

FEATURE DOCUMENT
USER DIALED AUTHORIZATION CODES—
ENHANCED PRIVATE SWITCHED COMMUNICATIONS SERVICE—
2-WIRE NO. 1 ELECTRONIC SWITCHING SYSTEM

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NOTICE

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FEATURE DEFINITION AND DESCRIPTION**1. DEFINITION/INTRODUCTION****DEFINITION**

1.01 The User Dialed Authorization Codes feature provides code numbers dialed by the originating party for cost accounting and call routing purposes.

INTRODUCTION

1.02 This document is one member of a family of feature documents pertaining to the Enhanced Private Switched Communications Service (EPSCS) feature. To fully comprehend this document, readers should be familiar with references B(7) through B(14) in Part 19. See reference A(3) in Part 19 for general queueing information.

2. USER PERSPECTIVE**CUSTOMER****A. General**

2.01 Authorization codes (ACs) allow the customer to define a set of network dialing capabilities and to restrict the use of these capabilities to authorized personnel. The restrictions are enforced by requiring individuals to dial ACs for designated network uses. Each AC is assigned a class of service (via a treatment group) corresponding to distinct dialing capabilities, which can be defined by the customer through service orders. The treatment group assigned to an AC can be determined and/or changed from the customer network control center (CNCC).

2.02 ACs are 3 to 6 digits in length. Portable codes are those having the same meaning throughout the entire network. Nonportable (local) codes may change meaning or be invalid outside the access line group (ALG) for which they are defined.

2.03 For the system to distinguish portable codes from local codes, portable codes must be identifiable by the first one, two or three digits.

2.04 The authorization codes and their associated classes of service are stored in the network ESS machines. The class of service assigned to

an AC can be set or changed from the CNCC. The ACs may be chosen by the customer in any blocks of 100 or 1000 consecutive numbers.

B. Call Processing

2.05 When the calling station goes off-hook, dial tone is returned to the calling party. Upon receipt of dial tone, the calling party responds by dialing the called number. This called number may be a 3-digit code or a 7- or 10-digit address (Table A). If the class of service of the ALG indicates that a user dialed AC is required for a call having those first 3-digits, recall dial tone is returned to the calling party. The recall dial tone consists of two bursts of tone, 100 milliseconds on, 100 milliseconds off, followed by steady dial tone. The recall dial tone is an AC indicator, and the calling party responds by dialing an AC.

2.06 If screening is intended, the class of service associated with the AC is used to route the call: either completion of the call, or intercept by reorder tone or an appropriate announcement. If the AC is invalid, so that no class of service can be found, the call is also intercepted.

C. Authorization Code Administration

2.07 Authorization codes may be activated or deactivated or their treatment groups may be changed by telephone company service orders or by messages at the CNCC. The CNCC does not have the ability to turn on or off the requirement for ACs nor to change the class of service of a treatment group. These changes can only be made by telephone company generated service orders.

2.08 From the CNCC, the customer may query the ESS data base for AC status asking for the treatment group (TRTG) of an individual AC or for the TRTGs of a range of up to 100 ACs. The information in response to these queries may be displayed on the cathode-ray tube (CRT) terminal or printed out by the printer.

2.09 Should a situation arise when, due to the need to conserve remaining recent change (RC) call store space, it is necessary for the central office to inhibit customer originated RC changes, an indication that recent change is full is sent by ESS to the CNCC when a change is requested. This message is used to inform the customer that

TABLE A
NUMBERING PLAN

DIGIT	MEANING
1XX	Route to Network Attendant Access Line Conferencing
10X	Route to Network Test Lines
NNX XXXX	Private Network Number (On-Net)
N0/1X NNX XXXX	DDD Number (Off-Net)

Where:

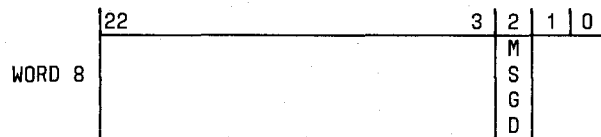
N is any digit other than 0 or 1
X is any digit

the requests for authorization code changes are not being processed by ESS.

TELEPHONE COMPANY

2.10 The recent change (RC) limits mechanism in No. 1 ESS (Parameters NONSL, TOTLW, TMPW1, TMPW2) automatically monitors the use of RC registers. When the NONSL (nonstandard RC limit) parameter is reached, customer originated RCs are automatically inhibited. When any of the other 3 parameters are reached, an RC20 message (limits reached) is printed at the maintenance and service order TTY and a minor alarm is sounded. When No. 1 ESS system problems necessitate, or if the RC area is filled to the point that remaining RC registers should be saved for essential messages, customer originated RC messages to change authorization codes may be inhibited by manual request. Customer originated RC messages can be inhibited at the maintenance TTY by using the RC-INH input message. The RC-INH message restrictions can be removed by the RC-ALLOW input message.

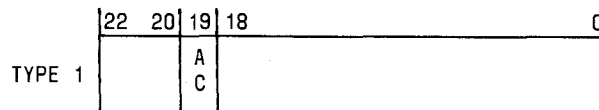
auxiliary block (Fig. 1). Message detail is always provided when the AC feature is used. When the MSGD indicator is set to 1 a message detail record is sent to the CNCC for every incoming call over the trunk group. This indicator is valid only when the major class is 28, 33, 34, or 35.



LEGEND:

MSGD - MESSAGE DETAIL

Fig. 1—LEN Auxiliary Block—Word 8



LEGEND:

AC - AUTHORIZATION CODE = 1

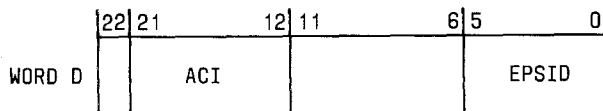
Fig. 2—Supplementary Call Identification Word

3. SYSTEM PERSPECTIVE

SOFTWARE DATA STRUCTURES

A. Translations

3.01 The requirement for message detail is indicated by item 2 (MSGD) in the LEN



LEGEND:

ACI - AUTHORIZATION CODE INDEX
 EPSID - EPSCS CUSTOMER IDENTIFICATION NUMBER

Fig. 3—Trunk Group Supplementary Auxiliary Block

3.02 The chart column translator contains a new item (AC) in the supplementary call identification word (SCIW) (Fig. 2). If this AC indicator is set to 1, an authorization code is required to complete the call, so recall dial tone is returned to the user and a user dialed authorization code is collected after the called number is dialed.

3.03 The trunk group supplementary translator contains a new optional word D in the auxiliary block (Fig. 3). The items required in optional word D are as follows:

- (a) EPSID—An EPSCS customer identification number is needed for any trunk dedicated to an EPSCS customer, including any dedicated service circuit.
- (b) ACI—The authorization code index selects a subtranslator for ACs received by the trunk group.

