create, or remove the circuit in the "FROM" IC. The DTR/ATR must provide the analogous request to change, create, or remove circuits pending in the "TO" IC as a result of the DTR/ATR. Therefore, while in most cases it is not necessary for a CPT, SET, JAM, CTR, FTR, or WOLST to send the complete translation data for a circuit/service to MAS,[12] the TRM message from a DTR or ATR must provide all translation information associated with the circuit (like service order translation messages).

Every switch port, channel, or call reference value identified in a TRM contract will include an associated *Exchange Key*. The exchange key uniquely identifies the IC. In the DMS100, a host and remote IC may have the same exchange key. In this case, the site ID is necessary to uniquely identify the IC.

The exchange key information will be used by SOAC to route the TRM message to the correct MAS system. MAS also uses the exchange key to identify the IC for which the TRM message is intended.

12. The MAS-affecting changes made by these work orders include changing the switch port, channel, and call reference value, or adding or removing transmission equipment. The contract interface for TRM for these changes must provide sufficient information for MAS to apply these changes. Thus, this interface consists of relatively short contracts as compared to the TRM contracts sent from DTRs, ATRs, CIOs or service orders.

14.7.1 DTR/ATR Processing Overview

DTRs and ATRs in the SWITCH System are multi-pass work orders. The user must *establish* the order in the SWITCH system database. Separate transactions are then available to *assign* circuits, *cancel* circuits, *complete* assigned circuits, and *correct* the translation data resulting from an assignment.

DTRs and ATRs move circuits from one intelligent controller (IC) to another intelligent controller. After the transfer, the "FROM" IC may be retired or continue to operate. The main difference between a dial and area transfer is that for an area transfer, the "FROM" and "TO" ICs are in different wire centers while for a dial transfer, the ICs are in the same wire center. In addition, because cable pairs usually define an area transfer, area transfers, unlike dial transfers, may include non-switched circuits.

14.7.2 Translation Data Processing Phases

The translations data processing for the "TO" IC is the same for DTRs and ATRs. There are four phases of a DTR/ATR which can involve translations data output. The phase the transfer is in will determine what kind of output the SWITCH system will generate.

1. **Bulk Translation Output Phase**

   In this phase, BTO FCIF, TAGTMART or TMART extracts will be generated to send the assignment and translation information to the vendor for loading into the "TO" IC. Multiple extracts may be created as necessary. During this phase, BTO extracts are the only way to provide this information to the "TO" IC (i.e., TRM contracts *cannot* be sent via the SWITCH/SOAC/MAS interface).

2. **No Output Phase**

   During this phase, the "TO" IC is in the process of being installed and cannot accept any input, via BTO extract or otherwise.

3. **Managed MAS Output Phase**

   This phase relies upon the TRM interface to pass the translation information to the "TO" IC via MAS. During this phase, only messages which have been requested will be sent to MAS. All units which have been assigned should be requested in this phase to begin automatically sending all TRM updates.[13] Note that a TRM request *must* be received for all assignments which were made during the No Output and Managed MAS Output Phases.

4. **Automatic MAS Output Phase**

13. For area transfers, TRM processing will exclude non-switched circuits. This processing is not done for dial transfers because all circuits in a dial transfer are switched.

During the "automatic" phase, all translation information for the "TO" IC will be sent to MAS automatically via the TRM interface (no user requests necessary).

There exist two parameters which are used to determine the method by which translation and assignment information will be sent to the "TO" IC. These parameters are **BOA** (Bulk Output Allowed) and **STD** (Send Translation Data).

BOA: When BOA = Y, creation of the BTO extracts for the switch vendors are allowed and TRM messages are *not* allowed.

When BOA = N, no BTO extracts can be created. TRM messages are allowed.

STD: When STD = Y and BOA = N, translation data will be *automatically* sent to MAS via TRM messages for newly assigned circuits and groups.

When STD = N and BOA = N, TRM messages can be sent upon request from the user. TRM messages will be sent automatically for those circuits that are "MAS Active".

14.7.3 Bulk Load of Translation Data to the TO IC

There are two methods by which the translation data necessary for initially creating circuits and groups in the "TO" IC can be provided. One method involves creating Bulk Translation Output (BTO) extracts which contain the translation information needed to create, modify, or delete circuits. See Section 14.9.

14.7.3.1 BTO and TRM Method

Initially, BTO extracts should be created to provide the information to the "TO" IC. This is the "Bulk Translation Output Phase" (Phase 1). During this time, as many BTO extracts as necessary can be created to add, change, or remove circuits in the "TO" IC. Once the last BTO extract has been written, the BOA parameter will be changed to "N" in SWITCH System Reference Data. This will prevent additional BTO extracts from being written. This also marks the end of the BTO Phase.

During the next phase, the "TO" IC is being updated with the last of the extract information and is then connected to MAS. During this period, no additional translation information will be sent to the IC from the SWITCH system. This is the "No Output Phase" (Phase 2).

Once the IC is connected to MAS, it is possible to send TRM messages via the SOAC/ SWITCH/MAS interface. New assignment and translation information as well as changes to the circuits created via the BTO extracts will be sent over this interface in TRM contracts.

14.7.3.2 TRM Only Method

In the second method, the operating companies choose not to create BTO extracts and the TRM interface is used to provide all the assignment and translation information to the "TO" IC. When using this alternative, the BOA parameter should always be set to "N" so that no BTO extracts are created and TRM contracts can be sent. During the initial stages of the DTR/ATR (before the "TO" IC is available through MAS), the STD parameter should also be set to "N" so that TRM messages are not automatically sent to MAS. The SWITCH System database maintains all assignment and translation information, including changes resulting from rework and correction processing. In order to send the initial assignment and translation requests to the "TO" IC through the TRM interface, a REQTRM contract must be initiated via the SWITCH system ULBB REQ TRM work session or the FUSA RQT transaction. The REQTRM contract must identify those assignments for which translation messages are to be sent to MAS.

The TRM messages sent to MAS to request that new circuits be created in the "TO" IC contain *build* requests. Upon receipt of the TRM messages, MAS can create the circuits in the "TO" IC which were assigned by the DTR/ATR in the SWITCH System. Additional TRM updates are sent to keep the circuits current in the IC following DTR/ATR correction or rework processing.

14.7.4 TRM Updates To The TO IC Following Bulk Load

Once the initial assignment and translation data has been provided via either the BTO extracts[14] or TRM build requests, the TRM interface will be used to send updated information as necessary.

All TRM updates sent to MAS are based on the assumption that any previous translation requests for the circuit (or group) have been sent to the intelligent controller. In other words, if a circuit was created or changed via a BTO extract, it is assumed that the circuit in the IC reflects the latest information included on an extract. If a circuit was created or updated via a TRM contract, then it is assumed that the circuit in the IC reflects the latest information sent to MAS in the TRM contract. Any subsequent TRM update requests will be sent as an increment to any request.

14. Multiple BTO extracts may have been created to provide this initial assignment and translation data. Also, circuits may have been *updated* via subsequent BTO extracts. This section discusses the updates sent via the TRM contract interface after *all* BTO extracts have been sent and the BOA parameter has been set to N.

If the assignment is canceled from the transfer,[15] the SWITCH system will create a TRM message which requests that the circuit be *removed* from the "TO" IC. The TRM interface following each DTR/ATR pass is fully described in the following sections.

14.7.5 TRM Output For the TO IC Following DTR/ATR Assignment

Either TRM messages or BTO extracts can be used to provide the initial translation message for circuits (and groups) in the DTR/ATR. Only those circuits and groups which have been assigned by the DTR/ATR can be sent to MAS or included on a BTO extract. During the assignment pass, the values of BOA and STD are evaluated to determine if the translation data should be sent immediately following assignment, or retained in the SWITCH system until explicitly requested.

14.7.5.1 BTO Phase

If BOA=Y, then the translation data will not be sent via a TRM message, regardless of the value of STD. During this phase, the assignments will be included on BTO extracts (TAGTMART or TMART) and sent to the vendor. The vendor will then use this information to populate or update the "TO" IC.

14.7.5.2 Managed TRM Output Phase

If BOA is N and STD is N, then no additional BTO extracts will be created. In this case, the TRM contracts for those circuits and groups assigned during this phase will not be sent automatically. The user must initiate a REQTRM contract for the assignment. As a result of the TRM request, the new assignment will be sent to MAS in a TRM contract as a *build* request.

If a circuit in the TRM message is a member of a hunt group, and the group has not yet been built in the "TO" IC, i.e., it was not included in a BTO extract or sent via a previous TRM build request, then the output process must also send a build request for the group.

If no previous TRM messages have been sent for a DTR/ATR order, the contract which is sent to MAS is a PRETMD (for a DTR) or a PRETMR (for an ATR). If at least one TRM contract has been sent to MAS for a DTR/ATR order, then the contract sent is a CORTMD (for a DTR) or CORTMR (for an ATR).

15. DTR/ATR processing in the SWITCH system supports two types of cancellation - cancellation from transfer, and cancellation from assignment. For the purposes of TRM output, cancellation from assignment is a temporary state and the item will be either re-assigned or canceled from transfer at some future time. Therefore TRM will not be sent if an item is cancelled from assignment.

14.7.5.3 Automatic TRM Output Phase

Any assignments made while BOA is N and STD is Y (automatic TRM output phase) will be sent to MAS immediately following the assignment in the SWITCH system. This includes assignments initiated manually via the ASG DTR or ASG ATR work session or assignments which result from DTR/ATR auto establishment (new or changed circuits which meet the DTR/ATR scope criteria are automatically included in the DTR/ATR). These circuits will be sent to MAS as *build* requests. The output TRM will be the same as the build requests sent as a result of the user initiated request, including the hunt group information when needed.

14.7.6 TRM Output Following DTR/ATR Rework and Correction

TRM output for the "TO" IC that is sent automatically following assignment or as a result of a user initiated request where no BTO output was generated will usually be sent as *build* requests.[16] Build requests are only generated for those circuits that do not yet exist in the "TO" IC.

Once a circuit has been created in the "TO" IC (either via BTO extracts or TRM contracts) and the DTR/ATR is not in the BTO phase (phase 1), TRM contracts will be used to update the circuit with changes which result from work order or service order activity. These changes can result from reworking an assignment in the "TO" IC or a user initiated translation correction (COR TTR work session).

The TRM request for those services for which MAS-affecting changes are detected will be sent as *change* requests. The request will change the circuit from the last state sent to MAS or output on a BTO extract to the new state (following the rework or correction). Each TRM message assumes that all prior BTO extracts and TRM messages have been sent to the IC.

If a circuit or group was created via a TRM contract, it is considered "MAS active". A circuit or group is also considered "MAS active" if it was evaluated for MAS output as a result of a user initiated request, but was found that a translation update was not necessary at the time of the request. This situation can occur when a circuit or group is created via a BTO extract and is subsequently included in a TRM request, but no MAS affecting changes have occurred since creation of the last BTO extract. Any MAS-affecting changes to a circuit or group which is "MAS active" will be sent to MAS immediately in a TRM update.

TRM updates will be sent in either PRETMD or CORTMD contracts (for DTRs) or in PRETMR or CORTMR contracts (for ATRs) as described above.[17]

16. The exceptions to this are *remove* requests which may be sent from a REQTRM as a result of canceling a circuit which was included on a BTO extract. See Section 14.9.

17. The TRM interface does not generate TRM messages to remove groups and group members that fully complies with MAS processing needs in release 2.0.

14.7.7 TRM Output Following DTR/ATR Cancellation

Output processing following a DTR/ATR cancellation is determined by whether the canceled item has been created in the "TO" IC and whether the TRM interface is active at the time of cancellation.

If the canceled item was never included in a BTO extract or a TRM contract (i.e., the circuit or group does not exist in the "TO" IC) then no additional MAS output is necessary when the item is canceled.

If the canceled item was included in a BTO extract and/or a TRM contract, the item must be removed from the "TO" IC via a *remove* request. If the DTR/ATR is still in BTO phase (i.e., BTO extracts are being created to update the IC), then the next BTO extract will include the canceled items. If there are no additional BTO extracts then the cancellations will be included in the first REQTRM request (see Section 14.7.10.4).

If the canceled item is considered "MAS active" then the remove request will be sent immediately following the DTR/ATR cancellation pass.[18]

14.7.8 TRM Output Following DTR/ATR Completion

If all members of a group are removed from the DTR/ATR via the RMV DTR work session, the group itself will also be removed from the DTR/ATR. If members are removed via rework, the group might not be removed and might remain in the DTR until completion time. During completion processing, if the DTR/ATR detects that a group which has been created in the "TO" IC no longer has any members, that group will be automatically canceled. If the canceled group has been created in the "TO" IC (via BTO extract or TRM) and TRM is active, the group will be removed from the IC via a TRM request.

14.7.9 Disconnect of Circuits in the FROM IC

If the "FROM" IC is being retired following the DTR/ATR, then there is no need to disconnect the circuits which have been moved to the "TO" IC. However, if the "FROM" IC is *not* being retired, then the circuits and groups which are now working out of the "TO" IC must be removed from the "FROM" IC. For dial transfers, the user must run a SWITCH system DTR report to identify all circuits and groups in the "FROM" IC which are being moved to the "TO" IC. The circuits and groups must then be manually disconnected in the "FROM" IC. Note that this is necessary only when the "FROM" IC is *not* being retired.

For area transfers, the user has the option to send TRM messages to disconnect the circuits in the "FROM" IC. If the MAS involvement table is set to "yes" for the "FROM" IC in an

18. An item may be "MAS active" even if TRM has never been sent, provided it was previously evaluated for TRM output as a result of a user initiated request.

area transfer, TRM messages will be generated. To prevent putting a customer out of service, the TRM messages for the "FROM" IC cannot be sent until the circuits are completed in the "TO" IC. As such, the *wo order control* parameters BOA, STD, and SOS will not be used for the "FROM" IC of an area transfer. The REQTRM contract will be used to request the TRM messages for the "FROM" IC after the circuits have been completed in the "TO" IC. If the user does not select TRM for the "FROM" IC, the users must run a SWITCH system ATR report to identify all circuits and groups in the "FROM" IC which are being moved to the "TO" IC. The circuits and groups must then be manually disconnected in the "FROM" IC.

14.7.10 User Initiated Requests for DTR/ATR Translation Data

Users may initiate requests for DTR/ATR translation data via the SWITCH System ULBB Work Session "REQ TRM" or the FUSA transaction RQT. For the "TO" IC, TRM for a DTR/ATR may be requested during the "Managed MAS Output Phase" or the "Automatic MAS Output Phase". For the "FROM" IC, TRM for an ATR may be requested only if the specified circuits have been completed in the "TO" IC.

14.7.10.1 Send Frame Output and TRM Output Simultaneously (SOS)

TRM may also be requested for the "TO" IC via the SWITCH System ULBB or FUSA requests to send frame output (REQ FO/RQF) by specifying that translation data should also be sent for the items for which frame output is requested. To request translation data in addition to the frame output, the SOS (Send Output Simultaneously) parameter must be set to Y in the frame output request contract (REQWO). This will result in any item for which frame output is requested to be evaluated for TRM output as well.

Likewise, frame output will be sent when users request translation data (REQ TRM/RQT) and specify that frame output also be sent. If the SOS parameter is set to Y in the REQTRM contract, each item which is evaluated for TRM output will also be evaluated for frame output. Frame output will be sent for those items which have not yet been sent to FOMS in a PREWO contract.

14.7.10.2 BOA/TRM Interactions

When BOA=Y, i.e., during the BTO phase, *no* TRM contracts will be sent. The REQTRM contract processor will return an error stating that TRM contracts cannot be sent. In this case, frame output requested via REQTRM with SOS=Y will not be sent either.

If TRM is requested via REQWO with SOS=Y (and BOA=Y), neither the frame output nor the translation data will be sent[19] and a message indicating that the parameter settings are inconsistent will be returned. When BOA=N, frame output and translation data can be sent as requested. When SOS=N, frame output (REQWO) can be sent regardless of the value of BOA.

Table 14-3 summarizes the output that will be sent based on the values of BOA and SOS for REQTRM and REQWO requests.

BOA	SOS	Request	FO Sent?	TRM Sent?
Y	n/a	REQTRM	N	N
Y	Y	REQWO	N	N
Y	N	REQWO	Y	N
N	Y	REQTRM	Y	Y
N	Y	REQWO	Y	Y
N	N	REQTRM	N	Y
N	N	REQWO	Y	N

Table 14-3. Output Processing Based on BOA and SOS Control Parameters

14.7.10.3 REQ TRM Work Session

The REQ TRM Work Session in the SWITCH System ULBB allows filtering when requesting TRM for a DTR/ATR. When requesting TRM for a DTR/ATR via the REQ TRM Work Session in the SWITCH System ULBB, filter criteria are available to define the scope of the request. This allows the RCMAC the ability to request that translation data for specific groups or circuits (e.g. Centrex groups) be requested separately. See Section 8.

14.7.10.4 Canceled Items

Items which were created in the "TO" IC via a BTO extract must be removed from the IC when they are canceled from the DTR/ATR. If the TRM interface is available and the canceled item is "MAS active", the TRM request to remove the item will be sent immediately following the processing of the cancellation. However, if the TRM interface is *not* available or the canceled item is not "MAS active", then the request to remove the item from the "TO" IC will be sent to MAS automatically whenever the next TRM request is processed. The remove requests for the cancellations will be sent before any of the requested assignment information and will increment the line count of the output (if specified). As a result, the number of new assignments in a requested TRM contract may

19. By setting SOS to Y, the user is requesting that the frame output and the translation data be sent at the same time. Since the translation data cannot be sent when BOA=Y, the frame output will not be sent either.

be less than that requested, however, the total number of items in the contract will equal the input line count.

14.7.10.5 Group Data

Translations management for DTRs involves managing group translations as well as circuit translations since both circuits and groups must be built in the "TO" IC. If a TRM request is performed on an assigned Series Completion Hunt (SCH) or Multi-Line Hunt (HML) group that has not been built, a TRM build request would be generated for the group and all of its members which are assigned in the DTR. Likewise, if a TRM request is performed on assigned members of a group that have not been built (including the group itself), a TRM build request would be generated for the group and all the assigned members of the group. Hence, TRM supports the building of partial groups in the "TO" IC. A Group Management List (GML) is maintained for each group that has been built (i.e., sent to MAS via BTO or TRM) where members of the group have not been built. The GML consists of group members that are not assigned in the DTR or members that are assigned but are not TRM activated.

Once a group has been built, subsequent modifications to the group will be sent as TRM change requests. The modifications to a group may include changes to group translations, rearrangements of hunt sequences, the building of additional members, or the removal of existing members. If the modifications only affect the group, such as changes to group translations or rearrangements of hunt sequences, then a TRM change request would be generated for the group only. However, if the modifications affect the group as well as its members, such as the building of additional members or the removal of existing members, then a TRM change request would be generated for the group as well as the affected members, with the exception of the removal (disconnection) of a member from an SCH group. When a member is being removed from an SCH group, two TRM requests are generated; a TRM change request for the group to disassociate the member from the group followed by a TRM remove request for the member. Similar to groups, once a member has been built, subsequent modifications to the member will be sent as TRM change requests. When the modifications only affect the member, such as changes to the translations of the member, then a TRM change request would be generated for the member along with a recap of the group.

If a TRM request contains an item which is a member of multiple hunt groups, each hunt group will be included in the TRM contract. Information for each group appears once in a contract, regardless of the number of items involved.

The tog (TRM Output Group) parameter of the wo contract options table defines the maximum number of circuits which may be contained in a single group DTR TRM contract. If a TRM request contains more circuits than the value of the tog parameter, then multiple TRM contracts will be generated. Currently, the MARCH system can not process more than 100 circuits in a single contract. Therefore, the TRM process will not generate a

DTR TRM group contract containing more than 100 circuits, regardless of the value of the tog parameter.

The DTR TRM process uses the group's translations edge to define its membership. This data associates each member by the external ID of the service. As an example, a member of an HML group may be defined as TER[3] (i.e., HTER=TER[3]) on the group's translation edge while the associated external ID of the member may be TLI[1234567890]TER[3]. ISDN secondary services can also be members of HML groups. However, current service order procedures do not identify these services with a standard HML external ID, such as TLI[1234567890]TER[3]. For these services, the external ID of a member can not be identified from the data on the HML's translations edge. Therefore, DTR TRM group processing will not support the packaging (and generation of the appropriate output) of these services.

14.8 Company Initiated Order TRM Processing

This section describes the TRM interface for company initiated orders. CIOs are entered into the SWITCH system and treated in MAS as service orders, but work order TRM contracts are sent to SOAC because SOAC has no knowledge of these orders. The content of the work order TRM contract from the SWITCH system is similar to the translation data generated for service orders.

The TRM contract interface supports sending translation data for CIOs following

— assignment (precompletion), cancellation, or correction passes, or

— rework resulting from a work order or another service order.

The contracts used to support TRM for CIOs are PRETMO and CORTMO.

Company initiated orders include all the functionality of service orders, and therefore, can change translation data or build or remove circuits. Therefore, it is necessary for the TRM message from a CIO to provide all translation information associated with each circuit on the CIO (like service order translation messages).

Every switch port, channel, or call reference value identified in a TRM contract will include an associated *Exchange Key*. The exchange key uniquely identifies the IC. In the DMS100, a host and remote IC may have the same exchange key. In this case, the site ID is necessary to uniquely identify the IC.

The exchange key information will be used by SOAC to route the TRM message to the correct MAS system. MAS also uses the exchange key to identify the IC for which the TRM message is intended.

14.8.1 The TRM Interface for Company Initiated Orders

TRM information may be sent to MAS following CIO assignment, cancellation and correction passes. TRM messages from CIOs are sent only if at least one circuit on the CIO is found to be MAS-affecting. TRM messages for CIOs are sent immediately.

The contract interface for TRM for CIOs will consist of a single PRETMO contract per CIO order followed by multiple CORTMO contracts.

The first time a CIO is assigned (PRE pass) and is MAS-affecting results in the sending of a PRETMO contract. For any subsequent MAS-affecting cancellations, corrections, or rework processing, the SWITCH system will send the translation information via a CORTMO contract. It is assumed that all previously sent TRM requests for a CIO have *not* been sent to the IC (i.e., they are pending in MAS), so each update is sent as a change to the previous request sent to MAS (including removals from and additions and modifications to the previous request).

14.8.2 MAS Involvement

Translation data is sent to MAS for CIOs only for circuits which are found to be MAS involved. The *mas involvement table* is defined by order type (e.g. CIO, SET) and intelligent controller. This table is referenced by a CIO to determine if MAS can process the CIO for a specific intelligent controller. Once it is determined that MAS can process the order, the SWITCH system will compare the circuit before and after the assignment of the CIO to determine if it is MAS-affecting. If any value which is sent to MAS in a work order TRM message (i.e., any tag in the FCIF contract definition) is changed, added or removed as a result of the CIO, then the CIO is considered MAS-affecting.

For all CIOs, if an assignment is not MAS-affecting, no translation data is sent to MAS for that circuit. However, once translation data has been sent for a MAS-affecting assignment, cancellation of that assignment must also be sent to MAS. Following rework or correction processing, the MAS involvement check must be done again since the new assignment may have changed the previous assignment, and possibly changed information that MAS is concerned about. It may have been determined following the original assignment that it was not necessary to notify MAS, however, on subsequent rework or correction processing, the assignment may now be MAS-affecting. In this case, MAS must be notified of the translation data changes from the correction or rework. Likewise, if the original assignment is MAS-affecting, it is possible that a rework or correction pass could have changed the assignment so that it is no longer MAS-affecting. In this situation, MAS must be sent a request to restore the circuit to its original state, withdrawing the assignments previously sent to MAS for that circuit.

14.8.3 TRM Processing for CIOs

CIO TRM processing consists of sending one PRETMO and multiple CORTMO contracts to MAS for each CIO in the SWITCH system database. A PRETMO contract will be sent following the first MAS-affecting assignment. Any translation data sent as a result of subsequent MAS-affecting cancellations, corrections, or rework will be sent via a CORTMO contract. The TRM output created from each activity is described below.

14.8.3.1 Assignment

Following assignment (precompletion) in the SWITCH system, translation data is sent automatically for a CIO which is found to be MAS-affecting. Translation data will automatically be sent for any MAS-affecting assignments for the circuits on the CIO via a PRETMO or CORTMO contract. For each MAS-affecting circuit, the primary service and all of its secondary services are included in the contract. If no messages have been previously sent to MAS for the CIO or if the last message sent to MAS for the CIO withdrew the assignments (e.g., a correction removed MAS involvement of the assignments), the contract sent is a PRETMO contract. All subsequent messages sent to MAS for the CIO will be CORTMO contracts.

For a change to an existing circuit, the contract will recap the circuit's translation information before the assignment for which this TRM contract is being created.[20] It will

20. This is also true for rework and correction passes, described in separate sections.

also contain the new translation information, i.e., the circuit's translation data following the assignment in the SWITCH system database.

14.8.3.2 Correction/Rework

Once a CIO is pending in the SWITCH system database, the user may change the CIO through a correction pass.

If a service order[21] affects a circuit which is pending in a CIO and is due before the CIO, then the pending CIO assignment will be reworked as necessary to update the circuit to reflect changes made by the service order.

Following rework or CIO correction passes, the SWITCH system must determine if it is necessary to send a TRM contract to MAS with the new or updated translation data. Table 14-2 describes the factors involved in making this decision, such as whether or not translation data has previously been sent for a circuit. In table 14-2, "TRM Active" is always Y (yes) for CIOs.

If MAS has already been sent translation data for a circuit, then the SWITCH system must determine if it is necessary to send updated translation data as a result of the correction or rework processing. MAS must be sent new translation data if the correction or rework caused a change to the information previously sent to MAS. The SWITCH system will compare the previous translation data sent to MAS with the translation date following the correction/rework to determine if a MAS-affecting change occurred. If a MAS-affecting change is detected (Case 1), a CORTMO contract will be generated for MAS with information about the modified circuit (including all translations for the circuit). If only the due date changed for the CIO, a CORTMO contract must be sent with the Due Date and the Due Date Change Flag set to "Y" in the *C1 header with all of the translations for the circuits on the CIO recapped.

CORTMO contracts which are sent to MAS will include all the translation data that was sent in the previous message and include the updated or new translation data for that circuit.

If the Correction/Rework did not change any MAS-affecting information (Case 2), then it is not necessary to send additional information to MAS.

If no translation data has been sent to MAS for a circuit because its initial assignment was not MAS-affecting, and the assignment is changed via a correction pass or rework, the MAS involvement check must be performed again as though this were a new assignment. The original translation data, that is, the data before any assignments were made from the CIO, and the translation data following the correction or rework will be compared to determine if MAS must now be notified of this assignment. If the assignment after

21. Inventory transactions and work orders due before the pending work order will also cause the pending CIO to rework.

correction/rework is now found to be MAS-affecting (Case 4), output will be sent and the circuit will be included in a PRETMO contract.

If translation data has been sent for a circuit which is no longer MAS-affecting following a correction or rework pass (Case 5), the SWITCH system will send a CORTMO contract to MAS immediately which will request that the circuit be returned to its original state, withdrawing the previous assignments.

14.8.3.3 Cancellation

When a cancellation request is processed for a CIO in the SWITCH system, MAS must be notified of the cancellation only if translation data had previously been sent for any of the circuits on the CIO. Like other changed assignments (i.e., corrected or reworked), the canceled assignment will be sent immediately via the CORTMO contract. The previous information sent to MAS is withdrawn in the CORTMO contract, returning all circuits back to their original (pre-CIO) state (canceling the previous translation data).

14.8.4 Recap of Hunt Group Information

If translation data for work order assignments are sent to MAS, the SWITCH system must also send the hunt group information for all circuits included in that contract.

14.8.5 Sequencing of TRM Contracts

Because a CIO is treated like a service order in MAS, sequencing of the work order TRM contracts for CIOs is not necessary. Instead, the correction suffix is included in the *C1 header of each contract. Also, the order type is included in the *C1 header since a CIO is treated like a service order in both MAS and the SWITCH system.

14.9 Dial/Area Transfer Bulk Translations Output

Bulk Translations Output (BTO) is the process of extracting data from the SWITCH system database and writing it to 9 track magnetic tape or dataset for the use of various groups (e.g. switch vendors, LMOS, NSDB, accounting).

BTO is used for two separate purposes:

- To provide a bulk transfer of assignment and translation data to an IC vendor or other Operations System for a Dial/Area Transfer.
- To provide an extract that can be used to compare or "bash" the SWITCH system database against other corresponding databases which should contain similar data.

The data to be extracted includes cable pair and switch port, channel, or call reference value assignments and translations data for each individual service/circuit in the selected input scope. The selected input scope for dial/area transfers is the set or a subset of circuits established in the dial/area transfer. General Extracts provide an input scope as part of the Job Control Language (JCL) parameters.

14.9.1 Formats

The SWITCH system has the ability to store current translation data, on a per service and per group basis, represented by a set of tags and values. The set of translations tags to be stored by the SWITCH system database can be found in *SWITCH System Translations Data Catalog* which is Appendix 13A in this document. The SWITCH system will support a Bulk Translations Data output format that can transmit all the stored translations data. For historical and compatibility reasons, the BTO TMART and TAGTMART formats will resemble COSMOS bulk output formats as closely as possible. A new output format has been designed to accommodate Digital Loop Electronics (DLE) information. The BTO FCIF extract is an FCIF contract form of the SWITCH system translations and cross connect information.

Several bulk output formats are supported by COSMOS:

1. TAGTMART - a TAG:value format.
2. TMART - a fixed field format.
3. TODA - a TAG:value format supporting 5ESS®. switches. TODA is a tape format that is similar to TAGTMART in that it has a self defining "tag:value" format. TODA is defined by AT&T and used **only** by AT&T to update the 5ESS® class of switches.

   As TODA is a vendor specific format, the SWITCH system will not support the TODA format

The TAGTMART and TMART and BTO FCIF output formats are discussed below.

14.9.1.1 TAGTMART

TAGTMART is a record oriented extract with separate records for services and for groups. Each record contains information about a service or a group stored in a tag/value format. Only those tags needed to define the service are placed in the record. Records are variable length.

Special Report SR-2180[22] is a publicly available document that specifies the TAGTMART and TMART interfaces. As the TAGTMART format specification changes, this document will be modified accordingly and issued periodically.

Digital Loop Electronics (DLE) data will be available on the TAGTMART extract to indicate that DLE elements are present for a particular service, but full translations/cross connect information about the DLE paths will not be available. The full path and cross connect data will be supported by the BTO FCIF extract.

The beginning of a TAGTMART record is positively identified by the RECORDTYPE tag and the end of the record is indicated by a newline character. Tag/Value pairs are separated by semicolons (';') and the Tag separated from the Value by an equal sign ('=') as shown:

```
RECORDTYPE=value; TAG=value;...;  <newline character>
```

Because some older systems will require the original delimiters, each delimiter is configurable and can be set to any single character value. Delimiter values will be stored in a reference table indexed by extract recipient.

The following record types are defined for TAGTMART:

- **Header** - Identifies extract format, date of creation, wire center, IC, vendor order number, etc. Recordtype is "header"
- **Group** - Group records which provide information that is applicable to the group as a whole e.g. group translations information, default PIC etc. Includes recordtypes "group" and "rmvgrp".
- **Service** - A record for each assigned service that is in the input scope. Recordtypes include "service", "chgsvc "and "rmvsvc".
- **Spare** - A record for each NTU in the input scope that is not part of a circuit.
- **Trailer** - Contains summary counts for each record type (except the header record).

TAGTMART extracts can be written on 2400 ft. 9 track magnetic tapes. Standard IBM labels will be used and the tapes will use the EBCDIC character set. The tapes will be written at 1600 bpi, 6250 bpi or greater. TAGTMART extracts are also compatable with standard IBM datasets. It is suggested that the extract be placed initially in a dataset on DASD and then, once the extract has been successfully generated, it be copied to the final shipping medium.

TAGTMART records are variable in length, have no upper limit on size and can span blocks. TAGTMART extracts should be read as if the data on the extract is one continuous stream of characters. Records are delimited by the RECORDTYPE tag and a newline character.

22. **SR-2180,** *Bulk Translations Output: TAGTMART and TMART Extracts,* Issue 2, Bellcore, September 1997.

Block sizes on the extracts can range from 512 bytes per block up to 32768 bytes per block. Block size should be a multiple of 512 bytes. TAGTMART extracts may be written on multiple extract datasets or tape volumes but only one TAGTMART extract header will be written to the first extract. Using the higher block sizes will allow writing an entire IC or wirecenter on a single tape. Writing a single tape is the recommended practice. A block size of 32768 and 1600 bpi is recommended, as this will accommodate large offices. The last block on a tape should be padded with blanks to the full block size. Block size is less important when creating a dataset, but should be considered along with the final media the extract will be sent to the vendor on. It is suggested that the extract be placed initially in a dataset on DASD and then, once the extract has been successfully generated, it be copied to the final shipping medium.

14.9.1.2 TMART

Because of TMART's fixed field format, it would not be practical to expand TMART to include all translation tags. The SWITCH system will support the existing TMART format, that COSMOS generates, to the extent that it can. Due to the differences between COSMOS and SWITCH, some of the TMART fields will no longer be supported.

TMART's fixed field format cannot handle Digital Loop Electronics (DLE) data. When DLE data is present in a circuit that will be placed in a TMART extract, that circuit's record will be marked (in the SWPT working or spare area) to indicate that there is information missing from the record.

What follows is a brief summary of the TMART format. For a specification of the TMART format that is supported by SWITCH see **SR-2180**, *Bulk Translations Output: TAGTMART and TMART Extracts*, Issue 2, September, 1997.

TMART extracts are intended to be written on 2400 ft. 9 track magnetic tapes.Each TMART record is 512 bytes and is stored on the magnetic tape in 512 byte blocks (1 record per block) in ASCII format. A maximum of 25000 records will be written to any particular output dataset, whether a tape volume or DASD.

The following record types are defined for TMART:

- Header - Identifies extract format, date of creation, wire center, IC, vendor order number, etc.
- Service or Spare - A record for each assigned, cancelled or changed service that is in the input scope. If spares are included then a record for each spare NTU in the input scope will also be prepared.

Multiline Hunt Groups will be placed on the extract, contiguously, in terminal order. This requirement is due to the lack of group records for TMART. The only way to distinguish groups is by position on the extract.

If the input scope does not include the entire hunt group, then the extract may contain partial hunt groups. It is the responsibility of the user to insure that the input scope contains the entire hunt group.

14.9.1.3 BTO FCIF

For the SWITCH system, the recommended bulk translation output extract format will be BTO FCIF. BTO FCIF is an aggregated tag/value format, and is expandable to handle new tags and values where other formats are not. When information is specific to a particular network unit, that information can be associated with that specific NTU and no other.

The BTO FCIF extract is designed to provide full information about a circuit to external systems. The structure of Digital Loop Electronics (DLE) data made it necessary to provide this FCIF output format. Dial and Area Transfers can generate BTO FCIF extracts which contain all of the central office translations stored in the SWITCH system, all Network Units (NTUs) that are part of the circuit, and details about these NTUs that were not available in the TMART or TAGTMART extracts, due to their "flat" structure (i.e. there was no aggregation construct available).

The FCIF format will allow both the old information representing the "FROM" IC and the new information representing the "TO" IC to be present for any particular circuit. This can be used by outside vendors to correctly populate the "TO" IC's translations based on a dump of the "FROM" IC and the mapping of TN and SWPT to the "TO" IC.

Full information on the DLE elements of a circuit will be present in the extract, except that Network Element Path (NEP) information is not presently generated.[23] Procedures for generating a BTO FCIF extract are similar to those provided for TAGTMART extracts. A General Extract capability is not yet available.

14.9.2 BTO Methods and Procedures

There are several phases in a dial/area transfer where Bulk Translations Output extracts are needed. A summary of the phases that a dial/area transfer progresses through can be found in Section 14.7.2.

14.9.2.1 Controlling the DTR/ATR

Several parameters and flags will be used to control dial and area transfers. The Bulk Output Allowed (BOA) parameter will control the way assignment and translations

23. See SR-3666, *Bulk Translations Output FCIF Extract*, Issue 1, September 1997, for more detail on the BTO FCIF extract and the BTOEXT contract.

information will be sent to the "TO" IC. When BOA = Y, BTO extracts for vendors will be allowed. Also when BOA = Y, TRM messages will be disallowed.

After the last BTO extract has been written and before the first REQTRM request (needed to send TRM contracts), the BOA parameter will be set to "N"[24], which will prevent BTO extracts for vendors to be written. This prevents irrevocable changes to the SWITCH system database. This also marks the end of the Bulk Output phase.

While the IC receives its last update extract and is in the process of being connected to MAS, no information will be sent to the IC from the SWITCH system database.

Once the IC is connected to MAS, the Controlled MAS Output phase can begin. REQTRM requests will send a managed amount of TRM messages from the SWITCH system to MAS, via SOAC. Once a circuit has been included in the scope of a REQTRM, it is "MAS active", and updates, changes and rework activity will automatically be sent to MAS. The first REQTRM request marks the start of the Controlled MAS Output phase.

At some later time the Send Translations Data (STD) parameter will be set to "Y". This marks the beginning of the Automatic MAS Output phase. A REQTRM request that selects all circuits in the dial or area transfer should be processed at this time, as well.

At this time, about a week prior to the DTR/ATR cutover, the ARM BTO extracts will be prepared for LMOS or NSDB.

Because the vendor database can get corrupted if it receives incorrect or conflicting information, the SWITCH system will keep track of the vendor's view of the new IC. This requires the SWITCH system to preserve the state of the database for each circuit that has been sent to the IC, either by BTO extract or TRM message.

If a service or group changes after it has been sent to the IC, a withdrawal of that service or group may be needed before the new information can be loaded. TRM and BTO will always recap the service and/or group information.

If a service has been sent to the IC via BTO and is changed later in the Controlled MAS or Automatic MAS outputs phases, the SWITCH system will send a TRM message with the changed information to the IC. Several flags are maintained to determine this condition.

Assignment Redundancy Management (ARM) is needed when assignments or translations change. The new information must be sent to downstream systems such as LMOS or NSDB. Due to the large numbers of services to be handled in a dial or area transfer, the updates to LMOS or NSDB will be bulk updates. These updates take place near the end of the Dial/Area Transfer, usually in the Automatic MAS Output phase.

Please Note: Only vendor extracts are prohibited from being generated outside the BTO Allowed phase. Producing vendor extracts used for TRM purposes will update TRM flags

24. Parameter changes are accomplished by updating the reference tables via the UPDREF user session, and are the responsibility of the Loop Assignment Center personnel.

in the SWITCH system database, and producing ARM extracts will update ARM flags in the SWITCH system database.

The dial/area transfer completion processing will block completion unless all circuits have had their most recent view sent to the IC (via TRM or BTO).[25] For most WOs, ARM output is generated as part of completion processing. For DTRs/ATRs, because of their volume, a BTO extract for LMOS/NSDB may be generated prior to Work Order completion. This means that any changes that occur after the ARM extract is generated should be printed out in a report to be manually transmitted to the affected downstream systems.

14.9.3 Extract Processing

A Bulk Translations Output extract from the SWITCH system database will be initiated as a BMP (batch) submission and will generate output files of working, changed and withdrawn circuits and groups. These files will be passed on to formatter processes which will generate the output extract format. Later sections will specify the formatters.

If a Dial/Area Transfer extract is run and the Bulk Output Allowed (BOA) parameter (stored in reference data) has a value of "N", and the BTO extract recipient is a vendor, BTO extracts are not allowed and the job should halt with an error message to that effect.

This will allow BCC personnel to control the Dial/Area Transfer project via control parameters like BOA.

14.9.4 BTO Extract Type

There are several choices to be made, as BTO extracts go to many different systems. Major choice: is this a vendor extract, an ARM extract (LMOS or NSDB) or is it an OTHER extract? Vendor extracts and OPS system extract processing will update the dial transfer unit status and group status tables. "OTHER" extract processing will do no updates at all, but will generate output based on the same criteria as a vendor extract processing run.

1. Vendor Extracts - The DEST input parameter is used to select the extract destination. Some destinations are pre-loaded as "Vendors" (AT&T and NTI are 2 vendors specifically treated this way) in the *tagtmart destination* Reference Table. LMOS and NSDB are pre-loaded to be ARM extracts.

   The choice of destination also specifies, via the table, what delimiters to use on the extract.

25. For an area transfer, translations data must be sent for all switched circuits involved in the transfer. For a dial transfer, all circuits are switched, therefore, translations data must be sent for all circuits involved in the transfer.

Additional vendor entries can be added to the table by the BCC users. See Table A-4, "tagtmart destination types," page A for additional information.

Another choice to be made if a "vendor extract" is to be produced is what circuits to include on the extract. If the extract will include only the incremental information that has changed since the last BTO extract was produced it is a CHG extract. If it will include every assigned circuit and group that is in the Dial/Area Transfer then it is an ALL extract. The choice CHG or ALL limits the use of the line count parameter. (See below.)

An ALL extract will contain all of the assigned circuits and groups in the Dial/Area Transfer and nothing else. CHG extracts will contain all of the cancellations and modifications of circuits already delivered to the vendor and a number, up to the line count, of newly assigned circuits. The CHG option is only allowed for vendor and OTHER extracts.

2. ARM Extracts - LMOS and NSDB are specified, in the *tagtmart destination* Reference table, as operations systems that receive Assignment Redundancy Management information. LMOS is different from the rest of the entries in that it specifies the older colon-colon ("tagname:value:...") delimiter scheme as provided by COSMOS TAGTMART.

   For dial/area transfers, each ARM extract created will contain ALL circuits assigned in the transfer. If a CHG extract is requested for an ARM extract, an error will be produced and the run will stop. The SWITCH system will not manage change information for ARM systems, nor be able to produce ARM extracts with only new information on them.

14.9.5 Line Counts

When a vendor extract is specified and only new, changed or canceled circuits are put on the extract (a CHG extract); or a extract for some unknown system (an OTHER extract) is specified, the line count parameter can be used to control the size of the extract. Line counts will only be applied to working records from newly assigned circuits. Line count can be used to limit the number of output records to be written. However, the line count option will not be an absolute limit of the number of records to produce.

To avoid corrupting a vendor's database, **all** changed and canceled circuits should be placed on a vendor's change extract. Therefore the line count will not pertain to withdraw (rmvsvc or rmvgrp) records or to working (service, chgsvc) records from circuits which have been included on a previous BTO extracts. Group records (group, chggrp) must also be written to accompany a given working record that is a member of the group, so group records will also not affect the line count.

Finally, once a circuit is to be processed for output, all services associated with that circuit will be written to the extract regardless of the line count parameter. When the line count is exceeded, no further new circuits will considered for output to the extract. As stated before, all changed and canceled circuits will be written to every vendor change extract.

When an ALL extract is being generated for an IC vendor or LMOS/NSDB, the line count limit is ignored. When an OTHER extract is being generated and the ALL option is selected, line count will limit the number of assigned circuits selected for output, as above. Once a circuit is selected for output, working records for all services on that circuit will be produced. When processing an ALL-OTHER extract, circuits are counted as they are for vendor extracts.

The Line Count parameter is valid in the following contexts:

Extract Destination	ALL Extract	Change (CHG) Extract
IC Vendor	not valid	valid
LMOS/NSDB	not valid	valid
OTHER	valid	valid

Table 14-4. Line Count Parameter Context

14.9.6 Input Parameters

See Appendix D, "Bulk Translations Output JCL Input Parameters," for complete description of input parameters necessary is initiate a BTO extract.

14.9.7 BTO Extract Header

The BTO header record includes a representation of each JCL input parameter, and information about the process that is creating the extract, what wire center the information is coming from and so forth. A full description of the header record is in the appropriate extract format appendix, Appendix A for TAGTMART , Appendix B for TMART and Appendix C for BTO FCIF . Header records contain all information necessary to reconstruct the JCL input parameters.

BTO header records intended for Northern Telecom should include an entity-to-site mapping table if the output format is a TMART extract. The table is a required input for TMART extracts only, containing information from DMS 10 or DMS 100 switches. This table is a mapping from the Control Group Number to the SITE names of the host IC and all of its remote units. The Control Group Number is an arbitrary number that should be selected to be relatively unique for each SITE on the extract. The Control Group Number has no relationship to control groups within the SWITCH system database.

14.9.8 Database Updates

There are many BTO extract recipients for Dial/Area Transfer BTO extracts. They can be classified into three groups:

1. Translations Redundancy Management (TRM) Systems which include the IC vendors.
2. Assignment Redundancy Management (ARM) Systems, which include LMOS and NSDB
3. OTHER Systems.

The SWITCH system will keep track of what circuits have been sent to the TRM systems and the ARM systems. No tracking of information sent to the OTHER group will be done.

The SWITCH system will maintain the "status" of every circuit that is in the Dial/Area Transfer. The status of a circuit that is important to the BTO processes is whether the circuit has been:

- Assigned (ASG) (BTO Read only)
- Sent via Bulk Translations Output to vendor (BO_SENT) (BTO Writable)
- Bulk Output database image saved (BO_SAVED) (BTO Writable)
  If BO_SENT is 'Y' and BO_SAVED is 'Y', then the circuit has changed since the last BTO extract and the delta extract has already been saved. If BO_SENT is 'Y' and BO_SAVED is 'N' it means that the circuit has not changed since the last BTO extract. If the circuit is modified (by rework, correction, or cancellation) the delta extract must be saved before it gets modified.
- MAS candidate (MAS_CAND) (BTO Writable)
  TRM output may need to be sent if there is a MAS-affecting change.
- MAS definite (MAS_DEFINITE) (BTO Writable)
  TRM or BTO output needs to be sent.
- Canceled since being sent via BTO (MAS_WITHD) (BTO Writable)
- Assignment Redundancy Generated (ARG). (BTO Writable)
  This is an Assignment Redundancy Management (ARM) flag that means assignment redundancy information was sent to a BCC Operations System such as LMOS or NSDB.

If this is a Dial/Area Transfer Vendor extract:

1. Must set BO_SENT flag to 'Y' for bulk output to vendors.
2. Must set BO_SAVED flag to 'N' for bulk output to vendors.
3. Must set MAS_CAND to 'N' for bulk output to vendors.
4. Must set MAS_DEFINITE to 'N' for bulk output to vendors.

If this is a Dial/Area Transfer ARM extract (NSDB or LMOS):

1. Must set ARG flag to 'Y' for ARM output. This flag should be set for all circuits in the dial transfer.

14.10 General Extracts Bulk Translations Output

Bulk Translations Output can also be run as a general database extract unrelated to any Dial/Area Transfer. A General Extract provides a extract of working services and, optionally, spare network units that match the input criteria provided in the JCL.

The two output formats available for Dial/Area Transfers, TAGTMART and TMART,[26] are also available for General Extract. The main difference between Dial/Area Transfer BTO and General Extract (GX) BTO is that for a Dial/Area Transfer, the list of circuits to be placed on the DTR/ATR extract comes from the Unit and Group Status tables, whereas the scope of services to be put on the GX extract is provided in the input JCL. The scope is based on the primary key and filters specified.

Please note that Dial/Area Transfers provide entire circuits that are in the DTR/ATR whereas General Extracts provide services that match the input scope. Both extracts are batch jobs, initiated by JCL to create extract output.

14.10.1 Input Parameters

The following items are required for a GX BTO extract run. If any of these parameters are missing, the job will generate an error message and halt.

- Wire Center (WC)
- Comments (CMT) - User comments for this extract. (up to 480 bytes)
- Primary key (SWPT,CP,TN and HML)
- Destination - Used for delimiter selection

The following are optional inputs:

- Serving NPA - Needed for TMART extracts because TMART only reports 7 digits of the TN.
- NPANXX table. - (May be blank.) Used for Wirecenters which encompass more than one NPA.
- Entity to Site Table (needed on TMART extracts for NTI (DMS) ICs).

26. TAGTMART is supported for both Dial and Area Transfers. TMART is supported for Dial Transfers but not for Area Transfers.

- Ranges - limited to CP, HML, Switch port, and TN.
- Masks - limited to Switch port and TN.
- Filters
- Line Count
- Date of View - defaults to root view.
- DLE_FULL - indicates to include DLE network units and information.
- FORMAT - indicates the output format of NTU ids U=USO (default), S=SWITCH system input format, C=COMMON LANGUAGE format.
- OUTWATS - indicates the OutWATS TN instead of the main TN is to be used as the CTID tag value for OutWATS if this option is set to "y" (only for extracts with Destination "LMOS")

The following include/exclude filters will be allowed:

- ADSR - Administration of Design Service Review. Circuits that the SWITCH system inventories for TIRKS but no connectivity information is stored. This filter allows for including only ADSR circuits or excluding ADSR circuits from the extract. If not set, ADSR is not checked.
- CP - Include or exclude all cable pairs from the extract.
- CTX - Include or exclude all Centrex circuits from the extract.
- HML - Include or exclude all HML circuits from the extract.
- IC - Include or exclude all circuits in a particular set of ICs or Remote Units from the extract. If more than one IC or RU is listed, place a circuit in the extract if it is in at least one of the ICs or RUs. (This corresponds to a logical OR of all the ICs listed.) A total of 5 ICs and/or RUs may be specified. If more than 5 ICs or RUs are specified the additional IDs will be ignored and a warning message will be printed.
- NXX - Include or exclude all circuits in a particular set of NXXs from the extract. If more than one NXX is listed, place a circuit in the extract if it is in at least one of the NXXs. (This corresponds to a logical OR of all the NXX filters.) A total of 5 NXXs may be specified. If more than 5 NXXs are specified the additional NXXs will be ignored and a warning message will be printed.
- Spare - Include all spare NTUs in the extract. NOTE: **This filter defaults to exclude spares.**

Only the IC and NXX filters will be allowed to specify a value or values. If more than one filter is specified, a circuit must satisfy each filter condition. (Logically AND all dissimilar filters).

The IC filters are to be grouped together, and, if multiple values are specified for the IC, these values should be "ORed" together. Multiple values of the NXX filter should also be "ORed" together. If a filter is omitted, the filter condition will not be used to select services.

The Entity to Site Table (ENSTBL) and the Serving NPA parameters are needed by Northern Telecom Inc. (NTI) when a DMS switch is being dumped. It will be a required input when DEST=nti. In a general extract, if information is being extracted from a DMS IC, the JCL should provide the ENSTBL but the BTO job will run without it.

14.10.2 Job Processing

General Extracts can be run at any time and are independent of Dial/Area Transfers extracts.

General extracts will only **extract** information from the SWITCH system database. No database **updates** will be done.

14.10.2.1 Line Counts

General Extracts will always be considered ALL extracts in that they will write all of the services selected in the input scope to the extract. The Line Count parameter will limit the number of service records written to extract.

Spare records, and service records will count towards the Line Count on the extract.

As the requirements for general extracts differ from those for dial/area transfer extracts, there will be separate processes for each extract type. Both types of extract will require similar input parameters. The General Extract parameters are listed below and detailed in Appendix 14C. The table below lists the input parameter description, its parameter name and whether it is optional or mandatory.

Parameter Description	Parameter Name	Optional/ Required/ Conditional	Comments
Wire Center	WC	R	All Extracts
Primary Key(s)	PKEY	R	SWPT,CP,TN or HML
Ranges	LRANGE HRANGE	O O	
Masking	MASK	O	
Filters	FILTER	O	
Line count	LC	O	

Table 14-5. General Extract Input Parameters

Parameter Description	Parameter Name	Optional/ Required/ Conditional	Comments
Comments	CMT	O	All extracts
Extract recipient	DEST	R	Vendor name or LMOS or NSDB or OTHER. All Extracts.
Entity to Site Table	ENSTBL	O	Required for DMS switches
Area Code to NXX table	NPANXX	O	When multiple NPAs in wirecenter, for TMART
Serving NPA	SRVNPA	O	NTI (DMS) switches on TMART extracts
Date of View	TIME_VIEW	O	default to root view
Format	FORMAT	O	Identify the output format to be used when creating NTU ids: S=SWITCH system input format, U=USO format (SOAC) Default, C=COMMON LANGUAGE® format
OutWATS TN	OUTWATS	O	Identify the OutWATS TN to be used instead of main TN when OUTWATS=y (only for extracts with Destination "LMOS")
DLE Information	DLE_FULL	O	Write DLE network units

Table 14-5. General Extract Input Parameters

14.10.2.2 Extract Data from Database

What follows is a procedural definition of what should be extracted from the database. It is not intended as a binding design.

For each service in the database that matches the input parameters, primary key, and passes the filters, create a service record using the following steps:

1. Find the service indicated by the primary key. Include a tag for each NTU connected to the service with a composition edge. Include a tag for each group connected to the service with an association edge. Include a tag for each group connected to the TN node with an hunt edge. For each NTU visited, collect the SWITCH-system-and-

MAS data as specified. See Table 1 for a list of SWITCH-system-and-MAS tags. Include the MAS-Only tags.

2. For each primary service, follow the provides edge to the circuit. NTUs used by the circuit, but not part of any service should appear for each primary service. This currently includes CP, BL, TRE, ME, ICE, and IF NTUs. If an ME NTU contains a non NULL SIDE attribute, this NTU should be represented on the extract as an SSC. The SSC tag should have the ME ID as its value.

   Those NTUs that are shared among several services should appear on each service.

For each NTU in the database that matches the input parameters, primary key, and passes the filters, and that is not part of a circuit, create a spare record consisting of the NTU and relevant SWITCH-system-and-MAS data from the NTU. This step is only necessary if the SPARE filter is set to include spares on the extract. Otherwise the SPARE filter defaults to exclude.

14.10.2.3 Pending Activity

Check each service to see if it has any pending activity and if it does determine the delta due date of the first delta. Create a PDD tag with the due date as its value.

In the COSMOS environment, TAGTMART extracts contained two kinds of circuits: working, and spare. The working circuits could be working or pending disconnect. The spare could be spare or pending connect.

The SWITCH system will be handling pending orders in a different fashion. Bulk outputs will contain a "snapshot" of the current or future view of the database. For general extracts, this means either the root view of the database (which is based on circuits that are "working" in the database) or a time view of the database (which is based on delta due dates). The time view for "today" may not, in general, match the root view of the database on the same day, because there may be circuits with pending work that has not been completed by the due date.

Appendix 14A: BTO TAGTMART Extract Format

This appendix will describe the format of a BTO TAGTMART extract. A TAGTMART extract will have 1 extract header record, zero or more group records, one or more individual service records and 1 trailer record.

14A.1 Physical Extract Format

TAGTMART extracts can be written on 2400 ft. 9 track magnetic tapes or sent to a TSO dataset. Standard IBM labels will be used and the extracts will use the EBCDIC character set. The tapes may be written at 1600 bpi, 6250 bpi or greater.

TAGTMART records are variable in length, have no upper limit on size and can span blocks. TAGTMART extracts should be read as if the data on the extract is one continuous stream of characters. Records are delimited by the RECORDTYPE tag and a new-line character.

Blocksizes on the extracts can range from 512 bytes per block up to 32768 bytes per block. Blocksize should be a multiple of 512 bytes. TAGTMART extracts may be written on multiple extract volumes but only one TAGTMART extract header will be written on the first volume. Using the higher block sizes will allow writing an entire IC or wire center on a single tape. Writing a single tape is the recommended practice. A block size of 32768 and 1600 bpi is recommended, as this will accommodate large offices. The last block on a tape should be padded with blanks to the full block size.

It is suggested that the extract be placed initially in a dataset on DASD and then, once the extract has been successfully generated, it be copied to the final shipping medium.

14A.2 Records

A record is a collection of tags and values that pertain to one service or one group. The record starts with a RECORDTYPE tag and ends with a new-line <NL> character (EBCDIC Line Feed). Records are of variable length. Special values for the RECORDTYPE tag are:

- header
- group
- service
- rmvsvc (withdrawal record Dial Transfer extract only, SEL_OPTION=CHG)
- rmvgrp (withdrawal record Dial Transfer extract only, SEL_OPTION=CHG)
- spare (spare network unit found on General Extract extracts only)

- trailer

14A.3 Header Record

Consists of header information about where and when the extract was generated, what switching machine (IC) the extract is for, which wire center, etc.

Table 14A-1. Header Record

TAGS	VALUES
HDR	"TAGTMART 2" identifies the extract as a release 2 TAGTMART extract produced by the SWITCH system.
ISSUE_NUMBER	A value that reflects the specific TAGTMART software release that is producing the extract.
DTE	TAGTMART extract creation date (YYMMDD).
SENDER	Name of Software system that produced the extract (SWITCH).
SENDER_ISSUE	Release or version number of sender's software system (3.0).
DEST	Recipient of the extract. Vendor or LMOS or NSDB or OTHER.
WC	Wire Center ID.
PKEY	Primary Key for extract generation. (General Extract only)
LRANGE	Low Range for Primary Key. (General Extract only)
HRANGE	High Range for Primary Key. (General Extract only)
MASK	Masking for Primary Key. (General Extract only)
FILTER	Filter used (may have more than one). (General Extract only)
LC	Line Count (number of output records generated)
CMT	User comment text.
DLE_FULL	DLE network unit indicator. Y if DLE NTUs will be in the extract.
DTRORD	Dial Transfer BCC Order Number
ON	Office Name (Wire Center Information Table)

Table 14A-1. Header Record (Continued)

EXT_TYPE	(DTR or GENERAL) Defines the type of extract. If the extract type is DTR the following fields will be needed: DTRORD (Dial Transfer Work Order Number) SEL_OPTION (ALL or CHG)
TCC	Telephone Company Code. (AT&T). (Wire Center Information Table)
BNO	Base Number (AT&T). (Wire Center Information Table)
ICID	Switch (IC) ID based on the "TO" switch type and ID. (e.g., 1es.1 or 5es.a or dmc.4 or dmx.2)
ETYP	Switch (IC) type (1ES, 1AES, 2ES, 2BES, 5ES, DMS100, DMS10).
CG	Entity Number or Control Group Number.
ORDERNO	Vendor's Order Number
FORMAT	Format Indicator
HLINE	Alternate Format Indicator
OUTWATS	Indicates that the OutWATS TN associated with OutWATS service instead of the main TN is to be used as the CTID tag value when parameter is set to "y" (only for extracts with Destination "LMOS").

14A.4 Group Records

The extract output contains translations that apply to groups. The following recordtypes pertain to groups:

- group
- rmvgrp

For any changed or cancelled group, the old view will be given in a "rmvgrp" record and the new view will be in a "group" record.

All group translations present on the group translations edge must be recorded on the extract prior to the group being referenced by any individual member of that group. This applies to "group" records. The following groups are to be written: HML, SCH, and CTX.

14A.4.1 HML Group

The following tags are included in the HML group record:

1. HML = Group Number.
2. TLI = Pilot number for HML.
3. Any other translations tags.

14A.4.2 SCH Group

The following tags should be included in the SCH group record:

1. SCH = tn. Use the first number of the hunt sequence, i.e. the pilot TN.
2. Any Translations tags on the trans edge.

Note that the SCH group does not have an id in the switch database. The SCH group will be recognized by the first TN in the hunt list. Each working record that is part of an SCH should refer to the SCH "group" by the first TN in the SCH hunt list.

14A.4.3 CTX Group

The following tags should be included in the CTX group record:

1. CTX = Centrex Group Number.
2. Any other translations tags.

14A.5 Service Records

The extract output contains translations that apply to working individual services. The following recordtypes are for services:

- service
- chgsvc

Each service that is selected to be on the TAGTMART shall have one record that contains translations information for that individual service. If the service is a member of a group, the group translations information (the group record) must precede the individual translations information (the service record).

Tags to be included in working records are listed in Appendix 13A. The following tags should be included on a working record:

1. RECORDTYPE="service" or "chgsvc"
2. CTID or (STID and CTIDR)
3. Group IDs if groups are present.
4. SWITCH-system-and-MAS data. This includes design edge data and the following NTU IDs:
   - Switch Ports (SWPTs)
   - The following Digital Loop Electronics (DLE) Data should be placed in the extract unless the DLEFULL parameter has a "N" value.
     - Call Reference Values (CRVs)
     - Channels (CHANs)
     - Carrier Controller Port (CCPT)
     - Carrier Controller (CCID)

     If any of the above NTUs are present in the circuit, place a DLE=Y tag/value in the record to indicate that DLE elements are present.
   - Cable Pairs (CP)
   - Simulated Facility Groups (SFG)
   - Telephone Numbers (TN)
   - Multi-Line Hunt Groups (HML)
5. If the service is a primary service, then any NTU in the circuit, that is on the following list, will be represented in the record by its external id.
   - Bridge Lifters (BL) (GX Only)
   - Transmission Equipment (TRE)
   - Miscellaneous equipment (ME) (GX Only)

     If the ME has a non NULL SIDE attribute it will be represented as an SSC. Otherwise it will be represented as an ME.
   - IC Equipment (ICE)
   - Tie Pairs (IF) (GX Only)
6. MAS-Only data. This is all the tags from the translations edge.

14A.6 Withdraw Records

Withdraw records will only be used for dial transfers with SEL_OPTION=CHG. They serve to identify services that have already been sent to the vendor that need to be changed. Withdraw records will be identical to the original working record that was sent, except for the recordtype tag. There are two types of withdraw records:

- rmvsvc (for the removal of a service)
- rmvgrp (for the removal of a group)

As the group already exists in the vendor's database, group records do not need to precede the withdraw records.

14A.7 Spare Records

Spare records have the recordtype "spare" and will contain information about individual network units that meet the input criteria of general extracts and have no edge to a circuit.

14A.8 Trailer Record

Contains summary information about the number of records on the extract. It is broken down by several categories including record type. Each of the following tags should be present in every trailer record even if the value for a tag is 0. Tags in this record are shown in Table A-2.

Table 14A-2. Trailer Record

TOT_NUM_RECORDS	A count of the total number of TAGTMART records on the extract, excluding the header and trailer records.
NUM_GROUP	A count of the group records.
NUM_SERVICE	A count of the service records.
NUM_CHGSVC	A count of changed services (CHG extract only).
NUM_RMVGRP	A count of the withdraw records (groups).
NUM_RMVSVC	A count of the withdraw records (services).
NUM_SPARE	A count of the spare records (zero for dial transfers).

14A.9 SWITCH System Translations Data Storage

In general, translations tags will reside on the translation edge for the service. Information on the translation edge is already in tag/value form and can be copied directly to the output record. A few tags, called SWITCH-system-and-MAS Tags, will be found elsewhere in the database, either on other edges (external or design edges for example) or in the body of a node. A sample list of these tags can be found in the following table. Details about all of the tags can be found in Appendix 13A. SWITCH system database storage location information for each tag is included in the descriptions. Tagnames must be created for each of these database values.

SWITCH-system-and-MAS data is translations data that is used by both the SWITCH system for assignment purposes and by the MAS system for loading the IC. It is stored throughout the SWITCH system database. MAS-Only data is translations data stored in the SWITCH system database only to be transmitted to MAS. Except for Translations Transformations, MAS-Only data is not parsed or changed by the SWITCH system system.

Table 14A-3. SWITCH System and MAS Tags

ALUSOC	CP	EXK	ME[a]	POE	ROE	SIG	SUS
BAND	CS	FT	MTER	POER	RPOE	SITE	TD
BL[a]	CTX	HML	NHN	PRP	RT	SLEN	TLI
BOE	DNP	IC	OE	PTN	RTI	SSC[a]	TN
BS1	DPTN	ICE	OER	PTY	RZ	STN	TOE
BS2	DTN	IDP	PD	PUL	SCH	SUBL	TRE
BSD	ESL	MB	PIC	RCU	SFG		

a. These Tags appear only on General Extract extracts.

14A.10 Order of Records on the Extract

Withdraw records are written to extract before any group or working records. A group record is written before any individual working service from that group is written.

Each service in the circuit is written to a separate BTO output record.

14A.11 Group Translations Recap - DTR Only

For any TAGTMART extract generated, if there are working records that contain references to group information, that group information shall be on that extract and shall have been written to the extract prior to the first working record that refers to the group. This shall hold for all extracts and all groups, even those that have been written on previous extracts.

14A.12 Format

The following is the format of each individual tag and value.

TAG<**delimiter 1**>value<**delimiter 2**>

The delimiter between the tag and the value is called delimiter 1 and the delimiter between tag/value pairs is the called the delimiter 2. Both delimiters will be determined from a table in reference data (See TableA-4, "tagtmart destination types"), based on the extract recipient.

14A.13 Differences from SOAC/MAS Interface Specification

14A.13.1 Backward Compatibility with COSMOS TAGTMART

There are differences between the SOAC/MAS Interface Specification (SMIS) and the TAGTMART specification. TAGTMART is constrained to be upward compatible with the existing COSMOS specification where possible. Some of the tags in use in COSMOS TAGTMART conflict with tags in use in SMIS. Table A-5, "tagtmart tag map" lists the tag names in conflict. Once all the data has been extracted from the SWITCH system database, each tag is checked against this table. If the tag exists in the as an "IN TAG" table, it is replaced with the corresponding "OUT TAG".

14A.14 TAGTMART Output Reference Tables

14A.15 *tagtmart destination types* Reference Table

This table specifies the delimiters to be used on a particular extract and the type of processing needed for a particular extract-recipient. It is keyed by recipient. If a recipient is not found in the table the delimiters should take on the default values listed in the table.

The reference table will have 4 columns: Column 1 is the extract destination (TAGTMART_DEST), column 2 is the extract type (TAGTMART_TYPE), column 3 is separator 1 (TAGTMART-SEP-1) and column 4 is separator 2 (TAGTMART-SEP-2). Extract types can be vendor (table value = "V"), Assignment Redundancy Management [NSDB or LMOS] (table value = "L"), or other (table value = "O").

The default table will be as follows:

TAGTMART_DEST	TAGTMART_TYPE	TAGTMART_SEP1	TAGTMART_SEP2
DEFAULT	V	=	;
AT&T	V	=	;
NTI	V	=	;
LMOS	L	:	:
NSDB	L	=	;
OTHER	O	=	;

Table 14A-4. *tagtmart destination types*

14A.16 *tagtmart tag map* Table

The tagnames on existing TAGTMART extracts, generated by COSMOS, conflict with tagnames defined by the SOAC/MAS Interface Specification (SMIS). The SWITCH system will preserve the meaning of the TAGTMART tagnames by providing the Tag Map Table. In this way the SWITCH system TAGTMART extracts are backward compatible with COSMOS TAGTMART extracts and can co-exist.

The Tag Map Table will list those tags whose tagnames are in conflict only. Tagnames which cannot be found in this table should be written to the extract unchanged.

The first column is the tags in conflict. The second column is that tag's replacement name.

In Tag	Out Tag
BTN	BN
CAT	CT
CD	CONV_DIAL
ESL	EF
IC	EN
LCC	LC
RCU	US
SUS	SC
TC	TRCL
TER	TR

Table 14A-5. *tagtmart tag map*

14A.17 *tagtmart tag list* Table

For the purposes of comparing withdraw records and working records, the following list of tags is defined. If one of the following tags exists in a "service" or "rmvsvc" record and its value does not match the other record (or the other record does not have the tag) then the two records are considered significantly different. In that case they should both be written. Otherwise they are matching records, the rmvsvc record should not be written to the BTO extract and the service record should be written to extract as a chgsvc record.

tagtmart tag list			
BOE	HML	POER	STID
CTID	OE	PTN	TER
CTX	OER	SCH	TLI
DTN	POE	SFG	TN

Table 14A-6. *tagtmart tag list*

Appendix 14B: BTO TMART Extract Format

14B.1 Overview

This appendix will describe the format of a BTO TMART extract. A TMART extract will have 1 header record and one or more individual service records.

14B.2 Physical Format

Each TMART record is 512 bytes and is stored in the extract in 512 byte blocks (1 record per block) in ASCII format.

It is suggested that the extract be placed initially in a dataset on DASD and then, once the extract has been successfully generated, it be copied to the final shipping medium.

14B.3 Records

A TMART record is a collection of values that pertain to one service or one spare NTU. The record is 512 bytes in length and is fully specified in the following sections.

14B.4 TMART Header Record

The header record is produced at the beginning of each extract.

14B.4.1 Generalized Header for All Vendors or Extracts

Consists of header information about where and when the extract was generated, what switching machine (IC) the extract is for, which wire center, etc. .

Table 14B-1. Generalized Header

Extract Bytes	Justification	Description
1-8		"T MART 2" will identify the extract as the SWITCH TMART extract.
9-20		FLAG bytes (zeros)
21-26		TMART extract creation date (YYMMDD).
27-29		Default NPA (From JCL)

Table 14B-1. Generalized Header (Continued)

Extract Bytes	Justification	Description
30-89	Left	Table of NXXs/NPAs different from the default NPA. From (JCL)
90-97		Wire Center ID.
98-103	Left	Primary Key (JCL)
104-118	Right	Low Range (JCL)
119-133	Right	High Range (JCL)
134-139	Right	Line Count (JCL)
140-218		Vendor specific information (See specific vendor)
219-223	Left	Destination (JCL)
224-238	Right	Mask (JCL)
239-391		Filters (JCL)
392-402	Left	DTR Order Number (JCL)
403-405		Extract Option [CHG or ALL] (JCL)
406-412	Left	Extract Type [DTR or GENERAL] (JCL)
413-420		Time View Date (JCL)
421-499		Blank
500-512		Vendor specific information (See specific vendor)

Filter fields are as follows:

- NXX - use the syntax shown below, where x is "I" for include or "E" for exclude and aaa through eee represent individual NXXs.

  ```
  FILTER=x:NXX=aaa,bbb,ccc,ddd,eee;
  ```

- IC - use the syntax shown below, where x is "I" or "E" and aaaaaa through eeeeee represent individual Intelligent Controller (IC) IDs or Remote Unit (RU) IDs.

  ```
  FILTER=x:IC=aaaaaa,bbbbbb,cccccc,dddddd,eeeee;
  ```

- For all other filters use the following syntax, where x is "I" (include) or "E" (exclude) and ""<filter_name>" is replaced by a filter from the allowed list:

  ```
  FILTER=x::<filter_name>;
  ```

14B.4.2 TMART Header Record (Vendor Other).

Table 14B-2. Specific information for OTHER extracts and General Extracts

Extract Bytes	Justification	Description
1-139		Generic header information (See All Vendors)
140-147	Left	Order Number
148-197	Left	Site to Entity Table
198-218	Left	User comment text (only the first 21 characters).
219-499		Input Parameters (See Generalized Header)
500		"Y"
501-512		Blank

14B.4.3 Header Record (Vendor AT&T)

Table 14B-3. Header Record (Vendor AT&T)

Extract Bytes	Justification	Description
1-139		Generic header information (See All Vendors)
140-142		Telephone Company Code (3 numeric digits) (from WC Parms Reference Table)
143-146		Base Number of the IC in Dial Transfers the "TO" IC (from WC Parms Reference Table) (4 alphanumeric characters)
147		"C" for 1/1A ESS[a] , "E" for 2/2B ESS[b] , "5" for 5ESS, blank otherwise (DTR "TO IC")
148		Control Group from ICID of "TO IC" (1 alphanumeric character)
149-156	Left	AT&T Order Number (1 to 8 alphanumeric characters) (From JCL)
157-168	Left	AT&T Office Name (1 to 12 alphanumeric characters) (From WC Parms Reference Table)

Table 14B-3. Header Record (Vendor AT&T) (Continued)

Extract Bytes	Justification	Description
169-174		Blank
175		"Y" if any services on this extract are members of an HML group, "V" otherwise. Determined from data processed.
176		"Y"
177		"Y"
178		"Y" if any services on this extract are members of a Centrex group, "N" otherwise. Determined from data processed.
179-218		Blank
219-499		Input Parameters (See Generalized Header)
500-512		Blank

a. The 1ESS and 1AESS switching machines are both labeled 1ESS in the SWITCH System database.

b. The 2ESS and 2AESS switching machines are both labeled 2ESS in the SWITCH System database.

14B.4.4 Header Record (Vendor NTI)

Specific extract header information for NTI (Nortel) vendors.

BTO extracts indented for Nortel should include an entity-to-site mapping table where up to 10 single digit entity numbers are mapped to site names. This table will be supplied in the input JCL in the form:

ENSTBL=essss:essss:essss:essss:essss:essss:essss:essss:essss:essss;

Where "e" represents a user chosen Entity code that will map to the "ssss" site information. Only one byte is available in the TMART record for site information. The entity code is relevant only for the TMART extract and has no correspondence to data in the SWITCH database.

The STBL format is stored in the header record in a format compatible with COSMOS TAGTMART extract formats.

Table 14B-4. Header Record (Vendor NTI)

Extract Bytes	Justification	Description
1-139		Generic header information (See All Vendors)

Table 14B-4. Header Record (Vendor NTI) (Continued)

Extract Bytes	Justification	Description
140-151	Left	NTI Office Name (1 to 12 alphanumeric characters) (From WC Parms Reference Table)
152-157	Left	NTI COEO Order Number (1 to 6 alphanumeric characters) (From JCL)
158-160		Serving NPA (3 numeric digits)
161-162		Blank
163		"Y" if any services on this extract are members of an HML group, "V" otherwise. Determined from data processed.
164		"N"
165		"Y"
166		Blank
167-216	Left	Entity to Site Table (up to 10 combinations where entity is 1 alphanumeric character and site is up to 4 alphanumeric characters) (From JCL)
217		"Y"
218		"Y" if any services on this extract are members of a Centrex group, "N" otherwise. Determined from data processed.
219-499		Input Parameters (See Generalized Header)
500-512		Blank

14B.5 Service Records

The following sections will discuss the TMART service record in detail. The record is divided into several sections each 60 bytes long. A TMART record is designed to contain telephone number (TN), switch port (OE), cable pair (cp), and miscellaneous information. For each of TN, OE and cp there is a section for working or pending disconnect data and a section for spare or pending connect data. Each of these is 60 bytes. The final section is the miscellaneous section which contains information about other translation data relevant to the service.

14B.5.1 Digital Loop Electronics

The TMART extract will not be modified to store any Digital Loop Electronics (DLE) Network Units. Users who wish to supply DLE information should use the BTOEXT extract instead. If a TMART extract is produced that includes DLE equipment a byte will be marked indicating that there is data about the particular circuit that is missing from the TMART extract. See details in the Working/Spare Switch Port sections below.

14B.5.2 Data Placement

Dial Transfer (DTR) extracts and General Extract (GX) extracts will have data stored in different parts of the TMART record. Each extract contains a "snapshot" of the database from a given date. The DTR extract contains "pending" circuit information, a view of what the service will look like on the "TO" IC at the time of the DTR cutover.

The GX extract contains working circuits or spare NTUs as of a specific date (or the root view).

14B.5.2.1 Pending Activity

Pending activity is reported on three circuit elements (NTUs): TNs, CPs and SWTPs. Each section of the TMART record has 2 bytes set aside for "Status Code". The pending status of each of the three circuit elements is independent of the other elements in the circuit. A circuit could have a TN that is "W" for working and a SWPT that is "PA" for pending activity. The activity is not specified. It could be a change or a disconnect of the specified circuit element.

Pending activity indicates that the NTU has a connection with a delta node, in the SWTICH system database, which is due at some time after the view date. If the root view is specified then there exists at least one delta for that NTU. If a view date is specified then at least one delta exists with a due date later than the view date.

14B.5.2.2 DTR Data

DTR data representing a service that is to be working in the "TO" IC on the cutover date will be stored in the "pending" sections of the TMART record. These records will have "PC" (for pending connect) in the "status code" field.

If a service has been sent to the IC and is to be removed it will be shown in the "working" section of the TMART record and will have a "W" in the "status code" field to indicate that it is working in the "FROM" IC and will not be moved to the "TO" IC.

14B.5.2.3 GX Data

General Extract data representing a working service will be stored in the "working" section of the TMART record and will have a "W" in the "status code" field for working or a "PA" in the status code field if pending activity is indicated in the SWITCH database.

Spare equipment will be stored in the "spare" section of the TMART record (if the SPARE filter is marked "Include") and have an "S" in the "status code field" for spare or a "PA" in the "status code" field if pending activity is indicated in the SWITCH database. The other sections of the record will be blank.

14B.5.3 TMART Working TN

Table 14B-5. TMART Working TN

Extract Bytes	Justification	Description
1-7		Telephone number ID
8-9		Status Code
10-15	Left	Recent Change USOC (RCU)
16-23		Billing Telephone Number
24-30	Right	Hunt to Telephone or "00" if end of hunt sequence.
31-42	Left	Remarks (1st 12 bytes only)
43-46	Right	Centrex Group EXID(1st 4 bytes only)
47-48		Hunting information. [Start|Middle|End][Tn|m|hG][a]
49		Party Position [numeric 1-8 or blank]
50-55		Change Date (Service)
56-60		Blank

a. The hunting information field indicates two things. First, whether the service begins ("S"), continues ("M"), or ends ("E") the group (first byte of the field). Second, whether the service is part of an HML ("G") or an SCH ("T") (2nd byte of the field).

