

**PRIORITY CALLING FEATURE
FEATURE DOCUMENT
1A *ESS*TM SWITCH
*AUTOPLEX*TM SYSTEM 100**

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FEATURE AVAILABILITY

1.03 The Priority Calling feature is available with the 1AE8A and later generic programs. The feature is located in the base program.

2. DEFINITION/BACKGROUND

DEFINITION

2.01 The Priority Calling feature provides for a second directory number to be assigned to a mobile unit. A call can then be completed to the mobile's second directory number even though the Immediate Call Forwarding feature is active on the mobile's primary directory number.

BACKGROUND

2.02 The Immediate Call Forwarding feature is a feature that provides for all calls to the mobile unit to be automatically forwarded to a specified remote station regardless of the busy or idle status of the mobile station. See reference (1) in Part 18 for detailed information on the Immediate Call Forwarding feature.

2.03 The Priority Calling feature allows the mobile station to receive calls even though the Immediate Call Forwarding feature is active. Calls to the second directory number can be completed regardless of whether the Immediate Call Forwarding feature is active on the primary directory number. The second directory number cannot be used for a call origination.

2.04 A mobile subscriber located in the home mobile service area can request a second directory number via an attendant. A second directory number is assigned to the mobile unit with no expiration date associated with it. No mobile subscriber features (e.g., call waiting) can be used with the second directory number.

2.05 The Priority Calling feature can be used by a mobile unit located outside the subscriber's home mobile service area (roamer). The Roamer II feature can be used by the roamer to acquire a TLDN (temporary local directory number). This number becomes the roamer's primary directory number while in the host mobile service area. The roamer can also request a second directory number. Therefore, the roamer can have the Immediate Call Forwarding

feature active on the TLDN and still receive calls to the second directory number. The roamer subscriber must have a TLDN assigned for the second directory number to be assigned. The roamer second directory number must have an expiration date associated with it. This date cannot exceed the expiration date of the corresponding TLDN. See reference (2) in Part 18 for detailed information on the Roamer II feature.

DESCRIPTION

3. USER OPERATION

CUSTOMER

3.01 In order to request a second directory number, the mobile subscriber calls an attendant by dialing a service code or a 7/10-digit attendant number. The service code is an NXX number assigned for attendant access. The subscriber is assigned a second directory number for the priority calling service.

3.02 The roamer subscriber calls the attendant to request a TLDN for roamer service. A second directory number can be requested at the same time. If the second directory number is requested at a later time, the subscriber provides the attendant with the home directory number and TLDN assigned to the mobile unit. The attendant uses this information to verify that a valid TLDN is assigned. The attendant can also use the roamer's home directory number and other information associated with the subscriber for this verification.

3.03 If the roamer subscriber is already located in the host MSA (mobile service area), the attendant can be reached by dialing either a service code or a 7/10-digit attendant number. If the subscriber is located outside of the host MSA, the 10-digit attendant number must be dialed.

3.04 Calls made to the second directory number of an idle mobile unit attempt to terminate to that unit. Calls made to the second directory number of a mobile unit which is busy on a call made to the second directory number receive busy treatment. Calls made to the second directory number of a mobile unit which is busy on a call made to the primary directory number receive unavailable mobile unit announcement. Calls made to the primary directory number of a mobile unit which is busy on a call made to the second directory number receive unavailable mobile unit announcement.

CELLULAR SERVICE PROVIDER

3.05 An attendant is required to provide the Priority Calling feature. The attendant communicates with the mobile subscriber via telephone to collect the required information for assigning a second directory number.

3.06 The attendant uses an unassigned directory number to assign the second directory number. The second directory number is assigned by using TTY recent change input messages. The recent change messages enter data into the directory number translator and the MIN-SDN translator. See reference (3) in Part 18 for detailed information on assigning and verifying a second directory number.