3.04 The authorization code (AC) translator (Fig. 4) converts a user-dialed AC to a treatment group (TRTG). The TRTG is then converted to a screening LEN via the EPSCS customer translator. The AC translator is a digit-by-digit type. The final level can be a simple primary translation word (PTW) if the AC is not used for screening; otherwise, it must point to a subtranslator. The master head table annex +51 points to the AC head table. The length of the AC head table is a maximum of 1025. The AC head table is indexed by the authorization code index (ACI) and contains DTYP and associated data as shown in Fig. 4.

3.05 The digit interpreter tables (Fig. 4) are indexed by D_n, where n is the level of the table. (Digit 0 is treated as 10). The digit interpreter tables are 15 words long, with the last

five words all zeros. The maximum number of digit interpreter levels is three.

3.06 A thousands block subtranslator (Fig. 4) contains the TRTG for 1000 consecutive authorization codes. These codes are packed four entries per word. The TRTG for XXX is in word XXX-111, and the displacement from the right,

within the word, is five times the remainder of the index formula (digit 0 is treated as 10). The treatment groups associated with these codes are changeable directly by the customer or may be built by recent change messages.

3.07 The hundreds block subtranslator (Fig. 4) is similar to the thousands block subtranslator but handles only 100 consecutive ACs. The index to a code word is XX-11 and the displacement is

five times the remainder of the index formula.

3.08 The DTYP3 data shown in the AC translator (Fig. 4) is used for portable codes or codes not used for screening.

- (a) A nonzero authorization code index (ACI) indicates portable codes, and is used in place of the original ACI. (The NDIGS item does not apply.)
- (b) A zero ACI indicates that the AC is to be recorded on message detail but not used for screening. (The NDIGS item specifies the number of digits in the AC.)

3.09 The EPSCS customer ID (EPSID) translator (Fig. 5) contains common customer data applicable to all customer trunk groups in the office. The head table is pointed to from the auxiliary master head table +52. The index into the head table is indexed by EPSID obtained from either the trunk group supplementary translator or the number group number to rate center translator. The EPSID auxiliary block (common block) is indexed by TRTG+3 where TRTG ranges from 0 to 31. The TRTG is derived through authorization code translation. Items contained in the common block are as follows:

- (a) NPAT—Number of routing patterns in addition to the base pattern

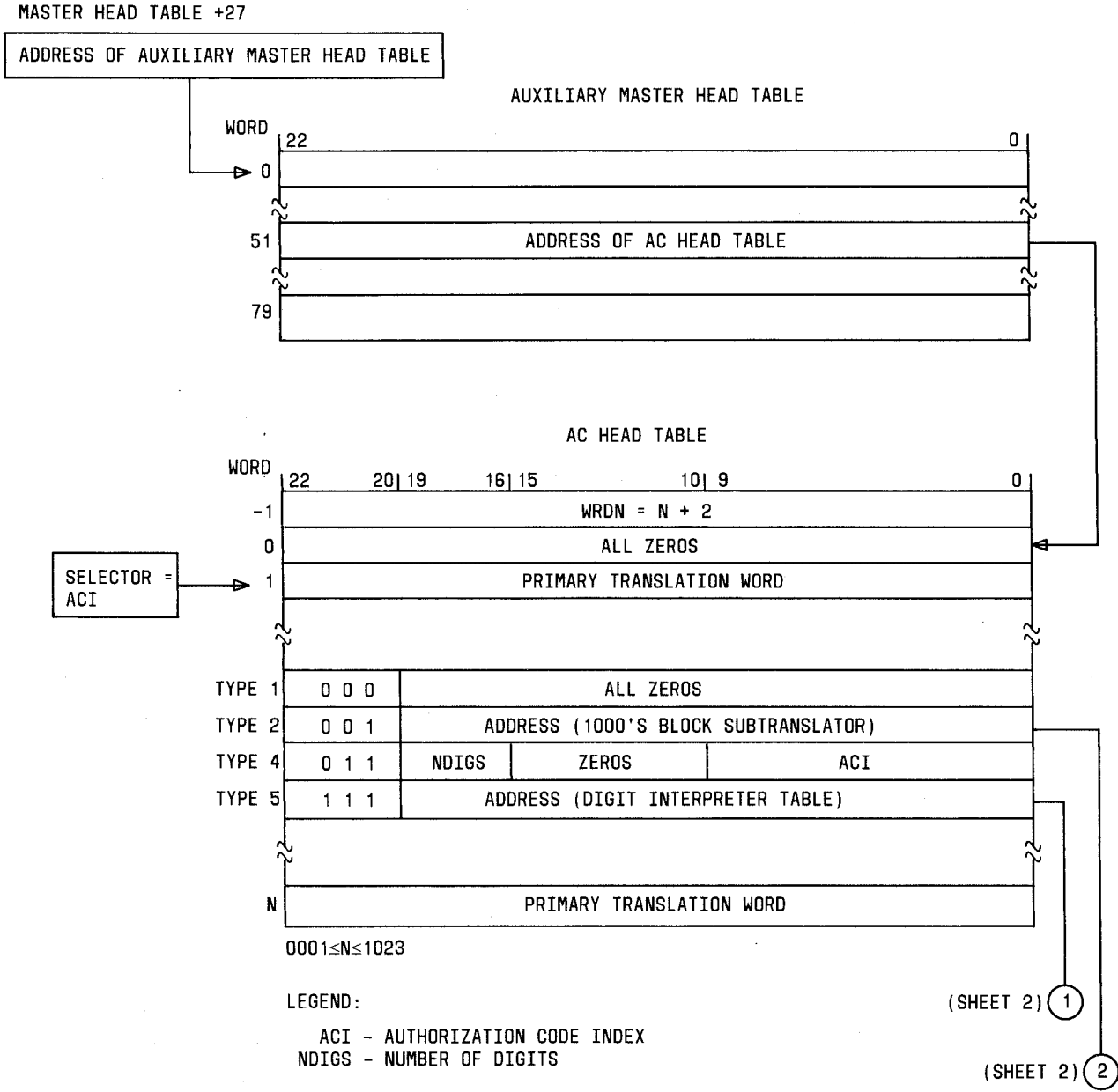


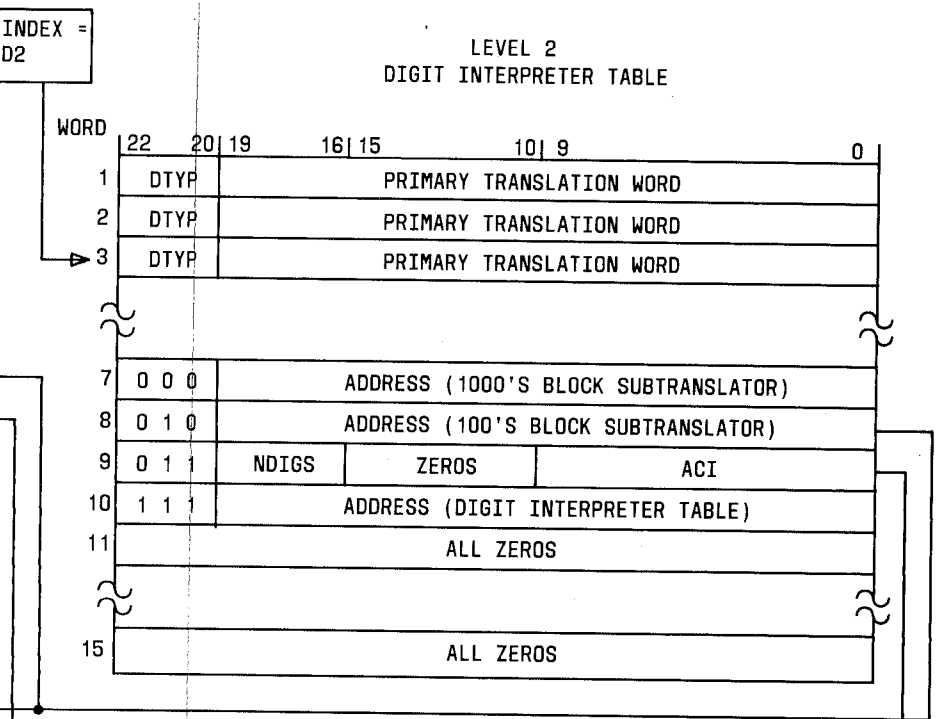
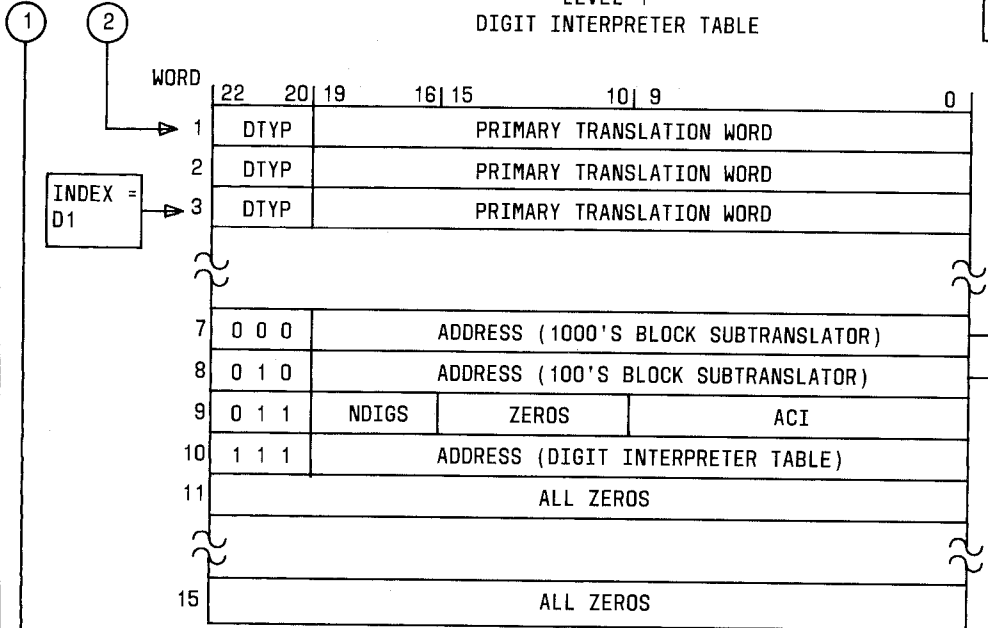
Fig. 4—Authorization Code Translator (Sheet 1)

(SHEET 1)