14B.5.4 TMART Pending TN

Table 14B-6. TMART Pending TN

Extract Bytes	Justification	Description Spare pending connect)
61-67		Telephone number ID
68-69		Status Code
70-75	Left	Recent Change USOC (RCU)
76-83		Billing Telephone Number
84-90	Right	Hunt to Telephone or "00" if end of hunt sequence.
91-102	Left	Remarks (1st 12 bytes only)
103-106	Right	Centrex Group EXID(1st 4 bytes only)
107-108		Hunting information. [Start|Middle|End][Tn|m|hG]
109		Party Position [numeric 1-8 or blank]

Table 14B-6. TMART Pending TN

Extract Bytes	Justification	Description Spare pending connect)
110-115		Change Date (Circuit)
116-120		Blank

14B.5.5 TMART Working Switch Port

Table 14B-7. TMART Working Switchport

Extract Bytes	Justification	Description
121-129	Left	Switchport ID (all numeric, dashes removed)
130-131		Status Code
132		Entity Code as defined in ES Table (from JCL input table DMS only)
133		Entity group number. (from ICID)
134		Rate zone. (from IC NXX Reference Table)
135-139	Left	Assignable Line USOC. (design edge)
140-145	Left	Customer Class of Service USOC (design edge)
146-149		Customer Features (FEA) [Rotary|Touchtone] [range eXtend|None] [Essential|Not essential] [Loop|Ground] (from SVC/design edge/PLS, Blank, ES, SIG)
150		Equipment Feature "E"=essential; "N"=non-essential
151-162	Left	PIC (from trans edge)
163-166		Blank (Was party information)
167-170		More PIC
171		blank
172		"Y" : line is prohibited from dialing 10xxx access code "N" : line is not prohibited.
173-174	Right	Centrex Access Treatment
175-177		Line Class Code (LCC) (Blank if none)
178		"X" Indicates that of the following DLE network units is present in the circuit: CCPT, CHNL, or CRV.
179-180		Blank

14B.5.6 TMART Pending Switch Port

Table 14B-8. TMART Pending Switchport

Extract Bytes	Justification	Description
181-189	Left	Switchport ID (all numeric, dashes removed)
190-191		Status Code
192		Entity Code as defined in ES Table (from JCL input table DMS only)
193		Entity group number (from ICID).
194		Rate zone. (from IC NXX Reference Table)
195-199	Left	Assignable Line USOC.
200-205	Left	Customer Class of Service USOC
206-209		Customer Features (FEA) [Rotary|Touchtone] [range eXtend|N] [Essential|NotEssential] [Loop|Ground]
210		Equipment Feature "E"=essential; "N"=non-essential
211-222	Left	PIC
223-226		Blank (was Party Info rotary/touchtone)
227-230		More PIC
231		blank
232		"Y" line is prohibited from dialing 10xxx access code, "N" line is not prohibited.
233-234	Right	Centrex Access Treatment
235-237.		Line Class Code (LCC) (Blank if none)
238		"X" Indicates that of the following DLE network units is present in the circuit: CCPT, CHNL, or CRV.
239-240		Blank

14B.5.7 TMART Working CP

Table 14B-9. TMART Working CP

Extract Bytes	Justification	Description
241-255	Right	Cable Pair ID
256-257	Left	Status Code

Table 14B-9. TMART Working CP

Extract Bytes	Justification	Description
258		Blank
259-262		Blank
263		"M" indicates a Mini Bridge Lifter working on this CP
264-285	Left	Permanent Remarks
286-291		Blank
292-297		CP Change date
298-300		Blank

14B.5.8 TMART Pending CP

Table 14B-10. TMART Pending CP

Extract Bytes	Justification	Description
301-315	Right	Cable Pair ID
316-317	Left	Status Code
318		Blank
319-322		Blank
323		"M" indicates a Mini Bridge Lifter working on this CP
324-337	Left	Permanent Remarks
338-345	Left	Temporary Remarks (1st 8 bytes only)
346-351		Blank
352-357		CP Change Date
358-360		Blank

14B.5.9 TMART Miscellaneous

Table 14B-11. TMART Miscellaneous

Extract Bytes	Justification	Description
361-364	Right	Terminal TER ID
365-368	Right	Multiline Hunt Group (MLHG) ID
369-372	Right	TER ID Pending Connect (PC)

Table 14B-11. TMART Miscellaneous (Continued)

Extract Bytes	Justification	Description
373-376	Right	MLHG ID Pending Connect (PC)
377-383		Blank
384-390		Blank
391-410	Left	CTID/STID (First 20 bytes only)
411-452	Left	CCF values separated by commas (marked with "*" if truncated)
453-459	Left	Bytes 21-27 of CTID/STID (which started at byte 391)
460		P if a Primary Service, S if a secondary service.
461-480		Blank
481-484	Right	Simulated Facilities Group Number.
485-506		Blank
507		Y for Remove (Blank otherwise)
508		Y for Change (Blank otherwise)
509-512		Blank

Appendix 14C: BTO FCIF Extract Format

This Appendix will describe the format of a BTO FCIF extract. This extract is intended to support the inclusion of Digital Loop Electronics (DLE) in the SWITCH system database, and provide a means of transmitting, in bulk, translations and assignment data for circuits/ services in the database.

14C.1 Digital Loop Electronics

Capabilities have been introduced into the SWITCH system to handle provisioning of Digital Loop Electronics (DLE) systems from the remote terminal into the central office.

DLE systems are characterized by Remote Terminals (RTs) connected to Central Office Terminals (COTs) via copper or optical carrier systems. The COTs are then connected to the Intelligent Controllers (ICs) via additional carrier systems (typically DS1s or T1 systems) or to analog ports on the Main Distributing Frame (MDF). The RTs and COTs are referred to as carrier controllers (CCs). The analog ports are referred to as cc ports if they are ports on a CC and are analogous to the switch ports on an IC.

Two kinds of carrier systems are supported by the SWITCH System, TR008 and TR303.

14C.1.1 TR008 DLE Systems

TR008 systems are static pair gain systems where a particular timeslot on a carrier system is dedicated to a particular customer circuit. This timeslot is referred to as a channel (CHNL).

A circuit that is represented with a derived pair and a derived switch port in the pre DLE mode of provisioning, would be represented in the DLE mode with a copper pair, connected to a cc port at the RT, using a channel from the carrier circuit to the COT, and either using another channel from a carrier circuit connecting the COT to the IC. Universal service would be represented with a copper pair, connected to a cc port at the RT, using a channel from the carrier circuit to the COT and another cc port which has an appearance on the MDF, and a jumper to one of the IC's analog switch ports.

14C.1.2 TR303 DLE Systems

TR303 systems use a dynamic timeslot allocation scheme between the RT and the IC. This timeslot may not be called a channel because it could be used by multiple customer circuits on successive calls. Instead, a different designation is used: a Call Reference Value (CRV). The CRV is used during call setup to negotiate which particular timeslot on the TR303 system will be used for the call. These types of circuits are not represented in pre-DLE mode provisioning and are similar to the TR008 described above but using CRVs directly into to IC. COT CC ports on the MDF are not used.

14C.1.3 DLE Inventory

The SWITCH system inventories switch ports, channels and call reference values with similar naming conventions and parse rules. When provisioning a channel or CRV, the assignment data is sent to the Memory Administration System (MAS) as an originating equipment (OE) assignment, regardless of the original type of circuit element involved. Thus any system or vendor can get valid data from a BTO FCIF extract by treating switch ports (SWPTs), channels (CHNLs) and call reference values (CRVs) as the same thing: an originating equipment reference for the particular IC.

14C.2 BTO Background

With the BTO FCIF format, the SWITCH system is producing a contract form for the extract. The contract will contain the assignments and translations data for circuits. The existing formats (TMART and TAGTMART) will continue to be supported but will not be updated to fully support DLE equipment. Future changes to the database structure will not be reflected in TMART or TAGTMART although TAGTMART will continue to be updated to contain all of the relevant translations tags.

Contracts are used to pass data out of the SWITCH System for the purpose of updating other systems and or comparing the SWITCH System data with other systems. The structure of the contracts is based on FCIF which is an aggregated TAG=VALUE format. The FCIF contracts used for the SWITCH System BTO FCIF Extract and the data passed from the SWITCH system to these external systems are discussed in Section 14C.4.

14C.3 Extract Processing

Processing Flows for the BTO FCIF extract are similar to the BTO TMART and BTO TAGTMART Dial Transfer (DTR) extracts, extracting data from the DTR work order information and generating the BTO FCIF output format. .

At this time, there is no general extract process available for the BTO FCIF extract.

14C.4 BTO FCIF Extract Format

The BTO FCIF extract process will extract the information needed for the BTOEXT contract from the DTR database structures. This information includes OE, BOE, POE, CC,

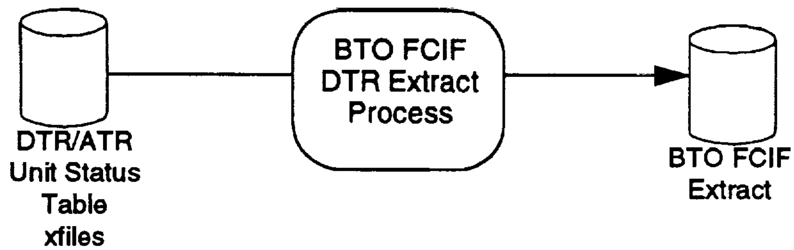

Figure 14C-1. BTO FCIF Process Flow

CHNL, CCPT and CRV information. The OE, BOE, POE, CHNL CCPT and CRV sections represent physical or logical switch port designations.

The BTOEXT contract will contain the following sections:

*C1	Contains contract header information
*BEXT	Contains individual circuit information.
*TSCH	Contains Series Complete Hunt (SCH) group information.
*THML	Contains Multi-line Hunt (HML) group Information.
*HDR	Contains information about the whole extract.
*TLR	Contains extract summary information.

Any BTOEXT contract that contains a *TSCH section will contain sections for the circuits, that fall into the input range, that make up the SCH group. This contract should consist of the *TSCH section, the necessary *BEXT sections and no other sections. An exception to this is the case where a circuit is in multiple groups. In this case all the groups will be placed in a single contract.

Any BTOEXT contract that contains a *THML section will contain sections for the circuits, in the input range, that make up the HML group. The contract should consist of the *THML section, the necessary *BEXT sections and no other sections. An exception to this is the case where a circuit is in multiple groups. In this case all the groups will be placed in a single contract.

The *BEXT section will hold all the services in a circuit, and will hold no more than one circuit.

The SWITCH system will format the BTOEXT contract and place it on tape or in an MVS dataset, as specified by a BMP JCL job.

For a complete description of the BTO FCIF extract format see **SR-3666**, *A Description of the Bulk Translations Output FCIF Extract*, Issue 1, September, 1997.

Appendix 14D: Bulk Translations Output JCL Input Parameters

14D.1 Overview

This appendix will describe the input parameters needed on the JCL that will generate a BTO TAGTMART, BTO TMART or BTO FCIF extract.

As the requirements for general extracts differ from those for dial transfer extracts [1], there will be separate processes for each extract type. Both types of extract will require similar input parameters which are listed below. If an individual parameter is applicable only to one or the other extract type it is noted.

There will be one parameter per line of the form ""<parameter>==<data>;". For example:

```
WC=908699;
```

14D.2 Parameter List - Dial Transfer Extracts

Dial Transfer BTO extracts will contain all circuits that are established in the Dial Transfer as defined by the Dial Transfer Work Order.

Table 14D-1 lists the JCL input parameters for Dial Transfer extracts.

:

Table 14D-1. DTR JCL Input Parameters

Parameter Description	Parameter Name	Optional/ Required/ Conditional	Comments
Wire Center	WC	R	
Line count	LC	O	Number of new records written to the BTO extract. See note 1.
Comments	CMT	O	User comments. Limited to 480 characters for TAGTMART and BTO FCIF, and 21 characters for TMART OTHER extracts. Must be the last JCL entry.
Work Order Number	DTRORD or ATRORD	R	Dial Transfer (DTRORD) or Area Transfer (ATRORD)

1. Dial transfer extract type for TAGTMART extracts are used for both dial transfers and area transfers.

Table 14D-1. DTR JCL Input Parameters (Continued)

Parameter Description	Parameter Name	Optional/ Required/ Conditional	Comments
Selection Type	SEL_OPTION	R	ALL or CHG CHG is valid only for vendor extracts or OTHER extracts.
Extract recipient	DEST	R	Extract recipient vendor, LMOS, NSDB or OTHER. Must be specified.
Vendor Order Number	ORDERNO	R	Dial Transfer Vendor extract only.
Entity to Site Table	ENSTBL	O	Required for TMART extracts only, with Northern Telecom Switches. See note 2.
Serving NPA	SRVNPA	O	Required for TMART extracts only, with Northern Telecom Switches.
DLE Network Unit indicator	DLE_FULL	O	"Y" or not present: All DLE NTUs will be placed in the circuit record. "N": If DLE NTUs are encountered in a circuit, then the tag/value DLE=Y will appear to indicate the presence of DLE elements.
Exchange Key Override	EXK	O	Allow the user to override the database exchange key to the extract.
New Tape Option	NEWTAPE	O	Applies to BTO FCIF only. (Default is NEWTAPE=N)
Database deadlock self retry limit	RETRYLMT	O	Default is 100 if RETRYLMT is not specified. Maximum RETRYLMT is 500.
Format	FORMAT	O	"S" - ULBB, i.e., SWITCH format[a] "C" - COMMON LANUAGE format "U" - USO, i.e., SOAC format Default is "U" if no format is given.
Build Group Management List	BUILDGML	O	This parameter is for release of existing DTR to release 2.5. The GML will be created for each group transition output. This parameter is olny allowed when SEL_OPTION=ALL and DEST=VENDOR

a. In releases before 1.7 this was the only possible format and the option was not avialable. Format options were added in Release 1.7 but the SWITCH input format was NOT selected as the default. Therefore to get the same output format as previous releases, FORMAT=S; MUST be specified.

NOTES:

1) This refers to the number of **new** records written to the BTO extract. As records are of variable length, some adjustment of the line count parameter may be necessary to "fill" an extract. When used with a Change (CHG) job, the extract may contain more records than was requested. Each Change (CHG) extract will contain all canceled and changed records that have accumulated since the previous BTO extract.

Line count applies only to working records that have not been written to BTO extracts before. In addition, there may be more records written to extract than requested. Each circuit can generate many records (one per service), and BTO will write all the records generated by a circuit, even if this exceeds the line count parameter. The Line Count parameter is valid in the following contexts (see Table 14D-2):

Table 14D-2. Line Count Valid Contexts

Extract Destination	ALL Extract	Change (CHG) Extract
IC Vendor	not valid	valid
LMOS/NSDB	not valid	valid
OTHER	valid	valid

2) Format as follows:

ENSTBL=essss:essss:essss:essss;
Where "e" represents a user choses Entity code that will map to the "ssss" site information.

14D.3 Parameter List - General Extracts

A General Extract BTO extract will use JCL input to specify what circuits should be on the extract (primary keys, masks, and filters).

Table 14D-3 lists the JCL input parameters for General extracts.

Table 14D-3. GX JCL Input Parameters

Parameter Description	Parameter Name	Optional/ Required/ Conditional	Comments
Wire Center	WC	R	
Primary Key(s)	PKEY	R	Only one PKEY allowed per extract.
Ranges	LRANGE HRANGE	O O	Low ID of primary key range High ID of primary key range See note 1
Masking	MASK	O	See note 2
Filters	FILTER	O	See note 3
Line count	LC	O	Number of new records written to the BTO extract. See note 1 after Table 14D-1 above.
Comments	CMT	O	User comments. Limited to 480 characters for TAGTMART and 21 characters for TMART OTHER extracts. Must be the last JCL entry.
Extract recipient	DEST	R	Extract recipient vendor, LMOS, NSDB or OTHER. Must be specified.
Entity to Site Table	ENSTBL	O	Required for TMART extracts only, with Northern Telecom Switches. See note
Area Code to NXX table	NPANXX	O	When multiple NPA in wire center, for TMART
Serving NPA	SRVNPA	O	Required for TMART extracts only, with Northern Telecom Switches.
Date of View	TIME_VIEW	O	MM/DD/YY, defaults to root view.

Table 14D-3. GX JCL Input Parameters (Continued)

Parameter Description	Parameter Name	Optional/ Required/ Conditional	Comments
Format	FORMAT	O	"S" - ULBB, i.e., SWITCH format "C" - COMMON LANUAGE format "U" - USO, i.e., SOAC format Default is "U" if no format is given.
OutWATS TN	OUTWATS	O	When parameter equals "Y", the OutWATS TN associated with the service rather than the main TN will be used as the CTID tag value. Only for extracts with destination "LMOS".
DLE Option	DLE_FULL	O	"Y" or not present: All DLE NTUs will be placed in the circuit record. "N": If DLE NTUs are encountered in a circuit, then the tag/value DLE=Y will appear to indicate the presence of DLE elements.
Restart	RESTART	O	To restart job from previous run.
Append	APPEND	O	If restart job, append to temporary files (SPARECAN, WORKING, and GROUP).

1) Ranges are allowed for CP, HML, SWPT and TN.

2) Masking is allowed for SWPT and TN (line number only).

3) The following can be used as filters on the input ranges (as in PREDTR):

- Administration of Design Service Review (ADSR)
- Cable Pairs (CP)
- Centrex Circuits (CTX)
- Multi-Line Hunt Groups (HML)
- Intelligent Controllers or Remote ICs (IC)

- NXX (up to a maximum of 5)
- Spare Network Units (SPARE)

The filter formats are as follows:

FILTER=*x*:NXX=*aaa,bbb,ccc,ddd,eee*;
x = "I" (include)
x = "E" (exclude)
aaa,bbb,...,eee = NXX values

FILTER=*x*:IC=*aaaaaa,bbbbbb,cccccc,dddddd,eeeeee*;
x = "I" (include)
x = "E" (exclude)
aaaaaa,bbbbbb,...,eeeeee = IC or Remote Unit IDs.

FORMAT=x:<filter name>;
x = "I" (include)
x = "E" (exclude)
For all other filter options.

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15. SWITCH SYSTEM and FOMS INTERFACE

The SWITCH SYSTEM and FOMS application-to-application (app-to-app) interface will provide circuit connectivity information for all provisioning requests and work orders to the Frame Operations Management System (FOMS). FOMS provides support for the frame work force, including frame output generation, frame work management, jeopardy processing, and frame completion.

Data will be passed across the SWITCH System and FOMS app-to-app interface in FCIF (Flexible Computer Interface Format). The SWITCH System and FOMS interface will use TOP/X.25 protocol between the SWITCH system and the Work Manager Consolidation. [1]

15.1 Processing Modes

The SWITCH System/FOMS interface supports several types of processing: programmable mode, demand mode, jeopardy processing, pending activity verification, reports, transmission of reference data, and inventory contracts.

15.1.1 Programmable Mode

Frame output from a programmable order can be sent immediately following assignment in the SWITCH system database, or it can be sent upon request from the user.

A programmable order is a multi-pass work order that can wait some amount of time before it is processed or completed. When a programmable order is first established in the SWITCH system, a planning message is sent to FOMS from the SWITCH system to alert frame personnel of future work. When frame personnel request frame output on programmable orders, the SWITCH system will send the frame output to FOMS. The SWITCH system will track the items of a multi-pass work order on which frame output has been sent to FOMS.

When changes are made to facilities that alter frame output previously sent to FOMS (e.g., changes caused by rework), the SWITCH system will send new frame output to FOMS containing the new view.

1. The Work Manager Consolidation is located on the same mainframe as FOMS. It performs communication level functions, and does not affect the contract flows between the SWITCH system and FOMS described in this section.

15.1.2 Demand Mode

Frame output from a demand order will be sent to FOMS immediately following assignment in the SWITCH system database.

A demand order is service related and must be processed immediately. Provisioning requests and single-pass work orders are normally processed in demand mode. When the SWITCH system completes assignment of a demand order, frame output will automatically be sent to FOMS.

15.1.3 Jeopardy Processing

Jeopardy processing applies to provisioning requests and multi-pass work orders. The multi-pass work orders for which the SWITCH system will support jeopardy processing are: cable pair transfers (CPTs), switch port equipment transfers (SETs), wire assembly orders (WAOs) and work order LSTs (WOLSTs). Jeopardy processing is not performed for Jumper Activity Management (JAMs), Channel/CRV Transfers (CTRs), Frame Transfers (FTRs), Dial Transfers (DTRs) or Area Transfers (ATRs). A specific item number may be used to identify a circuit being put into or removed from jeopardy.

Jeopardy processing will not be done on single-pass work orders because single-pass work orders do not pend in the SWITCH system and, therefore, cannot be placed in jeopardy. When the SWITCH system receives a contract from FOMS to establish a jeopardy on a single-pass work order, the SWITCH system will produce the following message: "Jeopardy rejected: Order NNNNNNNN does not exist". When the SWITCH system receives a contract from FOMS to cancel a jeopardy on a single-pass work order, the SWITCH system will ignore the contract. No error response will be sent to FOMS.

Large work orders may be worked in stages. In this situation, it possible to receive jeopardies for the following conditions:

1. An item is shown as complete in the Unit Status Table and a jeopardy establishment contract arrives for that item. On identifying this condition, the SWITCH system will produce the following message: "Jeopardy rejected: 'Network Unit ID' and 'Item Number' has been completed."
2. An item is shown as canceled in the Unit Status Table and a jeopardy establishment or cancellation arrives for that item. On identifying this condition, the SWITCH system will produce the following message: "Jeopardy rejected: 'Network Unit ID' and 'Item Number' has been canceled."

The cancellation of a jeopardy condition for an item that has been completed or canceled will not produce a notifier.

Line side jeopardies are established and canceled only by FOMS. When a jeopardy condition is established by frame personnel against a provisioning request, FOMS will send an Establish Frame Jeopardy (PREJEO) contract to the SWITCH system only if the FOMS Jeopardy Reason Table indicates that the jeopardy request should be sent. When a jeopardy condition is established against a multi-pass work order, FOMS will send an Establish Work Order Frame Jeopardy (PREJWO) contract to the SWITCH system only if the FOMS Jeopardy Reason Table instructs FOMS to do so. The FOMS Jeopardy Reason Table is BCC tunable by jeopardy type. The SWITCH system will also have a BCC-tunable table, the Jeopardy Action Table, that specifies jeopardy processing actions that should be taken by the SWITCH system for the different jeopardy types (see Section 15.8). The Jeopardy Action Table for Provisioning Requests is shown in Table 15-1. The Jeopardy Action Table for Work Orders is shown in Table 15-2. [2]It will be possible for the FOMS table to be set to send a jeopardy contract to the SWITCH system and the SWITCH system Jeopardy Action Table to be set so that no jeopardy processing occurs in the SWITCH system. The BCCs must take care to avoid this condition as it will cause unnecessary traffic on the interface.

15.1.4 Pending Activity Verification

BCC operations in a SWITCH System and FOMS environment requires the capability to verify that each pending activity residing in the SWITCH system database exists in the FOMS database. The EXTPDG contract will be sent to FOMS from the SWITCH system as a result of the EXT PDG work session. The contract provisions a list, optionally consisting of each pending provisioning request (i.e., service orders, company initiated orders), WOLST, CPT, SET, CTR, JAM, and WAO found in the SWITCH system database.

EXTPDG provides limited support for Dial Transfers up to 25K in size, in isolated instances when the need arises.[3] Due to the amount of data in the contract being generated for a DTR, output from the SWITCH System is written to an MVS dataset instead of being sent over the message queue. The file then must be manually transferred to FOMS/FUSA by means of a utility such as FTP. Further procedures exist in FOMS/FUSA to split the contract into pieces for processing.

2. The Jeopardy Action Tables are at the intelligent controller level, but may also be set at a higher level (e.g., wire center or global). When set globally, the same Jeopardy Action Table will be used for provisioning requests and work orders.

3. Sizes larger than 25K need additional memory beyond the SOE requiring the DCM to be temporarily changed. The SWITCH System performance group at Bellcore should be consulted for sizing assistance in these instances.

15.1.5 Reports and Reference Data

The SWITCH System can send any report to FOMS using the PREDAT contract. The PL header identifies the report for FOMS in the contract.

The SWITCH System can send any non-GTS (generic table system) reference data table to FOMS via the PREREF contract. The table may be requested by FUSA via a PRTREF contract. The table is sent in tag/value format.

15.1.6 Inventory Contracts

FOMS can send the UPDASM inventory contract to the SWITCH system. FOMS uses the UPDASM contract to create or break (as appropriate) DIPs in the SWITCH system database.

15.2 Determining FOMS Involvement

Determining FOMS involvement is straightforward. A user-settable, wire center level flag in the SWITCH system reference data *wc involvement* table will indicate whether or not contracts should be sent to FOMS. *No other involvement check is done by the SWITCH system.* Further involvement screening will be done by FOMS. This is because frame personnel may need to test a circuit or related circuit when no frame wiring is required, and the SWITCH system has no ability to know this.

The SWITCH system will use the wire center flag to determine FOMS involvement for all demand and programmable orders. Provisioning requests where some circuits in the request are FOMS involved and some are not will be considered FOMS involved. Contracts created for such provisioning requests will contain only the data for the FOMS-involved circuits.

The SWITCH system will have a Send Frame Output (SFO) parameter for each programmable order type. The SFO parameter will indicate whether the SWITCH system should send frame output to FOMS immediately (SFO=Y) or upon request (SFO=N). Users may set the SFO parameter so that the SWITCH system will handle programmable orders in the demand mode.

The SWITCH system also supports a Send Output Simultaneously (SOS) parameter. This parameter is evaluated during processing of user initiated requests for frame output (REQWO) or translation data (REQTRM). When processing a request for frame output, if the SOS parameter is set to coordinate output (SOS=Y), the SWITCH system will send both frame output and translation data at the same time, *if* translation data was not yet sent. When processing a request for translation data, if the SOS parameter is set to coordinate output (SOS=Y), the SWITCH system will send both translation data and frame output at the same time, *if* the frame output has not yet been sent. When the SOS parameter does not

specify coordination of output (SOS=N), the SWITCH system will send frame output to FOMS independently of sending translation data to SOAC for MAS.

When FOMS receives a contract from the SWITCH system, FOMS will perform data differencing. FOMS differencing will include review of frame work status to determine whether the "last" frame work has begun or not. If it has begun, then FOMS will prepare frame work instructions that include the previous and corrected frame termination information. If not, then FOMS will replace the previous frame termination information with the current information.

15.3 Contract Basis

The SWITCH System and FOMS interface is a wire center based interface. Any given SWITCH system to FOMS contract will be sent to only one FOMS system. Contracts between the SWITCH system and FOMS will be on a per pass basis for provisioning requests and on a per transfer unit [4]basis for work orders.

15.4 Sequence Numbers

The SWITCH system will provide a contract sequence number to FOMS on contracts for provisioning requests and multi-pass work orders. The sequence number will be provided at the order level only. The sequence number will be incremented by +1 for each successive contract for a specific provisioning request or multi-pass work order. The only exception are PREPWO contracts (also known as "planning messages"), which will not contain sequence numbers. Contracts for single-pass work orders will also not contain sequence numbers.

The SWITCH system multi-pass work order application programs will record the last order level sequence number in the Order Work Task (OWT) and in the Unit Status Table (UST) of each transfer unit related to the current pass of the multi-pass work order. When the SWITCH system receives a request from FUSA to resend a specific sequence numbered contract for a multi-pass work order (REQWO), the SWITCH system will resend the contract associated with that missing sequence number only. When the SWITCH system receives a request from FUSA to resend a contract for provisioning requests (RSDFO), the SWITCH system will resend the most recent contract that it sent to FOMS. In either case, the resent contract will contain the same sequence number as the contract for which the resend is requested. It will also contain a resend tag (RESEND=Y) to identify the contract as a resend.

4. For example, the transfer unit of a CPT is a cable pair, the transfer unit of an SET is a switch port, the transfer unit of a DTR is a circuit, etc.

FOMS will record the last order level sequence number in its order file and with each circuit. FOMS will continue processing past a missing sequence numbered contract. If a later contract contains frame output for a circuit that was also involved in the missing sequence numbered contract, FOMS will determine the actions necessary to continue processing. FOMS will permit frame personnel to print frame output but will block completion of an order if a sequence numbered contract is missing. When frame output is printed, the FOMS application programs will include a notifier indicating that the frame output may be incomplete due to missing SWITCH System contracts.

Table 15-3 contains an example of how sequence numbers will be applied to the SWITCH System and FOMS interface contracts. The example shows one cable pair transfer with five work tasks and several assignment or order changes. The example is not intended to be all inclusive.

15.5 General Contract Rules

As described above, the SWITCH System and FOMS interface processing for demand orders is different from the SWITCH and FOMS interface processing for programmable orders. Table 15-4 shows which orders are normally demand and which are normally programmable.

FCIF contracts are used for interface messages. Contracts with names of the form aaaFO are used to send information to FOMS on provisioning requests and single-pass work orders. Contracts with names of the form aaaWO are used to send information to FOMS on multi-pass work orders. Contracts with names of the form aaaJEO are used for FOMS to send messages to the SWITCH system to establish or cancel jeopardies on provisioning requests. Contracts with names of the form aaaJWO are used for FOMS to send messages to the SWITCH system to establish or cancel jeopardies on multi-pass work orders. The PCNSET contract will be used for FOMS to send completions of switch port equipment transfers to the SWITCH system when these are initiated by frame personnel. The PCNJAM contract will be used for FOMS to send completions of jumper activity management orders to the SWITCH system when these are initiated by frame personnel. The PCNWAO contract will be used for FOMS to send completions of wire assembly orders to the SWITCH system when these are initiated by frame personnel. The PCNFTR contract will be used for FOMS to send completions of frame transfer orders to the SWITCH system when these are initiated by frame personnel. The contract EXTPDG is sent to FOMS from the SWITCH system for verification of pending activities. The PREDAT contract is used to send formatted report information to FOMS from the SWITCH system. The PREREF contract is used to send reference data tables to FOMS from the SWITCH system. Finally, the PREFWI contract is sent from FOMS to inform the SWITCH system of frame completion status for a dial transfer or area transfer. The contracts are:

1. Establish Plan for Multi-Pass Work Order Frame Output (PREPWO)

2. Establish Multi-Pass Work Order Frame Output (PREWO)
3. Cancel Multi-Pass Work Order Frame Output (CANWO)
4. Complete Multi-Pass Work Order Frame Output (PCNWO)
5. Complete Switch Port Equipment Transfer (PCNSET)
6. Complete Jumper Activity Management (PCNJAM)
7. Complete Wire Assembly Order (PCNWAO)
8. Complete Frame Transfer Order (PCNFTR)
9. Establish Frame Output (PREFO)
10. Cancel Frame Output (CANFO)
11. Cancel Frame Output for Service Order LST (CANFOL)
12. Complete Frame Output (PCNFO)
13. Complete Frame Output for Service Order LST (PCNFOL)
14. Establish Frame Jeopardy for Provisioning Requests (PREJEO)
15. Cancel Frame Jeopardy for Provisioning Requests (CANJEO)
16. Establish Frame Jeopardy for Multi-Pass Work Orders (PREJWO)
17. Cancel Frame Jeopardy for Multi-Pass Work Orders (CANJWO)
18. Inform the SWITCH system of dial/area transfer frame completion (PREFWI)
19. Provide FOMS with a list of pending circuit orders in the SWITCH system (EXTPDG)
20. Formatted reports output for FOMS (PREDAT)
21. Reference data tables for FOMS (PREREF)

The SWITCH system will receive other contracts from FUSA (Frame User assignment System Access). The FUSA contracts that affect FOMS app-to-app interface processing are: Request Multi-Pass Work Order Frame Output (REQWO), Resend Multi-Pass Work Order Frame Output (REQWO), and Resend Frame Output (RSDFO). When one of these requests is received from FUSA, the SWITCH system will respond by sending a contract to FOMS. In addition, FUSA can send a PRTREF contract to the SWITCH system which will cause a PREREF.

For the SWITCH system to create contracts for FOMS on provisioning requests, the following rules will apply:

The SWITCH system will send full order data on all contracts created for precompletion (PRE), correction (COR), and assignment change (ACE) passes. [5]Contracts on PRE, COR, and ACE passes will contain data on the current pass only. No data from previous passes

will be included. On provisioning requests with inward and outward activity, both the inward and outward data will be included in the contract.

Provisioning request contracts will be complete for all activities. That is, *all circuits* on the current pass of the provisioning request will be sent to FOMS, and *all facilities* on those circuits will be sent whether the action on the facilities is *in, out* or *reuse*. Only *physical* facilities will be sent to FOMS, not *logical* facilities. For example, carrier controller ports will be sent, but channels and CRVs will *not* be sent. Contracts will be sent to FOMS on all passes of provisioning requests. All information for the current pass of the provisioning request will be provided in the contract. That is, if a correction pass withdraws a circuit that was on a previous pass, the circuit will be absent from the contract for the correction pass. If a circuit has an equipment change from one pass of a provisioning request to another, the equipment that was assigned on the previous pass and removed in the current pass will not appear in the contract for the current pass. The actions related to the facilities will be with respect to the in-effect view of the data before the provisioning request was received by the SWITCH system. Thus:

- **reuse** means that the equipment was in the circuit before the initial provisioning request was established (e.g., before the initial PRE pass).
- **in** means that the equipment was not in the circuit before the initial provisioning request was established and is being put in by the current provisioning request.
- **out** means that the equipment was in the circuit before the initial provisioning request was established but is being taken out by the current provisioning request.

Any equipment activity for provisioning request passes before the **current** one is ignored. Thus, if transmission equipment was originally in a circuit, removed by a PRE pass, but put back in by a COR pass, the action to FOMS will be **reuse**.

Contracts will be sent for each pending provisioning request or multi-pass work order for which frame output was previously sent to FOMS and which is subsequently involved in rework activity. For example, if a provisioning request cancellation causes rework on two pending provisioning requests, three contracts will be sent: one for the canceled provisioning request, and one for each of the reworked pending provisioning requests.

Associated activity for a provisioning request will appear in the same contract as the frame output for the provisioning request. Thus, information on breaking DIPs or about associated LSTs will appear in the same contract.

For backtap management, FOMS will maintain a pending equipment file that will contain provisioning request numbers and due dates for all activities on each assigned and pending network unit. Since the SWITCH system will send contracts on all state changes, FOMS will be able to update the pending equipment file and know all related pending activity

5. Refer to BR 752-106-040, "SWITCH System Contracts Directory," for details on the contents of the SWITCH System and FOMS app-to-app interface contracts.

against an assigned network unit. Thus, the SWITCH system will not need to send FOMS the last completed order or last pending order associated with an assigned network unit.

15.6 Demand Order Contract Flows

As shown in Table 15-4, provisioning requests and single-pass work orders are demand orders. The contracts used for provisioning requests are PREFO, CANFO, and PCNFO. The contract used for single-pass work orders is PREFO. The contracts used for multi-pass work orders are PREPWO, PREWO, CANWO, and PCNWO.

PREWO, CANWO, PCNWO, CANFO, and PCNFO contracts *always* contain sequence numbers. PREFO contracts for provisioning requests *always* contain sequence numbers, but PREFO contracts for single-pass work orders *never* do.

The contract flows for each demand order type are discussed separately in the remainder of this section.

15.6.1 Provisioning Requests

The SWITCH system will immediately send an initial PREFO contract to FOMS when the SWITCH system finishes processing the following provisioning contracts:

- Establish and Assign Provisioning Request (PRESO)
- Establish and Assign INT Mode Provisioning Request (PREINT)
- Establish and Assign TDO Mode Provisioning Request (PRETDO)
- Record Only Provisioning Request (RORSO)

The SWITCH system will also use PREFO contracts to send corrections to FOMS. The SWITCH system will process corrections on a first in/first out basis. Correcting PREFO contracts will have a *correction suffix* greater than that of the previous PREFO contract sent to FOMS and will contain information for all circuits on the provisioning request, not just for the circuits that have changed. FOMS will difference the new and prior frame output received from the SWITCH system to determine what changes, if any, are of interest to frame personnel. The SWITCH system will send correcting PREFO contracts to FOMS when the SWITCH system finishes processing the following contracts:

- Correct Provisioning Request (CORSO)
- Correct INT Mode Provisioning Request (CORINT)
- Correct TDO Mode Provisioning Request (CORTDO)
- Assignment Change for Provisioning Request (ACESO)

If a CORSO, CORINT, or CORTDO contract changes the provisioning request from FOMS involved to FOMS not involved, the SWITCH system will send a CANFO contract to FOMS. ACESO contracts will not affect FOMS involvement.

The SWITCH system will also send a correcting PREFO contract to FOMS when rework causes assignment changes to a provisioning request on which a PREFO has already been sent. Rework processing occurs when, during assignment of a provisioning request, network units already assigned to another, unrelated pending order (provisioning request or multi-pass work order) are selected. If a PREFO was not yet sent to FOMS, the SWITCH system will combine the new information resulting from rework into the initial PREFO to FOMS. Correcting PREFO contracts resulting from rework will have the same correction suffix and version number as the previous PREFO contract sent to FOMS, but the sequence number will be incremented.

The SWITCH system will send a CANFO contract to FOMS when the SWITCH system finishes processing a Cancel Provisioning Request (CANSO) contract *if* the SWITCH system previously sent PREFO contract(s) to FOMS for the provisioning request. If the SWITCH system has not yet sent PREFO contract(s) to FOMS, the SWITCH system will not send a CANFO to FOMS. The cancellation will be done in the SWITCH system only.

The SWITCH system will send a PCNFO contract to FOMS when the SWITCH system finishes processing a Complete Provisioning Request (PCNSO) contract *if* the SWITCH system previously sent PREFO contract(s) to FOMS for the provisioning request. If the SWITCH system has not yet sent PREFO contract(s) to FOMS, then the SWITCH system will not send a PCNFO to FOMS. The completion will be done in the SWITCH system only.

When the SWITCH system finishes processing a PCNSO contract on a provisioning request for which completion is to be blocked [6] the SWITCH system will put the PCNSO in queue. When the SWITCH system receives a CANJEO contract for the provisioning request, the SWITCH system will cancel the jeopardy, process the PCNSO contract that is in queue, and send a PCNFO contract to FOMS.

Company Initiated Orders (CIO) can be completed in FOMS. When a CIO is completed in FOMS, FOMS will send a PCNSO contract to the SWITCH System.

15.6.2 Service Order LSTs

The SWITCH system will allow: cancellation and completion of the service order (SO) and service order LST (SOLST) at the same time; separate cancellation of the SOLST both before and after the SO is canceled; and separate completion of the SOLST both before the

6. i.e., the SWITCH system previously received an Establish Frame Jeopardy (PREJEO) contract for the provisioning request and the Jeopardy Action Table indicated that the SWITCH system should block completion. (See Section 15.8.1)

SO is completed and after the SO is canceled. The SWITCH system will process a SO and SOLST cancellation based on the value of the CANLST tag that comes from SOAC in the *LST section of PRESO, CORSO, and ACESO contracts. When there is activity against a SO and/or SOLST, the SWITCH system will inform FOMS.

There are several cases that apply to SOLST cancellation and completion. The flows for each are discussed in detail in the sections that follow.

1. Both the SO and SOLST are canceled:

   If the SWITCH system previously sent contracts to FOMS for the SO and SOLST, the SWITCH system will send FOMS a CANFO contract. The CANFO will contain a *FO section with only the sequence number. (This is the current structure of CANFO.) FOMS should cancel both the SO and SOLST.

2. The SOLST is canceled before the SO:

   If the SWITCH system previously sent contracts to FOMS for the SO and SOLST, the SWITCH system will send FOMS a PREFO contract. If there is an *LST section in the PREFO, FOMS should cancel the SOLST items that do *not* appear in the *LST section. If there is no *LST section, FOMS should cancel *all* SOLST items.

3. The SO is canceled before the SOLST:

   If the SWITCH system previously sent contracts to FOMS for the SO and SOLST, the SWITCH system will send FOMS a CANFO contract. The CANFO will contain a *FO section with the sequence number and a *LST section. The *LST section will contain a CKT (Circuit) aggregate for each SOLST item that is still pending.

4. The SOLST is canceled after the SO:

   If the SWITCH system previously sent contracts to FOMS for the SO and SOLST, the SWITCH system will send FOMS a CANFOL contract. The CANFOL will contain a *FO section with the sequence number and a *LST section. The *LST section will contain a CKT aggregate for each SOLST item that is still pending. FOMS will cancel the SOLST items that do *not* appear in the *LST section. If there is no *LST section, FOMS should cancel *all* SOLST items.

5. Both the SO and SOLST are completed:

   If the SWITCH system previously sent contracts to FOMS for the SO and SOLST, the SWITCH system will send FOMS a PCNFO contract. The PCNFO will contain a *FO section with only the sequence number. (This is the current structure of PCNFO.) FOMS should complete both the SO and SOLST.

6. The SOLST is completed before the SO or after the SO is canceled:

   If the SWITCH system previously sent contracts to FOMS for the SO and SOLST, the SWITCH system will send FOMS a PCNFOL contract. The PCNFOL will contain a *FO section with the sequence number and a *LST section. The *LST section will

contain a CKT aggregate for each SOLST item that is still pending. FOMS will complete the SOLST items that do *not* appear in the *LST section. If there is no *LST section, FOMS should complete *all* SOLST items.

15.6.3 Maintenance Changes Tickets

The only SWITCH System-to-FOMS contract that is used for maintenance change tickets is PREFO. When the SWITCH system finishes processing an Establish Maintenance Change Ticket (PREMCT) contract, the SWITCH system will immediately send a PREFO contract to FOMS.

15.7 Multi-Pass Work Order Contract Flows

As shown in Table 15-4, CPTs, SETs, CTRs, JAMs, WOLSTs, WAOs, FTRs, DTRs, and ATRs are multi-pass work orders. The contracts used for multi-pass work orders are PREPWO, PREWO, CANWO, and PCNWO. [7]PREWO, CANWO, and PCNWO contracts will contain a sequence number. PREPWO contracts will *not* contain a sequence number.

PREPWO contracts are also known as "planning messages". Planning messages will identify the range of all facilities included in the programmable order. For dial and area transfers, the planning messages will include the input scope criteria used to establish or assign the dial/area transfer. [8]Planning messages will have two forms. The establishment planning message (PREPWO contract with ostat tag equal to "e") will notify FOMS that the SWITCH system has received a new programmable order or that the size of an existing programmable order has changed. This message will be stored by FOMS and will be incorporated in the "Open-of-Day" report.

When a programmable order is established and the wire center level flag is set to "N" (do not send frame output), the SWITCH system will not create an establishment planning message.

The assignment planning message (PREPWO contract with ostat tag equal to "a") will be sent at the end of the assignment process in the SWITCH system. This message will produce output on a FOMS terminal or printer to inform frame personnel that wiring information for the programmable order is available and may be requested from the SWITCH system through FUSA, using the REQWO contract (FUSA transaction RQF).

7. PREFWI is also used in DTRs and ATRs to notify the SWITCH system of frame completion status.

8. Establishment planning messages for the "TO" WC of an area transfer will not include all the scope information. Line count will be provided, but filter criteria will not be present. Facility ranges will be present for cable pair ranges if cable pair mapping (CPM) is set to "no" for the ATR or if CPM is "yes" and the "FROM" cable pairs appear in the mapping tables. See Section 17 for additional information on area transfers.

The assignment planning message will automatically notify FOMS that frame output is ready and will eliminate the need to run periodic inquiries for this purpose.

The SWITCH system will use the PREWO contract to send frame output on multi-pass work orders to FOMS. There will be initial and correcting PREWO contracts. The SWITCH system will send initial PREWO contracts to FOMS according to the SFO parameter (see Section 15.2). The SWITCH system will only send correcting PREWOs when at least one PREWO has already been sent to FOMS for the particular transfer item. The SWITCH system will send correcting PREWO contracts to FOMS immediately, regardless of the SFO parameter setting. FOMS will difference the new and prior frame output received from the SWITCH system to determine what changes, if any, are of interest to frame personnel.

When the SWITCH system receives a correction before the initial PREWO is sent to FOMS, the SWITCH system will combine the correction(s) with the initial input contract data and will send it in the initial PREWO contract according to the SFO parameter setting.

The SWITCH system will also send a correcting PREWO contract to FOMS when rework causes assignment changes to a multi-pass work order on which a PREWO has already been sent. Rework processing occurs when, during assignment of a work order, network units already assigned to another, unrelated pending order (provisioning request or multi-pass work order) are selected. If a PREWO was not yet sent, the SWITCH system will combine the new information resulting from rework into the initial PREWO to FOMS. The sequence number of reworked PREWO contracts will be incremented.

The SWITCH system will use the CANWO contract to send partial and entire cancellations of programmable orders to FOMS. The SWITCH system will use the PCNWO contract to send partial and entire completions of programmable orders to FOMS. If the entire order is cancelled or completed, the SWITCH system will include a tag, DISCARD, in the CANWO or PCNWO contract to indicate to FOMS that the order has been removed from the SWITCH system database and should be removed from FOMS. The DISCARD tag is utilized for entire cancellation or completion of all types of multi-pass work orders.

In a DLE environment, certain work orders may not require any frame work. The IFC (Ignore Frame Output for Completions) parameter determines whether an item can be completed if the associated frame output has not been sent to FOMS. If IFC=Y, then an item can be completed regardless of whether or not the associated frame output was sent to FOMS. If IFC=N, then an item can not be completed if the associated frame output was not sent to FOMS. The IFC parameter applies to CPTs, WOLSTs, CTRs, DTRs, and ATRs.

The contract flows for each programmable order type are discussed separately in the remainder of this section.

15.7.1 Cable Pair Transfers (CPTs)

The Establish Cable Pair Transfers (PRECPT) contract will establish CPTs in the SWITCH system. When the SWITCH system finishes processing a PRECPT contract, the SWITCH system will send an establishment planning message to FOMS.

The Assign Cable Pair Transfer (ASGCPT) contract will assign CPTs in the SWITCH system. When the SWITCH system finishes processing an ASGCPT contract, the SWITCH system will send an assignment planning message to FOMS. Assignment planning messages will be sent immediately, regardless of the SFO parameter setting.

If SFO=N, the SWITCH system will send a PREWO contract to FOMS when the SWITCH system receives a REQWO contract from FUSA or the SWITCH system ULBB for items on the CPT. The user may tune the SWITCH system to process CPTs in demand mode (SFO=Y). If SFO=Y, the SWITCH system will send a PREWO contract to FOMS immediately after the assignment planning message.

The SWITCH system will receive corrections to CPTs from LFACS via SOAC as a Cancel Cable Pair Transfer (CANCPT) and a PRECPT contract pair. The action that the SWITCH system will taken when it receives a CANCPT/PRECPT contract pair depends on (1) the contracts that the SWITCH system has already sent to FOMS and (2) whether the CANCPT partially or entirely cancels the CPT. A description of the full flows follows:

1. CANCPT:

   When the SWITCH system receives a partial or an entire CANCPT but the SWITCH system has not yet sent a PREPWO or a PREWO to FOMS, the SWITCH system will *not* send a contract to FOMS.

   When the SWITCH system receives a partial CANCPT and the SWITCH system previously sent PREPWOs to FOMS but *no* PREWO, the SWITCH system will send a new establishment planning message but *no* CANWO contract. The new establishment planning message will show the decrease in lines on the CPT caused by the CANCPT.

   When the SWITCH system receives a partial CANCPT and the SWITCH system previously sent PREPWOs *and* PREWO to FOMS, the SWITCH system will send FOMS a CANWO contract and a new establishment planning message.

   When the SWITCH system receives a final CANCPT and the SWITCH system previously sent FOMS PREPWOs only or both PREPWOs and PREWO, the SWITCH system will send a CANWO contract to FOMS. The SWITCH system will *not* send an establishment planning message on final cancellations.

2. PRECPT:

   When the SWITCH system receives the PRECPT contract, the SWITCH system will send FOMS another establishment planning message to redefine the size of the CPT resulting from the PRECPT. Following ASGCPT processing, the SWITCH system

will then send an assignment planning message to FOMS. If the SWITCH system already sent a PREWO to FOMS prior to receiving the CANCPT and PRECPT contracts, the SWITCH system will immediately send a PREWO contract to FOMS *regardless* of the SFO parameter setting. If the SWITCH system did not yet send a PREWO to FOMS prior to receiving the CANCPT and PRECPT contracts, the SWITCH system will send a PREWO contract to FOMS *according to* the SFO parameter setting.

The SWITCH system will use the Correct Cable Pair Transfer (CORCPT) contract to change non-F1 CPT assignments. When the SWITCH system receives the CORCPT contract, the SWITCH system will determine if the items specified in the CORCPT contract were assigned. If yes, the SWITCH system will further determine if PREWO contract(s) have already been sent to FOMS. If yes, the SWITCH system will immediately send a correcting PREWO. If no, the SWITCH system will include the corrections in the initial PREWO which will be sent to FOMS according to the SFO parameter setting.

The Complete Cable Pair Transfer (PCNCPT) contract will partially or entirely complete CPTs in the SWITCH system. When the SWITCH system receives a PCNCPT contract which completes successfully, the SWITCH system will send a PCNWO contract to FOMS, *if* the SWITCH system previously sent PREWO contract(s) to FOMS for the transfer item(s). If IFC=Y and the SWITCH system has not yet sent PREWO contract(s), then the SWITCH system will not send a PCNWO contract. If IFC=N and the SWITCH system has not yet sent PREWO contract(s), then the SWITCH system will block the completion (the PCNWO will not be sent until the PREWO is sent).

15.7.2 Switch Port Equipment Transfers (SETs)

The Establish Switch Port Equipment Transfer (PRESET) contract will establish SETs in the SWITCH system. When the SWITCH system finishes processing a PRESET contract, the SWITCH system will send an establishment planning message to FOMS.

The Assign Switch Port Equipment Transfer (ASGSET) contract will assign SETs in the SWITCH system. When the SWITCH system finishes processing an ASGSET contract, the SWITCH system will send an assignment planning message to FOMS. Assignment planning messages will be sent immediately, regardless of the SFO parameter setting.

If SFO=N, the SWITCH system will send a PREWO contract to FOMS when the SWITCH system receives a REQWO contract from FUSA or the SWITCH system ULBB for items on the SET. The user may tune the SWITCH system to process SETs with SFO=Y. If SFO=Y, the SWITCH system will send a PREWO contract to FOMS immediately after the assignment planning message.

The Cancel Switch Port Equipment Transfer (CANSET) contract will partially or entirely cancel SETs in the SWITCH system. When the SWITCH system receives a partial or an

entire CANSET but the SWITCH system has not sent a PREPWO or a PREWO to FOMS, the SWITCH system will *not* send a contract to FOMS.

When the SWITCH system receives a partial CANSET and the SWITCH system previously sent PREPWOs to FOMS but *no* PREWO, the SWITCH system will send a new establishment planning message but *no* CANWO contract.

When the SWITCH system receives a partial CANSET and the SWITCH system previously sent PREPWOs *and* PREWO to FOMS, the SWITCH system will send FOMS a CANWO contract and a new establishment planning message.

When the SWITCH system receives an entire CANSET and the SWITCH system previously sent FOMS PREPWOs only or both PREPWOs and PREWO, the SWITCH system will send a CANWO contract to FOMS. The SWITCH system will *not* send an establishment planning message on entire cancellations.

The Complete Switch Port Equipment Transfer (PCNSET) contract will partially or entirely complete SETs in the SWITCH system. [9]When the SWITCH system receives a PCNSET contract which completes successfully, the SWITCH system will send a PCNWO contract to FOMS, *if* the SWITCH system previously sent PREWO contract(s) to FOMS for the transfer item(s). If the SWITCH system has not yet sent PREWO contract(s), then the SWITCH system will block the completion (the PCNWO will not be sent until the PREWO is sent).

15.7.3 Channel/CRV Transfers

The Establish Channel/CRV Transfer (PRECTR) contract will establish CTRs in the SWITCH system. When the SWITCH system finishes processing a PRECTR contract, the SWITCH system will send an establishment planning message to FOMS.

The Assign Channel/CRV Transfer (ASGCTR) contract will assign CTRs in the SWITCH system. When the SWITCH system finishes processing an ASGCTR contract, the SWITCH system will send an assignment planning message to FOMS. Assignment planning messages will be sent immediately, regardless of the SFO parameter setting.

If SFO=N, the SWITCH system will send a PREWO contract to FOMS when the SWITCH system receives a REQWO contract from FUSA or the SWITCH system ULBB for items in the CTR. The user may tune the SWITCH system to process CTRs with SFO=Y. If SFO=Y, the SWITCH system will send a PREWO contract to FOMS immediately after the assignment planning message.

The Cancel Channel/CRV Transfer (CANCTR) contract will partially or entirely cancel CTRs in the SWITCH system. When the SWITCH system receives a partial or an entire

9. The SWITCH system will receive the PCNSET contract from FOMS across the interface, or optionally may receive PCNSET from the ULBB work session CMP SET.

CANCTR but the SWITCH system has not sent a PREPWO or a PREWO to FOMS, the SWITCH system will *not* send a contract to FOMS.

When the SWITCH system receives a partial CANCTR and the SWITCH system previously sent PREPWOs to FOMS but *no* PREWO, the SWITCH system will send a new establishment planning message but *no* CANWO contract.

When the SWITCH system receives a partial CANCTR and the SWITCH system previously sent PREPWOs *and* PREWO to FOMS, the SWITCH system will send FOMS a CANWO contract and a new establishment planning message.

When the SWITCH system receives an entire CANCTR and the SWITCH system previously sent FOMS PREPWOs only or both PREPWOs and PREWO, the SWITCH system will send a CANWO contract to FOMS. The SWITCH system will *not* send an establishment planning message on entire cancellations.

The Complete Channel/CRV Transfer (PCNCTR) contract will partially or entirely complete CTRs in the SWITCH system. When the SWITCH system receives a PCNCTR contract which completes successfully, the SWITCH system will send a PCNWO contract to FOMS, *if* the SWITCH system previously sent PREWO contract(s) to FOMS for the transfer item(s). If IFC=Y and the SWITCH system has not yet sent PREWO contract(s), then the SWITCH system will not send a PCNWO contract. If IFC=N and the SWITCH system has not yet sent PREWO contract(s), then the SWITCH system will block the completion (the PCNWO will not be sent until the PREWO is sent).

15.7.4 Jumper Activity Management (JAM)

The Establish Jumper Activity Management (PREJAM) contract will establish JAMs in the SWITCH system. When the SWITCH system finishes processing a PREJAM contract, the SWITCH system will send an establishment planning message to FOMS.

The Assign Jumper Activity Management (ASGJAM) contract will assign JAMs in the SWITCH system. When the SWITCH system finishes processing an ASGJAM contract, the SWITCH system will send an assignment planning message to FOMS. Assignment planning messages will be sent immediately, regardless of the SFO parameter setting.

If SFO=N, the SWITCH system will send a PREWO contract to FOMS when the SWITCH system receives a REQWO contract from FUSA or the SWITCH system ULBB for items in the JAM. The user may tune the SWITCH system to process JAMs with SFO=Y. If SFO=Y, the SWITCH system will send a PREWO contract to FOMS immediately after the assignment planning message.

The Cancel Jumper Activity Management (CANJAM) contract will partially or entirely cancel JAMs in the SWITCH system. When the SWITCH system receives a partial or an entire CANJAM but the SWITCH system has not sent a PREPWO or a PREWO to FOMS, the SWITCH system will *not* send a contract to FOMS.

When the SWITCH system receives a partial CANJAM and the SWITCH system previously sent PREPWOs to FOMS but *no* PREWO, the SWITCH system will send a new establishment planning message but *no* CANWO contract.

When the SWITCH system receives a partial CANJAM and the SWITCH system previously sent PREPWOs *and* PREWO to FOMS, the SWITCH system will send FOMS a CANWO contract and a new establishment planning message.

When the SWITCH system receives an entire CANJAM and the SWITCH system previously sent FOMS PREPWOs only or both PREPWOs and PREWO, the SWITCH system will send a CANWO contract to FOMS. The SWITCH system will *not* send an establishment planning message on entire cancellations.

The Complete Jumper Activity Management (PCNJAM) contract will partially or entirely complete JAMs in the SWITCH system. [10]When the SWITCH system receives a PCNJAM contract which completes successfully, the SWITCH system will send a PCNWO contract to FOMS, *if* the SWITCH system previously sent PREWO contract(s) to FOMS for the transfer item(s). If the SWITCH system has not yet sent PREWO contract(s), then the SWITCH system will block the completion (the PCNWO will not be sent until the PREWO is sent).

15.7.5 Wire Assembly Orders (WAOs)

The Establish Wire Assembly Order (PREWAO) contract will establish WAOs in the SWITCH system. When the SWITCH system finishes processing a PREWAO contract, the SWITCH system will send an establishment planning message to FOMS.

The Assign Wire Assembly Order (ASGWAO) contract will assign WAOs in the SWITCH system. When the SWITCH system finishes processing an ASGWAO contract, the SWITCH system will send an assignment planning message to FOMS. Assignment planning messages will be sent immediately, regardless of the SFO parameter setting.

WAOs are normally processed in programmable mode (SFO=N). If SFO=N, the SWITCH system will send a PREWO contract to FOMS when the SWITCH system receives a REQWO contract from FUSA or the SWITCH system ULBB for items on the WAO. The user may tune the SWITCH system to process WAOs in the demand mode (SFO=Y). If SFO=Y, the SWITCH system will send a PREWO contract to FOMS immediately after the assignment planning message.

The Cancel Wire Assembly Order (CANWAO) contract will partially or entirely cancel WAOs in the SWITCH system. When the SWITCH system receives a partial or an entire CANWAO but the SWITCH system has not sent a PREPWO or a PREWO to FOMS, the SWITCH system will *not* send a contract to FOMS.

10. The SWITCH system will receive the PCNJAM contract from FOMS across the interface, or optionally may receive PCNJAM from the ULBB work session CMP JAM.

When the SWITCH system receives a partial CANWAO and the SWITCH system previously sent PREPWOs to FOMS but *no* PREWO, the SWITCH system will send a new establishment planning message but *no* CANWO contract.

When the SWITCH system receives a partial CANWAO and the SWITCH system previously sent PREPWOs *and* PREWO to FOMS, the SWITCH system will send FOMS a CANWO contract and a new establishment planning message.

When the SWITCH system receives an entire CANWAO and the SWITCH system previously sent FOMS PREPWOs only or both PREPWOs and PREWO, the SWITCH system will send a CANWO contract to FOMS. The SWITCH system will *not* send an establishment planning message on entire cancellations.

The Complete Wire Assembly Order (PCNWAO) contract will partially or entirely complete WAOs in the SWITCH system. [11]When the SWITCH system receives a PCNWAO contract which completes successfully, the SWITCH system will send a PCNWO contract to FOMS, *if* the SWITCH system previously sent PREWO contract(s) to FOMS for the transfer item(s). If the SWITCH system has not yet sent PREWO contract(s), then the SWITCH system will block the completion (the PCNWO will not be sent until the PREWO is sent).

15.7.6 Work Order Line and Station Transfers (WOLSTs)

The Establish Work Order LST (PRELST) contract will establish WOLSTs in the SWITCH system. Although WOLSTs typically involve only one circuit, they can require a cascade approach to clear the specific targeted cable pair. When the SWITCH system finishes processing a PRELST contract, the SWITCH system will send an establishment planning message to FOMS. The establishment planning message will include information about the involved cable pair.

The Assign Work Order LST (ASGLST) contract will assign WOLSTs in the SWITCH system. When the SWITCH system finishes processing an ASGLST contract, the SWITCH system will send an assignment planning message to FOMS. Assignment planning messages will be sent immediately, regardless of the SFO parameter setting.

WOLSTs are normally processed in programmable mode (SFO=N). If SFO=N, the SWITCH system will send a PREWO contract to FOMS when the SWITCH system receives a REQWO contract from FUSA or the SWITCH system ULBB for items on the WOLST. The user may tune the SWITCH system to process WOLSTs in the demand mode (SFO=Y). If SFO=Y, the SWITCH system will send a PREWO contract to FOMS immediately after the assignment planning message.

11. The SWITCH system will receive the PCNWAO contract from FOMS across the interface, or optionally may receive PCNWAO from the ULBB work session CMP WAO.

The SWITCH system will receive corrections to WOLSTs from LFACS via SOAC as a CANLST and PRELST contract pair. When the SWITCH system receives the CANLST/PRELST contract pair, the SWITCH system will follow the same flow as for CPT corrections described above in Section 15.7.1.

The Cancel LST (CANLST) contract will entirely cancel WOLSTs in the SWITCH system. [12]When the SWITCH system receives a CANLST but the SWITCH system has not yet sent a PREPWO or a PREWO to FOMS, the SWITCH system will *not* send a contract to FOMS.

When the SWITCH system receives an entire CANLST and the SWITCH system previously sent FOMS PREPWOs only or both PREPWOs and PREWO, the SWITCH system will send a CANWO contract to FOMS. The SWITCH system will *not* send an establishment planning message on entire cancellations.

The Complete LST (PCNLST) contract will entirely complete WOLSTs in the SWITCH system. When the SWITCH system receives a PCNLST contract which completes successfully, the SWITCH system will send a PCNWO contract to FOMS, *if* the SWITCH system previously sent PREWO contract(s) to FOMS for the transfer item. If IFC=Y and the SWITCH system has not yet sent PREWO contract(s), then the SWITCH system will not send a PCNWO contract. If IFC=N and the SWITCH system has not yet sent PREWO contract(s), then the SWITCH system will block the completion (the PCNWO will not be sent until the PREWO is sent).

15.7.7 Frame Transfer (FTR)

The Establish Frame Transfer (PREFTR) contract will establish FTRs in the SWITCH system. When the SWITCH system finishes processing a PREFTR contract, the SWITCH system will send an establishment planning message to FOMS.

The Assign Frame Transfer (ASGFTR) contract will assign FTRs in the SWITCH system. When the SWITCH system finishes processing an ASGFTR contract, the SWITCH system will send an assignment planning message to FOMS. Assignment planning messages will be sent immediately, regardless of the SFO parameter setting.

If SFO=N, the SWITCH system will send a PREWO contract to FOMS when the SWITCH system receives a REQWO contract from FUSA or the SWITCH system ULBB for items in the FTR. The user may tune the SWITCH system to process FTRs with SFO=Y. If SFO=Y, the SWITCH system will send a PREWO contract to FOMS immediately after the assignment planning message.

The Cancel Frame Transfer (CANFTR) contract will partially or entirely cancel FTRs in the SWITCH system. When the SWITCH system receives a partial or an entire CANFTR but the SWITCH system has not sent a PREPWO or a PREWO to FOMS, the SWITCH system will *not* send a contract to FOMS.

12. Because there is one item per WOLST, WOLSTs cannot be partially canceled.

When the SWITCH system receives a partial CANFTR and the SWITCH system previously sent PREPWOs to FOMS but *no* PREWO, the SWITCH system will send a new establishment planning message but *no* CANWO contract.

When the SWITCH system receives a partial CANFTR and the SWITCH system previously sent PREPWOs *and* PREWO to FOMS, the SWITCH system will send FOMS a CANWO contract and a new establishment planning message.

When the SWITCH system receives an entire CANFTR and the SWITCH system previously sent FOMS PREPWOs only or both PREPWOs and PREWO, the SWITCH system will send a CANWO contract to FOMS. The SWITCH system will *not* send an establishment planning message on entire cancellations.

The Complete Frame Transfer (PCNFTR) contract will partially or entirely complete FTRs in the SWITCH system. [13]When the SWITCH system receives a PCNFTR contract which completes successfully, the SWITCH system will send a PCNWO contract to FOMS, *if* the SWITCH system previously sent PREWO contract(s) to FOMS for the transfer item(s). If the SWITCH system has not yet sent PREWO contract(s), then the SWITCH system will block the completion (the PCNWO will not be sent until the PREWO is sent).

15.7.8 Dial Transfers (DTRs)

The Establish Dial Transfer (PREDTR) contract will establish DTRs in the SWITCH system. When the SWITCH system finishes processing a PREDTR contract, the SWITCH system will send an establishment planning message to FOMS. If the PREDTR was initiated to change the DTR due date, then the due date change flag in the *C1 header will be set to 'y'. Otherwise this flag in the *C1 header will be blank.

The Assign Dial Transfer (ASGDTR) contract will assign DTRs in the SWITCH system. When the SWITCH system finishes processing an ASGDTR contract, the SWITCH system will send an assignment planning message to FOMS. Assignment planning messages will be sent immediately, regardless of the SFO parameter setting.

If SFO=N, the SWITCH system will send a PREWO contract to FOMS when the SWITCH system receives a REQWO contract from FUSA or the SWITCH system ULBB for items on the DTR. If SFO=Y, the SWITCH system will send a PREWO contract to FOMS immediately after the assignment planning message.

The Cancel Dial Transfer (CANDTR) contract will partially or entirely cancel DTRs in the SWITCH system. [14]When the SWITCH system receives a partial or an entire CANDTR

13. The SWITCH system will receive the PCNFTR contract from FOMS across the interface, or optionally may receive PCNFTR from the ULBB work session CMP FTR.

14. Dial Transfer cancellations can request that items in the DTR be canceled from assignment or canceled from transfer. The information sent to FOMS is the same for either type of cancellation.

but the SWITCH system has not yet sent a PREPWO or a PREWO to FOMS, the SWITCH system will *not* send a contract to FOMS.

When the SWITCH system receives a partial CANDTR and the SWITCH system previously sent PREPWOs to FOMS but *no* PREWO, then the SWITCH system will send a new establishment planning message but *no* CANWO contract.

When the SWITCH system receives a partial CANDTR and the SWITCH system previously sent PREPWOs *and* PREWO to FOMS, then the SWITCH system will send FOMS a CANWO contract and a new establishment planning message.

When the SWITCH system receives an entire CANDTR and the SWITCH system previously sent FOMS PREPWOs only or both PREPWOs and PREWO, then the SWITCH system will send a CANWO contract to FOMS. The SWITCH system will *not* send an establishment planning message on entire cancellations.

The Complete DTR (PCNDTR) contract will partially or entirely complete DTRs in the SWITCH system. When the SWITCH system receives a PCNDTR contract which completes successfully, the SWITCH system will send a PCNWO contract to FOMS, *if* the SWITCH system previously sent PREWO contract(s) to FOMS for the transfer item(s). If IFC=Y and the SWITCH system has not yet sent PREWO contract(s), then the SWITCH system will not send a PCNWO contract. If IFC=N and the SWITCH system has not yet sent PREWO contract(s), then the SWITCH system will block the completion (the PCNWO will not be sent until the PREWO is sent).

The Frame Work Information (PREFWI) contract will be sent to the SWITCH system from FOMS whenever a DTR assignment is frame complete. This information will be stored in the SWITCH system and will be available via inquiries and reports. No processing is done in the SWITCH system based on this information.

15.7.9 Area Transfers (ATRs)

Administrative area transfers will not generate frame output. Non-administrative area transfers will generate frame output from both the "FROM" and "TO" wire centers. [15]The Establish Area Transfer (PREATR) contract will establish ATRs in the SWITCH system. When the SWITCH system finishes processing a PREATR contract, the SWITCH system will send an establishment planning message to FOMS. If the PREATR was initiated to change the ATR due date, then the due date change flag in the *C1 header will be set to 'y'. Otherwise this flag in the *C1 header will be blank.

The Assign Area Transfer (ASGATR) contract will assign ATRs in the SWITCH system. When the SWITCH system finishes processing an ASGATR contract, the SWITCH system will send an assignment planning message to FOMS. Assignment planning messages will be sent immediately, regardless of the SFO parameter setting.

15. See Section 17 for a discussion of Area Transfers.

If SFO=N, the SWITCH system will send a PREWO contract to FOMS when the SWITCH system receives a REQWO contract from FUSA or the SWITCH system ULBB for items on the ATR. If SFO=Y, the SWITCH system will send a PREWO contract to FOMS immediately after the assignment planning message.

For circuits for which frame output has been previously sent, frame output messages will be sent automatically when circuit assignments are changed because of rework activity, re-assignment after cancellation, or assignment correction.

The Cancel Area Transfer (CANATR) contract will partially or entirely cancel ATRs in the SWITCH system. [16]When the SWITCH system receives a partial or an entire CANATR but the SWITCH system has not yet sent a PREPWO or a PREWO to FOMS, the SWITCH system will *not* send a contract to FOMS.

When the SWITCH system receives a partial CANATR and the SWITCH system previously sent PREPWOs to FOMS but *no* PREWO, then the SWITCH system will send a new establishment planning message but *no* CANWO contract.

When the SWITCH system receives a partial CANATR and the SWITCH system previously sent PREPWOs *and* PREWO to FOMS, then the SWITCH system will send FOMS a CANWO contract and a new establishment planning message.

When the SWITCH system receives an entire CANATR and the SWITCH system previously sent FOMS PREPWOs only or both PREPWOs and PREWO, then the SWITCH system will send a CANWO contract to FOMS. The SWITCH system will *not* send an establishment planning message on entire cancellations.

The Complete ATR (PCNATR) contract will partially or entirely complete ATRs in the SWITCH system. When the SWITCH system receives a PCNATR contract which completes successfully, the SWITCH system will send a PCNWO contract to FOMS, *if* the SWITCH system previously sent PREWO contract(s) to FOMS for the transfer item(s). If IFC=Y and the SWITCH system has not yet sent PREWO contract(s), then the SWITCH system will not send a PCNWO contract. If IFC=N and the SWITCH system has not yet sent PREWO contract(s), then the SWITCH system will block the completion (the PCNWO will not be sent until the PREWO is sent).

The Frame Work Information (PREFWI) contract will be sent to the SWITCH system from FOMS whenever a ATR assignment is frame complete. This information will be stored in the SWITCH system and will be available via inquiries and reports. No processing is done in the SWITCH system based on this information.

16. Area Transfer cancellations can request that items in the ATR be canceled from assignment or canceled from transfer. The information sent to FOMS is the same for either type of cancellation.

15.8 Jeopardy Contract Flows

The SWITCH system will process jeopardies on provisioning requests, and multi-pass work orders. The multi-pass work orders for which the SWITCH system will support jeopardy processing are: CPTs, SETs, WAOs and WOLSTs. The SWITCH system will handle the following jeopardy types for both provisioning requests and multi-pass work orders:

- A - Assignment Error
- C - Circuit Design Group (CPC)
- E - No ESS Translations
- I - No Installation Go Ahead
- R - Repair Service Bureau Error
- N - Network Administration Center

Jeopardies will originate in FOMS; they cannot be created directly into the SWITCH system. For provisioning requests, FOMS will use PREJEO and CANJEO contracts to pass jeopardy information to the SWITCH system. For multi-pass work orders, FOMS will use PREJWO and CANJWO contracts to pass jeopardy information to the SWITCH system. These contracts are discussed in detail in the remainder of this section.

15.8.1 Establishing Provisioning Request Jeopardies

Various work groups (e.g., NAC, NTEC, FCC, LAC, etc.) can identify and establish jeopardy conditions on provisioning requests. The "Input Jeopardy Report" (IJR) transaction is used to establish a jeopardy in FOMS. If the FOMS Jeopardy Reason Table indicates that FOMS should inform the SWITCH system of an assignment-affecting jeopardy on a provisioning request, FOMS will send the SWITCH system an Establish Frame Jeopardy for Provisioning Request (PREJEO) contract. FOMS will not check the order type when sending a PREJEO contract to the SWITCH system.

When the SWITCH system receives a PREJEO contract, the SWITCH system will verify that the status of the provisioning request in the database is "assigned", that the correction suffix and version number of the PREJEO contract are the same as the suffix and version number of the provisioning request in the data base, and that no completion pass has been processed. If these criteria are not satisfied or if the SWITCH system receives a PREJEO contract for a non-pending provisioning request, the SWITCH system will ignore the PREJEO.

If the criteria for jeopardy acceptance are satisfied, the SWITCH system will check the BCC-tunable Jeopardy Action Table to determine the action to take. Table 15-1shows the Jeopardy Action Table for Provisioning Requests. The Jeopardy Action Table is at the

intelligent controller level, but may also be set at a higher level (e.g., wire center or global). For all jeopardy types on provisioning requests, the user may tune the SWITCH system to: retain jeopardy data, block completion, send the jeopardy status to SOAC, and send a notice to another BCC-specified location. Additionally for "A"-type jeopardies on provisioning requests, the user may tune the SWITCH system to send an RMA to SOAC.

If the user tunes the SWITCH system to retain jeopardy data, the SWITCH system will retain jeopardy data for each circuit in the PREJEO contract until it receives either a CANJEO contract or a new COR, ACE, or CAN pass. Jeopardy data provided by FOMS and retained by the SWITCH system will include: [17]

- Date and time the jeopardy was input to FOMS. *Jeodate* is in the form yyyymmdd. *Jeotime* is based on a 24 hour clock.
- Jeopardy code (*jeocode*): the data that describes the jeopardy type (e.g., Axx, Cxx, Exx, Ixx, Rxx, where "xx' can be any values).
- Jeopardy remarks (*jeormks*), as input through the IJR transaction into FOMS.

Jeopardy data retained by the SWITCH system will provide an audit trail between FOMS and the SWITCH system.

If the SWITCH system is not tuned to retain jeopardy data, no jeopardy processing will occur, and settings in the Jeopardy Action Table for other actions are irrelevant.

If the user tunes the SWITCH system to block completion after it receives a PREJEO contract, then the SWITCH system will hold completions received for circuit(s) that are in jeopardy. When the SWITCH system blocks a completion, the SWITCH system will output a notice to BCC-determined location(s). The locations to which the SWITCH system can output notices are work centers with SWITCH system printers. The notice will contain the order number, the circuit ID, and the statement "PCN blocked due to jeopardy condition". The completion will be restarted automatically when the jeopardy is cleared via a CANJEO contract from FOMS.

If the user tunes the SWITCH system to send the jeopardy status to SOAC, the SWITCH system will send a PRE, COR, or ACE contract to SOAC, depending on the last contract that the SWITCH system received from SOAC. For example, if the last contract received from SOAC for the provisioning request was a PRESO, then the SWITCH system will send SOAC a PRESO contract with the unsolicited field in the *C1 header set to "u" (unsolicited) and the status field in the *C1 header set to "j" (jeopardy). The contract will also contain the latest assignments and, if applicable, translation data.

If the user tunes the SWITCH system to send a notice to BCC-specific location(s), the SWITCH system will send a notice to those locations stating that a jeopardy has been established when it receives a PREJEO contract from FOMS. The notice will contain the

17. See BR 752-106-040, "SWITCH System Contracts Directory," for details about the data contained in jeopardy contracts.

order number, the circuit ID, and the jeopardy data (date, time, code, and remarks). The locations to which the SWITCH system can output notices are work centers with SWITCH system printers.

For "A"-type jeopardies only, the user may tune the SWITCH system to send SOAC an RMA when the SWITCH system receives a PREJEO contract from FOMS. This will enable SOAC and LOMS to package and distribute jeopardy notices using existing SOAC RMA capabilities. The RMA format will provide automatic notification of a jeopardy condition to the LAC work group that is responsible for resolving problem(s) associated with the jeopardy. The data in the *JEO section of the PREJEO contract will be sent to SOAC in the *MSG section of the RMA. The MA field in the *C1 header will be set to "y" (Yes). The status field in the *C1 header will be "m" (error kept). The RMA notice output from LOMS can, thus, reduce the phone calls between the originator and user of the jeopardy reports.

15.8.2 Clearing Provisioning Request Jeopardies

Jeopardies on provisioning requests may be cleared from the SWITCH system in two ways: FOMS may send CANJEO contract to the SWITCH system, or the SWITCH system will automatically clear the jeopardy when it receives a new provisioning request pass that affects the circuit in jeopardy. Rework will *not* clear jeopardies. PREFO contracts sent to FOMS due to a new order pass will contain a JEO (Jeopardy) in the CKT aggregate to identify circuits that remain in jeopardy in the SWITCH system.

15.8.2.1 CANJEO Processing

When the SWITCH system receives a CANJEO contract against a pending circuit, the SWITCH system will undo the jeopardy actions that were done when it received the PREJEO contract from FOMS:

- If the SWITCH system retained jeopardy data, the SWITCH system will purge the jeopardy data that was retained.
- If the SWITCH system blocked completion, then the SWITCH system will automatically restart completion if a completion was received and blocked while a circuit was in jeopardy. The SWITCH system will then send a PCNFO contract to FOMS after the completion has been processed.
- If the SWITCH system sent the jeopardy status or an RMA to SOAC, the action the SWITCH system takes depends on whether the CANJEO clears jeopardies from all or only some of the circuits on the order. If the CANJEO clears jeopardies from all circuits, the SWITCH system will send a PRE, COR, or ACE contract to SOAC to remove the jeopardy status. If the CANJEO clears jeopardies from only some of the circuits, the SWITCH system will send another jeopardy status or RMA to SOAC for

the circuits that remain in jeopardy. In either case, the contract type will depend on the last contract that the SWITCH system received from SOAC.

For example, if the last contract received from SOAC for the provisioning request was an ACESO, then the SWITCH system will send SOAC an ACESO contract with the unsolicited field in the *C1 header set to "u" (unsolicited). The value of the status field in the *C1 header depends on whether the contract clears the jeopardy in SOAC (status set to "a"), establishes a new jeopardy (status set to "j"), or contains a RMA-type jeopardy (status set to "m"). If the contract clears the jeopardy or establishes a new one, it will contain all assignments for the provisioning request. If, in addition, the provisioning request is INT or TDO mode and MAS involved, the contract will also contain translation data.

- If the SWITCH system sent a notice to BCC-specific location(s), then the SWITCH system will send a notice to those locations stating that the jeopardy was canceled.

The SWITCH system will send FOMS a new PREFO contract when jeopardies are cleared via CANJEO.

When the SWITCH system receives a CANJEO contract for a provisioning request that is not pending, the SWITCH system will output a message stating that the specified order is not found.

15.8.2.2 New Provisioning Request Pass

When the SWITCH system receives a new provisioning request pass (COR, ACE, or CAN pass from either SOAC or the ULBB), the SWITCH system will:

- Delete all jeopardy data for the circuit affected by the new order pass
- Send a PREFO contract to FOMS containing all circuits on the order (if the new pass was a COR or ACE). Circuits that remain in jeopardy will be identified by the JEO tag in the CKT aggregate.
- Send a CANFO contract to FOMS if the new pass canceled the order.

If the SWITCH system sent a notice to BCC-determined location(s), then the SWITCH system will *not* send a notice to the same location(s) when a jeopardy is cleared by a new pass.

15.8.3 Establishing Work Order Jeopardies

As with provisioning requests, various work groups (e.g., NAC, NTEC, FCC, LAC, etc.) can identify and establish jeopardy conditions on multi-pass work orders. The "Input Jeopardy Report" (IJR) transaction is used to establish a jeopardy in FOMS. If the FOMS Jeopardy Reason Table indicates that FOMS should inform the SWITCH system of an

assignment-affecting jeopardy on a multi-pass work order, FOMS will send the SWITCH system an Establish Frame Jeopardy for Multi-Pass Work Order (PREJWO) contract. If the SWITCH system receives a PREJWO contract for a transfer unit that is not pending, the SWITCH system will provide an error message.

The action that the SWITCH system will take when it receives a PREJWO contract against a pending transfer unit is determined by the user-tunable "Jeopardy Action Table" (shown in Table 15-2). The Jeopardy Action Table is at the intelligent controller level, but may also be set at a higher level (e.g., wire center or global). The "Jeopardy Action Table" may be a work order instance, or it may be the same global table as used for provisioning requests. If the same table is used, the two actions with respect to SOAC are ignored for work orders, since SOAC does not handle jeopardies against work orders.

For all jeopardy types (A, C, E, I, R, N) on multi-pass work orders, users may tune the SWITCH system to: retain jeopardy data, block completion, and send a notice to BCC-determined location(s).

If "Retain Data" is set to "Y" (Yes), the SWITCH system will retain jeopardy data for each transfer item identified in the PREJWO contract until it receives either a CANJWO contract or a new COR or CAN pass. Jeopardy data provided by FOMS and retained by the SWITCH system will include:

- Date and time the jeopardy was input to FOMS. *Jeodate* is in the form yyyymmdd. *Jeotime* is based on a 24-hour clock.
- Jeopardy code (*jeocode*): the data that describes the jeopardy type (e.g., Axx, Cxx, Exx, Ixx, Rxx, where "xx" can be any values).
- Jeopardy remarks (*jeormks*), as input through the IJR transaction into FOMS.

If "Retain Data" is set to "N" (No), no jeopardy processing will occur, and settings in the Jeopardy Action Table for other actions are irrelevant.