4. SYSTEM OPERATION

HARDWARE

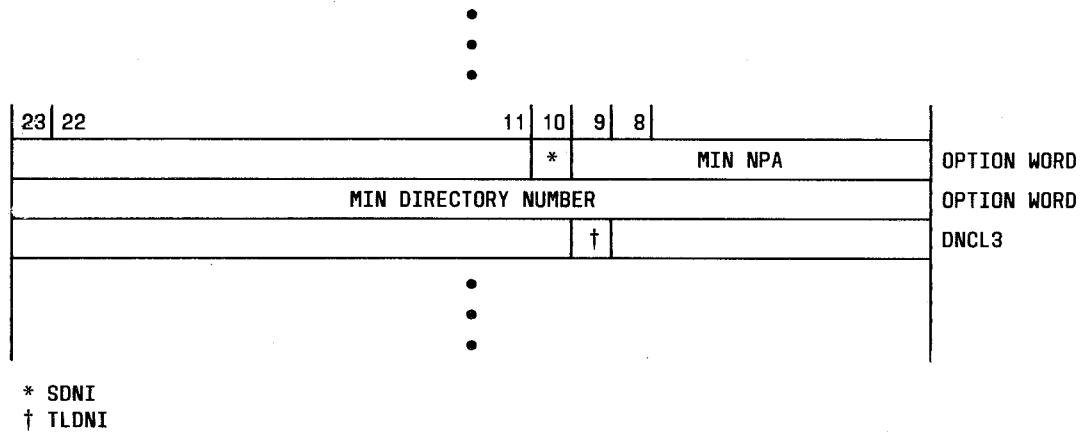
4.01 The attendant requires a station with the capability of receiving telephone calls. A TTY must be available for assigning a second directory number.

OFFICE DATA STRUCTURES

A. Translations

4.02 The directory number auxiliary block in the directory number translator is modified for the Priority Calling feature (Fig. 1). The second directory number used for priority calling is a special kind of TLDN. The TLDNI item is set to a value of one to indicate that the associated directory number is being used as a TLDN. The SDNI item is set to a value of one when the TLDN is used as a second directory number. Any directory number that is not assigned in the MTSO (Mobile Telephone Switching Office) can be assigned as a TLDN. When the TLDNI item is set to a value of one, two option words are built above the word containing the TLDNI item and the SDNI item. The first optional word contains the binary encoded MIN (mobile identification number) NPA code of the associated mobile unit. The second option word contains the binary encoded MIN directory number. If the TLDN is out of service these two option words are zeroed.

4.03 The address of the MIN-SDN head table is the AMHT (auxiliary master head table) + 91 (Fig. 2). The head table contains 100 entries which are indexed by the last two digits of the mobile directory number before MIN encoding. The head table



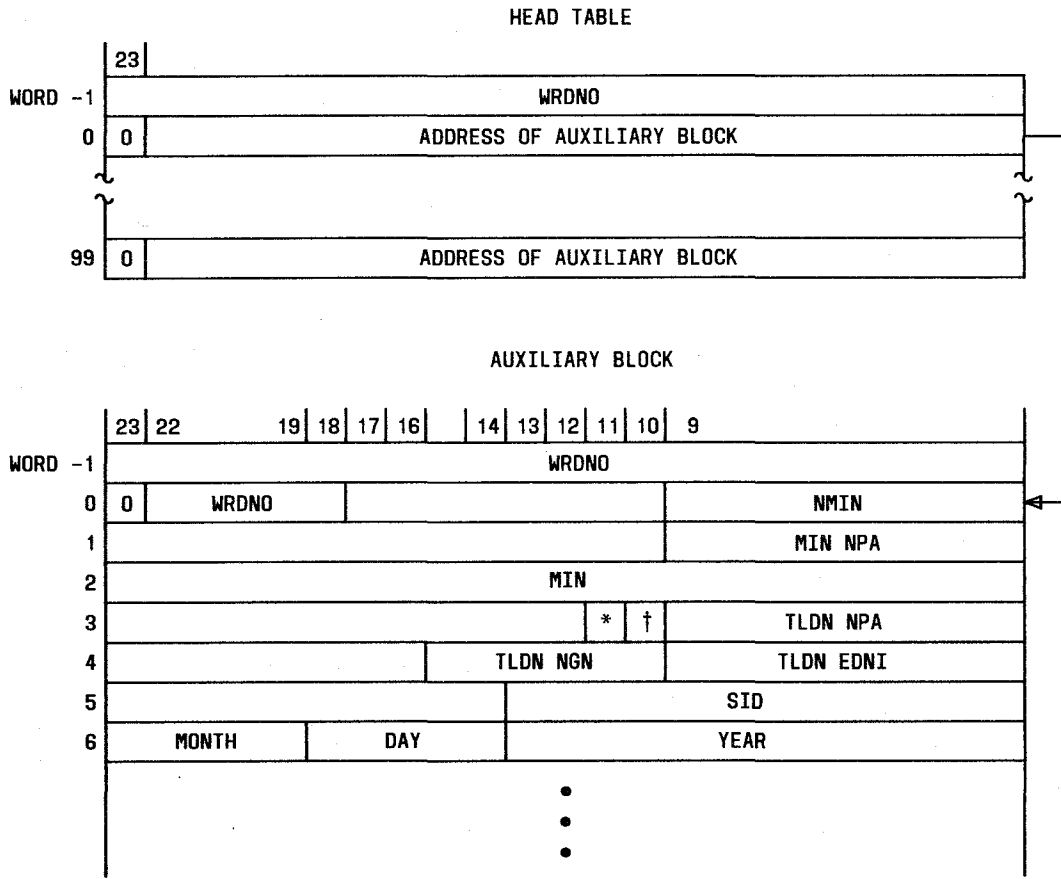
LEGEND:
 SDNI - SECOND DIRECTORY NUMBER INDICATOR
 TLDNI - TEMPORARY LOCAL DIRECTORY NUMBER INDICATOR.

