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1. GENERAL

This practice provides a description of AUTOPLEX System 100 (System 100) translators, RC (recent change) verification information, RC message formats, and RC implementation procedures for the System 100 feature in a 2-wire 1A ESSTM switch central office. The 1A ESS switch central office associated with the System 100 cell sites is referred to as the MTSO (mobile telephone switching office).

This practice provides coverage of 1AE9 (Release 3) and later generic program features including CN (cellular networking). Earlier generics are no longer supported in this practice.

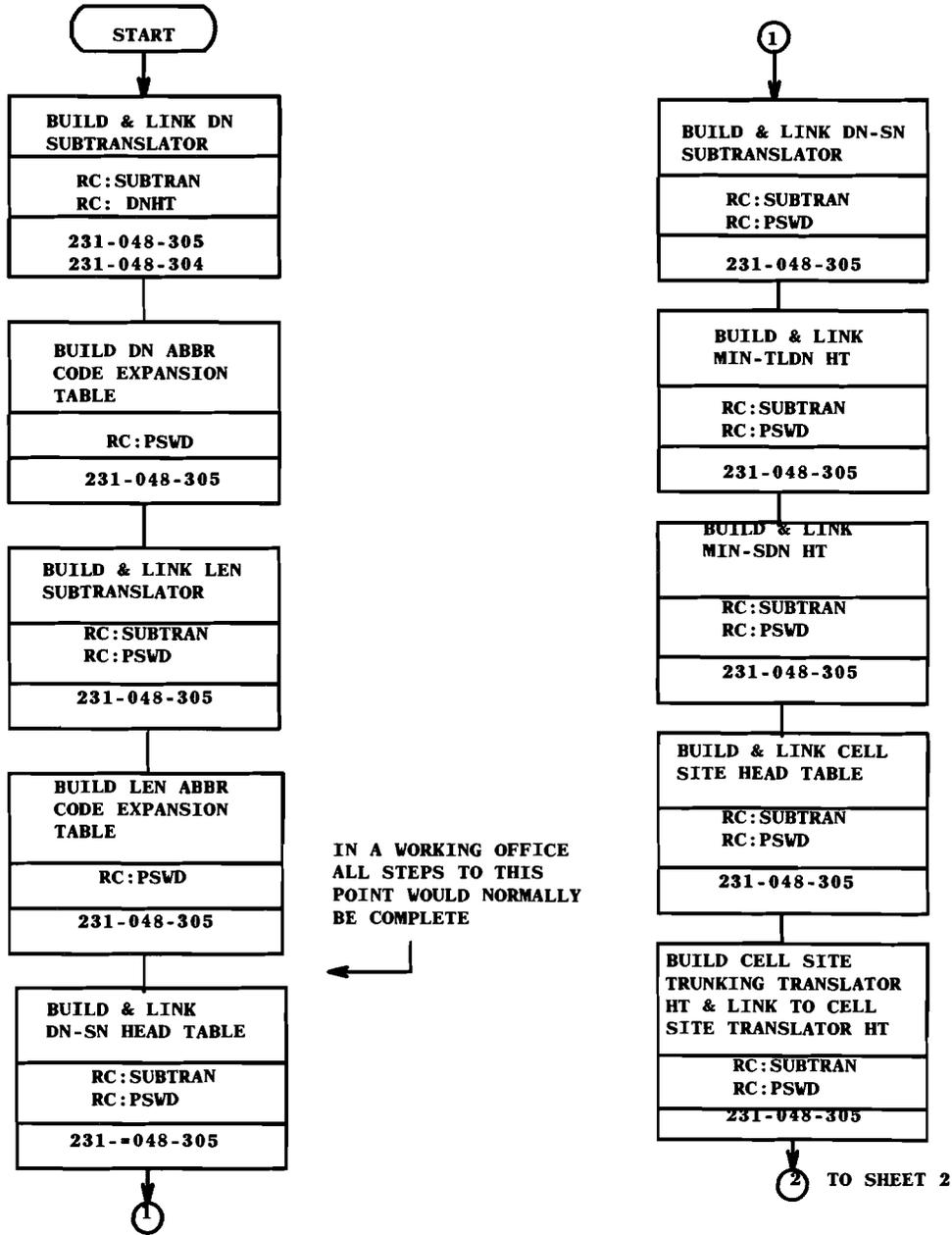
This practice is reissued to update RC messages RC:MLOC, RC:DCHA, RC:ICCB, RC:MSTAT, RC:AMI, RC:RSL, RC:LSA (changed to RC:LSVA), and RC:CELEQ. The associated translator descriptions are also changed where necessary.

This practice contains:

- General RC information (Part 2)
- A brief description of System 100 and its features (Part 3)
- A description of System 100 translators (Part 4)
- RC verification information (Part 5)
- RC message format information (Parts 6, 7, and 8)
- RC implementation procedures (Part 9)
- A glossary of abbreviations and acronyms (Part 10).

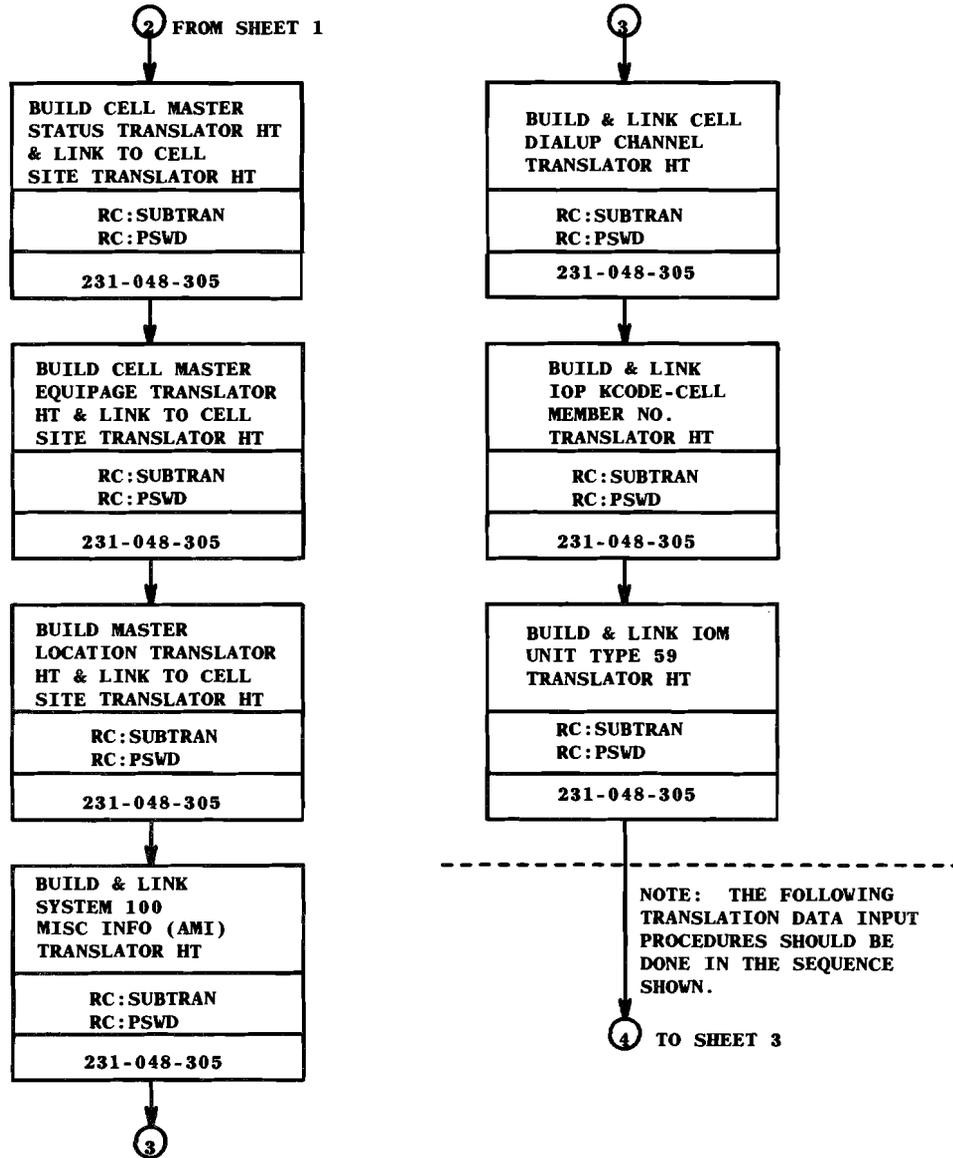
Items and fields shown in translator layouts, and keywords shown in RC messages, are not necessarily included in the list of abbreviations and acronyms. These items and keywords are defined in legends included in translator layout figures or tables associated with the RC message.

A flow diagram showing the recommended sequence for implementing System 100 RC translations is shown in Fig. 1.