If "Block Completion" is set to "Y" for a jeopardy code, the SWITCH system will block completion of transfer units with that jeopardy code. When the SWITCH system blocks a completion, the SWITCH system will output a notice to BCC-determined location(s). The locations to which the SWITCH system can output notices are work centers with SWITCH system printers. The notice will contain the order number, the circuit ID, and the statement "PCN blocked due to jeopardy condition". The completion will be restarted automatically when the jeopardy is cleared via a CANJWO contract from FOMS.

The SWITCH system will accept correction passes against transfer units for which a completion is blocked. When a user enters a correction through the ULBB, the ULBB will check if a completion is blocked. If yes, the SWITCH system will output a warning notice to the user's screen to inform them that they are entering a correction against a transfer unit for which a completion is blocked. If the user proceeds with the correction, the following will occur:

- the blocked completion will be dropped;

- the transfer unit will be corrected;
- the jeopardy against the transfer unit will be cleared; and
- a new PREWO contract will be sent to FOMS.

If "Block Completion" is set to "N", the SWITCH system will not block completion.

If "Notice to BCC-Determined Location" is set to "Y", then the SWITCH system will send a notice to BCC-determined location(s). The notice will contain the order number, the circuit ID, and the jeopardy data (date, time, code, and remarks). The locations to which the SWITCH system can output notices are work centers with SWITCH system printers.

If "Notice to BCC-Determined Location" is set to "N", then the SWITCH system will not send a notice.

15.8.4 Clearing Work Order Jeopardies

Jeopardies on multi-pass work orders may be cleared from the SWITCH system in two ways: FOMS may send the SWITCH system a CANJWO contract to cancel work order jeopardies, or the SWITCH system will automatically clear its jeopardy when it receives a new work order pass (COR or CAN) that affects the transfer unit in jeopardy. Rework will *not* clear jeopardies. [18]

15.8.4.1 CANJWO Processing

When the SWITCH system receives a CANJWO contract against a pending transfer unit, the SWITCH system will undo the jeopardy actions that were done when it received a PREJWO contract from FOMS:

- If the SWITCH system retained jeopardy data, then the SWITCH system will purge the jeopardy data that was retained.
- If the SWITCH system blocked completion, then the SWITCH system will automatically restart completion if a completion was blocked while a transfer unit was in jeopardy. The SWITCH system will then send a PCNWO contract to FOMS after the completion has been processed.
- If the SWITCH system sent a notice to BCC-determined location(s), the SWITCH system will send a notice to the same location(s) stating that the jeopardy was canceled.

18. PREWO contracts resulting from rework will contain a JEO (Jeopardy) tag in the TRAN aggregate to identify transfer units that remain in jeopardy in the SWITCH system.

The SWITCH system will *not* send FOMS a new PREWO contract when jeopardies are cleared via CANJWO.

If the SWITCH system receives a CANJWO contract for a transfer unit that is not pending, the SWITCH system will provide an error message.

15.8.4.2 New Work Order Pass

When the SWITCH system receives a new work order pass (COR or CAN pass from either SOAC or the ULBB), the SWITCH system will:

- Delete all jeopardy data for the transfer unit affected by the new pass
- Send a PREWO contract to FOMS containing *only* the transfer units affected by the new pass (if the new pass was a COR)
- Send a CANWO contract to FOMS for the transfer units affected by the new pass (if the new pass was a CAN)

If the SWITCH system sent a notice to BCC-determined location(s), the SWITCH system will *not* send a notice to the same location(s) when a jeopardy is cleared by a new pass.

15.9 Control Contracts

There are two contracts in this category -- REQWO, and RSDFO. Each is discussed in detail in the remainder of this section.

15.9.1 Request Multi-Pass Work Order Frame Output

Frame personnel will initiate the REQWO contract to request frame output from the SWITCH system on multi-pass work orders processed in programmable mode: CPTs, SETs, CTRs, JAMs, WAOs, WOLSTs, FTRs, DTRs, and ATRs. The REQWO contract is limited to one specific, multi-pass work order per contract. When the SWITCH system receives a REQWO contract from FUSA or the ULBB REQ FO Work Session, the SWITCH system will send a PREWO contract to FOMS. [19]REQWO contracts may be sent for all or only part of the programmable order.

19. If the SOS (Send Output Simultaneously) parameter is set to "Y", the SWITCH system will also generate an output contract to MAS via SOAC when the SWITCH system receives a REQWO contract *if* translation data was not yet sent. See Section 14.6 for details.

15.9.2 Resend Multi-Pass Work Order Frame Output

The SWITCH system will also receive the REQWO contract from the ULBB or FUSA when frame personnel determine that a contract or items for a multi-pass work order is missing from FOMS. The REQWO contract will contain a resend flag and will specify the sequence number or item number range, and order number of the missing contract or items for which resend is requested. When the SWITCH system receives a REQWO (resend) contract identifying the sequence number, the SWITCH system will send a PREWO, PCNWO, or CANWO contract to FOMS for the sequence number and order number specified in the contract. The SWITCH system will know which type of contract to send based on entries in the order's Unit Status Table. The contract/sequence number relationship is recorded there.

The resent contract will contain the same sequence number as the contract for which resend is requested. It will also contain a resend flag (resend=y) to identify the contract as a resend.

When the SWITCH system receives a REQWO (resend) contract identifying the item number(s), the SWITCH system will send a PREWO contract to FOMS for the item number(s) and order number specified in the contract. The sequence number of the contract will be incremented and a resend flag (resend=y) will be included for the resent item(s). If the item(s) for which the resend is requested is no longer pending (i.e., canceled or completed), no PREWO will be created.

15.9.3 Resend Frame Output

The SWITCH system will receive the RSDFO contract from the ULBB or FUSA when frame personnel determine that a contract for a provisioning request is missing from FOMS. The RSDFO contract will specify the order number of the missing contract for which resend is requested. When the SWITCH system receives a RSDFO contract, then the SWITCH system will resend the most recent contract that was previously sent to FOMS. The resent contract will contain the same sequence number as the contract for which resend is requested. It will also contain a resend flag (resend=y) to identify the contract as a resend.

15.10 Error Flow

If the SWITCH system errors in generating a contract to FOMS, no responses to SOAC will be held up, nor will the status returned to SOAC in the responses be affected by the error. The SWITCH system will error in generating a contract to FOMS when it encounters physical database errors.

If the SWITCH system sends FOMS a contract that FOMS cannot read, FOMS will produce an RMA. The RMA will contain the contents of the contract that errored. The RMA will be formatted for user readability. If FOMS cannot format the contents for readability, FOMS will print the FCIF. FOMS will distribute its RMAs directly, not through the SWITCH system or SOAC.

If FOMS sends the SWITCH system a contract that the SWITCH system cannot read, the SWITCH system will ignore the contract.

For Company Initiated Orders, if the SWITCH systems errors upon receipt of a PCNSO, PREJEO, or CANJEO contract from FOMS, information about the error will be sent to SOAC in an unsolicited *PREMSG section.

Table 15-1. Provisioning Request Jeopardy Action Table

Action	Jeopardy Type					
	A	C	E	I	R	N
Retain Data	y	y	y	y	y	y
Block Comp.	y	n	n	n	n	n
Jeo. Status To SOAC	n	y	n	y	y	y
RMA To SOAC	y	N.A.	N.A.	N.A.	N.A.	N.A.
Notice to Other BCC-Det'd. Loc.	n	n	n	n	n	n

NOTES:

1. Here is a brief definition of the Jeopardy Types:
   - "A" = Assignment Error
   - "C" = Circuit Design Group (CPC)
   - "E" = No ESS Translations
   - "I" = No Installation Go Ahead
   - "R" = Repair Service Bureau Error
   - "N" = Network Administration Center
2. Allowable values are: y = yes (perform this action) or n = no. The default is "n".
3. The "RMA to SOAC" option cannot be selected for any Jeopardy Type other than "A". When the "Jeo. Status to SOAC" option is set to "y", the "RMA" option must be set to "n". When the "RMA" option is "y", the "Jeo. Status" option must be "n". Both can be set to "n".
4. When all options for any Jeopardy Type are set to "n", the SWITCH system will not expect to receive contracts for them from FOMS.

Table 15-2. Work Order Jeopardy Action Table

Action	Jeopardy Type					
	A	C	E	I	R	N
Retain Data	y	y	y	y	y	y
Block Comp	y	n	n	n	n	n
Notice to BCC-Det'd. Loc.	n	n	n	n	n	n

NOTES:

1. Here is a brief definition of the Jeopardy Types:
   - "A" = Assignment Error
   - "C" = Circuit Design Group (CPC)
   - "E" = No ESS Translations
   - "I" = No Installation Go Ahead
   - "R" = Repair Service Bureau Error
   - "N" = Network Administration Center
2. Allowable values are: y = yes (perform this action) or n = no. The default is "n".
3. When all options for any Jeopardy Type are set to "n", the SWITCH system will not expect to receive contracts for them from FOMS.

Table 15-3. Example Frame Output Sequence Numbers for Multi-Pass WOs

WO Contract in the SWITCH Sys.	WT#1	WT#2	WT#3	WT#4	WT#5	Frame Output Contract	SEQ.#
#1 PRECPT	establish	establish	establish	establish	N.A.	PREPWO(E)	
#2 ASGCPT (SFO=N)	assign	assign	assign	assign	N.A.	PREPWO(A)	
#3 REQWO note 1	F.O.	F.O.	F.O.	F.O.	N.A.	PREWO	1
#4 CANCPT	N.A.	cancel	N.A.	N.A.	N.A.	PREPWO(E) CANWO	2
#5 PRECPT	N.A.	re-estab.	N.A.	N.A.	N.A.	PREPWO(E)	
#6 ASGCPT (SFO=Y)	N.A.	assign, F.O.	N.A.	N.A.	N.A.	PREWO	3
#7 CANCPT	cancel	N.A.	cancel	N.A.	N.A.	PREPWO(E) CANWO note 2	4
#8 REQWO note 3	N.A.	F.O.	N.A. note - 4	N.A.	N.A.	PREWO note 5	3 resend=y
#9 PRECPT	re-estab.	N.A.	N.A.	N.A.	establish	PREPWO(E)	
#10 ASGCPT (SFO=N)	assign, F.O. note 6	N.A.	N.A.	N.A.	assign	PREPWO(A) PREWO note 7	5
#11 REQWO	N.A.	N.A.	N.A.	N.A.	F.O.	PREWO	6
#12 CORCPT note 8	change non-F1 asgnmt.	N.A.	N.A.	N.A.	N.A.	PREWO	7
#13 PCNCPT (partial)	complete	complete	N.A.	N.A.	N.A.	PCNWO	8
#14 PCNCPT (final)	N.A.	N.A.	N.A.	complete	complete	PCNWO	9

This example is for a CPT that starts with four work tasks and experiences several changes/corrections. The far left column shows the events in terms of the contracts received by the SWITCH system. The two right-hand columns show the SWITCH System to FOMS

contracts and their related sequence numbers. The data under the columns labeled "WT#1", etc., describes the action relative to the contracts to FOMS.

NOTES:

1. If FOMS requests frame output with one or more REQWO contracts, several PREWO contracts may be sent, each with a unique sequence number.
2. The CANWO contract includes the cancellation activity for both WT#'s 1 & 3. WT#1 will be re-established, while WT#3 will not.
3. The REQWO contract (for resend) is sent by FOMS because the CANWO contract, sequence #4, was received immediately following the CANWO contract, sequence #2. FOMS, therefore, considers the PREWO contract, sequence #3, to be missing.
4. This contract does not apply to WT #3 because it was canceled by a previous CANCPT contract and not re-established.
5. The sequence number of the resent PREWO contract and the data content is exactly the same as the one that was requested by the REQWO contract. The resent contract will include a resend flag to show that it is in response to the REQWO contract.
6. PREWO is sent automatically because a PREWO was already sent for WT#1 in response to a REQWO contract (contract #3, above).
7. The PREWO contract, sequence #5, is automatically produced by the SWITCH system to provide the new frame output (re-estab.) for WT#1. The PRECPT also added WT#5 to the transfer, so two planning messages are generated: the PREPWO(E), which establishes WT#5, and the PREPWO(A) as output of the ASGCPT contract for WT#5. FOMS then sends a REQWO contract to obtain frame output for WT#5, and the PREWO contract, sequence #6, is sent by the SWITCH system.
8. The CORCPT contract is sent from the SWITCH system ULBB only. Because frame output has been sent on a previous PREWO, sequence #1, the SWITCH system will automatically produce the PREWO, sequence #7, that defines the changed frame output.

ABBREVIATIONS:

A. F.O. = Frame Output.

B. N.A. = Not Applicable.

C. WT#n = Work Task number "n".

D. PREPWO(A) = Assignment planning message to notify FOMS that assignments are available for frame output. This contract does not have a sequence number.

E. PREPWO(E) = Establishment planning message to provide base planning information on multi-pass work orders. This contract does not have a sequence number.

Table 15-4. Order Type by SWITCH System Processing Mode

	Demand Orders	Programmable Orders
Single Pass	**Maintenance Change Tickets** **Record Orders**	---
Multi Pass	Service Orders Company Initiated Orders	Cable Pair Transfers Work Order Line and Station Transfers Switch Port Equipment Transfers Channel/CRV Transfers Frame Transfers Dial Transfers Jumper Activity Management Wire Assembly Orders Area Transfers

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16. DIAL TRANSFERS

This section provides Dial Transfer specifications.

16.1 Introduction

A Dial Transfer (DTR) is the transfer of services from one Intelligent Controller (IC) to another. This is usually a transfer of service between two different kinds of ICs (e.g., 1es to 5es). However, it is possible that a transfer may occur between different entities (e.g., 5es.0 to 5es.1) of the same entity type. Prior to the Dial Transfer, the "TO" IC may already be servicing customers or may be newly installed. After the Dial Transfer, the "FROM" IC may be retired or may continue to operate. The customer's Telephone Number will stay the same. In most cases the customer's Cable Pair will remain the same. A new Switch Port in the "TO" IC will be assigned to the circuit and the service will be provisioned out of the "TO" IC. The ICs may be either host or remote ICs.

The SWITCH system supports Dial Transfers between all Intelligent Controllers recognized by the system. Translations Transformation tables specific to some IC types have been provided, which may be modified for the specific combination of ICs. Provided tables include:

- Analog to 5es
- Analog to DMS
- Analog to TL1
- 5es to DMS
- 5es to TL1
- DMS to 5es
- DMS to TL1
- TL1 to 5es
- TL1 to DMS

In the above, "TL1" refers to IC types that use the TL1 (TR-TSY-000199) generic interface, namely the EWSD, AXE and DCO switching machines.

Because a Dial Transfer can exist for a long period of time, a Dial Transfer is a Multi-Pass Work Order. There are several DTR user work sessions. They are used to: establish the order in the SWITCH system database, assign circuits in the SWITCH system database, cancel establishments and/or assignments, correct translations, and complete assignments. Each work session submits a deferred contract to the DLBB to get the work done. With release 1.8, DLE involved circuits are not allowed to be established in a DTR.

16.1.1 Dial Transfer Work Sessions

The main work sessions used for Dial Transfers are listed here, along with their contracts. The contracts are described briefly in the following section.

- SET DTR (Set up Dial Transfer)
  - — WSIDTR
  - — PREDTR
- AUTO DTR (Automatic Dial Transfer)
  - — AUTDTR
  - — ASGDTR (if the Automatic Dial Transfer Assignment parameter (ADA) = "y")
- ASG DTR (Assign Dial Transfer)
  - — WSIDTR
  - — ASGDTR
- COR WO (Resolve Assignments)
  - — WSIWO
  - — CORDTR (and CORCPT & CORSET, used for Cable Throws and SETs)
- COR TTR (Correct Translations)
  - — WSITTR
  - — CORTTR
- RMV DTR (Remove Dial Transfer; i.e., cancel from assignment or cancel from transfer)
  - — WSIDTR
  - — CANDTR
- CMP DTR (Complete Dial Transfer)
  - — WSIDTR
  - — PCNDTR
- ADM DTR (Administer Dial Transfer, provides automated inventory actions on TO IC switch ports and Centrex groups. Does bulk work similar to UPD CTX) (has to handle TN suppression)
  - — WSIDTR
  - — ADMDTR

- INQ WO (Work Order Inquiry) performs an inquiry on a work order and can optionally display the circuits and network units associated with the work order. It is used as an administrative tool for retrieving immediate data about the active work orders in a wire center.
  - — WSIVAL
  - — INQWO
- RPT DTR (Dial Transfer Report) is used to request a report with data to monitor the status a Dial Transfer.
  - — WSIVAL
  - — RPTDTR

16.1.2 Dial Transfer Input Contracts

Listed below are the SWITCH system input contracts to the SWITCH system Data Layer Building Block (DLBB) which are used in Dial Transfer management:

- WSIDTR - retrieve order-related information from the SWITCH system DLBB to initialize data for the SET DTR, ASG DTR, RMV DTR, and CMP DTR work sessions which will then submit the PREDTR, ASGDTR, CANDTR, and PCNDTR contracts.
- WSIWO - initialize data for the COR WO work session which submits the CORDTR contract.
- WSITTR - initialize data for the COR TTR work session which submits the CORTTR contract.
- WSIVAL - validates information entered on input screens is present in the SWITCH system (i.e., order id, network units, group IDs, IC and ICID or CLLI, circuit ID, service ID or frame).
- PREDTR - newly establish a DTR or add to an existing DTR order or change an order due date.
- ASGDTR - assign a DTR (partially or completely).
- CANDTR - cancel assignments (partially or completely) from Assignment or from Transfer.
- CORDTR - invokes assignment for an individual circuit in the dial transfer.
- CORTTR - correct translations data, either group or circuit.
- PCNDTR - complete a DTR (partially or completely).
- ADMDTR - map switch port attributes for overlaid switch ports, modify/create/delete CTX groups in the FROM and TO ICs.

- REQWO - request from the Frame User assignment System Access (FUSA) (or the SWITCH system User Layer Building Block [ULBB]) to send Frame Output Data to FOMS, or to resend previously sent Frame Output Data to FOMS.
- REQTRM - request from FUSA (or ULBB) to send Translation Data to the Memory Administration System (MAS).
- INQWO- submits a request to the DLBB for information about the DLBB view of the circuits involved in the Dial Transfer as well as summary data about the Dial Transfer from the Unit Status Table (UST) and Group Status Table (GST). The contract is executed in immediate mode.
- RPTDTR - submits a request to the DLBB for information about the DLBB view of circuits involved in the Dial Transfer as well as summary data about the Dial Transfer from the Unit Status Table (UST) and Group Status Table (GST). The contract is executed in deferred mode.
- PREFWI - FOMS Frame Work Information contract. Sent from FOMS when frame completion of an item has been processed (value maintained in SWITCH system for reporting purposes only).

16.1.3 Dial Transfer Output Contracts

Listed below are the SWITCH system output contracts which are used in Dial Transfer management:

- PREPWO - FOMS Establishment Planning Message (ostat=e)
  (sent after establishment and partial cancellation).
- PREPWO - FOMS Assignment Planning Message (ostat=a)
  (sent after assignment and resolve assignment).
- PREWO - FOMS Frame Output
  (sent after assignment, correction, rework, and user-initiated output request).
- CANWO - FOMS Transfer Line Cancellation.
- PCNWO - FOMS Transfer Line Completion.
- PCNDTR - DTR Completion.
- PRETMD - MAS DTR Establishment.
- CORTMD - MAS DTR Addition to, Modification to, or Withdrawal from an existing DTR.

16.1.4 Dial Transfer and Local Number Portability

When the Local Number Portability (LNP) customer feature is enabled, there are additional circuit elements which must be considered. Each imported TN or Ad-Hoc TN has a Location Routing Number (LRN) which may change as a result of DTR processing. In addition when Ad-Hoc TNs are transferred, they may be returning to their "native" switch.

SWITCH System Dial Transfer processing has two customer features that support LNP processing. The "DTR LNP full replacement" feature supports the movement of Ad-Hoc TNs from one IC to another but does not support changing the LRN. The "DTR LNP general support" feature adds the functionality to change the LRN values and update the TN to LRN mapping that is stored in the switched network.

See sections 4, 6 and 9 for details on new LNP database elements, Service Order and Work Order processing.

DTR LNP features include the following items which are outlined below and discussed throughout this chapter.

1. TN "Transfer IC" attribute

   UPD/ADM NTU Work Session populates the "transfer IC" attribute and the Assignment Engine uses the information.

2. LRN and EXK translations transformation

   For the "DTR LNP full replace" customer feature, LRN and EXK transform unchanged. When the "DTR LNP general support" feature is also active, LRN and EXK values can be modified.

3. LNP Service Order/DTR interactions

   If a Service Order (SO) has an exchange key and an Ad-Hoc TN, reference data tables that are set up for DTR processing can supply an alternate EXK for the SO to use when the SO has a due date that is later than the DTR due date.

4. DTR work sessions recognize and deal with Ad-Hoc TNs

   Filters allow Ad-Hoc TNs to be included or excluded.

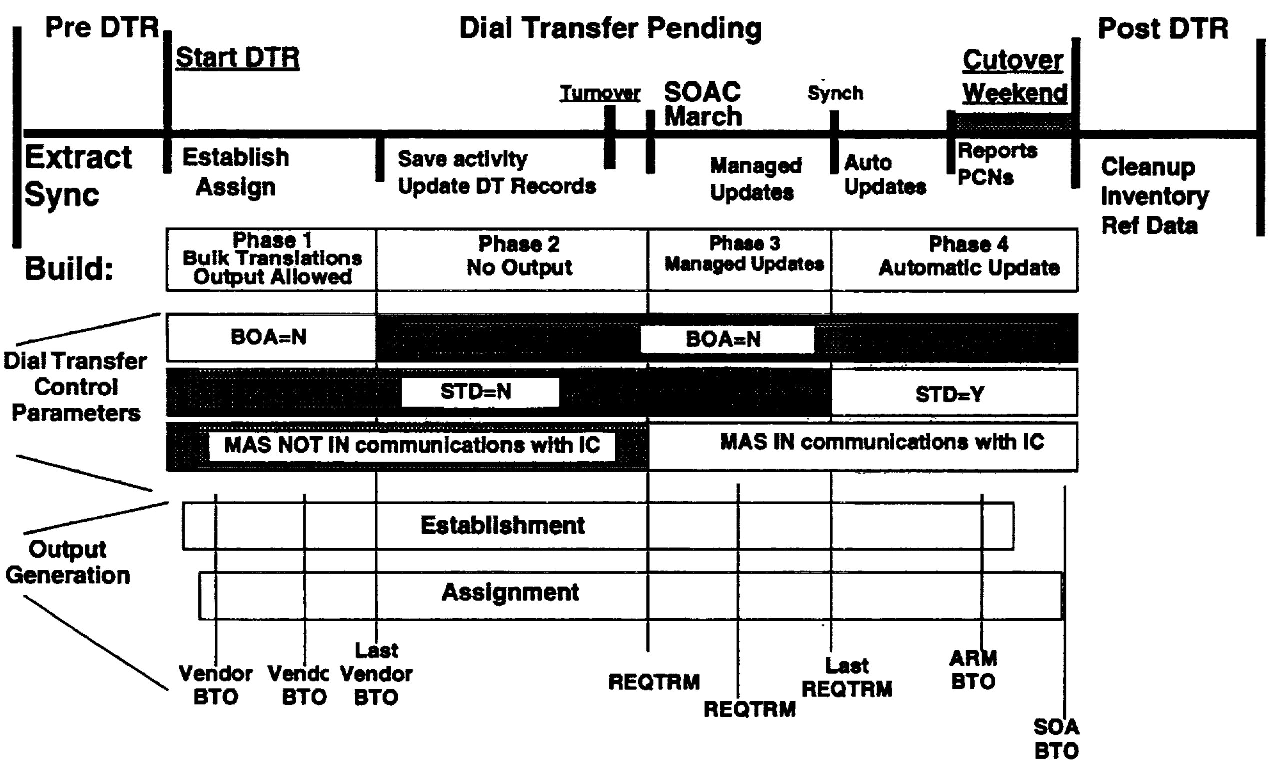
5. New Bulk Translations Output (BTO) SOA extract

   The TN to new LRN mapping is provided in an FCIF format to SOA.

16.1.5 Dial Transfer Key Phases

There are four active output phases to a Dial Transfer in the SWITCH system (See Figure 16-1). Just prior to the first phase all SWITCH system database preparation should be complete.[1]

Figure 16-1. Dial Transfer Phases



16.1.5.1 Bulk Output Phase

This phase starts with Dial Transfer Establishment and includes additional Establishment, Assignment, Correction, and Cancellation activities. In this phase, the initial Establishment work will be initiated in a SET DTR work session. Once established initial assignments can be made in ASG DTR work sessions. When enough assignments have been made, Bulk

1. Centrex groups may be built in the Pre DTR time frame, but it is recommended that the ADM DTR work session that builds these TO IC groups and combines them with the FROM IC groups be run **after** the DTR is established.

Translations Output (BTO) tapes may be generated to send assignments and translations information to the vendor for loading into the IC. There could be zero, one or more BTO tapes generated. During this phase, BTO tapes are the only way to send this information to the IC. (i.e. TRM contracts cannot be sent via the SWITCH System/SOAC/MAS interface.) In this phase we start to process the PREDTR, ASGDTR, CORDTR, CORTTR, CANDTR, and REQWO contracts.

16.1.5.2 No Output Phase

During this phase, the IC is in the process of being installed and cannot accept any input, bulk or otherwise. All assignment and translations messages are held until the next phase.

16.1.5.3 Controlled MAS Output Phase

Turnover of the "TO" IC from the vendor to the operating company (typically six to eight weeks after the Dial Transfer preparation began).

The PREDTR, ASGDTR, CORDTR, CORTTR, CANDTR, and REQWO contracts will be processed and processing REQTRM contracts is also allowed.

Assignment and translations information can be sent to the IC via SOAC and MAS during this phase. The Translation Redundancy Management (TRM) interface to the IC is the method used to send this information and is discussed in Section 14. During this phase, messages for newly assigned circuits will go to MAS only if requested by the user. If a circuit is reworked and TRM has already been sent for that circuit, the change message is automatically sent to MAS.

BTO could be used to send Assignment Redundancy Management (ARM) tapes during this or the next phase, but no vendor tapes will be allowed.

16.1.5.4 Automatic MAS Output Phase

TRM messages will be sent to SOAC automatically when a service is newly assigned in this phase. Messages are also sent if a service is modified in some way and TRM messages have been sent to SOAC previously. Assignment and translations information will flow to the IC via SOAC and MAS.

One week before the Dial Transfer Cutover (typically six to eight weeks after the "TO" IC has been turned over from the vendor to the operating company):

- Reports, inquiries, Reference Data changes to update control parameters, and Translation Data changes will continue to be processed.

- Run RPT DTR to determine whether all entries in the Dial Transfer are ready for completion.
- Resolve any problems by altering the SWITCH system database and/or processing the PREDTR, ASGDTR, CORDTR, CORTTR, CANDTR, REQWO, and REQTRM contracts.
- "SWAP" the exchange keys of the FROM IC and the TO IC if the FROM IC is being retired. In order to update all pending files in SWITCH and SOAC with the exchange key given to the TO IC, run the BMP process, VCDBU21.
- Create an Assignment Redundancy Management (ARM) tape for LMOS or NSDB.
- If Ad-Hoc TNs have been transferred, create a BTO SOA extract to update SOA with new Location Routing Numbers (LRNs). This step should be done after the last Service Order that could affect LRNs has processed. This should be 1 or 2 days before the DTR cutover.

During the Dial Transfer Cutover Weekend:

- Process reports and inquiries.
- Complete the order.
- Determine which circuits have not had Assignment Redundancy data sent to LMOS or NSDB and forward that information to LMOS or NSDB.
- Resolve any problems by updating the problem circuit(s) (e.g. UPDCKT or moving the circuit to a different switch port using a SET) and/or processing the PREDTR, ASGDTR, CANDTR, CORDTR, REQWO, and REQTRM contracts.

After the Dial Transfer Cutover:

- If necessary, purge the "FROM" IC Inventory and Reference Data from the SWITCH system.
- Run a Dead Jumper List report in FOMS to remove any unused jumpers.
- MAS may need to generate Recent Change Messages to disconnect services in the "FROM" IC.

16.1.6 Document Overview

The rest of this document will present the details of Dial Transfer activities. Following is a list of the topics covered:

- Database preparation
- Dial Transfer establishment
- Dial Transfer assignment

- Dial Transfer correction
- Dial Transfer Output
- Dial Transfer Cancellation
- Dial Transfer Completion

Dial Transfer activity may be queued for overnight processing. Results of the activity may be accessed via reports and inquiries.

16.2 Dial Transfer Preparation

Several operations begin prior to the Dial Transfer active phase (before the beginning of phase 1), typically three to four months before the cutover date:

The following sections describe these preparations and include the following topics:

- "FROM" IC Data Characterization
- "TO" IC Preparations
- Reference Data Tables for "TO" IC
- Translations Synchronization
- Translations Transformations
- Switch Port Overlay
- Host/remote Dial Transfer Processing

16.2.1 FROM IC Data Characterization

Prior to the establishment of a Dial Transfer, the user will need to prepare, inquire, and report on data stored in the SWITCH system database. Reports should be run over Network Unit ranges or over an IC to retrieve counts and summarization of Network Unit, service, and circuit characteristics, e.g.:

a. List all circuits in a specified IC and within a Network Unit range which have a specified characteristic (e.g., CTX, HML, SCH, SFG, ME). (Report CKT).

b. List all circuits in a specified IC which have a specified tag with the tag values (ADM QRY BCRTRANS2)

c. Given a Switch Port or Telephone Number range/mask or NXX, and optional customer features, return a count of SWPTs or TNs by Class of Service and Status. Note that the ULBB may pass an NXX tag to the DLBB. This tag will contain a six-character NPA/NXX value or only a three-character NXX value. If the three-character

NXX value is passed, the Data Layer contract processor will retrieve the default NPA from the SWITCH system database. (Report COUNT).

d. Report "FROM" IC summarization data given report filters such as Loading Division, Assignment Limitation, Estimated, Adjusted, and Measured Usage, Capacity, Main Station Estimates, CECs, Cross Loading, Specific Functionality, and Frame/Zone Location. (Report Load Balance, Report ADMIN and/or Report Count).

If the "TO" IC is an existing IC, it is also desirable to run reports for it.

16.2.2 TO IC Preparation

The following is list of pre-establishment activities:

1. Gather data from engineering to build the "TO" IC in the SWITCH system database.
2. Populate the SWITCH system wire center with appropriate Inventory.
3. It may be desirable to make the "TO" IC switch port inventory match the "FROM" IC switch port inventory if the DTR will be overlaid. An option of the ADM DTR work session will read the switch port configurations in the "FROM" IC and use them to configure the overlaid switch ports in the "TO" IC. This process would find a PARTY SWPT in the "FROM" IC and, if it maps to a "TO" IC SWPT, configure that "TO" IC SWPT as a PARTY SWPT also.
4. Read in MELD (Mechanized Engineering Layout for Distributing Frames) tape or PACE (Programs for Arrangement of Cables and Equipment) tape for Location Oriented Identification System (LOIS) data.
5. Create test circuits (i.e., SLATTS - Selective Line Translations) in the "TO" IC. The following procedure is recommended:
   - The user should process an inventory contract in the SWITCH system via the ULBB to place assignment limitations on those Network Units which will be involved in the test circuits.
   - The user should generate Translation Guide forms and send them to the vendor.
   - Using the information on the forms, the vendor should create circuits in the "TO" IC to test the Switching Machine.

> **NOTE** — After the DTR is completed, when the test circuits are no longer needed, the circuits will be removed from the new Switching Machine. The BCC must remove the assignment limitations from the Network Units in the SWITCH system database via a ULBB inventory contract.

6. Make regular inventoried TNs appear portable for the duration of the Dial Transfer. TNs must then be associated with both the FROM and the TO IC. TNs should be marked with the TO IC as the "Transfer IC"[2].

It may also be necessary to change inventory in the "FROM" IC:

a. If Centrex groups are being moved, the Centrex group in the FROM IC must be converted to a temporarily combined group (TCOM). The "TO" IC Centrex group must be inventoried and associated with the existing TN group[3] to which the corresponding "FROM" IC Centrex group belongs. This allows it to exist in both ICs during the Dial Transfer. Once the transfer is complete the new Centrex group in the TO IC may be converted back. These Centrex group manipulations can be accomplished using the ADM DTR work session. It is recommended that the ADM DTR session that builds the Centrex groups in the TO IC be executed after the DTR is established with a SET DTR work session.

b. Availability dates on inventory (switch ports) may need to be changed or added.

16.2.3 Reference Data Tables

Reference Data tables for the "TO" IC need to be established (or examined and changed if necessary). These tables include:

— *centrex rcu* - provides default data for centrex groups.

— *inv frame layout* - if mapping by LOIS data.

— *wo nu map* - provides mapping for IDLC (keyed by CPID) and Host IC-Remote mappings (keyed by CPID) and specific OE mappings.

— *wo order control* - Work Order Control parameters.

— *wo output size control*

— *wo contract options*

— *wo swpt overlay block* - provides switch port mapping.

— *wo swpt overlay concentrator* - provides switch port mapping.

— Translations Transformations tables (See 16.2.5 below for details).

Caution must be taken when changing Reference Data values after assignments have been made. The change in Reference Data values *will not* cause retroactive action to be taken

2. This step is not applicable to pure Ad-Hoc TNs which will automatically be associated with the TO IC at DTR assignment time.

3. This is not necessary if the TN suppression feature is turned on, and some other system is managing TNs.

on Dial Transfer circuits which have *already* been processed. Those circuits affected by a table change should be canceled from assignment and reassigned.

Three reference data tables that affect IC selection have the capability of being time dependent. Normally, new versions should be created with the DTR cutover date as the effective date. The three tables are:

- IC Priority
- IC NXX
- IC Frame Map

If Local Number Portability is enabled, an exchange key mapping parameter should be added to the *wc parms* table. The parameter has a fixed part and a part that depends on the original EXK: lnpexk-<EXK>. An example of such a parameter is lnpexk-908699=90869T where the "908699" represents the original EXK and the parameter value 90869T represents the Temporary EXK given to the TO IC for the duration of the DTR.

Service Orders for circuits with Ad-Hoc TNs will use the EXK provided by SOAC to determine which IC to use. If the IC indicated by the EXK has a priority of 99 (used to indicate that the IC is being retired), the Assignment Engine will try to determine an alternate EXK to use. The exchange key mapping parameter will be used to map the SO assignment to an alternate EXK. If another EXK cannot be determined, the Service order will RMA.

16.2.4 Translations Synchronization

The SWITCH system can receive translation data from an IC, the 1/1A ESS, or from any vendor that meets the UPDTRN contract specifications. The SWITCH system can compare its database to the IC dump and prepare an audit report, or synchronize its database with the translation data on the dump. Synchronization is desirable prior to a Dial Transfer, to insure that each customer's translations are correct before being moved to the new IC. See Section 12.3 for a full description of the Translations Synchronization process.

16.2.5 Translations Transformations

As a part of the Dial Transfer process, the SWITCH system can transform group IDs and other MAS translation tags and values for one IC type to those for another IC type. In preparation for a Dial Transfer, the Dial Transfer translations tables should be updated, using the UPD REF work session. These tables need to be updated before the circuits in a Dial Transfer are assigned. Some of the tables can be used with an optional customer instance key to group together items that logically would be worked on together. The tables, together with suggested customer instance keys, are:

- *transf index*
- *transf tag oto* - (DMS-100 cpg)
- *transf tag mtm* - (hml, 5ESS cpg, scg, dsk)
- *transf tag excp*
- *transf sfg rcu*
- *transf lcc*
- *transf mss features*
- *transf mss attributes*
- *transf rti*
- *transf centrex*

There is a process that will scan the SWITCH wire center and produce a set of tables that are prepopulated with the existing FROM IC translations (based on what is in the *transf index* table). Any translations tags that exist in the database and are not in the *transf index* table will be noted in a warning message.

See the Translations Transformations information in Section 16.4, the Dial Transfer Assignment section for a more detailed discussion of these tables, with examples.

16.2.6 Switch Port Overlay

The switch port overlay process provides SWPT prespecifications for both Dial Transfer circuits and for wire assembly assignments done in conjunction with a Dial Transfer. The input to overlay is the value of the SWPT (SWPT ID) currently working in the "FROM" IC. The output of overlay is the SWPT ID of the SWPT, in the "TO" IC, that is physically connected to the same frame location (i.e. overlaid). This mapping of old SWPT to new SWPT may be done in three ways.

1. The common frame location of the two SWPTs can be used if specific location data, i.e., LOIS, are associated with the SWPTs on the frame.
2. Concentrator block mapping can be used for conventional 64 pin blocks where the switch ports are laid out in a pattern.
3. Specific SWPT or SWPT range mapping is available for those switch ports which cannot be mapped in any other way.

Any or all of the methods can be employed simultaneously in a single DTR by setting the parameters correctly as follows.

The actions that must be performed in a Dial Transfer when overlay is employed include:

1. Creation of the Switch Port Overlay reference data. (Both updating the *wo order control* table and the relevant overlay tables.)
2. Reviewing, and possibly editing, Switch Port Overlay data. Block to block data checking all OEs to see if there is a match.
3. Avoiding or correcting assignment problems by manually reassigning SWPTs using SET processing in the "FROM" IC. (The IMM MAP work session can be used to find what "TO" OE would be used given a "FROM" OE. RPT MAP can also provide this data and can map from a "TO" OE to a "FROM" OE as well.)
4. Once assignment is proceeding, responding to assignment problems using the COR WO work session to create correct network unit assignments, e.g., adding a scan point to a circuit.

FOMS output is augmented to carry a tag indicating Switch Port Overlay was used to generate the circuit assignment. Standard MAS output is not affected by overlay. If the DTR is entirely overlaid and there is no reason to send FOMS output, there is a parameter in the *wo order control* table, the Ignore Frame Output for Completion (IFC) parameter, which when set to "Y" will cause completions of DTRs to not require Frame Output. This parameter can also be set on the command line of the CMP DTR work session. The command line setting will override the *wo order control* value.

DTR Assignment processing will also use a parameter (dtr-overlay-ovr) in the *wc parms* table to allow assignment of circuits where NTUs other than OEs are entering or leaving the circuit. If the dtr-overlay-ovr = "N" then such assignments will **error**. If dtr-overlay-ovr = "Y" then these assignments will be made but the overlay flag in the Unit Status Table (UST) will **not** be set.

16.2.6.1 Preparing For Overlay

Switch port overlay allows the physical connection of groups of new switch ports from a new IC to the old SWPTs on the frame. The Switch Port Overlay process supports connectors, such as the type 711 connector systems, available for 12, 25, and 32 cable pair complement sizes which are usable on both COSMIC and conventional frames. The activities to be accomplished before starting assignment using the overlay tables include:

1. Creating the new switch port inventory in the "TO" IC using standard inventory creation work sessions. For switch ports terminated on frames with LOIS level information, inventory creation includes running inventory tapes, such as MELD, PACE or ECHO. The result of these steps is an updated *inv frame layout* table.
2. Preparing the OVERLAY reference data tables which include:

   — The *wo order control* table and, optionally,

   — The *wo swpt overlay concentrator* table and *wo swpt overlay block* table and/or,

— The swpt instance of the *wo nu map* Table.

— The *wc parms* table (review the dtr-overlay-ovr assignment override parameter).

3. Moving circuits in the "FROM" IC, if necessary, using standard reports and SET work sessions to meet different load/spread requirements in the new IC.

There is no need to move circuits, using SET work sessions, that are working on non-integrated facilities but will be working on integrated facilities to switch port locations that are not involved in overlay. This is discussed fully in the section on the *wo nu map* table. The Switch Port Overlay process depends on the update or creation of one or more overlay reference data tables. At a minimum, the *wo order control* Table must be updated with the Dial Transfer order number, and the value of Switch Port Overlay tags must be set to indicate that overlay is in effect. Frames having LOIS level information, such as COSMIC frames and CODS 2 frames, are supported by the *inv frame layout* reference data table. If this table was built by conversion or by tape input on the creation or expansion of an IC, no further editing of this table is required nor is any further table building necessary for overlay. Note that this SWITCH system feature greatly reduces the manual effort in a Switch Port Overlay Dial Transfer. Manual procedures are available to add LOIS data if necessary. Frames for which location data are not available may require multiple tables. Should all SWPTs terminate on standard 64 pin blocks, the combination of a single Work Order Switch Port Overlay Concentrator Table (*wo swpt overlay concentrator* Table) which points to one or more Work Order Switch Port Overlay Block Map Tables (*wo swpt overlay block* Tables) suffices. Overlay using a mixture of block sizes requires the population of SWPT range mapping tables (*wo nu map* Tables 16-38, 16-39). These tables support termination on blocks that are not 64 pins. These tables must be built and reviewed for accuracy prior to doing any DTR assignments. See the Switch Port Overlay information in Section 16.4.3, the Dial Transfer Assignment section, for a more detailed discussion of these tables.

16.2.7 Host/remote Dial Transfer Processing

When circuits on a "FROM" IC are being transferred to a "TO" IC remote switch module, the following input from the ULBB will be needed:

- "FROM" IC (required input) (host ic only - e.g., 1es.1)
- "TO" IC (required input) (host ic only - e.g., 5es.5)
- PRIMARY KEYS (optional input) (based on "FROM" IC):
  - — TN
  - — SWPT
  - — CP
  - — CKID

- IC (only for SET DTR work session)
- Remote Unit ID (only for SET DTR work session)
- NPANXX
- CTX
- HML
- SFG
- SCH

- FILTERS (optional input):
  - NPANXX
  - CTX (PREDTR may only exclude)
  - HML (PREDTR may only exclude)
  - SFG (PREDTR may only exclude)
  - SCH
  - Other filters are supported. See Section 16.3.2 for establishment filters and section 16.4.1 for assignment filters.
- SELECTION CRITERIA (optional):
  - Load Group Exclusion (in ASG DTR work session only)

16.3 Dataset Input to DTR Work Sessions

Dataset input provides a method for the users to pre-specify the units to which the work session should be applied. A user will identify a set of circuits, by some means, and provide that list of circuits as input to the particular work session desired.

Examples of circuit identification could include: SERQL queries or Reports output to a dataset, user supplied lists of circuits manually entered into a dataset.

Dataset input is being provided as an option to the following DTR work sessions:

ASG DTR	Assign items in a DTR
CMP DTR	Complete items in a DTR
RMV DTR	Cancel or remove items from a DTR

Due to the complex nature of service provisioning and work order processing, not all combinations of circuit filtration that are needed in every case can be provided. Dataset input to these work sessions will separate the filtration step from the work session and will allow whatever filtration of circuits is needed (via reports or user input) while still providing the benefits of work order processing on large numbers of circuits.

Another benefit is that users can define a list of circuits to be processed as a group.

16.3.1 Dataset Content

The user is responsible for insuring that the circuits identified in the dataset are appropriate for the work session. (Each circuit in the dataset will be processed and, if inappropriate for the work session, will generate a separate error message.) It is assumed that the dataset content will not change while processing it, even during Dial Transfer restart periods where no processing is taking place. Dataset names should follow standard naming conventions which, for instance, can be implemented to prevent dataset migration.

16.3.1.1 Dataset File Content Requirements

The intent of this feature is to allow the user to create a dataset easily, perhaps directly from a report or a SERQL query, and also allow the user to manually edit or process the dataset in ways not specified here. DTR processing requires a circuit id as input, but to identify a circuit id within a dataset, there must be no spaces within the id. An alternate method which allows spaces in the id is to put the text "ckt" followed by the entire circuit id all on one line.

This means that TNs must be formatted with dash characters (spaces are not allowed between the NPA, NXX and LINE parts of the TN) or that the "ckt" method must be used.

The following are examples of acceptable circuit ids:

501-223-5544	223-5541
908.335.3347.t4	tn[2013211001]
tli[9083353347]ter[4]	1ckt#35
ckt 501 223 5544	

Unacceptable circuit ids:

501 235 8875	235 4456

Only the first (leftmost) circuit id per line (record) of the dataset will be processed.

If data is presented in a columnar form, as in a report, only the left column will be considered to be a unit identifier.

Lines that do not contain circuit ids will be silently skipped.

Thus, comments are allowed in the dataset as long as those comments do not contain a circuit id.

The leftmost non-blank word will be interpreted as a circuit id and if the word represents a valid circuit, it will be passed on to the Contract Processor. If the word is "ckt" then the remaining part of the line will be treated as the circuit id and passed on to the Contract Processor, otherwise the line will be skipped. The strings "swpt:", "oe!", "svc:", "fr_ckid:" and "svc!" will be treated as blanks for the purposes of finding a circuit id.

See Figure 16-2 for an example dataset. For this example, the only circuit ids would be `501-767-9862, 501-760-2785, 501-767-8275, 501-767-2865 and 501-767-3813.`

```
WC: s2L                          Date: 05/05/95              EMP: TKSPD09
                                 Time: 16:38:29                DCOR Tag:

svc: 501-767-9862 swpt: 000-0003    swpt: P028-00000-03L    cp: 6-244
                  tre: 101.18-48

svc: 501-760-2785 swpt: 000-0332    swpt: P028-00011-32L    cp: 9-167
                  tre: 101.18-35

svc: 501-767-8275 swpt: 000-1263    swpt: P028-00050-63L    cp: 6-130
                  tre: 101.18-65

svc: 501-767-2865 swpt: 000-1351    swpt: P028-00051-51L    cp: 6-111
                  tre: 101.18-49

svc: 501-767-3813 swpt: 000-1362    swpt: P028-00051-62L    cp: 6-134
                    tre: 101.18-29
```

Figure 16-2. Example Dataset

16.3.2 Enabling This Feature

This feature is a **client specific enhancement** and is only available to participating clients. Because of its client specific status, this feature must be enabled locally by participating clients. Client specific features are enabled by placing their feature codes (*dataset input to ewo* in this case) in the *customer features* reference data table with a status of "y". The client specific feature id codes (unique code for each client) for this feature will be individually communicated to each participating client.

16.4 Dial Transfer Establishment

Once the SWITCH system database is prepared and establishment of a Dial Transfer in the SWITCH system database is desired, the SET DTR Work Session will invoke a WSIDTR immediate contract to retrieve order-related data from the DLBB (e.g., order-specific reference data values). The screen data, along with additional user input, will be utilized to build a PREDTR contract for deferred execution. The execution of subsequent SET DTR Work Sessions will retrieve existing database order data.

16.4.1 Scope Criteria

Each PREDTR Primary Key/Filter combination is termed a "PREDTR Scope Criterion." Several Scope Criteria may be established within the processing of one PREDTR contract. A list of this Scope Criteria data is saved in the SWITCH system database. It defines the *entire Scope* on which the Dial Transfer will process. An individual Scope Criterion consists of the primary key and associated filters. A Unit Status Table (UST) associated with the Dial Transfer Order is created and populated in the SWITCH system database through the PREDTR contract. This table contains Dial Transfer processing information for each circuit which satisfies the Scope Criteria. In addition, a Group Status Table (GST) associated with the Dial Transfer Order is created and populated in the SWITCH system database through the PREDTR contract. This Table contains Dial Transfer Group processing information for each HML, SCH, and/or SFG group involved in the Dial Transfer. If a circuit/service is a member of an HML, SCH, and/or SFG group, an entry in the GST for the group(s) is made when the circuit data is placed in the UST. Centrex-related group information will be processed with the circuit. A separate Group entry in the GST is not required for centrex groups.

It is not necessary that a user *establish* all members of a particular group at one time. In addition, if the user indicates that an entire group should be established but one of the group members (circuits/services) is in error, the remaining members of the group will still be established. Entries will be made in the UST for those circuits established in the Dial Transfer. An entry will also be made in the GST for the group associated with the Dial Transfer *established* circuits. The PREDTR Contract Processor must always check that the circuits are working for the Due Date time view, meet any one of the Scope Criteria, are associated with the originally input "FROM" IC, and must record (in the UST) whether they are design circuits. A notifier is returned to DCOR stating the actual number of circuits established in the Unit Status Table. The PREDTR CP will also automatically filter out test circuits, which can be identified by a circuit usage value of "ts". The user may establish the entire scope of the Dial Transfer up front (using one Scope Criterion or many Scope Criteria) before any assignments are processed or add new Scope Criteria at any time after assignment has begun. A ULBB restriction of 10 Scope Criteria will be permitted for one Dial Transfer order.

16.4.1.1 Altering the PREDTR Scope Criteria List

When a subsequent SET DTR work session is invoked, the user will be presented with the current list of scope criteria from which the user can add, change or delete scopes. Each scope may be marked as "no action", "add", "change" or "delete".

The PREDTR contract generated will contain only scopes marked "no action", "add" or "change". Deleted scopes are not sent to the DLBB. The PREDTR Contract Processor will establish circuits in those scopes that are marked "add" or "change" only. No processing will be done with scopes marked "no action" and it is the user's responsibility to "Cancel from Transfer" those circuits that were included in the DTR only due to a deleted scope.

When circuits are "Canceled from Transfer" (i.e., marked as canceled in the UST using the RMV DTR Work Session), the user must diminish the scope to reflect the cancels otherwise circuits that have been canceled may be re-established via automatic establishment (AUTDTR). Relationships are not maintained between the PREDTR Scope Criteria List and circuit entries in the Unit Status Table. Changing data on the screen will alter the PREDTR Scope Criteria List stored in the SWITCH system database, and initiate processing, but it *will not* cancel the existing entries in the DTR Unit Status Table. Only the RMV DTR Work Session may mark circuits as canceled in the Unit Status Table. If the SET DTR Work Session is used to alter an existing Scope Criterion (i.e., Primary Key/ Filter(s)), it will be automatically processed by the PREDTR contract processor. If the SET DTR Work Session is used to add a new Scope Criterion, that Scope Criterion will be automatically processed by the PREDTR contract processor. If the SET DTR Work Session is used to delete a Scope Criterion, the PREDTR contract processor will only update the PREDTR Scope Criteria List stored in the SWITCH system database. If specified by user input, the PREDTR contract processor will add several new Scope Criteria and delete existing Scope Criteria all within one contract process.

16.4.2 Set Up Dial Transfer (PREDTR Contract)

The DTR establishment (SET DTR Work Session) will process the following PREDTR input criteria:

- Dial Transfer Order Number (required).
- Dial Transfer Cutover date (i.e., Order Due Date) (required).
- "FROM" IC (required).
  This tag value is populated by the DTR ULBB Work Session.
- "TO" IC (required).
- Primary Key (exactly one is required). The tag passed to the DLBB Contract Processor is shown in parentheses:
  — Circuit Identifier (CKID).

- — Telephone Number (TN).
- — Cable Pair (CP).
- — Switch Port (SWPT).
- — Entire "FROM" IC (default).
  The default is the entire "FROM" IC if a Primary Key is not entered.
- — Remote Unit ID.
- — Exchange(s) of Local Telephone Number (NXX).
  The ULBB may pass an NXX tag to the DLBB. This tag will contain a six-character NPA/NXX value or only a three-character NXX value. If the three-character NXX value is passed, the Data Layer contract processor must retrieve the default NPA from the SWITCH system database.
- — Centrex Group(s) (CTX).
- — Simulated Facilities Group(s) (SFG).
- — Multi-Line Hunt Group(s) (HML).
- — Series Completion Groups (SCH).

- Filter Criteria (optional). The tag passed to the DLBB Contract Processor is shown in parentheses:
  - — Exchange(s) of Local Telephone Number (NXX).
  - — Centrex Group(s) (CTX).
  - — Simulated Facilities Groups(s) (SFG).
  - — Multi-Line Hunt Group(s) (HML).
  - — Series Completion Groups (SCH).
  - — Type of Service (TS).
  - — Class of Service (CLS).
  - — Directionality (DIR).
  - — Type of Signaling (SIG).
  - — IC of the CTX group (CTXIC).
    This tag value is populated by the DTR ULBB Work Session.
  - — IC of the Multi-Line Hunt Group (HMLIC).
  - — IC of the Simulated Facilities Group (SFGIC).
  - — Administration of Designed Services Review (ADSR).
  - — Assignment Category (ASGCAT).

— Category of Service (CTG).[4]

— WATS band (BAND).

— Frame (FR).

— Cable (CA).

— Imported TN (IMPORTED)

The IC information is required as input for the following reasons:

- For TN or SWPT range processing and IC processing, the input "FROM" IC will be matched against the IC with which the Network Unit is associated in the SWITCH system database.[5]
- The Dial Transfer ASGDTR Contract Processor will pass the "TO" IC data (e.g., Translation Data) to the Assignment Engine for new Switch Port Assignments.

16.4.2.1 Rework of DTR Establishment/Assignments

Via the PREDTR contract, all circuits recorded in the Dial Transfer Unit Status Table will *pend* in the SWITCH system database for the purpose of "rework triggering." The pending time view will be the Dial Transfer Cutover Date. As these Dial Transfer circuits are *assigned* in the SWITCH system database, the *pending* view will include the assignment changes. If a Service Order or Work Order affecting a circuit in Dial Transfer is assigned a Due Date prior to the Dial Transfer Cutover Date, that circuit will be processed by Dial Transfer *rework. Rework* will process in the following manner:

- If the circuit no longer exists at the Dial Transfer Cutover Date (e.g., the circuit has been disconnected by a Service Order), *rework* will cancel the circuit from the Dial Transfer, mark the circuit entry in the Unit Status Table as "Canceled from Transfer", and send cancellation messages to FOMS/MAS if appropriate. The PREDTR Scope Criteria List *will not* be diminished automatically.
- If the circuit exists, *rework* will first check if the circuit meets any of the original PREDTR Scope Criteria:
  — If the circuit meets the criteria and it has not been assigned (e.g., established only), the circuit will remain in the Unit Status Table as established.

4. Category of Service can be used to filter MADN circuits by specifying a value of "m". MADN may be excluded from a DTR when transferring from a DMS100 to another IC type with this filter, or explicitly selected for a DMS100 to DMS100 transfer. For the latter type of transfer SWPT ranges should be used as the primary key to select the circuits as TN ranges will not adequately identify the set of MADN circuits to be transferred.

5. Ad-Hoc TNs do not process in ranges or in NXXs.

— If the circuit meets the criteria and it has already been assigned, assignment will be reworked.

— If the circuit does not meet the criteria, *rework* will cancel the circuit from the Dial Transfer, mark the circuit entry in the Unit Status Table as "Canceled from Transfer", and send cancellation messages to FOMS/MAS if appropriate. The PREDTR Scope Criteria List *will not* be diminished automatically.

16.4.2.2 Dial Transfer Establishment - Groups

Entering the "FROM" IC as the Primary Key guarantees that *all* groups will be established in the Dial Transfer. To ensure that just a particular group(s) is established in a Dial Transfer, the user should input a group Primary Key (i.e., CTX, SFG, HML, SCH). Entering a range of Network Units will not guarantee that all members of a groups will be established in the Dial Transfer. Dial Transfer processing *will not* attempt to locate the "pilot" of a hunt group within a given range and then place the entire Hunt Group in the order. Depending on the user's needs, he/she may be able to refine the scope by using the available group filters. Since a positive match on the Primary Key and Filters is made within the PREDTR processing, care must be taken by the user to input a Primary Key which will encompass the filters. For example, since all SCH members contain a TN, the user may enter a TN range as the Primary Key along with SCH as the filter. The result will be the establishment of all SCH groups within that TN range. However, the TN range should encompass all TNs associated with SCH groups. Otherwise, not all members of the SCH will be placed in the Dial Transfer. On the other hand, entering a TN range as the Primary Key and HML as a filter would *not* establish all members of the Multi-Line Hunt Group since all HML members need not have a TN associated with their service. Because of this, only *exclusion* filtering of CTX, SFG, and HML groups will be permitted to allow the establishment of all circuits within the Primary Key *other than* the filtered group. To insure proper inclusion of all group members, a scope with the group as a primary key should be part of the Scope Criterion List. During the establishment phase of a Dial Transfer, "rework triggers" will be established in the SWITCH system database for the "FROM" IC group. If the "FROM" IC group is altered by an order with an earlier due date, the "rework triggers" will initiate *rework* of the "TO" IC group assignments (though **new** group members are not added to the DTR by the rework process). A group "rework trigger" will be established in the SWITCH system database ahead of (at an earlier pending position) its associated circuit "rework triggers." If a group cannot be accessed in the SWITCH system database, a notifier will be generated and sent to the proper destination and *none* of the group members (i.e. circuits) will be established in the Dial Transfer.

16.4.3 Automatic Dial Transfer

Although the PREDTR Contract Processor will establish all working circuits (which meet the Scope Criteria) in a Dial Transfer, a method is required to establish circuits which have been generated/changed after the initial PREDTR establishment(s). The AUTO DTR work session allows a user to schedule the automatic establishment of circuits into Dial Transfers (DTRs). The establishment of these circuits is automatic in two senses:

1. Flags are automatically set on inward and change activity to make the DTR establishment process for new circuits efficient.
2. The DTR establishment process for new circuits can be run at user specified intervals using SCHED.

The scheduling of the AUTDTR contract eliminates the need to continually process a PREDTR contract to "pick up" new circuits which belong in the Dial Transfer. The basic concept of Dial Transfer Automatic Establishment is to periodically:

- determine all Dial Transfers which exist in a wire center.
- detect if any components of a Circuit/Service have changed in the database (detected by "Edge Addition/Deletion" database primitives.)
- determine which of those Circuits should be established (and assigned if indicated by the user or the ADA parameter in the *wo order control* table) into existing Dial Transfer(s).

In addition to Automatic Establishment of new circuits, if a Circuit/Group already involved in a Dial Transfer is changed, *rework* must determine whether the Circuit should be:

- re-processed through establishment processing, or
- re-processed through assignment processing, or
- canceled from the Dial Transfer.

The Automatic Establishment processing may support an unlimited number of Dial Transfers within one wire center. However, FOMS restrictions limit the number of established Dial Transfers within one wire center to five. As it is done for other work orders, entering the Action Line Option EXEC from the AUTO DTR work session screen allows the user to run the automatic establishment process with the priority set in the PRI field. In this mode, a value for PRI is optional (either "D", "D+", "D-", or "O"). If PRI is not entered then "D" is the default. The work session is not allowed to run in immediate execution mode. The user must specify the wire center of the DTR in the LOC/WC field before processing may commence. This is the only required data field. Normally users will specify the SCHED option to run AUTO DTR periodically. There is only one contract used in the AUTO DTR work session: AUTDTR. Upon execution of the work session, an AUTDTR contract is sent to the Data Layer Building Block (DLBB) for deferred processing. This contract only contains the wire center for the DTR and the execution option selected by the user. In addition to the normal mode of deferred execution, the user may enter SCHED on the command line. This allows the work session to be run at various time intervals. For more information on SCHED, see the SCHED work session utility documentation.[6] Upon completion of AUTDTR contract processing:

- If successful, any circuits added by new processing in the specified wire center that should be included in Dial Transfers will be established in the appropriate DTR. Circuits that should be included in the DTR due to removal of processing (e.g. cancelling a disconnect order) will not be automatically established.
- An acknowledgment contract along with any error messages and advisories of the actual established circuit id's will be sent to the originator. If successful, then the following parameters will be set in the *UMSG section:
  - — Set message type to "A" (Advisory).
  - — Set the message text to the count of circuits established into each DTR.
- If it is successful and if the Automatic Dial Transfer Assignment (ADA) parameter of the *wo order control* Reference Data Table is set to "y", then the AUTDTR contract processor will contract chain to Assign DTR (ASGDTR) processing. In this case, AUTDTR will
  - — Contract Chain to ASGDTR Contract Processor (which will retrieve and process the circuits. The ASGDTR Contract Processor would then determine that it is processing Automatic Assignment. It must then retrieve the Circuits on which it should operate. NOTE: It will also be necessary for the SWITCH System Security Administrator to update the IMS NAS Security Administration Group (e.g., Group ADMINW1) and the PL Administration GRID with "AUTO" as a valid user.

The AUTDTR request contract comprises the following sections:

- *C1 header section
- *PLHDR section

The AUTDTR response contract comprises the following sections:

- *C1 header section
- *PLHDR section
- *UMSG section

DTR Automatic Establishment utilizes the following:

- *wc summary* Summary Data Table
- PREDTR Contract Processor Processing

6. SCHED is documented in BR 752-108-001 Platform User Layer Building Block.

- PREDTR Work Order Range Processor Processing
- SWITCH System Database Primitives
- SWITCH System FAST Database Primitives
- AUTDTR Automatic Establishment/Assignment Contract Processor Processing
- Inventory
- CANDTR Contract Processor Processing

The *wc summary* Summary Data Table will indicate if at least one Dial Transfer order exists within a wire center.

16.4.3.1 Automatic Establishment/Assignment

The AUTDTR Contract Processor will determine which circuits should be added to any existing Dial Transfer orders within the wire center. The AUTDTR Contract Processor will be accessed via ULBB Work Session AUTO DTR. The user input for this Work Session is limited to the wire center. The AUTO DTR Work session will generate an AUTDTR DLBB contract and place this contract on the Deferred Message Queue. Initially, the user may wish to schedule the processing of the AUTDTR Contract Processor (via CRON) on a weekly basis. As the Dial Transfer Cutover date draws near, the frequency of processing the AUTDTR Contract Processor may be altered to shorter time intervals (e.g., daily or several times a day.) Since the PREDTR Scope Criteria will most likely *not* be the criterion used when making assignments, Start Assignment Logic capability is not available during PREDTR processing. However, an ADA (Automatic Dial Transfer Assignment) parameter may be set in the *wo order control* Reference Data Table which will direct the AUTDTR Contract Processor to contract chain to ASGDTR processing. If ADA = "y", the AUTDTR Contract Processor will:

- Save a list of newly established circuits.
- Generate an ASGDTR contract.
- Place this contract on the Deferred Message Queue.

The ASGDTR Contract Processor will retrieve the saved list of circuits, and process the assignment of each.

16.4.3.2 Work Order Rework

When a change is made on a circuit element which is involved in a Multi- Pass Work Order at a time view *prior* to the Work Order, *rework* must be called by the Contract Processor causing the circuit element alteration. Rework processing will determine whether all of the "FROM" IC groups to which a circuit belongs have entries in the GST. If a group does not have an entry in the GST or some of the groups have been canceled, the appropriate entries for that circuit will be made. After *rework*, the appropriate SO/WO FOMS and/or MAS output needs to be sent for:

- any Multi-Pass Work Orders which have been affected by *rework*.
- any Service Provisioning Orders which have been affected by *rework*.

If the *rework* results in a cancellation, the cancellation must be recognized in order to send the appropriate PREPWO and CANWO contracts to FOMS, and the appropriate PRETMD/CORTMD contract to MAS. In order to cancel a Circuit from a Dial Transfer and leave it working in the "FROM" IC, the following procedures must be followed:

1. The user must process a PREDTR contract to diminish any existing scopes which contain the Circuit to be "Canceled from Transfer" via the SET DTR work session.
2. The user must then process a CANDTR contract via the RMV DTR work session.

16.5 Dial Transfer Assignment

Dial Transfer Assignments are performed using the ASG DTR Work Session. Once the Dial Transfer has been established, all circuits or a subset of the established circuits may be assigned in the SWITCH system database. The user may dictate assignment processing by entering any one of the Primary Keys and zero or more of the Filter Criteria keys listed in the Dial Transfer Establishment section. Additional Filter Criteria are available as input during assignment. These are listed in the following section. In the ASG DTR Work Session, the WSIDTR immediate contract will retrieve order-related data from the DLBB. The retrieved data, along with the user input, will be utilized to build an ASGDTR contract for deferred execution. The COR WO work session will allow a user to initiate resolve assignment for an individual circuit. The COR WO work session sends a deferred CORDTR contract to the DLBB. The COR WO work session will generally be invoked for those circuits that fail assignment processing or if the user knows ahead of time that the circuit requires more than just an OE change.

16.5.1 Item Numbers

When a circuit in the UST is successfully assigned, it is given an Item Number which is stored in the UST. This Item Number is retained when the circuit is canceled from assignment or from transfer, but is replaced by a new number when the circuit is re-assigned. When the circuit is reworked the Item Number is re-used.

16.5.2 Filter Criteria

The user may direct the ASGDTR contract Processor to assign *all* established items in the Dial Transfer. However, if that is not desirable the ASGDTR contract may be processed using equipment-associated and circuit-associated filtering. This filtering will limit assignments to a subset of the circuits already existing in the Dial Transfer Unit Status Table. It is assumed that eventually (i.e., before the Dial Transfer Cutover) all non-canceled (i.e., not "Canceled from Transfer") circuits in the Dial Transfer Unit Status Table will be assigned. Final completion of the Dial Transfer Order will be blocked if any circuits are marked in the Unit Status Table as "filtered out", "in error", not "assigned", or "FOMS/MAS output not sent." In addition to the Filter Criteria listed in the Dial Transfer Establishment section, the following filters will be permitted for usage during DTR assignment. The tag passed to the DLBB Contract Processor is shown in parentheses.

- Line Count (LC).
- Grade of Service (GRD).
- Essential Service Line Indicator (ESL).
- Central Office Administrative type (CATY).
- Manual Circuit Indicator (MANIND).
- Overlay Circuits (OVRLY)
- Primary Interexchange Carrier (PIC).
- Custom Calling Feature (CCF).
- Complex Circuit (CMPLX).
- Telecommunications Service Priority Circuits (TSPC).

A notifier will be returned to DCOR stating the original Line Count request, and the actual assignment Line Count value.

16.5.3 Dial Transfer Assignment - Groups

Entering the "FROM" IC as the Primary Key guarantees that *all* groups will be assigned in the Dial Transfer. To ensure that just a particular group(s) is assigned in a Dial Transfer, the user should input a group Primary Key (i.e., CTX, SFG, HML, SCH). Entering a range of Network Units will not guarantee that all members of a groups will be assigned in the Dial Transfer. Dial Transfer processing *will not* attempt to locate the "pilot" of a hunt group within a given range and then assign the entire Hunt Group in the order. As with filtering during DTR establishment, the user may be able to refine the *assignment* universe by using the available group filters. During the assignment phase of a Dial Transfer, circuits are given pending assignments in the TO IC. It is not necessary that a user *assign* all members of a particular group at one time. In addition, if the user indicates that an entire group should be assigned but one of the group members (circuits/services) is in error, the remaining members of the group will still be assigned.

16.5.4 Translations Transformations

The translations transformation tables that were established by the UPD REF work session are used, together with transformation rules, by ASGDTR (and by Rework) to make transformations automatically. Translation Packets (TPs) for work orders are implemented by the SWITCH system as work order TRM contracts (PRETMD and CORTMD), containing TMIS, THML, TSCH, TRMC, and TRMS sections. For these work order contracts, including Dial Transfer contracts for the "TO" IC, SOAC does some minimal processing and passes the data on to MAS as true TPs, containing MIS, HML, SCH, LIN, and SDT sections. The SOAC processing includes the determination of MAS manual assistance triggers. Because the SOAC processing for work orders is minimal, the SWITCH system translation sync process must derive several tags and values for the "FROM" IC that would have been derived by SOAC if the service were being established by a service order. Examples are the HTER and NTER tags for multiline hunt groups. It should be noted that the value lengths shown in the requirements definition section are generally for a single occurrence and that some of them are longer as a result of range or series use. The Dial Transfer tag and value transformation process will:

- Accept translation tags and values for the "FROM" IC and produce corresponding translation tags and values for the "TO" IC.
- Produce "TO" IC data items that are, whenever possible, in a form that can be accepted by MAS on a flowthrough basis.
- Provide a table initialization process to enter "FROM" IC data from the SWITCH system data base into the transformation tables.
- Accept user input in upper or lower case. All upper case user input should be converted by the SWITCH system to lower case.
- Accept "*" as a wild card, as described in a following section.
- Provide "translation transformation notifiers" for problem cases and support user correction of the output translation data.
- Eliminate duplicate tag and value pairs from the transformation output.

Whenever the transformation process encounters an error condition while processing a circuit or a group, a translations advisory is recorded. The tae (Translations Advisory Error) parameter of the *wo order control* table determines whether an error will be generated for the circuit or group when a translations advisory is present. If tae=y and a translations advisory is present, then the assignment process will generate an error for the circuit or group and assignment will not occur, otherwise the assignment process will assign the circuit or group.

16.5.4.1 General Transformation Capabilities

Some of the transformation tables and rules are specific to the "FROM" IC type and the "TO" IC type. There are, however, several transformation methods that are independent of IC type and which could be used for any Dial Transfer. These are:

1. The tag and value can remain unchanged (U),
2. The tag and value can be dropped (D),
3. The tag and value can be transformed using a table that provides user- specified one-to-one transformations (OTO) of tags and values (where the values do not exceed 27 characters each),
4. The tag and value can be transformed using another table that provides user-specified three-to-three transformations (MTM, or Many-To-Many) of tags and values (where the values do not exceed 14 characters each),
5. The tag and value can be transformed using an exception table (EXCP) (no tag or value length constraints), and
6. The tag can be set to produce a notifier so that the tag and value can be transformed manually (M) after the transformation process is complete (before or after the "TO" IC assignments are made).

It should be noted that:

1. Rule-based transformations (R) are based on hard-coded functions in the SWITCH system and cannot be added at site, except via an exception table. Approximately 8 rules are provided. Similarly, specialized table transformations (T) would in general not be applicable to transfers from or to other IC types.
2. Transformed tags and values are generally placed where the previous tags and values were located. For example, it is not in general possible to take a tag or value from a primary service in the "FROM" view and place it on a secondary service in the "TO" view. The only known case where such a transformation is needed, the MCFI tag, has a hard-coded solution in the SWITCH system.
3. Flowthrough use of the new features of new generics may be limited by the capabilities of the SWITCH system, SOAC, and MAS.

As an example, 240 transformations were studied for Dial Transfers from 1/1AESS ICs: 120 tags for 1/1A to 5ESS Dial Transfers, and the same 120 for 1/1A to DMS-100. Of the 240, about 197 (82%) could be handled by the "table-driven" methods, i.e., methods 1-5.

The transformation methods, U, D, OTO, MTM, EXCP, M, R, and T, are described in more detail in Section 16.4.3.5, the *transformation index* table.

16.5.4.2 Transformation Tables Initialization Process

The SWITCH system provides an initialization process to enter much of the translations data for the "FROM" IC into the transformation tables[7]. The process consists of four steps:

1. Copy/modify/migrate the index tables
2. Run the table initialization BMP module (VCTXL03)
3. Complete the tag transformation tables
4. Migrate the tag transformation tables

The initialization process can be used with the following transformation tables:

- TRANS TAG OTO
- TRANS TAG MTM
- TRANSF LCC
- TRANSF MSS ATTRIBUTES
- TRANSF RTI
- TRANSF CENTREX

Inputs to the initialization process are specified via JCL PARMS. For example:

```
FROMIC=1ES.1
TO IC=5ES.5
DTRNO=CTX1JWC
PARTIAL=Y
TYPE=EXCL
TABLES=transf rti, transf tag mtm(scg)
MTMCOMB=cd/sh1, cd/sh2, hml/hty/htc
```

In the above example, PARTIAL=Y and TYPE=EXCL means to exclude the listed tables from the initialization process. The MTMCOMB cd/sh1, for example, means to create a TRANSF TAG MTM instance with "FROM" IC data for the combination of the tags "cd" and "sh1". Once the tables have been initialized they contain the translations tags found in the "FROM" IC. The user is then responsible for updating these tables by adding the "TO" IC information needed. Once the tables have been modified, they must be migrated to the working system.

7. The LRN and EXK tags are not handled by the initializaion process and must be done manually.

16.5.4.3 User Interaction with the Transformation Process

The SWITCH system provides two levels of user interaction with the transformation process.

1. The user can revise the transformation tables before the transformations are made. These are the tables described in these requirements. They are instances of reference data tables, with the instance key including the "FROM" IC and the Dial Transfer order number.

2. After the transformations are made, the COR TTR work session provides the user with the opportunity to correct some of the transformation output. Since rework will re-apply the translations transformation tables, these corrections will be nullified if the circuit is reworked. Where possible, the user should go back to the translations transformations tables and modify them to provide the same values as provided by the correction pass. This may not be possible in all cases.

The SWITCH system provides the user with default tables that show the tag transformation and, when practical, the corresponding data for the "TO" IC. The user has the capability of changing defaults and entering values in these tables. Because the transformation tables are reference data tables, they are available both as printed reports and as online screens. The SWITCH system also provides the user with the ability to manually correct the new translations for the "TO" IC before they are sent to SOAC for forwarding to MAS. The SWITCH system provides a "transformation notifier" and flags the translation in the transformation output for such cases as when the ASG DTR process detects that a translation tag for the "FROM" IC is not in the transformation tables.

16.5.4.4 Deny/Suspend and MCFI Issues

The SWITCH system transformation process output for denied and suspended services indicates only the final denied or suspended state. Depending on how a BCC chooses to deny or suspend their lines, it may be necessary for the RCMAC to enter denied and suspended lines via two messages. The first would put in a line and the second would deny or suspend it. For a transfer of the multiple number call forwarding inhibit feature (MCFI) to a DMS-100, it is necessary to move a translation tag and value from a primary service to each associated dependent service. This is performed automatically by the translation transformation routines.

16.5.4.5 Transformation Index Table

An Index Table (See tables 16-1 through 16-4) is provided to supply the transformation process with the method used to transform each "FROM" IC tag. There is one line in the Index Table for each tag that may be found for the "FROM" IC. The Index Table has four columns. The first is for the "FROM" IC tags. The second column describes how the tag and value are to be transformed. The third column is used to indicate if an advisory is desired. If any entries in the optional advisory column are "y", a notifier will be produced showing each such tag and value, along with the corresponding "TO" IC tag(s) and value(s). The fourth column is for an optional customer instance value. For each tag, the transformation method field indicates how it should be transformed. The possible entries in this field are:

1. U - The tag and value will remain unchanged,
2. D - The tag and value will be dropped,
3. OTO - The transformation will use a One-To-One tag transformation table,
4. MTM - The transformation will use a Many-To-Many tag transformation table,
5. EXCP - The transformation will use an EXCePtion tag transformation table,
6. R - The transformation will use a predesignated rule,
7. T - The tag and value are to be transformed using a predesignated table (the predesignated table for each tag is indicated in the tag description subsection of this section), and
8. M - result in a notifier indicating that manual transformation is required [this will be indicated in the transformation output by trmma=*tag_that_requires_manual_transformation*].

Whenever the transformation process encounters an error condition, it produces a notifier and flags the translation information in the transformation output by:

trmerr=*tag_that_caused_a_transformation_error(associated_value)*.

An error condition can be caused by a tag for the "FROM" IC that cannot be found in the Index Table, an index table entry that is not valid, or an invalid entry in one of the other transformation tables. When an error condition is encountered, the user can correct the transformation output to indicate what tag(s) and value(s) are desired for the "TO IC" and, if necessary, reassign the circuit. The tag transformation tables (OTO, MTM, and EXCP) are used by the SWITCH system to transform all tags that do not require separate transformation tables. They are also used by the user to specify transformations for tags and values that cannot be transformed by any of the prespecified tables or rules. The three tables are described in detail in Section 16.4.3.6, the tag transformation table section. Briefly, they are:

- The One-To-One tag table (OTO) can transform one tag and value for the "FROM" IC to one tag and value for the "TO" IC if the values are not too long.
- The Many-To-Many tag table (MTM) can transform up to three tags and values for the "FROM" IC to up to three tags and values for the "TO" IC if the values are not too long.

- The EXCePtion tag table (EXCP) can transform any number of tags and values for the "FROM" IC to any number of tags and values for the "TO" IC, regardless of the lengths of the tags and values.

Of the three tag transformation tables, it is expected that the users will find the OTO table easiest to use; it is listed as the default when it is expected to be sufficient. On the other hand, the EXCP table is the most powerful; it is the default when the others are not expected to be adequate. The optional customer instance field can be used to obtain instances of tables which are specific to certain tags. For example, if the customer instance field were not used, all MTM transformed tags for a Dial Transfer would appear in one *transf tag mtm* table. If a customer instance of HML were used for the HML and HTY tags, then these tags would be transformed by a separate HML instance of the *transf tag mtm* table. The tables shown in these requirements use customer instances to group together tags which would naturally be worked on together. Sometimes a tag is used as a catalyst; that is, it affects a transformation without being transformed itself. The entry in the Index Table refers to the table or rule where the tag is transformed, not one where it is used as a catalyst. The default Index Table instances provided are for IC type families, where the ICs in each family have similar characteristics. The 1es, 2es, and 3es IC types are grouped together as analog (alg) ICs. The dmc and dmx IC types share much hardware in common and are grouped together as dms ICs. The ewsd, dco, and axe IC types are all striving to use the generic MAS interface and are grouped together as generic interface (tl1) ICs. The remaining IC type, 5es, is in a family by itself. In summary, the IC type families are:

alg	5es	dms	tl1
1es	5es	dmc	ewsd
2es		dmx	dco
3es			axe

The default index tables provided are del/modgl table instances of "from IC type family" and "to IC type family":

alg-->5es	5es-->dms	dms-->5es	tl1-->5es	alg-->dms
5es-->tl1	dms-->tl1	tl1-->dms	alg-->tl1	

Thus, 9 default transformation index tables are provided. The user will copy from "IC type family" instances to "IC type" instances before using, e.g.:

copy alg-->tl1 to 1es-->ewsd

The instance key of an index table to be used for a specific dial transfer also includes the DTR order number. Thus, for example, the first time a BCC encounters a dial transfer from a 1AESS to an EWSD, a user will copy the alg;tl1 index table to a 1es;ewsd;DTR_order_number table. The user will then tailor the table for use in that specific transfer. That modified table will then serve as the model for any future 1AESS to

EWSD transfers made by that BCC. The index tables assume there will be no transfer from an IC with ISDN capability to an IC without ISDN capability. If such a transfer were made, the user would probably want to modify the index table being used to delete the ISDN tags that are not needed. Since such transfers would be customer-affecting (because of the differences in ISDN capabilities between ICs) they are expected to be done with service orders, not DTRs. The changes that a user might want to make to the defaults are:

1. Specify that a tag transformation table (OTO, MTM, or EXCP) is to be used instead of the default. This gives the user the capability to:
   a. make transformations that are different than would be made by the predesignated table or rule,
   b. specify flowthrough transformations for tags that have a default requiring manual assistance, and
   c. specify a more powerful tag transformation table than listed as the default (e.g., MTM instead of OTO, or EXCP instead of MTM).
2. Specify that a tag and its value are to be unchanged or dropped (U or D).
3. Specify that a tag needs manual assistance (M).

If a predesignated table or rule (T or R) is available, that will be specified as the default. *Therefore, the user will not be able to specify that a predesignated table or rule should be used when the default is something different.* In addition to changing the transformation method, optional advisory, and customer instance columns, the user can also add new tags, with corresponding transformation method, optional advisory data, and customer instance. The tables in the table section are shown in a combined form. Table 16-1 shows the three Index Tables for transfers from analog ICs. For example, the Index Table for analog to dms transfers consists of columns 1 ("FROM" IC tag), 3 (transformation method), 5 (optional advisory), and 6 (customer instance). Table 16-2 shows the tables for transfers from 5es ICs; Table 16-3, transfers from dms ICs; and Table 16-4, transfers from tl1 ICs.