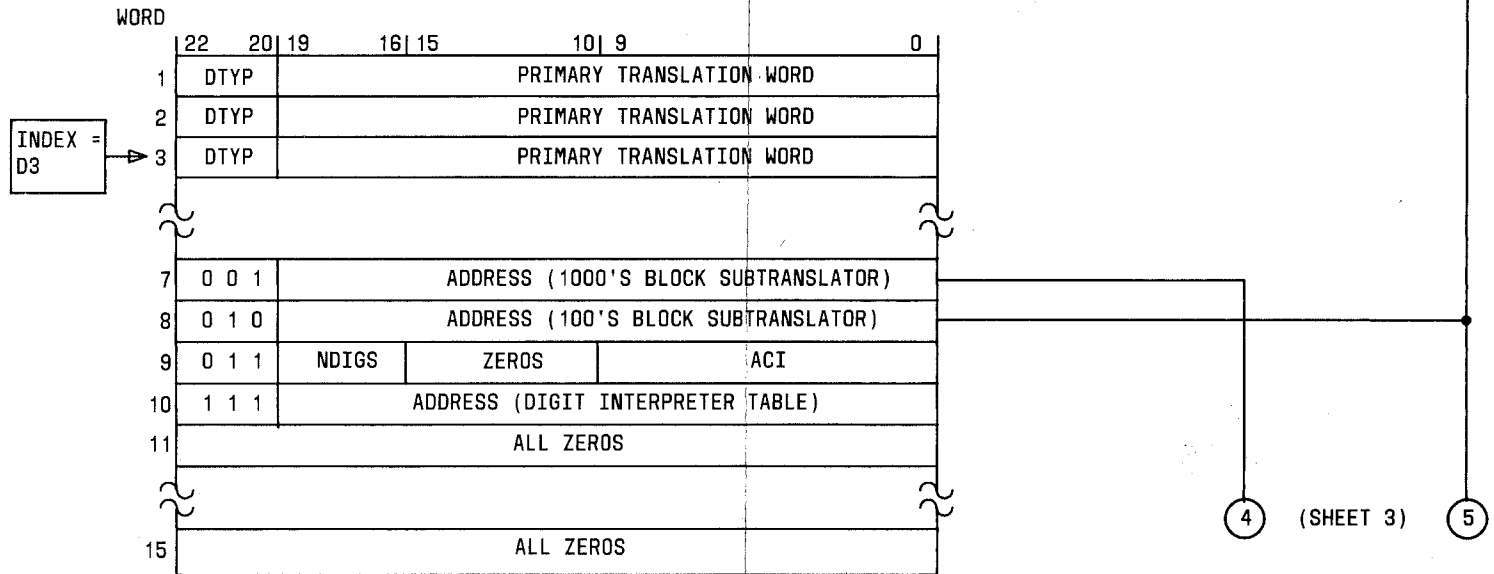
LEVEL 1
DIGIT INTERPRETER TABLE

INDEX =
D2

LEVEL 2
DIGIT INTERPRETER TABLE



LEVEL 3
DIGIT INTERPRETER TABLE

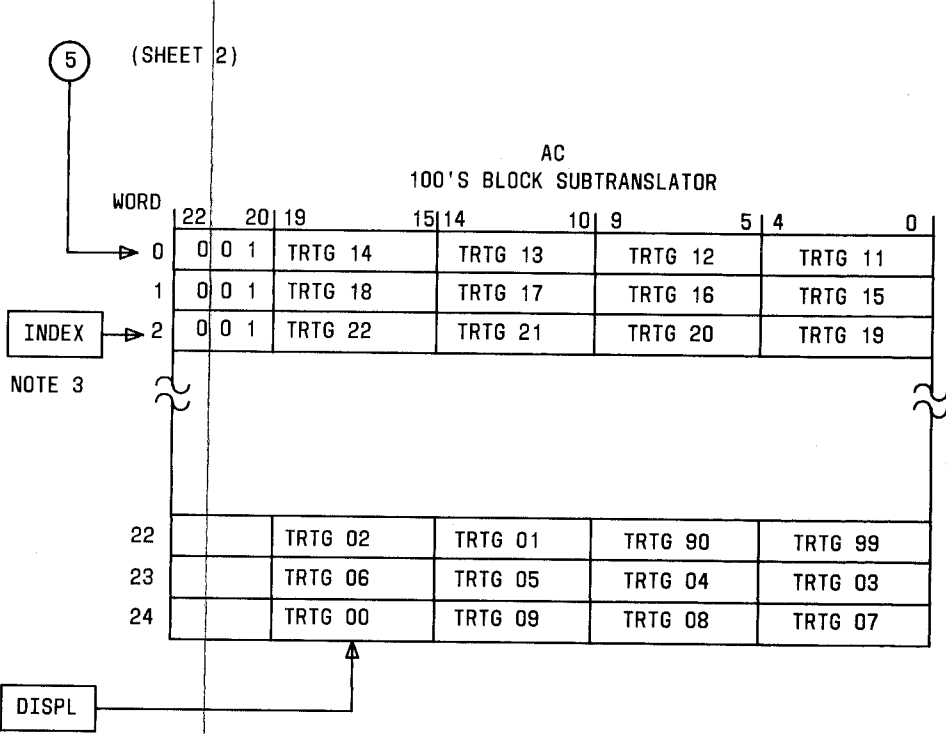
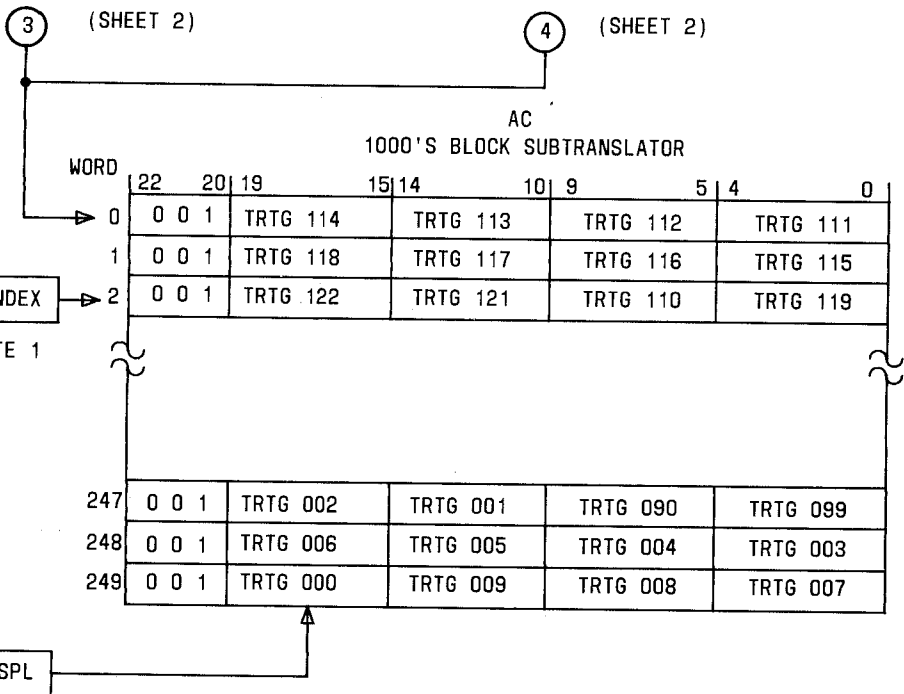


3 (SHEET 3)

LEGEND:

ACI - AUTHORIZATION CODE INDEX
NDIGS - NUMBER OF DIGITS

Fig. 4—Authorization Code Translator (Sheet 2)



LEGEND:
TRTG - TREATMENT GROUP

- NOTES:
1. INDEX=XXX-111. WHERE XXX ARE THE LAST 3 DIGITS OF THE AUTHORIZATION CODE
 2. DISPLACEMENT=5 TIMES THE REMAINDER OF THE 1000'S BLOCK INDEX FORMULA
 3. INDEX=XX-11. WHERE XX ARE THE LAST 2 DIGITS OF THE AUTHORIZATION CODE
 4. DISPLACEMENT=5 TIMES THE REMAINDER OF THE 100'S BLOCK INDEX FORMULA

Fig. 4—Authorization Code Translator (Sheet 3)

- (b) RI—Intercept route index, used for unassigned TRTGs (RI may route to tone or announcement)
- (c) SLEN—Screening LEN.

B. Parameters

3.10 Parameter word F4CUST (Fig. 6) points to a 16-word call store table allocated for authorization code screening. One word of call store per 4 customers is required. The maximum number of EPSCS customers is 63.

FEATURE OPERATION

3.11 Network trunk seizure occurs as a result of the calling party going off-hook and dialing the appropriate network access code, unless the calling station is served by a direct access line (DAL). For a DAL, trunk seizure occurs when the calling station goes off-hook. A receiver is connected to the incoming trunk and dial tone is returned to the caller (second dial tone in the access code case). Upon receipt of this dial tone, the caller dials (either dial pulse or TOUCH-TONE®) the called number.

3.12 After 3 digits of the called number are collected, a 3-digit translation is performed with the digits and the chart column of the screening LEN for the group. The 3-digit translation provides a call type which tells the number of digits expected in the called number (3, 7, or 10), routing data (RI, NOC, NAC, etc.), and an indicator that an authorization code is or is not required.

3.13 If an authorization code is required, the routing data obtained to this point is ignored. Checks are made to determine that a receiver is on the call, whether or not error conditions exist, the type of receiver (dial pulse or TOUCH-TONE) is determined, and then recall dial tone is applied indicating to the caller to dial the AC. The first three digits of the AC are collected and a trunk group supplementary translation is performed to find the ACI. Since the number of digits in the AC is dependent on no more than the first 3 digits, the digit collection is done in two parts. After the initial three digits are collected, an AC translation is performed and the output is either the final data or the number of digits remaining to be collected. The remaining digits (if any) are then collected and the AC translation is called again. This time the output consists of the final data

which is a new screening LEN (unless the record-only, no-screening option is used).

3.14 If the AC is to be used for screening, a second 3-digit translation is now done with the same called digits as before but with the new chart column from the screening LEN of the AC. The output from this translation may be the same route and call type as the first 3-digit translation, or it may indicate the call should be routed to intercept (if the call is not allowed with the AC dialed), or it may indicate some other route based on the new chart column. From this point the call proceeds as a call without AC screening.

3.15 The screening LEN output from the AC translator has other uses in addition to providing a chart column. If priority queueing is indicated in either the screening LEN of the group or of the authorization code, then the call is to be given priority queueing.

FEATURE ATTRIBUTES

4. APPLICABILITY

4.01 In the 1E5 generic program, the user dialed authorization codes feature is provided on a per customer trunk group basis and is an option for EPSCS customers only.