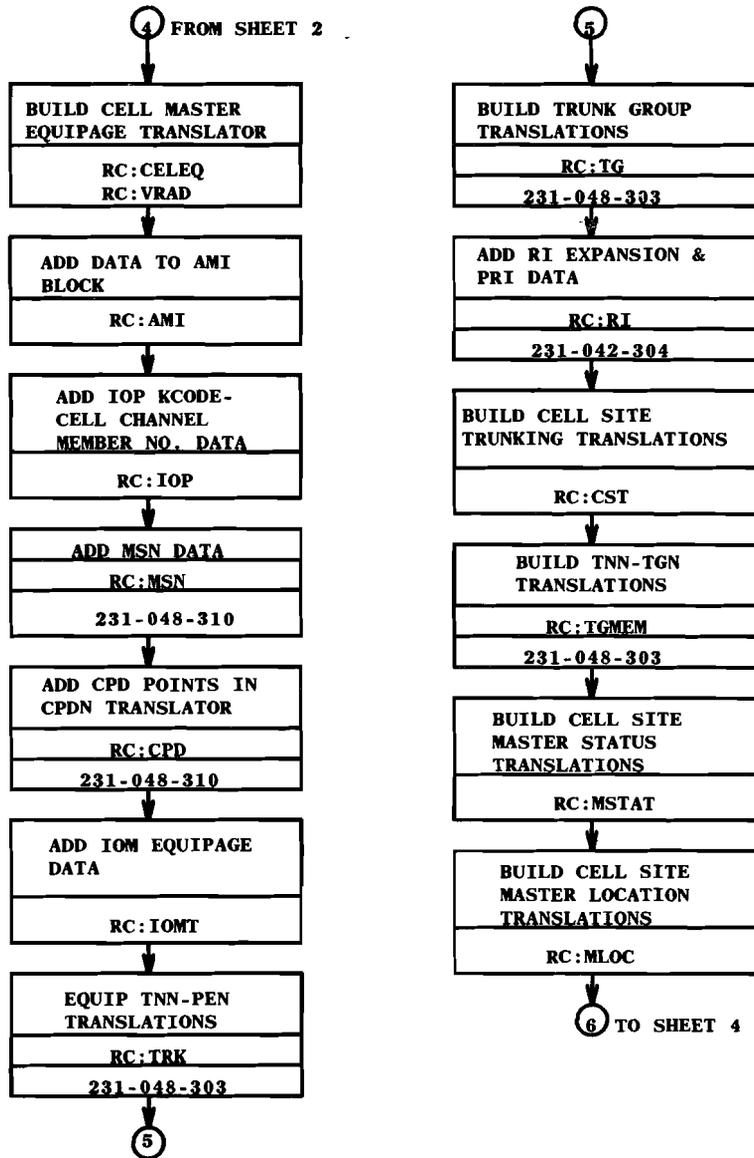
See Legend on Sheet 5.

Fig. 1 — RC Implementation Sequence (Sheet 1 of 5)



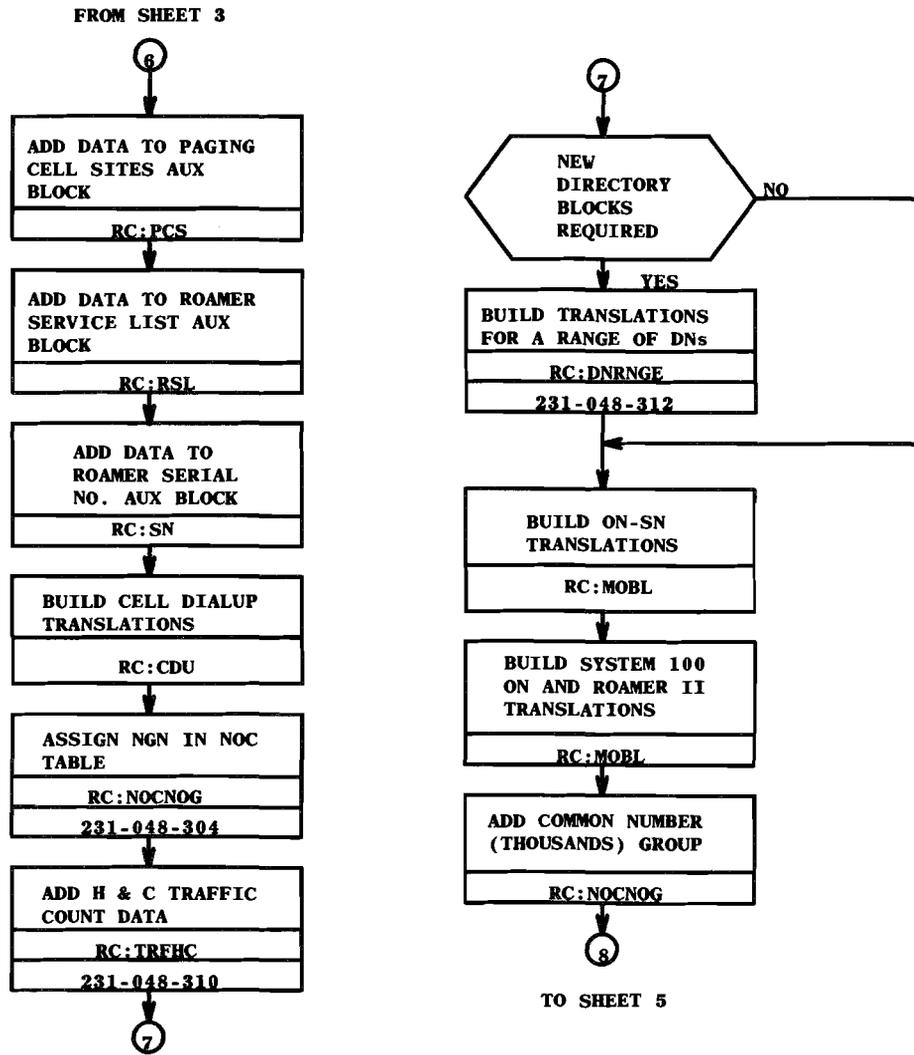
See Legend on Sheet 5.

Fig. 1 — RC Implementation Sequence (Sheet 2 of 5)



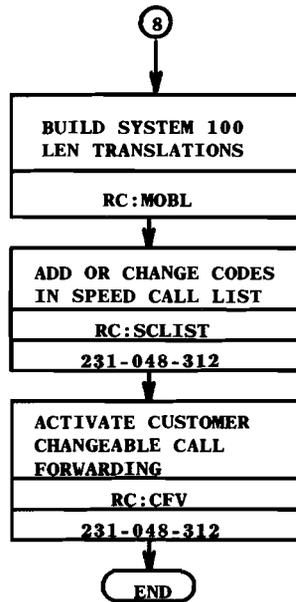
See Legend on Sheet 5.

Fig. 1 — RC Implementation Sequence (Sheet 3 of 5)



See Legend on Sheet 5.

Fig. 1 — RC Implementation Sequence (Sheet 4 of 5)



LEGEND:

ABBR = ABBREVIATED	MISC = MISCELLANEOUS
AMI = SYSTEM 100 MISC INFORMATION	MSN = MASTER SCANNER NUMBER
AUX = AUXILIARY	NGN = NUMBER GROUP NUMBER
C = CONTINUOUS	NOC = NORMALIZED OFFICE CODE
CPD = CENTRAL PULSE DISTRIBUTOR	PAR = PARAGRAPH
CPDN = CENTRAL PULSE DISTRIBUTOR NUMBER	PEN = PERIPHERAL EQUIPMENT NUMBER
DN = DIRECTORY NUMBER	PRI = PSEUDO ROUTE INDEX
H = HOURLY	RI = ROUTE INDEX
HT = HEAD TABLE	SN = SERIAL NUMBER
IOM = INPUT OUTPUT MEMBER NUMBER	SDN = SECONDARY DN
IOP = INPUT OUTPUT PROCESSOR	TLDN = TEMPORARY LOCAL DN
LEN = LINE EQUIPMENT NUMBER	TNN = TRUNK NETWORK NUMBER
MIN = MOBILE ID NUMBER	

Fig. 1 — RC Implementation Sequence (Sheet 5 of 5)

The translator descriptions and RC formats are presented in four categories:

1. Modified standard 1A ESS switch RC messages (RC:TG and RC:TGMEM) changed for the System 100 MTSO only
2. MTSO-only RC messages
3. Cellular networking RC messages
4. Cell site master RC messages.

The modified standard RC message formats are presented in Part 6 showing only System 100-related keywords. For complete RC:TG and RC:TGMEM information (except for System 100 data), refer to AT&T Practice 231-048-303. The System 100 MTSO-only RC message formats are covered in Part 7, and the cell site master RC message formats are covered in Part 8; all in their entirety.

Note: The RC message keyword coverage shown in Part 9 does not preclude the use of optional keywords which might pertain to a central office. See the referenced source for complete coverage.