16.5.4.6 Tag Transformations Tables

The three tag transformation tables have been selected as default transformation methods for many of the tags and can be chosen by users for others. The tag tables can be used without customer instance for miscellaneous transformations. Examples of these tables for miscellaneous transformations are provided at the end of this section. Descriptions of the tags shown in these tables are included in following sections.

- The One-To-One tag table (OTO) can transform one tag and value for the "FROM" IC to one tag and value for the "TO IC." Each tag can have a maximum of 8 characters and each value can have a maximum of 27 characters. Thus one complete transformation can be shown on one line on a SWITCH system screen. Therefore the OTO table should be used for a "FROM" IC tag when it can handle all the transformations for that tag (see Table 16-5 and Table 16-6 for example tables for transfers to 5ESS and DMS-100 ICs, respectively).

- The Many-To-Many tag table (MTM) can transform up to three tags and values for the "FROM" IC to up to three tags and values for the "TO IC." Each tag can have a maximum of 8 characters and each value can have a maximum of 14 characters. Thus one complete transformation can be shown on two lines on a SWITCH system screen. The MTM table should be used for a "FROM" IC tag when it is sufficient and the OTO table is not adequate (see Table 16-7 for an example table). The MTM table provides for any mapping up to 3-to-3. Thus, it can handle the following mappings:

  1-to-1 1-to-2 1-to-3
  2-to-1 2-to-2 2-to-3
  3-to-1 3-to-2 3-to-3

- The EXCePtion tag table (EXCP) can transform any number of tags and values for the "FROM" IC to any number of tags and values for the "TO" IC, regardless of the lengths of the tags and values. It has "and", "or", "not", "sizeof", and "continue" operators, as well as masking capability. See Table 16-8 for an example EXCP table.

For each of these tables, the user is able to:

- overwrite any prepopulated tags and values, thus overriding them,
- fill in the blanks as appropriate for any lines with prepopulated "FROM" IC tags, and
- add new lines for new transformations.

The user can also specify customer instances of these tables to group together transformations that would naturally be considered together. Customer instances of OTO are CTX and CPG (for DMS-100 CPG). Customer instances of MTM are:

- HML (for HML and HTY),
- CPG (for 5ESS CPG),
- SCG (for SCG),
- and DSK (for DSK and IOC).

16.5.4.7 Wild Card Transformations

The following rules describe string value matching provided by the SWITCH system:

- When used alone, the character "*" is a wild card to indicate a match with any value. This can be used, for example, to indicate that for a transfer to a DMS-100, any value of EAN maps to the value "C06".

- If an asterisk precedes alphanumeric data as it does in a 5ESS preconstructed feature name, it is to be interpreted literally. For example, "*" in "*xyz" does not indicate a wild card.
- A "TO" IC value consisting of a tag enclosed by < and > signs means that the value of that "FROM" IC tag is to be used as the value for the "TO" IC.
- A dash used as a value indicates that the tag does not exist.
- The "ld" string appended to a value indicates that the value is a default that should not be passed to SOAC for MAS.

16.5.4.8 Multiline Hunt Group Transformations

A multiline hunt group identifier (HML) in the "TO" IC will usually be different from what it was in the "FROM" IC. This is due to the fact that the "TO" IC may have existing groups or the groups might be established in a different order. The SWITCH system provides the user with a DTR Transformation Table for Multiline Hunt Groups (an MTM table). This table has a line for each multiline hunt group in the "FROM" IC. The user is able to print the table as a report and display it at a terminal and the SWITCH system will accept user entries for the "TO" IC values. The HML table is shown in Table 16-9 with the tags that would normally be used. The table is initialized by the SWITCH system with the HML groups in the "FROM" IC. The user then enters the corresponding tags and values for the "TO" IC. An entry of "m" for the "TO" IC HML value means that the hunt group requires manual transformations. For example, as indicated in the section describing multiline hunt issues, a transfer to a DMS-100 of a group containing both hunt and non-hunt (i.e., outdial) terminals requires two groups in the DMS-100. In order to force an error and get manual assistance, an "m" is inserted into the table. Since HML values must be numeric, "m" is not a valid group number and will result in an error notifier (TRMERR). When the user receives an error notifier, it generally indicates an error condition. In this case, however, it indicates that the hunt group requires manual transformations. The user needs to enter the HTY value for each hunt group for the "TO" IC. If any HTC value changes, the default transformation method needs to be changed from U and each HTC value needs to be entered also. Terminal numbers are not changed as part of the dial transfer process. If it is desired to change the terminal numbers, that can be done by service order. One approach, however, is for the user to assign TER independent of any IC verification sequence number. The SWITCH system is then the steward of TER and provides the relationship between TER and OE.

A Client Specific Feature is available to provide HML renumbering (multi line hunt term renumber). The HML Terminal Renumbering process is a stand alone contract processor that will change circuit identifiers and translations tags that relate to HML terminals to adjust the HML terminal numbers according to control parameters entered by the user. Terminals can be incremented or decremented. The user has control over whether gaps in the numbering sequence will be maintained or eliminated and whether Non Hunt Terminals (NTERs) will remain in a separate range or be listed sequentially with the other terminals.

HMLs to be renumbered by this client specific feature must not have any pending activity. The DTR order must be completed before the HMLs can be renumbered. The contract processor will keep track of the HMLs that have been updated in a tracking file and will not reprocess an HML group that is in the tracking file. The contract processor will optionally produce an audit report that will detail the changes to be made.

A PADDLE procedure has been provided to build and launch the contract that initiates the client specific renumbering process.

Any HML group which cannot be transformed to a single HML group must be handled manually with the SWITCH system. For a Dial Transfer to a DMS-100:

- If a 1/1AESS multiline hunt group has both hunt and non-hunt (i.e., outdial) terminals, two groups generally need to be established in the "TO" IC, one for the hunt terminals, and another for the non-hunt terminals. However, if each outdial terminal is to be provided with a telephone number in the DMS-100, then the outdial terminals do not need to be placed in a group.
- In general, each additional telephone number from which hunting can start requires another group in the DMS-100. This is not true, however, with BCS32 if the NTXJ82AA feature package is purchased.
- If a 1/1AESS POTS multiline hunt group has more than one class of service, more than one group needs to be established in the DMS-100.
- Non-hunt numbers (NHNs) in the 1/1A become Bridged Night Numbers (BNNs) in the DMS-100 and do not require additional groups.

A manual group transfer can be made by excluding the HML from the Dial Transfer and then writing a Service Order to move the group to the "TO" IC (the Exchange Key on the order will indicate the "TO" IC). One approach is to use filters to exclude all HML groups from the Dial Transfer, except for those which are explicitly identified via primary keys. For example,

- Primary Key - TN range
  Filter - exclude HML*
- Primary Key - CTX
  Filter - exclude HML*
- Primary Key - SCH
  Filter - exclude HML*
- Primary Key - SFG
  Filter - exclude HML*
- Primary Key - HML (Range of up to 3 HMLs which can be handled)

- Primary Key - HML (Another range of up to 3 HMLs which can be handled)

The group data items for multiline hunt groups are sent to SOAC in the THML section of a contract and forwarded from SOAC to MAS in the HML (multiline hunt) section of a TP. The control and action tags provided by the SWITCH system are CTC (Control Code), COR (Corrective action), and ACT (Action type). The required group level tags for an HML group are CEG, HML, and HTID. Optional group level tags, used only when needed, are HTY, HTC, HTER, NTER, and LHT. The MDP and PBG tags are used for 5ESS ISDN, and will not be needed for transfers from 1/1A ICs. No special tables are required for the line data items for multiline hunt groups. The transformed data items are sent to SOAC in the TRMC and TRMS sections of a contract and forwarded from SOAC to MAS in the LIN (line) and SDT (services data) sections of a TP. The control and action tags provided by the SWITCH system are CTC (Control Code), COR (Corrective action), and ACT (Action type). The tags required to be output for a line in a multiline hunt group are CEG, HML (or MLG if it is a line in a 1/1A multiline non-hunt group), CTID, EXK, ID, RCU, TER, and TLI. Optional tags, used when required, include HPF, HPT, LHT, TN, NHN, QFN, QP, RMB, and SHU.

16.5.4.9 Series Completion Hunt Group Transformations

The group data items for series completion hunt groups are sent to SOAC in the TSCH section of a contract and forwarded from SOAC to MAS in the SCH (series completion hunt) section of a TP. The control and action tags provided by the SWITCH system are CTC (Control Code), COR (Corrective action), and ACT (Action type). The tags required for group data for series completion hunt groups are CEG, HTG, HTID, and SER. The optional group tags, used only when needed, are CTX and HTC. The line data items for series completion hunt groups are sent to SOAC in the TRMC and TRMS sections of a contract and forwarded from SOAC to MAS in the LIN (line) and SDT (services data) sections of a TP. The control and action tags provided by the SWITCH system are CTC (Control Code), COR (Corrective action), and ACT (Action type). The tags required to be output for a line in a series completion hunt group are CEG, HTG, CTID, EXK, ID, RCU, and TN.

16.5.4.10 Centrex Group Transformations

Centrex group IDs need to be transformed to new IDs for the "TO IC." Centrex groups have other groups associated with them (call pickup groups and speed call groups) that also need to be transformed. In addition, there are defaults that are used by the Assignment Engine. This section describes tables that are used to help make these transformations. Because a Centrex group can have multiline hunting, the multiline hunt group section is also of interest to Centrex lines. While MAS does not handle Centrex group data, it does handle the data items that are available for each line in a group, even if they are the same for all the lines in the group. The SWITCH system has Centrex data stored in several places:

- The Centrex group body has the group ID and type, and defaults for several per-line tags: IDP (Individual Dialing Plan), RTI (Route Index), and PIC (Primary Inter-LATA Carrier).
- The Centrex reference data items include the group ID and, for each AUSOC (Assignable Line USOC) in the group, default values for CAT (Customer Access Treatment Code), LCC (Line Class Code), and CCFs (Custom Calling Features).
- Most of the Centrex line translations data items are stored on translation edges off individual primary and secondary service nodes.

The SWITCH system provides tables for the tags or values which are likely to change with a Dial Transfer. The Centrex tables should assist the user in determining and entering values for the "TO" IC. The user is able to print the tables as reports and display them at a terminal and the SWITCH system will accept user entries for the "TO" IC values under the appropriate prepopulated "TO" IC tags. The Centrex ID table *transf centrex* appears initially with no tags or values; these are entered by the user. Table 16-10, a *transf centrex* table, shows how Centrex IDs can be entered. The table is initialized with the Centrex groups in the "FROM" IC. The user then enters the corresponding tags and values for the "TO" IC. Each Centrex group in a 5ESS needs an IDP tag and value. They are not entered by the transformation process, however. Instead they are entered via UPD CTX when the Centrex group is built in the SWITCH system inventory; they are stored on the Centrex node body. If the *transf centrex* table is used and provides IDP values, the ADM DTR work session will automatically build the 5ESS centrex groups with the proper IDP values. The *transf index* table indicates that the centrex transformations will take place in the special centrex table by using method t. The SWITCH system RCU table [8] (see Table 16-11) will be established for the "TO" IC before the transformation process starts. For Centrex customers, based on each Centrex customer's AUSOC, it provides defaults for LCC, CAT, TRMINC, and CCF. Whenever the transformation process encounters a "FROM" IC value with "|d" appended to it, it knows that the value is a default and should be dropped; the Assignment Engine will get a new default for the "TO" IC from the "TO" IC SWITCH system RCU table. Otherwise, the value is not a default, and the transformation process needs to transform it for use by the Assignment Engine and MAS. If the COSMOS conversion process does not append the "|d" to values, they will be treated as if they were received on service orders. The Call Pickup Group table (see Table 16-12 and Table 16-13) data is initialized by the SWITCH system for the "FROM" IC. The user then enters the corresponding tags and values for the "TO" IC. Because CPG numbers are unique within an IC, there is no need to specify the "FROM" IC Centrex ID when transforming CPGs. The first CPG table (the MTM table: Table 16-12) shows how data can be entered for a Dial

8. The SWITCH system does not store Recent Change USOC values, but instead derives them from the assignable line USOC or the class of service USOC. See Section 13.2.5 for details. The *centrex rcu* table is accessed with the best USOC value available.

Transfer from a 1/1A ESS to a 5ESS. In this example, the first entry shows tags for an MVP group and the second shows tags (and 5ESS values) for other Centrex group types. The second CPG table (the OTO table: Table 16-13) shows how data can be entered for a Dial Transfer from a 1/1A ESS to a DMS-100. Similarly, the Speed Calling Group table (see Table 16-14) data is initialized by the SWITCH system for the "FROM" IC. The user then enters the corresponding tags and values for the "TO" IC. Because SCG IDs are not unique within an IC, the "FROM" IC CTX ID needs to be specified when transforming SCGs. Although the CTX value can be 18 characters for the DMS-100, the maximum for the 1/1A ESS is 4 characters, fitting easily within the 14 character limit for the MTM table. Another transformation method can be used if a centrex group name longer than 14 characters is needed. The line data items for Centrex lines are sent to SOAC in the TRMC and TRMS sections of a contract and forwarded from SOAC to MAS in the LIN (line) and SDT (services data) sections of a TP. The control and action tags provided by the SWITCH system are CTC (Control Code), COR (Corrective action), and ACT (Action type). The tags that are required to be output for Centrex lines are CTX, RCU, ID(OE), EXK, CEG, and CTID. Optional tags, used when needed, include AA, CAT, CCF, CD, CPG, CPUO, CPUT, DR, DRG, ESL, IDP, INT, LCC, LTG, MVP, PIC, RCYC, RTI, SCF, SCG, and TRMINC.

16.5.4.11 Simulated Facility Group Transformations

In some cases, service(s) which required a simulated/virtual facility group (SFG) in an analog IC do not require one in a digital IC. When one is required, the group identifier is generally different than it was in the analog IC. To assist the user to specify when one is required and which identifier will be used, the SWITCH system will use two tables. The SFG RCU transformation table (Table 16-15), is entered for each service to determine if an SFG is needed for the "TO" IC for that service. The user should enter in the SFG RCU table those RCUs that require an SFG in the "TO IC." This table will be used by the transformation process when a circuit with an SFGALL tag is encounted in the "FROM IC." The SFGALL tag, as well as the other tags referred to in this section, is described in Section 16.4.3.13, which provides an alphabetical listing of the transformation requirements for each tag. The value following an SFGALL tag consists of the SFG identifier, sometimes followed by a blank and either a simulated facility direction identifier (if a two-way WATS access line terminates in a Centrex) or the SFG type (OUTWATS, INWATS, etc.). If the circuit's RCU is not found in the table, the SFGALL tag and value are dropped. If it is found in the table, the index table entry for SFGALL is used to find the SFGALL transformation method (default, OTO). Whether or not the SFGALL is to be dropped, the band advance needs to be transformed. Since the BAAD value can be 34 characters, the default method for transforming it is EXCP. Tags that are required for a line in a Simulated/Virtual Facility Group are SFGALL, GSZ, RCU, ID(OE), EXK, CEG, and CTID. The BAAD tag is optional and used when needed; it is at the group level.

16.5.4.12 Scan and Distributor Points

A business need has been identified for the SWITCH system to assign scan and distributor points. When the SWITCH system is able to assign these points, the transformation process will not need to be concerned about them. Until that time, however, these translation items require manual transformation. With a transformation method of "M", each scan and distributor point tag will be placed in the transformation output as a value following a TRMMA tag. The user should enter scan and distributor points for the "TO" IC by adding the appropriate tags and values to the transformation output. At the time a manual transformation is performed, the corresponding TRMMA tag and value should be removed. The scan and distributor point tags are DPP, DP, and SP, although SOAC currently only passes DP and SP.

16.5.4.13 LNP Translations Transformation

When certain LNP features are enabled, translations transformation processing will allow the LRN and EXK values to be transformed. Under other circumstances the LRN value is to be unchanged and the EXK value is to be dropped. The following table shows which transformations are possible for the relevant customer features. :

Table 16-1. LRN/EXK Feature Transformation Matrix

AD-Hoc TN	DTR Full replacement	DTR LNP General Support	IC/RU & LRN Selection	DTR Assignment Request	Assignment Engine Action
off	n/a	n/a	n/a	Ignore EXK and LRN value in Transf tables. Drop EXK and LRN from AR	Fail DTR AR of Ad-Hoc TNs
on	off	n/a	n/a	Ignore EXK and LRN value in Transf tables. Drop EXK and LRN from AR	Fail DTR AR of Ad-Hoc TNs
on	on	off	off	Ignore EXK and LRN value in Transf tables. Drop EXK from AR	Assign DTR AR of Ad-Hoc TNs. Open OE selection to entire IC
on	on	off	on	Ignore EXK and LRN value in Transf tables. Drop EXK and LRN from AR.	Assign DTR AR of Ad-Hoc TNs. Follow IC/RU & LRN selection algorithms for host/remote and OE selection

Table 16-1. LRN/EXK Feature Transformation Matrix

AD-Hoc TN	DTR Full replacement	DTR LNP General Support	IC/RU & LRN Selection	DTR Assignment Request	Assignment Engine Action
on	on	on	off	Use EXK and LRN value from Transf tables. Allow LRN to change but do not drop LRN	Assign DTR AR of Ad-Hoc TNs. If present, use EXK to limit OE selection (i.e. OEs may only be selected from the subset of the IC that has the proper EXK value (similar to Service Order Assignment)
on	on	on	on	Use EXK and LRN value from Transf tables	Assign DTR AR of Ad-Hoc TNs. If present use EXK to assist IC/ RU selection feature and OE selection.

16.5.5 Switch Port Overlay

The basic assignment strategy, assuming overlay is on, is to evaluate:

1. Cable pair changes
2. Changes based on location (LOIS)
3. Standard (64 pin) block mapping
4. Range mapping

before resorting to having the assignment engine select the new SWPT.

16.5.5.1 The Overlay Tables

When overlay is in effect, the *wo order control* reference data table must be updated. For COSMIC frames, or any frame system allowing LOIS level (shelf, block and pin) data, no other table building is necessary. For non-LOIS frames, there are several options. When all SWPTs are terminated on 64 pin blocks, the combination of a Concentrator table and one or more Block tables is sufficient to support the assignment process. Where other block sizes are present, one or more Network unit mapping tables must be populated. The *wo order control* table indicates which types of tables are present.

wo order control table

The *wo order control* table (see Table 16-22) is used by ASG DTR to determine if switch port overlay or Cable Pair Mapping is in effect for the order being assigned and which type(s) of tables are present. If the ASG DTR process does not find the table indicated by a particular parameter that has a value of 'Y' in the *wo order control* table, a notifier will be produced indicating that the required table was not found and processing will stop. The table is keyed to unique work order numbers for each work order type. The Dial Transfer Switch Port Overlay parameters are as follows:

1. Cable Pair Mapping parameter (CPM) - Y or N. The *wo order control* table is supplied with the parameter value set to N. Change the value to Y and enter the DTR order number when the DTR involves moves from a host to remote locations and/or moves from universal carrier systems to integrated digital carrier.
2. Switch Port Mapping parameter (SPM) - Y or N. The table is supplied with the parameter value set to N. When Switch Port Overlay is in effect, change the value to Y and enter the DTR order number.
3. Switch Port Overlay Concentrator Mapping (non-LOIS) parameter (SPC) - Y or N. The table is supplied with the value set to N. When a concentrator table and its associated block table(s) are to be used, change the value to Y and enter the DTR order number.
4. Switch Port Range parameter (SPR) - Y or N. The table is supplied with the parameter value set to N. When range mapping is involved in the transfer, change the value to Y and enter the DTR order number.

inv frame layout table

This summary data table is used whenever location data are present for the SWPTs in the transfer. The table can be created upon conversion from the COSMOS LX table. The *inv frame layout* table is updated automatically on running one of the standard inventory location tapes, such as ECHOS, MELD, or PACE, or when location data are added manually to the physical appearance edge of network units. Manual table modification is not required. See Section 12.1 for more information regarding MELD and PACE.

wo swpt overlay concentrator table

The *wo swpt overlay concentrator* tables (see Tables 16-23 and 16- 24) are used to obtain the new switch port ID down to the block level based on the DTR order number and the "FROM" SWPT ID. The table also provides the name of the correct instance of the *wo overlay block* Table that is to be used to complete the full "TO" SWPT ID. The full ID is created by concatenating the portion of the "TO" SWPT ID found in the *wo swpt overlay concentrator* table with the pin numbers data obtained from a *wo swpt overlay block* table. The SWITCH system will provide a single master instance of the table for each unique hierarchal level 1 SWPT group in an IC. For a 1ESS IC this is the Line Link Network level, meaning there can be up to 61 1ESS master Concentrator tables. Each is prepopulated with an ascending list of the 1ESS concentrator numbers. For a specific DTR, new tables are created through the primary DD Dialog for each needed instance and the DTR order number. The master table data needed for mapping can be copied and the new table completed by the use of the UPD REF work session to:

1. Enter a "TO" equipment group ID for each 1ESS group that will be mapped to a new group.
2. Enter the name of the correct instance of the block table that is to be used to complete the SP ID.

The overlay process uses the "FROM" SWPT ID to determine the "FROM" equipment group, i.e., the first six digits of a 1ESS SWPT ID - NNN-NNN-nnn. The Concentrator table is then accessed to obtain the "TO" equipment group and the name of the block table that will provide the correct pin number relationship. If there is no "TO" equipment group entry, these SWPTs are not overlaid or are not terminated on standard 64 pin blocks and other overlay rules may apply.

wo swpt overlay block tables

These tables (see Table 16-25 through 16-36) are used by the ASGDTR Contract Processor to determine the portion of the SWPT ID that defines the specific pin location. The standard 64 pin block table supplied with the SWITCH system has two columns which map the 1ESS "FROM" pin position - Switch and Level (the last 3 digits of the SWPT format), to the equivalent "TO" SWPT format. A set of block tables defining the most common block arrangements will be supplied as SWITCH system reference data. Unusual numbering schemes may be handled by copying and modifying one of the standard tables or by using NU mapping. The following reference data block tables are supplied with the SWITCH system:

- 4HH5 (Table 16-25) - The "FROM" IC is 1ESS with a 4 to 1 concentration ratio numbered horizontally starting at upper left corner. The "TO" IC is 5ESS numbered horizontally starting at upper left corner.
- 4HV5 (Table 16-26) - The "FROM" IC is 1ESS with a 4 to 1 concentration ratio numbered horizontally starting at upper left corner. The "TO" IC is 5ESS numbered vertically starting at upper left corner.
- 4VH5 (Table 16-27) - The "FROM" IC is 1ESS with a 4 to 1 concentration ratio numbered vertically starting at upper left corner.

The "TO" IC is 5ESS numbered horizontally starting at upper left corner.

- 4VV5 (Table 16-28) - The "FROM" IC is 1ESS with a 4 to 1 concentration ratio numbered vertically starting at upper left corner. "TO" IC is 5ESS numbered vertically starting at upper left corner.
- 2HH5a (Table 16-29) - The "FROM" IC is 1ESS with a 2 to 1 concentration ratio numbered horizontally starting at upper left corner. The "TO" IC is 5ESS numbered horizontally starting at upper left corner. This table is for the top half (32 pins) of the block.
- 2HH5b (Table 16-30) - The "FROM" IC is 1ESS with a 2 to 1 concentration ratio numbered horizontally starting at upper left corner. The "TO" IC is 5ESS numbered horizontally starting at upper left corner. This table is for the bottom half (32 pins) of the block.
- 2HV5a (Table 16-31) - The "FROM" IC is 1ESS with a 2 to 1 concentration ratio numbered horizontally starting at upper left corner. The "TO" IC is 5ESS numbered vertically starting at upper left corner. This table is for the top half (32 pins) of the block.
- 2HV5b (Table 16-32) - The "FROM" IC is 1ESS with a 2 to 1 concentration ratio numbered horizontally starting at upper left corner. The "TO" IC is 5ESS numbered vertically starting at upper left corner. This table is for the bottom half (32 pins) of the block.
- 2V?5 - The cases where the the "FROM" IC is 1ESS with a 2 to 1 concentration ratio numbered vertically starting at upper left corner to a 5ESS cannot be handled with block tables. NU mapping table entries are required.
- 4HHC (Table 16-33) -The "FROM" IC is 1ESS with a 4 to 1 concentration ratio numbered horizontally starting at upper left corner. The "TO" IC is DMS-100 numbered horizontally starting at upper left corner.
- 4HVC (Table 16-34) -The "FROM" IC is 1ESS with a 4 to 1 concentration ratio numbered horizontally starting at upper left corner. The "TO" IC is DMS-100 numbered vertically starting at upper left corner.
- 4VVC (Table 16-34) -The "FROM" IC is 1ESS with a 4 to 1 concentration ratio numbered vertically starting at upper left corner. The "TO" IC is DMS-100 numbered vertically starting at upper left corner. Use 4HVC (Table 16-34)
- 4VHC (Table 16-35) -The "FROM" IC is 1ESS with a 4 to 1 concentration ratio numbered vertically starting at upper left corner.

The "TO" IC is DMS-100 numbered horizontally starting at upper left corner.

- 2HHC (Table 16-36) -The "FROM" IC is 1ESS with a 2 to 1 concentration ratio numbered horizontally starting at upper left corner. The "TO" IC is DMS-100 numbered horizontally starting at upper left corner.
- 2VHC - The cases where the the "FROM" IC is 1ESS with a 2 to 1 concentration ratio numbered vertically starting at upper left corner to a DMS-100 cannot be handled with block tables. NU mapping table entries are required.

For different block numbering schemes or for blocks of other than 64 pin size, the user will have to build the appropriate NU mapping tables using.

wo nu map tables

This table is used to map ranges of network units during a transfer operation. For a DTR, mapping tables may be used for both switch port and cable pair moves. SWPTs and cable pairs will not be present in a single table.

- SWPT Network Unit Mapping This type of table is used for overlaid switch ports that can be identified and mapped by ranges or mapped individually. These tables (see Table 16-37 for an illustrative example) contain the low and high full IDs for the "FROM" and "TO" ranges of consecutive overlaid SWPTs that are being moved. The table may also contain single SWPT entries; only low range ID supplied. No validation is performed to assure that the size of the "FROM" range is equal to the size of the "TO" range. A unique SWPT instance of the *wo nu map* table must be created from the basic reference data table supplied with the SWITCH system for the DTR order number and for each hierarchal level 1 (i.e., Line Link Network for 1ESS) involved.
- Cable Pair Network Unit Mapping This type of table is used for circuits that are moving from one location (site) to another or are changing from non-integrated to integrated facilities. Normally, the BCC's Outside Plant Engineering group supplies the information needed to manually build the cable pair relationships. The table (see Table 16-38 for an illustrative example) contains either the low and high IDs of the "FROM" and "TO" ranges of consecutive cable pairs that are being moved or the IDs of individual "FROM" and "TO" cable pairs. For individual pair moves, the value is entered only in the low range ID column. A validation is performed to assure all "TO" cable pairs are spare. No validation is performed to assure that the size of the "FROM" range is equal to the size of the "TO" range. There is only one instance of a cable pair table for a DTR. It must be created

from the basic reference data table supplied with the SWITCH system with a NU type of CP and the DTR order number as the instance key. Note that this table provides functionality that is similar to a cable pair transfer in that it specifies a series of "FROM" and "TO" cable pair moves. In the event a CPT is created in LFACS to support host/remote or non-integrated/integrated facility moves, it should not be sent to the SWITCH system. Should such a transfer be established accidentally in the SWITCH system, it should be canceled.

16.5.5.2 Summary of Overlay Process

The ASGDTR Contract Processor, on being invoked, will access the *wo order control* table and obtain the values of parameters CPM, SPC, SPM, and SPR for the order being assigned. The following rules apply:

1. CPM = Y indicates that a cable pair instance of the *wo nu map* table is present. The table is to support moves between locations or from non- integrated to integrated facilities. The default value shipped with the SWITCH system is "N".
2. SPM = "Y" indicates that overlay is active for all assignment requests in this order. The default value shipped with the SWITCH system is "N".
3. SPC = "Y" indicates that *wo swpt overlay concentrator* and *wo swpt overlay block* tables are present. The default value shipped with the SWITCH system is "N".
4. SPR = "Y" indicates that at least one SWPT instance of the *wo nu map* table is present. The default value shipped with the SWITCH system is "N".

Given the internal circuit ID of the first working circuit in the "FROM" IC, the ASGDTR processor will perform the following steps to create the input contract for the assignment engine.

1. Access the data base and obtain the CP, SWPT and, if present, the SWPT LOIS.
2. Evaluate cable pair mapping. If a cable pair change may be required (CPM = Y), access the CP instance of the *wo nu map* Table.
   a. Search for the range that each "FROM" CP falls into, or for a single entry of the "FROM" CP ID. If the CP is found in the table, obtain the prespecified "TO" CP, or compute it using the offset of the "FROM" CP, and generate an assignment change request removing the "FROM" CP and prespecifying the new CP. The AR should include a request that will **block** any DIPs from being formed. Continue processing after step 6. Should the circuit contain multiple cable pairs, verify that all "FROM" pairs exist in the table. If any cable pair is missing, generate an RMA message.

b. Do not mark the Unit Status Table (UST) to indicate that cable pair mapping was used to generate the assignment request.

c. If the "FROM" CP is not in the *wo nu map* Table, continue with assignment step 3.

d. If the *wo nu map* Table does not exist, generate a notifier

3. Evaluate location mapping. If CPM = N or the "FROM" CP is not in the CP instance of the *wo nu map* table, and SPM=Y, evaluate location mapping for the new SWPT. If SPM=N continue with the assignment process. If LOIS is present on the physical appearance edge of the "FROM" SWPT, attempt to use the the *inv frame layout* table to obtain the "TO" SP ID. If there is no LOIS data, continue with the assignment process step 4.

   a. If there is a SWPT at the same LOIS, Mode, Shelf, Block and Pin, in the "TO" IC, generate an assignment change request removing the "FROM" SWPT and prespecifying the "TO" SWPT.

   b. Indicate that overlay was used to generate the assignment request. Continue assignment processing after step 6.

   c. If there is no SWPT in the "TO" IC at the same LOIS, Mode, Shelf, Block and Pin, continue with assignment processing step 4.

   d. If the "FROM" LOIS cannot be found in the *inv frame layout* Table, continue with assignment processing step 4.

4. Evaluate standard block mapping. If SPC = Y, evaluate the standard concentrator and block tables. If SPC = N, continue with the assignment process step 5.

   a. Parse the "FROM" SWPT ID to obtain the concentrator portion of the ID (NNN-NNN of NNN-NNN-nnn)

   b. Attempt to find the concentrator in the *wo swpt overlay concentrator* Table.

   c. If found, obtain the "TO" SWPT concentrator level data and the instance of the block table that will complete the "TO" SWPT ID.

      — If the "TO" concentrator is not specified (blank), continue with the assignment process step 5.

   d. From the proper *wo swpt overlay* Table, obtain the remainder of the "TO" SWPT data. Create the "TO" SWPT ID by concatenating the concentrator data with the block data.

   e. Generate an assignment change request removing the "FROM" SWPT and prespecifying the "TO" SWPT.

   f. Indicate that overlay was used to generate the assignment request. Continue the assignment process after step 6.

5. Evaluate SWPT range mapping. If SPR = Y, evaluate the overlay based on range data in a SWPT *wo nu map* table. If SPR = N, continue with the assignment process step 6.
   a. Obtain the hierarchal level 1 instance of a SWPT *wo nu map* table.
   b. If the table exists, search for the range that the "FROM" SWPT falls into, or for a single entry of the "FROM" SWPT ID. If the SWPT is found in the table, obtain the prespecified "TO" SWPT, or compute it using the offset of the "FROM" SWPT, and generate an assignment change request removing the "FROM" SWPT and prespecifying the new SWPT.
   c. Indicate that overlay was used to generate the assignment request. Continue the assignment process after step 6.
   d. If the table does not exist, continue with the assignment process step 6.
6. Generate a request for normal selection and assignment.
7. Invoke the Assignment Engine with the assignment request.

When processing a DTRASG assignment, the assignment engine will use an alternate table to determine what verification rules to use to validate the assignment. Normal switch port selection would use Table 6-12, the *swpt rule set* table. For overlay assignments Table 6-86, the *swpt rule set overlay* table will be used. (See Section 6.7 for more details)

When evaluating an overlay assignment, the assignment engine will use the dtr-overlay-ovr parameter (from the *wc parms* table) to determine the proper action if any Network Unit, other than a switch port, changes. If dtr-overlay-ovr = N, then an error condition is generated, unless the circuit involves a change of ICE, as required for party and coin services on Ericsson ICs. If the circuit involves a change of ICE, then the assignment functions as if dtr-overlay-ovr=Y. If dtr-overlay-ovr=Y, then the assignment process continues and if required, changes network units other than the switch port. However, the UST overlay flag for the item being assigned is not set.

> **NOTE** — If the dtr-overlay-ovr=Y, there may be items in the DTR that should be sent to FOMS for frame work to be done. FOMS will only print those items that are not marked as overlaid.

16.5.5.3 Assignment Error Conditions

Occasionally an overlaid SWPT will not pass validation in the assignment engine. When this occurs the circuit will be placed in ERROR in the DTR UST. It is recommended that Network Administration, using standard SWITCH system reports and SET processing, move the service to another acceptable SWPT in the "FROM" IC. The SET results in moving the customer. Once moved the customer will assign properly, either through regular assignment processing or through the Resolve Assignment (COR WO) assignment processing. If the new SWPT is not overlaid, a random assignment will be made in the DTR. If the new SWPT is overlaid, the "TO" SWPT will be validated for the service. The NAC may choose to pick an appropriate "TO" SWPT for the service and then, using location data or the data supplied to build the overlay tables, determine the "FROM" SWPT ID needed for the SET. The IMM OVR work session is available to identify which "TO" SWPT corresponds to a given "FROM" SWPT.

16.5.5.4 Rework Control

Service order and work order activity in the "FROM" IC will trigger rework of assignments in the transfer. When Switch Port Overlay is in effect, the full ASG DTR process must be followed since a SWPT or CP change in the "FROM" IC may have invalidated the pending assignment in the "TO" IC. Service orders assignments in the "TO" IC may select switch ports which although spare in the "TO" IC are overlaid back to working services in the "FROM" IC. To insure that DTR assignments will cause such service orders to rework, a very low Pending Position value, such as 1, will be passed to the assignment engine for DTR assignments with a prespecified SWPT. To minimize such rework, the recommended M&P is to assign ranges of overlaid switch ports before other ranges. DTR assignments that request an assignment engine SWPT selection may result in a similar situation, i.e., the selection of a SWPT that is overlaid to a working service. To insure that subsequent DTR preassignments will cause these pending DTR assignments to rework, DTR assignment requests without a prespecified SWPT will carry a Pending Position value such as 2 so that the value is greater than for prespecified requests but less than for provisioning requests.

16.5.5.5 Corrections

Failures of assignment can be resolved from the ULBB. Unlike cable throws, the ability to correct pending assignments after they are made is not provided in the current release. Undesired assignments may be canceled from assignment and then reassigned.

16.5.5.6 Support Of Wire Assembly

If a SWPT is DIPed in the "FROM" IC and overlaid to the new IC, the DIP is available in the "TO" IC without any wiring being performed. Since DTR is used to move only circuits working in the "FROM" IC, moving overlaid DIPs as part of a Dial Transfer is accomplished using the Wire Assembly process - see description in Section 9. The wire assembly process identifies each DIP that meets the input arguments and, before requesting a new SWPT from the assembly engine, determines if overlay is active by accessing the *wo order control* Table. If overlay is active, the overlay tables are accessed as described above (SWPT tables only not Cable Pair Mapping), for each prespecified "TO" SWPT ID. If the

"TO" SWPT can be determined, the new ID is passed to the assignment engine. If no prespecification is found, the wire assembly request fails and assign wire assembly continues to the next SWPT in the range.

16.5.5.7 Output

When Switch Port Overlay is in effect, the SWITCH system will still send frame output data to FOMS using the PREWO contract according to the SFO and SOS parameters in the *wo order control* table. If the DTR is fully overlaid, it may be desired that NO output flow to FOMS. In this case, insure that SFO=N and SOS=N and use the Ignore Frame Output for Completion (IFC=Y) parameter to cause the DTR completion process to ignore the fact that NO frame output has been sent.[9] If frame output is to be sent, the typical result of assignment is the simple substitution of the working switch port in the "FROM" IC with a new, predefined switch port. No wiring is necessary for overlaid assignments. Since frame work instructions are not needed for the circuits involved in the overlay process, the SWITCH system will indicate in the PREWO, by presence in the SWPT EQP aggregate of the tag "OVERLAY" with the value "Y", that SWPT overlay was used for the assignment. (The UST has information on which circuit assignments are the result of Switch Port Overlay and which ones are the result of normal assignment.) When overlay is not used to generate an assignment (or an assignment is overlaid but other NTUs change and the dtr-overlay-ovr parameter is "Y") then the OVERLAY tag is absent. This is standard FOMS output. FOMS will interpret OVERLAY = Y as indicating physical work is not necessary and will not print any of the overlaid items.

16.5.6 Non-overlay Assignments

For non-overlay assignments, the DTR assignment process selects switch ports in the "TO" IC using the standard service order *swpt rule set* and assignment tables. However, since DTR processing assumes that the circuit in the "FROM" IC will not change its configuration in the "TO" IC, the DTR assignment process ignores the "pfil" settings of the *swpt rule set* table. This allows service order assignments to avoid the creation of party circuits if desired, while allowing DTR assignments to transfer party circuits intact.

9. This technique may be used regardless of the dtr-overlay-ovr parameter setting. If the parameter is set to Y, there may be items in the DTR that NEED to be sent to FOMS as there is frame work to be done. Individual items can be sent with the REQ WO work session. These items will be completed properly when a "header only" completion is sent to FOMS. If there are too many items to send individually ALL items should be sent to FOMS.

   Note that completion messages will always be sent to FOMS, either individual messages for those items that had frame output sent or a "header only" message if the entire IC is being completed regardless of the IFC setting.

16.5.7 Load Group Exclusion

Load Group Exclusion (LGEXCL) Selection Criteria values may be placed on Load Groups in the SWITCH system database. Each Switch Port within an excluded Load Group would then contain the LGEXCL value as an "inherited" value. For the SWITCH system, a Load Group Exclusion tag and value may be received as input in the ASGSET and ASGDTR contracts or specified via an entry in the default load group exclusion value table (*wo load group exclusion* table). The tag and value are in turn passed to the Assignment Engine.[10] Switch Port Selection then attempts to select only a SWPT belonging to a Load Group having the specified LGEXCL value. The LGEXCL tag should not be confused with the LGDIR and LG tags. The LGDIR (value of i=inclusion or e=exclusion) and LG tags instruct SWPT "Selection" to select a SWPT which is either *in* or *not in* a particular Load Group. LGEXCL, LGDIR/LG, MINLF/MAXLF, and pre-specified SWPTs are mutually exclusive as ULBB input. Each LGEXCL value is mapped to an exclusion value penalty in the *swpt penalty score excl* scoring table. The penalties may be "0", "99" or a dash. If an LGEXCL value is pre-specified on input, the *swpt penalty score excl* scoring table is not referenced. Selection will attempt to select a SWPT with an inherited LGEXCL value equal to the input LGEXCL value. If an LGEXCL value is *not* pre-specified on input, but:

- a SWPT is pre-specified on input and the SWPT has an inherited LGEXCL which maps to an exclusion value penalty of "-", then "Validation" will fail.
- a SWPT is pre-specified on input and the SWPT has an inherited LGEXCL which maps to an exclusion value penalty of "99" or less, then "Validation" will use the pre-specified SWPT.

If a SWPT is not pre-specified, only a SWPT without an LGEXCL will be selected. If the users are excluding Load Groups for SET or DTR assignment steering purposes, then the exclusion value penalty should be set to a dash. This will prevent Service Orders and other Work Orders from selecting any excluded SWPTs. If the users do not want to steer assignments but wish to do the following, then the exclusion value penalty should be set to "99":

- exclude Load Groups to prevent automatic selection of specific SWPTs by all Service Orders or Work Orders, and
- allow pre-specified SWPT input, for all SO and WO

10. Except in the case where a customer owns part of the IC and has a special Load Group Exclusion Selection Criteria value defined in the *admin grp excl* table. If this value is defined then NO LGEXCL value obtained from the default table will be passed to the assignment engine and normal assignment processing (leading to the assignment in this special customer owned Load Group) will take place. If the User specifies an LGEXCL value in the ASG DTR work session, it will take precedence over ALL table derived values.

When Load groups are to be excluded, the exclusion value penalty should be set to "99," in order for DTR SWPT Overlay assignments and DTR Resolve Assignment assignments to be processed. Assignment Limitations are placed on Network Units which are being made spare due to an assignment change.

16.5.8 Assignment Limitation

The user may input an assignment limitation to be placed on the "FROM" switch port when the circuit or circuits are assigned via the ASG DTR work session. If this feature is used, the assignment limitation will prevent any flow-through assignments, due later than the DTR, from picking those switch ports so marked.

A new assignment limitation value/type (TKD/RSD) has been defined with special processing for DTR assignments. If an NTU is marked with TKD, it will be valid in DTR assignments but will **not** be valid in Service Order assignments.

16.5.9 Automatic Load Factor Update

In order to achieve good switch port assignments in the "TO" IC, it is necessary to run the UPD LBL work session frequently towards the end of a non-overlay Dial Transfer assignment phase when the selection pool is limited. The work session is executed to update the load factor for all load divisions in the "TO" IC. If the UPD LBL work session is not run frequently, switch port assignments are made with high load factors and/or frame appearances far from the cable pair, thus requiring long jumpers.

The Automatic Load Factor Update feature is an additional tool for managing a Dial Transfer during the latter stages of assignment when there are limited resources from which the SWITCH system can select. When the feature is turned on, the manual effort of scheduling the UPD LBL work session to execute periodically during Dial Transfer assignment is eliminated.

The feature is controlled by two reference data parameters. The first reference data parameter is ULF (Update Load Factor) located in the '*wo order control*' table. ULF indicates whether the Automatic Load Factor Update feature has been activated. Valid values for ULF are 'Y' (feature activated) or 'N' (feature not activated). The second reference data parameter is LFI (Load Factor Interval) located in the '*wo contract options*' table. LFI indicates the specific number of assignments (i.e., 000 to 999) that should be performed before a new load factor is calculated and updated. The ULF parameter must be set to 'Y'.

If the Automatic Load Factor Update feature has been activated (i.e., ULF=Y) and the LFI parameter is set to the value of '*n*' (where *n* is greater than 0 and less than or equal to 999), the contract AUTLF will be generated during Dial Transfer assignment processing after every '*n*th' assignment. The AUTLF contract will calculate new load factor limits for all load divisions and update the SWITCH system database. The status of the AUTLF contract will be sent to DCOR. If the AUTLF contract was successful, there will be a 'contract successful' message sent to DCOR. If the contract was not successful, then there will be an error message sent to DCOR with an explanation for the failure. If Dial Transfer assignment processing should pre-maturely terminate for any reason, the number of assignments made prior to the termination will be recorded. When Dial Transfer assignment processing resumes, the ULF and LFI reference data parameters will be analyzed to determine whether the Automatic Load Factor Update feature has been activated. If the feature has been activated (i.e., ULF=Y) and the LFI parameter has a value greater than 0, then Dial Transfer processing will continue making assignments and at the *n*th assignment an AUTLF contract will be executed.

It is anticipated that when the Automatic Load Factor Update feature is activated and the LFI parameter is set to 10, there will be an approximate 6-11% reduction in the rate of lines assigned during Dial Transfer. This is due to the additional CPU demands of the AUTLF contract. When the LFI parameter is set to a larger number (i.e., AUTLF contract is invoked less frequently), the impact is expected to be smaller.

The following table summarizes how the two reference data parameters work together and the expected results with various settings.

Table 16-2. Reference Data Parameter Settings

ULF =	LFI =	EXPECTED OUTPUT
Y	0	Automatic Load Factor Update feature <u>is</u> activated; however no load factor calculations will be made. An advisory message is sent to DCOR indicating the settings for the ULF and LFI parameters are not allowed. Dial Transfer assignment processing will be performed without the load factor update.
	1 to 999	Automatic Load Factor Update feature <u>is</u> activated and load factor calculations will be made after the *n*th assignment is made. The value of '*n*' is determined by the LFI parameter. An advisory message is sent to DCOR after every *n*th assignment indicating the status of the automatic load factor update contract.
N	0 to 999	Automatic Load Factor Update feature is <u>not</u> activated. No load factor calculations will be performed. Dial Transfer assignment processing will be performed without the load factor update.

16.6 Dial Transfer Resolve Assignment

16.6.1 Resolve Assignments (CORDTR Contract)

After a circuit is *established* in a Dial Transfer, Resolve Assignment (the COR WO Work Session) may be used to make assignments which require user-specified input. Resolve Assignment may be used to:

- re-attempt a failed assignment which required specific input data, or
- make a first-time assignment requiring user-specified data.

The COR WO (correct work order) work session will allow a user to enter assignment data for a circuit established in a Cable Pair Transfer (CPT), Switch Port Equipment Transfer (SET) or Dial Transfer (DTR) OR correct pending assignments for a circuit assigned in a Cable Pair Transfer. Only the Dial Transfer Resolve assignment processing will be discussed below (See Section 9 for more details on the other aspects of COR WO) Entering assignment data for a circuit which has not yet been assigned is called "resolving assignments" or "resolve". It includes:

— add/change/delete of facilities other than cable pairs

— inward facilities may be explicitly specified or can be automatically selected by specifying "id=?" (except that miscellaneous equipment (ME), and Intelligent Controller Equipment (ICE), must be explicitly specified)

— specifying temporary circuit remarks

Resolve Assignment includes:

— Constrained Assignment. Both Totally Constrained Assignment and Partially Constrained Assignment.

— Non-Constrained Assignment.

The work session is initiated from the COR WO data request screen or equivalent command language. The user must specify wire center and order identification (*ord* for DTRs) plus information to identify the circuit that is to be assigned. For DTRs, either a circuit id or a network unit id must be specified. The work session consists of multiple screens for display and allows update of circuit assignments (e.g., network units, connectivity) and data about the transfer (i.e., temporary circuit remarks). The work session does not allow changes to service data, design data or translation data. When the work session is used to assign a circuit (resolve assignments), a single view of the circuit will be retrieved from the DLBB. This view will be the time view of the circuit as of the input expected completion date (ECD also know as the DTR Due date). For DTRs the ECD may not be changed via the COR WO work session, so the circuit will be retrieved as of the order due date time view. The COR WO Work Session for Resolve Assignment will invoke a WSIWO immediate contract to retrieve circuit-related data and order- related data from the DLBB. DTR Resolve Assignment will be by

- an individual Network Unit (i.e., TN, SWPT, CP).
- or an individual circuit ID (i.e., CKID).

The screen data, along with other user input, will be utilized to build a CORDTR contract for deferred execution. The two contracts involved in the COR WO work session for Dial Transfers are WSIWO, and CORDTR. WSIWO is the immediate contract that is used to initialize the work session. The WSIWO contract request will contain the From transfer unit, a circuit id or a network unit id as the key to the circuit view or pending (delta) assignment circuit view to retrieve. When resolving assignments for a circuit in a CPT, SET, or DTR, the WSIWO contract response will contain a single circuit view and data about the transfer. The circuit view will be as of the the order due date. CORDTR (resolve assignments) is the contract used to resolve assignment data for a circuit in a DTR. It supports the addition, replacement and removal of network unit assignments and connectivity. Upon execution of the work session for a DTR, a CORDTR deferred contract will be sent to the SWITCH system DLBB. The contract processor will massage the contract into an interface required by the Assignment Engine. If CP Mapping and SWPT Overlay exist for a circuit in DTR, the contract processor will perform the table lookups and prespecify the "TO" cable pair and/or "TO" switch port to the Assignment Engine. If the contract is resolving assignments and assignments are successful, a delta will be created in the time view requested (i.e., the DD time view) and the ASG flag in the UST (Unit Status Table) will be marked with a "y" and appropriate output will be sent. If the contract is resolving assignments and assignments are unsuccessful, the ERR flag in the UST will be marked with a "y", the ASG flag will remain as a "n" and an error message will be generated. For circuits for which Translation Data Output has never been sent, the Send Translation Data (STD) and Bulk Output Allowed (BOA) parameters will dictate whether the PRETMD/CORTMD Translation Data Output contract should be sent to MAS upon the assignment of the Dial Transfer circuit in the SWITCH system database or later via a FUSA/ULBB request (REQWO or REQTRM contracts). (If BOA = 'Y', then MAS output will not be sent regardless of the value of STD. See Section 14 for a full discussion of the TRM interfaces.) For circuits for which Translation Data has previously been sent via TRM, the SWITCH system will automatically send MAS a CORTMD Translation Data contract. The Send Output Simultaneously (SOS) parameter will indicate whether Frame Output and Translation Data are sent simultaneously during the processing of a REQWO or REQTRM contract.

16.6.2 Correction of Translations (CORTTR Contract)

The COR TTR work session is used to correct translation data (TRANS edge data only) in the pending view for a circuit or group (HML, SCH, SFG) assigned in a Dial Transfer (DTR). When a circuit or group is involved in a Dial Transfer, it may go through a

Translation Transformation Process (e.g., Dial Transfer from a 1ESS to 5ESS). This process will map translation tags and values for circuits and groups in the "FROM" IC to the equivalent translation tags and values in the "TO" IC. If the transformation process detects translation errors (e.g., no entry in transformation table for translation tag) or translation tags are marked as manual, a notifier is generated. In addition, whenever a translation error is detected, a TRMERR tag will be added to the circuit or group and its value will be the tag which caused the transformation error. Likewise, whenever a manual transformation is detected, a TRMMA tag will be added to the circuit or group and its value will be the tag which requires manual transformation. The user should then invoke the COR TTR work session to correct those errors and/or input translation data for the manual tags. During the correction process, the user should remove any TRMERR and/or TRMMA tag(s) from the circuit or group. All of the tags must be removed in order for the translations to be sent to MAS. If the work session is to correct circuit translation data, translation data for ALL of the services (primary and secondary) existing in the circuit will be retrieved in the work session. Translation data can then be updated for any one of the services or all of the services. If the circuit belongs to a group or groups, only the id of the groups will be retrieved and displayed in the work session. Translation data corrections for the group(s) must be done via a separate COR TTR work session. If the work session is to correct group translation data, translation data for that group node will be retrieved and available for update. Circuits that belong to that group will NOT be retrieved in the work session. Any translation data corrections to those circuits must be done via a separate COR TTR work session. There will be two views of the circuit or group data retrieved in a COR TTR work session. One view will be the "before" view which will be for display purposes - no updates are allowed. The other view will be the "after" view which the user will be allowed to change. Upon executing the COR TTR work session, if all of the TRMERR and TRMMA tags are not removed, then a warning message will be generated indicating that there are remaining error and/or manual transformation tags on the circuit or group. The user then has the option to remove the tags and correct any additional translations, or continue with the execution. If the process is continued, translations data will not be sent to MAS for the circuit or group, however any modifications made to the circuit or group will be updated in the data base. There are two contracts used by this work session.

1. The WSITTR contract is used to retrieve circuit or group translation data.
2. The CORTTR contract is used to update the circuit or group translation data in the data base.

The WSITTR contract is used to:

- retrieve order level data about the Dial Transfer (the DTR order id)
- retrieve the before and after circuit design and translation data for the circuit specified (required input for processing a circuit):
  - — Circuit identification (primary service id)
  - — Service identification (secondary service id)

— Network unit type and id (unique primary service)

- retrieve the before and after group translation data for the group specified. The required input for processing a group is to identify the "FROM" group, and depends on the type of group:

  — Multi-line hunt group id and intelligent controller (IC and ICID)

  — Simulated facilities group id and intelligent controller (IC and ICID)

  — TN of a series completion hunt group

The data retrieved by the WSITTR contract is used to populate the screens. The CORTTR contract is used to:

- change pending translation data for a circuit assigned in a Dial Transfer.
- change pending translation data for a Series Completion Hunt Group assigned in a Dial Transfer. (Since SCH groups do not have external ids, when an SCH is involved in a Dial Transfer, the Assignment Engine "changes" the control edge of the SCH node so that it points to the "TO" IC. So there is a single SCH pending delta in the data base where the left hand side reflects the "FROM" translation data and points to the "FROM" IC and the right hand side reflects the "TO" translation data and points to the "TO" IC (i.e., the SCH node is reused).)
- re-build the To Multi-Line Hunt Group with new translation data for a HML group assigned in a Dial Transfer. (There is no ACE-like processing for an assigned HML group via the Assignment Engine. When a HML group is assigned, there are two separate deltas for the HML group in the data base. One delta contains the From HML data. This delta is a "phantom" delta where the left and right hand side are the same. This delta exists for rework purposes. The other delta is the To or new HML group that exists in the "TO" IC. This delta is created through a build process. When the user changes translation data for a HML via the COR TTR, what happens is the To or new HML delta is re-built with the new translation data.)
- re-build the To Simulated Facilities Group with new translation data for a SFG assigned in a Dial Transfer (There is no ACE-like processing for an assigned SFG via the Assignment Engine. When a SFG is assigned, there are two separate deltas for the SFG in the data base. One delta contains the From SFG data. This delta is a "phantom" delta where the left and right hand side are the same. This delta exists for rework purposes. The other delta is the To or new SFG that exists in the "TO" IC. This delta is created through a build process. When the user changes translation data for a SFG via the COR TTR, what happens is the To or new SFG delta is re-built with the new translation data.)

16.6.3 Due Date Changes

The due date of a Dial Transfer is defined when the DTR is initially established in the SWITCH system database. All circuits in the DTR are established and assigned as of this date. Unlike other multi-pass work orders, e.g., CPTs, SETs, WOLSTs, the Estimated Completion Date (ECD) for DTR assignments is always the DTR due date. The order due date of a pending DTR may be changed via the Establish DTR (SET DTR) work session. Changing the order due date of a DTR will change the ECD of all circuits and groups in the DTR to a date earlier or later than the existing order due date. If *any* circuit in the DTR has been completed (via contract PCNDTR), the order due date change will *not be allowed.* When the SET DTR work session is invoked to request that a DTR order due date be changed, no other activity will be allowed via that work session. In other words, the addition of new circuits to the DTR or the changing of scope criteria will be prohibited. When changing the order due date, FOMS and MAS must be notified of assignment changes, as appropriate.

16.6.3.1 DTR Due Date Change Methods and Procedures

The following steps should be taken when changing the DTR due date:

Changing to an Earlier Due Date

1. If a WAO is associated with this DTR to move assemblies which contain overlaid switch ports, the WAO should be canceled prior to initiating the DTR due date change. Failure to perform this step may result in the assignment of assembled (overlaid) switch ports to the circuits being moved to a new time view as a result of the DTR due date change. As a result, the assemblies containing overlaid switch ports may be used in circuits, resulting in a loss of available assemblies in the "TO" IC.
2. Create new date-sensitive reference data tables using the new order due date (*ic priority, ic nxx, ic frame map.*)
3. Remove date-sensitive reference data tables defined for the old order due date (*ic priority, ic nxx, ic frame map.*)
4. Invoke UPD NTU work session to change the network unit availability date to the earlier date so that the equipment will be available when the assignment is moved to the new date. (Only needed if the availability date was set... for load and growth DTRs only.)
5. Re-establish and assign the WAO to move assemblies with overlaid switch ports at the new DTR due date.
6. Process the DTR due date change via the SET DTR work session.

7. Reprocess all Scope Criteria to pick up any circuits which should be included in the DTR via the SET DTR work session.

Changing to a Later Due Date

1. If a WAO is associated with this DTR to move assemblies which contain overlaid switch ports, the WAO should be canceled prior to initiating the DTR due date change. Failure to perform this step may result in the assignment of assembled (overlaid) switch ports to the circuits being moved to a new time view as a result of the DTR due date change. As a result, the assemblies containing overlaid switch ports may be broken, resulting in unnecessary frame work and few assemblies transferred.
2. Create new date-sensitive reference data tables using the new order due date (*ic priority, ic nxx, ic frame map.*)
3. Remove date-sensitive reference data tables defined for the old order due date (*ic priority, ic nxx, ic frame map.*)
4. Re-establish and assign the WAO to move assemblies with overlaid switch ports at the new DTR due date.
5. Process the DTR due date change.
6. Invoke UPD NTU work session to change the network unit availability date to the later date. (If necessary.)

In processing the DTR due date change, an attempt will be made to move each circuit in the Unit Status Table (UST) of the DTR to the new date. Processing will require two passes through the UST. The first pass will move those circuits in which the switch port in the "FROM" IC is overlaid to a switch port in the "TO". The second pass will move the remaining circuits in the DTR. As each circuit is processed, it will be checked to determine if the circuit is a member of any groups (HML, SCH, or SFG). If so, the group assignment must also be moved to the new due date. When the first circuit in a group is encountered, the group assignment will be moved. When subsequent circuits in the group are processed, the group assignment need not be moved again (it was already moved). When processing a circuit or a group, the contract processor will first attempt to "slide" the circuit or group to the time view of the new due date. If an item can be moved intact to the new due date, the processing for that item (circuit or group) is successful. In other words, an item "slides" successfully if the assignment in the old due date time view is valid in the new due date time view without any changes. If the item cannot "slide" to the new time view (due to an intervening service or work order), the SWITCH system will first determine whether the item still belongs in the DTR by evaluating the scope criteria of the DTR. If the item does still belong in the DTR, then the SWITCH system will attempt to reassign or reestablish the item (if it was not yet assigned) in the time view of the new due date via rework-like processing. If it is found that the item does not belong in the DTR at the new due date, it will be automatically canceled from the DTR. After all circuits in the UST have been processed, the Group Status Table (GST) will be checked to determine if any of the groups are no longer in the DTR as of the new due date (all circuits in the group were canceled as described above). Any group which no longer has members in the DTR will be automatically canceled from the DTR.

16.6.3.2 Output Processing for DTR Due Date Changes

Following processing of the PREDTR contract to change the DTR order due date, a new establishment planning message will always be sent to FOMS. The planning message will specify the number of circuits in the DTR following the due date change. The scope criteria used to establish the order will also be sent to FOMS. In addition, a tag in the C1 header will be set to indicate that the due date of the order has changed. New frame output contracts (PREWO) will *not* be sent for those circuits in the DTR which successfully "slide" to the new due date, since their assignment did not change. New frame output contracts (PREWO) will be sent to FOMS for those circuits which were reassigned (i.e., could not "slide"). CANWO contracts will be sent to FOMS for the items which were canceled from the DTR as a result of the due date change (they no longer met the DTR scope criteria). TRM contracts are sent to the IC as they are received in MAS, i.e., they are not held in the MAS system. Therefore, MAS system processing is not affected by the due date change. However, if an item is reassigned, the assignment before and after the reassignment must be differenced to determine if a MAS affecting change occurred as a result of the reassignment. New MAS output (PRETMD/CORTMD) will be sent to MAS for those circuits which are "MAS-Active" and for which a MAS-affecting change is detected. A circuit is considered "MAS-Active" if output has previously been sent to MAS for the circuit via a TRM contract, or if the circuit had been evaluated for MAS output because STD=Y during initial assignment, or the item was included in a request for TRM output. See Section 14 for additional information on TRM output from DTRs.

16.7 Dial Transfer Output

16.7.1 Dial Transfer Inquiries and Reports

A series of reports and inquiries may be exercised any time after the Dial Transfer has been established and before it has been "final" completed and purged from the database. The following is a list of these reports/inquiries which reference the SWITCH system database:

1. Inquire on any circuits ("FROM" IC and "TO" IC views) involved in the Dial Transfer (i.e., search in the Unit Status Table).
2. Given output options, report on all circuits involved in the Dial Transfer (i.e., search in the Unit Status Table).

3. Given any of the following data, return a count or the actual circuits identifiers which are *candidates* for Dial Transfer but are *not* in Dial Transfer (i.e., not in the Unit Status Table):
   a. NXX (NPA/NXX value), or a range of TNs, SWPTs, or CPs
   b. IC
   c. Optional circuit filters such as CTX, HML, SCH, SFG, ME
4. Given a specific External Service Node ID, determine whether its associated circuit is involved in Dial Transfer (i.e., search in the Unit Status Table).
5. Return counts of circuits in the Dial Transfer which have been assigned, canceled, in error, in conflict, filtered out, completed, had Frame Output generated and sent, are MAS-involved circuits which have had Translation Data generated and sent, had Assignment Redundancy Management Data generated and sent, and/or have a particular FOMS Sequence Number. This data may be found in the Order Control Work Task and/or the Unit Status Table.
6. Report on "FROM" IC and "TO" IC Translation Data for each circuit.

16.7.2 FOMS

16.7.2.1 Establishment Message

The SWITCH system will send FOMS a PREPWO Frame Output Establishment Planning Message at the conclusion of the PREDTR Establishment processing. This planning message will contain:

- General Header Information.
- ADA Parameter Value (used by automatic assignment upon inward action and possibly by Bulk Due Date change processing).
- Send Frame Output (SFO) parameter value.
- Order Line Count.
- Order Design Circuit Line Count.
- PREDTR Scope Criteria.

To inform other involved user groups, the SWITCH system message destination routing tables may be populated to send the PREPWO contract data to additional destinations on a contract basis.

16.7.2.2 Assignment Message

The SWITCH system will send FOMS a PREPWO Frame Output Assignment Planning Message at the successful conclusion of ASGDTR Assignment processing. This Planning Message will contain:

- General Header Information.
- Assignment Date.
- Send Frame Output (SFO) parameter value.
- Range of UST Item Numbers (Item numbers are associated with each assigned circuit).
- Input Assignment Primary Keys and Filters.

The Send Frame Output (SFO) parameter will dictate whether the PREWO Frame Output contract should be sent upon the assignment of a Dial Transfer circuit in the SWITCH system database or later via a FUSA/ULBB request (REQWO or REQTRM contracts). The SWITCH system PREWO output contract will include the UST Item Number associated with each assigned circuit. The ULBB work sessions which generate the REQWO and REQTRM contracts are REQ FO and REQ TRM respectively. The FUSA transactions which generate the REQWO and REQTRM contracts are RQF and RQT respectively. The Send Output Simultaneously (SOS) parameter will indicate whether Frame Output and Translation Data are sent simultaneously during the processing of either a REQWO or REQTRM contract. In the case of Switch Port Overlay circuits, the frame work has been done prior to the establishment of the Dial Transfer. Therefore, since the SWITCH system does not exercise Frame Output-related pass-to-pass differencing, either Frame Output will be sent to FOMS for *all* Dial Transfer circuits or for *none*. The SWITCH system will retain a Switch Port Overlay indicator in the UST for each overlaid circuit. This indicator will be passed to FOMS in the PREWO contract at the circuit level (if it is sent). FOMS will process its normal differencing to detect whether additional frame work is required. FOMS will also have the ability to suppress FOMS Frame Output generation for Switch Port Overlay circuits. The IFC parameter in the *wo order control* table can be used to suppress frame output checks at completion time, thus avoiding any circuit level frame output.

16.7.2.3 Resolve Assignment Message

The SWITCH system will send FOMS a PREPWO Frame Output Assignment Planning Message at the successful conclusion of CORDTR Resolve Assignment processing. For circuits for which Frame Output has never been sent, the Send Frame Output (SFO) parameter will dictate whether the PREWO Frame Output contract should be sent upon the assignment of the Dial Transfer circuit in the SWITCH system database or later via a FUSA/ULBB request (REQWO or REQTRM contracts). For circuits for which Frame

Output has previously been sent, the SWITCH system will automatically send FOMS a PREWO Frame Output contract (upon re-assignment after a previous cancellation, upon correction, or upon rework). The Send Output Simultaneously (SOS) parameter will indicate whether Frame Output and Translation Data are sent simultaneously during the processing of a REQWO or REQTRM contract.

16.7.2.4 Correction Message

The SWITCH system will send FOMS a PREWO Frame Output Message if a MAS-affecting change was made by a correction to a circuit for which Frame Output had previously been sent.

16.7.2.5 Cancellation Message

The SWITCH system will send FOMS a PREPWO Frame Output Establishment Planning Message at the conclusion of the CANDTR Cancellation processing. A decrement in the Order Line Count will be reflected in the Establishment Planning Message for "Cancellation from Transfer." The SWITCH system will send FOMS a CANWO Frame Output Message for cancellations made to circuits for which Frame Output has previously been sent. The SWITCH system CANWO output contract will include the UST Item Number associated with each canceled circuit. Final "Cancellation from Transfer" will generate a CANWO output contract containing only header information but will not generate a FOMS PREPWO Frame Output Establishment Planning Message.

16.7.2.6 Completion Message

The SWITCH system will send FOMS a PCNWO Frame Output Message for completed circuits. For partial completion, the PCNWO contract will contain the Item Number of each completed circuit. MAS does not require the SWITCH system completion notices for Work Orders.

16.7.3 Translation Redundancy Management (TRM)

After processing one or several ASGDTR contracts, Translation Data for each circuit must be transported and placed on the "TO" IC. This may be accomplished by the SWITCH system or by an outside vendor. If it is desirable to transport Translation Data from the SWITCH system database to the "TO" IC *before* the IC has been turned over from the vendor to the operating company, the Translation Data may be sent to the vendor via Bulk Translations Output tapes. These tapes replace the need for some of the Translation Guide forms. Any time after the "TO" IC is *turned over* (six to eight weeks after the Dial Transfer preparation began), Translation Data of the Dial Transfer assignments could be sent to MAS via the TRM contracts (i.e., PRETMD/CORTMD). The user may opt to *never* use the tape data transferral method. This scenario then requires that *all* Translation Data be transferred to MAS through PRETMD/CORTMD contracts via the SWITCH system and SOAC and MAS interface once the "TO" IC is turned over from the vendor to the operating company. Several TRM requests would be required to avoid system interface overload. It is also possible to use the TRM interface to communicate "assignment" data to MARCH which would then only have to handle the translations manually. The Bulk Output Allowed (BOA) and Send Translation Data (STD) parameter will dictate whether Translation Data should be sent (if appropriate) upon the assignment of a Dial Transfer circuit in the SWITCH system database or later via a FUSA/ULBB request (REQWO or REQTRM contracts). The sending of multiple TRM messages by the SWITCH system may be required in order to meet the Line Count request of the request contract *and* to satisfy message size limitations across the SWITCH system and SOAC and MAS interfaces. The SOS parameter will indicate whether Frame Output and Translation Data are sent simultaneously during the processing of either a REQWO or REQTRM contract. See Section 14 for further details on Dial Transfer TRM processing.

16.7.3.1 Bulk Translations Output

Bulk Translations Output (BTO) is the process of extracting data from the SWITCH system database and writing it to 9 track magnetic tape or a dataset for the use of various groups (e.g., switch vendors, LMOS, NSDB, accounting). BTO is used to provide a bulk transfer of assignment and translation data to an IC vendor or other Operations System for a Dial Transfer. Three formats for full translations and assignment data are supported: TAGTMART (TAG/value Transfer MAster Record Tape), TMART (Transfer MAster Record Tape) and FCIF format which is an FCIF implementation of BTO. The FCIF extract is the only Bulk Translations Output extract that will fully support Digital Loop Electronic (DLE) elements. The data that is extracted includes cable pair, switch port assignments, DLE elements, such as channels and call reference values, and translations data for each individual service/circuit in the selected input scope. The selected input scope for Dial Transfers is the set or a subset of circuits established in the Dial Transfer.

Another extract is available, the SOA format, which provides Ad-Hoc TN to LRN mapping data to SOA. This extract is used when LRN values have changed as a result of DTR assignments. The new TN to LRN mapping data must be communicated to the network. This is accomplished by sending the BTO SOA extract to SOA.

See Section 14 for a complete discussion of Bulk Translations Output.

16.7.4 Assignment Redundancy Management (ARM)

Assignment Redundancy Management (ARM) contracts are used to keep downstream systems up to date on assignment changes made by SWITCH system Work Orders. The ARM process is also known as "Common Update." Some of the downstream systems, like LMOS and NSDB, require a notification for each service that has been modified. Most of the SWITCH system work order processing handles the completion of each circuit separately and generates ARM contracts to be sent immediately. Dial Transfers, however, do not complete until "Dial Transfer cutover weekend" when all of the circuits in the transfer complete at once. This is too much load to be transmitted via SOAC. To handle the large number of circuits, a bulk ARM transfer tape, created via Bulk Translations Output, is prepared about a week before the cutover. This tape is sent, for example, to LMOS and used to prepare a batch update of the LMOS database. After cutover is successfully completed, the LMOS database is updated. Those circuits that were modified, added or canceled after the ARM tape was generated must be communicated to LMOS manually. See Section 14 for a more complete discussion of ARM processing.

16.8 Dial Transfer Cancellation

Dial Transfer cancellations are performed using the RMV DTR Work Session.

16.8.1 Partial and Total Cancellation

The user may cancel any or all established or assigned circuits in the Dial Transfer. Cancellation processing may be dictated by the entering of any one of the Primary Keys and zero or more of the Filter Criteria keys listed in the Dial Transfer Establishment section. Additional Filter Criteria are available as input during cancellation. These are listed in the assignment filtering section. The RMV DTR Work Session will invoke a WSIDTR immediate contract to retrieve order-related data from the DLBB. The retrieved data, along with other user input, will be utilized to build a CANDTR contract for deferred execution. The work session will allow the use of a line count to reduce the amount of circuits that will be processed.

16.8.2 Cancellation from Assignment and from Transfer

There are two types of cancellation -- "Cancellation from Assignment" and "Cancellation from Transfer." A notifier is always returned to DCOR stating the actual number of circuits which have been "Canceled from Assignment" or "Canceled from Transfer." A CANDTR contract may process only one type of cancellation. The user must indicate the desired type of cancellation during the RMV DTR Work Session.

16.8.2.1 Cancellation from Assignment

The user may desire to cancel circuits from assignment with the intention of eventually re-assigning the same circuits. In some cases the circuit to be reassigned has already had some wiring work done that the user would want to preserve. In this case the Cancel From Assignment should "remember" the previous state and put the old delta in hides-edges. In other cases the load balance needs to be changed and the user desires that all "memory" of the previous assigned state be discarded, and the circuit in question be totally re-evaluated for assignment. In this case the Cancel from Assignment should totally remove the old delta and the previous assignment data. Therefore, a "Cancellation from Assignment" will return the specified circuits back to the PREDTR state within the SWITCH system database. The following will occur for each circuit "Canceled from Assignment":

- The pending assignment in the SWITCH system database will be deleted (if not remembering the previous state), or put into the "hollow tree" (if remembering the previous state).
- The PREDTR establishment "rework trigger" state for the circuit will be resumed in the SWITCH system database.
- If it is the last group-associated circuit assignment to be canceled, the pending assignment of that group will revert to its PREDTR establishment state and the GST will be updated accordingly.
- A "Cancel from Assignment" tag will be set in the UST. The UST will be marked as no longer being "Assigned."
- Cancellation Frame Output or Translation Data will be sent if data had been previously sent to FOMS or MAS respectively.
- A "Frame Output Generated" History flag will be set in the UST with a "y" value if output contracts had previously been generated and sent FOMS. The "MAS must send" flag setting will be retained. If an ASGDTR contract is processed for a circuit which was previously "Canceled from Assignment", then a positive setting of the "Frame Output Generated" History flag in the UST will affect new output to be automatically generated and sent to FOMS. In that case, the "MAS must send" flag setting in the UST will *not* be retained.
- The PREDTR Scope Criteria *WILL NOT* be altered via the CANDTR contract.

When a circuit is returned back to the PREDTR establishment state in the UST, it is *not* necessary to alter the PREDTR Scope Criteria List.

16.8.2.2 Cancellation from Transfer

The user may desire to cancel circuits entirely from the Dial Transfer -- never intending to place those circuits in the Dial Transfer again. Therefore, a "Cancellation from Transfer" will cancel the specified circuits from the Dial Transfer completely. To prevent AUTODTR or SET DTR from returning a Cancelled-from-Transfer circuit to an established in the transfer stat, the user should alter the PREDTR Scope Criteria List to remove the particular circuit from all affected scopes. The following will occur for each circuit "Canceled from Transfer":

- The pending assignment in the SWITCH system database will be deleted. If the circuit belongs to a group, the GST is marked temporarily.
- Each entry that is marked in the GST is then examined. If this is the last member of a DTR-established group, all pending DTR states for the group itself will be deleted from the SWITCH system database and the GST will be updated accordingly.
- A "Cancel from Transfer" tag will be set in the UST. The UST will be marked as no longer being "Established" or "Assigned."
- Cancellation Frame Output or Translation Data will be sent if data had been previously sent to FOMS or MAS respectively.
- "Frame Output Generated" and "Translation Data Generated" History flag settings will be cleared in the UST. If an ASGDTR contract is processed for a circuit which was previously "Canceled from Transfer", then it will be considered a first time assignment and Frame Output and Translation Data will be generated and sent to their appropriate destinations only if the SWITCH system database parameters (or ULBB overrides) indicate to do so. Historical knowledge of past output generation is *not* maintained.
- The PREDTR Scope Criteria *WILL NOT* be altered via the CANDTR contract.

16.8.2.3 Cancellation Options

The RMV DTR Work Session will require that the user specify if the CANDTR contract should process either "Cancellation from Assignment" or "Cancellation from Transfer." The RMV DTR Work Session will also require that the user specify if the CANDTR contract should "remember" the previous assigned state or not. The RMV DTR Work Session will also require that the user specify if the CANDTR contract should cancel *all* established items in the Dial Transfer. The CANDTR contract received from the ULBB will contain header-only information if *all* established items are to be canceled. If final "Cancellation from Transfer" of the order occurs during the CANDTR processing, all order information is purged from the SWITCH system database. When circuits are "Canceled from Transfer" (i.e., marked in the UST), it is still necessary for the user to alter the PREDTR Scope Criteria List to reflect the diminished scope. This may be done via the SET DTR Work Session. However, the user will *not* be required to alter the PREDTR Scope Criteria List. If final "Cancellation from Transfer" of the order occurs during the CANDTR processing, modification of the scopes is not necessary. In that case, all order information is purged from the SWITCH system database. In the case where circuits have been sent via Bulk Translations Output, and the user wishes to cancel the entire order, the initial CANDTR request may fail. In this case the user may need to process a last BTO tape or process a REQTRM to have the final group of cancellations "sent" to the "TO" IC. Once this has been done, a CANDTR for the entire order will succeed. If ALL circuits have been selected for cancellation (from transfer or assignment) the Line Count value specified will be ignored.

16.8.2.4 Dial Transfer Cancellation - Groups

If a request is made to cancel a specific group or a specific type of group (i.e., all HMLs, SCHs, or SFGs), the group(s) and all of its members will be canceled from the DTR. If a cancellation request is made to "Consider All Groups", all groups which have no members assigned in the DTR will be canceled from the DTR. If a request is made to cancel a member of a group, only that circuit assignment will be canceled; other members in the group will not automatically be canceled. If a member of a group is canceled, and it is the last group-associated circuit assignment to be canceled, the associated group will also be canceled.

If a group is "Canceled from Assignment", the pending assignment of *that* group will revert to its PREDTR establishment state and the GST will be updated accordingly. If a group is "Canceled from Transfer", the pending assignment for *that* group will be deleted from the SWITCH system database and the GST will be updated accordingly.

Once all circuits have been processed in a DTR Cancellation-from-transfer contract, causing all of the circuits in the DTR to have been cancelled or completed, the Group Status Table will always be processed to consider all groups for cancellation.

When a DTR cancellation process finishes cancelling the circuits and groups requested, the contract will be finished. (This is changing a requirement that the DTR Cancellation contract processor chain to a DTR Completion processor when all circuits are either completed or cancelled from transfer).

16.8.2.5 Translation Data Output Generation

The SWITCH system will send MAS a CORTMD Translation Data Output Message for cancellations made to circuits for which Translation Data has previously been sent. If a member of a group is canceled, the CORTMD contract to be sent to MAS via SOAC will contain:

- the circuit data on the one affected group member.
- all Hunt Group Translation Data for each Hunt Group to which the circuit/service belongs.

16.9 Dial Transfer Completion

Dial Transfer completions are performed using the CMP DTR Work Session. The CMP DTR Work Session will invoke a WSIDTR immediate contract to retrieve order-related data from the DLBB. The retrieved data, along with other user input, will be utilized to build a PCNDTR contract for deferred execution. The user may control completion processing by entering any one of the Primary Keys and several (or none) of the Filter Criteria keys listed in the Dial Transfer Establishment section. Additional Filter Criteria is available as input during completion. This is listed in the Assignment Filtering section. A notifier should always be returned to DCOR stating the actual number of circuits which have been completed. Since Dial Transfers are cut over on a weekend, it is recommended that the entire Dial Transfer be completed at one time. However, the user will be permitted to partially complete a Dial Transfer if desired.

In order to be completed,[11] a circuit should be assigned in the SWITCH system with Frame Output and MAS Translations Data generated and sent. DTR completion processing will complete circuits and/or groups that have not had output sent but will in addition provide a notifier for the user to identify the output missing. Items that cannot be completed will be cancelled from transfer if possible (again with a notifier), or will generate an error message that the item could not be completed or cancelled.

Notifiers will be generated if the item is assigned and one of the following conditions is true:

1. The item was assigned with potentially incorrect translations.
2. The item is a candidate for MAS output (BTO extract or TRM).
3. The item should be sent to MAS.
4. The item should be withdrawn from MAS.

In addition completion processing will attempt completion of groups even if the GST flags indicate an illogical state. Notifiers will be sent if warranted. If the group cannot be completed it will be cancelled from transfer if possible.

An entire Dial Transfer order will be totally completed when *all* circuits are marked as being either "Canceled from Transfer" or have been marked "Completed". A check is *not* made regarding Assignment Redundancy Management data being generated and sent. If conditions allow final completion AND the CUC parameter (found in the *wo order control* table) is set to Y, *the order will then be purged from the SWITCH system database.*

11. This is dependent on the settings in the *mas involvement* table and the setting of the IFC parameter in the *wo order control* table.

    If the DTR is not MAS involved then MAS Translations data need not be sent.

    If the DTR has a IFC=Y condition, then Frame Output need not have been sent.

If CUC is set to N, the work order will not be purged, and reports and extracts using the UST may still be processed. However, all deltas in the Dial Transfer will have been completed. The work session will allow the use of a line count to control the number of circuits processed. The "TO" IC Groups will not be marked as completed in the UST if all group members have not been *completed* in the Dial Transfer, although the actual group deltas will have been completed when the first group member completes. If the user desires to complete *all* items in the Dial Transfer, the user may specify this in the CMP DTR Work Session. The PCNDTR contract received from the ULBB will contain header-only information if *all* items are to be completed. If final completion of the order occurs during the PCNDTR processing AND the CUC parameter is Y, then all order information is purged from the SWITCH system database. If *all* items have been selected for completion the Line Count filter option will be ignored.