4.02 The EPSCS feature is a prerequisite for the user dialed authorization codes feature and must exist in ESS.

5. LIMITATIONS AND RESTRICTIONS

OPERATIONAL

5.01 Customer originated messages to change the treatment of authorization codes may be inhibited at the maintenance TTY by using the RC-INH input message. This is necessary if the RC area is filled to the point that remaining RC registers should be saved for essential messages.

6. COMPATIBILITY AND INTERACTIONS

DYNAMIC INTERACTIONS WITH OTHER FEATURES AND HARDWARE

6.01 Meet-Me Conference—Authorization code screening can be used to insure privacy for the meet-me conference. A customer may assign

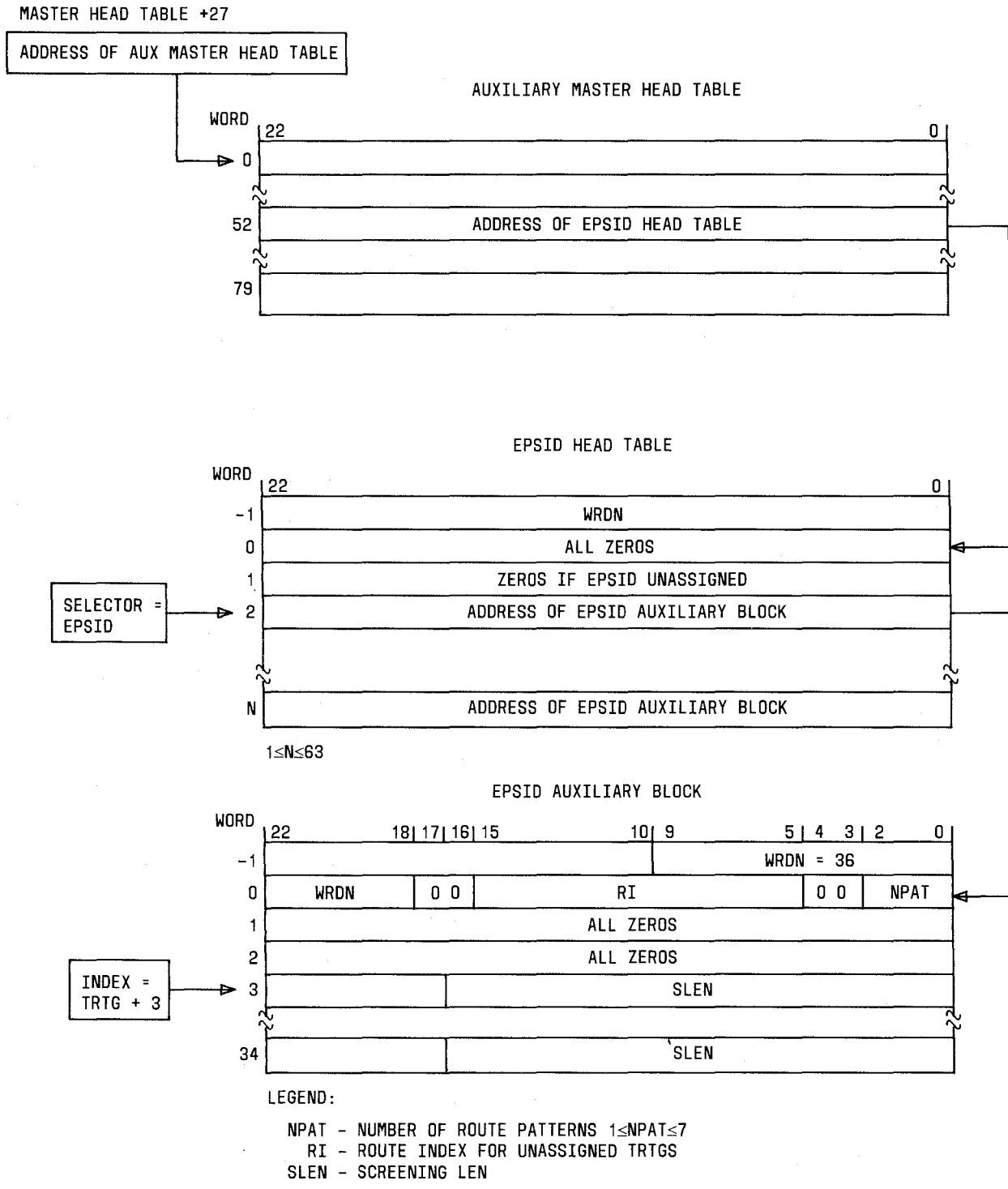


Fig. 5—EPSCS Customer Identification Translator



DATA = LENGTH OF THE CALL STORE BLOCK
 CSADR = ADDRESS OF THE CALL STORE BLOCK

Fig. 6—Parameter Word F4CUST

one of its 32 classes of service to each conference bridge in the network. This class of service can be set up to block all called numbers except the 1XX code for its bridge. All other classes of service blocks calls to the bridge. To conserve classes of service, a customer may assign a class of service to several conference bridges but only partial privacy will be provided by this arrangement.

7. COST FACTORS

A. Fixed

7.01 The following memory is required whether or not the user dialed authorization codes feature is used in the central office.

- **Generic: Basic Core Program (Program Store):** Approximately 10 words are required in the basic core program.
- **Parameter (Program Store):** 1 word-F4CUST. This word is shared with the EPSCS feature.

B. Conditional

7.02 The following memory is required when the user dialed authorization codes feature is provided:

- **Generic (Program Store):** The ACS feature package must be loaded to provide the user dialed authorization codes feature. The ACS feature package contains 1728 words. Of this total, 1428 words are code and 300 words are patch.

C. Variable

7.03 The following memory is required when the user dialed authorization codes feature is provided to a customer.

- **Translation (Program Store):**

- (a) 1 word in the LEN auxiliary block for each EPSCS trunk group with authorization code screening.
- (b) 1 word in the chart column translator (one chart column for each different AC entry pattern).
- (c) 1 word in the trunk group supplementary auxiliary block for each EPSCS trunk group.
- (d) The authorization code translator requires the following words:
 - (1) The AC head table is of variable length with a maximum length of 1025 words.
 - (2) 15 words are required for each interpreter table. Thus, for each AC index (ACI), one level takes 15 words, 2 levels take 30 to 165 words, and 3 levels take 45 to 1665 words.
 - (3) 250 words are required for each thousands block subtranslator.
 - (4) 25 words are required for each hundreds block subtranslator.
 - (5) 3 words are required to provide a screening LEN auxiliary block for each unique user dialed authorization code.

(e) The EPSCS customer identification translator requires the following words:

(1) The EPSID head table is of variable length up to 65 words.

(2) 36 words are required for the EPSID customer common block. The maximum number of EPSID customer common blocks is 63.

• **Call Store:**

(a) 16 words are required for the customer identification table.

PROCESSOR TIME

7.04 The real time cost for a typical 3- to 6-digit authorization code with a screening code is as follows:

3-digit	1700 cycles
4-digit	2100 cycles
5-digit	2200 cycles
6-digit	2300 cycles

Note that this is in addition to the average base EPSCS call of 6900 cycles.