Fig. 1—Directory Number Auxiliary Block

entries contain the address of a variable length auxiliary block. If there are no MINs assigned for the index, the head table entry equals zero and the auxiliary block does not exist. The NMIN field in word 0 of the auxiliary block indicates the number of entries in the auxiliary block. There is one entry for each MIN in this auxiliary block. The entries are in ascending MIN order. Each entry consists of six

words. The first word contains the MIN NPA of the mobile unit. The second word contains the MIN.

4.04 The third word of the entry contains the encoded TLDN NPA. Item TISI is set to a value of one to indicate that the TLDN is in service. A value of zero indicates that the TLDN is unavailable for service. The CDI item, when set to a value of one, in-



* CDI
 † TISI

- LEGEND:
- TISI - TLDN IN-SERVICE INDICATOR
 - CDI - CALL DELIVERY INDICATOR
 - EDNI - ENCODED DIRECTORY NUMBER INDEX
 - MIN - MOBILE IDENTIFICATION NUMBER
 - NGN - NUMBER GROUP NUMBER
 - NPA - NUMBERING PLAN AREA
 - NMIN - NUMBER OF MINS
 - SID - SYSTEM IDENTIFICATION NUMBER
 - TLDN - TEMPORARY LOCAL DIRECTORY NUMBER

Fig. 2 — MIN-SDN Translator

icates that a roamer's home MTSO has been contacted to forward calls to this TLDN.

4.05 The fourth word of the entry contains the encoded TLDN which consists of a number group number and directory number index. The fifth word contains the roamer system identification number.

4.06 The sixth word of the entry contains the expiration date. If the second directory number is assigned to a roamer, the expiration date is not to exceed the expiration date of the primary TLDN. If the second directory number is assigned to a home mobile, the expiration date is equal to zero. When a TLDN is in service, the expiration date indicates when the TLDN is to become out of service. When a TLDN is out of service, this date indicates when the TLDN is removed from the auxiliary block and becomes available for reuse. The TLDNI item in the directory number auxiliary block is set to zero. The directory number becomes unassigned and the associated entries in the MIN-SDN translator are removed.

B. Parameters/Call Store

4.07 Parameter words QP2TLDNUT and QP2TLDNUT + 1 contain the call store address and size of the temporary local directory number usage table TLDNUT. The size of the table is equal to the value of the set card TLDN. Set card TLDN specifies the number of directory numbers assigned in the MTSO for use as temporary local directory numbers.

FEATURE OPERATION

4.08 When the System 100 attendant receives a request for a second directory number, an unassigned directory number is assigned in the MIN-SDN translator.

4.09 A second directory number assigned to a roamer has an expiration date stored in the MIN-SDN translator. When the second directory number expires, the time period in the TLDNUP field (AMPS miscellaneous information translator) is added to the expiration date. The TISI item in the MIN-SDN translator is reset to a value of zero. This causes the second directory number to be kept in an unavailable state. The value of TLDNUP can not exceed 60 days and is determined by the cellular service

provider for the MTSO. If no unavailable period is wanted, TLDNUP can be set to a value of zero.

4.10 For calls attempting to terminate to an idle second directory number, the TLDNI and SDNI items in the DN auxiliary block are checked. Both items are equal to one if this is a second directory number. The MIN-SDN translator is checked for an assigned second directory number match. The associated MIN is used to page the mobile unit. Call processing continues as a normal mobile termination. If a call is made to a second directory number and the second directory number is not assigned, announcement is connected.