MAS does not require SWITCH system completion notices for Work Orders. Because of the large size of DTRs, ARM is carried out by bulk output, typically a TAGTMART tape (rather than by a contract via SOAC as part of PCN processing, as is done for other work orders.) Circuits sent via ARM bulk output are tracked in the UST. If the UST indicates that Assignment Redundancy Management data associated with a circuit has not been generated prior to completion, then the circuits that have been modified, added, or deleted need to be communicated manually to those downstream systems that require this information.

16.10 Interaction With Other SWITCH System Processes

Due to the typically large number of circuits involved in a Dial Transfer, the actual running times of a particular work session can be quite long. While running, other updating contracts are prevented from running. Users can manage these running times by limiting the number of circuits to be considered by a particular pass, but this puts a large load on them.

16.10.1 Long Runner Processing

A capability is available where DTR and other processes will "time share" with regular processing. This is managed by putting the DTR processing in a special wire center, "*$LNG*". While running in the $LNG wire center, these processes will actually process in the real target wire center but will co-operate with other contracts which queue up for the target wire center. Each DTR process will process through a commit interval, and if, at the end of the commit interval another updater contract is queued for the target wire center, the DTR process will wait while the other contract does some work. The other contract processor will work through a commit interval and then allow the DTR process to have a turn. This will continue until one or the other contracts have been fully worked. At that time, if there is still DTR processing to be done, the DTR contract processor will have full access to the target wire center (until another contract is queued). Thus an incoming updater contract will have to wait only for one commit interval to be completed before having access to the target wire center.

16.10.2 Service Order/Dial Transfer Interaction

When service orders are assigned to ICs involved in a Dial Transfer, a number of interactions can occur. These are:

1. A Service Order has a due date later than a Dial Transfer and a completion pass is processed on the service order before the DTR has been completed.
2. A DTR order has a due date after a Service Order and a completion pass is processed on the DTR order before the SO has been completed.
3. A Service Order correction pass is issued to change the due date that causes the order to be assigned earlier or later than a pending DTR Order.

In case 1, there are two outcomes possible depending on the date the SO completion pass is processed:

A. If the date the SO is processed is prior to the DTR due date, then the completion pass on the SO will RMA.

B. If the date the SO is processed is the same as or after the DTR due date, then the DTR item will be force completed, and the SO will be completed as well.

In case 2, the DTR item will error completion.

In case 3, the exchange key of the assigned facility will change. This is due to the change in Service Order due date which will:

A. place the assignment in the new IC if the SO due date is moved to be after the DTR due date.

B. place the assignment in the old IC if the SO due date is moved prior to the DTR due date.

In either case, SWITCH will indicate to SOAC that the exchange key sent back on a prior pass of the service order has changed. This will permit SOAC to indicate to the MARCH system that the prior message must be deleted from the recent change queue for the prior IC and placed on the recent change queue for the IC where the latest assignment has been made.

16.10.3 MCT/DTR Interaction

Dial Transfers are a major wire center activity and as a result, unlike most engineering work orders, DTRs are kept on schedule. If a DTR will not take place on a previously scheduled date, the Due Date of the DTR will be modified in the SWITCH System database to the new "cut" date. This means that unlike other work orders, Dial Transfer Estimated Completion Dates (ECDs) for items in the DTR are accurate indicators that the item will be modified on that ECD. When circuits are moved from one switching system to another there is a large probability that there will be some Maintenance Change Tickets (MCTs) issued to correct a customer's service.

MCT processing will detect pending DTR assignments and if the DTR is **not past due,** the MCT will act against the "root view" of the circuit. **If the DTR is past due** then the MCT will act on the DTR pending view of the circuit and when the MCT completes it will also force complete the DTR assignments. See Section 9 for a complete discussion of MCT/ DTR interaction.

Table 16-1. Transformation Index *transf index* Table, ANALOG 1/3

"transf index" Instances: alg;5es alg;dms alg;tl1

"From IC" Tag	Transformation Method			Optional Advisory	Customer Instance
	alg;5es	alg;dms	alg;tl1		
aa	oto	u	m	n	
atn	u	u	u	n	
baad	excp	excp	excp	n	
band	u	u	u	n	
bci	m	m	m	n	
bgi	oto	oto	m	n	
brg	d	d	d	n	
btn	u	u	u	n	
btncc	u	u	u	n	
cat	oto	oto	oto	n	
ccd	m	m	m	n	
ccf	u	u	u	n	
cd	mtm	oto	m	n	
ceg	u	u	u	n	
cfn	u	u	u	n	
cfnacc	u	u	u	n	
cfnb	u	u	u	n	
cfnbacc	u	u	u	n	
cfnbci	u	u	u	n	
cfnci	u	u	u	n	
cfnd	u	u	u	n	
cfndacc	u	u	u	n	
cfndci	u	u	u	n	
cfu	u	u	m	n	
cfuov	u	u	m	n	
chd	u	u	u	n	
chdres	u	u	u	n	
cil	u	u	u	n	
cls	u	u	u	n	
cpg	mtm	oto	m	n	cpg
csl	u	u	u	n	
csr	d	oto	m	n	
ctid	u	u	u	n	
ctx	t	t	t	n	
dnp	u	u	u	n	
dp	m	m	m	n	
dpp	m	m	m	n	
dpu	m	m	m	n	
dr	oto	oto	oto	n	
drdt	oto	u	m	n	

Table 16-1. Transformation Index *transf index* Table, ANALOG 2/3

"transf index" Instances: alg;5es alg;dms alg;tl1					
"From IC" Tag	Transformation Method			Optional Advisory	Customer Instance
	alg;5es	alg;dms	alg;tl1		
dsk	mtm	mtm	m	n	dsk
dtf	u	u	u	n	
ean	oto	oto	m	n	
esl	u	u	u	n	
estn	u	u	u	n	
fls	d	d	m	n	
fnc	m	m	m	n	
fnm	m	m	m	n	
frk	u	u	u	n	
frl	oto	d	m	n	
fzi	u	u	u	n	
gsz	u	u	u	n	
hln	u	u	u	n	
hlnda	u	u	u	n	
hml	mtm	mtm	m	n	hml
hpf	u	u	u	n	
hpt	u	u	u	n	
htc	u	u	m	n	
hter	u	u	u	n	
htg	u	u	u	n	
htid	r	r	m	n	
hty	mtm	mtm	mtm	n	hml
int	r	r	m	n	
ioc	mtm	mtm	m	n	dsk
lcc	t	t	m	n	
lht	d	d	d	n	
mausoc	u	u	u	n	
mbtn	m	m	m	n	
mcfi	u	r	m	n	
mlg	m	m	m	n	
mwi	r	oto	m	n	
nhn	u	u	u	n	
nps	u	u	u	n	
nrg	u	u	u	n	
nsv	u	u	u	n	
nter	u	u	u	n	
pic	u	u	u	n	
pid	u	u	u	n	
pkg	u	u	u	n	
pmds	m	m	m	n	

Table 16-1. Transformation Index *transf index* Table, ANALOG 3/3

"transf index" Instances: alg;5es alg;dms alg;tl1					
"From IC" Tag	Transformation Method			Optional Advisory	Customer Instance
	alg;5es	alg;dms	alg;tl1		
pn	u	u	u	n	
prox	u	u	u	n	
ptn	u	u	u	n	
pty	u	u	u	n	
pul	u	u	u	n	
qfn	mtm	d	m	n	
rcyc	u	u	u	n	
rmb	m	m	m	n	
rnp	u	u	u	n	
rst	u	u	u	n	
rti	t	t	m	n	
rus	u	u	u	n	
scg	mtm	mtm	mtm	n	scg
scg1	m	m	m	n	
scnd	u	u	u	n	
sctn	u	u	u	n	
ser	u	u	u	n	
sfg	oto	oto	oto	n	
sfgall	oto	oto	oto	n	
shu	m	m	m	n	
sh1	u	u	m	n	
sh2	u	u	m	n	
sig	u	u	u	n	
slen	d	d	d	n	
sp	m	m	m	n	
tc	u	u	u	n	
tctn	u	u	u	n	
ter	u	u	u	n	
tli	u	u	u	n	
tn	u	u	u	n	
tnnx	u	u	u	n	
tpl	m	m	m	n	
trminc	d	d	d	n	
trmincc	u	u	u	n	
truncate	u	u	u	n	
tsp	u	u	u	n	

Table 16-2. Transformation Index *transf index* Table, 5ES 1/8

"transf index" Instances: 5es;dms 5es;tl1				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	5es;dms	5es;tl1		
acbk	m	u	n	
acnt	m	m	n	
acos	u	u	n	
acsr	m	m	n	
actn	m	m	n	
actu	m	m	n	
acvt	m	m	n	
adrpat	m	m	n	
adrtime	m	m	n	
agi	m	u	n	
aid	u	u	n	
ain	m	m	n	
alf	m	m	n	
apid	m	m	n	
ars	m	u	n	
asi	m	m	n	
ath	u	m	n	
atn	u	u	n	
auc	m	m	n	
aul	u	m	n	
aulda	u	m	n	
autohold	m	m	n	
baad	excp	excp	n	
bci	m	m	n	
bdl	u	u	n	
bfg	u	m	n	
bfgu	u	m	n	
bgi	oto	oto	n	
blk1	m	m	n	
brg	u	u	n	
bs1	u	u	n	
bs2	u	u	n	
bscr	m	m	n	
bsd	u	u	n	
btn	u	u	n	
btncc	u	u	n	
byl	m	m	n	
bym	m	m	n	
callexcl	m	m	n	
capp	m	m	n	

Table 16-2. Transformation Index *transf index* Table, 5ES 2/8

"transf index" Instances: 5es;dms 5es;tl1				
"From IC" Tag	Transformation Method 5es;dms	5es;tl1	Optional Advisory	Customer Instance
cas	m	m	n	
cat	oto	oto	n	
ccf	u	u	n	
cdnd	u	u	n	
ceg	u	u	n	
cfbs	m	m	n	
cfd	u	u	n	
cfds	m	m	n	
cff	u	u	n	
cfgp	m	m	n	
cfn	u	u	n	
cfnacc	u	u	n	
cfnb	u	u	n	
cfnbacc	u	u	n	
cfnbci	u	u	n	
cfnci	u	u	n	
cfnd	u	u	n	
cfndacc	u	u	n	
cfndci	u	u	n	
cfw	u	u	n	
chg	u	u	n	
chna	u	m	n	
cil	u	u	n	
cls	u	u	n	
clss	m	m	n	
cmi	u	u	n	
cpepref	m	m	n	
cpg	m	m	n	
cpg2	u	u	n	
cpg3	u	u	n	
cpg4	u	u	n	
cpnb	m	m	n	
cpns	m	m	n	
cpuo	m	u	n	
cput	m	u	n	
csel	m	m	n	
csl	u	u	n	
cso	m	m	n	
csr	u	m	n	
ctid	u	u	n	

Table 16-2. Transformation Index *transf index* Table, 5ES 3/8

"transf index" Instances: 5es;dms 5es;tl1				
"From IC" Tag	Transformation Method 5es;dms	5es;tl1	Optional Advisory	Customer Instance
ctt	m	m	n	
ctx	t	t	n	
cug	u	u	n	
cwtg	u	u	n	
dag	u	u	n	
dbrg	u	m	n	
dcls	m	m	n	
dct	u	u	n	
did	u	u	n	
dif	u	u	n	
dis	m	m	n	
disp	m	m	n	
dnic	m	m	n	
dnp	u	u	n	
dp	m	m	n	
dpg	m	m	n	
dptn	m	m	n	
drg	u	m	n	
dsa	u	m	n	
dsc	u	u	n	
dsgn	m	m	n	
dsna	u	u	n	
dtci	m	m	n	
dtf	u	u	n	
dtm	u	u	n	
edgp	m	m	n	
eds	m	m	n	
erco	m	m	n	
esl	u	u	n	
estn	u	u	n	
fani	u	m	n	
fnc	m	m	n	
fnm	m	m	n	
frk	u	u	n	
frl	m	u	n	
fs	u	u	n	
fzi	u	u	n	
giac	u	u	n	
gsz	m	u	n	
hda	m	m	n	

Table 16-2. Transformation Index *transf index* Table, 5ES 4/8

"transf index" Instances: 5es;dms 5es;tl1				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	5es;dms	5es;tl1		
hi	u	m	n	
hk	u	u	n	
hln	u	u	n	
hlnda	u	u	n	
hml	m	m	n	
hntf	m	m	n	
htc	u	m	n	
hter	u	u	n	
htg	u	u	n	
htid	m	m	n	
hty	m	m	n	
ici	u	m	n	
icm	u	m	n	
icmfn	u	m	n	
icmgrp	u	m	n	
idg1	m	m	n	
idg2	m	m	n	
idg3	m	m	n	
idg4	m	m	n	
idg5	m	m	n	
idg6	m	m	n	
idg7	m	m	n	
idg8	m	m	n	
idg9	m	m	n	
idgp	m	m	n	
idp	m	u	n	
isc	u	u	n	
ishg	m	m	n	
key	u	u	n	
keylist	u	u	n	
kpi	u	u	n	
lass	u	u	n	
lcc	m	m	n	
lcdr	u	m	n	
lcl	u	u	n	
lcp	m	u	n	
lhtn	m	m	n	
lkband	u	u	n	
lklp	u	u	n	
lnid	m	m	n	

Table 16-2. Transformation Index *transf index* Table, 5ES 5/8

"transf index" Instances: 5es;dms 5es;tl1				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	5es;dms	5es;tl1		
lntt	m	m	n	
lon	u	u	n	
madn	u	u	n	
manexcl	m	m	n	
mausoc	u	u	n	
maxb	m	m	n	
mbct	m	m	n	
mcfi	r	m	n	
mcld	m	m	n	
mdp	u	m	n	
mdpk	m	m	n	
mdr	m	u	n	
miltime	m	m	n	
msgp	m	m	n	
mss	u	u	n	
mter	m	m	n	
mwc	u	u	n	
nbr	m	m	n	
nhn	m	u	n	
nps	u	u	n	
nrg	u	u	n	
nter	u	u	n	
ntf	m	u	n	
numc	u	u	n	
odband	m	m	n	
odbr	m	u	n	
odbrq	m	u	n	
odbu	m	m	n	
onetouch	m	m	n	
ovl	u	u	n	
pbg	m	m	n	
pcb	u	u	n	
pcp	m	m	n	
pfg	m	m	n	
phml	m	m	n	
pic	u	u	n	
pid	u	u	n	
pkg	u	u	n	
plcc	u	m	n	
pmds	m	m	n	

Table 16-2. Transformation Index *transf index* Table, 5ES 6/8

"transf index" Instances: 5es;dms 5es;tl1				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	5es;dms	5es;tl1		
pn	u	u	n	
port	m	m	n	
ppb	m	m	n	
prax	m	m	n	
prc	m	u	n	
prim	u	m	n	
priv	m	m	n	
pro	u	u	n	
prof	u	u	n	
prox	u	u	n	
pso	m	m	n	
pter	m	m	n	
ptli	u	u	n	
ptn	u	u	n	
pty	u	u	n	
pul	u	u	n	
qfn	m	m	n	
qmt	m	m	n	
qp	m	u	n	
rax	u	u	n	
rbv	m	m	n	
rcyc	u	u	n	
rk	u	u	n	
rlc	u	u	n	
rlk	m	m	n	
rmb	m	m	n	
rmct	m	m	n	
rmp	m	m	n	
rnd	m	u	n	
rnic	u	u	n	
rnp	u	u	n	
rrso	u	u	n	
rst	u	u	n	
rti	m	m	n	
scf	m	u	n	
scg	mtm	mtm	n	scg
scnd	u	u	n	
sctn	u	u	n	
scx	m	m	n	

Table 16-2. Transformation Index *transf index* Table, 5ES 7/8

"transf index" Instances: 5es;dms 5es;tl1				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	5es;dms	5es;tl1		
ser	u	u	n	
sfg	oto	oto	n	
sfgall	oto	oto	n	
sh1	u	m	n	
sh2	u	m	n	
shu	m	m	n	
sig	u	u	n	
slen	u	u	n	
slus	u	u	n	
smct	m	m	n	
sp	m	m	n	
spd	u	m	n	
spid	u	m	n	
srt	u	u	n	
sth	m	m	n	
suba	u	u	n	
sutn	m	m	n	
tc	u	u	n	
tcgn	u	m	n	
tctn	u	u	n	
tdte	m	m	n	
ter	u	u	n	
tfs	u	u	n	
tgid	u	u	n	
tgp	u	u	n	
tgs	m	m	n	
tks	m	m	n	
tlc	u	u	n	
tli	u	u	n	
tn	u	u	n	
tnnx	u	u	n	
tod	m	m	n	
tpl	m	m	n	
trminc	d	d	n	
trmincc	u	u	n	
trmoc	u	u	n	
truncate	u	u	n	
tsp	u	u	n	
ttp	m	m	n	
ttyp	m	m	n	

Table 16-2. Transformation Index *transf index* Table, 5ES 8/8

"transf index" Instances: 5es;dms 5es;tl1				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	5es;dms	5es;tl1		
twn	u	m	n	
txt	u	u	n	
typekts	m	m	n	
ucr	m	m	n	
vman	u	u	n	
xver	m	m	n	

Table 16-3. Transformation Index *transf index* Table, DMS 1/9

"transf index" Instances: dms;5es dms;tl1				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	dms;5es	dms;tl1		
aa	m	u	n	
aab	m	m	n	
aak	m	m	n	
abs	m	m	n	
acdg	m	m	n	
acdi	m	m	n	
acdr	m	m	n	
acls	m	m	n	
acos	u	u	n	
acp	m	m	n	
acpfn	m	m	n	
aemk	m	m	n	
aid	u	u	n	
asls	m	m	n	
ath	u	m	n	
atlg	m	m	n	
atn	u	u	n	
aud	m	m	n	
aul	u	m	n	
aulda	u	m	n	
baad	excp	excp	n	
bci	m	m	n	
bcn	m	u	n	
bdl	u	u	n	
bfg	u	m	n	
bfgu	u	m	n	
bgi	oto	m	n	
blf	m	m	n	
bnn	m	m	n	
brg	u	u	n	
bs1	u	u	n	
bs2	u	u	n	
bsd	u	u	n	
btn	u	u	n	
btncc	u	u	n	
cag	m	m	n	
car	m	m	n	
cas	u	u	n	
cat	oto	oto	n	
ccf	u	u	n	

Table 16-3. Transformation Index *transf index* Table, DMS 2/9

"transf index" Instances: dms;5es dms;tl1				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	dms;5es	dms;tl1		
cd	m	oto	n	
cdnd	u	u	n	
ceg	u	u	n	
cfbe	m	m	n	
cfbeci	m	m	n	
cfbeda	m	m	n	
cfbi	m	m	n	
cfbici	m	m	n	
cfbida	m	m	n	
cfbo	m	m	n	
cfd	u	u	n	
cfde	m	m	n	
cfdeci	m	m	n	
cfdeda	m	m	n	
cfdi	m	m	n	
cfdici	m	m	n	
cfdida	m	m	n	
cfdo	m	m	n	
cff	u	u	n	
cfk	m	m	n	
cfmd	m	m	n	
cfn	u	u	n	
cfnacc	u	u	n	
cfnb	u	u	n	
cfnbacc	u	u	n	
cfnbci	u	u	n	
cfnci	u	u	n	
cfnd	u	u	n	
cfndacc	u	u	n	
cfndci	u	u	n	
cfso	m	m	n	
cfu	m	m	n	
cfuov	m	m	n	
cfw	u	u	n	
chd	m	u	n	
chdres	m	u	n	
chg	u	u	n	
chna	u	m	n	
cif	m	m	n	
cil	u	u	n	

Table 16-3. Transformation Index *transf index* Table, DMS 3/9

"transf index" Instances: dms;5es dms;tl1				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	dms;5es	dms;tl1		
cin	m	u	n	
clfc	m	m	n	
cls	u	u	n	
clsp	m	m	n	
cmi	u	u	n	
cndb	m	u	n	
cndi	m	m	n	
cndt	m	m	n	
cod	m	m	n	
coto	m	u	n	
cpg	m	m	n	
cpg2	u	u	n	
cpg3	u	u	n	
cpg4	u	u	n	
cprn	m	m	n	
cprnda	m	m	n	
crx	m	m	n	
csl	u	u	n	
csr	u	m	n	
ctid	u	u	n	
ctintra	m	m	n	
ctx	t	t	n	
cug	u	u	n	
cwd	m	m	n	
cwtg	u	u	n	
cxr	m	m	n	
cxro	m	m	n	
cxrr	m	m	n	
cxrt	m	m	n	
dag	u	u	n	
dask	m	m	n	
dbrg	u	m	n	
dch	m	m	n	
dcpk	m	m	n	
dct	u	u	n	
ddn	m	m	n	
ddu	m	m	n	
denyi	m	m	n	
did	u	u	n	
dif	u	u	n	

Table 16-3. Transformation Index *transf index* Table, DMS 4/9

"transf index" Instances: dms;5es dms;tl1				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	dms;5es	dms;tl1		
difi	m	m	n	
din	m	m	n	
dlc	m	u	n	
dnd	m	u	n	
dnp	u	u	n	
dor	m	u	n	
dp	m	m	n	
dqs	m	m	n	
dqt	m	m	n	
dr	m	oto	n	
drdt	m	u	n	
drg	u	m	n	
dsa	u	m	n	
dsc	u	u	n	
dsk	m	m	n	
dsna	u	u	n	
dtf	u	u	n	
dtm	u	u	n	
duif	m	m	n	
duso	m	m	n	
ean	m	m	n	
emk	m	m	n	
esdn	m	m	n	
esl	u	u	n	
estn	u	u	n	
ewots	m	m	n	
exao	m	m	n	
faa	m	m	n	
fani	u	m	n	
fc	m	m	n	
fcdrop	m	m	n	
fcopt	m	m	n	
fcsz	m	m	n	
fcxfer	m	m	n	
flng	m	m	n	
fnc	m	m	n	
fnm	m	m	n	
frk	u	u	n	
fs	u	u	n	
fxrrcl	m	m	n	

Table 16-3. Transformation Index *transf index* Table, DMS 5/9

"transf index" Instances: dms;5es dms;tl1				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	dms;5es	dms;tl1		
fxrtim	m	m	n	
fzi	u	u	n	
giac	u	u	n	
gic	m	m	n	
hi	u	m	n	
hk	u	u	n	
hln	u	u	n	
hlnda	u	u	n	
hml	m	m	n	
hpf	m	u	n	
hpt	u	u	n	
htb	m	m	n	
htc	u	m	n	
hter	u	u	n	
htg	u	u	n	
htid	m	m	n	
hty	m	m	n	
icfb	m	m	n	
ici	u	m	n	
icm	u	m	n	
icmfn	u	m	n	
icmgrp	u	m	n	
int	m	m	n	
ioc	m	m	n	
iocsmdi	m	m	n	
irr	m	m	n	
isc	u	u	n	
key	u	u	n	
keylist	u	u	n	
kpi	u	u	n	
ksh	m	m	n	
lass	u	u	n	
lcc	m	m	n	
lcdr	u	m	n	
lcl	u	u	n	
let	m	m	n	
lkband	u	u	n	
lklp	u	u	n	
lnr	m	m	n	
lob	m	m	n	

Table 16-3. Transformation Index *transf index* Table, DMS 6/9

"transf index" Instances: dms;5es dms;tl1				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	dms;5es	dms;tl1		
lon	u	u	n	
lor	m	m	n	
lpic	m	m	n	
lsel	m	m	n	
ltcl	m	m	n	
ltclcs	m	m	n	
ltclps	m	m	n	
ltclver	m	m	n	
ltg	m	m	n	
ltid	m	m	n	
madn	m	m	n	
mausoc	u	u	n	
mbk	m	m	n	
mcfi	r	m	n	
mdnolp	m	m	n	
mdnorel	m	m	n	
mdp	u	m	n	
mpbr	m	m	n	
mph	m	m	n	
mrf	m	m	n	
mrfm	m	m	n	
msb	m	m	n	
msbo	m	m	n	
mss	u	u	n	
mvp	m	u	n	
mwc	u	u	n	
mwi	m	oto	n	
mxk	m	m	n	
ncf	m	m	n	
ndt	m	u	n	
nfa	m	m	n	
npi	m	m	n	
nps	u	u	n	
nrg	u	u	n	
nsv	m	u	n	
nsvc	m	m	n	
nter	u	u	n	
numc	u	u	n	
obs	m	m	n	
odn	m	m	n	

Table 16-3. Transformation Index *transf index* Table, DMS 7/9

"transf index" Instances: dms;5es dms;tl1				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	dms;5es	dms;tl1		
omi	m	m	n	
ovl	u	u	n	
paro	m	m	n	
parol	m	m	n	
pcb	u	u	n	
phd	m	m	n	
phi	m	m	n	
phl	m	m	n	
pic	u	u	n	
pid	u	u	n	
pkg	u	u	n	
pmds	m	m	n	
pn	u	u	n	
poid	m	m	n	
prim	u	m	n	
prk	m	u	n	
pro	u	u	n	
prof	u	u	n	
prox	u	u	n	
psap	m	m	n	
ptli	u	u	n	
ptn	u	u	n	
pty	u	u	n	
pul	u	u	n	
qbs	m	m	n	
qbstn	m	m	n	
qck	m	m	n	
qfn	u	u	n	
qtd	m	m	n	
rag	m	m	n	
rax	u	u	n	
rcyc	u	u	n	
rk	u	u	n	
rlc	u	u	n	
rmb	m	m	n	
rnic	u	u	n	
rnp	u	u	n	
rol	m	m	n	
rpa	m	m	n	

Table 16-3. Transformation Index *transf index* Table, DMS 8/9

"transf index" Instances: dms;5es dms;tl1				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	dms;5es	dms;tl1		
rrso	u	u	n	
rst	u	u	n	
rti	m	m	n	
scai	m	m	n	
scg	mtm	mtm	n	scg
scnd	u	u	n	
sctn	u	u	n	
ser	u	u	n	
setq	m	m	n	
sfg	oto	oto	n	
sfgall	oto	oto	n	
sh1	u	m	n	
sh2	u	m	n	
shr	m	m	n	
shu	m	m	n	
sig	u	u	n	
slen	u	u	n	
slng	m	m	n	
slus	u	u	n	
smdg	m	m	n	
sor	m	u	n	
sorc	m	m	n	
sp	m	m	n	
spd	u	m	n	
spid	u	m	n	
sre	m	m	n	
srt	u	u	n	
stb	m	u	n	
suba	u	u	n	
supp	m	m	n	
supr	m	m	n	
tc	u	u	n	
tcgn	u	m	n	
tctn	u	u	n	
tei	m	m	n	
ter	u	u	n	
tfs	u	u	n	
tgid	u	u	n	
tgp	u	u	n	
tlc	u	u	n	

Table 16-3. Transformation Index *transf index* Table, DMS 9/9

"transf index" Instances: dms;5es dms;tl1				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	dms;5es	dms;tl1		
tli	u	u	n	
tn	u	u	n	
tnnx	u	u	n	
tpl	m	m	n	
trminc	d	d	n	
trmincC	u	u	n	
trmoc	u	u	n	
truncate	u	u	n	
tsp	u	u	n	
ttyd	m	m	n	
twn	u	m	n	
txt	u	u	n	
ucd	m	m	n	
vman	u	u	n	
wicl	m	m	n	
wln	m	m	n	
wlt	m	m	n	
wuc	m	m	n	
xxtr	m	m	n	

Table 16-4. Transformation Index *transf index* Table, TL1 1/6

"transf index" Instances: tl1;5es tl1;dms				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	tl1;5es	tl1;dms		
aa	m	u	n	
acbk	u	m	n	
acos	u	u	n	
aga	m	m	n	
agi	u	m	n	
aid	u	u	n	
alek	m	m	n	
ars	u	m	n	
atn	u	u	n	
baad	excp	excp	n	
band	m	m	n	
bci	m	m	n	
bcn	m	u	n	
bdl	u	u	n	
brg	u	u	n	
bs1	u	u	n	
bs2	u	u	n	
bsd	u	u	n	
btn	u	u	n	
btncc	u	u	n	
cal	m	m	n	
cas	u	u	n	
cat	oto	oto	n	
cd	m	oto	n	
cdnd	u	u	n	
ceg	u	u	n	
cfd	u	u	n	
cff	u	u	n	
cfn	u	u	n	
cfnacc	u	u	n	
cfnb	u	u	n	
cfnbacc	u	u	n	
cfnbci	u	u	n	
cfnci	u	u	n	
cfnd	u	u	n	
cfndacc	u	u	n	
cfndci	u	u	n	
cfw	u	u	n	
chd	m	u	n	
chdres	m	u	n	

Table 16-4. Transformation Index *transf index* Table, TL1 2/6

"transf index" Instances: tl1;5es tl1;dms				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	tl1;5es	tl1;dms		
chg	u	u	n	
cil	u	u	n	
cin	m	u	n	
cls	u	u	n	
cmi	u	u	n	
cndb	m	u	n	
cnsl	m	m	n	
coic	m	m	n	
coto	m	u	n	
cpbr	m	m	n	
cpdn	m	m	n	
cpg	m	m	n	
cpg2	u	u	n	
cpg3	u	u	n	
cpg4	u	u	n	
cpnc	m	m	n	
cpnd	m	m	n	
cpnp	m	m	n	
cpnt	m	m	n	
cpuo	u	m	n	
cput	u	m	n	
csl	u	u	n	
ctid	u	u	n	
ctx	t	t	n	
cug	u	u	n	
cui	m	m	n	
cwtg	u	u	n	
dag	u	u	n	
dct	u	u	n	
did	u	u	n	
dif	u	u	n	
dlc	m	u	n	
dnd	m	u	n	
dnp	u	u	n	
dor	m	u	n	
dp	m	m	n	
dr	m	oto	n	
drdt	m	u	n	
dsc	u	u	n	
dsna	u	u	n	

Table 16-4. Transformation Index *transf index* Table, TL1 3/6

"transf index" Instances: tl1;5es tl1;dms				
"From IC" Tag	Transformation Method: tl1;5es	Transformation Method: tl1;dms	Optional Advisory	Customer Instance
dtf	u	u	n	
dtm	u	u	n	
esl	u	u	n	
estn	u	u	n	
fls	m	m	n	
fnc	m	m	n	
fnm	m	m	n	
frk	u	u	n	
frl	u	m	n	
fs	u	u	n	
fzi	u	u	n	
giac	u	u	n	
goer	m	m	n	
gsz	u	m	n	
hgcs	m	m	n	
hk	u	u	n	
hln	u	u	n	
hlnda	u	u	n	
hml	m	m	n	
hpf	m	u	n	
hpt	m	u	n	
hter	u	u	n	
htg	u	u	n	
htid	m	m	n	
hty	m	m	n	
idp	u	m	n	
ildn	m	m	n	
int	m	u	n	
isc	u	u	n	
key	u	u	n	
keylist	u	u	n	
kpi	u	u	n	
lass	u	u	n	
lcc	u	u	n	
lcl	u	u	n	
lcp	u	m	n	
lddn	m	m	n	
lkband	u	u	n	
lklc	m	m	n	
lkld	m	m	n	

Table 16-4. Transformation Index *transf index* Table, TL1 4/6

"transf index" Instances: tl1;5es tl1;dms				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	tl1;5es	tl1;dms		
lklp	u	u	n	
lklt	m	m	n	
lon	u	u	n	
madn	u	u	n	
mausoc	u	u	n	
mbg	m	m	n	
mdr	u	m	n	
ml1	m	m	n	
ml2	m	m	n	
mps	m	m	n	
mss	u	u	n	
mvp	m	u	n	
mwc	u	u	n	
mwi	m	oto	n	
ndt	m	u	n	
nhn	u	m	n	
nps	u	u	n	
nrg	u	u	n	
nsv	m	u	n	
nter	u	u	n	
ntf	u	m	n	
numc	u	u	n	
odbr	u	m	n	
odbrq	u	m	n	
orm	m	m	n	
ovl	u	u	n	
pcb	u	u	n	
pic	u	u	n	
pid	u	u	n	
pkg	u	u	n	
pmds	m	m	n	
pn	u	u	n	
prc	u	m	n	
prk	m	u	n	
pro	u	u	n	
prof	u	u	n	
prox	u	u	n	
ptli	u	u	n	
ptn	u	u	n	
pty	u	u	n	

Table 16-4. Transformation Index *transf index* Table, TL1 5/6

"transf index" Instances: tl1;5es tl1;dms				
"From IC" Tag	Transformation Method tl1;5es	Transformation Method tl1;dms	Optional Advisory	Customer Instance
pul	u	u	n	
pvps	m	m	n	
pvtc	m	m	n	
pvws	m	m	n	
qfn	m	m	n	
qp	u	m	n	
rax	u	u	n	
rcyc	u	u	n	
rk	u	u	n	
rlc	u	u	n	
rmb	m	m	n	
rnd	u	m	n	
rnic	u	u	n	
rnp	u	u	n	
roh	m	m	n	
rrso	u	u	n	
rst	u	u	n	
rti	m	m	n	
rus	m	m	n	
scf	u	m	n	
scg	mtm	mtm	n	scg
scl1	m	m	n	
scl2	m	m	n	
sclf	m	m	n	
scnd	u	u	n	
scnl	m	m	n	
sctn	u	u	n	
ser	u	u	n	
sfg	oto	oto	n	
sfgall	oto	oto	n	
shu	m	m	n	
sig	u	u	n	
slen	u	u	n	
slus	u	u	n	
sor	m	u	n	
sp	m	m	n	
spdn	m	m	n	
srt	u	u	n	
stb	m	u	n	

Table 16-4. Transformation Index *transf index* Table, TL1 6/6

"transf index" Instances: tl1;5es tl1;dms				
"From IC" Tag	Transformation Method		Optional Advisory	Customer Instance
	tl1;5es	tl1;dms		
suba	u	u	n	
tc	u	u	n	
tcf	m	m	n	
tctn	u	u	n	
tdn	m	m	n	
ter	u	u	n	
tfn	m	m	n	
tfs	u	u	n	
tgid	u	u	n	
tgp	u	u	n	
tlc	u	u	n	
tli	u	u	n	
tn	u	u	n	
tnnx	u	u	n	
toe	m	m	n	
trminc	d	d	n	
trmincc	u	u	n	
trmoc	u	u	n	
truncate	u	u	n	
tsp	u	u	n	
twc	m	m	n	
txt	u	u	n	
uus	m	m	n	
uut	m	m	n	
vman	u	u	n	
wsps	m	m	n	

Table 16-5. 5ESS One-To-One Tag *transf tag oto* Transformation Table

DTR Transformation Table: 5ESS One-To-One Tag Transformations (*transf tag oto*)			
Instance = From IC, DTR order number			
"From IC" Values		"To IC" Values	
f_tag	f_value	t_tag	t_value
aa	*	cfw	*cfblac
drdt	*	drg	*dric
ean	*	mwc	*mw6wc

Table 16-6. DMS-100 One-To-One Tag *transf tag oto* Transformation Table

DTR Transformation Table: DMS-100 One-To-One Tag Transformations (*transf tag oto*)			
Instance = From IC, DTR order number			
"From IC" Values		"To IC" Values	
f_tag	f_value	t_tag	t_value
ean	*	ean	c06
mwi	y	mwi	s
mwi	s	mwi	s
mwi	l	mwi	l

Table 16-7. 5ESS Many-To-Many Tag *transf tag mtm* Transformation Table

DTR Transformation Table: 5ESS Many-To-Many Tag Transformations (*transf tag mtm*)					
Instance = From IC, DTR order number					
"From IC" Values "To IC" Values					
f_tag1 t_tag1	f_value1 t_value1	f_tag2 t_tag2	f_value2 t_value2	f_tag3 t_tag3	f_value3 t_value3
qfn qp	* *qlcwl	cil	*		
qfn qp	* *ql	cil	-		

Table 16-8. Exception Tag *transf excp* Transformation Table

DTR Transformation Table: Exception Tag Transformations (*transf tag excp*)				
Instance = From IC, DTR order number				
ruleid	lineno	clause	cond/transf	op
	10 20	when set	baad=*f_value1* baad=*t_value1*	
	30 40	when set	baad=*f_value2* baad=*t_value2*	
		etc.		

Table 16-9. Multiline Hunt Group *transf tag mtm* Transformation Table

DTR Transformation Table: Multiline Hunt Groups (*transf tag mtm*)					
Instance = From IC, DTR order number, Cust Inst = hml					
"From IC" Values "To IC" Values					
f_tag1 f_value1 f_tag2 f_value2 f_tag3 f_value3 t_tag1 t_value1 t_tag2 t_value2 t_tag3 t_value3					
hml hml		hty hty			
hml hml		hty hty			
hml hml		hty hty			

Table 16-10. Centrex ID *transf tag oto* Transformation Table

DTR Transformation Table: Centrex ID (*transf tag oto*)			
Instance = From IC, DTR order number, Cust Inst = ctx			
f_tag	f_value	t_tag	t_value
ctx	*f_value*	ctx	*t_value*

Table 16-11. SWITCH System RCU *centrex rcu* Table

SWITCH System RCU Table (centrex rcu)									
Instance = IC Type, IC ID, Centrex group ID									
"To IC" Values									
RCU	LCC	CAT	TRMINC	CCF1	CCF2	CCF3	CCF4	CCF5	CCF6

Table 16-12. 5ESS Centrex CPG *transf tag mtm* Transformation Table

DTR Transformation Table: 5ESS Centrex Call Pickup Groups (*transf tag mtm*)					
Instance = From IC, DTR order number, Cust Inst = cpg					
"From IC" Values "To IC" Values					
f_tag1 t_tag1	f_value1 t_value1	f_tag2 t_tag2	f_value2 t_value2	f_tag3 t_tag3	f_value3 t_value3
cpg cpg					
cpg fnm	 *cpuo	 fnm	 *cput		

Table 16-13. DMS-100 Centrex CPG *transf tag oto* Transformation Table

DTR Transformation Table: DMS-100 Centrex Call Pickup Groups (*transf tag oto*)			
Instance = From IC, DTR order number, Cust Inst = cpg			
"From IC" Values		"To IC" Values	
f_tag	f_value	t_tag	t_value
cpg		cpg	
cpg		cpg	
cpg		cpg	

Table 16-14. Centrex SCG *transf tag mtm* Transformation Table

DTR Transformation Table: Centrex Speed Call Groups (*transf tag mtm*)					
Instance = From IC, DTR order number, Cust Inst = scg					
"From IC" Values "To IC" Values					
f_tag1 t_tag1	f_value1 t_value1	f_tag2 t_tag2	f_value2 t_value2	f_tag3 t_tag3	f_value3 t_value3
ctx scg		scg			
ctx scg		scg			
ctx scg		scg			

Table 16-15. SFG RCU *transf sfg rcu* Transformation Table

DTR Transformation Table: RCUs Requiring a Simulated/Virtual Facility Group (*transf sfg rcu*)					
Instance = From IC & DTR order number					
RCUs that require a SFG in the "To IC"					

Table 16-16. Desk *transf tag mtm* Transformation Table

DTR Transformation Table: Desk Table (*transf tag mtm*)					
Instance = From IC, DTR order number, Cust Inst = dsk					
"From IC" Values "To IC" Values					
f_tag1 t_tag1	f_value1 t_value1	f_tag2 t_tag2	f_value2 t_value2	f_tag3 t_tag3	f_value3 t_value3
dsk msgp		ioc			
dsk dsk		ioc ioc			
dsk smdg		ioc ioc			

Table 16-17. Line Class Code *transf lcc* Transformation Table

DTR Transformation Table: Line Class Codes (*transf lcc*)							
Instance = From IC & DTR order number							
"From IC"	"To IC" Values						
LCC	LCC	Tag	Value	Tag	Value	Tag	Value

Table 16-18. MSS Feature Names *transf mss features* Transformation Table (annotated)

DTR Transformation Table: MSS Feature Names (5ESS) (*transf mss features*)	
Instance = From IC & DTR order number	
MWI value	MSS feature name
Y (no FID data)	*MSAAD
S (Stutter tone)	*MSAAD
L (stutter tone with Lamp)	*MSAV

Table 16-19. MSS Feature Names *transf mss features* Transformation Table (as delivered)

```
92/06/08 09:46          DD/RDAS REFERENCE DATA
TABLE: transf mss features       VERSION: 1 STAT:OE LOCK:NONE
SCOPE: del/modwc       OVERRIDE:          STAT:RY LOCK:NONE
INSTANCE KEY:
*********************************************************************************
f_mwi          t_feature
 l             *msav
 s             *msaad
 y             *msaad
---------------------------------------------------------------------------
```

Table 16-20. MSS Attributes *transf mss attributes* Transformation Table

DTR Transformation Table: MSS Attributes (5ESS) (*transf mss attributes*)	
Instance = From IC & DTR order number	
1/1AESS MWI CFN	5ESS MSS MSSGRP

Table 16-21. Route Index *transf rti* Transformation Table

DTR Transformation Table: Route Indexes (*transf rti*)		
Instance = From IC & DTR order number		
"From IC" RTI Value	"To IC"	
	Tag	Value

Table 16-22. *wo order control*

ORDER_TYPE	ORIGIN	PARAMETER	ORDER_ID	VALUE
CPT	-	DCI	-	Y
CPT	-	SAL	-	Y
CPT	-	SFO	-	N
CPT	-	STD	-	N
LST	-	DCI	-	Y
LST	-	SAL	-	Y
LST	-	SFO	-	N
LST	-	STD	-	N
DTR	-	DCI	-	N
DTR	-	SAL	-	N
DTR	-	SFO	-	N
DTR	-	STD	-	N
DTR	-	CPM	-	N
DTR	-	SPM	-	N
DTR	-	SPG	-	N
DTR	-	SPR	-	N
-	-	-	-	-

CPM - CABLE PAIR MAPPING IN EFFECT (Y/N)
SPM - SWITCH PORT MAPPING IN EFFECT (Y/N)
SPG - SWITCH PORT GROUP TABLES ARE PRESENT (Y/N)
SPR - SWITCH PORT RANGE TABLES ARE PRESENT (Y/N)

Table 16-23. *wo swpt overlay conconcentrator* 4:1
Instance keys: ORDER ID and HIERARCHAL EQUIPMENT LEVEL 1
IC = 1ESS; Concentration ratio = 4:1; Line Line Network 00

1ESS	TO IC	BLOCK
00-000	-	-
00-001	-	-
00-002	-	-
00-003	-	-
00-004	-	-
00-005	-	-
00-006	-	-
00-007	-	-
00-020	-	-
00-021	-	-
00-022	-	-
00-023	-	-
00-024	-	-
00-025	-	-
00-026	-	-
00-027	-	-
00-100	-	-
00-101	-	-
00-102	-	-
-	-	-
-	-	-
00-706	-	-
00-707	-	-
00-720	-	-
00-721	-	-
00-722	-	-
00-723	-	-
00-724	-	-
00-725	-	-
00-726	-	-
00-727	-	-

Table 16-24. *wo swpt overlay conconcentrator* 2:1
Instance keys: ORDER ID and HIERARCHAL EQUIPMENT LEVEL 1
IC = 1ESS; Concentration ratio = 2:1; Line Line Network 00

1ESS	TO IC	BLOCK
00-000	-	-
00-001	-	-
00-002	-	-
00-003	-	-
00-004	-	-
00-005	-	-
00-006	-	-
00-007	-	-
00-010	-	-
00-011	-	-
00-012	-	-
00-013	-	-
00-014	-	-
00-015	-	-
00-016	-	-
00-017	-	-
00-100	-	-
00-101	-	-
00-102	-	-
-	-	-
-	-	-
00-706	-	-
00-707	-	-
00-720	-	-
00-711	-	-
00-712	-	-
00-713	-	-
00-714	-	-
00-715	-	-
00-716	-	-
00-717	-	-

Table 16-25. *wo swpt overlay block* 4HH5

From: 1ESS 4:1 Concentration, 64 pin block numbered horizontally starting at the upper left.
To: 5ESS numbered horizontally starting at the upper left corner.

1ESS	5ESS
000	0-00
001	0-01
002	0-02
003	0-03
004	0-10
005	0-11
006	0-12
007	0-13
008	0-20
009	0-21
010	0-22
011	0-23
012	0-30
013	0-31
014	0-32
015	0-33
100	0-40
101	0-41
-	-
-	-
114	0-72
115	0-73
200	1-00
201	1-01
202	1-02
203	1-03
204	1-10
205	1-11
-	-
-	-
313	1-71
314	1-72
315	1-73

Table 16-26. *wo swpt overlay block* 4HV5

From: 1ESS 4:1 Concentration, 64 pin block numbered horizontally starting at the upper left.
To: 5ESS numbered vertically starting at the upper left corner.

1ESS	5ESS
000	0-00
001	0-10
002	0-20
003	0-30
004	0-40
005	0-50
006	0-60
007	0-70
008	1-00
009	1-10
010	1-20
011	1-30
012	1-40
013	1-50
014	1-60
015	1-70
100	0-01
101	0-11
-	-
-	-
114	1-61
115	1-71
200	0-02
201	0-12
202	0-22
203	0-32
204	0-42
205	0-52
-	-
-	-
313	1-53
314	1-63
315	1-73

Table 16-27. *wo swpt overlay block* 4VH5

From: 1ESS 4:1 Concentration, 64 pin block numbered vertically starting at the upper left.
To: 5ESS numbered horizontally starting at the upper left corner.

1ESS	5ESS
000	0-00
001	0-40
002	1-00
003	1-40
004	0-01
005	0-41
006	1-01
007	1-41
008	0-02
009	0-42
010	1-02
011	1-42
012	0-03
013	0-43
014	1-03
015	1-43
100	0-10
101	0-50
102	1-10
103	1-50
104	0-11
105	0-51
106	1-11
107	0-51
108	0-12
109	0-52
110	1-12
-	-
-	-
312	0-33
313	0-73
314	1-33
315	1-73

Table 16-28. *wo swpt overlay block* 4VV5

From: 1ESS 4:1 Concentration, 64 pin block numbered vertically starting at the upper left..
To: 5ESS numbered vertically starting at the upper left corner.

1ESS	5ESS
000	0-00
001	0-01
002	0-02
003	0-03
004	0-10
005	0-11
006	0-12
007	0-13
008	0-20
009	0-21
010	0-22
011	0-23
012	0-30
013	0-31
014	0-32
015	0-33
100	0-40
101	0-41
102	0-42
103	0-43
104	0-50
105	0-51
-	-
114	0-72
115	0-73
200	1-00
201	1-01
-	-
-	-
312	1-70
313	1-71
314	1-72
315	1-73

Table 16-29. *wo swpt overlay block* 2HH5 Aa

From: 1ESS 2:1 SP concentration ratio on a 64 terminal block numbered horizontally starting at the upper left corner.
To: 5ESS numbered horizontally starting at the upper left corner.

This table represents the top half of the block.

1ESS	5ESS
000	0-00
001	0-01
002	0-02
003	0-03
100	0-10
101	0-11
102	0-12
103	0-13
200	0-20
201	0-21
202	0-22
203	0-23
-	-
-	-
302	0-32
303	0-33
400	0-40
401	0-41
-	-
-	-
700	0-70
701	0-71
702	0-72
703	0-73

Table 16-30. *wo swpt overlay block* 2HH5 Bb

From: 1ESS 2:1 SP concentration ratio on a 64 terminal block numbered horizontally starting at the upper left corner.
To: 5ESS numbered horizontally starting at the upper left corner.

This table represents the bottom half of the block.

1ESS	5ESS
000	1-00
001	1-01
002	1-02
003	1-03
100	1-10
101	1-11
102	1-12
103	1-13
200	1-20
201	1-21
202	1-22
203	1-23
-	-
-	-
302	1-32
303	1-33
400	1-40
401	1-41
-	-
-	-
700	1-70
701	1-71
702	1-72
703	1-73

Table 16-31. *wo swpt overlay block* 2HV5 Aa

From: 1ESS 2:1 SP concentration ratio on a 64 terminal block numbered horizontally starting at the upper left corner.
To: 5ESS numbered vertically starting at the upper left corner.

This table represents the top half of the block.

1ESS	5ESS
000	0-00
001	0-10
002	0-20
003	0-30
100	0-40
101	0-50
102	0-60
103	0-70
200	1-00
201	1-10
202	1-20
203	1-30
300	1-40
301	1-50
302	1-60
303	1-70
400	0-01
401	0-11
-	-
-	-
700	1-41
701	1-51
702	1-61
703	1-71

Table 16-32. *wo swpt overlay block* 2HV5 Bb

From: 1ESS 2:1 SP concentration ratio on a 64 terminal block numbered horizontally starting at the upper left corner.
To: 5ESS numbered vertically starting at the upper left corner.

This table represents the bottom half of the block.

1ESS	5ESS
000	0-02
001	0-12
002	0-22
003	0-32
100	0-42
101	0-52
102	0-62
103	0-72
200	1-02
201	1-12
202	1-22
203	1-32
300	1-42
301	1-52
302	1-62
303	1-72
400	0-03
401	0-13
-	-
-	-
700	1-43
701	1-53
702	1-63
703	1-73

Table 16-33. *wo swpt overlay block* 4HHC

From: 1ESS 4:1 Concentration, 64 pin block numbered horizontally starting at the upper left.
To: DMS-100 numbered horizontally starting at the upper left corner.

1ESS	5ESS
000	-00
001	-01
002	-02
003	-03
004	-04
005	-05
006	-06
007	-07
008	-08
009	-09
010	-10
011	-11
012	-12
013	-13
014	-14
015	-15
100	-16
101	-17
-	-
-	-
114	-30
115	-31
200	-00
201	-01
202	-02
203	-03
204	-04
205	-05
-	-
-	-
313	-29
314	-30
315	-31

Table 16-34. *wo swpt overlay block* 4HVC and 4VVC

From: 1ESS 4:1 Concentration, 64 pin block numbered horizontally starting at the upper left.
To: DMS-100 numbered vertically starting at the upper left corner.
also
From: 1ESS 4:1 Concentration, 64 pin block numbered vertically starting at the upper left.

To: DMS-100 numbered vertically starting at the upper left corner.

1ESS	5ESS
000	-00
001	-04
002	-08
003	-12
004	-16
005	-20
006	-24
007	-28
008	-00
009	-04
010	-08
011	-12
012	-16
013	-20
014	-24
015	-28
100	-01
101	-05
-	-
114	-30
115	-31
200	-02
201	-06
202	-10
203	-14
204	-18
205	-22
-	-
313	-23
314	-27
315	-31

Table 16-35. *wo swpt overlay block* 4VHC

From: 1ESS 4:1 Concentration, 64 pin block numbered vertically starting at the upper left.
To: DMS-100 numbered horizontally starting at the upper left corner.

1ESS	5ESS
000	-00
001	-16
002	-00
003	-16
004	-01
005	-17
006	-01
007	-17
008	-02
009	-18
010	-02
011	-18
012	-03
013	-19
014	-03
015	-19
100	-04
101	-20
-	-
-	-
114	-07
115	-22
200	-08
201	-23
202	-08
203	-23
204	-09
205	-24
-	-
-	-
313	-31
314	-15
315	-31

Table 16-36. *wo swpt overlay block* 2HHC

From: 1ESS 2:1 SP concentration ratio on a 64 terminal block numbered horizontally starting at the upper left corner.
To: DMS-100 numbered horizontally starting at the upper left corner.

This table represents both the top and bottom half of the block.

1ESS	5ESS
000	-00
001	-01
002	-02
003	-03
100	-04
101	-05
102	-06
103	-07
200	-08
201	-09
202	-10
203	-11
300	-12
301	-13
302	-14
303	-15
400	-16
401	-17
-	-
-	-
700	-28
701	-29
702	-30
703	-31

Table 16-37. *wo nu map* Switch Ports

LOW	HIGH	LOW	HIGH
000-000-000	000-000-301	5021-000-00	5021-001-41
000-000-302	000-001-203	5022-100-00	5022-101-41
000-001-204	000-002-105	5023-200-00	5023-201-41
000-002-106	000-003-007	5024-300-00	5024-301-41
-	-	-	-
-	-	-	-

Instance Keys are: NU TYPE is 'SWPT', 'ORDER ID' AND 'HIER LEVEL 1'
Up to 61 instances for 1ESS
Max length (ROWS) is 8,192 rows

Example shows ranges for four 50 SWPT blocks

Table 16-38. *wo nu map* Cable Pairs

LOW	HIGH	LOW	HIGH
PG01-1	PG01-96	IPG01-1	IPG01-96
PG02-1	PG02-96	IPG02-1	IPG02-96
6-601	6-900	14-901	14-1200
7-1501	7-1800	14-601	14-900
3-107	-	14-807	-
-	-	-	-
-	-	-	-

Instance Keys are: NU TYPE is 'CP' AND 'ORDER ID'

This example shows 4 cable pair range based moves and one single cable pair move:

— 2 pair gain systems are moving to integrated digital carrier

— 2 300 pair cable complements plus a single pair that will be served out of a remote location.

SWITCH System DLBB Functional Product Specification

Contents

17. AREA TRANSFER

17.1 Introduction

An Area Transfer (ATR) is the transfer of working circuits from one wire center (WC) to another wire center. The transfer may be associated with the creation of a new office or the recentering of an existing office. Most area transfers are defined by specifying the ranges of the cable pairs involved in the transfer. Some transfers may involve up to 200 cable pair ranges. The typical size of an area transfer is from 2,000 to 10,000 circuits, but there have been transfers with numbers of circuits that are outside of these bounds.

Area transfers are very similar to dial transfers in that both types of transfers move circuits from one intelligent controller (IC) to another intelligent controller. The SWITCH system supports area transfers between all Intelligent Controllers (IC) recognized by the system. Section 16.1 of this document identifies the ICs that are supported for dial transfers; these ICs also are supported for area transfers.

The main difference between a dial transfer and an area transfer is that for an area transfer, the FROM and TO ICs are in different wire centers. In addition, because cable pairs usually define an area transfer, area transfers, unlike dial transfers, may include non-switched circuits. Area Transfers assign in the "TO" wire center similar to Service Orders and to avoid any "special" Service Order processing the ATR order number must begin with the "A" character.[1]

Since an area transfer typically involves a geographic move, cable pairs usually are changed as part of the transfer. Telephone numbers will be changed if the customer telephone numbers are unable to be used in the TO wire center. If the telephone numbers must be changed, customers will be assigned new telephone numbers with the same line numbers whenever possible. Switchports and other central office equipment will be assigned in the TO wire center as needed to support each customer's service.

Occasionally an area transfer will be used to effect an administrative transfer. Instead of moving circuits to a different IC in a different wire center, the circuits will remain on the same IC and this IC will be administered out of a different WC. In this type of transfer, the telephone numbers, cable pairs, and central office equipment for the circuits are unchanged. However, the switchports may be renamed if the IC involved in the transfer is being renamed or is a remote unit that is being moved to a different host. Sometimes, re-hosting of a remote may also require changes to customer telephone numbers.

An area transfer is usually accomplished via work orders which disconnect the working circuits in the FROM wire center and establish New Connects for these circuits in the TO wire center. Record type service orders may be issued simultaneously to update billing and

1. This restriction is enforced by the ULBB SET ATR work session.

other downstream systems. For some transfers, Change type service orders are used instead of work orders. This is often done for non-switched services.

Area transfers require significant planning and coordination between work centers. Planning may begin up to two years prior to the actual transfer. Work orders and service orders are usually issued about six months before the transfer due date. Most area transfers are completed in their entirety on their due date (a "flash cut"). Occasionally, completions may be staggered across several weekends. Because an area transfer can exist for a long period of time, an area transfer is accomplished in the SWITCH system using a programmable work order. Programmable work orders are multi-pass orders that pend in the SWITCH system database. There are multiple work sessions associated with each programmable work order. A key difference between an area transfer work order and other types of programmable work orders is that the area transfer work order must exist in two wire centers. In the FROM wire center, the work order will be used to disconnect the circuits and groups in the transfer. In the TO wire center, the work order will be used to create New Connects for these circuits and groups. To ensure that the area transfer work order is consistent in the FROM and TO wire centers, the user interface for area transfers is designed to eliminate user entry of duplicate information in both wire centers. When appropriate, a work session accessed in one wire center will result in updates to both of the wire centers involved in the area transfer.

17.1.1 Area Transfer Work Sessions

The main work sessions used for area transfers are listed here, along with their contracts. The contracts are described briefly in the following section.

- SET ATR - This work session will be used to establish and update the area transfer work order. It will be executed by the user in the FROM wire center and will generate an establishment contract (PREATR) in the FROM wire center which will chain to an establishment contract for the TO wire center. WSIATR is the work session initialization contract for this work session.
- AUTO ATR - This work session will be used to automatically update the area transfer with circuits and groups added to the transfer after the initial establishment. It will be executed by the user in the FROM wire center and will generate an establishment contract (PREATR) in the FROM wire center which will chain to an establishment contract for the TO wire center.
- ASG ATR - This work session will be used to assign the area transfer. It will be executed by the user in the FROM wire center and will generate an assignment contract (ASGATR) in the FROM wire center which will chain to an assignment contract for the TO wire center. WSIATR is the work session initialization contract for this work session.

- RMV ATR - This work session will be used to cancel the entire area transfer, to cancel circuits and groups from the transfer, or to cancel circuits and groups from assignment. When executed by the user in the FROM wire center, this work session will generate a cancellation contract (CANATR) in the FROM wire center which will chain to a cancellation contract for the TO wire center. This work session will also support cancellation in the TO wire center independent of FROM wire center cancellation. WSIATR is the work session initialization contract for this work session.
- CMP ATR - This work session will be used to complete the area transfer. It will be executed separately in the FROM and TO wire centers. WSIATR is the work session initialization contract for this work session.
- UPD ATR - This work session will be used to update the FROM area transfer work order with a final completion status for the TO WC. It will be executed in the FROM wire center if the final UPDATR contract chained from the TO wire center is not received in the FROM WC.
- COR WO - This work session will be used to correct the area transfer assignments in the TO wire center. Because the FROM wire center circuits are being disconnected, there is no need to support assignment corrections in the FROM wire center. The COR WO work session for an area transfer will execute a CORATR contract. WSIWO is the work session initialization contract for this work session.
- COR TTR - This work session will be used to correct translations transformations for circuits and groups in the TO wire center. Because the FROM wire center circuits are being disconnected, there is no need to support translations corrections in the FROM wire center. The COR TTR work session for an area transfer will execute a CORTTR contract. WSITTR is the work session initialization contract for this work session.
- REQ FO - This work session will be used to request frame output for the area transfer. It will be executed separately in the FROM and TO wire centers. The REQ FO work session for an area transfer will execute a REQWO contract. There is no work session initialization contract for this work session.
- RSD FO - This work session will be used to resend frame output for the area transfer. It will be executed separately in the FROM and TO wire centers. The RSD FO work session for an area transfer will execute a RSDWO contract. There is no work session initialization contract for this work session.
- REQ TRM - This work session will be used to request translations for the area transfer. It will be executed separately in the FROM and TO wire centers. The REQ TRM work session for an area transfer will execute a REQTRM contract. There is no work session initialization contract for this work session.
- PREP TN - This work session will be used to prepare telephone numbers for assignment in the TO wire center. The PREP TN work session for an area transfer will execute a PRPTN contract. WSIATR is the work session initialization contract for this work session.

- RPT ATR - This work session will be used to request a report on an area transfer work order. The RPT ATR work session for an area transfer will execute a RPTATR contract. There is no work session initialization contract for this work session.
- INQ WO - This work session will be used to inquire on an area transfer work order in the FROM or the TO wire center. The INQ WO work session for an area transfer will execute an INQWO contract. There is no work session initialization contract for this work session.

17.1.2 Area Transfer Input Contracts

Listed below are the input contracts to the SWITCH system Data Layer Building Block (DLBB) that are used for area transfers:

- PREATR - Establish Area Transfer. This contract is used to create and update a pending area transfer Work Order.
- ASGATR - Assign Area Transfer. This contract is used to assign a pending area transfer Work Order.
- CORATR - Correct Assignments for an Area Transfer. This contract is used to correct circuits in error and to change circuit assignments for a pending area transfer.
- CORTTR - Correct Translations Transformations. This contract is used to correct translations transformations for circuits and groups that have been assigned.
- CANATR - Cancel Area Transfer. This contract is used to cancel circuits and groups from assignment or from the area transfer.
- PCNATR - Complete Area Transfer. This contract is used to complete the area transfer.
- UPDATR - Update Area Transfer with completion status. This contract is used to update the area transfer work order in the FROM WC with the completion status of the circuits and groups in the TO WC.
- WSIATR - Work Session Initialization for Area Transfer. This contract is used to obtain area transfer data for the SWITCH system ULBB work sessions that establish, assign, cancel, and complete an area transfer and the ULBB work session that prepares telephone numbers for an area transfer.
- WSIWO - Work Session Initialization for Work Order. This contract is used to obtain work order data for the SWITCH system ULBB work session that corrects work order assignments.
- WSITTR - Work Session Initialization for Translations Transformations. This contract is used to obtain work order data for the SWITCH system ULBB work session that corrects work order translations transformations.

- REQWO - Request Work Order Frame Output. This contract is used to request frame output for a programmable work order or to resend frame output for a programmable work order.
- REQTRM - Request Translations Redundancy Management. This contract is used to request translations redundancy management messages for a programmable work order.
- PRPTN - Prepare Telephone Numbers. This contract is used to find telephone numbers in the TO WC and to optionally mark them as reserved for an area transfer.
- RPTATR - Report Area Transfer. This contract is used to request a report on an area transfer.
- INQWO - Inquire on Work Order. This contract is used to inquire on a work order.
- PREFWI - FOMS Frame Work Information. This contract is sent to the SWITCH system from FOMS when frame completion of an item has been processed. This information is maintained in the SWITCH system for reporting purposes only.

17.1.3 Area Transfer Output Contracts

Listed below are the area transfer contracts that are output by the SWITCH system DLBB:

- PREPWO - FOMS Establishment Planning Message (sent after establishment and partial cancellation).
- PREPWO - FOMS Assignment Planning Message (sent after assignment and resolve assignment).
- PREWO - FOMS Frame Output (sent after assignment, correction, rework, and user-initiated output request).
- CANWO - FOMS Transfer Line Cancellation.
- PCNWO - FOMS Transfer Line Completion.
- PRETMR - MAS ATR Establishment.
- CORTMR - MAS ATR Addition to, Modification to, or Withdrawal from an existing ATR.

17.1.4 Area Transfer Overview

The SWITCH system will support an area transfer via a multi-pass work order in the FROM and TO wire centers. Two types of area transfers will be supported: non-administrative and administrative. In a non-administrative area transfer, working circuits and groups will be transferred from an IC in the FROM wire center to a different IC in the

TO wire center. In an administrative transfer, no physical move is taking place. The circuits and groups remain on the same IC, but the IC will be administered out of the TO wire center. The area transfer functionality is being used to rebuild these circuits and groups in the TO wire center.

Prior to establishing an area transfer work order in the SWITCH system, various preparatory activities should be performed in the SWITCH system database and in the SWITCH system Data Dictionary/Reference Data Administration System (DD/RDAS). Inventory work sessions in the SWITCH system User Layer Building Block (ULBB) should be used to build all necessary inventory in the TO wire center including the TO IC and associated network units. DD/RDAS tables used by area transfer work order processing also should be updated.

After the updates to the SWITCH system database and DD/RDAS tables are completed, work order work sessions should be used to create and update the area transfer work order. These work sessions will send work order contracts to the SWITCH system Data Layer Building Block (DLBB). The area transfer establishment work session (SET ATR) should be used to establish the area transfer in the SWITCH system databases for the FROM and TO wire centers. Once the area transfer order is established, the PREP TN work session should be run to determine whether the desired telephone numbers are assignable in the TO WC.

The automatic establishment work session AUTO ATR should be run periodically to pick up additions to the transfer. SWITCH system rework processing will automatically handle changes and deletions for circuits and groups in the area transfer.

The area transfer assignment work session (ASG ATR) should be used to assign the area transfer in the SWITCH system databases for the FROM and TO wire centers. At assignment time, pending Disconnects will be created in the FROM WC and pending New Connects will be created in the TO WC. The assignment contract for the TO wire center will contain the data needed by SWITCH system assignment engine processing to build the circuits and groups in the TO WC. For groups, the TO assignment contract will contain group attributes and translations data. For circuits, the TO assignment contract will contain circuit and service attributes, design data, translations, and pre-assigned network units and connectivity. Group data and circuit translations data will be obtained from translations transformation tables in the SWITCH system DD/RDAS. The circuit and service attributes and design data will be the same as in the FROM wire center. For non-administrative area transfers, telephone numbers, cable pairs, and miscellaneous equipment will be pre-assigned. Other network units and circuit connectivity will be determined by SWITCH system assignment engine processing. For administrative transfers, all network units and connectivity will be pre-assigned and will usually have the same values as in the FROM WC. Work order control flags will determine whether the pre-assigned network units should be the same as in the FROM wire center. If a network unit is to be changed, the new network unit ID will be obtained from network unit mapping tables in the SWITCH system DD/RDAS.

Area transfer assignments in the TO wire center may be corrected using the COR WO work session. This work session supports correction to circuits in error as well as assignment changes to circuits that have been successfully assigned. Area transfer translations for circuits and groups in the TO wire center may be corrected using the COR TTR work session.

For administrative transfers where the network units and connectivity in the TO WC are the same as in the FROM WC, output will not be generated for FOMS or the MARCH system. For non-administrative transfers, translations output will be generated for the MARCH system if MAS (Memory Administration System) involvement is "Y", and frame output will be generated for FOMS. Planning messages will be sent from the SWITCH system to FOMS after the area transfer work order is established and assigned in the FROM and TO wire centers. Based on user tunable flags, frame output will be sent to FOMS on user request, after successful assignment, or whenever translations data is output.

Translations may be output on Translations Redundancy Management (TRM) messages which will be sent to the MARCH system via SOAC. For the TO wire center, the user has the option to request bulk translations output prior to generating TRM messages. The only bulk extract that supports ATRs is the TAGTMART extract[2]. If bulk output is turned on, a TAGTMART tape will be used to provide the translations to the TO IC. After the tape has been pulled, TRM messages may be used to apply any translations changes that occur. If bulk output is not used, TRM messages will be used to provide the TO IC with all the translations for the circuits and groups in the TO wire center. Based on user tunable flags, TRM messages for the TO wire center will be sent on user request, after successful assignment, or whenever frame output is sent. For the FROM wire center, TRM for the disconnecting circuits and groups will be sent on user request after the transfer has been completed in the TO wire center.

A TAGTMART Extract tape will be used to update NSDB or LMOS with the new circuit data for the transferring circuits. A TAGLMART extract will be used to update LFACS with the new circuit identification for the transferring circuits.

Circuits and groups may be canceled from the transfer or from assignment using the RMV ATR work session. A single RMV ATR work session may be used to cancel circuits and groups in both the FROM and TO wire centers. RMV ATR also may be used to do cancellations in the TO wire center only.

The area transfer should be completed using the CMP ATR work session. The transfer must be completed separately in the FROM and TO wire centers. The TO wire center completion must be done before the FROM wire center completion.

During the course of the transfer, the user may run the INQ WO and RPT ATR work sessions to obtain information about the area transfer work order.

2. TMART extracts and BTOEXT extracts do not contain the old circuit id information needed to update the services in LMOS or NSDB.

The following constraints apply to the SWITCH system area transfer feature:

- The SWITCH system area transfer feature will provide contracts that access two wire centers - the wire center where the circuits are working (the FROM WC) and the wire center to which the circuits will be moved (the "to WC). These wire centers must have shared disk storage.
- The SWITCH system area transfer feature will not support administrative transfers that require the customers' telephone numbers to be changed.
- The SWITCH system area transfer feature will not support conversion of pending area transfers from COSMOS.
- The SWITCH system area transfer feature will not support the transfer of circuits or groups with the following characteristics:
  - — Multi-leg circuits where all legs are not in the transfer.
  - — Groups (HML, SCH, SFG, MADN, CTX) for which all circuits are not in the transfer.
  - — CO bridged party where all parties are not in the transfer.
  - — Party circuits where the FROM IC is an Ericsson AXE™ Release 4.0 or earlier.

17.1.5 Document Overview

The rest of this section of the document will present the details of area transfer activities. Following is a list of the topics covered:

- Area Transfer Preparation
- Area Transfer Establishment
- Area Transfer Automatic Establishment
- Area Transfer Assignment
- Due Date Change Processing
- Rework of ATR Establishment/Assignments
- Area Transfer Corrections
- Area Transfer Output
- Area Transfer Cancellation
- Area Transfer Completion

Area transfer activity may be queued for overnight processing. Results of the activity may be accessed via reports and inquiries. Status information for deferred contracts initiated

from ULBB work sessions may be accessed via DCOR (Deferred Contract Output Review).

17.2 Area Transfer Preparation

Several operations should be done before an area transfer work order is entered into the SWITCH system. Other activities must be done after establishment of the area transfer but before assignment.

The following sections describe these preparations and include the following topics:

- FROM WC Data Characterization
- TO WC Preparations
- Translations Synchronization
- Reference Data Updates
  - — Output Handler Destination Table
  - — Work Order Tables
  - — Translations Transformations Tables
  - — MAS Involvement Table
  - — Inventory and Assignment Tables

17.2.1 FROM WC Data Characterization

Prior to the establishment of an area transfer, the user will need to prepare, inquire, and report on data stored in the SWITCH system database. Reports should be run over Network Unit ranges (e.g., cable pair ranges) or over an IC to retrieve counts and summarization of Network Unit, service, and circuit characteristics, e.g.:

a. List all circuits in a specified IC or within a Network Unit range which have a specified characteristic (e.g., CTX, HML, SCH, SFG, ME) (Report CKT).

b. Given a Switch Port or Telephone Number range/mask or NXX, and optional customer features, return a count of SWPTs or TNs by Class of Service and Status (Report COUNT).

c. Report FROM IC summarization data given report filters such as Loading Division, Assignment Limitation, Estimated, Adjusted, and Measured Usage, Capacity, Main Station Estimates, CECs, Cross Loading, Specific Functionality, and Frame/Zone Location (Report Load Balance, Report ADMIN and/or Report Count).

17.2.2 TO WC Preparation

If the TO IC is an existing IC, the same reports described above may be run against the TO IC. If the circuits are being transferred to a new IC in the TO WC, the user should build the new IC in the TO WC and create the appropriate inventory and assignment reference data tables listed in Section 17.2.4.5 of this document. The SWITCH system database for the TO wire center should be updated with the inventory to support the area transfer. The switchports, telephone numbers, cable pairs, and other central office equipment needed to support the area transfer should be added to the TO wire center inventory. DIPs (Dedicated Inside Plant) may be created with the SET WAO work session, and test circuits may be created with the UPD CKT work session.

Switchports may be marked with an optional load group exclusion to exclude them from selection for orders other than the area transfer. Once the area transfer order is established, telephone numbers may be marked with a temporary reservation using the PRPTN contract initiated by a PREP TN work session.

For an administrative transfer, there will be no automatic assignment. All network units are pre-assigned. When establishing the network units in inventory, they may be marked with a temporary reservation to prevent automatic assignment for other orders.

17.2.3 Translations Synchronization

The SWITCH system can receive translation data from an IC, the 1/1A ESS, or from any vendor that meets the UPDTRN contract specifications. The SWITCH system can compare its database to the IC dump and prepare an audit report, or synchronize its database with the translation data on the dump. Synchronization may be done prior to an area transfer to insure that each customer's translations are correct before being moved to the IC in the TO WC. See Section 12.3 for a full description of the Translations Synchronization process.

17.2.4 Reference Data Updates

The following sections discuss SWITCH system tables that are used by area transfer work order processing. A description of these tables and sample instances may be found in the SWITCH System DD/RDAS Reference Data System Administration document, BR 752-106-035.

17.2.4.1 Output Handler Destination Table

The SWITCH system area transfer feature will support contract chaining from one wire center to another wire center. If the wire centers involved in an area transfer are not on the same IMS entity, the *oh destination* table for the FROM entity should be updated to include

the npanxx for the TO wire center and the end destination value associated with that npanxx. When a contract in the FROM WC chains to a contract designated for the TO WC, the information needed to route the contract to the appropriate entity, IMS copy, and machine will be obtained by looking up the TO npanxx in the OH destination table. The *PLHDR for the chained contract will contain information about the originating entity so that messages for the chained contracts may be routed back to DCOR in the originating entity. There will be one DCOR entry per chained contract.

17.2.4.2 Work Order Tables

17.2.4.2.1 wo contract options Table

The *wo contract options* table contains contract specific parameters, such as database commit size (dcs), used during work order processing. The size of area transfer contracts can be controlled by the database commit size (dcs) parameter. This parameter is used to indicate the number of units to be processed before committing the database. This in turn determines the number of units that will appear in chained area transfer contracts.

If dcs is not specified in the table, work order processing uses the default commit interval for the Deferred Contract Manager (DCM). If this commit interval is large, the chained area transfer contract may exceed the maximum allowed size in bytes for a message to a specified end destination (as defined by the max_size parameter in the *oh destination attributes* table). If an area transfer contract exceeds the max_size value, the contract will be dropped by the Deferred Message Poster (DMP), and an error message will be sent to the error printer. The chained contract will appear in DCOR, but its status will never get changed from queued to completed. If this occurs the *wo contract options* table should be updated to include a dcs value for contract type atr that is smaller than the default commit interval. Since area transfer contracts are built at each commit interval, smaller commit intervals will result in fewer circuits per contract with a corresponding decrease in the message size.

17.2.4.2.2 wo order control Table

This table contains order control information for work orders. For each order type, this table supports entry of various parameters that drive processing. Valid values for these parameters are "Y" for yes and "N" for no. A "Y" indicates that processing indicated by the parameter should be performed; an "N" indicates that the processing should not be done.

Prior to establishing an area transfer work order, the appropriate instance(s) of the *wo order control* table should be updated to include the parameters that are applicable to each area transfer work order. The table supports entry of multiple area transfer order IDs. This table may be defined at the WC level or globally for the entire entity. If WC level tables are used,

the same entries should be made in the table instances in both the FROM WC and the TO WC. If global tables are used and the FROM and TO wire centers are in the same entity, one instance of the table should be defined for the entity. If the FROM and TO wire centers are in different entities, the same entries should be made in the table instances in the entities that contain the FROM and "to WC.

The parameter AIC (administrative IC) is used to indicate if an area transfer is an administrative transfer. If the transferring circuits are staying on the same IC but the IC is being moved to a different WC, AIC should be set to "Y". If the transfer is moving working circuits to a different IC in a different WC, AIC should be set to "N". The default value for AIC will be "N".

For each area transfer defined in the table, a value should be entered for the network unit mapping parameters TNM, CPM, MEM, and SPR. TNM is used to indicate telephone number mapping. CPM is used to indicate cable pair mapping. MEM is used to indicate miscellaneous equipment mapping. SPR is used to indicate switchport mapping.

When AIC is "Y", the TNM, MEM, CPM, and SPR parameters must be "N". When AIC is "N", several combinations of these parameters and their values will be supported as shown in the table below. The value "Y" indicates "yes", the value "N" indicates "no", and the value "M" indicates "manual". "Y" and "N" are applicable to all the mapping parameters. "M" only applies to MEM. When the area transfer is established, the work session initialization process will verify that the mapping parameters are valid for the specified AIC value.

TNM	CPM	MEM	SPR	DESCRIPTION
Y	Y	Y	N	Telephone numbers, cable pairs, and miscellaneous equipment pre-assigned with new values from mapping tables. Switchports automatically assigned in the TO WC. These will be the default values for these parameters.
Y	Y	Y	Y	Telephone numbers, cable pairs, miscellaneous equipment, and switchports pre-assigned with new values from mapping tables.
N	Y	Y	N	Telephone numbers the same as in the FROM WC. Cable pairs and miscellaneous equipment pre-assigned with new values from mapping tables. Switchports automatically assigned in the TO WC.
N	Y	Y	Y	Telephone numbers the same as in the FROM WC. Cable pairs, miscellaneous equipment, and switchports pre-assigned with new values from mapping tables.
Y	Y	M	N	Telephone numbers and cable pairs pre-assigned with new values from mapping tables. Miscellaneous equipment will not be pre-assigned and will be set with a manual assistance trigger. Switchports automatically assigned in the TO WC.

TN M	CP M	ME M	SPR	DESCRIPTION
Y	Y	M	Y	Telephone numbers, cable pairs, and switchports pre-assigned with new values from mapping tables. Miscellaneous equipment will not be pre-assigned and will be set with a manual assistance trigger.
N	Y	M	N	Telephone numbers the same as in the FROM WC. Cable pairs pre-assigned with new values from mapping tables. Miscellaneous equipment will not be pre-assigned and will be set with a manual assistance trigger. Switchports automatically assigned in the TO WC.
N	Y	M	Y	Telephone numbers the same as in the FROM WC. Cable pairs and switchports pre-assigned with new values from mapping tables. Miscellaneous equipment will not be pre-assigned and will be set with a manual assistance trigger.

The AIC parameter also will be used to determine if frame output and/or translations output (Bulk Translations Extract and/or Translations Redundancy Management messages) are required for an area transfer. Both frame output and translations output are required[3] for non-administrative transfers (AIC=N). If AIC is "Y", frame output and translations output will be suppressed. However, a Bulk Translations Extract may be run to obtain data for LMOS or NSDB.

The SFO parameter indicates that frame output should be sent to FOMS automatically at assignment time. For area transfers, frame work will most likely be done at different times for the FROM and TO wire centers. As such, the capability to specify a different SFO value for the FROM and TO wire centers will be supported. For area transfers, the SFO parameter will be used to indicate if frame output should be sent automatically on assignment in the FROM wire center, and the SFT parameter will drive frame output for the TO WC.[4] When set to "Y", SFT indicates that frame output should be sent automatically on assignment in the TO wire center. The defaults for these tags will be "N".

The parameters BOA (Bulk Output Allowed), STD (Send Translations Data), and SOS (Send Output Simultaneously) also should be specified for each area transfer. BOA should be set to "Y" if the user wishes to have a Bulk Output Phase for the area transfer. While BOA is set to "Y", translations data will be output on a Bulk Translations Output extract

3. Translations output will be required if the order is MAS involved as determined by entries in the *MAS involvement* table.

4. Although two parameters are defined in SWITCH system reference data, only one SFO contract tag will appear in messages sent to FOMS. Since the messages are wire center based, the value of the SFO contract tag will be obtained from the SWITCH system SFO parameter for the FROM WC and from the SFT parameter for the TO WC where the FROM and TO wire centers are as defined in the ATR order generating the message.