Refer to AT&T Practice 231-048-301 for additional general information on RC message formats and the interpretation of message flowcharts.

Refer to the information accompanying the message flowcharts for definitions of keywords used in the messages.

The ORD (order) number is required only in RC:MOBL, RC:ACT, RC:CFV, RC:SCLIST, RC:DNRNG, and RC:BISI, and is optional in all other RC messages.

Refer to AT&T Practice 231-048-302 for RC message program listings and system acknowledgments.

Refer to AT&T Practice 231-252-000 for CN implementation, operation, and maintenance procedures.

Refer to Translation Guide TG-1A for documentation of translation data and associated ESS forms.

Refer to Translation Output Configuration PA-6A002 for information relating to the translation memory (translators) and forms.

Refer to Input Message and Output Message Manuals IM-6A001 and OM-6A001 for a complete description of input and output messages.

Refer to AT&T Practice 231-290-600 for an additional description of System 100 features and attributes.

1.1 Flowchart Symbols

The following flowchart symbols are used in RC message flowcharts:

- OPTION Symbol: The Option symbol is used to indicate that all flowlines leaving the symbol are optional. None, one, some, or all such flowlines may be selected.
- EXCLUSIVE OR Symbol: The Exclusive OR symbol is used to indicate that exactly one of two or more flowlines leaving the symbol must be selected.
- NONEXCLUSIVE OR Symbol: The Nonexclusive OR symbol is used to indicate that one or more of the flowlines leaving the symbol must be selected (no less than one, but more than one may be selected).
- AND Symbol: The AND symbol is used to indicate that all flowlines leaving the symbol must be used.
- REPEATABLE SEGMENT: The repeatable segment symbol is used to indicate that the keyword unit or the specific group of keyword units within the segment bracket can be repeated within an RC message without reentering previous keywords. Each segment is terminated by the percent sign.

In all recent change message flowcharts and tables, keywords without a variable shown are YES/NO keywords. When a YES/NO feature is **added**, enter the keyword by itself **OR** the keyword followed by a YES or Y. When a YES/NO feature is **removed**, enter the keyword followed by NO or N.

When using a change message flowchart, refer to the associated new message flowchart for valid combinations of keywords.

2. RC GENERAL INFORMATION

2.1 List of RC Message Indexes and Pidents

The RC message indexes and pidents applicable to System 100 are shown in Table A. The table contains a listing of the RC input messages and their corresponding message index number, message pident, and program listing number. A separate message pident is provided for each RC input message. The pident contains information useful in interpreting RC18 and RC16 output messages. For a complete listing of 1A ESS switch RC message indexes, refer to AT&T Practice 231-048-302.

2.2 System 100 RC18 and RC16 Output Messages

Refer to AT&T Practice 231-048-302 for an interpretation of RC18 and RC16 output messages.

Refer to AT&T Practice 231-048-300 for a list of RC18 fatal error numbers for the standard 1A ESS switch RC pidents. Refer to the PCS (Program Change Sheets) received with the current 1A generic program for error descriptions unique to System 100 RC messages.

TABLE A			
RC MESSAGE INDEXES AND PIDENTS			
MESSAGE INDEX	RC MESSAGE	MESSAGE PIDENT	PR REFERENCE
2	RC:TG	RCTG1A00	PR-6A359
6	RC:AMI	RCAMAMPS	PR-6A1143
9	RC:TGMEM	RCTM1A00	PR-6A362
18	RC:NOCNOG	RCNN1A00	PR-6A339
45	RC:PCS	RCPAAMPS	PR-6A1151
46	RC:RSL	RCROAMPS	PR-6A1152
47	RC:SN	RCFLAMPS	PR-6A1146
62	RC:CST	RCCSAMPS	PR-6A1163
65	RC:MOBL	RCMOAMPS	PR-6A1149
99	RC:IOP	RCIOAMPS	PR-6A1147
100	RC:MSTAT	RCMSAMPS	PR-6A1150
101	RC:CELEQ	RCEQAMPS	PR-6A1145
102	RC:VRAD	RCVRAMPS	PR-6A1153
103	RC:MLOC	RCMLAMPS	PR-6A1148
104	RC:CDU	RCDUAMPS	PR-6A1144
105	RC:IOMT	RCIMAMPS	PR-6A1173
111	RC:LSA	RCLSAMPS	PR-6A1521
114	RC:NSL	RCNSAMPS	PR-6A1541
115	RC:MFI	RCMFAMPS	PR-6A1542
116	RC:RSEC	RCECAMPS	PR-6A1582

3. OVERALL DESCRIPTION OF SYSTEM 100

System 100 (Fig.2) provides mobile telephone service between the mobile telephone and the MTSO. The MTSO coordinates the system and connects the mobile telephone service with the switched telephone network zone office. The MTSO is connected to the cell sites by data links and voice trunks.

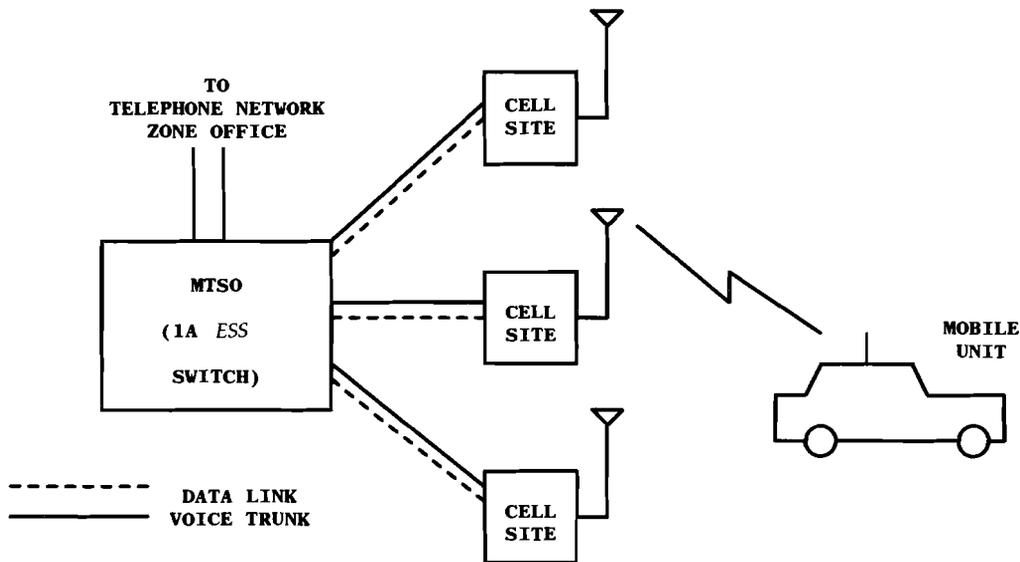


Fig. 2 — Basic System 100

The cell sites contain land-based radios which provide 2-way communications with the mobile radios. Each cell may be equipped with either omnidirectional or directional antennas. Each cell may also be a "dual" cell, with each physical antenna transmitting or receiving at two different power levels. The radios which transmit on the higher power level are grouped as SG (server group) 1; the lower power level as SG 0.

There are three types of radio usage at the cell site:

1. Setup radios — used to communicate with the mobile radio during the initial setup of the call
2. Location radios — used to determine the signal strength of the mobile radio
3. Voice radios — used for voice paths. Each voice radio has a dedicated voice trunk from the MTSO.

System 100 provides voice bandwidth communications with dial access between the mobile unit and any other mobile unit, or any land-line telephone that has access to the nationwide telephone network. Each mobile unit is assigned a 10-digit DN (directory number) which

includes the NPA (numbering plan area) NXX-XXXX. This number is used to route calls to the mobile and to provide a means to bill customers for System 100 services and toll calls. System 100 services are provided directly from the MTSO and are the equivalent of ordinary telephone services. The NPA-NXX zone office code is one of those assigned to an office in the subscriber's locality.

CN is a feature that permits an AUTOPLEX 100 MTSO to be interconnected with other System 100s or AUTOPLEX 10s in abutting system applications.

CN provides for improved continuity of service across the boundaries of two or more CGSAs (cellular geographical service area). It allows intersystem handoffs of calls already in progress without interrupting the call. It also provides extended home area service of incoming calls to roaming mobiles in abutting systems. Further details concerning the operation of the CN feature are found in AT&T Feature Document 231-290-619.

4. TRANSLATOR DESCRIPTIONS

The System 100 translations data base consists of data which is either office dependent or cell site dependent and which is resident in the MTSO and the cell site. The cell site data base has a master copy residing in the MTSO.

System 100 translations data consists of three major categories: (1) modified existing 1A ESS switch translators, (2) MTSO-only translators which exist only at the MTSO, and (3) cell site master translators which contain the master copy of the System 100 data resident at each cell.

Roamer II processing requires modification of the DN translator and the addition of two new translators. The two new translators are the MIN (mobile identification number) to TLDN (temporary local directory number) (MIN-TLDN) translator and the MIN to SDN (secondary directory number) (MIN-SDN) translator.