7.05 The cycle time for ESS is 5.5 microseconds.

8. AVAILABILITY

8.01 The user dialed authorization codes feature is available with 1E5 and later generic programs.

CONSIDERATIONS FOR INCORPORATION OF FEATURE INTO SYSTEM

9. PLANNING

9.01 Authorization codes to be available to each customer must be specified so that the system can make them available on a block basis. The treatment group assigned to each AC must be specified. The ACs may represent extension numbers, case or account numbers, or any identifier desired by the customer. The only restriction is that the codes must be assigned in blocks of a

hundred or a thousand consecutive codes (in which only the last 2 or 3 digits, respectively, vary).

9.02 If a customer wants portable codes, the customer must select a set of first digits and/or first two digits and/or first three digits that will be used only for portable codes. For efficient use of memory, a set of (one or more) first digits should be selected.

10. HARDWARE

10.01 Not applicable.

11. DETERMINATION OF QUANTITIES

MEMORY

11.01 The following procedures may be used to calculate program store memory requirements for consecutive AC assignments:

(a) Authorization codes to be assigned must first be grouped into individual hundreds and thousands blocks for each authorization code index (ACI). Compute program store requirements one ACI at a time as follows:

- 1 word for ACI index into head table.
- 25 words per hundreds block.
- 250 words per thousands block.

(b) Truncate the last two digits from the hundreds block codes and the last three digits from the thousands block codes. (There should be no duplicate prefixes remaining.) Computation is complete at this point if no prefixes remain. If prefixes remain, the following words must be added:

- 15 words (digit interpreter level 1)
- 15 words (digit interpreter level 2) for *each* different first digit which is not the last digit in the prefix.
- 15 words (digit interpreter level 3) for *each* different first 2-digit number of a prefix.

11.02 Table B is an example showing program store computation for consecutive AC assignments.

TABLE B

EXAMPLE OF PROGRAM STORE COMPUTATION FOR CONSECUTIVE AC ASSIGNMENTS

EXAMPLE		PROGRAM STORE COMPUTATION			
<u>ACI</u>	<u>AUTHORIZATION CODES</u>	1	(ACI)	51	(Subtotal)
17	8XX	25	(100's)	<u>15</u>	(Digit Interpreter Level 1)
	9XX	<u>25</u>	(100's)	66	Total
		51	Subtotal		
		1	(ACI)	326	(Subtotal)
20	623XX	25	(100's)	15	(Digit Interpreter Level 1)
	724XXX	250	(1000's)	30	(Digit Interpreter Level 2)
	8XX	<u>25</u>	(100's)	<u>30</u>	(Digit Interpreter Level 3)
	9XX	<u>25</u>	(100's)	401	Total
		326	Subtotal		
		1	(ACI)	301	(Subtotal)
21	1XX	25	(100's)	15	(Digit Interpreter Level 1)
	32XX	25	(100's)	15	(Digit Interpreter Level 2)
	386XX	<u>250</u>	(1000's)	<u>15</u>	(Digit Interpreter Level 3)
		301	Subtotal	346	Total

12. ASSIGNMENTS AND RECORDS**INPUT AND RECORD KEEPING****A. Translation Forms**

12.01 ESS translation forms affected by the user dialed authorization codes feature are as follows: (Refer to reference C(4) in Part 19 for details.)

(a) ESS Form 1101—Directory Number Record: Used to record the message detail entry for a trunk group

(b) ESS Form 1119—EPSCS Authorization Code Digit Interpretation: Used to assign

authorization code indices and to record digit interpretation information.

(c) ESS Form 1120—EPSCS Customer ID Record: Used to build the EPSCS customer translator which relates the 32 possible customer treatment groups to screening LENS as required. In addition, this form provides the route index for tone or announcement on unassigned customer treatment groups, and the quantity of routing patterns in addition to the base routing pattern for route pattern selection.

(d) ESS Form 1216—Trunk Group Supplementary Record: Used to record the ACI and the EPSCS customer identification number.

- (e) ESS Form 1304—Rate and Route Chart:
Used to record authorization code requirements.

B. Recent Change (RC) Messages

12.02 Recent change messages affected by the user dialed authorization codes feature are as follows:

RC Message	Function
RC:LINE	New keyword MSGD sets the bit in the LEN auxiliary block indicating message detail records to the customer (Section 231-118-335).
RC:CCOL	New keyword AC sets the bit in the supplementary call identification word requiring an authorization code (Section 231-118-324).
RC:TG	New keyword ACI identifies the AC index for ACs received over the trunk group. New keyword EPSID inputs the customer identification number.
RC:ACTABL	This message builds the digit interpreter tables and the hundreds and thousands blocks. This information is specified by keywords ACI, DGS, DI, HB, TB, TRTG, NDIGS, and PACI (Section 231-118-343).
RC:AC	This message is used to insert or change the treatment group number entries in the thousands or hundreds blocks with keywords ACI, DGS, L, and T (Section 231-118-343).
RC:EPSID	This message is used to build the EPSCS customer common block entries for the EPSCS customer translator with keywords EPSID, RI, TRTG, NPAT, and SLEN (Section 231-118-343).

UNIFORM SERVICE ORDER CODES

12.03 NP8 is the uniform service order code for the user dialed authorization codes feature.

13. NEW INSTALLATION AND GROWTH

13.01 An efficient method for initializing a large number of authorization codes for the consecutive codes plan using hundreds blocks or thousands blocks must be used. Emphasis is on minimal use of recent change (RC) registers, thereby maximizing the data created per card writing. This is achieved by initializing authorization codes in groups, and by creating recent changes on words or areas where recent change registers already exist.

13.02 The recent change message flowcharts and the number of RC registers created per specific keyword or segment is shown in Fig. 7. There will be additional RC registers created on link list entries, their number depending on the size of available memory areas. It is suggested that the available RC area be closely monitored throughout the entire procedure.

13.03 Depending on the amount of RC primary area available in the office, hundreds blocks (or thousands blocks) can now be seized and initialized until the office threshold is nearly reached. Each hundreds block takes 25 or 26 RC registers and each thousands block takes 250 or 251 RC registers. This number is required just to initialize the block to a single value, such as 0, with the RC:ACTABL message. The RC:ACTABL message should be followed before card writing by the RC:AC message to initialize the block in detail. This is essential to minimize RC register usage, since prior to card writing, registers which already exist on each word of the hundreds block and thousands block are being used.

13.04 The number of RC registers used for initialization is the same as the number of program store words created, since a single recent change register is used for each word.

13.05 Customer originated recent changes from the customer premises use one recent change register per word changed. If the treatment groups changed reside in the same program store word, only one recent change register is used.