(i.e., a TAGTMART tape), and Translations Redundancy Management (TRM) messages will be prevented. Once the Bulk Output Phase is completed, BOA should be set to "N" so that TRM messages may be used to send translations data to the IC. The STD and SOS parameters apply to translations data that is output on TRM messages. STD indicates that translations data will be output automatically at assignment time. SOS indicates that translations data will be output whenever frame output is sent to FOMS. These parameters will only be used for processing in the TO wire center. They will not apply to the FROM wire center because translations data will not be sent to the MARCH system for the disconnecting circuits and groups until after the area transfer has been completed in the TO wire center. The default for BOA will be "Y"; the defaults for STD and SOS will be "N".

The parameter ADA (Automatic Dial Transfer Assignment) indicates[5] that an ASG contract should be done automatically following processing of a PRE contract that resulted from Automatic Establishment. This parameter should be set for area transfers. The default for ADA will be "Y".

The parameter IFC (Ignore Frame output for Completions) indicates that completion may be done for a circuit even if frame output has not been to FOMS. The default for IFC will be "N".

The other parameters defined in the *wo order control* tables, DCI (Database Check for Inconsistencies), SAL (Start Assignment Logic), SPC (Switchport Concentrator Mapping), and SPM (Switchport Mapping) do not apply to area transfers.

Once an area transfer work order has been established, changes to the work order parameter AIC for this order will be ignored. The AIC value that is defined at the time the order is established will be used for the life of the order. The mapping parameters TNM, CPM, MEM, and SPR may be changed after the order is established, but the user should ensure that the values for the mapping parameters are valid with the AIC value. The table values for the parameters SFO, SFT, BOA, STD, SOS, and ADA may be changed any time after the transfer has been established.

17.2.4.2.3 Network Unit Mapping Tables

If network unit mapping has been set to "yes", *wo atr nu map* table instances must be defined. The network units that may be mapped are telephone numbers, data telephone numbers, cable pairs, miscellaneous equipment, and switchports. There should be one instance of this table for each network unit type that is to be mapped for an area transfer work order. The TNM, CPM, MEM, and SPR flags in the *wo order control table* will determine if mapping is to be done for a network unit type. If the CPM, MEM, or SPR mapping flag is set to "Y", a mapping table instance must be built for that network unit type. If the TNM flag is set to "Y", two mapping table instances must be built, one for telephone

5. Although this parameter is named Automatic Dial Transfer Assignment, it is used for both dial and area transfers.

numbers and one for data telephone numbers. The instance key for the table is the work order ID and network unit type of the FROM network unit.

The table will support entry of multiple FROM network unit type and ID ranges and TO network unit type and ID ranges. All FROM network unit types must be the same. Entry of a TO network unit type is required if the TO network unit type is not the same as the FROM network unit type. Mappings for individual network units may be done by entering only the low value of an ID range[6]. The table will also support a single FROM network unit mapping to no TO network units. When a FROM network unit maps to no network units, the TO column of table should be set to a "-". When looking up a FROM network unit in the table, SWITCH system mapping processing will search for the network unit type and ID entered as an individual FROM type and ID. If a match is not found on the individual ID, mapping processing will search the FROM ranges to determine if this ID is part of a range.

If the mapping parameter for a network unit type is set to "Y", every FROM network unit of that type must be mapped in the appropriate table instance. The network unit data that may be entered in a table instance depends on the network unit type. For CPs, the FROM and TO network units must be valid IDs, and one-to-many mapping will be allowed. For MEs, the FROM network units must be valid IDs; the TO network units may be valid IDs or a "-" which indicates that the network unit is to be dropped. For TNs and DTNs, the FROM and TO telephone numbers must be entered in the format "NPA-NXX-XXXX". For switchports, the FROM entries must be valid switchport IDs; the TO entries may be valid IDs or may be "?". Entry of a "?" indicates that the assignment engine should automatically assign a TO switchport for the specified FROM switchport IDs.

17.2.4.2.4 Resistance Zone Mapping Table

When an area transfer requires different cable pairs in the FROM WC than in the TO wire center, the resistance zone (RZ) or carrier zone (CZ) values also may be different. The wire center level table *wo atr resistance zone* is used to specify resistance zone or carrier zone information for all TO cable pairs involved in an area transfer. There should be one instance of this table for each area transfer work order where cable pairs are being mapped. The table will support entry of individual cable pair IDs or ranges. For each entry, a default carrier zone, carrier zone adjustment, default resistance zone, or a resistance zone adjustment should be entered. If the TO CP is DLE, the user should enter either a default carrier zone or carrier zone adjustment. If the TO CP is not DLE, the user should enter a default resistance zone or a resistance zone adjustment in the table. The default is the value

6. If a circuit is not on SSC (single subscriber carrier) equipment in the FROM WC and is transferred to SSC in the TO WC, the FROM cable pair must be mapped to miscellaneous equipment in the TO WC. Alternatively, if a circuit is supported by the physical side of an SSC in the FROM WC, it will contain a cable pair and miscellaneous equipment. If the circuit will not be SSC in the TO WC, the miscellaneous equipment is no longer required.

that should be used as the actual carrier zone or resistance zone for the specified cable pair or range. The adjustment is a numeric value preceded by a plus or minus sign. If an adjustment is specified for a cable pair or range, the adjustment value will be added to or subtracted from the carrier zone or resistance zone value that exists for the circuit in the FROM wire center. However, if an adjustment results in a resistance zone value less than 13, then the value 13 will be used as the RZ for that circuit. When looking up a cable pair in the table, SWITCH system CP mapping processing will search for the cable pair ID entered as a individual ID. If a match is found on the individual ID, the specified resistance zone or carrier zone information will be used. If a match is not found on the individual ID, mapping processing will search the ranges to determine if this ID is part of a range. If the cable pair falls within a range, the resistance zone or carrier zone information for the range will be used. If an entry in the table has both carrier zone (default CZ and/or CZ adjustment) and resistance zone (default RZ and/or RZ adjustment) for a CP, the CP mapping processing will error. If user has not entered CZ data but has entered both a default RZ and a RZ adjustment, CP mapping will use the default RZ value. If user has not entered RZ data but has entered both a default CZ and a CZ adjustment, CP mapping will use the default CZ value. If a cable pair is not found in the table, the CP mapping processing will error.

17.2.4.3 Translations Transformations Tables

For administrative transfers, the translations data for a circuit or group will be the same in the FROM and TO wire centers. For non-administrative transfers, translations information for the circuits and groups to be built in the TO WC will be obtained from translations transformation tables. The translations transformation tables contain the transformation rules to take translations tags and values for one IC type and map them to the corresponding tags and values for another IC type. The translations transformation process will be invoked when a circuit in a non-administrative transfer is assigned in the FROM WC. The translations data obtained from this process will be placed in the assignment contract for the TO WC.

The translations transformation tables for area transfers are the same tables that are currently defined for dial transfers.

- *transf index* (Transformations Index Table)
- *transf tag oto* (Transformations One-To-One Table)
- *transf tag mtm* (Transformations Many-To-Many Table)
- *transf tag excp* (Transformations Exception Tag Table)
- *transf sfg ausoc* (Transformations for Assignable Line USOC for Simulated/Virtual Facility Groups)
- *transf lcc* (Transformations for Line Class Code)

- *transf mss features* (Transformations for Message Service System Features)
- *transf mss attributes* (Transformations for Message Service System Attributes)
- *transf rti* (Transformations for Route Index)

A description of these tables and of the translations transformation processing for dial transfers may be found in Section 16.4.3 of this document. Default instances are defined in the SWITCH system DD/RDAS for each of these tables. With the exception of the *transf index* table, these same default instances will be used for both dial transfers and area transfers. For the *transf index* table, separate default instances will be defined for dial and area transfers. For area transfers, the default instances of the *transf index* table will contain the same methods defined for dial transfers plus four new methods: "tn", "dtn", "tnr", and "dtnr". These methods will be used for mapping translations tags that may contain telephone numbers. The default methods for all other tags except for HTID, CEG, and CTX will be the same as for dial transfers. The default method for the HTID tag which is "r" (hard coded rule) for dial transfers will be "oto" (one-to-one) for area transfers. The default method for the CEG tag which is "u" (unchanged) for dial transfers will be "r" (hard coded rule) for area transfers. The default method for the CTX tag which is "t" (table) for dial transfers will be "oto" (one-to-one) for area transfers.

The list below identifies the translations tags that may contain telephone numbers and the default methods for these tags in the *transf index* table instances for area transfers. All table instances in which a tag appears will contain the specified method except as noted in the list. If an instance of a table is excepted for a particular tag, the tag will be defined in that instance with the same method as for dial transfers. The advisory column of the table will be set to "y" for tags with methods "tn" and "dtn". A definition of each tag name may be found in Appendix 13-A of this document.

- Method "tn" will be the default for tags: AA (except for instances alg;tl1, dms;5es, and tl1;5es), ATN, AUL (except for instances dms;tl1 and 5es;tl1), BDL, BN, BTN, CEG, CFF, CFN, CFNB, CFND, CFW, DTE, ESTN, HLN, ICM (except for instances dms;tl1 and 5es;tl1), LASS, MSS, MVP (except for instances dms;5es and tl1;5es), MWC, NSV (except for instances dms;5es and tl1;5es), PN, QP (except for instances tl1;dms and 5es;dms), SCF (except for instances tl1;dms and 5es;dms), SER, SH1 (except for instances alg;tl1, dms;tl1, and 5es;tl1), SH2 (except for instances alg;tl1, dms;tl1, and 5es;tl1), SPID (except for instances dms;tl1 and 5es;tl1), TCTN, VMAN, WLAN.
- There are no tags defined with default method "dtn."
- Method "tnr" will be the default for tags: NHN (except for instances tl1;dms and 5es;dms), PTN, SCTN, STN, TLI, TN.
- Method "dtnr" will be the default for tags: DTN, PNHN, PTLI.

If telephone number mapping is off (TNM flag is set to "N"), the tags with these methods will not be transformed; they will keep the same values in the TO IC as in the FROM IC.

These methods only will be applied when the WO parameter TNM is set to "Y" for an area transfer. If TNM is "Y", mapping tables must be defined for TNs and DTNs. If a tag is defined with method "tn" or method "dtn", the transformation process will attempt to find the value of the tag in the TN or DTN mapping table respectively. If a match is found, the value of the tag will be changed to the TO telephone number from the table. If a match is not found, the tag and its value will not be changed. If the advisory flag is set for that tag in the *transf index* table, an advisory message will be generated indicating the specific tag and value that could not be mapped and the FROM circuit identification. The tag should be reviewed, and if necessary, the COR TTR work session should be used to correct the value once the circuit has been successfully assigned in the TO WC. It should be noted that since an advisory condition is logged, this will not prevent Bulk Translations Output (BTO) or Translations Redundancy Management (TRM) messages from being requested once the circuit has been assigned in the TO WC.

If TNM is "Y" and a tag is defined with method "tnr" or method "dtnr", the transformation process will attempt to find the value of the tag in the TN or DTN mapping table respectively. If a match is found, the value of the tag will be changed to the TO telephone number from the table. If a match is not found, a translations error will be output identifying the tag and value in error and the FROM circuit identification. The tag TRMERR=tag will be put in the assignment contract instead of the actual tag=value. When the circuit is processed in the TO wire center, an exception notifier will be output indicating that the circuit contains translation errors. This exception will not prevent assignment in the TO wire center but will block completion of the circuit. The user is required to correct the translations error using the COR TTR work session. In preparation for an area transfer, the default translations transformation tables should be updated, using the UPD REF work session or the SWITCH system DD/RDAS. These updates must be done before the circuits in an area transfer are assigned.

17.2.4.4 MAS Involvement Table

The MAS involvement table is a wire center level table that identifies the order types that require a response to MAS. The default value for order type "atr" is "n" indicating that area transfers are not MAS involved. If output is to be generated for MAS from the FROM and/or TO wire centers for an area transfer work order, the tables for the FROM and/or TO wire centers should be updated to change MAS involvement to "y".

17.2.4.5 Inventory and Assignment Tables

The following reference data tables for the TO IC need to be established if the circuits are being transferred to a new IC in the TO WC. If the circuits are being transferred to an existing IC, these tables should be examined and changed if necessary. Details on how to

create a new IC may be found in the SWITCH System Application Administration document, BR 752-106-038.

- *ic nxx* Table
- *ic priority* Table
- *ic frame map* Table
- *wc parms* Table
- *ccs adjustment* Table
- *ccs adjustment isdn* Table
- *pps adjustment isdn* Table
- *ccs adjustment wats* Table
- *dip definition* Table
- *measurement group map* Table
- *inv support group rules* Table

Users also should review inventory and assignment tables that contain IC specific data or that are used by area transfer assignment processing. Some of the tables that may need to be reviewed are as follows:

- *admin group excl* Table
- *adsr frame priority* Table
- *ctx rcu* Table
- *deny spread* Table
- *dip definition* Table
- *order pending in* Table
- *order pending out* Table
- *reverse spread* Table
- *swpt score weight* Table
- *swpt penalty score excl* Table
- *tn aging* Table

It is recommended that updates to assignment tables be done prior to assignment of any circuits in the TO WC of an area transfer. Caution must be taken when changing reference data values after assignments have been made. The change in reference data values *will not* cause retroactive action to be taken on area transfer circuits which have *already* been

processed. Those circuits affected by a table change should be canceled from assignment and reassigned.

17.3 Area Transfer Establishment

Once the SWITCH system database is prepared and establishment of an area transfer in the SWITCH system database is desired, the SET ATR Work Session should be run in the FROM wire center. SET ATR will invoke a WSIATR immediate contract to retrieve order-related data from the DLBB (e.g., order-specific reference data values). The screen data, along with additional user input, will be utilized to build a PREATR contract for deferred execution in the FROM wire center of the area transfer. This contract will establish an area transfer work order in the FROM wire center and chain to a TO PREATR contract which will establish the transfer in the TO wire center. The SET ATR work session may not be run against the TO WC. All establishment activities in the TO WC are accomplished via TO WC PREATR contracts that are chained from the FROM WC.

Once an area transfer work order has been established, additional SET ATR work sessions may be executed to change the scope of the area transfer, add new scopes to the area transfer, change the due date of the area transfer, re-establish items previously canceled from the transfer, or to resend establishment contracts to the TO wire center. The execution of subsequent SET ATR Work Sessions will retrieve existing database order data in the FROM wire center.

17.3.1 Scope Criteria

Each PREATR contract for the FROM wire center contains primary key and filter information that define the scope of the area transfer within the wire center. Each PREATR primary key/filter combination is termed a "PREATR Scope Criterion." Several Scope Criteria may be established within the processing of one PREATR contract. A list of this Scope Criteria data is saved in the SWITCH system database. It defines the *entire Scope* by which the area transfer must process. An individual Scope Criterion consists of the primary key and associated filters. On receipt of the initial PREATR contract in the FROM WC, the PREATR Contract Processor will determine the circuits that should be included in the area transfer. It will check that the circuits are working for the Due Date time view, meet any one of the Scope Criteria, and are associated with the input FROM IC (switched circuits only). For non-administrative transfers, the PREATR contract processor in the FROM WC will automatically filter out test circuits, which can be identified by a circuit usage value of "ts". ISDN circuits also are automatically filtered out if the FROM and TO IC types are different. The PREATR Contract Processor will establish the area transfer work order in the FROM WC, and generate a PREATR contract for the TO wire center. Because the circuits in the transfer have already been determined by processing the scope criteria for the FROM WC, the TO PREATR contract will not contain scope criteria.

Instead, it will list the circuits and groups to be included in the transfer. When the TO PREATR contract is processed in the TO wire center, the PREATR Contract Processor will create an area transfer work order containing the circuits and groups specified in the contract.

On completion of PREATR contract processing, notifiers are returned to DCOR stating the actual number of circuits established in the area transfer order in both the FROM and TO wire centers. Establishment planning messages (PREPWO) will be sent to FOMS for non-administrative transfers.

The user may establish the entire scope of the area transfer up front (using one Scope Criterion or many Scope Criteria) before any assignments are processed or add new Scope Criteria at any time after assignment has begun. A ULBB restriction of 20 Scope Criteria will be permitted for one area transfer order.

17.3.2 Set Up Area Transfer (PREATR Contract)

The PREATR establishment contract will contain the following data. Optional data items are noted; all other data items are required. Unless stated otherwise, these data items appear in the PREATR contracts for both the FROM and TO wire centers.

- Transfer order identification.
- Transfer due date.
- Originating wire center.
- Due date change flag (optional). This flag will be present if the due date of the transfer has been changed.
- Deferred order identification - the area transfer order identification.
- Identification of the FROM and TO IC (required except for a due date change which will not include this information).
- Identification of the FROM and TO wire centers (required except for a due date change which will not include this information).
- Resend flag (not present in TO PREATR; optional in FROM PREATR, but will not be present for due date change). This flag will be present if establishment contracts are to be resent to the TO wire center.
- AIC reference data parameter from the *wo order control* table (required except for a due date change which will not include this information).
- Scope of the transfer (not present in TO PREATR; required in FROM PREATR except for a due date change which will not include this information). Up to 20 scopes may be specified. Each scope consists of a primary key that may be used to find circuits and groups that belong in the transfer plus optional filter criteria that may be

used to include or exclude circuits and groups. The primary key must be one of the following:

— An indicator to transfer the entire IC.

— An indicator to transfer all circuits in a remote.

— A single network unit or one or more network unit ranges. Allowable network unit types for area transfers are cable pairs, telephone numbers, and switchports. The ID values may be a valid network unit ID, a masked ID, or an asterisk. An asterisk is used to indicate that all IDs for that network unit type should be processed. A masked ID consists of question marks as one or more characters in the ID. For cable pairs, only the pair numbers may be masked. For telephone numbers, only the line numbers may be masked.

— One or more CKIDs (circuit identification).

— A single group ID or a range of groups. Group type may be SCH (series completion hunt), HML (multi-line hunt), CTX (Centrex), or SFG (simulated/ virtual facility group).

— One or more local telephone number exchanges (NPANXX).

Filter criteria are optional. They provide a way to include or exclude circuits or groups that are picked up as part the scope based on the primary key that was input for that scope. One or more optional filter criteria may be specified for each scope.

— Exchange of local telephone number (if primary key is not NPANXX) - include or exclude the specified exchanges.

— Type of service - include or exclude circuits with the specified types of service.

— Class of service - include or exclude circuits with the specified classes of service.

— Category of service - include or exclude circuits with the specified categories of service. If the FROM and TO ICs are different types, circuits with a category of "I" (ISDN) may not be included. These circuits will be automatically excluded by SWITCH system area transfer processing.

— Central office termination - include or exclude circuits with the specified central office termination values. This may be used to filter on switched and non-switched circuits.

— WATS band - include or exclude circuits with the specified WATS bands.

— Cable - include or exclude circuits for the specified cables. When the primary key is a cable pair or range of cable pairs, cable may not be a filter.

— Frame - include or exclude circuits for the specified frame.

— Administration of designed services review - include or exclude ADSR circuits.

— Directionality - include or exclude circuits with the specified directionalities.

— Assignment category - include or exclude circuits with the specified assignment categories. This filter will not be present if any of the following filters are present in the contract: category of service, class of service, central office termination.

— Network unit type - include or exclude circuits that contain the specified network unit type.

— Group type and ID - include or exclude the specified groups. When the primary key is a group or range of groups, group type and ID may not be a filter.

Note: The data items that define an area transfer scope are the same as those for dial transfers with the following exceptions. Area transfers will support entry of multiple network unit ranges or CKIDs per scope; dial transfers do not. Area transfers will support central office termination as a filter; dial transfers do not. Area transfers will support filtering on network unit type ME when establishing an area transfer; dial transfers do not support network unit type filtering on establishment.

- Ranges of cable pairs in the TO wire center (not present in FROM PREATR; optional in TO PREATR but not present for due date change). For each scope in the FROM PREATR where the primary key is a FROM cable pair or cable pair range, if the work order control parameter CPM (cable pair mapping) is set to "Y", the network unit mapping tables will be accessed to obtain the corresponding TO network unit IDs for the low and high values of each range. If CPM is set to "N", the FROM ranges will be placed in the TO contract.
- A list of the circuits and groups involved in the transfer (not present in FROM PREATR; required in TO PREATR but not present for due date change).

17.4 Area Transfer Automatic Establishment

The PREATR contract also will be used to provide an automatic establishment capability. An automatic establishment PREATR contract will be created upon execution of an AUTO ATR work session in the FROM wire center. The AUTO ATR work session must be run in the FROM WC of the area transfer; it may not be run in the TO WC. The automatic establishment PREATR will be used to find the circuits and groups that fall within the scope of the transfer and were added to the database after initial establishment of the transfer. The AUTO ATR work session may be scheduled to run periodically at a specified time interval.

On receipt of a PREATR contract for automatic establishment, SWITCH system area transfer processing will reprocess the scopes to find circuits and groups that should be added to the transfer. The automatic establishment PREATR contract will add the circuits and groups to the area transfer work order in the FROM wire center. Once the circuits and groups have been successfully established in the FROM wire center, SWITCH system area

transfer processing will create PREATR contracts to add the circuits and groups to the area transfer work orders in the TO wire center. If the ADA (automatic dial transfer assignment) parameter in the *wo order control* table is set to "Y", the PREATR contract in the FROM wire center will chain to an ASGATR contract which will assign the circuits and groups. This ASGATR contract in turn will chain to ASGATR contracts for the TO wire center as described in the following section. On completion of PREATR contract processing, notifiers are returned to DCOR stating the actual number of circuits established in the area transfer order in both the FROM and TO wire centers. Establishment planning messages (PREPWO) will be sent to FOMS for non-administrative transfers.

17.5 Area Transfer Assignment

Area transfer assignments are performed using the ASG ATR work session. The ASG ATR work session must be run in the FROM WC of the area transfer; it may not be run in the TO WC. Once the area transfer has been established, all circuits or a subset of the established circuits may be assigned in the SWITCH system database. The user may dictate assignment processing by entering any one of the Primary Keys and several (or none) of the Filter Criteria keys listed in the area transfer Establishment section. Additional Filter Criteria are available as input during assignment. In the ASG ATR Work Session, the WSIATR immediate contract will retrieve order-related data from the DLBB. The retrieved data, along with the user input, will be utilized to build an ASGATR contract for deferred execution in the FROM WC of the area transfer. This contract will assign the area transfer work order in the FROM wire center and chain to a TO PREATR contract which will assign the transfer in the TO wire center.

17.5.1 FROM WC Assignment

The user may direct the ASGATR contract Processor to assign *all* established items in the area transfer. However, if that is not desirable, the ASGATR contract may be processed using equipment-associated and circuit-associated filtering. This filtering will limit assignments to a subset of the circuits already existing in the area transfer. It is assumed that eventually (i.e., before the area transfer cutover) all non-canceled (i.e., not "Canceled from Transfer") circuits in the area transfer will be assigned. A FROM ASGATR contract will be created upon execution of a ASG ATR work session in the FROM wire center. The contract will include the following data items.

- Transfer order identification.
- Transfer due date.
- Identification of the FROM and TO ICs.
- Identification of the FROM and TO wire centers.

- DIP Creation flag. This flag will be set to "Y" (yes) to indicate that DIPs are to be created on disconnect in the FROM wire center. If set to "N" (no), DIPs will not be created.
- Set Assignment Limit flags for switchports and tie pairs (optional). These flags will be set to "Y" (yes) to indicate that an assignment limitation should be set on switchports and tie pairs on disconnect in the FROM wire center. If set to "N" (no) or if not present, assignment limits will not be set.
- Transfer of calls (TC) flag. Indicates if telephone numbers are to be marked with intercept status DTC (disconnect transfer calls) on disconnect in the FROM wire center. This flag should be set to "Y" (yes) if the telephone numbers are being changed and the MARCH system will be used to update the IC with the intercept information. If the numbers are not changing or if the MARCH system will not be used to set the intercept status in the IC, this flag should be set to "N" (no).

  If the client specific TN Suppression feature is activated for the wire center, this data item does not apply.
- Transfer Call Period (TCP) (optional). This is the date that should be used as the transfer of call period for the disconnecting telephone numbers.

  If the client specific TN Suppression feature is activated for the wire center, this data item does not apply.
- Load group exclusion (optional). This is load group value to be used for selection of OE type switchports in the TO wire center.
- Resend flag (optional). This flag will be present if assignment contracts are to be resent to the TO wire center.
- Send Frame Output flags for FROM and TO wire centers. These flags will be used to override the default values in the *wo order control* table.
- A primary key that identifies the circuits to be assigned. The primary key may be one of the following:
  - — A flag indicating that all circuits on the order should be assigned.
  - — A single network unit or network unit range. Allowable network unit types for area transfers are cable pairs, telephone numbers, and switchports. The ID values may be a valid network unit ID, a masked ID, or an asterisk. An asterisk is used to indicate that all IDs for that network unit type should be processed. A masked ID consists of question marks as one or more characters in the ID. For cable pairs, only the pair numbers may be masked. For telephone numbers, only the line numbers may be masked.
  - — One or more CKIDs (circuit identification).

— A single group ID or a group range. Group type may be SCH (series completion hunt), HML (multi-line hunt), CTX (Centrex), or SFG (simulated/virtual facility group).

The ASGATR contract may also include optional filter criteria that may be used to include or exclude circuits from assignment. The filter criteria are the same as those defined for the PREATR contract except for WATS band plus the following additional filters that may be used for ASGATR:

— Line count.

— Grade of Service.

— Essential Service Line Indicator.

— Central Office Administrative Type.

— Manual Circuit Indicator.

— Primary Interexchange Carrier.

— Custom Calling Features.

— Complex Circuit.

— Service Indicator.

— Telecommunications Service Priority circuits.

On receipt of a FROM ASGATR contract, SWITCH system area transfer processing in the FROM wire center will determine the circuits and groups to be assigned. If the resend flag is not set, area transfer processing will call the assignment engine to create pending disconnects for these circuits and groups:

- An intercept value and aging date must be set for the numbers that are being disconnected in the FROM WC. If TCP is present in the assignment contract, this value will be used to calculate the TN aging date. If TCP is not present in the contract, aging date will be calculating according to the rules specified in the *tn aging* table. If TC is set to "Y" (yes) in the contract, the intercept value for the disconnecting telephone numbers in the FROM wire center will be set to "DTC" (disconnect transfer calls). If TC is "N" or is not present, the disconnecting telephone numbers will be marked in the SWITCH database with intercept status "DNT" (disconnect do no transfer calls).

  If the client specific TN Suppression feature is activated for the wire center, this telephone number intercept value/aging calculation processing does not occur.

- If DIP creation flag is set to "Y", DIPs will be created using the rules specified in the *dip definition* table. If DIP creation flag is set to "N", DIPs will not be created.

- If the Set Assignment Limits flag is "Y" for switchports and/or tie pairs, assignment limits will be set on switchports and/or tie pairs on disconnect of the circuits in the FROM wire center. The assignment limit type will be RST and the value will be ATR.

Area transfer processing will not assign:

- Multi-leg circuits where all legs are not in the transfer.
- CO bridged party where all parties are not in the transfer.

These circuits will error in the FROM wire center. The circuits should be canceled from the transfer, and service orders or company initiated orders should be used to transfer these circuits.

For non-administrative transfers, assignment planning messages (PREPWO contracts) will be sent to FOMS. If the SFO parameter is set to "Y" or if frame output has previously been sent, assignment messages (PREWO contracts) also will be sent to FOMS. FOMS messages will not be generated for administrative area transfers. ASGATR contracts will be automatically created and sent to the TO wire center for circuits and groups that have been successfully "assigned" as the result of the current FROM wire center assignment processing.

If the resend flag is set in the FROM ASGATR contract, the FROM wire center assignment processing described above (i.e., disconnect processing for circuits and groups) will not be done. ASGATR contracts will be automatically created and sent to the TO wire center for all circuits and groups that had been previously assigned. The assignment contracts that are created by the FROM WC contract processor will contain the information necessary to assign the circuits and groups in the TO wire center. A single ASGATR contract for the FROM wire center may result in multiple ASGATR contracts for the TO wire center. Because of the large number of circuits that may be involved in an area transfer, multiple TO ASGATR contracts will be created if there are too many circuits for a single contract.

17.5.2 TO WC Assignment

Assignment contracts for the TO WC will be created by the ASGATR contract processor in the FROM WC. Each TO ASGATR contract will contain the transfer order identification and a list of the circuits and groups to be assigned in the TO wire center. For each group, the ASGATR contract will contain the group identification, group action (build), identification of network units associated with the group (i.e., telephone numbers, telephone line identifiers, screening line equipment), and translations data. If the transfer is administrative, the translations data will be the same in the TO WC as in the FROM WC. If the transfer is not administrative, translations transformation tables will be accessed to transform the FROM group translations to the tags and values that should be used in the TO wire center. If the group contains any manual translations tags, an exception will be output identifying the tag and value in error and the group ID. When this group is processed in the TO wire center, an exception will be output indicating that the group has translations

transformation errors. This exception will not prevent assignment in the TO wire center but will block completion of the group. The user is required to correct the translations error using the COR TTR work session once the group has been assigned in the TO WC.

The following list describes the information that will be in the TO ASGATR contract for each circuit and how that information is determined.

- Service action will be set to "ADD".
- Identification of the circuit (i.e., primary service) and identification for each secondary service will be obtained from the FROM WC. If the *wo order control* parameter TNM (telephone number mapping) is set to "N", all circuit and service IDs will be the same in the FROM and TO wire centers. If telephone number mapping is set to "yes" for an area transfer, some of the circuit and service IDs that contain telephone number data will be different in the TO WC.

  When a circuit ID or service ID is parsed, the parser will identify one or more dialects for the ID.[7] IDs that are dialect CLS, SIT, SITd, CKT or TSPD will be the same in the TO wire center as in the FROM wire center. IDs that are dialect TLI, TLId, TN, DTN, NHN, KPI, SPI, MADN, SPTN, or PNTR will be different in the TO wire center. IDs that are dialect CLT will be different unless they also have a derived dialect of SITd. If a CLT has a derived dialect of SITd, the circuit identification in the TO WC will be the same as in the FROM wire center.

  For each ID with dialect TLI, TLId, TN, DTN, NHN, KPI, SPI, MADN, SPTN, PNTR, or CLT (without SITd), work order processing will attempt to find the NPA, NXX, and line numbers from the ID in the appropriate network unit mapping table. If the dialect is DTN, the mapping table instance for telephone number type DTN will be used. If the dialect is TLI, TLId, TN, NHN, KPI, SPI, MADN, SPTN, PNTR, or CLT (without SITd), the mapping table instance for telephone number type TN will be used. If a match is found, the FROM WC values will be replaced with the TO NPA, NXX, and line number from the table. The other parts of the ID will remain the same. If a match is not found, the circuit will error.

- The following service attributes contain telephone number data: service identifier (SVID) and logical terminal for secondary services (LOGT). SVID contains circuit identification which may include a telephone number. LOGT may contain a PN (primary number), SPID (service profile identifier), or a DTN (data telephone number). If the *wo order control* parameter TNM (telephone number mapping) is set to "N", the values of the SVID and LOGT attributes will be the same as in the FROM wire center. If TNM is set to "Y", the values of these attributes will parsed to obtain the TN elements of these attributes (i.e., the NPA, NXX, and line numbers), and network unit mapping tables will be accessed to obtain the NPA, NXX, and line

7. A description of circuit IDs and service IDs and the associated dialects may be found in Section 6 of this document

numbers that should replace the FROM WC values. The other parts of the attributes will remain the same.

— If the SVID contains a circuit ID that is dialect TN, NHN, CLT, KPI, SPI, MADN, SPTN or PNTR, the TN mapping table will be accessed. If the SVID contains a circuit ID that is dialect TLI, the service modifier obtained from parsing the SVID is used to determine which mapping table to access. If the service modifier is PTLI, the network unit mapping table for DTNs will be accessed to obtain the NPA, NXX, and line numbers that should replace the FROM WC values. If the service modifier is not PTLI, the TN mapping table will be accessed.

— If the LOGT contains an SPID, mapping tables will not be accessed. The FROM WC SPID will be included in the TO WC contract. If the LOGT contains a PN, the TN mapping table will be accessed to obtain the NPA, NXX and line numbers that should be in the LOGT for the TO WC. If the LOGT contains a DTN, the DTN mapping table will be accessed.

- The following circuit and service attributes will keep the same values as in the FROM WC: remark, service indicator, deny flag, circuit usage, telecommunications service priority, party position, B channel assignment for secondary services, and manual indicator. If the transfer is not administrative and a circuit is marked in the database with a manual indicator, the following exception information also will be included in the contract: the logid for the exception, exception type error, manual assistance trigger, value of manual indicator. When this circuit is processed in the TO wire center, assignments will not be made. The COR WO work session should be used to either change the circuit to non-constrained (automatic assignment set to "on") or to pre-assign the network units and connectivity for the circuit as appropriate for the manual indicator value.

- The following design attributes will keep the same values as in the FROM WC: number of conductors, grade of service, class of service, type of service, category of service, central office termination, quality, essential, signaling, pulsing, digital data rate, estimated CCS load, estimated PPS load, administration of designed services review, directionality, central office administrative type, service descriptor, B1 channel service, B2 channel service, D channel service, maximum number of terminals, maximum number of D channel packet users, on demand B channel packet users, on demand B channel packet band level for ISDN pipe, on demand B channel packet band level for ISDN service, bearer capability name, WATS band, assignable line USOC (Universal Service Order Code), class of service USOC.

- If the transfer is administrative, the translations data for the circuit will be the same in the TO WC as in the FROM WC. If the transfer is not administrative, the translations data for the circuit will be obtained from translations transformation tables in reference data. If the circuit contains any manual translations tags, an exception will be output identifying the tag and value in error and the FROM circuit ID. When this circuit is processed in the TO wire center, an exception will be output indicating that the circuit

has translations transformation errors. This exception will not prevent circuit assignment in the TO wire center but will block circuit completion. The user is required to correct the translations error using the COR TTR work session once the circuit has been assigned in the "to WC.

- Telephone numbers for an area transfer must be pre-assigned in the ASGATR contract. If the *wo order control flag* TNM (telephone number mapping) is set to "N" (no), the telephone numbers in the FROM WC will be placed in the assignment contract for the TO WC. If the *wo order control flag* TNM (telephone number mapping) is set to "Y" (yes), the TO telephone numbers will be obtained from the TN and DTN network unit mapping table instances in reference data. If TNM is "Y" and a mapping is not found in the table, the circuit will error in the FROM wire center and the ASGATR contract will not include that circuit.
- Cable pairs for an area transfer must be pre-assigned in the ASGATR contract. If the *wo order control flag* CPM (cable pair mapping) is set to "N" (no), the cable pairs in the FROM WC and their resistance zone and carrier zone values will be placed in the assignment contract for the TO WC. If the *wo order control flag* CPM (cable pair mapping) is set to "Y" (yes), the TO cable pairs will be obtained from the CP network unit mapping table instance in reference data. The resistance zone and carrier zone values for the mapped cable pairs will be obtained from the *wo atr resistance zone* table. If CPM is "Y" and a TO CP mapping is not found in the CP mapping table, the circuit will error in the FROM wire center and the ASGATR contract will not include that circuit. If a cable pair mapping is found but the TO CP is not found in the *wo atr resistance zone* table, the circuit will error in the FROM wire center and the ASGATR contract will not include that circuit. The circuit also will error if a TO CP is found in the *wo atr resistance zone* table with both RZ and CZ information.
- Miscellaneous equipment is not automatically assignable by the SWITCH system. If a circuit contains miscellaneous equipment in the FROM wire center and the WO control flag MEM (miscellaneous equipment mapping) is set to "Y" (yes), the ME mapping table instance will be accessed to determine the network unit(s) to which it will be mapped in the TO wire center. If MEM is "Y" and no entry is found in the table for an ME or if MEM is "M", the following exception information will be placed in the contract: the logid for the exception, exception type error, manual assistance trigger, FROM circuit identification, type and ID of each network unit in error. When this circuit is processed in the TO wire center, assignments will not be made. An exception notifier will be output containing this information. The user may use the COR WO work session to pre-assign ME if needed or if ME is not required, the user may use the work session to reexecute the assignment contract and have the circuit automatically assigned without ME. If the MEM parameter is set to "N" (no), the FROM ME ID will be placed in the TO contract.
- If the transfer is not administrative, the WO parameter SPR (switchport range mapping) will be accessed to determine how the TO switchports should be assigned. If SPR is "N", switchports will be assigned automatically by SWITCH system

assignment engine processing when the ASGATR contract is processed in the TO wire center. If a load group exclusion was specified in the FROM ASGATR contract, the load group exclusion will be included in the TO ASGATR contract for each circuit that contains an OE type switchport in the FROM WC. This will steer switchport assignment in the TO WC to the specified load group.[8]

If SPR is "Y", the TO switchport IDs will be obtained from the switchport network unit mapping table instance in reference data. If a mapping is not found in the table, the circuit will error in the FROM wire center and the ASGATR contract will not include that circuit. If a mapping is found, the TO switchport ID will be obtained from the table and placed in the ASGATR contract. If the TO ID for an OE type switchport is a "?" and a load group exclusion was specified in the FROM ASGATR contract, the load group exclusion will be included in the TO ASGATR contract.

If the transfer is administrative, the switchport IDs in the FROM wire center will be included in the ASGATR contract. If the administrative transfer involves a name change for the IC or is re-hosting a remote unit, the parts of the switchport IDs that reflect the IC or host identification will be changed to the new name.

- If the transfer is not administrative, other network units (e.g., bridge lifters, tie pairs) for the circuits in the TO wire center will be assigned automatically by SWITCH system assignment engine processing when the ASGATR contract is processed in the TO wire center.

  If the transfer is administrative, the IDs for all the other network units (e.g., bridge lifters, tie pairs) in the FROM wire center will be included in the ASGATR contract. Network unit connectivity also will be included for these network units as well as for switchports, cable pairs, and miscellaneous equipment. If the administrative transfer involves a name change for the IC or is re-hosting a remote unit and the circuit contains ICE network units, the parts of the ICE IDs that reflect the IC or host identification will be changed to the new name.

- If the transfer is administrative, remarks associated with pre-assigned network units will be included in the contract. Network unit remarks will not be put in the contract for non-administrative area transfers.

- "Historical" data needed for Bulk Extraction (TAGTMART) will be included for each circuit listed in the ASGATR contract. The TAGTMART extract for NSDB will be pulled from the data in the TO wire center. NSDB needs the circuit and service identification from both the FROM and TO wire centers. The FROM circuit and service IDs for each circuit will be passed as historical data in the TO ASGATR contract to support TAGTMART processing in the TO WC.

8. See Section 16.4.5.1 of this for a discussion of load group exclusion processing for dial transfers. This same processing is done for switchport assignment for area transfers.

On receipt of an assignment contract in the TO wire center, SWITCH system area transfer processing will attempt to assign each circuit and group in the contract that does not have a manual assistance trigger. Area transfer processing will call the assignment engine to create pending New Connects for these circuits and groups. For circuits and groups with manual assistance triggers, assignment processing will not be attempted. The circuit or group will be marked in error and an appropriate notifier will be output.

The assignment engine must use all pre-assigned network units from the ASGATR contract. For administrative transfers, all circuit components and their connectivity will be pre-assigned. For non-administrative transfers, the assignment engine will determine the required circuit components, attempt to use pre-assigned network units, assign additional network units as needed, and do circuit connectivity. If pre-assigned network units cannot be used, or the assignment engine cannot assign additional network units or do circuit connectivity, the circuit will error. For circuits and groups that have advisory, warning, or error type exception conditions in the ASGATR contract, an appropriate notifier will be output containing these exception conditions as well as any other exceptions encountered during assignment processing.

For non-administrative transfers, assignment planning messages (PREPWO contracts) will be sent to FOMS. If the SFO parameter is set to "Y" or if frame output has previously been sent, assignment messages (PREWO contracts) also will be sent to FOMS. For circuits and groups that are successfully assigned and have no translations errors, TRM messages will be generated if TRM has been previously output for the circuit or if the STD parameter is set to "Y". FOMS messages and TRM will not be generated for administrative area transfers.

17.6 Due Date Change Processing

As discussed previously in Section 17.3, the PREATR contract will support a change to the area transfer due date. When a PREATR contract for a due date change is received in the FROM WC, work order processing in the FROM WC will chain to a PREATR due date change contract for the TO WC. The processing of a due date change contract differs between the FROM and TO wire centers.

17.6.1 FROM WC Due Date Change

In the FROM WC, all circuits in the transfer will be re-evaluated relative to the new due date. Work order processing will determine if the circuits should remain in the transfer at the new due date. If any circuits do not exist at the new date or do not contain the network unit that originally caused the circuit to be included in the transfer, these circuits will be canceled from the transfer in the FROM WC, and CANATR contracts will be chained to the TO WC. For assigned circuits, due date change processing will re-assign a circuit if the date change causes a transfer circuit to move before or after another pending order.

ASGATR contracts will be chained to the TO wire center for all assigned circuits in the FROM WC even those for which assignments were unchanged. If the due date change fails in the FROM WC for one or more circuits, a CANATR contract will be sent to the TO WC to cancel the chained due date change contract that had been previously sent. For non-administrative transfers, establishment and assignment planning messages (PREPWO contracts) will be sent to FOMS. If the SFO parameter is set to "Y" or if frame output has previously been sent, assignment messages (PREWO contracts) also will be sent to FOMS for assigned circuits. FOMS messages will not be generated for administrative area transfers.

17.6.2 TO WC Due Date Change

When a chained PREATR due date change contract is received in the TO WC, work order processing will position all the circuits in the TO WC at the new due date. If the circuit will "slide" unchanged to the new date it will remain assigned, but if the assignment is not valid at the new date, the PREATR contract processor will not re-assign the circuits. Instead these circuits will be canceled from assignment with the assignment data "saved. These TO WC circuits will be either re-assigned at the new date or canceled when the chained ASGATR and CANATR contracts are received in the TO WC. Sections 17.5 and 17.10 of this document describe the ASGATR and CANATR contracts respectively.

17.7 Rework of ATR Establishment/Assignments

All circuits established in an area transfer will *pend* in the SWITCH system database. The pending time view will be the area transfer Cutover Date. In the FROM WC, the pending view will be a Disconnect of each transferring circuit and group. In the TO WC, the pending view will be a New Connect of each transferring circuit and group.

While an area transfer work order is pending, service order and work order activity in the FROM wire center may add, change, or delete circuits and groups in the scope of the transfer. Service order and work order activity in the TO wire center may attempt to use network units assigned to circuits that are pending connect for the area transfer.

17.7.1 FROM WC Rework

SWITCH system rework processing in the FROM WC will automatically update circuits and groups in the area transfer that are changed or disconnected as the result of service order or work order activity. However, if the circuits or groups already have been completed in the TO WC, rework will be blocked and the service order or work order will error. If the circuits or groups have not been completed in the TO WC, rework processing will update the area transfer to reflect the service order or work order activity. If the circuits or groups

are disconnected, they will be canceled from the transfer in the FROM WC, and a cancellation contract will be chained to the TO WC to cancel the circuits or groups in the TO WC. If a service order or work order changes circuits or groups in the FROM WC of an area transfer, rework processing in the FROM WC will re-establish or re-assign the circuit or group based on its current status in the area transfer work order and will create the appropriate establishment or assignment contracts to update the TO wire center. If rework processing results in changes to cable pairs, telephone numbers or miscellaneous equipment for a circuit in the transfer, assignment processing of the transfer circuit will error if network unit mapping is required for that type of network unit and the mapping tables have not been updated to reflect these changes. For non-administrative transfers, establishment and assignment planning messages (PREPWO contracts) will be sent to FOMS. If the SFO parameter is set to "Y" or if frame output has previously been sent, assignment messages (PREWO contracts) also will be sent to FOMS for assigned circuits. FOMS messages will not be generated for administrative area transfers.

17.7.2 TO WC Rework

If a service order or work order in the TO wire center uses network units assigned to circuits that are pending connect for the area transfer, rework processing in the TO WC will attempt to re-assign the circuit based on the information from the last ASGATR contract. Updates made as the result of corrections from ULBB work sessions COR WO and COR TTR will not be retained. If a service order or work order has taken one of the network units assigned by the assignment engine for that circuit, rework processing will attempt to re-assign the area transfer circuit. If new network units cannot be assigned, the area transfer circuit will error. If a service order or work order has taken one of the network units pre-assigned for that circuit in the ASGATR contract, the area transfer circuit will error. If the transfer is administrative, a warning message also will be issued against the service order or work order that caused the transfer circuit to be reworked. In response to this warning, the user should change the assignments for the service order or work order so that the order does not use network units that belong to the transfer circuit. The transfer circuit should then be re-assigned either by resending the assignments via the ASG ATR work session in the FROM WC or by re-executing the assignments via the COR WO work session in the TO WC. For non-administrative transfers, establishment and assignment planning messages (PREPWO contracts) will be sent to FOMS. If the SFO parameter is set to "Y" or if frame output has previously been sent, assignment messages (PREWO contracts) also will be sent to FOMS for assigned circuits. For circuits and groups that are successfully assigned and have no translations errors, TRM messages will be generated if TRM has been previously output for the circuit or if the STD parameter is set to "Y". FOMS messages and TRM will not be generated for administrative area transfers.

17.8 Area Transfer Corrections

17.8.1 Correction of Assignments (CORATR Contract)

The COR WO work session may be used to correct assignments for an individual circuit in the TO WC of a non-administrative area transfer. Corrections are not supported for administrative area transfers or for the FROM WC. Two types of corrections will be supported for area transfers: assignment resolution and assignment change. Assignment resolution is used to correct circuits that are at error and have not yet been assigned. Assignment change is used to correct pending assignments for circuits that have been already assigned. COR WO will provide the following capabilities for area transfer circuits:

- The work session may be used to specify circuit remarks.
- For circuits at error, the work session may be used to reexecute the previous assignment (ASGATR) contract.
- For circuits at error, the work session may be used to change pre-assigned network units (except for telephone numbers and cable pairs) and to change connectivity from the previous assignment (ASGATR) contract.
- For circuits at error, the work session may be used to enter selection criteria to drive automatic assignment of network units and to pre-assign network units except for telephone numbers and cable pairs (non-constrained assignment). The assignment engine will pick any additional network units that are required and determine connectivity for the circuit. The work session may also be used to do constrained assignment. For totally constrained assignment, all network units and their connectivity must be specified. For partially constrained assignment, all network units, except for tie pairs, and their connectivity must be specified.
- For assigned circuits that contain a single primary service, the work session may be used to change network unit assignments (except for telephone numbers and cable pairs) and to change connectivity. Non-constrained, partially constrained, and totally constrained assignment changes will be supported.

  Assignment changes will not be supported for circuits with multiple primary services, that is circuits with multiple party services and circuits with suspended service either with or without sublet service. Several methods may be used to change a network unit assignment for an area transfer circuit with multiple primary services. If the user would like the assignment engine to pick a different network unit, inventory work sessions may be used to mark the assigned network unit with an assignment limitation of "withheld" which makes the network unit unassignable. This will cause rework of the area transfer circuit that contains the network unit, and the assignment engine will pick another network unit to replace it. The advantage to this method is that the assignment engine will reuse all the other assigned network units if possible. If the

user would like to replace the assigned network unit with a specific network unit, the circuit should be canceled from assignment, and the replacement network unit should be pre-assigned using the resolve assignment functionality in the COR WO work session.

- The work session supports entry of the STD (send translations data) parameter.
- The work session supports entry of the SFO (send frame output) parameter.

The work session will not support changes to circuit identification, service identification, telephone numbers, cable pairs, circuit attributes, design data, or the number of primary and secondary services associated with a circuit. This is consistent with COR WO processing for other types of work orders.

The WSIWO immediate contract is the work session initialization contract for the COR WO work session. For area transfers, the WSIWO contract processor will retrieve assignment data from the DLBB for the specified circuit. For assignment resolution, WSIWO will retrieve the assignment data from the last ASGATR contract. For assignment correction, WSIWO will retrieve the pending assignments for the circuit. On execution of the work session, the COR WO work session will send a deferred CORATR contract with the user specified assignment updates to the DLBB.

On receipt of a CORATR contract to correct assignments, work order processing will call the assignment engine to apply the user updates to the pending view of the circuit. On receipt of a CORATR contract to resolve assignments, work order processing will pass to the assignment engine the network units and connectivity pre-assigned by the user plus the circuit and service data from the last ASGATR contract for that circuit. This information will be used to create a pending New connect circuit. Assignment planning messages (PREPWO contracts) will be sent to FOMS. If the SFO parameter is set to "Y" or if frame output has previously been sent, assignment messages (PREWO contracts) also will be sent to FOMS. For circuits and groups that are successfully assigned and have no translations errors, TRM messages will be generated if TRM has been previously output for the circuit or if the STD parameter is set to "Y".

17.8.2 Correction of Translations (CORTTR Contract)

The COR TTR work session may be used to correct translation data for a circuit or group (HML, SCH, SFG) assigned in the TO wire center for a non-administrative area transfer. Corrections are not supported for administrative area transfers or for the FROM WC. This work session will not support changes to group identification, telephone line identifiers, screening telephone numbers or screening line equipment for groups.

When a circuit or group is involved in a non-administrative area transfer, it will go through a Translation Transformation Process. This process will map translation tags and values for circuits and groups in the FROM IC to the equivalent translation tags and values in the TO IC. If the transformation process detects translation errors (e.g., no entry in

transformation table for translation tag) or translation tags are marked as manual, a notifier is generated. In addition, whenever a translation error is detected, a TRMERR tag will be added to the circuit or group and its value will be the tag which caused the transformation error. Likewise, whenever a manual transformation is detected, a TRMMA tag will be added to the circuit or group and its value will be the tag which requires manual transformation. The user should then invoke the COR TTR work session to correct those errors and/or input translation data for the manual tags. During the correction process, the user should remove any TRMERR and/or TRMMA tag(s) from the circuit or group. All of the tags must be removed in order for the translations to be sent to MAS. If the work session is to correct circuit translation data, translation data for ALL of the services (primary and secondary) existing in the circuit will be retrieved in the work session. Translation data can then be updated for any one of the services or all of the services. If the circuit belongs to a group or groups, only the id of the groups will be retrieved and displayed in the work session. Translation data corrections for the group(s) must be done via a separate COR TTR work session. The WSITTR immediate contract is the work session initialization contract for the COR TTR work session. For area transfers, the WSITTR contract processor will retrieve translations data from the DLBB. If the work session is to correct group translation data, translation data for that group will be retrieved and available for update. Circuits that belong to that group will NOT be retrieved in the work session. Any translation data corrections to those circuits must be done via a separate COR TTR work session. Upon executing the COR TTR work session, a CORTTR contract will be sent to the DLBB for deferred processing. If all of the TRMERR and TRMMA tags are not removed, then a warning message will be generated indicating that there are remaining error and/or manual transformation tags on the circuit or group. The user then has the option to remove the tags and correct any additional translations, or continue with the execution. If the process is continued, translations data will not be sent to MAS for the circuit or group, however any modifications made to the circuit or group will be updated in the database. TRM messages will be generated if all of the TRMERR and TRMMA tags are removed and TRM has been previously output for the circuit or the STD parameter is set to "Y".

17.9 Area Transfer Output

17.9.1 Area Transfer Inquiries and Reports

The INQ WO (Work Order Inquiry) work session will support inquiries on area transfer work orders. The inquiry will allow the user to view the work order in either the FROM or TO wire center.

An Area Transfer Report (RPT ATR) will provide status, network unit, circuit, audit, group, and translation information for circuits associated with the area transfer. It may be requested from either the FROM or TO wire center and will output data from both the FROM and TO wire centers. RPT ATR may be used to monitor the area transfer through

various stages of processing. In addition, it should be used to identify invalid conditions that will not be identified by work order area transfer processing. If the FROM IC of an area transfer is an Ericsson AXE™ Release 4.0 or earlier, the users should run RPT ATR to identify party circuits that are part of the transfer. These circuits should be canceled from the transfer, and the transfer scope should be updated to exclude these circuits. RPT ATR also should be used to identify Centrex and MADN groups for which all circuits in the group are not included in the transfer. The transfer should be updated to either include all circuits from the group or to take the group out of the transfer.

RPT ATR also may be used to identify simulated facility groups, multi-line hunt groups, and series completion hunt groups for which all circuits in the group are not included in the transfer. Unlike Centrex and MADN groups, work order completion processing will not allow these groups to be completed. However, since the condition will not be detected until completion, it is advisable to run RPT ATR to identify these groups prior to completion. The transfer should be updated to either include all circuits from the group or to take the group out of the transfer.

Prepare Telephone Numbers (PREP TN) is a report that will be used for telephone number assignment for area transfer work orders. The report will find the telephone numbers associated with the transfer circuits in the FROM wire center and determine the desired telephone numbers in the TO wire center. If the *wo order control* parameter TNM is "N", the desired telephone numbers are the same as in the FROM wire center. If the *wo order control* parameter TNM is "Y", the TN network unit mapping table will be accessed to determine the numbers to be used in the TO wire center. PREP TN will check the availability of desired telephone numbers in the TO wire center and optionally place a reservation assignment limitation on these numbers. The output will be a report identifying the telephone numbers that were not available in the TO wire center and numbers for which an assignment limitation has been set.

Requirements for INQ WO, RPT ATR, and PREP TN are provided in the SWITCH System ULBB Functional Product Specifications, BR 752-101-002.

17.9.2 FOMS

Frame output for an area transfer will be sent from the SWITCH system to FOMS using the standard work order interface for programmable orders. Administrative area transfers will not generate frame output. Non-administrative area transfer work orders will generate frame output separately for the FROM and TO wire centers.

17.9.2.1 Establishment Planning Message

The SWITCH system will send FOMS a PREPWO Frame Output Establishment Planning Message at the conclusion of the PREATR Establishment processing. This planning message will contain:

- General Header Information.
- Work Order Parameters:[9]
  - — Automatic Dial Transfer Assignment (ADA) parameter value from the *wo order control* table.
  - — Send Frame Output (SFO) parameter value. For the FROM WC, this will be the value of the SFO parameter in the *wo order control* table. For the TO WC, this will be the value of the SFT parameter in the *wo order control* table.
  - — Bulk Output Allowed (BOA) parameter value from the *wo order control* table. BOA will be present in TO WC messages but not in FROM WC messages.
  - — Send Output Simultaneously (SOS) parameter value.
  - — Ignore Frame output for Completions (IFC) parameter value from the *wo order control* table.
- Circuit Line Count.
- Designed Circuit Line Count.
- FROM and TO wire center names.
- FROM and TO IC ids.
- PREATR Scope Criteria for the FROM WC establishment messages. There are no Scope Criteria for the TO WC establishment messages. The TO WC messages may optionally contain the TO cable pair ranges.

17.9.2.2 Assignment Planning Message

The SWITCH system will send FOMS a PREPWO Frame Output Assignment Planning Message at the successful conclusion of ASGATR Assignment processing or CORATR Resolve Assignment processing. This Planning Message will contain:

- General Header Information.
- Assignment Date.
- Work Order Parameters:

9. See Section 17.2.4.2.2 of this document for a description of the work order parameters.

— Send Frame Output (SFO) parameter value. If the user specifies SFO via a ULBB work session, SFO will contain the user specified value. If the user does not specify SFO, the appropriate value from the *wo order control* table will be used. For the FROM WC, this will be the value of the SFO parameter. For the TO WC, this will be the value of the SFT parameter.

— Bulk Output Allowed (BOA) parameter value from the *wo order control* table. BOA will be present in TO WC messages but not in FROM WC messages.

— Send Output Simultaneously (SOS) parameter value.

— Ignore Frame output for Completions (IFC) parameter value from the *wo order control* table.

- Range of Item Numbers (Item numbers are associated with each assigned circuit).
- Circuit Line Count.
- Designed Circuit Line Count.
- FROM and TO wire center names.
- FROM and TO IC ids.
- Input Assignment Primary Keys and Filters. This information will be present in FROM WC messages but not in TO WC messages.

17.9.2.3 Assignment Message

Assignment messages contain SWITCH system assignment data needed by the frame work force. The SWITCH system will send FOMS a Frame Output (PREWO) message under the following circumstances:

- A REQWO contract requesting frame output is successfully processed. See Section 8.9 of this document for more information on REQWO.
- A RSDWO contract is successfully processed against circuits for which assignment messages were previously sent to FOMS. See Section 8.8 of this document for more information on RSDWO.
- A REQTRM contract requesting translations data is successfully processed, and the SOS parameter is set to "Y". See Section 8.10 of this document for more information on REQTRM.
- An ASGATR contract is successfully processed and the SFO parameter is set to "Y".
- An ASGATR contract, CORATR contract, or assignment rework activity is successfully processed for a circuit for which frame output has been previously sent to FOMS.

17.9.2.4 Cancellation Message

The SWITCH system will send FOMS a PREPWO Frame Output Establishment Planning Message at the conclusion of the CANATR Cancellation processing. A decrement in the Order Line Count will be reflected in the Establishment Planning Message for "Cancellation from Transfer." The SWITCH system will send FOMS a CANWO Frame Output Message for cancellations made to circuits for which Frame Output has previously been sent. The SWITCH system CANWO output contract will include the Item Number associated with each canceled circuit. Final "Cancellation from Transfer" will generate a CANWO output contract containing only header information but will not generate a FOMS PREPWO Frame Output Establishment Planning Message. The SWITCH system also will send FOMS a CANWO output contract when a RSDWO contract is successfully processed against circuits for which cancellation messages were previously sent to FOMS.

17.9.2.5 Completion Message

The SWITCH system will send FOMS a PCNWO Frame Output Message for completed circuits. For partial completion, the PCNWO contract will contain the Item Number of each completed circuit. The SWITCH system also will send FOMS a PCNWO output message when a RSDWO contract is successfully processed against circuits for which completion messages were previously sent to FOMS.

17.9.2.6 FOMS Frame Work Information Messages

FOMS will send the SWITCH system a Frame Work Information Message (PREFWI) when frame completion of an item has been processed. This information is maintained in the SWITCH system for reporting purposes only.

17.9.3 Translation Redundancy Management (TRM)

For an administrative area transfer, the working circuits remain on the same IC so there is no need to update the IC with translations data. For a non-administrative area transfer, the working circuits are moved to a different IC in another WC, therefore, both the FROM and TO ICs should be updated with the appropriate translations data for all switched circuits and all hunt groups involved in the transfer. The TO IC must receive build requests and translations data for these circuits and groups, and the FROM IC must disconnect these circuits and groups. The Translations Redundancy Management (TRM) Interface may be used to provide translations data to the FROM and TO ICs involved in an area transfer. The values in the wire center level *mas involvement* table will determine if translations data should be output for area transfer work orders. MAS involvement may be turned on for a

specific exchange key by entering a "y" (yes) in the column for contract type "atr". The default value for contract type "atr" is "n" (no).

17.9.3.1 FROM IC

If the FROM IC is being retired following the ATR, there is no need to send disconnect information to the FROM IC for these circuits and groups. However, if the FROM IC is *not* being retired, then the circuits and groups that are now working out of the TO IC must be disconnected in the FROM IC. In addition, if the area transfer changes the customers' telephone numbers, then the numbers must be put on intercept. For area transfers where telephone numbers are not changing, the numbers must be disconnected in the FROM IC but intercept is not required. On the cutover date, all calls coming in to that number will be routed to the TO IC. The TRM interface may be used to provide the FROM IC with the disconnect information and, based on a user specified option, with the intercept information. If the user sets "MAS involvement" to "no", TRM messages will not be sent for the FROM IC. If the user sets "MAS involvement" to "yes" but does not select the intercept option, TRM messages will be built with disconnect information only.

To prevent putting a customer out of service, the translations data for the FROM wire center cannot be sent until the circuits are completed in the TO wire center. As such, the *wo order control* parameters BOA, STD, and SOS will not be used for the FROM wire center of an area transfer, and processing based on these parameters will treat them as if they were set to "no". The user may specify an override for SOS via the REQ TRM and REQ FO work sessions. If the user specifies SOS=Y, output will be sent simultaneously provided that the circuits have been completed in the TO WC. If the circuits have not been completed in the TO WC, frame output may be sent but not TRM. The REQTRM contract will be used to request the TRM messages for the FROM wire center after the circuits have been completed in the TO wire center. The TRM messages for the FROM wire center will contain disconnects for the switched services in the FROM IC. Work order processing will not build TRM output for non-switched circuits, that is, circuits with COTE of "N" (non-switched) or "F" (foreign exchange). When requesting TRM for a large area transfer, all circuits should not be requested with a single REQTRM contract. Multiple REQTRM contracts should be staggered over time to control the release of recent change messages from the MARCH system to the IC.

17.9.3.2 TO IC

For the TO wire center, translations data may be provided to the TO IC through Bulk Translations Output and the Translations Redundancy Management interface. The *wo order control* parameters Bulk Output Allowed (BOA), Send translation data (STD), and Send Output Simultaneously (SOS) flags will control the translations output. If BOA is "Y" (yes), a Bulk Translations Output extract (TAGTMART) will be used to update the TO

IC with the translations for the circuits/groups being transferred. After the bulk output phase, BOA will be set to "N" and translations redundancy management (TRM) messages will be used to update the TO IC with changes made since the last extract was pulled. If bulk output is not used for an area transfer, all translations data will be sent in TRM messages.

The STD and SOS flags will determine when TRM messages should be sent for the TO IC. If STD is "Y" (yes), TRM will be sent automatically after assignment. If SOS is "Y" (yes), TRM will be sent whenever frame output is sent. If these flags are set to "N", TRM messages will only be sent when requested via a REQTRM contract. REQTRM may be initiated from the SWITCH system ULBB REQ TRM work session or from FUSA. Section 14.7 of this document describes Translations Redundancy Management processing for Area and Dial Transfers. Section 14.9 describes Bulk Translations Output.

17.9.4 Assignment Redundancy Management (ARM)

Assignment Redundancy Management (ARM) contracts are used to keep downstream systems up to date on assignment changes made by SWITCH system Work Orders. The ARM process was known as "Common Update." Some of the downstream systems, like LMOS and NSDB, require a notification for each service that has been modified. Most of the SWITCH system work order processing handles the completion of each circuit separately and generates ARM contracts to be sent immediately. Area transfers, however, usually do not complete until "Area Transfer cutover weekend" when all of the circuits in the transfer complete at once. This is too much load to be transmitted via SOAC. To handle the large number of circuits, a bulk ARM transfer tape, created via Bulk Translations Output, is prepared about a week before the cutover. This tape is sent, for example, to LMOS and used to prepare a batch update of the LMOS database. After cutover is successfully completed, the LMOS database is updated. Those circuits that were modified, added or canceled after the ARM tape was generated must be communicated to LMOS manually. See Section 14 for a more complete discussion of ARM processing.

17.9.5 TAGLMART

If an area transfer changes customers circuit identification, a TAGLMART extract should be used to update LFACS with the new circuit IDs for the transferring circuits. The TAGLMART extract *must* be run before the area transfer work order is completed in the TO wire center. This is necessary to ensure that LFACS receives the old circuit identification that will be used as a key to find the transferring loops in the LFACS database. The old circuit identification only exists as part of the ATR assignment data which was sent from the "FROM" wire center. This data will be removed when the ATR order is cleaned up at completion time.

See Section 18 for a more complete discussion of the TAGLMART extract.

17.10 Area Transfer Cancellation

Area transfer cancellations are performed using the RMV ATR Work Session. RMV ATR will invoke a WSIATR immediate contract to retrieve order-related data from the DLBB. The retrieved data, along with other user input, will be utilized to build a CANATR contract for deferred execution. The user may cancel any or all established or assigned circuits in the area transfer. Two types of cancellation will be supported - cancel from transfer and cancel from assignment. The user must specify the type of cancellation that applies for a particular RMV ATR work session. Cancel from transfer should be done against circuits that are to be removed from the area transfer.[10] Cancel from assignment should be done when the user wishes to cancel the current assignments but expects to subsequently re-assign the circuits. The RMV ATR work session may be executed from either the FROM or TO wire center. If a RMV ATR work session is executed in the FROM wire center, the CANATR contract will cancel the specified circuits in the FROM wire center and chain to a TO CANATR contract which will cancel the circuits in the TO wire center. If a RMV ATR work session is executed from the TO wire center, only the circuits in the TO wire center will be canceled. It is expected that the cancellations in the TO wire center will be assignment cancellations rather than transfer cancellations. Transfer cancellations would normally be executed from the FROM wire center to ensure that the transfer work order contains the same circuits in both wire centers. To protect against accidental cancel from transfer in the TO WC, a different command (CAN ATR) must be used to access a RMV ATR work session to perform a cancel from transfer in the TO WC.

If all circuits are being canceled from the transfer, the CANATR contract will contain the transfer order identification and due date. If all circuits are not being canceled or if the CANATR contract is intended to cancel circuits from assignment, the CANATR contract will include the following data items. Optional data items are noted; all other data items are required.

- Transfer order identification.
- Transfer due date.
- Deferred order identification - the area transfer order identification.
- Identification of the FROM and TO ICs.
- Identification of the FROM and TO wire centers.
- Resend flag (optional). This flag will be present if cancellation contracts are to be resent to the TO wire center. This flag will only appear in CANATR contracts generated by a RMV ATR work session in the FROM wire center.
- Type of cancellation - cancel from transfer or cancel from assignment.

10. Before a circuit is canceled from the transfer, it is *first* necessary to alter the PREATR Scope Criteria List. If this is not done, the circuit will be re-established in the transfer when the scope is re-processed in a subsequent PREATR contract generated as the result of a SET ATR or AUTO ATR work session.

- If the CANATR contract is created by SWITCH system area transfer processing in the FROM wire center (i.e., it is a chained contract), the contract will contain a list of the circuits and groups to be canceled in the TO wire center. If the CANATR contract is created by the RMV ATR work session, it will contain a primary key that identifies the circuits to be assigned and one or more optional filter criteria. The primary key may be one of the following:

  — A single network unit or network unit range. Allowable network unit types for area transfers are cable pairs, telephone numbers, and switchports. The ID values may be a valid network unit ID, a masked ID, or an asterisk. An asterisk is used to indicate that all IDs for that network unit type should be processed. A masked ID consists of question marks as one or more characters in the ID. For cable pairs, only the pair numbers may be masked. For telephone numbers, only the line numbers may be masked.

  — One or more CKIDs (circuit identification).

  — A single group ID or a range of groups. Group type may be SCH (series completion hunt), HML (multi-line hunt), CTX (Centrex), or SFG (simulated/ virtual facility group).

  The filter criteria are the same as those defined for the PREATR contract plus the following additional filters that may be used for CANATR:

  — Line count.

  — Grade of Service.

  — Essential Service Line Indicator.

  — Central Office Administrative Type.

  — Manual Circuit Indicator.

  — Primary Interexchange Carrier.

  — Custom Calling Features.

  — Complex Circuit.

  — Service Indicator.

  — Telecommunications Service Priority circuits.

On receipt of a CANATR contract, SWITCH system area transfer processing will determine the circuits and groups to be canceled. If the CANATR is for the FROM WC, the contract processor will check if any circuits or groups already have been completed in the TO WC. If so, they may not be canceled in the FROM WC.

Area transfer processing will mark the circuits and groups to be canceled with a status indicating the type of cancellation ("canceled from assignment" or "canceled from transfer") and delete the pending assignments. Cancellation Frame Output or Translation

Data will be sent if data had been previously sent to FOMS or MAS respectively. If the CANATR results in the cancellation from transfer of all circuits on the order, all order information will be purged from the SWITCH system database. If a member of a group is to be "Canceled from Assignment" or "Canceled from Transfer", only that circuit assignment will be canceled. If a member of a group is to be "Canceled from Assignment" and it is the last group-associated circuit assignment to be canceled, the pending assignment of *that* group will revert to its PREATR establishment state. If a member of a group is to be "Canceled from Transfer" and it is the last group-associated circuit assignment to be canceled, the pending assignment for *that* group will be deleted from the SWITCH system database. If the cancellation contract is for the FROM wire center, CANATR contracts will be automatically created and sent to the TO wire center after successful cancellation of the circuits and groups in the FROM wire center. If the resend flag is set, FROM wire center cancellation processing will not be done. SWITCH system area transfer processing will determine the circuits and groups that had been previously canceled and generate TO CANATR contracts for these circuits and groups.

17.11 Area Transfer Completion

Area transfer completions are performed using the CMP ATR Work Session. CMP ATR will allow completion of an entire area transfer order, of all groups on an ATR order, or a subset of circuits on an ATR order. To complete the transfer in the TO wire center, a CMP ATR work session should be executed in the TO wire center. To complete the transfer in the FROM wire center, a CMP ATR work session should be executed in the FROM wire center. The CMP ATR Work Session will invoke a WSIATR immediate contract to retrieve order-related data from the DLBB. The retrieved data, along with other user input, will be utilized to build a PCNATR contract for deferred execution.

If all circuits in the transfer are being completed, the PCNATR contract will contain the transfer order identification and due date. If all circuits are not being completed, the PCNATR contract will include the following data items. Optional data items are noted; all other data items are required.

- Transfer order identification.
- Transfer due date.
- Deferred order identification - the area transfer order identification.
- Identification of the FROM and TO ICs.
- Identification of the FROM and TO wire centers.
- Resend flag (optional for TO WC, not present for FROM WC). This flag will be present if UPDATR contracts are to be resent to the FROM wire center.
- A primary key identifying the circuits to be completed. The primary key must be one of the following:

— A single network unit or network unit range. Allowable network unit types for area transfers are cable pairs, telephone numbers, and switchports. The ID values may be a valid network unit ID, a masked ID, or an asterisk. An asterisk is used to indicate that all IDs for that network unit type should be processed. A masked ID consists of question marks as one or more characters in the ID. For cable pairs, only the pair numbers may be masked. For telephone numbers, only the line numbers may be masked.

— One or more CKIDs (circuit identification).

The filter criteria are the same as those defined for the PREATR contract plus the following additional filters that may be used for PCNATR:

— Line count.

— Grade of Service.

— Essential Service Line Indicator.

— Central Office Administrative Type.

— Manual Circuit Indicator.

— Primary Interexchange Carrier.

— Custom Calling Features.

— Complex Circuit.

— Service Indicator.

— Telecommunications Service Priority circuits.

On receipt of a PCNATR contract, SWITCH system area transfer processing will determine the circuits and groups to be completed. Partial completions will not be supported for circuits that belong to series completion or multi-line hunt groups. To complete these circuits and groups, a CMP ATR work session to "complete all groups" or "complete all circuits" must be executed. "Complete all groups" will complete all groups on the order and the circuits that are members of groups. "Complete all circuits" will complete all circuits on the order as well as all groups. Only assigned circuits and groups will be completed; circuits and groups at error will be blocked from completing. Series completion and multi-line hunt groups that are assigned will not be completed if any of the circuits for the group are not assigned. If the transfer is not administrative, completion will be blocked for circuits for which translations data[11] or frame output have not been sent.

Completion of a circuit or group may not be done in the FROM wire center until after that circuit or group has been completed in the TO wire center. When a TO PCNATR contract is processed, work order contract processing will complete the specified circuits and groups in the TO WC and create an UPDATR contract for the FROM WC. The UPDATR contract

11. If MAS involvement is set to "yes".

will contain a list of the circuits and groups that have been completed in the TO WC. If the TO PCNATR contract contains a resend flag, an UPDATR contract will be sent with completion status information for circuits and groups that were previously completed. When an UPDATR contract is received by the FROM WC, the pending area transfer work order in the FROM wire center will be updated with the completion status for each circuit and group specified in the UPDATR contract. Each circuit and group in the FROM WC may not be completed until an UPDATR contract has been received indicating successful completion in the TO WC. An entire area transfer order will be totally completed (i.e., final completion) when *all* circuits are marked as being either "Canceled from Transfer" or have been assigned with Frame Output and MAS Translation Data generated and sent. A check is *not* made regarding Assignment Redundancy Management data being generated and sent or a TAGLMART extract being generated. *The order will then be purged from the SWITCH system database.* Because of the large size of ATRs, ARM is carried out by bulk output, typically a TAGTMART tape (rather than by a contract via SOAC as part of PCN processing, as is done for other work orders.) Circuits sent via ARM bulk output are tracked by work order processing. If Assignment Redundancy Management data associated with a circuit has not been generated prior to completion, then the circuits that have been modified, added, or deleted need to be communicated manually to OPS. For non-administrative transfers, completion messages (PCNWO) will be sent to FOMS for the circuits that have been completed. FOMS output will not be sent for administrative transfers. MAS does not require SWITCH system completion notices for Work Orders.

17.11.1 Updates to Area Transfer Completion Status

Although unlikely, there is a possibility that an UPDATR contract generated by the TO WC may not be received by the FROM WC. If this occurs at the time of final completion in the TO WC, the UPDATR cannot be resent because the area transfer work order has been removed from the database in the TO WC. The UPD ATR work session provides the capability to update the FROM area transfer work order with a final completion status for the TO WC. The UPD ATR work session will build an UPDATR contract that is equivalent to the UPDATR that is built by the TO WC contract processor on final completion of the area transfer work order.

17.12 Interaction With Other SWITCH System Processes

Due to the typically large number of circuits involved in an area transfer, the actual running times of a particular work session can be quite long. While running, other updating contracts are prevented from running. Users can manage these running times by limiting the number of circuits to be considered by a particular pass, but this puts a large load on them.

17.12.1 Long Runner Processing

A new capability is available where ATR and other processes will "time share" with regular processing. This is managed by putting the ATR processing in a special wire center, "$LNG". While running in the $LNG wire center, these processes will actually process in the real target wire center but will cooperate with other contracts which queue up for the target wire center. Each ATR process will process through a commit interval, and if, at the end of the commit interval another updater contract is queued for the target wire center, the ATR process will wait while the other contract does some work. The other contract processor will work through a commit interval and then allow the ATR process to have a turn. This will continue until one or the other contracts have been fully worked. At that time, if there is still ATR processing to be done, the ATR contract processor will have full access to the target wire center (until another contract is queued). Thus an incoming updater contract will have to wait only for one commit interval to be completed before having access to the target wire center.

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18. Data Integrity

Database integrity covers a wide range of activities that check the integrity of the data in both the DLBB database and Reference Data databases. Tools provided by the SWITCH system will scan these databases and report on defined inconsistencies discovered within the databases. Other tools will rebuild certain summary data.

ScanDB is the feature that discovers any DLBB inconsistencies about a node and between nodes. The scope of the database scan will be controlled by the input defined by the user. ScanDB consists of a number of defined tests that can be run against ranges of nodes, samples of nodes, or an individual node. The two areas of checking will be at the node level (data about a node) and at the application level (data accessed by and/or modified by the application).

Scan Data is a diagnostic process that checks for inconsistencies that exist between reference data tables, or between reference data tables and the DLBB database.

An extract process is provided that extracts data from the SWITCH system database (including assignment and translations data), formats it in either TAGTMART or TMART form, and outputs a tape with this data for use by appropriate BCC personnel.

RPT SAM is a process that provides random samples of data about network units that can be used for comparison with other databases or with physical plant.

EXT PDG provides a list of pending orders, which is issued as a contract to FOMS for processing. FOMS will process this contract and perform an audit between the SWITCH system and FOMS.

ISDN Collection Audit is a process that uses an extract from a 5ESS IC to audit and update timeslot information in the SWITCH system ISLU Collections. It consists of a batch program to format the raw data from the IC extract and a deferred contract (UPDFIV) to perform the audit/update in the SWITCH system database.

Translation Synchronization is the process of converting an extract of translation data from an IC into a defined contract format, and then processing that contract to audit or update translation data in the SWITCH system. Circuits and services are validated before translation data is updated. Translation Synchronization is described in Section 12.3.

18.1 ScanDB

There are three basic functions a diagnostic program can perform:

1. Find and diagnose problems
2. Suggest corrections and/or correct the problem
3. Re-initialize the data

18.1.1 Levels of Checking

There are two levels of checks that are performed by ScanDB: Node and Application.

18.1.1.1 Node Level

Node level checks are those that look for errors in the data about a node: body and edge data. Much of this data is similar to inventory's view of the data.

Some of the checks that are performed at this level are checking for valid fields, edges, and cardinalities of fields. The cardinalities of fields tells whether a field is required, prohibited, or optional and how many times the field can occur. Inventory category will drive the validations that are used in these checks.

Other checks will deal with the relationships a node can have or not have. These relationships would be checked for direction (1-way, 2-way, etc.), whether they are required, optional or prohibited, and if the data required for their existence is consistent (i.e., capacity edge has usage data populated).

Data that exists in the External to Internal ID mapping (EIX) Table will be checked to ensure that if a node has an "ex" edge, that data appears in the table. Also the opposite will be checked such that data in the EIX table actually exists on the nodes.

18.1.1.2 Application Level

Application Level checks are those that look at the consistency of data that affects a set of nodes. This level deals with groups of nodes and sets of values applied over those nodes.

Some of the checks that are performed at this level will be done against services, equipment groups, and orders. These checks could include the validity of hunt, requires, and association relationships to the administrative groups and services.

Other checks could include the order's structure to ensure the work task sequencing is correct. Also the deltas will be checked to ensure proper due date sequencing.

Equipment groups can be checked to ensure that the chain of factor edges appear consistent.

18.1.2 ScanDB Tests

The following sub-sections describe some of the inconsistency checks that the ScanDB tests will perform. A list of these tests with a brief description is in Appendix 18A.

18.1.2.1 Attribute Validity

By inventory category, ScanDB will check database records (i.e., bodies of nodes) for valid attributes and the cardinality of those attributes. Cardinalities tell whether an attribute/aggregate is required, prohibited, or optional. Cardinality also states how many times this attribute may exist (0, 1, N, 0-N, 1-N). The attributes can be checked to see if any are missing or extraneous.

The following Node types will be checked for attribute validity and edge validity (see next section):

swpt	cp	asm
if	bl	tre
tn/dtn	ckt	svc
hml	sch	ctx
sfg	sweq	clct
ice	ic	ru
cc	ccpt	chnl
crv	bw	path
frm		

18.1.2.2 Edge Validity

Edges will be checked for cardinality and their attributes. The attributes will be checked to ensure that the minimal attributes that must exist for the edge are there. Optional and prohibited attributes are also checked. How many times this edge should appear or could appear will be checked (e.g., tie pairs require two physical appearances). The edges will also be checked for their proper representation; that is 1-way, 2-way, and 3-way.

Slot nodes will have the number of factor edges compared to the attribute, absolute number of circuits, to ensure that the slot has a full complement of CCPTs.

18.1.2.3 Valid Values

Only certain attributes will be checked for valid values. These attributes are the scorable ones used by the assignment engine. Switch ports will have their administrative constraints, essentiality, signaling, and encoding protocol validated. The valid values exist in reference data tables which will be accessed by ScanDB. If a value exists in the table it is valid. Null might also be a valid value.

Transmission Equipment, Bridge Lifters and Cable Pairs (even though the SWITCH system does not assign them) will have their specific functionalities checked again using reference data tables.