The various categories of System 100 translators are listed below. The RC messages required to input the translations are shown in parentheses.

Note: The following list does not include the additional standard 1A ESS switch RC messages, such as RC:SUBTRAN and RC:PSWD, which are required to build some head tables and auxiliary blocks.

1. Modified existing 1A ESS switch translators are:
 - DN translator (RC:MOBL)
 - LEN translator (RC:MOBL)
 - TGN (trunk group number) translator (RC:TG)
 - TGN supplementary translator (RC:TG)
 - TNN (trunk network number) to TGN translator (RC:TGMEM)
 - RI (route index) translator (RC:RI)
 - NOC (normalized office code) to NGN (number group number) translator (RC:NOCNOG).
2. The MTSO-only translators are:
 - DN to SN (serial number) translator (RC:MOBL)
 - MIN-TLDN/MIN-SDN translators (RC:MOBL)
 - CST (cell site trunking) translator (RC:CST)
 - AMI (System 100 miscellaneous information) translator (RC:AMI, RC:PCS, RC:RSL, RC:MFI, RC:NSL, and RC:SN)
 - IOP (input/output processor) KCODE-cell channel number translator (RC:IOP)
 - IOMTRANS (input/output processor member number translator) (RC:IOMT).

3. System 100 cell site master translators are:

- Cell master status translator (RC:MSTAT)
- Cell master equipage translator (RC:CELEQ and RC:VRAD)
- Cell master location translator (RC:MLOC).

4.1 Modified 1A ESS Switch Translators

4.1.1 DN Translator

The DN translator (Fig. 3) head table points to subtranslators, each of which represents data for 1000 numbers. Two types of data may be obtained: the PLEN (pseudo line equipment number), and an abbreviated code index. The PLEN is used in System 100 to determine originating class codes. Each mobile is assigned a PLEN. If the physical terminal exists, it is not to be used. The PLEN may even be that of a physically nonexistent line link network.

The abbreviated code index is used when several different selectors or indexes can share identical information. In this case, each mobile DN needs the DNCL1 and DNCL2 (DN class 1 and 2) for terminating service requirements. Most mobiles will have identical information stored in these two words. Rather than store two identical words per DN, these DN class words are put into the abbreviated code expansion table, which is four words long with the last two words not used. Each DN needing that information stores the table index rather than the two class words.

Each mobile is assigned a DN. Bit 7 in the DNCL2 word is always set to indicate a mobile DN. The mobile DN (bit 7) will be assigned a ring combination of 4 (ring code = 1).

System 100 always uses an abbreviated code (type 2 entry) except when the following features are set:

- Call Forwarding Busy Line
- Call Forwarding Don't Answer
- Call Trace
- Call Waiting Tone.

For denied termination, System 100 uses a standard type 3 subtranslator. The Call Trace feature is allowed in this table. The terminating major classes allowed are 4FIND and 4FDT83.

The DN translator is accessed by the DN, consisting of a NOC and the last four digits in BCD (binary coded decimal) form. The NOC is obtained from incoming trunk translation data. The NGN is used as the selector in the DN head table and as the index into the NOC to NGN table.

4.1.1.1 Roamer II TLDN

Any DN may be assigned as a TLDN. When the DN is not in use as a TLDN, it is treated as an ordinary DN. Item TLDN (Fig. 4) in DNCL3 (bit 9) indicates that the DN is being used as a TLDN. There are three uses of TLDNs: (1) as a primary DN by a roamer, (2) as a second DN by a roamer (roamer SDN), and (3) as a second DN by a home mobile (home SDN). All SDNs must have a denied origination class of service. When the TLDNI bit is set in DNCL3, the corresponding MIN and an SDN indicator are built (item SDNI) in the DN-SN/MIN translator.

4.1.1.2 Customer Changeable Conditional Call Forwarding

The DN auxiliary block (Fig. 5) requires the 2-word option (option 7, Fig. 5a) for customer changeable conditional call forwarding. Bit 17 in the DNCL2 word indicates (when set) that a System 100 2-word option 7 block for CFBL/DA (call forwarding busy line/ don't answer) is included in the DN auxiliary block.

The layout of the DN auxiliary block option 7 word is shown below:

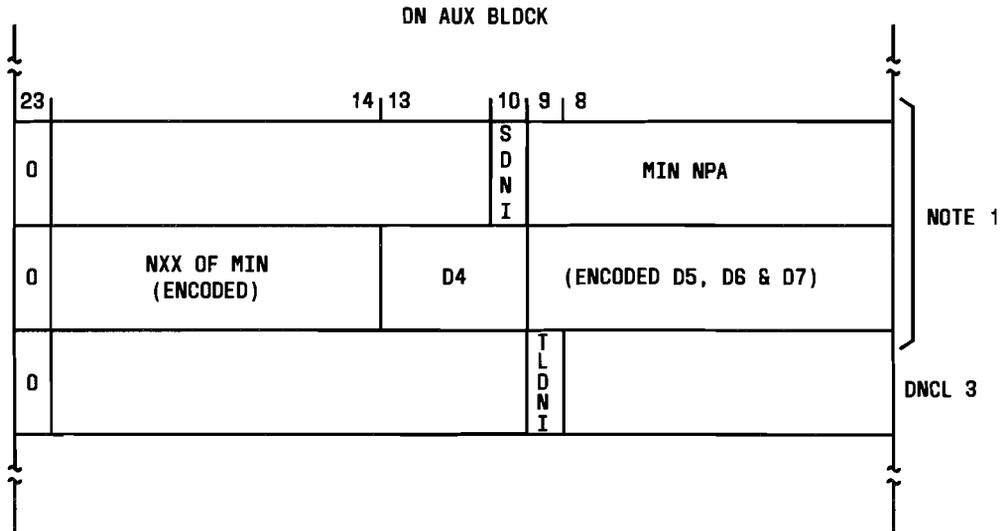
1. Word 0 contains the NXX portion of the remote DN for CFBL/DA (System 100) in encoded binary form.
2. Word 0 also contains the "thousands" digit (D4) in BCD and the last three digits (D5, D6, D7) of the remote DN for CFBL/DA (System 100) in BCD.
3. Item CIDI (bit 21) in word 1 is the CI (carrier interconnect) digits indicator. When set, CIDI means that CI digits are included.
4. Item PB1I (bit 20) is set for the prefixed-by-one indicator.
5. The NPA field in word 1 is the NPA of the remote DN for CFBL/DA (System 100) in encoded binary form.
6. The CI XXX field is reserved for CI.

The prefixed access code PTW [Fig. 5(b)] contains the feature code (19) in word 71 required for customer changeable conditional call forwarding.

4.1.1.3 Assigning Mobile DNs

Figure 6 displays how mobile DNs are randomly assigned from the DNs of their zone offices. Modifications to translations are necessary to route a call from the MTSO to a DN that is assigned to its zone office. Prior to 1AE8A generic programs, translations at the MTSO assigned an NGN to each NXX, D4 combination that was assigned at the zone and not at the MTSO. To avoid this rapid depletion of NGNs, a common NGN is now assigned to these NXX, D4 combinations.

System 100 needs the capability to allow multiple use of an NGN for NXX, D4 combinations from a zone office that are not assigned at the MTSO. Each NGN has an RI associated with it. This RI is directed to a trunk group routed to the proper zone office. The RI must reside in the DN head table entry for this NGN. The translation layouts for the NOC-NGN translator and DN translator are shown in Fig. 6 with an example of a common NGN assignment. The example assumes that zone 1 has the 222 exchange, the MTSO has DNs 222-5000 through 222-5999, and that NOC 1 represents NXX 222. In the left hand side of the NOC to NGN table, all bits are set to indicate that this is a common NGN.