13.06 Figure 8 illustrates the procedures required to add the user dialed authorization codes feature.

RC Registers
per Keyword

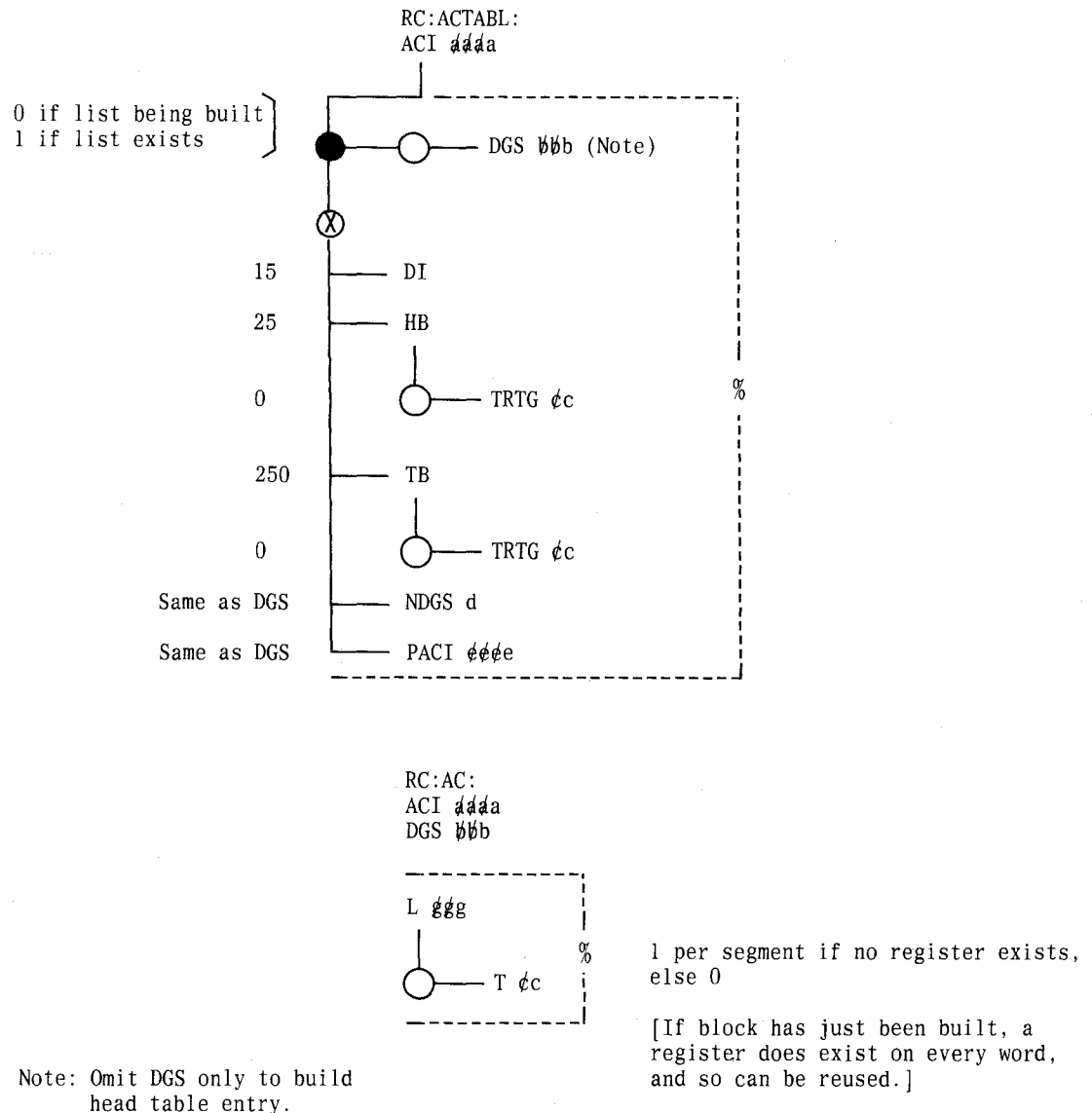


Fig. 7—RC Register Usage for Authorization Code Messages

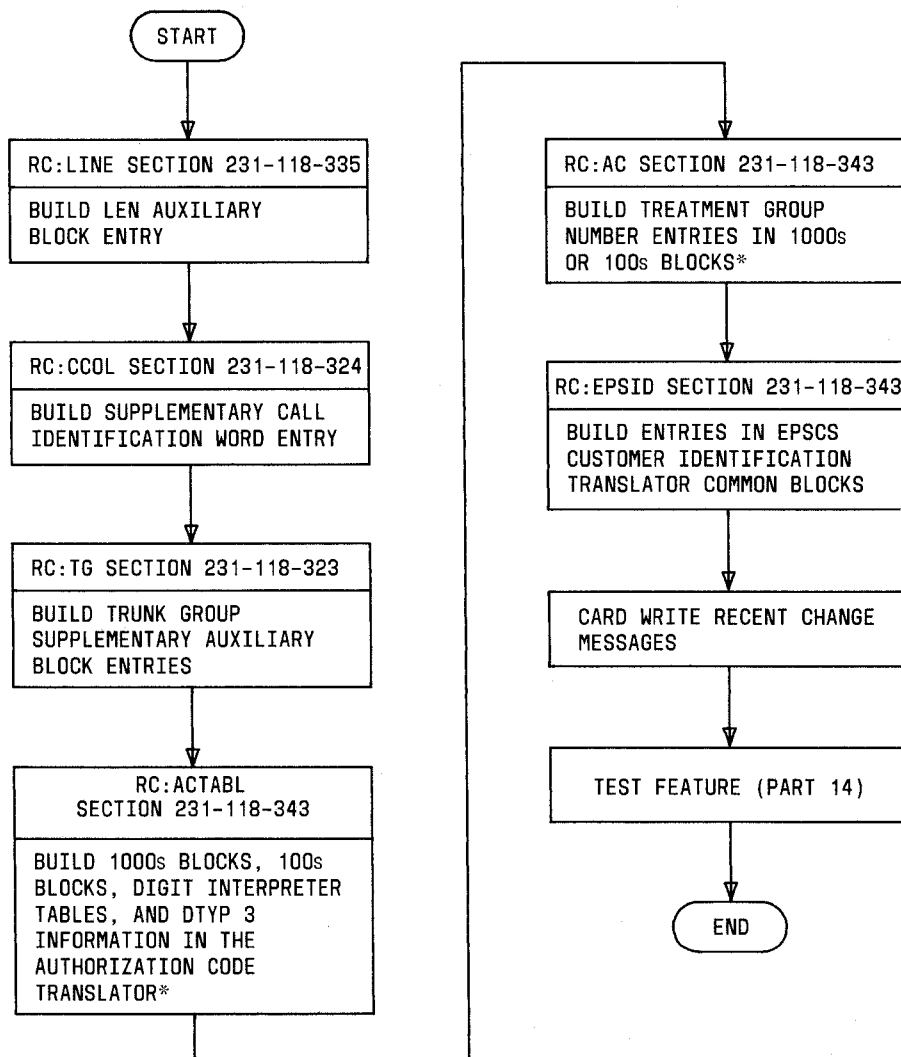
14. TESTING

14.01 TTY input and output messages given in references C(1) and C(2) in Part 19 can be used to verify the user dialed authorization codes feature. The messages are:

(a) VFY-LEN input message—Verifies the message detail item in the LEN auxiliary block. System response is a TR03 output message.