CCPTs will have the card type attribute checked against code set validations reference data.

18.1.2.4 Indexes

The only index table that will be checked is the EIX (External to Internal ID mapping) table. This table contains data which appears on the external ID edges associated with a database record. This is close to a node level check but is a little different in that the data on a node is checked against an index of data that should appear in the database.

If an "ex" edge is on a node, then that data should also appear in the EIX table. The opposite will also be checked. If data appears in the EIX table, check that it exists in the database on the node it should be on.

18.1.2.5 Administrative Groups

Administrative groups will be checked for their consistency of requires, hunt and association relationships. This ensures that objects that are required as part of the administrative group are there, hunted by the group are there, and the services provided by the group are properly associated to the group.

18.1.2.6 Equipment Groups

Besides checking at a node level for valid attributes and edges, the factor chains of equipment groups will be checked to validate the consistency of the hierarchy and the correctness of their summary counts.

18.1.2.7 Orders

The only thing that will be checked for orders is to ensure that the work tasks created for each order are sequenced correctly. Also the time sequencing of the deltas will be checked (e.g., due date order).

18.1.2.8 Assemblies

A check will be done to validate that a cable pair in an assembly with a ccpt has a specific functionality of "cc."

Another check will be performed to ensure that assemblies of type TASM, MASM, and PSSV do not have components of the network unit types CCPT, CHNL, or CRV.

18.1.2.9 Service Validations

Checks will be done for two types of circuits: 4 wire and services with no TNs. 4 wire circuits will be checked to ensure that if there is a "transmit" there is also a "receive." The "number of conductors" CEC attribute will tell ScanDB if the service is 4 wire.

Also if a service has no TN, a check will be performed to see if a TN is not required (non-switched, outgoing only, etc.)

Services will also have their design edge checked to make sure that there are enough CEC attributes to derive an assignment category. The ability to derive an assignment category is checked, not the validity of the assignment category versus the components existing in the service.

The assignment engine will not be used for ScanDB. No service/circuit composition analysis will be performed. Further investigation, on its usefulness for ScanDB to see if it should be included in a future SWITCH system release, is being done.

18.1.2.10 Valid Administrative Constraint

This test will validate that the administrative constraint associated with a switch port is a valid value. The values will be checked against a defined set in reference data.

18.1.2.11 ICE PASM

When a switch port is assembled to a network unit of type ICE, there are a defined set of administrative constraints the switch port can have. This test will check that the administrative constraints of a switch port in a PASM with an ICE unit is of that defined set.

18.1.2.12 Connectivity

This test will check that the connection relationship between the components of a service contains valid frame IDs and that the physical appearance that is connected exists for the network unit in the database.

18.1.2.13 Valid Translations

This test will check that the translation tags stored against a database record (e.g., service, group, etc.) are valid for the specific node type they are stored against. The valid list of tags for a type is stored in reference data.

18.1.3 Using ScanDB

ScanDB will be a BMP process which will use input (in JCL) that defines the scope(s) of options that are to be run. ScanDB will only diagnose inconsistencies found in the DLBB; not correct them.

The input to the job will be a list of options. These options will describe the scope of the scan to be performed. The scope can include test type, node type, IDs (external or internal as defined in a dataset), line count, range (hi and low), output options, and output file name.

The input JCL contains:

WC Name - identify the wirecenter to be scanned

JCL Options

— tag: "TEST=testtype" where testtype is either SCAN SCOPE, in which case run whatever scan scope test is appropriate for the input or the test types defined in

— 18A.

— tag: "DO_TYPE=type", to specify all of a given type in a wirecenter.

— tag: "DO_INTIDS=dsname", to specify a dataset containing a list of internal IDs.

— tag: "DO_EXTIDS=dsname", as above, but with exids.

— tag: "DO_LOW=id", identifies low ID of a range.

— tag: "DO_HIGH=id", identifies high ID of a range.

— tag: "CHG_CNT=number", specify maximum number to test. Will do the first <number> nodes it comes across, either by list or FAST.

— tag: "OUT_OPTION=option", signifies whether detailed (detail) output or just summary (sum) output is to be provided.

— tag: "OUTFILE=dsname", specify dsname of output. Must be specified.

The test type is the name of the test that is to be run for this job (see Appendix 18A). More than one test type can be entered.

The node type is the type of node that the entered test types are to run against. These types (e.g., swpt, tn, ctx, etc.) will be checked to see if they are valid for the test type(s) being processed. Multiple types can be entered for each test type.

Specific IDs can be entered by storing them in a dataset and entering that dataset name. Within the dataset will be a list of the IDs and an optional IC identifier. The IC ID will be used for limiting the scan to those nodes that are controlled by that IC.

The line count option is used to limit the scan to a maximum number of nodes. When that number of nodes is checked (randomly encountered nodes, or nodes within ID range specified), the scan is completed for that test type.

The user can specify a range to check using a low end and a high end. All nodes within the range will be checked. The tag/values would be "DO_LOW=id" and "DO_HIGH=id."

The output option is used to specify whether the output is to be detailed or just a summary. Detailed output will list the inconsistencies, by test type and node external ID (internal ID if the external ID does not exist). Also counts of nodes checked and errors found will be provided. Data about inconsistencies will include description of the error. If the output option is chosen to be just a summary, the number of nodes searched and the number of errors found will be output. The tag/value of this option would be "OUT_OPTION=sum or detail" (sum is default).

The output dataset name will have to be specified. The tag/value would be "OUTFILE=dsname."

18.1.3.1 ScanDB Process

An example will be used to describe the ScanDB process. The first test type to be run is "Scan Scope." The node type scan scope is to be run against is "swpt." A range is given over a single 5ESS switch module. A line count option of 50 is input.

A second test type of "Hunt Check" is requested. The node type is "sch." A user created dataset named "SCH.intids" is used to identify the sch groups to scan.

The output of these scans is to go to dataset "scandb.out," and a detailed report is requested.

The input for ScanDB would look as follows:

```
TEST=Scan Scope
DO_TYPE=swpt
CHG CNT=50
DO_LOW=5001-001-01L
DO_HIGH=5001-791-73L

TEST=Hunt Check
DO_TYPE=sch
DO_INTIDS=SCH.intids

OUT_OPTION=detail
OUTFILE=scandb.out
```

ScanDB will then take the first 50 swpts (by external ID) it finds in the given range and check the scope of those nodes. The scope checked will be the node body, edges, and edges of nodes pointed to form the swpt. Any inconsistencies will be noted in the output file.

ScanDB will then run the hunt check test for the sch groups listed in the dataset. The checks performed will be to ensure that every TN in the hunt sequence (translations data) has a hunt edge to the sch. Also any TN with a hunt edge to the sch is reflected in the hunt sequence. Any inconsistencies will be noted in the output dataset.

The output will look like the following:

> TEST=Scan Scope
> error: in node 5001-002-02L: edge "member edge" exists to CTX group 001, should be prohibited.
>
> Total nodes checked = 50: total errors found = 1
>
> TEST=Hunt Check: TN 201.699.7143 missing hunt edge to 1sch#2
>
> Total nodes checked = 10: total errors found = 1

18.1.3.2 Concurrency

When running scandb, the user may wish to suspend all deferred processing for a wire center. Immediate processing may also be suspended. Suspending processing will ensure that there are no possible contention problems.

Deferred processing can be controlled for each wire center by setting the concurrency level (the number of messages allowed to process simultaneously). All processing can be suspended for a wire center by setting the overall concurrency level to zero. This is done through the Concurrency Control Utility (CCU) with the Update Concurrency Details (CCUD) screen. This screen displays each message priority level and its associated concurrency level for a wire center. Messages can be of priority 01 through 11 (or higher if a BCC chooses to have more priorities). Priority level "00" applies to the entire wire center and can override data given for individual priority levels. To turn off all deferred contract processing, the user may set the concurrency level for each priority (01 to n) to "00", or may set the concurrency level for priority 00 to zero (i.e. zero messages may process for this wire center).

The Concurrency Control Utility (CCU) may also be used to optionally turn off immediate as well as deferred processing for a wire center. The Quiesce (CCUQ) screen displays data for the SWITCH system entity or for a particular wire center and has two columns - mode (immediate or deferred) and option (Q - quiesce or R - resume). By setting the option to Q, processing can be suspended. Setting the option to R will resume SWITCH system processing. When the option for deferred processing is set to Q with the CCUQ screen, the concurrency levels are automatically set to 0 for that wire center. When the option is set to R, the concurrency levels are automatically reset to their previous values.

It is recommended that ScanDB be run at night or over a weekend if it is to run concurrent with other processing. This will help performance of both.

18.2 Scan Data

The Scan reference data process (scan data) is a (BMP) run designed to detect and report on inconsistencies between SWITCH system reference data tables and the active Inventory and Assignment database as well as inconsistencies between entries in related tables. Scan data may be run as often as required, selecting one or more of the tests to suit the needs of the BCC data administrator. Scan data checks only table reference data.

The scandata process is composed of four tests that are run in a BMP mode (the run ID is VCDBU08). The tests perform the following functions:

1. Test 1 - This test assures that table instance keys and column data are consistent with the database. It validates:
   - That whenever a table instance key contains a reference to a node in the database, the database node exists.
   - That when data in a table column references a node in the database, the database node exists.
2. Test 2 - This test assures that the database is supported by required table instances. It verifies the presence of required tables based on the value of specified nodes in the database. For example, any tables that require specific IC instances exist for each IC in the database.
3. Test 3 - This test assures that wire center level tables (which do not have instance keys) are consistent with database node data. For example, certain reference data tables include specific frames as part of the data (e.g., frm connect priority). These frames should exist in the database.
4. Test 4 - This test looks across tables to assure that when one table refers to an item in another table, the reference is valid. The test also lists items that might have been missed when creating these inter-table references. For example, if an IC is part of the data in one table and this data should appear in another table; it does.

When an inconsistency is detected, the test will produce either:

— An error message indicating that a condition has been encountered that must be corrected.

— A warning message indicating a condition has been encountered that requires review.

Output is written into separate error message and warning files to facilitate user review.

18.2.1 Control Tables

The generic tests are controlled by five reference data tables, with all but the first being new. Each row in the first four tables listed below defines a specific condition to be tested. The last table is used to assemble valid table instance keys. The tables are:

1. id translation
2. scandata instance key
3. scandata node
4. scandata entry match
5. instance key definition

Tests are run to be more specific by using the following filter options:

1. Wire Center (required)
2. Test numbers - Excl_Test (optional)
3. Table names - Excl_Tab (optional)
4. Node types - Excl_Node (optional)
5. Node IDs - Excl_Node_Type (optional)

The filtering options chosen by the user may be viewed in the sysprint dataset.

18.2.2 Tests

The specific test items that make up each generic test are defined in tables.

18.2.2.1 Test 1 - Table ID Validation

This test starts with table data items and validates them against internal database IDs. The source table data are either:

- a part of a table instance key,
- data values stored in a column of a specified table.

The test is driven by the 'id translation' table (See Table 18-1). This table lists each candidate table name. For each table name, the 'id translation' table indicates that part of the instance key which, if it exists, should be validated and/or the table column that is to be validated. For example, the Intelligent Controller ID (IC ID) of the 'asgn category rules' table is an optional instance key part. If it is present, the test will verify that the IC is actually in the database. If the IC is not found, an error message is produced.

Each entry in the instance key or column that should be in the form of a database ID will be checked against the actual database content. For example, the ic nxx table contains a column labeled IC ID. Every different IC ID in this column should be checked to verify their existence in the database. If the data item is not found, an error message is produced.

18.2.2.2 Test 2 - Instance Key Existence Validation

This test uses the database to verify the presence of table instances for various database node types. The test is driven by two new tables:

1. The 'scandata instance key' table (See Table 18-2)
2. The 'instance key definition' table (See Table 18-3)

Tests are supported for the following tables:

1. centrex rcu
2. deny spread
3. inventory group rules
4. load factor summary
5. measurement group
6. spread count
7. spread typing
8. TN Type
9. wc parms

Starting with the 'scandata instance key' table, the process for test 2 will:

1. Start with a specific row of the table and obtain a node type - table name relationship.

   For example, the first row of Table 18-2 indicates that the test will look at centrex nodes to determine the presence of centrex rcu table instances.

2. Use the 'table name' to find an entry in the 'instance key definition' table.

   To follow the example, the test will now look at the 'centrex rcu' row in the 'instance key definition' table (Table 18-3). This row indicates that only the value of the 'id' tag in the centrex node is needed to make up the instance key of the table being verified.

3. Verify the presence of the table instance.

   In this case the test will look for an instance of the centrex rcu table for each centrex id.

4. If the test fails (no table instance is found), the test looks at the 'msg id' column entry of the scandata instance key table.

- If the column is blank or 'e', an error message is produced indicating that an expected table instance cannot be located.
- If there is a 'w' value in the column, a warning message is produced indicating that an expected table instance cannot be located.

Additional constraints may be placed on a test by entries in the 'db tag' and 'value' columns of the 'scandata instance key' table.

For example, the test for instances of the 'deny spread' table are limited to 5ESS switches by the entry in the table of db tag 'ex.ic_type' with value '5es'. Due to this entry, the test will look at the external edge data in the centrex node for an ic_type value of 5es.

- If the value is 5es the test executes.
- If the value is not 5es the test will skip this centrex node and proceed to the next.

18.2.2.3 Test 3- Table Content vs DB Validation

This test starts with database information and verifies that each test node has appropriate entries in wire center level tables. The tables referenced in this test contain only default instances. The test is driven by the new 'scandata node' table (See Table 18-4).

This test supports:

1. References to frames in the following tables:
   - frm conn priority
   - frm system id
   - frm syst priority
   - ic frame map
   - tp routes
2. References to ICs in the following tables:
   - frm system id
   - frm system priority
   - ic frame map
   - ic nxx
   - ic priority
3. References to CCs in the following table:
   - cc ic connect map

Starting with the 'scandata node' table the process for test 3 will:

1. Start with a specific row of the table and obtain a node type - table relationship.

   For example, the first row of Table 18-4 indicates that the test will look at database frame nodes to determine the presence of the frames, as either 'From Frames' or 'To Frames', in the frm connect priority table.

2. Obtain the value(s) of the database tags (DB TAG) indicated in frm connect priority table from the database node. If there are multiple tags, note the value of the 'OP' column.

   - If the value is 'o', test for an 'OR' relationship.
   - If the value is 'a', test for an 'AND' relationship.

3. The database tag called 'id' (the internal ID of a frame) is retrieved.

4. Compare the value of the tag against the column value(s) indicated in the scandata node table (COL 1 and COL 2).

   This specific test requires that the value of the frame id found in the frame node appear in either the From Frame column or the To Frame column (OP=o) for the test to be successful.

   If there is no match, the value of the msg id column is checked to determine if failure should produce an error message (a blank or 'e' in the msg id column) or a warning.

Note that the second test in the table requires that the frame id found in the frame node appear in both the From and To frame columns. This test assures that connectivity allows jumpers to be run between two pieces of equipment on a frame.

18.2.2.4 Test 4 -Table Content vs Table Content Validation

This test set is used to compare data items that appear in multiple tables for consistency. Specifically, the test verifies that for each column entry of a 'Source Table', there exists a corresponding column entry in a 'Target Table'. This test is driven by the new 'scandata entry match' table (See Table 18-5).

The test only validates the assignment category values for a wire center. It also indicates any assignment categories that are listed in the assignment category map table that are not supported by the wire center.

Starting with the 'scandata entry match' table the process will:

1. Access the source table and source column for the first entry.

   In the first row of "scan data entry match" table, this will be the assignment category (asgcat) column of the ic priority table to obtain a value such as 'bus'.

   If there are multiple instances of a source table, the source node type (src ntyp) column is used to obtain the data needed to find, via the 'instance key definition table', each source table instance to be tested. For each row in each of the source table instances, the target table instance used is the default instance.

2. Access the target table and check the target entry in the target column with the source column entry in the source table to find a matching value.

   For this test item, scan the asgcat column of the asgn category map table for a match.

3. If a match is found continue to the next row in the ic priority table. If a match is not found, produce an error message (because of an e in msg-id column of 'scandata entry match' table) indicating that there is an assignment category in the ic priority table that is not supported by the assignment category map table.

Note that the second row provides warnings for assignment categories that are defined in the assignment category map table but are not found in the ic priority table.

18.2.3 Input Options

The user input consists of a series of control cards identifying the wire center to be tested and, optionally, any test or data that are to be excluded from the run. These exclusions are all defined in a tag = value format, one per line. The card types are:

1. Wire Center - one wire center ID
2. Exclude Test - up to three test numbers, one per line, that are to be excluded from the test run. (e.g., EXCL_TEST=3)
3. Exclude Table - up to 64 table names that are to be excluded from the test run. (e.g., EXCL_TBL=ccs adjustment isdn)
4. Exclude Node - up to 64 database node IDs that are to be excluded from the test run. (e.g., EXCL_NODE=ic!5es.5)
5. Exclude Node Type - up to 64 database node types that are to be excluded from the test run. (e.g., EXCL_NODE_TYPE=frm)
6. DEBUG

See Appendix 18B for more details on user input.

18.2.4 Output Files

The following output files are produced for each batch run.

1. Input option file that recaps ID of the wire center being tested and the exclusions that were in effect for the run. This file can be viewed from the sysprint dataset.
2. An ERROR file, sorted by test type, that reports the details of each error. For each test the file will also summarize the test results and the number of tables tested.

3. A WARNING file, similar to the error file.

18.3 Extract Pending Data (EXT PDG)

BCC Operations in a SWITCH system and FOMS environment require the capability to verify that each pending activity residing in the SWITCH system database exists in the FOMS database. This is to:

1. assure conversion has successfully converted all pending activities.
2. provide an ongoing check at any time to verify that pending activity is synchronized between the two systems.

An EXT PDG report, run by execution of work session EXT PDG in the SWITCH system, will compile a list of pending circuit orders in the SWITCH system and distribute the list as an FCIF contract to FOMS. Upon receipt of the complete contract, FOMS will compare the list to its pending circuit order database and provide a report.

Due to the amount of data generated for a Dial Transfer, EXT PDG output for a Dial Transfer is written to an MVS dataset instead of being sent over the message queue to FOMS. The dataset must then be manually transferred to the FOMS system for processing. Additionally, EXT PDG will only support Dial Transfers containing up to 25K circuits. Dial transfers containing more than 25K circuits require additional memory beyond the SOE, thus requiring the DCM to be changed temporarily. Due to these limitations, EXT PDG for Dial Transfers is not intended for general use, but instead for isolated instances when the need arises.

A possible problem can occur with switch port transfers (SETs) for load and growth jobs where large numbers of pending circuits may be encountered. The user should be made aware that performance may be affected if this verification is run in a wire center with such activity.

Work session EXT PDG provides the following options:

1. ALL - verify each pending service order, CIO, CPT, JAM, WO LST, SET and WAO found in the SWITCH system database. This is the **default**.
2. SO - verify each pending SO, including CIOs
3. CIO - verify each pending CIO
4. WO - verify each pending CPT, JAM, LST, SET, and WAO
5. CPT - verify each pending CPT
6. CTR - verify each pending CTR
7. JAM - verify each pending JAM
8. LST - verify each pending work order LST

9. SET - verify each pending SET
10. WAO - verify each pending WAO
11. DTR - verify each pending DTR

A single order id or ewo/tr id may be entered which will check for a single order only.

Since most wire centers fall in a range from 10K to 40K working circuits and pending activity typically approximates 2% of the working circuit base, circuit order volumes can be expected to range from 200 to 800 circuit orders. However, some larger wire centers (100K+) may have in excess of 2000 pending circuit orders.

The EXT PDG contract that is sent from the SWITCH system to FOMS can be expected to contain up to 140 characters per circuit order. Thus, a normal wire center contract can be expected to have less than 100K characters. Larger wire centers may produce contracts in the range of 240K+ characters.

18.3.1 DLBB PROCESSING

DLBB processing for this work session consists of creating a contract to be sent to FOMS that consists of all pending activity represented by the options received in the EXT PDG data request.

18.3.1.1 DLBB Validation

If the single order option was requested, and the input order does not exist, the DLBB shall return an error message to that effect.

18.3.1.2 DLBB OUTPUT

Output of the EXT PDG work session will be a list of each pending activity of the type requested by the user. The list will be sent to FOMS in an FCIF contract that contains the Order ID, the CKID, the jeopardy status (if one exists), the order due date, the order type, and the item number (work orders only).

18.3.2 FOMS PROCESSING

FOMS will receive and store the EXTPDG contract. When the entire EXTPDG contract has been stored, FOMS will compare the list to the FOMS database. FOMS output will be a report stating the number of circuit orders received from the EXTPDG contract originated by the SWITCH system and the number found pending in FOMS. The report should provide the following:

1. total number of circuit orders on the list from the SWITCH system.
2. total number of circuit orders pending in FOMS.
3. individual orders pending in the SWITCH system but not pending in FOMS.
4. individual orders pending in FOMS but not pending in the SWITCH system. Single pass circuit orders and orders which have received a PCN from the SWITCH system should not be included in this category.
5. individual orders pending in both systems whose jeopardy status is not in agreement.
6. individual orders whose due dates in the SWITCH system and FOMS do not agree.

FOMS may correctly have pending orders that do not exist in the SWITCH system data base due to:

— single pass work orders,

— having received a completion pass (PCN).

As noted above, these will not be considered errors by the FOMS audit.

18.4 Report Sample (RPT SAM)

RPT SAM provides a capability to do sample verifications between the SWITCH system database and the physical plant it represents, or other mechanized systems. The sample will be done on a completely random basis, subject to user-supplied constraints.

The user selects the number of each NTU to be selected from the sample base. The default process will produce an output containing 50 randomly selected NTUs each of telephone number (TN), originating equipment (OE) and cable pair (CP). By default, the sample base includes all NTUs of the name specified. The user can optionally select NTUs involved in services to be sampled instead of the default all NTUs. Additionally, the user can override the default NTU base by optionally selecting a single NTU name or names, and may also specify the number of NTUs to be output in the sample size. In addition to the three prepopulated NTU types, the user may specify any valid user name or NTU type, including the following:

POE for packet switch ports
TP for intra-nodal facilities
DTN for data telephone numbers
TRE for transmission equipment
ME for miscellaneous equipment
BL for bridge lifters
ICE for intelligent controller equipment
LTID for logical terminal identifiers
TKP for trunk pairs

A range of NTUs can be entered for random sampling. If the sample size is equal to or greater than the range size the report will include every NTU in the range in the sample.

The user may optionally enter the input option IC for Intelligent Controller which will sample only NTUs from the NTU column that are associated with the specified IC.

The output will be a printed report containing data for each selected NTU and its associated circuit assembly if it is working, pending, or a member of an assembly. The report provides output options including composition only (LIST), attributes only (ATTR), translation data only (TRAN), connectivity data only (CONN) or all of the above (DATA).

18.4.1 DLBB Processing

The RPTSAM contract can specify five parameters for NTU selection:

1. whether all NTUs in the sample base or only those part of services should be sampled.
2. filter by IC.
3. one or more NTU user names or types to be sampled.
4. a specific sample size for each NTU user name.
5. a range of NTUs to be included in the selection base for the sample. If no range is entered, use the entire population of the designated NTU as the sample base.

DLBB will obtain the internal IDs for total inventory range or the specified range for each NTU to be sampled. The random sample should be based on the number of NTUs present in a given sample base.

If the population of NTUs is equal or less than the value requested sample size, the output will include all NTUs on the report without random selection.

RPT SAM will provide a report consisting of the number of NTUs in the sample size requested on the RPT SAM Data Request. Unless a range is specified all NTUs of the name requested will be included in the sample base. The NTUs will be selected at random from a random start point to assure that a duplicate list will not be created. A NTU should not be selected more than once.

18.4.1.1 Filtering for Services

A global reference data table named rpt excl value, provides for additional filtering of the services that are selected as candidates for the sample.

When this table exists and the filter option for services is specified, the DLBB will select only services that are not suspended, denied or involved in any pending activity. These services will be further filtered by comparing their design edge attributes to the entries found in the rpt excl value table. This filtering can only operate on the attributes defined in this table (see Table 18-6).

If the table does not exist and the filter option S is specified, the DLBB will provide an error message and terminate processing.

DLBB shall select double the number specified in the SIZE field to allow for losses due to matches encountered in the exclusion table.

18.4.1.2 IC Filtering

An optional entry of an IC filter is allowed which will limit selection of NTUs to those associated with a specific IC. When this option is used, no range entry is allowed.

18.4.1.3 RPT SAM Output

Output for RPT SAM will be directed to a designated printer. If none is specified on input, the default printer destination will be used. See Figure 18-1 for an example. Also, RPT SAM output can be directed to FOMS in a PRESVO contract, to provide service observing capability.

18.5 DB Extracts

Database Extracts are the processes which extract data from the DLBB and output magnetic tapes with this information for use by outside vendors and BCC personnel.

18.5.1 Extract Cable

Extract Cable (EXTBL) is the contract that will be used to provide cable oriented information for use by LFACS. This will be produced in TAGLMART format which is the same format used for cross audits today.

18.5.1.1 Function

Information on TAGLMART tapes is data extracted from a SWITCH system database (wire center). Each set of data is a selected subset of facilities/attributes extracted from the "total" subscriber loop which extends from the customer's premises to the central office. This data is for use by both LFACS in updating their database and by FACS in testing the reliability of both LFACS and the SWITCH system databases.

18.5.1.2 General Tape Information

TAGLMART records are written to 9 track magnetic tape at 1600 b.p.i. or greater. Each tape will contain 24,000 blocks of data at 512 bytes per block on a 2,400 foot tape.

A subscriber circuit will contain a number of tag/values depending on the complexity of the circuit. Each value extracted from the SWITCH system database will be entered on tape prefixed by a unique tag. Each tag will be separated from its value by a delimiter (:). Also each tag/value couple will be followed by a delimiter (:). The last tag/value couple describing a unique subscriber circuit will be terminated by a new line (\n) character. TAGLMART tapes will continue in this fashion until 24,000 physical tape records are written to tape. Lastly, each tape will completely describe a subscriber loop before beginning a new tape. Thus it may be possible that more than 24,000 physical tape records exist on any one tape, but not more than 24,002.

18.5.1.3 Tape Composition

The first data entry on each tape will be a header record. This header record will contain information pertaining to inputs used to create the TAGLMART tape, tape creation date, wire center ID, and user comment text. The remainder of the tape will be filled with SWITCH system logical records until the upper (physical record) bound is attained. If at any point during the gathering of subscriber circuit data (logical records), an error is detected in the subscriber circuit, an error tag will be written to the tape along with the cable pair (CP) ID of the circuit. The tape will continue with the next circuit. When complete, the process will print out the number of logical (CP) records and physical records written to the tape. It will then request user inputs to commence the next tape if necessary. When all input is exhausted, the total number of physical and logical records on all tapes will be printed out to the user.

See Appendix 18C for details of the TAGLMART tape format.

18.5.2 Translations Extracts

The SWITCH system will provide bulk translations output by writing this data to a magnetic tape for the use of various groups (e.g., IC vendors, LMOS, NSDB, accounting).

Bulk translations output is used for two separate purposes:

- To provide a bulk transfer of assignment and translations data to an IC vendor or other Operations system for a Dial Transfer.
- To provide an extract that can be used to compare the SWITCH system database against other corresponding databases which should contain similar data.

The data to be extracted includes cable pair and switch port assignments and translations data for each individual service/circuit in the selected input scope. The selected input scope for dial transfers is the set or subset of circuits established in the dial transfer. The output formats for this extract will be in the form of TAGTMART or TMART. See Section 14 for full details on TAGTMART and TMART output.

18.6 Additional Tools

A set of tools will be provided for rebuilding the EIX table, for rebuilding summary data, and performing low-level checks on the database. Diagnostic tools are used at the BCC's discretion. Disaster recovery should be done in consultation with Bellcore.

- Disaster Recovery
  - EIX - rebuilds the External to Internal ID mapping table by reading all nodes & x-files.
  - Mini BL Use - rebuilds the Mini Bridge Lifter Use Summary Table.
  - INV Ranges - rebuilds the INV Ranges Summary Tables from Network Unit Externals IDs.
  - INV Frame Layout - rebuilds the INV Frame Layout Table from Network Unit Frame Terminations.
  - ID Rebuild - rebuilds the free ID (FID) database.
  - Spread Counts - rebuilds the Spread Count Summary Tables for all groups that spread.
  - Asgn Category Population - re-calculates asgn category and populates it in the database for services.
- Diagnostic
  - Recalculate Timeslot Counts - recalculates the value for timeslots used and compares to timeslots allocated and engineered.
  - CheckDb - checks all or a subset of nodes for edge pointers that point to non-existent nodes.

18.7 ISDN Collection Audit

A Collection and Collection Group are SWITCH system database constructs used to provision Basic Rate ISDN in an AT&T 5ESS Intelligent Controller (IC). Collections and Collection Groups model the circuit-switched and packet-switched portions of the IC and the timeslot resources between the two (see Figure 18-2). B-channel packet service requires one whole timeslot. D-channel packet service requires one quarter of a timeslot.

Timeslots are not inventoried in the SWITCH system; they are managed by the IC. Various timeslot counts are maintained by the SWITCH system representing whole timeslot allocation and capacity, and quarter timeslots in use for D channels[1]. Timeslots may also be reserved for On-Demand B (ODB) use. ODB timeslot reservation reduces the timeslot capacity available for permanent packet use. These collection timeslot counts aid in the assignment of Digital Subscriber Lines (DSLs) and Packet Originating Equipment (POE) for ISDN service. [2]

Collection timeslot counts are adjusted by the SWITCH system assignment process in anticipation of the timeslot assignment process that will be performed in the IC. Two kinds of inaccuracies in the collection counts can result from this processing.

1. When disconnecting a D channel, a quarter timeslot becomes available. Since the SWITCH system does not know from which timeslot the quarter timeslot was working, it does not know if a whole timeslot is released. A worst case scenario is assumed, whereby all quarter timeslots are treated as if they came from different whole timeslots. Thus, ISDN timeslot disconnect and connect activity within a Collection results in the collection counts understating the true whole timeslot availability (by overstating the true timeslot allocation).
2. When timeslot assignment in the IC is manually overridden and timeslots are used in violation of the AT&T standard timeslot assignment algorithm,[3] the collection counts may not reflect the true timeslot capacities.

Thus the timeslot counts in the SWITCH system database may need to be resynched with the IC from time to time.

The ISDN Collection Audit feature provides a capability to audit and synchronize SWITCH system database timeslot ISLU(2)[4] collection counts with data extracted directly from a 5ESS IC.

1. Once a quarter timeslot (QTS) is associated with a POE (Packet Originating Equipment) in a packet handler (PH), the remaining 3 QTS must be utilized by other POEs in the same PH. There are instances where only 3 D-channels can be provisioned on a timeslot when DSLs are assigned out of a RISLU (remote ISLU). In the SWITCH System, Collections are not built for RISLUs; ISDN Collection Audits do not support RISLUs.
2. Collections and Collection Groups can also exist for provisioning ISDN on IDCUs, depending on whether or not the client specific feature, tr303 dle isdn, is enabled. However, the ISDN Collection Audit process does not support the IDCU case. Only ISLU Collections and Collection Groups are audited.
3. Examples of this activity have been observed during analysis of extracts from 5ESS ICs.
4. The term "ISLU(2)" simultaneously denotes both "ISLU" and "ISLU2"; similarly the term "LG(C)" simultaneously denotes both "LG" and LGC"

18.7.1 Overview

The ISDN Collection Audit feature provides a process to compute the various timeslot counts associated with ISLU(2) Collections and Collection Groups in the SWITCH system database from data in the 5ESS IC. The following timeslot counts are computed from the IC data.

- For each LG(C)/PH on a shelf:
  - — for D service, the number of QTSs allocated and the number of QTSs used;[5]
  - — for B service, the number of whole TSs allocated and the number of whole TSs used.[6]
- For each LG(C)/SHELF:
  - — a summary of all the LG(C)/PH counts on that shelf;
  - — the total number of TSs allocated;
  - — the total number of TSs restricted.
- For each ISLU(2)/SHELF:
  - — the DPIDBs and the number of TSs reserved for ODB in each DPIDB;
  - — the total number of TSs reserved for ODB;
  - — the ODB engineered CCS capacity.[7]
- For each SG/SHELF:
  - — the total number of TSs reserved for ODB (includes only the DPIDBs serving this SG);
  - — the total number of TSs available for D and PPB;
  - — the total number of TSs allocated to D and PPB.[8]

5. Each D channel assignment "uses" 1 QTS. The switch port assignment process attempts to select a DSL and POE combination which will allow the IC to use a QTS in a partially filled TS, if there are any available. This algorithm tends to prevent unnecessary "allocation" of a new whole TS. If allocation of a new TS is necessary, the appropriate D allocated count is incremented by 4, since it is expressed in units of QTS. Thus, for each LG(C)/PH, the number of D allocated QTSs equals the number of *unique* TSs multiplied by 4.

6. The number of TSs allocated and used for B service are by definition the same, since B service requires one whole TS.

7. The ODB engineered CCS capacity equals the number of TSs reserved for ODB multiplied by the CCS per TS (a Wire Center Parms parameter).

8. As restricted TS counts in LG(C)s actually represent used TSs (refer to Section 18.7.5.3.1), the SG/SHELF allocated D and PPB TS counts include any restricted TS counts from the LG(C)s in the SG. This prevents exceeding the D and PPB allocation limit imposed by ODB reservations.

The computed counts are then compared with those existing in the SWITCH system Collections and Collection Groups. Discrepancies and a statistical summary are output on various audit reports. The SWITCH system database may be updated either automatically by this process, or manually by the existing Update Collection Work Session. Figure 18-4 and Figure 18-5 show Update Collection Work Session screens. The fields that can be updated in each Collection or Collection Group are:

- D allocated TS count in an LG(C)/PH,
- Restricted TS count in an LG(C)/SHELF,
- ODB reserved TS count for a DPIDB in an ISLU(2)/SHELF.

B allocated TSs are audited but not updated. Refer to Section 18.7.5.3 for more information on B TS auditing. The other counts mentioned above are all derivable from these basic counts. The sum counts are computed and updated by this Collection Audit process if automatic update is requested, or by the DLBB contract (UPDISD) that is invoked by the Update Collection Work Session for manual updates.

18.7.2 Collection Audit Architecture

Figure 18-6 shows a flow diagram of the ISDN Collection Audit process. The information that is extracted from the 5ESS IC is passed to a pre-processor on the SWITCH system, along with run-time parameters. The pre-processor parses the IC information and forms input contracts for the UPDFIV contract processor. Each contract contains the IC data for one SM. The UPDFIV contract processor:

- sorts the data into Collection form,
- computes the Collection TS counts based on the input data,
- accesses the SWITCH system database Collections and compares the counts,
- issues audit and error reports,
- optionally updates the SWITCH system Collections.

Each instance of a contract contains all the data for one SM of the IC.

The pre-processor does not need to access the SWITCH system database. It is built as a batch process to format the UPDFIV messages. The Test Message Generator is used to send the messages to the IMS queue. The UPDFIV contract processor will run as a deferred contract processor. The users have the option of routing report output to a data set or to a printer. Warnings and errors are routed to a pre-assigned destination printer or data set.

18.7.3 Extract from the 5ESS IC

The source of timeslot data for the audit is a 5ESS IC. The 5ESS IC is a computer system controlling a switching fabric. The computer runs a real time UNIX operating system. The 5ESS IC has logins and passwords just as any other UNIX system.

Once logged in, Switching Control Center (SCC) personnel can take a dump of the DSLEQUIP relation or internal table, which is coded in hexadecimal, using the Office Data Base Editor (ODBE). For switching generics 5e7, 5e8 and 5e9.1[9], the DSLEQUIP relation contains all the nailed-up[10] timeslot information for the ISDN circuits in a SM. For switching generic 5e10, two additional relations, CKT_PORT and CKTDATA, must be obtained in addition to the DSLEQUIP relation. The 5e10 ISDN Collection Audit process cannot produce UPDFIV contracts for the SM if the data from any of these three relations is missing. For the 5e10 switching generic, the convention of naming the files created from the dumps of these three relations is crucial to proper processing of the data. Filenames should adhere to the following formats:

Relation	Filename
DSLEQUIP	/unixa/users/SM*xxx*DSL
CKT_PORT	/unixa/users/SM*xxx*PRT
CKTDATA	/unixa/users/SM*xxx*CKT

where *xxx* indicates the number of the SM for which the data has been obtained.

An office record form, Form 5905, contains ODB reserved timeslot information for each DPIDB. Form 5905 can be extracted for the entire IC, or for a range of SMs. A Form 5905 extract is a formatted output in ASCII. Both the relation and form extracts, and the copy of the resulting extract files to tape, can be accomplished using existing capabilities of the operating system on the 5ESS IC.

Since the ISDN Collection Audit process involves comparing time-sensitive data, it is highly desirable when performing an audit involving a 5e10 switch to obtain the ODBE dump of the three relations (DSLEQUIP, CKT_PORT and CKTDATA) for each SM at one time.

9. There is presently no ISDN Collection Audit support for the 5e9.2 switching generic.

10. The term "nailed-up" means that the timeslot is assigned at provisioning time and dedicated to an ISDN channel, as opposed to dynamically at call setup.

18.7.4 Audit/Update Options

When doing any kind of audit of data between two systems sharing common data, a certain level of checking is required to insure that the process can determine which data items *should* be compared. For the Collection Audit, this amounts to synchronizing the ISDN switch ports between the IC and the SWITCH system. It is also necessary for the Collection Audit process to recognize when IC timeslot assignments violate the AT&T standard pattern, since these must be treated in a special way in the TS counts. The TS pattern audit is described in Section 18.7.5.3.1.

Table 18-7 shows the processing options to be supported by the UPDFIV contract processor. All the options listed are individually selectable. This means that a user could request that just a TS pattern check be done, or just an OE-POE check, for example. The prerequisite column identifies the options which must be selected in connection with any particular option. The OE-POE audit and the TS pattern check are required to be performed if Collection TS Audit is selected. The UPDATE option is used to request that the SWITCH system database Collections be automatically updated based on the audit results. The RECALC option enables the user to request that the existing TS recalculation tool (refer to Section 18.6 be run before Collection TS auditing is performed. RECALC can only be requested if the UPDATE option is set. The reason for exercising the RECALC option is related to how TS counting accounts for pending circuits and is explained further in Section 18.7.5.3.4. An optional printer destination (device or data set) may be supplied to override default destinations.

18.7.5 Detailed Requirements

This section presents the detailed requirements for the ISDN Collection Audit process. The IC extract is discussed first, followed by the UPDFIV contract processor.

18.7.5.1 Auditing from IC

The BCC is responsible for obtaining the extract of the DSLEQUIP relations (and, for the 5e10 switching generic, the CKT_PORT and CKTDATA relations) and the FORM 5905 from the 5ESS IC. Local procedures must be set up to accomplish this. The extracted files may be copied to tape and sent to the SWITCH system. The tape will be formatted like a UNIX CPIO tape with ASCII characters[11].

Each relation is extracted by SM. The SM to extract is supplied on the extract request within the IC, and does not appear on the output. The ICID, SM, switch generic, wire center

11. The IBM IEBGENER utility, previously available to extract each file off the tape and place it in a TSO dataset, can no longer be used.

(WC), and file type must be associated with each extracted file through the pre-processor's JCL stream. In addition, the options to UPDFIV discussed in Section 18.7.4 must be supplied through JCL. The UPDFIV options are communicated to the contract processor through FCIF tags in the contract input message.

The pre-processor receives DSLEQUIP (and for the 5e10 switching generic, CKT_PORT and CKTDATA) relation files and/or FORM 5905 files to process. The DSLEQUIP, CKT_PORT and CKTDATA relations are encoded in hexadecimal. Each "tuple" or record in a DSLEQUIP relation represents one ISDN channel (D, B1, or B2). For the 5e10 switching generic, certain elements in the DLSEQUIP relation record are pointers to tuples in the CKT_PORT and CKTDATA relations[12]. Each tuple is broken down into words separated by white space. The fields of interest are extracted from these words. The tuple layout is generic specific (5E7 and 5E8 are different, for example) and can be expected to change in the future as new generics come from AT&T. The parsing of the relation is driven by an external table so that field updates can be made to accommodate a new relation layout, if necessary.

The 1.6.5 initial release of the pre-processor supported the 5E7 and 5E8 generics only. The 5E9.1 generic has been determined to be functionally equivalent to the 5e8 for the purposes of the ISDN Collection Audit process, and is supported in SWITCH System release 2.0.1. The 5E10 generic, which has significant differences from previous generics in the relational data formats, is also supported in SWITCH System release 2.0.1. Support for ISDN Collection Audits for future 5ESS switching generics will be analyzed when AT&T 5ESS documentation is updated to include it, and depending upon the availability of adequate test data .[13]

Table 18-9 identifies the words containing the fields of interest for each generic supported; Table 18-10 shows how to derive the SWITCH system fields from the DSLEQUIP, CKT_PORT and CKTDATA fields; Table 18-11 shows the layout of the DPIDB word for switching generics prior to 5e9.2. Table 18-12 shows how the channel port word is formatted for switching generics prior to 5e9.2, and how the circuit index is formatted for the 5e10 switching generic. Since the ISLU2 has two components that uniquely identify the switch port (i.e., Line Board and Line Circuit) where the ISLU switch port has only one component (Line Card), the ISLU2 identification is manipulated by the pre-processor to produce the DSL tag in conformance with the format the UPDFIV contract requires.

The 5905 Office Record Form can be extracted for an entire IC or for a range of SMs. Figure 18-7 shows a sample 5905 input form for generic 5E7. Figure 18-8 shows a sample 5905 input form for generic 5E8. With generic 5E8, IDCUs as well as ISLUs may appear on the form; IDCUs are ignored. Generic 5E7 supports only ISLUs. Thus the unit type

12. The tuples in the CKT_PORT and CKTDATA relations represent non-ISDN relational data as well as ISDN relational data. There is no one-to-one correspondence between the records of any of the three relations required for the 5e10 ISDN Collection Audit process. See Figure 18-15 for the relationships between the three relations and their data attributes.

13. AT&T 5ESS documentation is available on-line through a special login, to which Bellcore has access.

field does not appear on the generic 5E7 form. Figure 18-9 shows a sample output report from a 5905 Office Record Form print of an entire IC. The sample in Figure 18-9 is for generic 5E8. The fields of interest on the form are the SM, ISLU, MIN ODB TS PER DPIDB, DPIDB, and PSU SHELF. There are no changes in the processing of the 5905 input form for ISDN Collection Audits for the 5e9.1 and 5e10 switching generics.

If both the form and the relation are being processed and the form is for multiple SMs (or the entire IC), then the ODB TS records from the form should be separated by SM and grouped with the relation records for corresponding SMs. One instance of an UPDFIV contract message contains all the TS information for the Collections and the Collection Groups for one SM. The output is formatted according to the UPDFIV FCIF Contract Specifications in Section 18.7.5.2.

The following statistics are kept and output:

- number of ODB RECs per SM,
- number of D TS RECs per SM,
- number of B TS RECs per SM,
- number of UPDFIV contract messages generated.

18.7.5.2 UPDFIV FCIF Contract Specifications

The UPDFIV input contract message is defined in FCIF format. There is one contract message for every SM. A contract message consists of one occurrence of each of the following sections:

*C1	required for all UPDFIV contracts.
*PLHDR	optional - contains platform information.
*FILEHDR	required - contains information about extract.
*PARM	required - contains option control parameters.
*TMSLT	required - contains data for every ISDN channel.

Table 18-13 contains the aggregate structure for the *FILEHDR section; Table 18-14 contains the aggregate structure for the *PARM section; Table 18-15 contains the aggregate structure for the *TMSLT section.

Note that the REC aggregates are not sorted in any particular order. The UPDFIV contract processor sorts the RECs as needed.

18.7.5.3 UPDFIV Contract Processor

The UPDFIV contract processor processes the FCIF sections from the input message. The tags in the *PARM section indicate the audits requested. Each REC aggregate in the *TMSLT section represents an ISDN channel assignment (OE-POE-(Q)TS combination) or an ODB TS reservation for a DPIDB. If the option tags in the *PARM section are not consistent with the RECs in the *TMSLT section, an error message should be generated. (E.g., TSODB set in the *PARM section but no ODBRES tags in the *TMSLT section, or TSPATT set in the *PARM section but no CHNL aggregates in the *TMSLT section).

The REC aggregates are sorted appropriately to gather together the RECs from the same Collection or Collection Group. The sort keys for TS assignment RECs are: ISLU, LGC, SHELF, PH, DSL, TS, and QTS. ODB reservation RECs are sorted by: ISLU, SHELF, and DPIDB.

As the RECs are being processed, the audits requested in the *PARM section are performed. For a Collection TS audit (TSCKT set), the TS Pattern audit and the OE-POE audit are automatically performed.

18.7.5.3.1 Timeslot Pattern Audit

If the TSPATT tag or the TSCKT tag in the *PARM section is set, TS pattern auditing is performed. The TS pattern audit involves comparing each TS assignment associated with a DSL and POE from the IC against the standard AT&T assignment pattern depicted in Figure 18-3. This audit does not involve the SWITCH system database, since TS assignments are not stored in the SWITCH system database. For each LGC, the pattern defines the desired TSs to use for the specified DPIDB. IC TS assignments that do not fit the pattern are output on the AT&T TS Pattern Discrepancies Report (refer to Section 18.7.6). The report identifies, for each out-of-pattern assignment, the input data from the IC and the LG(C) which "owns" the TS that was "stolen".

The engineered, allocated, and used counts in the SWITCH system Collections are used to determine the TS capacity when selecting a DSL and a POE for an ISDN request. The Collection counts reflect the TS counts resulting from using the AT&T TS standard pattern to do IC TS assignment.[14] Two problems arise in connection with out-of-pattern TS assignments.

1. If a TS is "stolen" from another LG(C) by a manual override in the IC, then the Collection capacity of the other LG(C) is overstated.
2. If the out-of-pattern TS assignment in the IC is discovered and the SWITCH system Collections are updated via an UPD COLL Work Session, then when that service is

14. Each time a DPIDB is added or removed using the UPD ISDN Work Session, the engineered TS counts in the appropriate LG(C)/SHELF are adjusted by four TSs.

disconnected, the SWITCH system will update the wrong Collection counts (i.e., the ones associated with the assumed in-pattern TS assignment). The actual TS used is not known to the SWITCH system, nor is it on the Service Order.

The solution to these problems is to allow the Collection Audit process to use the TS restricted Collection counts. The LG(C)/PH Collection counts will reflect the assignments as if the TSs were all "in-pattern". This insures that subsequent disconnect activity will update the correct Collection. Each "out-of-pattern" TS assignment discovered by this audit will increment the restricted TS count in the LG(C)/SHELF where the actual TS in use belongs. This insures that inward activity sees a realistic Collection capacity. The Collection Audit process thus takes over ownership of the restricted TS counts and resets them to reflect the current state of out-of-pattern TS assignments. This algorithm is conservative in that out-of-pattern TS assignments result in the Collection capacity being understated for the "in-pattern" Collection, but this is necessary to protect subsequent disconnect activity.

Here is an example to illustrate the algorithm just described. Suppose the SWITCH system assigns a DSL in LGC 0. Someone manually overrides the TS assignment in the IC to use a TS normally belonging to LGC 10. The Collection Audit process will leave the TS allocated count in LGC 0 at 1, and set the TS restricted count in LGC 10 to 1.

18.7.5.3.2 OE-POE Audit

If the OEPOESYNC tag or the TSCKT tag in the *PARM section is set, then an OE-POE audit is performed. The OE-POE audit consists of matching all the OE-POE combinations from the IC with the OE-POE combinations in the SWITCH system database and noting discrepancies. The OE-POE comparison is complicated by any time difference between the IC extract and the time the UPDFIV contracts are processed. The comparison is further complicated by the fact that the IC has no pending state as does the SWITCH system. Thus, even if the IC extract and audit process could be coincident, there would still be discrepancies based on whether all recent change messages were successfully processed by the IC and whether there was any order backlog in SOAC or MAS.

To deal with these complications, UPDFIV makes a simplifying assumption. The main purpose of the Collection Audit is to recover whole TSs from excessive D allocations which are the result of past disconnect/reconnect activity. This benefit can be obtained by comparing only root views of inventory which have no pending activity against the IC counterparts.[15] Thus, the OE-POE audit process does not analyze all the future pending states of OE-POE equipment, only recognizes when there are any pending views.

The OE-POE audit finds OE discrepancies in both directions; i.e., OE in the IC and spare in the SWITCH system database, and OE working in the SWITCH system database and missing from the IC. This requires UPDFIV to access the entire DSL inventory for the SM

15. Section 18.7.5.3.3 will explain how to count these conditions.

to compare against the IC records. Table 18-16 summarizes all the possible states of IC and SWITCH system OE and the action to be taken.

- If a working OE match is found with no pending activity in the SWITCH system database, then the POE is compared.
  - — If the POEs do not match, the discrepancy is printed out.
  - — If the POEs do not match, but they are in the same PH, they are counted normally.
  - — If the POEs do not match, and they are in different PHs, this is an error condition which prevents TS auditing in both the LG(C)/PHs. Both LG(C)/PH counts are marked as unauditable.
- All SWITCH system OEs with pending activity are printed out and no POE compare is attempted for these OEs.
- Working OEs in the IC that are spare in the SWITCH system, and working OEs in the SWITCH system that are missing from the IC, are error conditions which are printed out and prevent TS auditing in the LG(C)/PHs. Both LG(C)/PH counts are marked as unauditable.

Table 18-18 contains some examples of OE-POE matching.

All error and information conditions generated by the OE-POE audit are reported on the OE-POE Pending Discrepancy Report (refer to Section 18.7.6).

18.7.5.3.3 Collection Timeslot Audit/Update

If the TSCKT tag in the *PARM section is set, then the Collection TS Audit is performed. An audit report is generated as a result of this processing. If the UPDATE tag in the *PARM section is set, then the Collections and Collection Groups are automatically updated in addition to outputting the audit report. There are three major parts to the Collection TS audit:

1. Tallying up the TS counts for each LG(C)/PH combination from the REC aggregates in the *TMSLT section of the input message representing the IC TS assignments,
2. Comparing the tallied IC counts with the existing SWITCH system Collection counts,
3. Optionally updating the D allocated QTSs and the restricted TS counts in the Collections along with all the related summary Collection and Collection Group counts.

The REC aggregates, which have been previously sorted into Collection order, are processed. If an LG(C)/PH count for a particular type (D or B) has been identified as not auditable by the OE-POE Audit, then all the RECs for that LG(C)/PH/TYPE are skipped. Otherwise, for each LG(C)/PH, the number of B TSs allocated (and used)[16] for PPB service, and the number of D QTSs allocated and used for D service are counted. The D allocated QTSs go up in increments of four each time a new TS is encountered from the IC. The TYPE tag in the CHNL aggregate indicates whether the service is D, B1, or B2. B1 and B2 are PPB. The number of TSs to be restricted based on the TS Pattern Audit (refer to Section 18.7.5.3.1) is counted. The number of D and B TS RECs processed is kept for output on the Audit/Update Statistics Report (refer to Section18.7.6).

Once the counts from the IC have been tallied, the SWITCH system Collections are accessed. The computed IC counts are compared with the SWITCH system database counts. Discrepancies only are output to the Collection TS Discrepancies Report (refer to Section 18.7.6).

Discrepancies can arise from pending service as discussed in Section 18.7.5.3.2. These discrepancies are handled in the following way. The SWITCH system (Q)TS used counts can be greater than the IC counts to the extent that there are pending services (pending in or out).[17] These pending services are displayed on the OE-POE Pending Discrepancy Report. Since this process does not update used (Q)TS counts, there is nothing further to be done. There can be discrepancies in the D allocated QTSs from two sources:

1. from pending activity, the same as for the used count case,
2. from the SWITCH system "worst case" scenario logic used to reduce D allocated QTS counts on disconnect activity.

The SWITCH system D allocated QTS counts are updated with the calculated IC D allocated QTSs as long as they are not reduced beyond what is necessary to support the existing SWITCH system D used QTSs. This proviso on reducing the allocated counts takes into account the pending services in the SWITCH system database which may not have been worked in the IC before the extract, or completion orders which may not have been processed through the SWITCH system yet. The D QTS IC allocated field on the discrepancy report is populated with the value that the SWITCH system database should be set to, not the raw IC count. Table 18-18 shows an example of how the D allocated QTS are audited. Any audit discrepancies appear on the Collection TS Discrepancies Report (refer to Section 18.7.6).

The following statistics are kept:

- the number of B and D LG(C)/PH counts with discrepancies,
- the number of B and D LG(C)/PH counts not audited due to OE-POE errors,
- the number of TSs restricted,
- and the (potential) number of whole TSs freed due to excess D allocated QTSs in the SWITCH system database.

16. Since PPB service requires one whole TS, the number of B TSs allocated and used are by definition equal.
17. SWITCH system assignment processing updates Collection counts at pre-completion time for inward activity, and at post-completion time for outward activity.

If the UPDATE tag is set, the following Collection counts are updated:

- the LG(C)/PH D allocated QTSs,
- the LG(C)/SHELF summary PH D allocated QTSs,[18]
- the LG(C)/SHELF restricted TSs,
- the LG(C)/SHELF allocated TSs,
- the SG/SHELF allocated TSs.[19]

18.7.5.3.4 Timeslot Recalc Update

The algorithm for dealing with pending service presented in Section 18.7.5.3.3 depends on the accuracy of the D used Collection counts in the SWITCH system database. The used counts in the SWITCH system Collections should only be different (larger) than the IC derived counts where there is pending service on a switch port. Used counts derived from root views with no associated pending views are assumed to be accurate.[20] The used counts in the SWITCH system Collections built as a result of a COSMOS conversion may not be accurate. A Timeslot Recalc Tool exists to set the TS counts in the SWITCH system Collections based on the DSL and POE assignments in the SWITCH system database. This TS recalc tool takes all future pending views into account in its calculations.

The TS recalc tool must be run once (for update) after conversion from COSMOS before the ISDN Collection Audit process is used to update Collection TS counts. Once the used TS counts are set correctly with the TS recalc tool, the SWITCH system keeps the used counts consistent.

For convenience, if the RECALC tag in the *PARM section is set, the existing TS recalc tool is invoked automatically for an update run before any other auditing is performed.

18.7.5.3.5 On-Demand-B Reserved Timeslot Audit/Update

If the TSODB tag in the *PARM section is set, then the ODB reserved TS audit is performed. An audit report is generated as a result of this processing. If the UPDATE tag in the *PARM section is set, then the Collection Groups are automatically updated in

18. In the case where an LG(C)/PH count is not updated due to errors in the OE-POE Audit, use the existing SWITCH system database LG(C)/PH count in calculating the summary PH D count.

19. As restricted TS counts in LGCs actually represent used TSs (refer to Section 18.7.5.3.1), the SG/SHELF allocated D and PPB TS counts include any restricted TS counts from the LG(C)s in the SG. This prevents exceeding the D and PPB allocation limit imposed by ODB reservations.

20. This is guaranteed by the OE-POE Audit.

addition to outputting the audit report. There are two major parts to the ODB reserved TS audit:

1. comparing the ODB reserved TSs per DPIDB IC counts with the existing SWITCH system Collection Group counts,
2. optionally updating the ODB reserved TSs per DPIDB counts in the Collection Groups along with all the related summary Collection Group counts.

The REC aggregates, which have been previously sorted into Collection Group order (ISLU, SHELF, DPIDB), are processed. The Collection Group corresponding to the RECs is accessed. The DPIDBs in the Collection Group are compared with the DPIDBs from all the ODB RECs on input. If there are any DPIDB inventory discrepancies (in either direction), the error is printed out and no ODB auditing can take place in this Collection Group. The next Collection Group in the input is processed.

The ODB reserved TSs for each DPIDB from the IC are compared with the corresponding value in the SWITCH system Collection Group. Discrepancies (only) are output on the ODB Reserved TS Discrepancies Report (refer to Section 18.7.6). The number of ODB TS count discrepancies is kept for later statistical reporting.

If the UPDATE tag is set, the following Collection Group counts are updated:

- the ODB reserved TSs for each DPIDB,
- the total ODB reserved TSs for each SG,[21]
- the available D and PPB TSs for each SG,[22]
- the total reserved ODB TSs for the ISLU(2)/SHELF,
- the ODB engineered CCS.[23]

The ODB engineered CCS is adjusted up or down (*not* recomputed) by the difference between the ODB TSs from the IC and the ODB TSs in the SWITCH system database. BCC users may have manually adjusted the CCS value from that determined strictly from the ODB TSs reserved. This manual adjustment is preserved.

21. The ODB reserved TSs for *odd* numbered DPIDBs are summed for SG 0; the ODB reserved TSs for *even* numbered DPIDBs are summed for SG 1.

22. The total available TSs for the SG is the total engineered TSs for the SG less the total ODB reserved TSs for the SG.

23. The ODB engineered CCS capacity equals the total number of TSs reserved for ODB multiplied by the CCS per TS (a Wire Center Parms parameter).

18.7.6 Reports

There are up to five output reports which may be generated by an ISDN Collection Audit run. Sample layouts of these reports can be found in Figure 18-10 through Figure 18-14. The reports that are output correspond to the type of audit(s) requested.

The AT&T TS Pattern Discrepancies Report (Figure 18-10) has an entry for each out-of-pattern (Q)TS. The entries are grouped and totaled by SM/ISLU(2)/SHELF.

The OE-POE Pending Discrepancies Report (Figure 18-11) has entries for OE status mismatches, pending conditions, and POE mismatches. The field identified by "DD" in Figure 18-11 represents the type of the POE (D, B1, or B2). The entries are grouped by SM/ISLU(2) and totaled by type of entry.

The Collection TS Discrepancies Report (Figure 18-12) has an entry for each LG(C)/PH with a TS count discrepancy. Only those PHs with discrepancies are included. The report is grouped by Collection (SM/ISLU(2)/SHELF/LG(C)). The TSs restricted and the excess TSs allocated to D channels are shown. These values represent those that *will* result if an update is performed based on this data.

The ODB Reserved TS Discrepancies Report (Figure 18-13) has an entry for each DPIDB with an ODB reserved TS count mismatch. The odd numbered DPIDBs, corresponding to SG 0, are shown on the left half of the report; the even numbered DPIDBs, corresponding to SG 1, are shown on the right half of the report. The entries are grouped by SM/ISLU(2)/ SHELF.

The Audit/Update Statistics Report (Figure 18-14) summarizes the results of a Collection TS audit/update and/or a ODB TS audit/update. Either the second line on the report (indicating that this is an audit run) or the third and fourth line (indicating that this is an update run) are present, but not both. The left side of the report summarizes the input RECs; the right side of the report summarizes the audit results. The statistics are reported by SM/ISLU(2). Total statistics for the entire SM are included as well.

18.7.7 Methods and Procedures

This section gives some guidelines on when to run an ISDN Collection Audit, what a BCC must do to get ready for the audit, and how to analyze the reports from the audit.

Typically the NAC becomes aware of the need to run a Collection Audit based on complaints received from the RCMAC about too many Service Order errors. Service Orders may error due to OE/POE discrepancies between the IC and the SWITCH system or because of timeslot availability. The NAC could use the SWITCH system Report ISDN to help analyze whether a Collection Audit would be beneficial. Report ISDN consists of a DPIDB Summary Report and a SWITCH System Port and Timeslot Detail Report. The detail report contains D QTSs allocated and available for each PH in a Collection. When the Collection totals for these two counts are both relatively large considering the number of DPIDBs equipped, the *potential* exists for there to be excess D allocated QTSs which *may* be recovered by running an ISDN Collection Audit.

The BCCs must set up procedures for extracting data from the 5ESS ICs and loading that data onto the SWITCH system. Refer to Sections 18.7.3 and 18.7.5.1 for more information. Since the ISDN Collection Audit process involves comparing time sensitive data, it is highly desirable to minimize the time between the extract from the 5ESS and running the ISDN Collection Audit. The process is self-protecting, in that "old" data will not overwrite "new" data.[24] However, the older the IC extract is, the more OE-POE audit errors may occur, and the fewer Collections can be updated.

Another desirable time to run an ISDN Collection Audit is right after a conversion from COSMOS. The TS recalc tool should be run to internally synchronize the Collection counts with the ISDN switch port assignments. The ISDN Collection Audit can then synchronize all the Collections with the 5ESS IC. The ISDN Collection Audit process can also be used to do an initial load of all the ODB reserved TS data.

Section 18.7.6 describes five reports that may be generated in connection with an ISDN Collection Audit run. Entries on the TS Pattern Discrepancies Report can be used to cross-check the number of restricted TSs set in each Collection. Entries on the OE-POE Pending Discrepancies Report can be used to cross-check the differences between the IC and SWITCH system "used" counts due to pending conditions, and the LG(C)/PH counts not audited due to errors. The Collection TS Discrepancies Report can be used to manually update the Collection LG(C) data with the Update Collection Work Session. The TS restricted value for each Collection, and the D QTS IC allocated values for the individual PHs within a Collection are used with the Update Collection Work Session. The Update Collection Work Session takes care of updating all the summary counts affected by these basic counts. The ODB Reserved TS Discrepancies Report can be used to manually update the Collection ISLU(2) data with the Update Collection Work Session. The ODBTS (IC) data for each ISLU/SHELF is used with the Update Collection Work Session. The Update Collection Work Session takes care of updating all the summary counts and ODB engineered CCS value affected by these basic counts. The input statistics from the Audit/ Update Statistics Report can be checked against the output statistics of the pre-processor.

Finally, after any update ISDN Collection Audit run, a new Report ISDN should be requested.

24. The audit process synchronizes only those Collections where the OEs and POEs have compatible statuses. The SWITCH system view of pending services is accepted.

Figure 18-1. Example RPT SAM Output using CONN Option

```
                                 REPORT SAM - CONN
LOC/WC: ________        DATE: ________   TIME: ________   EMP: ________
                                                     DCOR TAG: __________

INPUT OPTIONS: NTU: CP=50,SIZE=50,OE=50,SIZE=50,TN=50,SIZE=50

FILTER OPTION: CONN

sample item no.    1

ckt  tn-oe   cp-tn  cp-oe    cp     oe     tn     tp     me     tre     dip

                            w  s   w  s   w  s   w  s   w  s   w  s   w  s

comment:



 ---------------------------- CKID: 201-482-0795 ------------------------------
 CKID: 201-482-0795                                              CHGD: 04-01-90
          ASM: CKT                           EMP: +CNV
 TN: 201-482-0795                                                CHGD: 02-06-89
          ASM: CKT                             EMP: +CNV
 OE:  L5001-000-00                                               CHGD: 02-06-89
          ASM: CKT                             EMP: +CNV
          W FR: F25  ZN: 001    FRT: 01-01U01-1-01
     (CONN TO) CP:  8-97
                FROMFR: F25   FROMZN: 001   TOFR: F25   TOZN: 001
 CP: 8-97                                                        CHGD: 02-06-89
          ASM: CKT                             EMP: +CNV
         W FR: F25  ZN: 001
                                                        MBL: N
     (CONN TO)
                FROMFR:       FROMZN:       TOFR:       TOZN:
```

Figure 18-2. 5ESS Architecture for ISLU

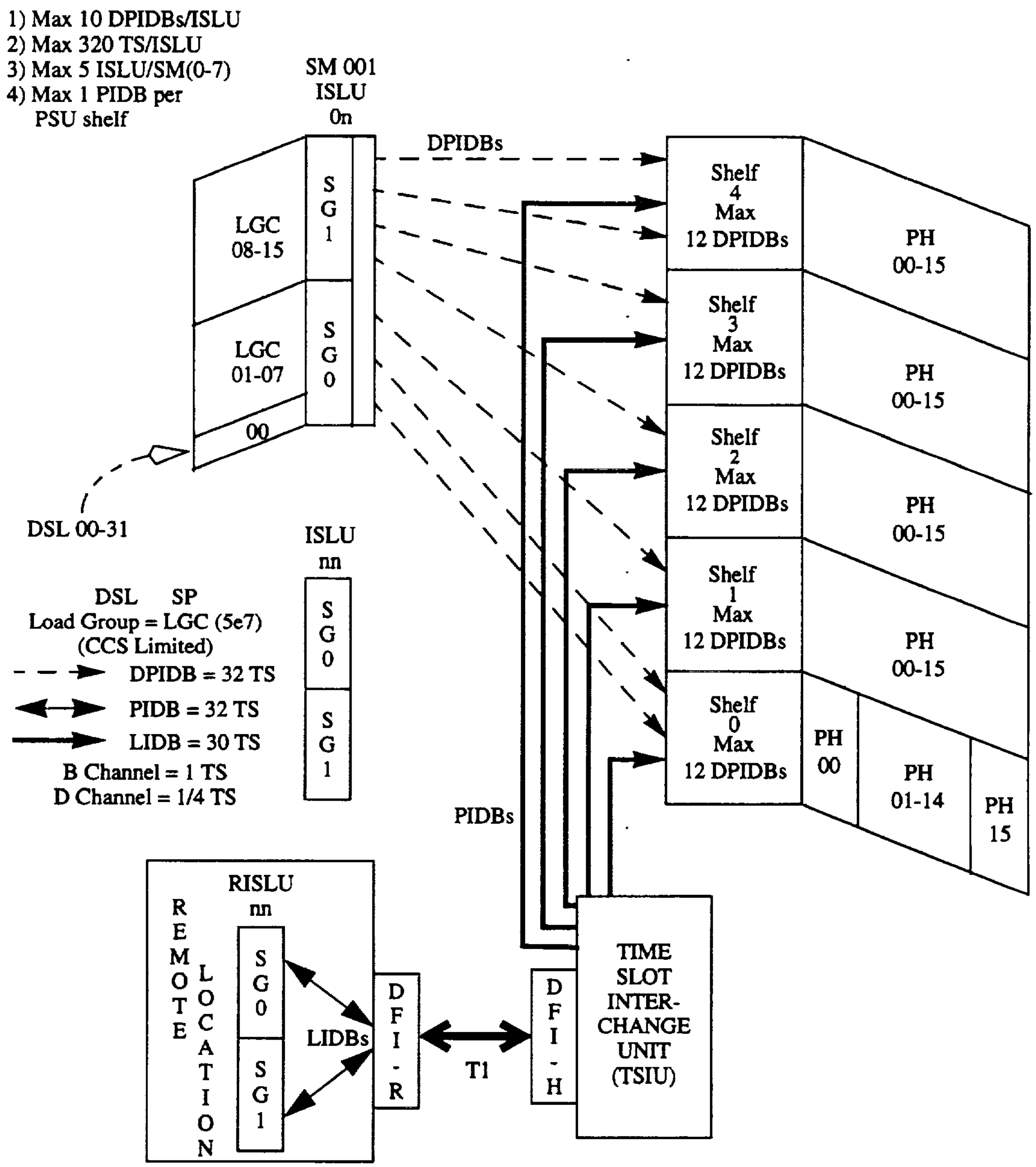

Figure 18-3. AT&T Timeslot Assignment Pattern

```
                          DPIDB Timeslots
      |   3                   2                   1                   0
LGC   | 1 0 9 8 7 6 5 4 3 2 1 0 9 8 7 6 5 4 3 2 1 0 9 8 7 6 5 4 3 2 1 0
------|---------------------------------------------------------------
  0   |     I G E C A       I G E C A       I G E C A       I G E C A
  1   |   I G E C A       I G E C A       I G E C A       I G E C A
  2   | I G E C A       I G E C A       I G E C A       I G E C A
  3   | G E C A       I G E C A       I G E C A       I G E C A       I
  4   | E C A       I G E C A       I G E C A       I G E C A       I G
  5   | C A       I G E C A       I G E C A       I G E C A       I G E
  6   | A       I G E C A       I G E C A       I G E C A       I G E C
  7   |       I G E C A       I G E C A       I G E C A       I G E C A
      |
  8   |     J H F D B       J H F D B       J H F D B       J H F D B
  9   |   J H F D B       J H F D B       J H F D B       J H F D B
 10   | J H F D B       J H F D B       J H F D B       J H F D B
 11   | H F D B       J H F D B       J H F D B       J H F D B       J
 12   | F D B       J H F D B       J H F D B       J H F D B       J H
 13   | D B       J H F D B       J H F D B       J H F D B       J H F
 14   | B       J H F D B       J H F D B       J H F D B       J H F D
 15   |       J H F D B       J H F D B       J H F D B       J H F D B
```

DPIDB										
SG	0					1				
NUMERIC	11	9	7	5	3	10	8	6	4	2
ALPHA	A	C	E	G	I	B	D	F	H	J

Figure 18-4. Update Collection Work Session Screen - ISLU Data

```
_ Dcor Main Logoff                     SWITCH                        XX/XX/XX XX:XX
                             UPD COLL - (ISLU) ISLU DATA
loc/wc: ........  update fcn: ...  dcor tag: __________  pri: __ emp: ........

     ic: ....  icid : .  sm: ...  islu: .  shelf: .

dpidb: ..  odbts: __   dpidb: ..  odbts: __   dpidb: .. odbts: __
dpidb: ..  odbts: __   dpidb: ..  odbts: __   dpidb: .. odbts: __
dpidb: ..  odbts: __   dpidb: ..  odbts: __   dpidb: .. odbts: __
dpidb: ..  odbts: __

(total timeslots) eng: ...  ODB reserved: ...   D and PPB alloc: ...

(ODB Data)
     engineered CCS for ODB: ____      estimated ODB load (CCS): ____

 invord: _____________            step: ___
 islu rmk: ______________________________________________________________
(history) ord: _____________   dd: ________     invord: .............
          emp: *........     chgd: ........

_____  Exec  Undo  Lgc
Cmd/find: ______________________________________________________________________
MESSAGE LINE
```

Figure 18-5. Update Collection Work Session Screen - LGC Data

```
_ Dcor Main Logoff                    SWITCH                    XX/XX/XX XX:XX
                    UPD COLL - LGC (LINE GROUP CONTROLLER DATA)
loc/wc: ........  update fcn: ...  dcor tag: __________  pri: __ emp: ........

    ic: ....  icid : .  sm: ...  islu: .  shelf: .                lgc: ..

  ts-eng: ..  ts-alloc: ..  ts-rst: __  ts-allowed:  D: __  B: __
  lgc rmk: ____________________________________________________________

 ph      D timeslots   B timeslots      ph      D timeslots    B timeslots
         alloc  used   alloc  used              alloc  used    alloc  used
         (1/4)         (whole)                  (1/4)          (whole)
 ..       __     ..     ..     ..       ..       __     ..      ..     ..
 ..       __     ..     ..     ..       ..       __     ..      ..     ..
 ..       __     ..     ..     ..       ..       __     ..      ..     ..
 ..       __     ..     ..     ..       ..       __     ..      ..     ..
 ..       __     ..     ..     ..       ..       __     ..      ..     ..
 ..       __     ..     ..     ..       ..       __     ..      ..     ..
 ..       __     ..     ..     ..       ..       __     ..      ..     ..
 ..       __     ..     ..     ..       ..       __     ..      ..     ..
_____ Exec  Undo   Islu
Cmd/find: ____________________________________________________________________
MESSAGE LINE
```

Figure 18-6. ISDN Collection Audit Flow Diagram

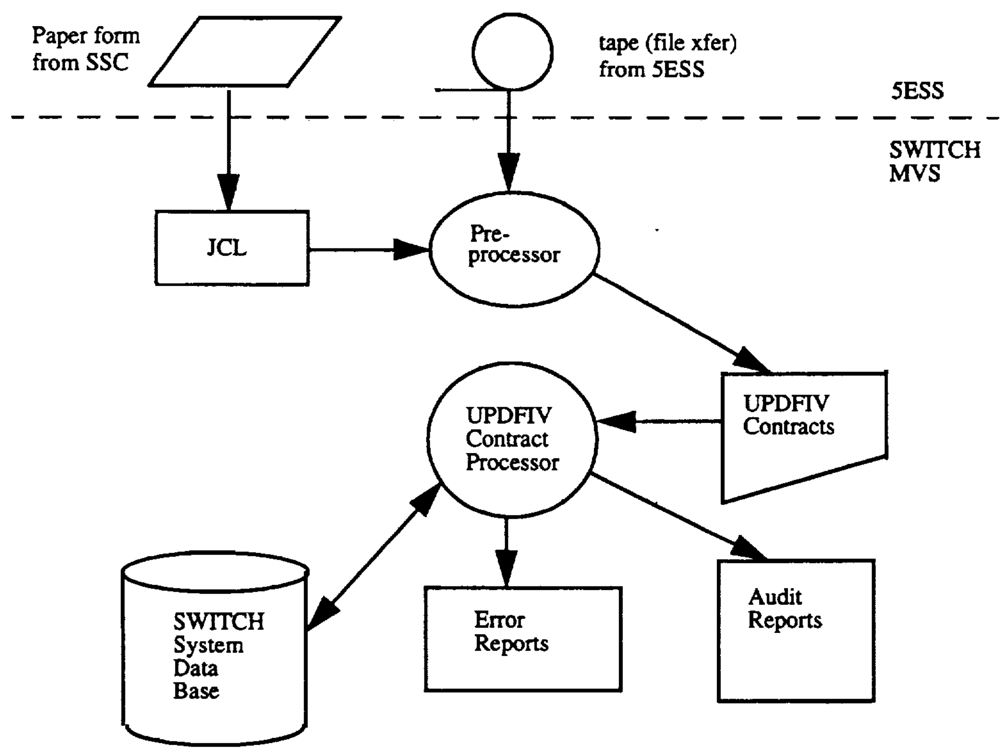

Figure 18-7. Sample FORM 5905 Input for 5E5-5E7

```
SCREEN 1 OF 2                       5ESS Switch
odbts                           OFFICE DATA ADMINISTRATION
(5905)                              ODB TS ALLOCATION

*1. SM   002
*2. ISLU 0                          3. ODB TS LIST

     MIN TS/                         PSU         MAX TS/       USRS/
     DPIDB          DPIDB            SHELF       SHELF         SHELF

  1.  01             11               4
  2.  02             10               3
  3.  __             __               _
  4.  __             __               _
  5.  __             __               _
  6.  __             __               _
.sp 2
SCREEN 2 OF 2                       5ESS Switch
odbts                           OFFICE DATA ADMINISTRATION
(5905)                              ODB TS ALLOCATION

                                    3. ODB TS LIST

     MIN TS/                         PSU         MAX TS/       USRS/
     DPIDB          DPIDB            SHELF       SHELF         SHELF

  7.  __             __               _
  8.  __             __               _
  9.  __             __               _
 10.  __             __               _
 11.  __             __               _
```

Figure 18-8. Sample FORM 5905 Input for 5E8

```
SCREEN 1 OF 2                    5ESS Switch
odbts                      OFFICE DATA ADMINISTRATION
(5905)                         ODB TS ALLOCATION

*1. SM        001
*2. UNIT TYPE ISLU
*3. UNIT      0                4. ODB TS LIST

     MIN TS/                        PSU          MAX TS/        USRS/
     DPIDB          DPIDB           SHELF        SHELF          SHELF

  1.  01             11              4
  2.  02             10              3
  3.  __             __              _
  4.  __             __              _
  5.  __             __              _
  6.  __             __              _
.sp 2
SCREEN 2 OF 2                    5ESS Switch
odbts                      OFFICE DATA ADMINISTRATION
(5905)                         ODB TS ALLOCATION

                               4. ODB TS LIST

     MIN TS/                        PSU          MAX TS/        USRS/
     DPIDB          DPIDB           SHELF        SHELF          SHELF

  7.  __             __              _
  8.  __             __              _
  9.  __             __              _
 10.  __             __              _
 11.  __             __              _
```

Figure 18-9. Sample FORM 5905 Output for 5E8

```
ESS 5905                          ODB TS ALLOCATION      DATE : 02-22-93
VIEW #: 23.13                        5ESS SWITCH
OFFICE: 8R8WDO
```

SM	UNIT TYPE	UNIT	MIN ODB TS PER DPIDB	DPIDB	MAX ODB TS PER SHELF	PSU SHELF	ODB USERS PER SHELF
2	ISLU	0	10	05	034	0	002
			10	07	034	0	002
			10	09	034	0	002
			04	11	034	0	002
3	ISLU	0	00	05	000	0	000
			00	07	000	0	000
			00	09	000	0	000
			00	11	000	0	000
3	IDCU	2	00	21		0	
			00	22		0	

****** End of Report ******

SM	UNIT TYPE	UNIT	MIN ODB TS PER DPIDB	DPIDB	MAX ODB TS PER SHELF	PSU SHELF	ODB USERS PER SHELF

SM	UNIT TYPE	UNIT	MIN ODB TS PER DPIDB	DPIDB	MAX ODB TS PER SHELF	PSU SHELF	ODB USERS PER SHELF

Figure 18-10. AT&T TS Pattern Discrepancies Report Layout

```
                    SWITCH ISDN COLLECTION AUDIT
           ODB RESERVED TIMESLOT (TS) DISCREPANCIES REPORT

WC: ________        DATE: ________       TIME: ________      PAGE: ___
IC: ___________  EXTDATE: ________                            EMP: ________

SM: ___     ISLU: _    SHELF: _

DPIDB   ODBTS (SWITCH)     ODBTS (IC)   |  DPIDB   ODBTS (SWITCH)    ODBTS (IC)
 11      __                 __          |   10      __                __
 09      __                 __          |   08      __                __
 07      __                 __          |   06      __                __
 05      __                 __          |   04      __                __
 03      __                 __          |   02      __                __

SM: ___     ISLU: _    SHELF: _

DPIDB   ODBTS (SWITCH)     ODBTS (IC)   |  DPIDB   ODBTS (SWITCH)    ODBTS (IC)
 11      __                 __          |   10      __                __
 09      __                 __          |   08      __                __
 07      __                 __          |   06      __                __
 05      __                 __          |   04      __                __
 03      __                 __          |   02      __                __

SM: ___     ISLU: _    SHELF: _

DPIDB   ODBTS (SWITCH)     ODBTS (IC)   |  DPIDB   ODBTS (SWITCH)    ODBTS (IC)
 11      __                 __          |   10      __                __
 09      __                 __          |   08      __                __
 07      __                 __          |   06      __                __
 05      __                 __          |   04      __                __
 03      __                 __          |   02      __                __
```

Figure 18-11. OE-POE Pending Discrepancies Report Layout

```
                    OE-POE PENDING DISCREPANCIES REPORT

WC: ________          DATE: ________       TIME: ________       PAGE: ___
IC: ___________    EXTDATE: ________                             EMP: ________

SM: ___     ISLU: _

           *ERROR*                                                 *ERROR*
       OE MISSING/SPARE  PENDING            POE              MISSING OR DIFF  SAME
 OE      SWITCH   IC                SWITCH          IC             PH          PH
AA.AA      X      X         X    C.CC.CCC(DD) C.CC.CCC(DD)         X            X
AA.AA      X      X         X    C.CC.CCC(DD) C.CC.CCC(DD)         X            X
AA.AA      X      X         X    C.CC.CCC(DD) C.CC.CCC(DD)         X            X
  .
  .
  .

TOTAL     999    999       999                                  9999         9999

SM: ___     ISLU: _

           *ERROR*                                                 *ERROR*
       OE MISSING/SPARE  PENDING            POE              MISSING OR DIFF  SAME
 OE      SWITCH   IC                SWITCH          IC             PH          PH
AA.AA      X      X         X    C.CC.CCC(DD) C.CC.CCC(DD)         X            X
AA.AA      X      X         X    C.CC.CCC(DD) C.CC.CCC(DD)         X            X
AA.AA      X      X         X    C.CC.CCC(DD) C.CC.CCC(DD)         X            X
  .
  .
  .

TOTAL     999    999       999                                  9999         9999
  .
  .
  .
```

Figure 18-12. Collection TS Discrepancies Report Layout

```
.                   COLLECTION TIMESLOT (TS) DISCREPANCIES REPORT

WC: _______          DATE: ________       TIME: ________        PAGE: ___
IC: ___________   EXTDATE: ________                              EMP: ________

SM: ___     ISLU: _    SHELF: _    LGC: __

TS RESTRICTED: __    EXCESS WHOLE TS ALLOCATED TO D CHANNELS : __

PH       D QUARTER TS         B WHOLE TS | PH       D QUARTER TS         B WHOLE TS
      SWITCH        IC        SWITCH  IC |       SWITCH        IC        SWITCH  IC
    ALLOC USED  ALLOC USED               |     ALLOC USED  ALLOC USED
00    __   __    __   __      __    __   | 01    __   __    __   __      __    __
02    __   __    __   __      __    __   | 03    __   __    __   __      __    __
04    __   __    __   __      __    __   | 05    __   __    __   __      __    __
06    __   __    __   __      __    __   | 07    __   __    __   __      __    __
08    __   __    __   __      __    __   | 09    __   __    __   __      __    __
10    __   __    __   __      __    __   | 11    __   __    __   __      __    __
12    __   __    __   __      __    __   | 13    __   __    __   __      __    __
14    __   __    __   __      __    __   | 15    __   __    __   __      __    __

SM: ___     ISLU: _    SHELF: _    LGC: __

TS RESTRICTED: __    EXCESS WHOLE TS ALLOCATED TO D CHANNELS : __

PH       D QUARTER TS         B WHOLE TS | PH       D QUARTER TS         B WHOLE TS
      SWITCH        IC        SWITCH  IC |       SWITCH        IC        SWITCH  IC
    ALLOC USED  ALLOC USED               |     ALLOC USED  ALLOC USED
00    __   __    __   __      __    __   | 01    __   __    __   __      __    __
02    __   __    __   __      __    __   | 03    __   __    __   __      __    __
04    __   __    __   __      __    __   | 05    __   __    __   __      __    __
06    __   __    __   __      __    __   | 07    __   __    __   __      __    __
08    __   __    __   __      __    __   | 09    __   __    __   __      __    __
10    __   __    __   __      __    __   | 11    __   __    __   __      __    __
12    __   __    __   __      __    __   | 13    __   __    __   __      __    __
14    __   __    __   __      __    __   | 15    __   __    __   __      __    __
 .
 .
 .
```

Figure 18-13. ODB Reserved TS Discrepancies Report Layout

```
                      SWITCH ISDN COLLECTION AUDIT
            ODB RESERVED TIMESLOT (TS) DISCREPANCIES REPORT

WC: ________          DATE: ________       TIME: ________      PAGE: ___
IC: ___________    EXTDATE: ________                            EMP: ________

SM: ___     ISLU: _    SHELF: _

DPIDB   ODBTS (SWITCH)   ODBTS (IC)  |  DPIDB   ODBTS (SWITCH)   ODBTS (IC)
 11        __                __      |   10        __                __
 09        __                __      |   08        __                __
 07        __                __      |   06        __                __
 05        __                __      |   04        __                __
 03        __                __      |   02        __                __

SM: ___     ISLU: _    SHELF: _

DPIDB   ODBTS (SWITCH)   ODBTS (IC)  |  DPIDB   ODBTS (SWITCH)   ODBTS (IC)
 11        __                __      |   10        __                __
 09        __                __      |   08        __                __
 07        __                __      |   06        __                __
 05        __                __      |   04        __                __
 03        __                __      |   02        __                __

SM: ___     ISLU: _    SHELF: _

DPIDB   ODBTS (SWITCH)   ODBTS (IC)  |  DPIDB   ODBTS (SWITCH)   ODBTS (IC)
 11        __                __      |   10        __                __
 09        __                __      |   08        __                __
 07        __                __      |   06        __                __
 05        __                __      |   04        __                __
 03        __                __      |   02        __                __
 .
 .
 .
```

Figure 18-14. Audit/Update Statistics Report Layout

```
                          SWITCH ISDN COLLECTION AUDIT
                            AUDIT STATISTICS REPORT
                            UPDATE STATISTICS REPORT
     ***ONLY ODB TS, D-ALLOC QUARTER TS, AND RESTRICTED TS ARE UPDATED***

WC: ________          DATE: ________        TIME: ________        PAGE: ___
IC: ___________    EXTDATE: ________                               EMP: ________

SM: ___    ISLU: _                       # COLLECTIONS UPDATED: _
___ ODB  RECORDS PROCESSED               ___ ODB TS MISMATCHES
___ B TS RECORDS PROCESSED               ___ B LGC/PH COUNT MISMATCHES
                                         ___ B LGC/PH COUNT WITH OE-POE ERRORS
___ D TS RECORDS PROCESSED               ___ D LGC/PH COUNT MISMATCHES
                                         ___ D LGC/PH COUNT WITH OE-POE ERRORS
                                         ___ WHOLE TS FREED DUE TO EXCESS D-ALLOC
                                         ___ RESTRICTED TS

SM: ___    ISLU: _                       # COLLECTIONS UPDATED: _
___ ODB  RECORDS PROCESSED               ___ ODB TS MISMATCHES
___ B TS RECORDS PROCESSED               ___ B LGC/PH COUNT MISMATCHES
                                         ___ B LGC/PH COUNT WITH OE-POE ERRORS
___ D TS RECORDS PROCESSED               ___ D LGC/PH COUNT MISMATCHES
                                         ___ D LGC/PH COUNT WITH OE-POE ERRORS
                                         ___ WHOLE TS FREED DUE TO EXCESS D-ALLOC
                                         ___ RESTRICTED TS

SM: ___    ISLU: _                       # COLLECTIONS UPDATED: _
___ ODB  RECORDS PROCESSED               ___ ODB TS MISMATCHES
___ B TS RECORDS PROCESSED               ___ B LGC/PH COUNT MISMATCHES
                                         ___ B LGC/PH COUNT WITH OE-POE ERRORS
___ D TS RECORDS PROCESSED               ___ D LGC/PH COUNT MISMATCHES
                                         ___ D LGC/PH COUNT WITH OE-POE ERRORS
                                         ___ WHOLE TS FREED DUE TO EXCESS D-ALLOC
                                         ___ RESTRICTED TS

   .
   .
   .

SM: ___    TOTALS                        # COLLECTIONS UPDATED: _
___ ODB  RECORDS PROCESSED               ___ ODB TS MISMATCHES
___ B TS RECORDS PROCESSED               ___ B LGC/PH COUNT MISMATCHES
                                         ___ B LGC/PH COUNT WITH OE-POE ERRORS
___ D TS RECORDS PROCESSED               ___ D LGC/PH COUNT MISMATCHES
                                         ___ D LGC/PH COUNT WITH OE-POE ERRORS
                                         ___ WHOLE TS FREED DUE TO EXCESS D-ALLOC
                                         ___ RESTRICTED TS
```

Figure 18-15. Relationships of DSLEQUIP, CKT_PORT and CKTDATA Relations and Attributes for 5e10

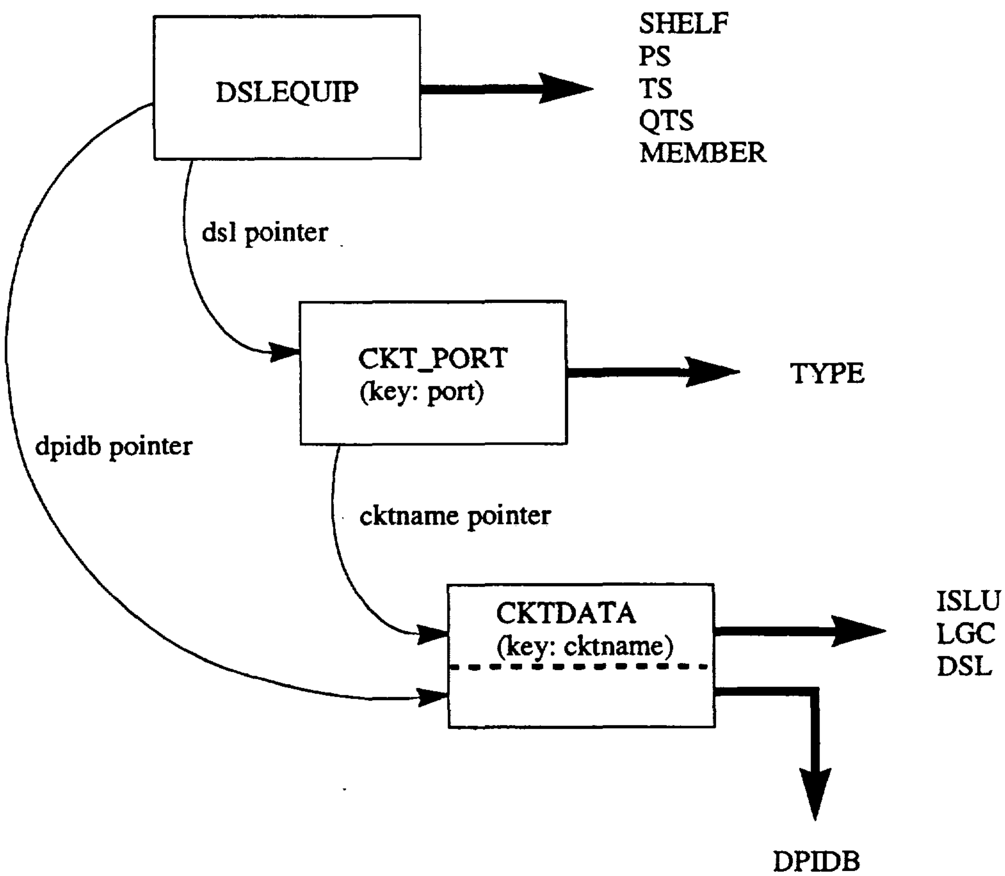

TABLE APPENDIX 18

Table 18-1. id translation table

TABLE NAME	INSTANCE	TAG
asgn category rules	IC ID	
asgn options		Option Value
cc ic connect map		CC
cc ic connect map		CC/IC
ccs adjustment	IC ID	
ccs adjustment ISDN	IC ID	
ccs adjustment WATS	IC ID	
centrex rcu	CTX Grp ID	
dip definition	IC ID	
frame connect priority		From Frm, To Frm
frame system ID		Frame ID
frame system priority		Frame ID
ic frame map		IC ID, Frame ID
ic nxx		IC ID
ic priority		IC ID
inv frame layout	Frame ID	IC ID
inv group rules	IC ID	
inv parse rules	IC ID	
inv supp group rules	IC ID	
jeopardy action		IC ID
line module map		IC ID
load factor summary	IC ID	Load Div ID
measurement group	IC ID	
pps adjustment ISDN	IC ID	
reverse spread	IC ID, Admin Grp ID	Eqpt ID
deny spread	IC ID, Admin Grp ID	Eqpt ID

Table 18-1. id translation table Cont.