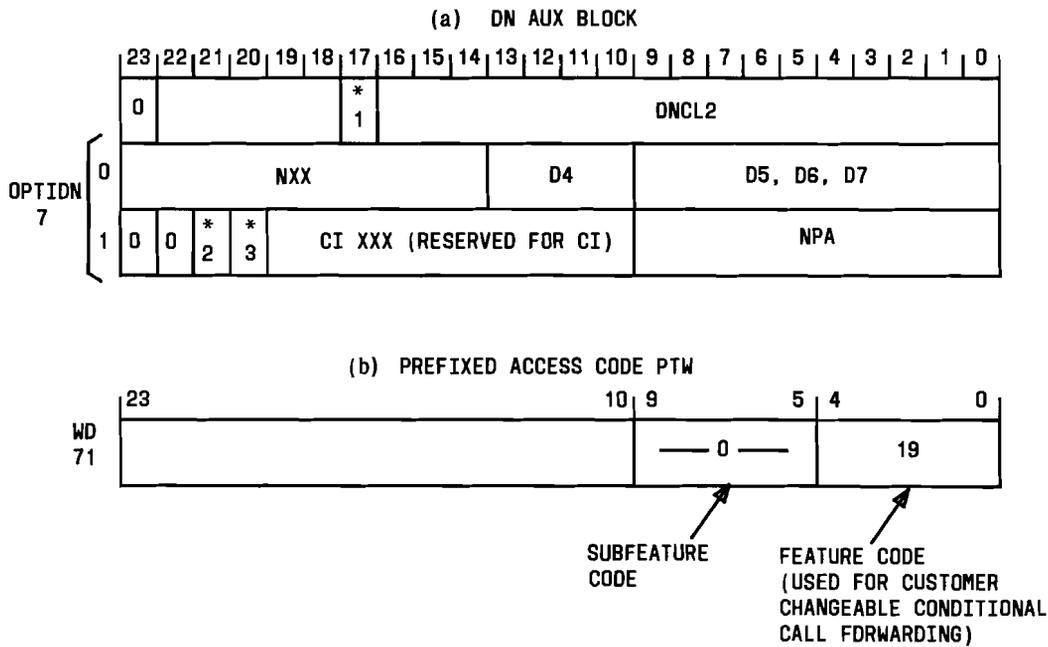
NOTE:

1. These option words (located directly above DNCL3) are created when the TLDN bit (bit 9 of DNCL3) is set only in pre-release 3 generic programs. For release 3 and later, these option words are located in the DN-SN/MIN TRANSLATOR.

LEGEND:

- DN = DIRECTORY NUMBER
- DNCL = DN CLASS
- MIN = MOBILE IDENTIFICATION NUMBER
- NPA = NUMBERING PLAN AREA
- SDNI = SECONDARY DN INDICATOR
- TLDNI = TEMPORARY LOCAL DN INDICATOR.

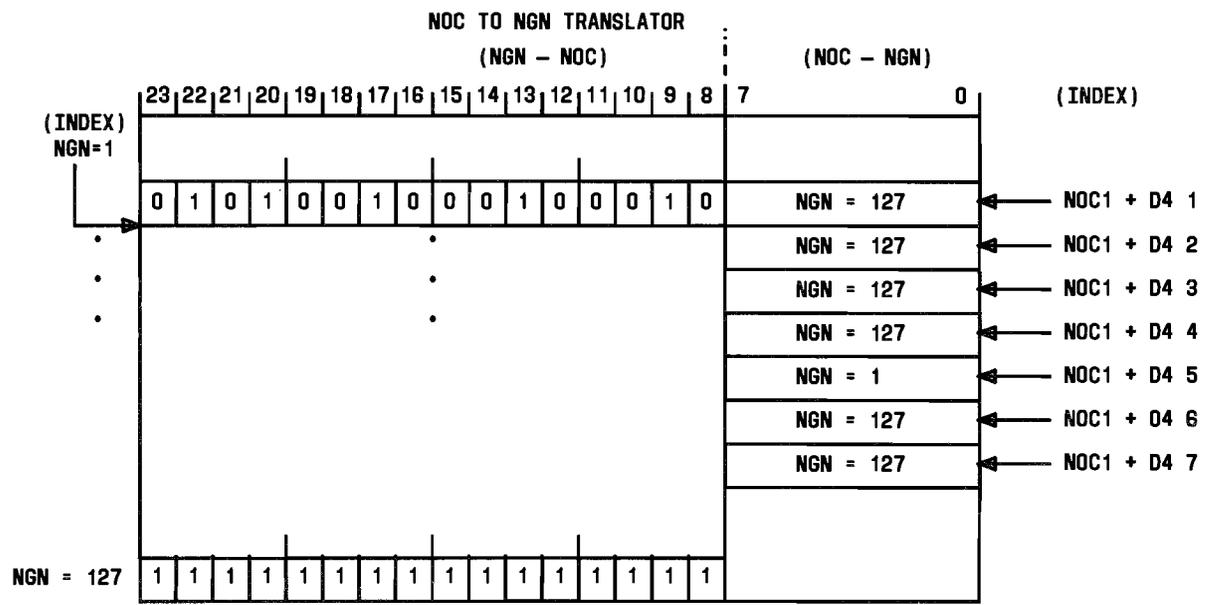
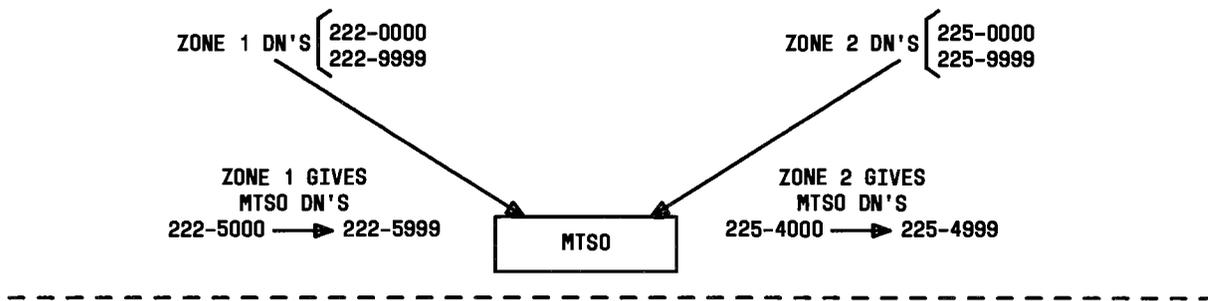
Fig. 4 — DNCL3 Word



NOTE:
1. Binary encoded 0's are 10's.

- LEGEND:
- *1 = CFBL/DA = CALL FORWARDING BUSY LINE/DON'T ANSWER INDICATOR
 - *2 = CIDI = CI DIGITS INDICATOR
 - *3 = PB1I = PREFIXED BY 1 INDICATOR
 - CI = CARRIER INTERCONNECT
 - DNCL = DN CLASS
 - NPA = NUMBERING PLAN AREA.

Fig. 5 — Call Forwarding DN and Prefix Access Code



NOTE:
 1. NOC 1 is for NXX-222, NGN 1 is assigned for 222-5XXX, and NGN 127 is chosen arbitrarily for this example.

LEGEND:
 DN = DIRECTORY NUMBER
 MTSO = MOBILE TELEPHONE SWITCHING OFFICE
 NGN = NUMBER GROUP NUMBER
 NOC = NORMALIZED OFFICE CODE

Fig. 6 — Example of Mobile DN Assignment

4.1.2 LEN (Line Equipment Number) Translator

The LEN translator (Fig. 7) is used to obtain originating service requirements through the LEN class words (LENCL1, LENCL2, and LENCL3). Since mobile phones do not have dedicated physical lines, System 100 phones should use a PLEN. The PLEN describes a LEN which is not equipped in the MTSO.

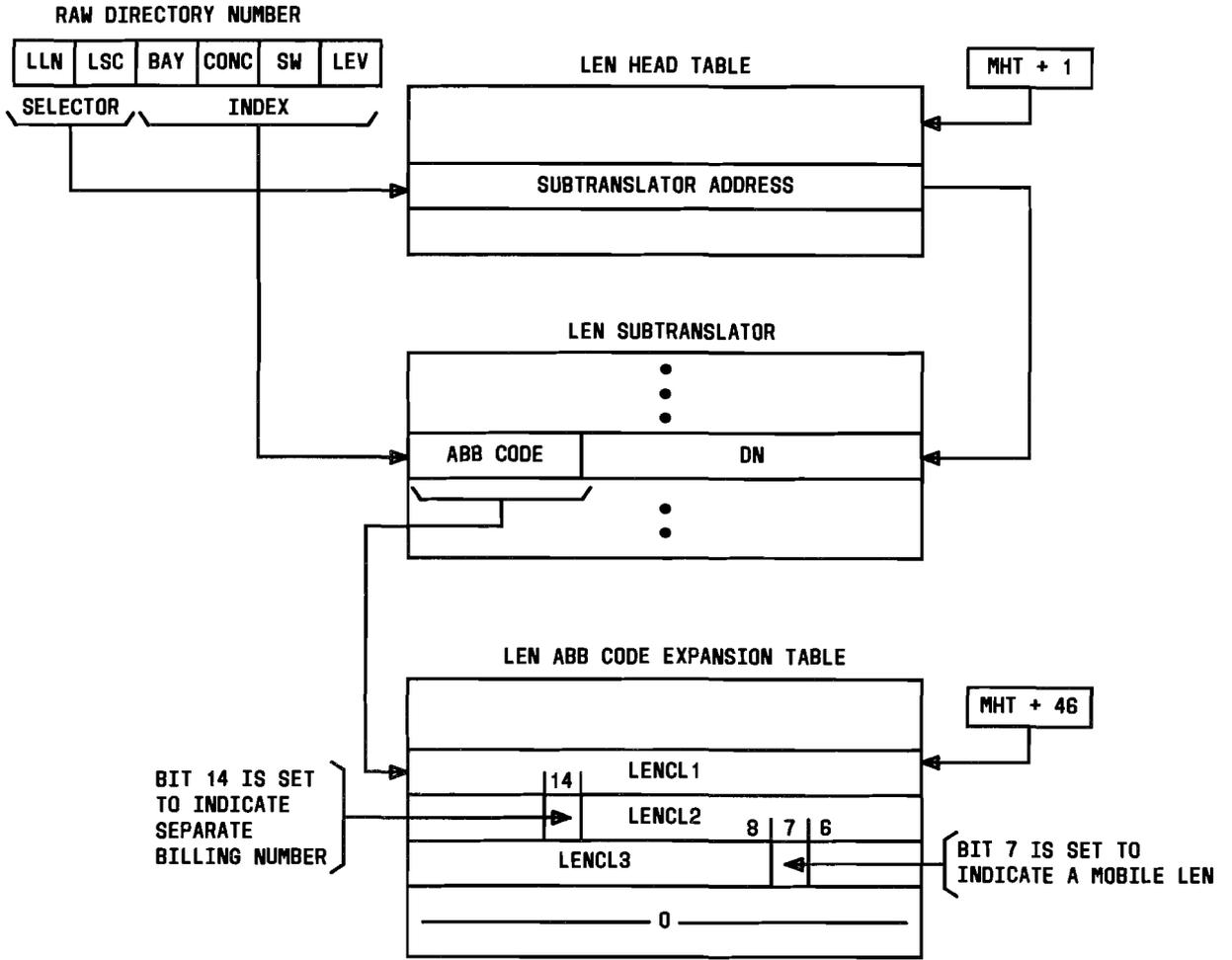
The LEN contains the selector for the LEN head table and the index into the LEN subtranslator. The LEN subtranslator word may contain the encoded DN (NGN plus a binary representation of the last three digits) and an abbreviated code index. If not, the LEN subtranslator will contain an auxiliary address.