(b) VFY-TKGN input message—Verifies the trunk group and will return the address of the supplementary trunk group auxiliary block which may be T-READ to verify the ACI and EPSID items. System response is a TR10 output message.

(c) V-ACS input message—Verifies the contents of the AC to treatment group translator



*ALWAYS USE THE RC-AC MESSAGE TO ASSIGN SPECIFIC TREATMENT GROUP VALUES WITHIN THE NEWLY BUILT THOUSANDS AND HUNDREDS BLOCKS BEFORE CARD WRITING. THIS WILL MINIMIZE RC REGISTER USAGE THEREBY MAXIMIZING DATA CREATED PER CARD WRITING.

Fig. 8—Procedure for Adding the User Dialed Authorization Codes Feature

for each AC. System response is a TR68 output message.

(d) VFY-OFFC input message—Verifies the AC item assignment in the supplementary call identification word. System response is a TR04 output message.

(e) VFY-EPSID input message—Verifies the contents of the EPSID auxiliary block. System response is a TR67 output message.

14.02 The user dialed authorization codes feature may be tested in two steps:

(a) Verify that requests from the CNCC are acted upon and (b) verify that customer originated calls can be made.

14.03 The following requests may be initiated at the CNCC.

- (a) Request authorization code treatment of a single AC
- (b) Request to change authorization code treatment—make it valid or invalid
- (c) Request the TRTGs for a range of up to 100 ACs.

14.04 The customer may place authorization code calls to other customer stations outside of the EPSCS switch using portable codes or local codes. Recall dial tone should be heard after dialing the called number and is an indication to dial the AC. Calls must also be made using invalid portable codes and local codes. When an invalid code is dialed, an indication (either 120 ipm or recording) is received.

14.05 Additional test information for the user dialed authorization codes feature is contained in reference C(7) in Part 19.

15. MEASUREMENTS

15.01 Not applicable.

16. CHARGING

16.01 Not applicable.

SUPPLEMENTARY INFORMATION

17. GLOSSARY

AC Authorization Code—A 3- to 6-digit dialed code required on certain calls in an EPSCS network, used for screening and/or identification of individuals, groups, or projects.

ACI Authorization Code Index—An index into an AC head table to select a subtranslator for authorization codes received by the trunk group.

CNCC Customer Network Control Center—A dedicated facility located on customer premises. The CNCC allows the customer to monitor and control the network use and cost. The

CNCC can be used to exercise control of some network operations and to obtain usage and status information automatically or on demand.

CSACC

Customer Service Administrative Control Center—A shared, centrally-located facility used by the telephone companies and Long Lines to monitor and control the operation of all EPSCS networks. CSACC serves as a single maintenance contact point for customers; it responds to all problems and questions related to service operations. From this location, all network installation and rearrangement activity is controlled. CSACC personnel direct network testing and maintenance activity and, with the use of automated equipment, perform many of the routine transmission tests for the Bell System provided facilities.

DAL

Direct Access Lines—4-wire connections directly to individual telephone stations, key telephone stations, or voice-frequency data sets. The stations will normally be remotely located with respect to the switch and be connected on the TLN via a carrier system.

EPSCS

Enhanced Private Switched Communications Service.

EPSID

EPSCS Customer Identification—EPSID is a national customer identification, i.e., it is unique for the entire country. EPSID is required since a given EPSCS switch may service more than one EPSCS customer.

MSGD

Message Detail—Bit in the SLEN translator indicating 100 percent message detail; that is, a message detail record is sent to CNCC for every incoming

call over the trunk group. The MSGD indicator is valid only when the major class is 28, 33, 34, or 35. This feature must be used if ACs are used.

Portable Authorization Code

Portable codes have the same meaning throughout the network as contrasted with local codes which may differ in validity and meaning at different switches or access line groups.

Recall Dial Tone

Two short bursts of tone (100 ms on, 100 ms off) followed by steady dial tone. Used to request the caller to dial authorization code.

TRTG

Treatment group, 0 (invalid) and 1 to 31, assigned to an authorization code. Each customer has this set of TRTGs at each switch (different customers at the same switch can have different sets, and each one can have different sets at different switches).

(5) Section 231-118-324—Rate and Route Translation RC Procedures for NOCNOG, DNHT, NOGRAC, RATPAT, DIGTRN, TOLDIG, CCOL, RI, CHRGX, DITABS, TNDM, IDDD, and TDXD (CTX-6 Through 1E5 Generic Programs)—2-Wire No. 1 Electronic Switching System

(6) Section 231-118-335—Line RC Procedures for LINE, TWOPTY, MPTY, SCLIST, MLHG, ACT, and CFV (CTX-7 Through 1E5 Generic Programs)—2-Wire No. 1 Electronic Switching System

(7) Section 231-118-343—EPSCS RC Procedures for AC, ACTABL, and EPSID (1E5 Generic Program)—2-Wire No. 1 Electronic Switching System.

B. Other Documentation

(1) Input Message Manual IM-1A001

(2) Output Message Manual OM-1A001

(3) Translation Output Configurations PA-591003—No. 1 Electronic Switching System

(4) Translation Guide TG-1A—ESS Translation Forms

(5) Office Parameter Specification PA-591001—No. 1 Electronic Switching System

(6) Parameter Guide PG-1—No. 1 Electronic Switching System

(7) FD 231-190-127—Enhanced Private Switched Communication Service Feature—2-Wire No. 1 Electronic Switching System

(8) FD 231-190-128—Meet-Me Conferencing Feature—2-Wire No. 1 Electronic Switching System

(9) FD 231-190-129—Network Call Queueing—2-Wire No. 1 Electronic Switching System

(10) FD 231-190-130—Network Message Detail Recording Feature—2-Wire No. 1 Electronic Switching System

(11) FD 231-190-131—Interface With CNCC Feature—2-Wire No. 1 Electronic Switching System

18. REASONS FOR REISSUE

18.01 Not applicable.

19. REFERENCES

A. Bell System Practices

(1) Section 231-061-450—Program Stores, Network Design—No. 1 Electronic Switching System

(2) Section 231-061-460—Call Stores, Network Design, No. 1 Electronic Switching System

(3) Section 231-090-167—Queueing For Trunks and Lines—2-Wire No. 1 and No. 1A Electronic Switching System

(4) Section 231-118-323—Trunk Translations Recent Change Procedures for TG, TGBVT, TRK, CFTRK, and TGMEM (CTX-6 Through 1E5 Generic Programs)—2-Wire No. 1 Electronic Switching System

(12) FD 231-190-133—4-Wire Direct Access Line
Feature—2-Wire No. 1 Electronic Switching
System

(13) FD 231-190-134—Off-Network Calling Via
Customer Premise Switching System and

TOUCH-TONE® Outpulsing Feature—2-Wire
No. 1 Electronic Switching System

(14) FD 231-190-136—Interface With Peripheral
Interface Unit Feature—2-Wire No. 1
Electronic Switching System.