CHARACTERISTICS

5. FEATURE ASSIGNMENT

5.01 The Priority Calling feature is provided on a per office basis.

6. LIMITATIONS

6.01 Not applicable.

7. INTERACTIONS

7.01 Not applicable.

8. RESTRICTION CAPABILITY

8.01 Not applicable.

INCORPORATION INTO SYSTEM

9. INSTALLATION/ADDITION/DELETION

9.01 Refer to item (3) in Part 18 for the procedures to build, link, and assign entries in the MIN-SDN translator.

10. HARDWARE REQUIREMENTS

10.01 Not applicable.

11. SOFTWARE ENGINEERING

Note: This part contains cost factors and determination of quantities. The COEES (Central Office Equipment Engineering System) Planning and Mechanized Ordering Modules are the recommended procedures for developing these

requirements. However, for planning purposes or if COEES is not available, the following guidelines may be used.

MEMORY

11.01 Software engineering data is provided herein for PS (Program Stores), UCS (Unduplicated Call Store), DCS (Duplicated Call Stores, and FS (File Stores) or where applicable (with 1AE7 and later), the APS (Attached Processor System).

A. Base Generic Program (PS and FS or APS)

11.02 Approximately 2000 words are required to provide the Priority Calling feature in the 1AE8A generic program.

B. Optionally Loaded Feature Packages (PS and FS or APS)

11.03 Not applicable.

C. Parameters (UCS and FS or APS)

11.04 The following fixed parameter words are required for the Priority Calling feature:

- QP2TLDNUT
- QP2TLDNUT + 1.

D. Call Store Requirements (DCS)

11.05 Set card TLDN specifies the number of directory numbers assigned in the MTSO for use as temporary local directory numbers.

11.06 The size of call store table TLDNUT is equal to the value of set card TLDN.

E. Translations (UCS and APS)

11.07 The following translations memory is required when the feature is applied:

- Directory number auxiliary block—3 words per TLDN are assigned.
- MIN-SDN head table—101 words are required per office.

- MIN-SDN auxiliary block—the number of words depends on the number of entries.

REAL-TIME IMPACT

11.08 The real-time impact for termination to a second directory number is approximately 500 cycles.

12. DATA ASSIGNMENTS AND RECORDS

TRANSLATION FORMS

12.01 Not applicable.

RECENT CHANGES

12.02 The RC:MOBL: input message is used to assign a second directory number.

13. TESTING

13.01 Refer to item (3) in Part 18 for procedures for verifying information in the MIN-SDN translator.

14. ADVANCE PLANNING

14.01 Not applicable.

ADMINISTRATION

15. MEASUREMENTS

15.01 For detailed information concerning traffic measurements unique to the MTSO feature, see reference (4) in Part 18.

15.02 The following traffic measurements are for the usage of TLDNs and have a TMC (traffic measurement code) of 116.

EGO

DEFINITION

- | | |
|-----|---|
| 038 | TLDN Assignment Peg Count: This counts the number of times a TLDN assignment is made. |
| 039 | TLDN Call Peg Count: This counts the number of times a TLDN is used in making a call. |

16. CHARGING**AUTOMATIC MESSAGE ACCOUNTING**

- 16.01 For detailed information as to how and when charging applies, see reference (5) in Part 18.

SUPPLEMENTARY INFORMATION**17. GLOSSARY**

- 17.01 The following terms are defined as they apply to this feature.

Home Mobile Service Area—The MSA from which the mobile unit subscribes service.

Mobile Service Area—A basic coverage region in which System 100 is made available.

Roamer—A mobile unit which operates in a mobile service area other than the one from which mobile service is subscribed.

18. REFERENCE

- 18.01 The following documentation contains information related to or affected by the Priority Calling feature.

AT&T PRACTICES

- (1) 231-290-607—Immediate Call Forwarding Feature—Feature Document

- (2) 231-290-616—Roamer II Feature—Feature Document

- (3) 231-218-301—AUTOPLEX System 100 Recent Change Formats and Implementation—Description and Procedures

- (4) 231-290-604—Traffic Measurements—Feature Document

- (5) 231-290-620—Automatic Message Accounting—Feature Document

- (6) 231-290-600—Mobile Telephone Switching Office Feature—Feature Document

- (7) 231-200-005—Mobile Telephone Switching Office, Cell Site, and Mobile Unit—Description.

OTHER DOCUMENTATION

- (1) Input Message Manual IM-6A001

- (2) Output Message Manual OM-6A001

- (3) Translation Guide TG-1A

- (4) Office Parameter Specification PA-6A001

- (5) Parameter Guide PG-1A

- (6) Translation Output Configuration PA-6A002.