The LEN abbreviated code expansion table is four words long and contains the three LEN class words, with the last word unused. Bit 7 in LENCL3 is always set to indicate a mobile LEN. Bit 14 is set to indicate a special billing number.

The LEN translator always uses an abbreviated code for mobiles except when the following features are set:

- Call forwarding variable
- Speed calling
- Three-way calling
- Special billing DN.

The originating major classes used for System 100 are 4FDENO, 4FMAN, and 4FIND.



LEGEND:
 ABB = ABBREVIATED
 CONC = CONCENTRATOR
 DN = DIRECTORY NUMBER
 LEN = LINE EQUIPMENT NUMBER
 LENCL = LINE EQUIPMENT NUMBER CLASS
 LEV = LEVEL
 LLN = LINE LINK NETWORK
 LSC = LINE SWITCH CIRCUIT
 MHT = MASTER HEAD TABLE
 SW = SWITCH

Fig. 7 — LEN Translator

4.1.3 TGN Translator and TGN Supplementary Auxiliary Block

An auxiliary block is defined for trunks connected to the cell site as shown in the TGN translator (Fig. 8). Both the trunk usage (TU = 02) and the trunk group type (TGTYPE = 13) indicate 2-way trunks. For noncell site trunks, trunk usage of the TCC (trunk class code) is set to 2 to indicate 2-way trunks. The logical antenna face (ANT = 0 through 3), and SG 0 and SG 1, that the trunk connects to and the CSN (cell site number) (1 through upper parameter limit QG2CELL) are defined. A cell site TG (trunk group) serves no more than one logical antenna face of a cell site.

In some MTSOs, System 100 must have the ability to use (or assign) cell site TGs with TGTYPE = 13 and a TCC defining 1-way trunks.

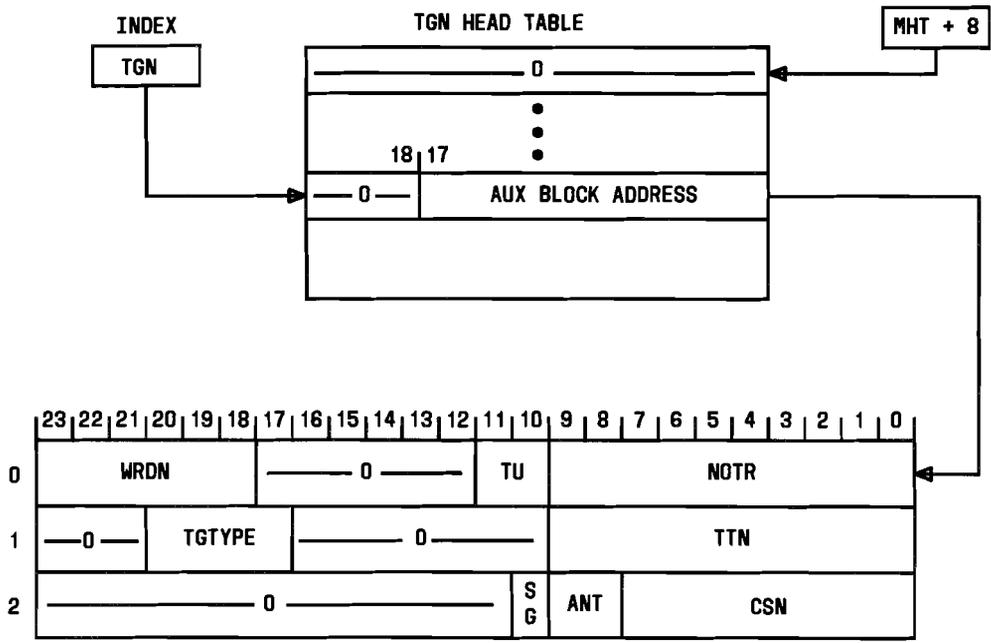
Note: In the zone office, TGTYPE=6 and the auxiliary block must have a screening LEN associated with it. The zone office screening LEN must have an OMAJ (originating major class) equal to 4FCOTK (central office trunk) with a decimal value of 27. Word 0 of the chart class column expansion in the SCIW (supplementary call identification word) translator must have the ANI (automatic number identification) subfield (bits 17 and 16) set to 01 to provoke outpulsing of information digit 7.

The ANT field is the physical antenna number ranging from 0 through 3. Antenna 0 represents the omnidirectional antenna. Antennas 1 through 3 represent directional antennas. Antenna 1 is the cell antenna closest to true North, with the other directional antennas numbered clockwise from antenna 1.

The SG 0 field is the primary SG representing the preferred set of radios serving the mobile. The SG 1 field is the secondary SG and exists only for dual cells.

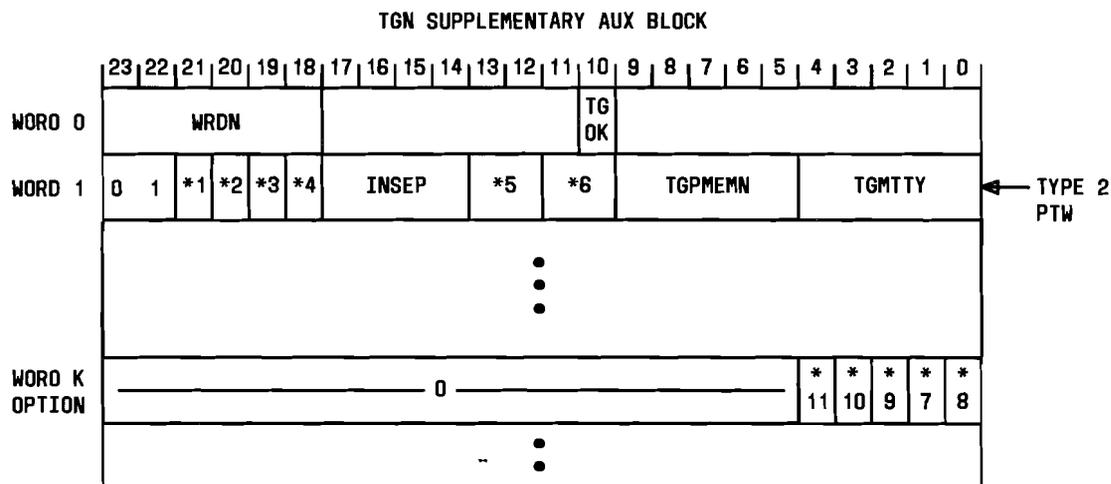
For MTSO loop-around trunks, System 100 uses a type 2 TGN supplementary translator as shown in Fig. 9. Bit 10 (TGOK) of word 0 and bit 0 of word K are set to indicate that the trunk is a loop-around type. Bit 1 of optional word K must be set to indicate that this is an MTSO group at the zone office. Bit 3 in word K is set for the call forwarding feature to indicate MTSO loop-round TGs without attenuation padding.

At the MTSO, noncell site trunks will have a TGTYPE = 6 with a screening LEN having an OMAJ of 4FCOTK (=27).