TABLE NAME	INSTANCE	TAG
spread count	IC ID, Admin Grp ID	Remote ID, Eqpt ID
spread typing	IC ID	
sublet options	IC ID	
swpt asgn control	IC ID	
swpt penalty score age	IC ID	
swpt penalty score am	IC ID	
swpt penalty score asm	IC ID	
swpt penalty score en	IC ID	
swpt penalty score es	IC ID	
swpt penalty score jump	IC ID	
swpt penalty score ld	IC ID	
swpt penalty score sig	IC ID	
swpt relaxation	IC ID	
swpt rule set	IC ID	
swpt score weight	IC ID	
tp routes		All Frame IDs
tn type	IC ID	
tre penalty score age	IC ID	
tre penalty score asm	IC ID	
tre penalty score jump	IC ID	
tre penalty score sf	IC ID	
tre relaxation	IC ID	
tre rule set	IC ID	
wc parms	IC ID, Frame ID	Parmval

Table 18-2. scandata instance key Table

NODE TYPE	TABLE NAME	DB TAG	VALUE	MSG ID
ctx	centrex rcu			e
ctx	deny spread	ex.ic_type	5es	e
ctx	spread count			e
frm	wc parms			e
hml	spread count	grp_sel_ind	y	e
ic	inv group rules			e
ic	load factor summary			e
ic	measurement group			e
ic	spread typing			e
ic	wc parms			e
sch	spread count			e

Table 18-3. instance key definition Table

TABLE NAME	INSTANCE KEY PART1	PART2	PART3	PART4	PART5
asgn category rules	ic_type	generic	id		
ccs adjustment isdn	ic_type	generic			
ccs adjustment wats	ic_type	generic			
centrex rcu	id				
deny spread	cntrld_by.idx	type	id		
dip definition	ic_type	id			
frame system priority	ic_type	i			
inv group rules	ic_type	generic	id		
load factor summary	ic_type				
measurement group	ic_type	generic	id		
spread count	id				
spread typing	ic_type	generic	id		
tn type	ic type	generic	id		
wc parms	id				

Table 18-4. scandata node Table

NODE	TABLE NAME	COL1	DB TAG1	COL2	TAG2	CL3	TG3	OP	MSG
frm	frm conn priority	ffrm	id	tfrm	id			o	e
frm	frm conn priority	ffrm	id	tfrm	id			a	e
frm	frm system id	frm_id	id						w
frm	frm syst priority	frm_id	id						e
frm	ic frame map	frm_id	id						w
frm	tp routes	ff	id	tf	id			o	e
ic	frm system id	clli	ex.clli-loc						e
ic	frm syst priority	clli	ex.clli-loc						e
ic	ic frame map	icid	id						e
ic	ic nxx	ic	id						e
ic	ic priority	icid	id						e

OP = o - logical 'or' condition

OP = a - logical 'and' condition

Table 18-5. scandata entry match Table

SOURCE TBL	SRC COL	SRC NTYP	TARGET TBL	TAR COL	MSG
ic priority	asgcat		asgn category map	asgcat	e
asgn category map	asgcat		ic priority	asgcat	w
tn type	asgn cat	ic	asgn category map	asgcat	e
asgn category rules	asgcat	ic	asgn category map	asgcat	e

Table 18-6. rpt excl value

When a match is found for the value of any tag appearing in the table, that service is removed from the sample population.

DSGN ATTR	EXCLUDED VALUE(S)
nc	1
nc	4
nc	6
nc	u
gs	ƀ
cs	d
cs	i
cs	w
cot	n
cot	f
cot	x
dy	o
dy	i
sd	ƀ
co	ƀ
cl	ƀ
al	ƀ

Attributes with ƀ will have no value excluded. The following Design Edge Attributes are allowed in in the rpt excl value table.

DSGN ATTR	SHORT NAME	LENGTH
number of conductors	nc	1
grade of service	gs	1
category of service	ct	1
central office termination	cot	1
directionality	dy	1
service descriptor	sd	38
central office admin type	co	5
assignable line usoc	al	5
class of service usoc	cl	5

Table 18-7. UPDFIV Contract Processor Options

#	Option	Has Prerequisite
1	TS Pattern Check	
2	OE-POE Audit	
3	CLCT TS Audit	1 and 2
4	ODB TS Audit	
5	Recalc	3 and 6
6	Update	3 or 4

Table 18-8a. DSLEQUIP Word Location by Generic

DSLEQUIP Information	Word			
	5e7	5e8	5e9.1	5e10
# Words	30	36	36	39
DSL (Port/Pointer)	1	1	1	1
DPIDB (#/Pointer)	2	2	2	2
DSL Group	3	3	3	3
Member	4	4	4	4
TS	9	9	9	9
QTS	11	13	13	13

Table 18-8b. CKT_PORT Word Location (5e10)

CKT_PORT Information	Word
# Words	3
Port (key)	3
Port Index	2
Circuit Name (Pointer)	1

Table 18-8c. CKTDATA Word Location (5e10)

CKTDATA Information	Word
# Words	15
Circuit Name (key)	1
Unite Type	9
Unit	10
Circuit Index	11

Table 18-9a. SWITCH System Field Derivation (5e7, 5e8, 5e9.1)

SWITCH System Tag	Relation	Relation Field	Derivation
SM			key to relation

Table 18-9a. SWITCH System Field Derivation (5e7, 5e8, 5e9.1)

SWITCH System Tag	Relation	Relation Field	Derivation
ISLU	DSLEQUIP	port	bits 9-11 (i.e., shift left four bits, then leftmost three bits)
LGC	DSLEQUIP	port	bits 5-8 (i.e., shift right five bits, then rightmost four bits)
DSL	DSLEQUIP	port	rightmost five bits (bits 0-5)
DPIDB	DSLEQUIP	DPIDB	rightmost four bits
TS	DSLEQUIP	TS	directly
QTS	DSLEQUIP	QTS	directly
SHELF	DSLEQUIP	DSL Group	int(DSL Group)/16
PH	DSLEQUIP	DSL Group	(DSL Group) mod 16
POE	DSLEQUIP	Member	directly
TYPE	DSLEQUIP	port	based on leftmost four bits: 1011=d channel, 1000=b1 channel, 1001=b2 channel

Table 18-9b. SWITCH System Field Derivation (5e10)

SWITCH System Tag	Relation	Relation Field	Derivation
SM			key to relation
ISLU	CKTDATA	Unit	directly
LGC	CKTDATA	Ckt Index	leftmost eight bits, minus 3
DSL	CKTDATA	Ckt Index	described in Table 18-10
DPIDB	CKTDATA	Ckt Index	rightmost four bits
TS	DSLEQUIP	TS	directly
QTS	DSLEQUIP	QTS	directly
SHELF	DSLEQUIP	DSL Group	int(DSL Group)/16
PH	DSLEQUIP	DSL Group	(DSL Group) mod 16
POE	DSLEQUIP	Member	directly
TYPE	CKTPORT	Port Index	0=d channel, 1=b1 channel, 2=b2 channel

Table 18-10. DSL Derivation for ISLU and ISLU2 (5e10)

Unit Type	Relation	Relation Field	Derivation
ISLU	CKTDATA	Ckt Index	rightmost five bits
ISLU2	CKTDATA	Ckt Index	bits 4-6 and bit 0-3[a] (i.e., shift left nine bits, then three leftmost bits and four rightmost bits

a. these two subfields are to be concatenated with a "0" in the middle to produce a 3-digit pseudo-line-card representation for the UPDFIV contract processor

Table 18-11. UPDFIV *FILEHDR Section

*FILEHDR Request Section	Appearances	Notes
*FILEHDR		
IC{	1	1
EXNM	1	
EXID	1	
}		
WC	1	
SM	1	
GENDATE	1	2
GENTIME	opt	2
}%		

Notes:

1. IC will identify the intelligent controller to be update or audited.
2. GENDATE/GENTIME will be set to the date/time that the data was extracted from the IC. Format of the date is "YYYYMMDD" (e.g. 19920622 represents June 22, 1992).

Table 18-12. UPDFIV *PARM Section

*FILEHDR Request Section	Appearances	Notes
*PARM		
OPTS{	1	
TSPATT	opt	
OEPOESYNC	opt	
TSCKT	opt	
TSODB	opt	
RECALC	opt	1
UPDATE	opt	2
DEST	opt	3
}		
}%		

Notes:

1. RECALC may only be present if TSCKT and UPDATE are set.
2. UPDATE may only be present if TSCKT or TSODB are set.
3. DEST is an output device or a data set name.

Table 18-13. UPDFIV *TMSLT Section

*TMSLT Request Section	Appearances	Notes
*TMSLT{		
REC{	1+	1
CTL{	1	2
SM	1	
ISLU	1	
LGC	opt	3
SHELF	1	
DPIDB	opt	4
}		
ACL{	1	5
ODBRES	opt	6
CHNL	opt	7
PH		
DSL		
TS		
QTS		
TYPE		
DPIDB		
PHMEMB		
}		
}		
}		
}%		

Notes:

1. Each REC aggregate supports one ISDN channel or an ODB reservation for one DPIDB.
2. The CTL aggregate must contain either LGC or DPIDB, but not both.
3. If LGC is present, this is a channel REC. LGC is required for auditing nailed-up timeslots.
4. If DPIDB is present, this is an ODB REC. DPIDB is required for auditing ODB timeslots.
5. The ACL aggregate must contain either ODBRES or CHNL, but not both.
6. ODBRES is required for auditing ODB timeslots.
7. CHNL is required for auditing nailed-up timeslots.

Table 18-14. OE-POE Audit Algorithm

OE (IC)	OE (SWITCH)	Print-Out	Error	Check POE
WK	WK			X
WK	WK/PND	X		
WK	SP/PND	X		
WK	SP	X	X	
	WK	X	X	
	WK/PND	X		
	SP/PND	X		
	SP			

Table 18-15. OE-POE Audit Examples

OE (IC)	OE (SWITCH)	Count	Print-Out	Error
OE1-POE1	OE1-POE1	X		
OE2-POE2	OE2-POE3 (same PH)	X	X	
OE4-POE4	OE4-POE5 (diff PH)		X	X
OE6-POE6	OE6-POE6 +pnd	X	X	
OE7-POE7	OE7-POE8 +pnd	X	X	

Table 18-16. Example of D Allocated TS Audit Rule

IC		SWITCH Before		SWITCH After	
D-alloc	D-used	D-alloc	D-used	D-alloc	D-used
4	4	8	4	4	4
4	4	8	5	8	5
4	4	12	5	8	5

Appendix 18A: Scan DB Tests

18A.1 Scan DB Node Level Tests

Test Name(Test Type): Scan NTU Scope (Scan Scope)

Test Description:

Check that the NTU node has valid edges (types and correct 1way, 2way, 3way), pointing to valid other nodes, required edges, no prohibited edges, and correct number of edge type.

The following node types will be supported by Scan DB:

SWPT	CP
IF	BL
TRE	TN
CKT	SVC
HML	SCH
CTX	SFG
ICE	DTN
IC	RU
SWEQ	CLCT
ASM	

Test Name(Test Type): Scan Group Scope (Scan Scope)

Test Description:

Check that the Group node has valid edges (types and correct 1way, 2way, 3way), pointing to valid other nodes, required edges, no prohibited edges, and correct number of edge type.

Test Name(Test Type): Scan Assembly Scope (Scan Scope)

Test Description:

Check that the assembly has valid edges (types and correct 1way, 2way, 3way), pointing to valid other nodes, required edges, no prohibited edges, and correct number of edge type.

Test Name(Test Type): Scan Order Scope (Scan Scope)

Test Description:

Check that the order work task has valid edges (types and correct 1way, 2way), pointing to valid other nodes, required edges, no prohibited edges, and correct number of edge type.

Test Name(Test Type): Valid Administrative Constraint (Admin Check)

Test Description:
Check a defined list (reference data table = codeset values) of valid values for administrative constraint for node type swpt.

Test Name(Test Type): Valid Specific Functionalities (Spec Func)

Test Description:
Check a defined list (reference data table = codeset values) by node type of valid specific functionalities. Node types supported are BL, TRE, and CPs.

Test Name(Test Type): Check Swpt Assignability Attributes (Swpt Attr)

Test Description:
Check node type swpt to ensure essentiality, signaling, and encoding protocols have valid values (reference data table = codeset values). Signaling and essentiality must be populated; null is a valid value for encoding.

Test Name(Test Type): Check EIX (EIX)

Test Description:
Check that all entries in External-to-Internal mapping (EIX) table are reflected on ex edges of nodes and the ivalue of exid_val on nodes is reflected in the EIX table.

18A.2 Scan DB Application Level Tests

Test Name(Test Type): Tie Pair Endpoints (TP Check)

Test Description:
Check for missing or inconsistent IF endpoints. All IFs should have two endpoints (physical appearance edges). Also if an IF is between two components the endpoints (frame IDs) of the IF should agree with the frame IDs of the components.

Test Name(Test Type): Party Check (Party Check)

Test Description:
If service is party, check that no other party service provided by the same circuit contains the same party position, and that the switch ports which are components of the service contain the same party position as the service.

Test Name(Test Type): Hunt Check (Hunt Check)

Test Description:

Check for SCHs that every TN in the hunt sequence has a hunt edge to the SCH. Check that a TN with a hunt edge is reflected in the hunt sequence translations data of the SCH.

Check for HMLs that every HTER and NTER on the trans edge for the HML is reflected in the trans edge of the associated services (TER tag and value). Also check if there are services that have TER translations data that does not appear as HTER or NTER translations data for the HML.

Test Name(Test Type): Check CEC (Asgn Cat)

Test Description:

Check that services contain the minimal CEC data (#cond, Grade, Cls SVC, Category, and CO Term). The "asgn category map" reference data table derives assignment categories based on CEC values. This test will attempt to derive an assignment category with the given CEC. Some assignment categories only require 3 CEC values, thus this test is a best estimate.

Test Name(Test Type): Check Service/Work Order (CHK SO/WO)

Test Description:

Check that the order of work tasks is correct (i.e., order work task followed by SOAC work task, followed by Circuit work task, followed by Delta). Also the due date sequencing of the deltas will be checked.

Test Name(Test Type): Service vs. TN (No TN)

Test Description:

If a service has no TN, validate that it does not require one (non-switched, HML service, outgoing only). The service's CEC data will be used. CO termination is non-switched or Directionality is outgoing only or the service is a HML line (does not require a TN).

Test Name(Test Type): Check Four Wire (CHK 4W)

Test Description:

This test will check four wire services (number of conductors equals 4) to ensure that there is a transmit for a receive and vice versa. The design edge of a service, for four wire will have number of conductors as four. If a service has two cable pairs with the same TID, the trans_receive attribute on the comp edge for one should be transmit and the other receive.

Test Name(Test Type): Check Slot Factor Edges (CHK SLTFAC)

Test Description:

This test will check that the number of factor edges between a slot and ccpts is the same number that is stored in the attribute, "absolute number of circuits," in the node body.

Test Name(Test Type): Check Assembly Components (CHK ASMCOM)

Test Description:

Check that assemblies of types MASM, TASM and PSSV (Modifiable Assembly, Temporary Assembly and Pseudo Service) do not have as components CCPT, CHNL, or CRV (Carrier Controller Port, Channel, or Call Reference Value).

Test Name(Test Type): Check CP Specific Functionality in Assembly with CCPT (CHK CPSF)

Test Description:

Check that if a cable pair is in an assembly with a CCPT, that the specific functionality of the cable pair is "CC".

Appendix 18B: Scan Data Input

18B.1 DD STMTS FOR SCAN DATA BMP

PARMS CONTROL CARD DEFINITION

The input dataset PARMS contains input option cards in tag = value format. Comments may be coded by placing a pound sign (#) in column 1, blank lines are ignored. The available input cards are described below:

WC = x the Wire Center for the run (REQUIRED).

Example: WC = 201482

EXCL_TEST = x used to exclude test x from processing where x is:
1 - Table ID Validation
2 - Instance Key Existence validation
3 - Table Content vs. DB Validation
4 - Table Content vs. table content Validation

Example: EXCL_TEST=1

EXCL_TAB = x used to exclude table x from processing.
Up to 64 EXCL_TAB cards may be entered.

Example: EXCL_TAB = id translation

EXCL_NODE = x used to exclude a particular node id from processing.
Up to 64 EXCL_NODE cards may be entered.

Example: EXCL_NODE = ic!5es.5 (node type!id)

EXCL_NODE_TYPE = x used to exclude a node type from processing.
Up to 64 EXCL_NODE_TYPE cards may be entered.

Example: EXCL_NODE_TYPE = dtn

DEBUG= any card beginning with 'DEBUG=' is passed to the Platform to enable debugging.

Example: DEBUG=:FFF;TSO=DD:STDOUT;DUMP=YES;SUBSYS=ALL;

Appendix 18C: TAGLMART Record Formats

18C.1 Header Record(s) Tags

TAG	No. of bytes in VALUE	Description
HDR	8	"TAGLMART" - will identify the tape as the COSMOS LFACS MASTER RECORD TAPE having a TAG/VALUE format.
DATE	6	TAGLMART tape creation date (YYMMDD).
WC	2	COSMOS Wire Center ID.
HLINE	max. 298	H-line used to generate TAGLMART tape (blanks are substituted for slashes).
SMPL	max. 222	Representation of H-line input type - WC (full Wire Center), OT (cable pair range), CA (specific cables - listed after "CA", but before ":" and separated by commas).
CMT	unlimited	User comment text. Lone dot "." in position 1 on the input line signifies text completion.

18C.2 Working or Pending Disconnect Tags

TAG	No. of bytes in VALUE	Description
TN	10	Telephone Number (TN) ID
TS	max. 3	Telephone Number Status Code
PN	1	TN Party Line Number
TR	max. 4	Terminal (TER) ID
MG	4	Multiline Hunt Group (MLHG) ID
PT	10	Pilot TN ID of MLHG
XN	max. 7	Coded Terminal (XN) ID
P1	max. 51	First Miscellaneous Circuit Number (PL) ID
P2	max. 51	Second Miscellaneous Circuit Number (PL) ID
TD	7	Cable Pair (CP) Circuit Termination ID (CTID)
SG	3	CP CLCI Segment Number

TAG	No. of bytes in VALUE	Description
SB	10	Sublet TN ID
SBS	max. 3	Sublet TN Status Code
SD	6	Date of TN Suspension (YYMMDD)
NH	10	TN ID having a non-hunt number status
DT	10	Data TN (DTN) ID
PNR	10	Primary Number
SET	max. 2	Set Number
CP	max. 15	CP ID
PS	max. 3	CP Status Code
PD	6	CP Change Date (YYMMDD)
US	max. 5	Line Equipment (OE) - Universal Service Order Code (USOC)
CS	max. 6	OE - Customer Class of Service (CS)
FT	4	OE - Customer Features (FEA)
NL	1	Non-locally Switched Indicator tag (value is n)
SSC	1	Single Subscriber Carrier (SSC) indicator (p = physical; d = derived)
MLI	max. 2	MADN Line Identifier

18C.3 Spare or Pending Connect Tags

TAG	No. of bytes in VALUE	Description
STN	10	TN ID
STS	max. 3	TN Status Code
SPN	1	TN Party Line Number
STR	max. 4	TER ID
SMG	4	MLHG ID
SPT	10	Pilot TN of MLHG
SXN	max. 7	XN ID
SP1	max. 51	First PL ID
SP2	max. 51	Second PL ID

TAG	No. of bytes in VALUE	Description
STD	7	CP CTID
SSG	3	CP CLCI Segment Number
SSB	10	Sublet TN ID
SDT	10	DTN ID
SCP	max. 15	CP ID
SPS	max. 3	CP Status Code
SPD	6	CP Change Date (YYMMDD)
SUS	max. 5	OE - USOC
SCS	max. 6	OE - CS
SFT	4	OE - FEA
SNL	1	Non-locally Switched Indicator tag (value is n)
SSSC	1	SSC indicator (p=physical; d=derived)
SMLI	max. 2	MADN Line Identifier
SPNR	10	Primary Number
SSET	max. 2	Set Number

18C.4 Miscellaneous Circuit Tags

TAG	No. of bytes in VALUE	Description
PYS	4	CP Party Data
PY2	10	Second TN ID in party circuit
N2	1	Second TN Party ID
PY3	10	Third TN ID in party circuit
N3	1	Third TN Party ID
PY4	10	Fourth TN ID in party circuit
N4	1	Fourth TN Party ID
CPERR	max. 15	CP ID - in error (e.g., bad pointers/infinite loop in circuit/ service order chain, etc.)

18C.5 TAGLMART Private Line Option

TAG=GM file record 32 byte 30

TAGLMART automatically sets the TAG following the completion of a run using option PL. TAG may be changed using transaction GMINIT.

A. TAG NOT SET

1. NO OPTION PL USED
   PLs are placed on tape according to their status in the subscriber loop (i.e. a spare equivalent status will append a tag of SP1/SP2 to the PLs identification (value); while a working equivalent status will append a tag of P1/P2).
2. OPTION PL USED
   If the subscriber loop does not contain a "new" PL, it is skipped. Otherwise, "new" PLs will have a tag of SP1/SP2; "old" PLs will have a tag of P1/P2; all other (USO, bad) PLs will be ignored.

B. TAG SET

1. NO OPTION PL USED
   New and/or USO PLs are placed on tape according to status. In the event that all PLs in the subscriber loop are old and/or bad, only 1 PL (a matter of loop hierarchy) is used.
2. OPTION PL USED
   As B-1) above, but also require at least 1 PL. Otherwise, the loop is skipped.

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19. MediaPulse/Delivery™ AND SWITCH SYSTEM INTERFACE

The SWITCH system must both receive information *from* other systems and provide information *to* other systems. One of the systems with which the SWITCH system will have an on-line interface is MediaPulse/Delivery™ (MPD). MPD is a controller for a set of Operations Support systems which will provide telephony and video services over a hybrid fiber coax (HFC) network.

The MPD and the SWITCH system interface will be used for several purposes: (1) to enable MPD to obtain the assignments from the SWITCH system for new provisioning requests and to update downstream systems; (2) to enable MPD to add, delete, or change circuits in the SWITCH system database;(3) to update slot data for the auto-discovery of channel units;(4) to request a TN when disconnecting to soft dial tone.

During the provisioning process (case (1) above), manual activity may be required. Section 7 discusses the automatic and manual provisioning process in general[1]. Section 6 explains the common assignment functions used by provisioning. The contracts used between MPD and the SWITCH system for both provisioning and inventory updates are explained in this section[2].

Generally, the information that the SWITCH system receives *from* MPD across the MPD and the SWITCH system interface for new provisioning requests relates to circuit terminations that are to be added, disconnected, or rearranged. On provisioning requests from MPD, the SWITCH system accepts the F1 cable pair that MPD will derive (from the Network Access Unit[3] ID and physical port ID (binding post) obtained from MediaCore/ Access Location™), or an origination controller (NAU ID) along with an origination card type, as the service "starting point". The SWITCH system will then assign facilities from the Network Access Unit (NAU) to the central office, including the channel (for proprietary or TR-008 systems) or Call Reference Value (CRV) for a TR-303 system. The SWITCH system will manage the bandwidth between the HDT (Host Digital Terminal) and the Intelligent Controller (and between the HDT and NAUs in the case of proprietary bandwidths). Information that the SWITCH system provides *to* MPD across the MPD and the SWITCH system interface as a result of provisioning requests reflects inventory that the SWITCH system has assigned to these requests[4].

1. Limited manual provisioning is available in the MPD flow. For example, there is no concept of INT or TDO mode processing in this flow.
2. Refer to BR 752-106-040, "SWITCH System Contracts Directory", for details about the contracts.
3. Network Access Unit (NAU) is the generic name for the device near the customer location where the copper and/ or coax drop connect to the customer's living unit. The Central Office side of this device is fed by coax in a Hybrid Fiber/Coax (HFC) configuration and by fiber in a Fiber To The Curb (FTTC) configuration.
4. Although SWITCH will return all the data associated with making an assignment between the NAU and the CO, MPD will only use the CRV assignment.

The MPD and the SWITCH system interface is composed of several contracts. In the remainder of Section 19, the functional design and contracts for the MPD and the SWITCH system interface will be described in greater detail.

19.1 Determining the SWITCH System Involvement

For line side provisioning requests, MPD determines when to send messages across the MPD and the SWITCH system interface to the SWITCH system. These messages are sent prior to activation of the circuit in a MPD environment. Conditions under which MPD will send messages to the SWITCH system in this case are described briefly below. Detailed flows and discussion of the Provisioning Contracts involved are contained in the sections that follow.

MPD will send message to the SWITCH system when:

1. Information that MPD has determined from the provisioning request indicates that spare facilities are required for the provisioning request. In this case, MPD will request assignments from the SWITCH system. The SWITCH system provides the required assignments[5].
2. MPD has received a completion on a provisioning request for which the SWITCH system previously accepted a message. MPD sends the completion to the SWITCH system so that the SWITCH system can change the status of the assignments for the provisioning request from pending to working.

In cases where provisioning involves a soft-dial-tone condition on a single line service, inventory contracts (UPDCKT) are used (see Section 19.3). In this case, the SWITCH system is just updating its database, and translation data has already been updated in MAS[6]. When there is secondary service involvement or Centrex or Hunt groups involved however, provisioning contracts are used even when soft dial tone is involved. This is discussed in Section 19.2.1.1

The provisioning requests that can be processed through the MPD and the SWITCH system interface are N (New connect request), C (Change request), D (Disconnect request), F (From request), and T (To request) for precompletion (PRE) and completion passes (PCN) only. Correction (COR) and Cancellation (CAN) passes are not expected from MPD (except in the case of the cutover process for transitioning circuits from narrowband to broadband facilities, for which cancellation passes are expected). In addition, assignment changes (ACE), completion with corrections (CPC) and single pass record orders (ROR) are not expected from MPD.

5. With the migration of digital loop electronics from LFACS to the SWITCH system, the central office "boundary" has been moved out into the loop. The SWITCH system will make assignments on digital loop carrier systems out to the last electronic device before the copper plant begins.

6. MAS (Memory Administration System) is the generic name used throughout this section to refer to systems that provide recent change messages to the line side of intelligent controllers.

The MPD and the SWITCH system interface is a wire-center-based, request-response interface identical to the SOAC request-response interface as discussed in Section 13.

The current SWITCH system and MPD interface supports the following features:

- POTS
- Coin service
- Selective Ringing
- TN Suppression
- Centrex and Hunt Group service
- Suspend/Restore service processing
- F&T activity

Support does not include items such as:

- Party service, including "singleton" service
- ISDN and MADN service
- Four-wire service
- High Capacity service
- Multi-leg service
- Digital bridging
- Any circuit ID with a TID

19.2 Provisioning Contracts

This section discusses the provisioning contracts that are used in the MPD and the SWITCH system interface.These contracts support the assignment of spare facilities to a customer request or a disconnect to spare facilities. In certain cases they are also used when a soft-dial-tone condition exists as discussed in Section 19.2.1.1. The contracts are:

- Establish and Assign Provisioning Request (PRESO)
- Complete Provisioning Request (PCNSO)

MPD and the SWITCH system interface processing under each Provisioning Contract is described in greater detail in the remainder of this section.

19.2.1 Establish and Assign Provisioning Request

The message that the SWITCH system receives from MPD under the Establish and Assign Provisioning Request Contract is called a PRESO AR. The SWITCH system will receive a PRESO AR from MPD for the first pass of a provisioning request that requires facility assignments. The SWITCH system will accept a PRESO AR from MPD if the SWITCH system has no knowledge of the provisioning request, that is,

- the SWITCH system has not yet received a PRESO AR for that provisioning request from MPD, or
- All PRESO ARs sent to the SWITCH system from MPD previously for that provisioning request were returned to MPD with an error deleted status.

Acceptance Processing

If the conditions for acceptance for a PRESO AR are met, the SWITCH system will validate the AR input, combine the circuit termination level data in the AR into a circuit level Work Task[7], generate central office assignments, and mark the status of the assignments in the data base as pending. To generate responses to the PRESO AR, the SWITCH system will decompose the circuit level Work Task assignments into circuit termination level assignments.

If the conditions for acceptance for a PRESO AR are met, and the SWITCH system can successfully complete all necessary processing, responses to the PRESO AR will be:

- A solicited PRESO ARR to MPD containing the value "a" (assigned) in the status field of the header and the central office assignments for the provisioning request.
- An Establish Frame Output (PREFO) contract to FOMS, if the SWITCH system determines that FOMS is involved with the provisioning request (see Section 15 for details on contracts sent to FOMS for provisioning requests)[8].

If the conditions for acceptance for a PRESO AR are met, but the SWITCH system cannot complete all processing necessary to provide assignments for the provisioning request, the response to the PRESO AR will be a solicited PRESO ARR to MPD containing the value "m" (error kept) in the status field of the header and information about the error condition(s). The MPD response reaction will be to output the RMA notice to the location designated in BCC-modifiable tables.

Failure Conditions

If the conditions for acceptance for a PRESO AR are not met, the response to the PRESO AR will be a solicited PRESO ARR to MPD containing the value "d" (error deleted) in the

7. "Circuit termination level data" refers to data associated with a loop. "Circuit level data" refers to data associated with a set of loops that make up a circuit.

8. Also see BR 752-106-040, "SWITCH System Contracts Directory".

status field of the header and information about the error condition(s). MPD will output the RMA notice to the location designated in BCC-modifiable tables.

In some cases where the SWITCH system returned a PRESO ARR to MPD with an error status in the status field of the header, the SWITCH system manual transactions may be used to resolve the errors and restart processing in the SWITCH system. The manual transactions represent user-initiated contracts that the SWITCH system receives from the ULBB. In a MPD environment, only a RESOL ASG work session (see Section 7) can be used to resolve an RMA. MPD will only accept an unsolicited response from the SWITCH system for an order that is at RMA. INT and TDO mode processing as well as ACE processing are not applicable in a MPD environment.

19.2.1.1 Provisioning Requests Involving Centrex and Hunt Groups

As mentioned earlier, inventory contracts will be for single line services when a soft-dial-tone condition is involved. There are cases however, when a combination of an existing soft-dial-tone service with a need to provision additional spare facilities to satisfy the service request occurs. Cases which will be supported in this scenario are the provisioning of Centrex and Hunt groups (where multiple lines are involved) and Selective Ringing (where both primary and secondary services are involved).

Service requests involving Centrex or Hunt groups typically involve multiple lines. Lines that exist as soft-dial-tone circuits can become part of a new Centrex or Hunt group service. Alternatively, lines disconnecting from a Centrex or Hunt group can be put into a soft-dial-tone state. Similarly, a soft-dial-tone circuit can become the primary service of a Selective Ringing service where additional lines are added as secondary services.

To prevent MPD from having to break up a service order into one part that would necessitate only database updates in the SWITCH system (via an UPDCKT contract) for the soft-dial-tone circuits and one part that would require the assignment of spare facilities from the SWITCH system (via a PRESO contract), all circuits, whether soft-dial-tone or not, will be processed with the same PRESO contract in these multi-line cases.Whereas inward activity contains requests for assigning new facilities, MPD will now send a mix of change requests (to go from soft dial tone to working) and inward requests (to select spare facilities) on an inward order. Similarly, whereas a disconnect activity has only remove requests, in this case, a change to soft dial tone will also be received for this order resulting in a mix of change requests (to go from working to soft dial tone) and remove requests.

F&T Centrex, Hunt group and Selective Ringing orders that involve soft-dia-tone circuits cannot flow through the SWITCH system and will RMA. For service orders involving only spare facilities, there are additional validation criteria when Centrex and Hunt groups are involved which are identical to criteria used for orders coming from SOAC. These criteria are discussed in Sections 6 and 13.

19.2.1.2 Provisioning Requests Involving F&T Orders

Support for the provisioning of F & T orders will be provided by the SWITCH system when both orders originate from MPD and where one order originates in SOAC and the other in MPD. As a result of receiving F & T orders from two different controllers, issues associated with the different timing strategies now exist. SOAC sends orders as soon as they receive them, whereas MPD sends orders on, or very near, the due date. When the two orders are controlled by different systems, there are impacts on the frequency in which T orders are received out of sequence and the length of time which may exist before the arrival of a T order (during which the F order may be completed).

F & T orders may also involve soft dial tone either at the *from* or *to* location (or both). For single line orders that do not involve secondary services, MPD will send UPDCKT contracts to the SWITCH system (see Section 19.3) to update the database. When spare facilities are to be assigned (or working facilities are to become spare), PRESO contracts are used as discussed earlier. The combination of order receipt timing, due date, and presence or absence of soft dial tone has added to the complexity of dealing with F & T orders. This complexity will cause some combinations of F & T orders to RMA.

The following conditions apply to F & T orders in a MPD environment:

- Only related and unrelated F & T orders will be supported by MPD; DUAL service will not be supported
- MPD will send PRESO contracts for F & T orders that are identical to those received from SOAC, including the NRID tag
- MPD will place NRID in all F PRESO contracts, regardless of whether the service is really unrelated or not
- The SWITCH system will send MPD the same PRESO response contract for F & T orders that it currently sends to SOAC
- F & T orders involving Centrex, Hunt groups, or Selective Ringing along with a soft-dial tone condition will RMA in the SWITCH system. Highly manually-intensive methods and procedures are needed in these cases

19.2.2 Complete Provisioning Request

The message that the SWITCH system receives from MPD under the Complete Provisioning Request Contract is called a PCNSO AR. MPD will send a PCNSO AR to the SWITCH system on completion (PCN) passes. MPD will send the SWITCH system a PCNSO AR for provisioning requests assigned in AUTO mode. The SWITCH system will

accept a PCNSO AR from MPD if the SWITCH system has previously accepted an AR for the provisioning request, and

- the correction suffix of the PCNSO AR is greater than the suffix for the previously retained contract for the provisioning request, or
- the correction suffix of the PCNSO AR is equal to the previous suffix and the version number is greater than the previous version number, or
- if a correction suffix does not exist, the version number must be greater than the previous version number.

The PCNSO AR consists of a header only.

Acceptance Processing

If the conditions of acceptance for a PCNSO AR are met, the SWITCH system will validate the AR input. The processing that the SWITCH system will do on the PCNSO AR depends on the state of the data base for the provisioning request. If the data base status for the provisioning request is assigned (i.e., the previous PRESO AR for the provisioning request processed successfully), the SWITCH system will update the status of the assignments. If the data base status for the provisioning request is at error, the SWITCH system will return an error to MPD because provisioning requests with error statuses in the SWITCH system cannot be completed. If the provisioning request is not in the SWITCH system data base, no error will be returned to MPD.

If the conditions of acceptance for a PCNSO AR are met and the data base status for the provisioning request prior to receipt of the PCNSO AR is assigned, responses to the PCNSO AR will be:

- A solicited PCNSO ARR to MPD containing the value "p" (processed successfully) in the status field of the header
- A Complete Frame Output (PCNFO) contract to FOMS, if the SWITCH system considers FOMS to be involved with the provisioning request (see Section 15 for details on contracts sent to FOMS for provisioning requests)[9]

If the conditions of acceptance for a PCNSO AR are met but the data base status for the provisioning request prior to receipt of the PCNSO AR is at error, the response to the PCNSO AR will be a solicited PCNSO ARR to MPD containing the value "d" (error deleted) in the status field of the header and information about the error condition(s). MPD will output the RMA notice to the location designated in BCC-modifiable tables.

If the conditions of acceptance for a PCNSO AR are met but the SWITCH system cannot perform all processing necessary to complete the provisioning request, the response to the PCNSO AR will be a solicited PCNSO ARR to MPD containing the value "m" (error kept)

9. Also see BR 752-106-040, "SWITCH System Contracts Directory".

in the status field of the header and information about the error condition(s). MPD will output the RMA notice to the location designated in BCC-modifiable tables.

Failure Conditions

If the conditions of acceptance for a PCNSO AR are not met because the provisioning request is not in the data base, the response to the PCNSO AR will be a solicited PCNSO ARR containing the value "p" (processed successfully) in the status field of the header and a warning message. MPD will output the warning to the location designated in BCC-modifiable tables.

If the conditions of acceptance for a PCNSO AR are not met because of the correction suffix or version number, the response to the PCNSO AR will be a solicited PCNSO ARR containing the value "d" (error deleted) in the status field of the header and information about the error condition(s). MPD will output the RMA notice to the location designated in BCC-modifiable tables.

In cases where the SWITCH system returned a PCNSO ARR to MPD with an error status in the status field of the header, the SWITCH system manual transactions may be used to complete the provisioning request in the SWITCH system. The manual transactions represent user-initiated contracts, the output of which is a set of responses to the first contract (here, the Complete Provisioning Request contract).

If the user-initiated contract results in successful processing of the PCNSO AR, the response will be the same as described above for PCNSO acceptance processing *except* that the PCNSO ARR will be *unsolicited* rather than solicited.

19.3 Inventory Contracts

The SWITCH system can receive inventory contracts from MPD. These contracts will be processed by the SWITCH system in the same way these contracts are processed when they are submitted by a user.

19.3.1 UPDCKT contract

This contract will be used to update circuits in the SWITCH system database. These updates are made after activation has occurred so there is no need for a provisioning contract. Updates include:

- changing the circuit from soft dial[10] tone to working
- changing the circuit from working to soft dial tone

10. There is no specific indicator in the SWITCH system database to indicate a circuit is in a soft-dial-tone state. It exists as a working circuit. Certain attributes such as the CATY or USOC may have values which are used when a circuit is placed in a soft-dial-tone state.

- changing the TN in a circuit
- suspending a working circuit
- restoring a suspended service

19.3.2 UPDCCP Contract

MPD will send an UPDCCP contract to the SWITCH system during the auto-discovery process. This process is initiated when a channel unit is placed or removed from a NAU. At time of placement or removal, the HDT communicates with the MediaPulse/HFC-EM or other vendor system, which generates messages to update other systems. In particular, a message will be sent to MPD which will result in an UPDCCP contract to the SWITCH system. This contract will *only* result in a change to the EQPED attribute of a slot. This contract is only expected for slots that are already pre-engineered or pre-equipped as POTS or COIN.

19.3.3 UPDTNL contract

If MPD needs to request a TN (to be used as the soft-dial-tone TN in the disconnect-to-soft-dial-tone case), and the SWITCH system is being used as the telephone number administration system, an UPDTNL contract will be sent by MPD to the SWITCH system. This contract will create a list in the SWITCH database containing one TN. A response will be returned to MPD containing the id of the list and the one TN member in the list. In addition, upon successful processing, an advisory message will also be included in the response to MPD with text containing the id of the list, the number of TNs requested (only one in this case) and the number of TNs returned.

19.4 SWITCH Support for MPD Cutover Process

Mechanized support is provided for transitioning single line POTS circuits from the narrowband (copper) networks to the broadband (fiber) networks. The SWITCH system will be one of the components used in identifying whether or not a circuit meets the cutover criteria. The SWITCH system will also assign and provide the new call reference value (CRV) of each circuit transitioning to the broadband network. The transitioning circuits in the SWITCH system database will be updated in conjunction with the subscriber cutover process.

This cutover process will only involve simple single line switched services. At this time, only lines working from 5ESS ICs will be supported; lines supported by remote ICs will not be supported. Lines in the cutover must not be simultaneously involved with service order activity.

19.4.1 Inquiry Processing

The Subscriber Cutover Manager (SCM) will initiate a query into LFACS to obtain address, telephone number and circuit identification information for each circuit potentially involved in the cutover to the broadband network. The SCM will then initiate an inquiry into the SWITCH system using the INQCKT contract to determine if the circuit meets the cutover criteria and to obtain the CEC data for the circuit.

The data and attributes of the queried circuit will be returned to the SCM.

19.4.2 Assignment Processing

Once it is determined that a circuit meets all the cutover criteria, a NAU physical port id is obtained from MediaCore/Access Location and a request for a Cutover Dial Tone TN (CDT)[11] is made to a telephone number administration system. MPD will initiate a service request using the PRESO contract to the SWITCH system to (1) build a "CDT" line containing the CEC data and CDT TN just obtained, with a CATY code of "CDT" and (2) to disconnect the current working line[12].

The SWITCH system response will include the assigned call reference value (CRV) for the "CDT" line, and data for the disconnecting line.

19.4.3 Cancellation Processing

If there is a need to cancel the pending service request, MPD will send a CANSO contract to the SWITCH system. Processing will be identical to that performed if SOAC had initiated the contract, as discussed in Section 13.3.10.

19.4.4 Completion Processing

When MPD has transmitted the necessary information to MAS and the central office work is complete, the SCM will advise MPD, which will in turn initiate a PCNSO contract to the SWITCH system to complete the pending service request for both the CDT line and the disconnected line. MPD will then initiate an update request using the UPDCKT contract to the SWITCH system to change the CDT TN of the circuit to the customer's original TN. This inventory update will contain an assignment limitation to be placed on the customer's TN since this TN will henceforth be administered by another telephone number

11. A CDT TN is similar in concept to a soft-dial-tone TN. It is a TN temporarily used during the cutover process.

12. To avoid premature disconnection of the line prior to being transitioned to the broadband network and the occurrence of a "customer-out-of-service" condition, the table settings in the SWITCH system should be geared towards the creation of a DIP for disconnecting circuits.

administration system. In addition, if a CATY code previously existed on the original narrowband circuit, it will be included in the contract to replace the "CDT" CATY code on the circuit. If a CATY code did not previously exist on the narrowband circuit, data will be sent to remove the "CDT" CATY code. MPD will then inititate a request to establish a wire assembly order[13] (WAO) using the PREWAO contract to break the DIP created during the assignment process.

13. The first character of the WAO order number from MPD (i.e., "C") specifies the order type. Work orders in the SWITCH system and FOMS do not process on the order type. If an inquiry or report is performed on the WAO in the SWITCH system or in FOMS, the first character of the order number (i.e., "C") must be omitted.

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20. PERFORMANCE OBJECTIVES

This section provides a high level view of the performance objectives of the SWITCH system. The objectives are rough estimates at this time. They are intended as upper bounds which cover 95% of the cases.

20.1 Entity Sizing

Multiple SWITCH entities will reside in the IMS system where SWITCH resides. The optimum size of a SWITCH entity depends on release transition issues such as the amount of data that can be upgraded in a weekend, the number of users that can be trained at once, anticipated growth in the entity geographical regions, and the desired trial size for a new release. Risk management factors such as the amount of an operation that can be down at one time are also an issue.

The objective for SWITCH entity sizing is that it should match the size of LFACS and SOAC components. Therefore, the SWITCH system entity should support at least 750K working F1 subscriber lines and may in some instances be as many as 1 million. Some FACS entities exceed these guidelines and have between 1 million and 1.8 million working F1s. In these cases, sites should weigh the risk factors and determine whether the benefit of matching the FACS environment outweighs the risk. It is Bellcore's recommendation that SWITCH entities be no more than 1 million working F1s.

20.2 Transaction Volume

Using 750K working F1 pairs as a model, analysis was done on transaction volume data sent in by various regions. Averaging of the data showed that per month for the 750K model size, there were 97,500 service order passes. There were 49,200 orders, some of which have multiple passes, 3080 RMAs, and 3450 Message Trunk Items. Using 21 work days in a month, there were about 4640 passes, 145 RMAs and 165 Message Trunk Items per day. The busy hour is expected to generate twice the average transaction rate.

20.3 On-line Response Time

Response time for immediate user transactions consists of two parts, communications delay and the SWITCH system application processing (including user layer building block). The objective for the SWITCH system processing is that 95% of the immediate transactions be completed in 6 seconds. Allowing an additional 4 seconds for communication delays in the terminal network, yields an overall objective of 10 seconds.

20.4 Deferred Contract Scheduling

In order to balance the workload, the SWITCH system may queue transactions that it does not process immediately. A set of queues has to be established so that the highest priority work is done first. The priority order in which deferred transactions should be queued for each wire center is as follows.

1. Reserved for system emergencies.
2. Provisioning request designated by the user as "hot".
3. Contracts associated with field assistance (ACESO, PREMCT, etc.).
4. High priority manual provisioning requests (PRs) due today.
5. Manual PRs due today.
6. Flow through PRs due today and manual PRs due tomorrow.
7. Flow through PRs due tomorrow, manual PRs due in two or more days, inventory contracts and work order contracts.
8. Flow through PRs due in 2 days.
9. Completions of all kinds and flow through PRs due in three days or more.
10. User designated overnight transactions and flow through contracts with negative priorities.

Cancellations should run at the same priority as the original request. In addition priority level 50 is reserved for deferred contracts that must be run while no other deferred contracts are processing. In this case all other priority levels would be turned off. An example would be when equipment groups are being rearranged due to a change in IC generic. Also priority levels 90 through 99 should be reserved for reports. This allows a deferred contract manager to be dedicated to running reports, if desired.

The SWITCH system should be designed so that all queues can be drained in a twelve hour day.

20.4.1 Priority Calculation

The SWITCH system should have two basic methods of calculating priority.

1. Use the priority specified in the header of the contract provided by the source system (external method)
2. Calculate the priority in the SWITCH system (internal method)

The user should be provided a method to specify which method will be used depending on the source of the contract.

The *external* priority calculation should map the priority field values in the *C1 header to the ten SWITCH system priority levels show above according to Table 19-1. If no priority is designated in the header, the internal method should be used to calculate priority.

The *internal* priority calculation should use a user-definable base priority for each contract as well as optional source, due date and user adjustments. A table should be provided which lists the base priority for each contract and whether or not the various optional adjustments are allowed for that contract. The base priority is one of the default queues defined above. Generally the base priority should be set to 8, except for field assistance which should be set to 4 and reports which should be set to 96. The source adjustment would allow a contract to move up or down as much as two queues depending on the sending system. ULBB contracts would be given a plus one adjustment. The due date adjustment would bump a contract up one queue if it was due tomorrow and two queues if it was due today. The user adjustment would allow ULBB contracts to move up (or down) one queue, if the user requested a higher (or lower) priority. This will result in the priority ordering defined above.

Also, the user should be able to designate that the contract be run over night (queue 99 for reports or queue 10 for everything else) or by itself (queue 50).

20.5 Availability

The SWITCH system data base is organized by wire centers. The objective for the SWITCH system application is that at least 99% of the wire centers average at least 99% availability during the operational day. This figure excludes communications network and hardware reliability. To achieve this availability level, it will be necessary for the SWITCH system to support degraded mode processing. This means that if the data base for a wire center is unavailable (e.g., disk crash), it will be possible to manually close the queues for this wire center and allow the SWITCH system to continue processing on the remaining wire centers.

Table 20-1. External Priority Mapping

EXTERNAL PRIORITY	SWITCH PRIORITY
Negative	10
0	09
1	08
2	07
3	06
4	05
5	03
6	02

Glossary

A

ACE — Assignment Changes

ACTN — Access Telephone Number

ADSR — Administration of Design Services Review

ADM — Add-Drop Multiplex

AID — Access Identifier

AIS — Automatic Intercept System

AMI — Alternate Mark Inversion

AR — Assignment Rate

AR — Assignment Request

ARM — Assignment Redundancy Management

ARR — Assignment Request Response

ART-IM — Automated Reasoning Tool for Information Management

AT — Area Transfer

ATR — Area Transfer

AXE — Ericsson Intelligent Controller

B

BAE — Bellcore Application Environment

BCC — Bellcore Client Company

BL — Bridge Lifter

BMP — Batch Mode Processor

BPOE — B Channel Packet Originating Equipment

BRCS — Business Residence Custom Services

BRI — Basis Rate Interface (ISDN)

BTO — Bulk Translations Output

BW — Bandwidth

C

CA — Capacity Activation

CAPEDG — Capacity Edge

CATY — Central Office Administrative Type

CC — Carrier Controller

CC — Carrier Controller Port

CCPT — Carrier Controller Port

CCRS — Centrex Customer Rearrangement System

CCS — Hundred Call Seconds

CEC — Central Office Equivalence Code

CEG — Control Group

CF — Connected Facility

CHNL — Channel

CID — Circuit Identifier

CKID — Circuit Identifier

CKL — Circuit Location

CKT — Circuit

CLEI — COMMON LANGUAGE Equipment Identifier

CLFI — COMMON LANGUAGE Facility Identifier

CLLI — COMMON LANGUAGE Location Identifier

COR — Correction Pass of an Order

COT — Central Office Terminal

CP — Cable Pair

CPC — Circuit Provisioning Center

CPG — Call Pick-up Group

CREG — Concentrated Range Extension with Gain

CRV — Call Reference Value

CT — Cut Through

CT/CPT — Cable Transfer

CTID — Circuit Termination Identification

CTX — Centrex Group

CWT — Circuit Work Task

CZ — Carrier Zone

D

DAC — Disconnect Available Capacity

DCLU — Digital Carrier Line Unit

DCO — Stromberg-Carlson Intelligent Controller

DCOR — Deferred Contract Output Review

DCS — Digital Cross-Connect System

DD — Due Date

DDR — Digital Data Rate

DDS — Digital Data Services

DIP — Dedicated Inside Plant

DIU — Digital Interface Unit

DLBB — Data Layer Building Block

DLC — Digital Loop Carrier

DLE — Digital Loop Electronics

DPA — Different Premises Address

DPIDB — Directly Connected Peripheral Interface Data Bus

DPOE — D Channel Packet Originating Equipment

DPTN — Data Plant Test Number

DR — Deny and Restore

DS0 — 64 kbs digital transmission rate

DS1 — 1.544 Mbs digital transmission rate

DS3 — 44.736 Mbs digital transmission rate

DSL — Digital Subscriber Line

DSX — Digital Signal Cross-Connect

DTR — Dial Transfer

E

ECS — Equipment Class of Service

EDSX — Electronic Digital Cross-Connect System

EIX — External ID to Internal ID Table

EOC — Embedded Operations Channel

EQF — Equipment Features

ER — Entity Relationship

ESS — Electronic Intelligent Controller

EWO — Engineering Work Order

EXK — Exchange Key

EXP — Exported

F

FACS — Facilities Assignment and Control System

FAST — Flexible Attribute Selection Technique

FCC — Frame Control Center

FCIF — Flexible Computer Interface Format

FCTR — Factor Of (edge)

FDD — Frame Due Date

FEPS — Facility and Equipment Planning System

FITL — Fiber In The Loop

FTTC — Fiber To The Curb

FLR — Floor

FOMS — Frame Operations Management System

FOS — Frame Operations Summary

FSO — Foreign Switching Office

FT — Frame Transfer

FUSA — Frame User assignment System Access

FX — Foreign Exchange

F1 — Feeder Cable

G

GRIT — Generalized Record Interface Technique

H

HDT — Host Digital Terminal

HECIG — Human Equipment Catalog Item

HICAP — High Capacity

HML — Multi-line Hunt Group

HRCY — Hierarchy

I

IC — Intelligent Controller

ICE — Intelligent Controller Equipment

ID — Identification

IDLC — Integrated Digital Loop Carrier

IDT — Integrated Digital Terminal

IDSX — Integrated Digital Signal Cross-Connect

IF — Intra-Wire Center Facility

ILAS — Intelligent Loop Administration System

ILCM — Integrated Line Concentration Module

INQ — Inquiry

INWATS — Inward Wide Area Telecommunications Service

ISDN — Integrated Services Digital Network

ISLU — Integrated Services Line Unit

J

JAM — Jumper Activity Management

L

LAC — Loop Assignment Center

LCC — Line Control Card

LD — Load Division

LDN — Listed Directory Number

LF — Load Factor

LFACS — Loop Facilities Assignment and Control System

LGC — Line Group Controller

LIRA — Left In Resource Administration

LLN — Line Link Network

LMOS — Loop Maintenance Operations System

LNP — Local Number Portability

LOIS — Location Oriented Information System

LOMS — LAC Operations Management System

LORI — Last Order Relationship Indicator

LRN — Location Routing Number

LSF — Line Switch Frame

LSO — Local Switching Office

LST — Line and Station Transfer

LTI — Loop Termination Identifier

LTID — Logical Terminal Identification

LU — Line Unit

M

MA — Manual Assistance

MADN — Multiple Appearance Directory Number

MAS — Memory Administration System

MASM — Modifiable Assembly

MBL — Mini Bridge Lifter

MCT — Maintenance Change Ticket

ME — Miscellaneous Equipment

MELD — Mechanized Engineering Layout for Distributing Frames

MLAC — Mechanized Loop Assignment Center

MPTY — Multi-Party

MTBL — Mated Bridge Lifter

MVP — Multi-Variety Package Centrex Group

MVS — Multiple Virtual Storage

N

NAC — Network Administration Center

NAR — Node Access Routine

NAS — Nodal Assignment System

NEP — Network Element Provisioning

NFVT — Netted Field Verification Test

NGDLC — Next Generation Integrated Digital Loop Carrier

NHN — Non-Hunt Number

NLS — Non Locally Switched

NS — Non Switched

NSDB — Network and Services DataBase

NSV — Night Service

NTU — Network Unit

O

OC1 — 51.840 Mb/s optical transmission rate

OC3 — 155.520 Mb/s optical transmission rate

OC12 — 622.080 Mb/s optical transmission rate

OE — Office/Originating Equipment (switch port)

ONA — Open Network Architecture

ONU — Optical Network Unit

OPS/INE — Operations Process Systems/ Intelligent Network Elements

OSCA — Computing Architecture

OSIP — Open Switch Interval Protection

OSMINE — Operations Systems Modifications for the Implementation of Network Elements

OWATS — Outward Wide Area Telecommunications Service

OWT — Order Work Task

P

PACE — Programs for Arrangement of Cables and Equipment

PASM — Permanent Assembly

PBX — Private Branch Exchange

PCN — Completion Pass of an Order

PF — Program Function (key)

PH — Protocol/Packet Handler

PIC — Primary Interexchange Carrier

PICS — Plug-In Inventory Control System

POE — Packet Originating Equipment

POTS — Plain Old Telephone Service

PPS — Packets Per Second

PPSN — Public Packet Switched Network

PRE — Initial Pass of an Order

PREMIS — Premises Information System

PSSV — Pseudo-Service

PSU — Packet Switching Unit

PTN — Plant Test Number

PVI — Planning View of Inventory

PWI — Plug Work Instruction

R

RC — Recent Change

RC — Ringing Combination

RCF — Remote Call Forwarding

RCU — Recent Change USOC

RDF — Remote Distribution Frame

RDT — Remote Digital Terminal

RISLU — Remote Integrated Services Line Unit

RMA — Request for Manual Assistance

RSU — Remote Switching Unit

RT — Remote Terminal

RTI — Route Index

RTZ — Rate Zone

RU — Remote Unit

RZ — Resistance Zone

S

SA — Service Activation

SCG — Speed Calling Group

SCH — Series Completion Hunt Group

SCID — SONET Carrier Circuit Identifier

SFG — Simulated Facilities Group

SLATTS — Selected Line And Trunk TranslationS

SM — Switch Module

SMAS — Switched Maintenance Access System

SMDF — Subscriber Main Distributing Frame

SME — Subject Matter Expert

SMS — Service Management System

SOAC — Service Order Analysis and Control System

SOE — Standard Operating Environment

SONET — Synchronous Optical Network

SPC — Stored Program Control

SS7 — Signaling System 7

SSC — Single Subscriber Carrier

STID — Service Termination ID

STS — Synchronous Transport Signal

SUBL — Sublet Service

SUS — Suspended Service

SWPT — Switch port

T

TAGLMART — TAG-value Loop MAster Record Tape

TAGTMART — TAG-value Translation MAster Record Tape

TASM — Temporary Assembly

TCID — Temporary Circuit Identifier

TDAS — Traffic Data Administration System

TDM — Time Division Multiplexing

TDO — Track and Distribute Only

TIRKS — Record Keeping System for Trunks

TID — Termination Identifier

TID — Target Identifier

TIDE — Traffic Information Distributor and Editor

TLI — Telephone Line Identifier

TMDF — Trunk Main Distributing Frame

TMC — Timeslot Management Channel

TN — Telephone Number

TNL — Telephone Number List Group

TODA — Total Office Data Assembly

TP — Tie Pair

TPU — Tie Pair Usage

TRANSEDG — Translation Edge

TRE — Transmission Equipment

TRM — Translation Redundancy Management

TSI — Time Slot Interchange

TSP — Telecommunications Service Priority

U

UDLC — Universal Digital Loop Carrier

UI — Unit Inventory

ULBB — User Layer Building Block

USO — Universal Service Order

USOC — Universal Service Order Code

V

VT — Virtual Tributary

W

WAO — Wire Assembly Order

WATS — Wide Area Telecommunications Service

WC — Wire Center

WFA — Work and Force Administration

WO — Work Order

Contract Glossary

A

ACESO — Assignment Change for Provisioning Request

ASGATR — Assign Area Transfer

ASGCPT — Assign Cable Pair Transfer

ASGCTR — Assign Channel Transfer

ASGDTR — Assign Dial Transfer

ASGFTR — Assign Frame Transfer

ASGLST — Assign Line and Station Transfer

ASGSET — Assign Switch Port Transfer

ASGSO — Assign Provisioning Request

ASGWAO — Assign Wire Assembly Order

AUTDTR — Automatic Establishment into Dial Transfer

B

BLDCAO — Build Capacity Activation Order

C

CANATR — Cancel Area Transfer

CANCAO — Cancel Capacity Activation Order

CANCPT — Cancel Cable Pair Transfer

CANCTR — Cancel Channel Transfer

CANDTR — Cancel Dial Transfer

CANFO — Cancel Frame Output

CANFTR — Cancel Frame Transfer

CANJEO — Cancel Frame Jeopardy on a Service Order

CANJWO — Cancel Frame Jeopardy on a Work Order

CANLST — Cancel Line and Station Transfer

CANMSG — Cancel Message

CANSET — Cancel Switch Port Transfer

CANSO — Cancel Provisioning Request

CANSOL — Cancel Service Order LSTs

CANWAO — Cancel Wire Assembly Order

CANWO — Cancel Multi-pass Work Order Frame Output

CONINT — Conversion of Pending INT mode order

CONSO — Conversion of Pending Service Orders

CORATR — Correct Area Transfer

CORCPT — Correct Cable Pair Transfer

CORCTR — Correct Channel Transfer

CORDTR — Correct Dial Transfer

CORINT — Correct INT Mode Provisioning

CORLST — Correct Line and Station Transfer

CORSET — Correct Switch Port Transfer

CORSO — Correct Provisioning Request

CORTDO — Correct TDO Mode Provisioning Request

CORTMC — Correct Cable Pair Transfer Translation Redundancy Management

CORTMD — Correct Dial Transfer Translation Redundancy Management

CORTME — Correct Switch Port Transfer Translation Redundancy Mangmnt

CORTML — Correct Non-Service Order Line Station Translation Redundancy Mngmnt

CORTMR — Correct Area Transfer Translation Redundancy Management

CORTTR — Correct Translation Transformation for Dial Transfers

D

DSSDSU — DCM Start/Stop for DCM Status Utility

DTRCTX — Dial Transfer Administration Data Request

E

EXTCP — Extract Cable

EXTPDG — Extract Pending Activity

I

IMMMAP — Immediate Network Unit Mapping

IMMNTU — Immediate Network Unit Request

IMMRTE — Immediate Route Request

INQASG — Inquiry for Assignment

INQASM — Inquiry for Assembly

INQCAO — Inquiry for Capacity Activation Order

INQCCU — Inquiry for Concurrency Control Utility

INQCKT — Inquiry for Circuit

INQDNU — Inquiry for Deferred Message Utility

INQDSU — Inquiry for DCM Status Utility

INQGRP — Inquiry for Group

INQNTU — Inquiry for Network Unit

INQORD — Inquiry Service Order

INQWO — Inquiry Work Order

L

LDTDSU — Load DCM Tables for DCM Status Utility

M

MIGREF — Migrate Reference Data

P

PCNATR — Complete Area Transfer

PCNCAO — Complete Capacity Activation Order

PCNCPT — Complete Cable Pair Transfer (input contract)

PCNCPT — Complete CPT Assignment Redundancy Mngmnt (output contract)

PCNCTR — Complete Channel Transfer

PCNDTR — Complete Dial Transfer

PCNFO — Complete Frame Output

PCNFTR — Conplete Frame Transfer

PCNLET — Switch Port Transfer Assignment Redundancy Management

PCNLST — Complete Line and Station Transfer (input contract)

PCNLST — Non-SO LST Assignment Redundancy Mngmnt (output contract)

PCNMCT — Maintenance Change Assignment Redundancy Management

PCNMSG — Complete Message

PCNSET — Complete Switch Port Transfer

PCNSO — Complete Provisioning Request

PCNSOL — Complete Service Order LSTs

PCNWAO — Complete Wire Assembly Order

PCNWO — Complete Multi-pass Work Order Frame Output

PREATR — Establish Area Transfer

PRECAO — Establish Capacity Activation Order

PRECPT — Establish Cable Pair Transfer

PRECTR — Establish Channel Transfer

PREDAT — Provide Report Output to FOMS

PREDTR — Establish Dial Transfer

PREFO — Establish Frame Output

PREFTR — Establish Frame Transfer

PREFWI — Establish Frame Work Completion Information for DTRs/ ATRs from FOMS

PREINT — Establish and Assign INT Mode Provisioning Request

PREJEO — Establish Frame Jeopardy on a Service Order

PREJWO — Establish Frame Jeopardy on a Work Order

PRELST — Establish Line and Station Transfer

PREMCT — Establish Maintenance Change

PREMSG — Establish Message

PREPWO — Establish Plan for Multi-pass Work Order Frame Output

PRESET — Establish Switch Port Transfer

PRESO — Establish and Assign Provisioning Request

PRESOS — Establish Skeletal Provisioning Request

PRESWP — Establish TN Swap (input contract)

PRESWP — TN Swap Assignment Redundancy Management (output contract)

PRETDO — Establish and Assign TDO Mode Provisioning Request

PRETMA — Establish TN Aging Translation Redundancy Management

PRETMC — Establish Cable Pair Transfer Translation Redundancy Management

PRETMD — Establish Dial Transfer Translation Redundancy Management

PRETME — Establish Switch Port Transfer Translation Redundancy Mangmnt

PRETML — Establish Non-Service Order Line & Station Trans. Redund. Mangmnt

PRETMM — Establish Maintenance Change Translation Redundancy Management

PRETMR — Establish Area Transfer

Translation Redundancy Management

PRETNA — Establish TN Aging

PREWAO — Establish Wire Assembly Order

PREWO — Establish Multi-pass Work Order Frame Output

PRPTN — Prepare Telephone Numbers

PRTREF — Print Reference Data

R

REQPRM — Request PREMIS TN Lists

REQTRM — Request Translation Redundancy Management

REQWO — Request/Resend Multi-pass Work Order Frame Output

REXASG — Re-execute Provisioning Request

REXCAO — Re-execute Capacity Activation Order

RORSO — Record Only Provisioning Request

RPTADM — Report Administrative Functionality

RPTASG — Report Assignment History

RPTATR — Report Area Transfer

RPTCAO — Report Capacity Activation Order

RPTCC — Report Carrier Controller

RPTCKT — Report Circuit

RPTDIP — Report DIP

RPTDTR — Report Dial Transfer

RPTFLC — Report Frame Layout Configuration

RPTFIL — Report Line/Usage Capacity

RPTFTA — Report Frame Transfer Activity

RPTGRP — Report Group

RPTHST — Report History

RPTIC — Report Intelligent Controller

RPTISD — Report ISDN

RPTLBL — Report Load Balance

RPTNTU — Report Network Unit

RPTORD — Report Service Order

RPTRNG — Report Network Unit Ranges

RPTRTE — Report Route

RPTSAM — Report of Random Sampling of Network Units

RPTSER — Report SERQL

RPTSPR — Report Administrative Group Spread

RPTTPA — Report Tie Pair Administration

RPTTHR — Report Threshold

RPTWO — Report Work Order

RSDASG — Resend Provisioning Request Response

RSDFO — Resend Provisioning Request Frame Output

S

SETOWT — Unlock Service Order

U

UPDALC — Update Bulk Allocation

UPDASM — Update Assembly

UPDATR — Update Area Transfer

UPDCC — Update Carrier Controller

UPDCCP — Update Carrier Controller Port

UPDCCU — Update for Concurrency Control Utility

UPDCHV — Update Channel

UPDCKT — Update Circuit

UPDCLK — Update Cable Link

UPDCND — Update Conditioning Equipment (Bridge Lifters)

UPDCTX — Update Centrex Group

UPDDNU — Update Deferred Message Utility

UPDDSU — Update DCM Status Utility

UPDEQP — Update Equipment Group

UPDEXI — Update External IDs of Network units

UPDFIV — Update Collections from 5ESS IC

UPDFRM — Update Frame

UPDFRT — Update Frame Termination

UPDGRP — Update Group

UPDIC — Update Intelligent Controller

UPDICE — Update Intelligent Controller Equipment

UPDISD — Update ISDN

UPDIVO — Update Inventory Order

UPDLD — Update Load Division

UPDLBL — Update Load Balance

UPDLF — Update Load Factor

UPDLTI — Update LTID numbers and groups

UPDMSC — Update Miscellaneous Equipment

UPDOVR — Dial Transfer Administration Data Request

UPDREF — Update Reference Data

UPDRSV — Update Reservations

UPDSPT — Update Switch Ports

UPDTHE — Update Theoretical Usage

UPDTNL — Update TN List

UPDTRE — Update Transmission Equipment

UPDTRM — Update Terminating Equipment

UPDTRN — Update Translations

UNLKWO — Unlock Work Order

W

WSIALC — Work Session Initialization for Bulk Allocation

WSIASG — Work Session Initialization for Inquiry for Assignment

WSIASM — Work Session Initialization for Assembly

WSIATN — Work Session Initialization for Assignable Telephone Numbers

WSIATR — Work Session Initialization for Area Transfer

WSICAO — Work Session Initialization for Capacity Activation Order

WSICC — Work Session Initialization for Carrier Controller

WSICKT — Work Session Initialization for Circuit

WSICPT — Work Session Initialization for Cable Pair Transfer

WSICTR — Work Session Initialization for Channel Transfer

WSICTX — Work Session Initialization for Centrex Groups

WSIDTR — Work Session Initialization for Dial Transfer

WSIEQP — Work Session Initialization for Equipment Groups

WSIFRM — Work Session Initialization for Frames

WSIFTR — Work Session Initialization for Frame Transfer

WSIGRF — Work Session Initialization for Grp Reference Data

WSIGRP — Work Session Initialization for Group

WSIIC — Work Session Initialization for ICs

WSIISD — Work Session Initialization for ISDN

WSIIVO — Work Session Initialization for Inventory Order

WSILD — Work Session Initialization for Load Division

WSILF — Work Session Initialization for Load Factor

WSILST — Work Session Initialization for Line Station Transfer

WSIMCT — Work Session Initialization for Maintenance Change Ticket

WSIMSR — Work Session Initialization for Measurement Data

WSINTU — Work Session Initialization for Network Unit

WSIPRV — Work Session Initialization for Provisioning

WSIREF — Work Session Initialization for Reference Data

WSIRSV — Work Session Initialization for Reservations

WSISET — Work Session Initialization for Switch Port Transfer

WSITNL — Work Session Initialization for TN List

WSITTR — Work Session Initialization for Correct Translation Transformation

WSIVAL — Work Session Initialization Validate

WSIWAO — Work Session Initialization for Wire Assembly Order

WSIWO — Work Session Initialization for Correct Work Order