- LEGEND:**
- ANT = ANTENNA NUMBER
 - AUX = AUXILIARY
 - CSN = CELL SITE NUMBER (1-255)
 - MHT = MASTER HEAD TABLE
 - NOTR = NUMBER OF TRUNKS IN GROUP
 - SG = SERVER GROUP
 - TGN = TRUNK GROUP NUMBER
 - TGTYPE = TRUNK GROUP TYPE (1 WAY OUTGOING = 13; 2-WAY = 2)
 - TTN = TEST TABLE NUMBER
 - TU = TRUNK TYPE (SET TO 00 FOR AMPS)
 - WRDN = NUMBER OF WORDS IN AUX BLOCK

Fig. 8 — TGN Translator



- *1 = TGINH
- *2 = REVH
- *3 = GLRM
- *4 = ITSO
- *5 = TGTPRP
- *6 = TGCRFR
- *7 = WHEN SET, INDICATES (AT THE ZONE OFFICE) THAT AN MTSO TRUNK GROUP IS BEING USED
- *8 = WHEN SET, INDICATES (AT THE MTSO) THAT THIS IS AN MTSO LOOP-AROUND TRUNK GROUP
- *9 = WHEN SET, INDICATES MTSO LOOP-AROUND TGS WITHOUT ATTENUATION PADDING. NEEDED FOR CALL FORWARDING (INTRAOFFICE) FEATURE.
- *10 = IMTG - INTER MTSO TRUNK GROUP
- *11 = CI - WHEN SET, INDICATES TRUNK GROUP IS AN INTER EXCHANGE CARRIER TRUNK GROUP

LEGEND:

- AUX = AUXILIARY
- GLRM = GLARE MASTER
- INSEP = INCOMING SEPARATION OF REVENUE CLASS
- ITSO = INCOMING TRUNK SERVICE OBSERVING
- PTW = PRIMARY TRANSLATION WORD
- REVH = REVERSE HUNT
- TGCRFR = TRUNK GROUP CRAFT FORCE RESPONSIBILITY
- TGINH = TRUNK GROUP INHIBIT SYSTEM DIAGNOSTICS
- TGMTTY = TRUNK GROUP MAINTENANCE TTY CHANNEL
- TGN = TRUNK GROUP NUMBER
- TGOK = TRUNK GROUP OPTION K
- TGPMEMN = TRUNK GROUP TEST PANEL MEMBER NUMBER
- TGTPRP = TRUNK GROUP TEST PAD REFERENCE POINT
- WRDN = NUMBER OF WORDS IN AUX BLOCK

Fig. 9 — TGN Supplementary Auxiliary Block

4.1.4 TNN-TGN Translator

The TNN-TGN auxiliary block (Fig. 10) contains additional fields for System 100 indicating which radio at the cell a particular trunk is tied to and the channel number the radio is using.

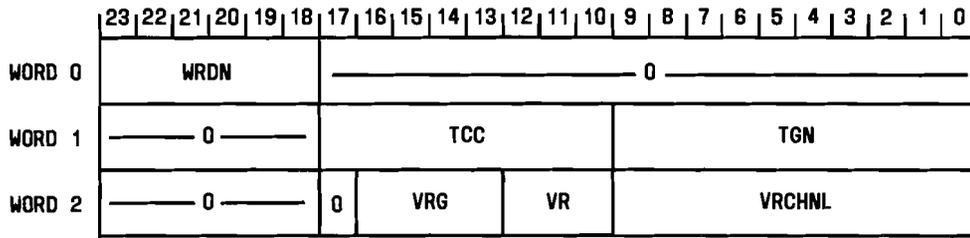
The voice radio number data fields include the following items. Item VRG is the voice radio group number, ranging from 0 through 11. Item VR is the voice radio number within the voice radio functional group and is input as a decimal number ranging from 0 through 7.

Frequency assignments for a mobile phone system in a given area are grouped into two channel groups; A and B, each containing 333 channel pairs (transmit and receive). Twenty-one channel pairs in each group are used for system access and control, which leaves 312 channel pairs for voice radio assignment. Channel group A consists of frequencies in the 870- to 880-MHz band for cell site transmission (with a corresponding cell site receiving frequencies in the 825- to 835-MHz band). Group B consists of frequencies in the 880- to 890-MHz band for cell site transmission (cell site receiving frequencies in the 835- to 845-MHz band). Each channel pair is spaced 30-kHz apart, with channel pair number 1 designated as the frequency pair 870.030 MHz, and 825.030 MHz for cell site transmit and receive, respectively. Therefore, channel numbers range from 1 through 312 if the system is operating in group A, and 355 through 666 if in group B. (Channels 313 through 354 are used for access and control frequencies.) Since the actual frequencies may be derived from the above rules, radio frequencies are not stored in translations.

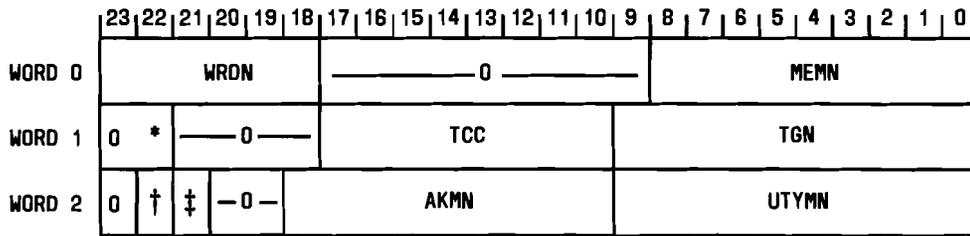
Carrier group alarms and trunk make-busy call words, if present, begin in word 2 of the trunk make busy and carrier group alarm auxiliary block.

System 100 uses the HILO (high-low) intraprocessor trunk type auxiliary block for loop-around trunks.

TNN-TGN AUXILIARY BLOCK - SYSTEM 100

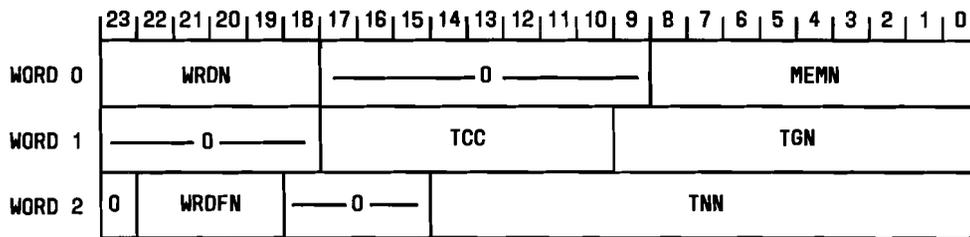


IF APPLICABLE, TRUNK MAKE BUSY & CARRIER
GROUP ALARM AUX BLOCK



* = 1WY
 † = TMGI
 ‡ = CGAI

LOOP-AROUND TRUNKS - AUX BLOCK



- LEGEND:**
 AKMN = ALARM OR KEY MEMBER NUMBER
 CGAI = CARRIER GROUP ALARM INDICATOR
 MEMN = MEMBER NUMBER
 TCC = TRUNK CLASS CODE
 TGN = TRUNK GROUP NUMBER
 TMBI = TRUNK MAKE BUSY INDICATOR
 TNN = TRUNK NETWORK NUMBER
 UTYMN = UNIT TYPE MEMBER NUMBER
 VR = VOICE RADIO NUMBER
 VRG = VOICE RADIO GROUP
 VRCHNL = VOICE RADIO CHANNEL NUMBER
 WRDN = NUMBER OF WRDMS
 WRDFN = WORD FUNCTION
 1WY = ONE WAY TRUNK

Fig. 10 — TNN-TGN Translator

4.1.5 RI and PRI Translators

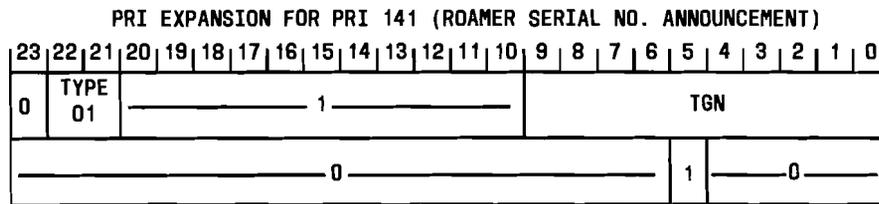
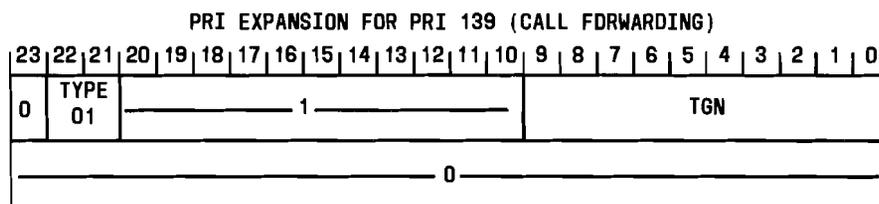
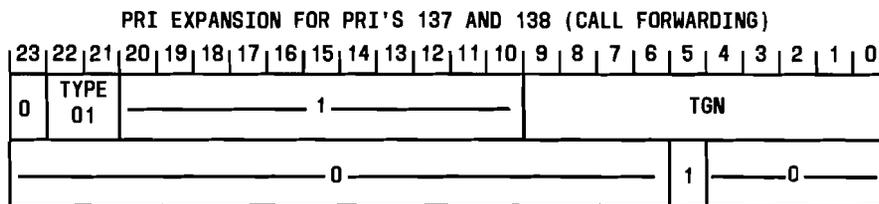
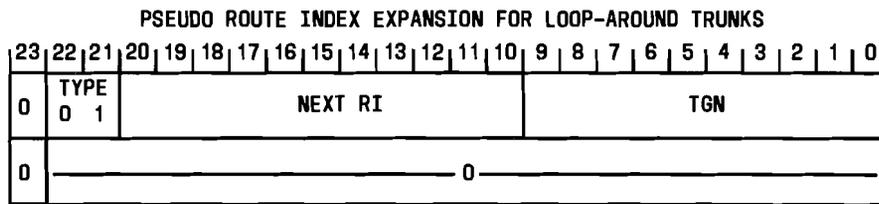
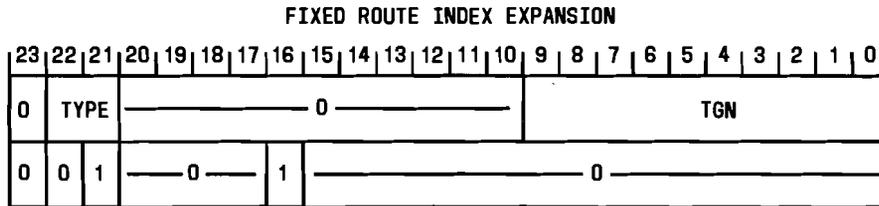
The RI and PRI translators are shown in Fig. 11. A fixed RI of 131 is assigned to System 100 for a dedicated group of milliwatt test lines which are used for a loop-around trunk diagnostics. Fixed RI131 has a CPI (circuit program index) of 21 and a TPI (trunk program index) of 0 for all cell site trunks. All fixed cell site trunks are SD-1A236 trunks.

Note: For cell site trunks (SD-1A236, CPI 21), scan point 0 uses a TPI of 0. Scan point 1 will be assigned TPI 57.

Pseudo route index 139 is assigned for System 100 for intraoffice call forwarding. This route index is associated with a loop-around trunk group that is not equipped with attenuation padding.

A PRI of 45, routes data to the MTSO loop-around trunks for an intraoffice mobile call. Pseudo route indexes needed for System 100 are:

- PRI 057 NO PAGE RESPONSE — The mobile did not respond to a page. This means that the mobile is either turned off, or not accepting calls, or is out of the mobile service area.
- PRI 058 INCOMING FACILITIES — Used for any problem with facilities during a terminating call to a mobile after it has responded to paging and before ring time-out.
- PRI 059 MOBILE ROAMER INTERCEPT — A roamer (mobile belonging to another mobile service area) is denied service in this mobile service area.
- PRI 060 ALERTING DISCONTINUED — The mobile was alerted (ringing) and timed out. (Mobiles are allowed to ring for only a specified time.)
- PRI 061 NO MOBILE SERVICE TREATMENT — The mobile DN was unassigned or illegal.
- PRI 137 DELAYED FORWARDING — When an MTSO forwards a call after the mobile has not responded to page or has not answered, it should first connect the calling party to this announcement, and then forward the call.
- PRI 138 CALL ALREADY BEING FORWARDED — When a call is forwarded to the mobile already in the process of forwarding another call.
- PRI 141 ROAMER SERIAL NUMBER ANNOUNCEMENT — Used to identify an announcement type optionally connected to a Roamer origination which fails an allowed/fraudulent serial number list check.



LEGEND:
 PRI = PSEUDO ROUTE INDEX
 RI = ROUTE INDEX
 TGN = TRUNK GROUP NUMBER

Fig. 11 — RI and Pseudo RI Expansion

4.1.6 Automatic Trunk Test Table

The permanent busy test, part of standard trunk diagnostics, is not suitable for MTSO loop-around trunk groups due to attenuated transmission levels. The diagnostic 100 test number test replaces the permanent busy test for MTSO loop-around trunks as shown in Fig. 12.

4.1.7 Master Scanner Number Translator

All eight scan points needed per IO (input/output) frame are assigned to the even-numbered IOUS (input/output unit selector) of the frame. Therefore, the MEMN field of the type 3 subtranslator word of the master scanner number translator (Fig. 13) is assigned as an even-numbered member number for System 100.

4.1.8 Traffic Count Translations

Traffic count data for H (hourly) and C (continuous) schedules are provided for System 100 with TMC (traffic measurement code) 116 and a set of associated EGO (equipment group or office) count numbers. These EGOs are listed in AT&T Practice 231-290-604.

	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
WORD 0 TYPE 2 (NOTE 1)	0	OPT			D1			D2			D3			D4			D5							

NOTE:

1. Type 2 is used only for MTSO loop-around trunks.

LEGEND:

OPT = OPTIONS AS FOLLOWS:

- 0 - SINGLE LINE ENTRY (<6 DIGITS), NOT PRIMARY TEST
- 1 - SINGLE LINE ENTRY (<6 DIGITS), PRIMARY TEST
- 4 - TWO-LINE ENTRY (>5 DIGITS), NOT PRIMARY TEST
- 5 - TWO-LINE ENTRY (>5 DIGITS), PRIMARY TEST

ONLY ONE PRIMARY TEST IS ALLOWED PER TEST TABLE; AS REQUIRED ON OTHERS.

D1 THRU D5 = DIGITS OF DIAGNOSTIC 100 TEST NUMBER. ZERO WILL SHOW AS "1010".

Fig. 12 — ATT Diagnostic 100 Test Number

	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0
TYPE 3	0	0	1	NTPI = 27						UTYN = 59						MEMN (NOTE 1)								

NOTE:

1. MEMN SHOULD BE AN EVEN NUMBER. BIT 0 ALWAYS = 0

LEGEND:

- MEMN = MEMBER NUMBER
- NTPI = NON TRUNK PROGRAM INDEX
- UTYN = UNIT TYPE NUMBER

Fig. 13 — MSN Translator Type 3 Word

4.2 MTSO-Only Translators

4.2.1 DN-SN/MIN Translator

The DN-SN/MIN translator consists of 1000 three-word entries, each containing the mobile SN (serial number), and the MIN (mobile identification number). The translator also contains the PC (paging channel) bit, the EMIN (extended mobile identification number) flag, and the SDNI (second directory number indicator). The translator index (identical to the DN translator index) is an encoded DN consisting of a 7-bit NGN plus an encoded last three digits.

The 32-bit mobile SN is stored in words 1 and 2 of the subtranslator, with the lower 24 bits in word 2, and upper 8 bits in bits 0 through 8 of word 1.

An EMIN is the 34-bit binary encoding of a DN. The NXX (numbering plan area) part of a DN is converted to a 10-bit binary field of the form $(100 \cdot D1 + 10 \cdot D2 + D3) - 111$ and stored in bits 10 through 19 of the first word of the subtranslator. The office code of the DN is encoded in the same manner and stored in bits 14 through 23 of the third word. Digit D4 remains a 4-bit BCD digit. Digits D5, D6, and D7 are converted to binary and along with digit D4 are stored in the remaining bits of word 3.

The first word of the DN-SN/MIN subtranslator contains The SDNI bit indicating that this TLDN is being used as a second DN.

The PC indicator determines the paging channel set used. If $PC = 0$, the mobile is to be paged over the first set. If $PC = 1$, the second set is designated. The first set of paging channels is generally used for paging roamers, since there is a fixed starting channel in both channel group A and B.

The EMIN flag indicates whether a long or short MIN is used to page a mobile. A short MIN only encodes the first seven digits of a DN (24 bits), while a long MIN encodes the NPA digits as well (34 bits). Roamers are always paged with a long MIN.

Refer to Fig. 14 for the layout of the DN-SN/MIN translator.

4.2.2 Cell Site Trunking Translator

Although the cell site trunking translator (Fig. 15) is considered functionally as part of the MTSO-only translations, it is accessed through the cell site head table and is physically part of the cell site translator.

The cell site trunking translator serves the following purposes:

- It determines the voice trunk RI for a set of voice radios serving a specific logical antenna (one of the two power levels of a physical antenna).
- It determines the logical antenna number serving a specific cell site voice radio.

- It determines the TNN of the trunk connecting a voice radio to the MTSO.
- It determines the status of a specific cell site.

The cell site trunking head table is indexed by a cell site number. Each entry is an address of an auxiliary block. The first eight words of the auxiliary block are indexed by the antenna number and SG.

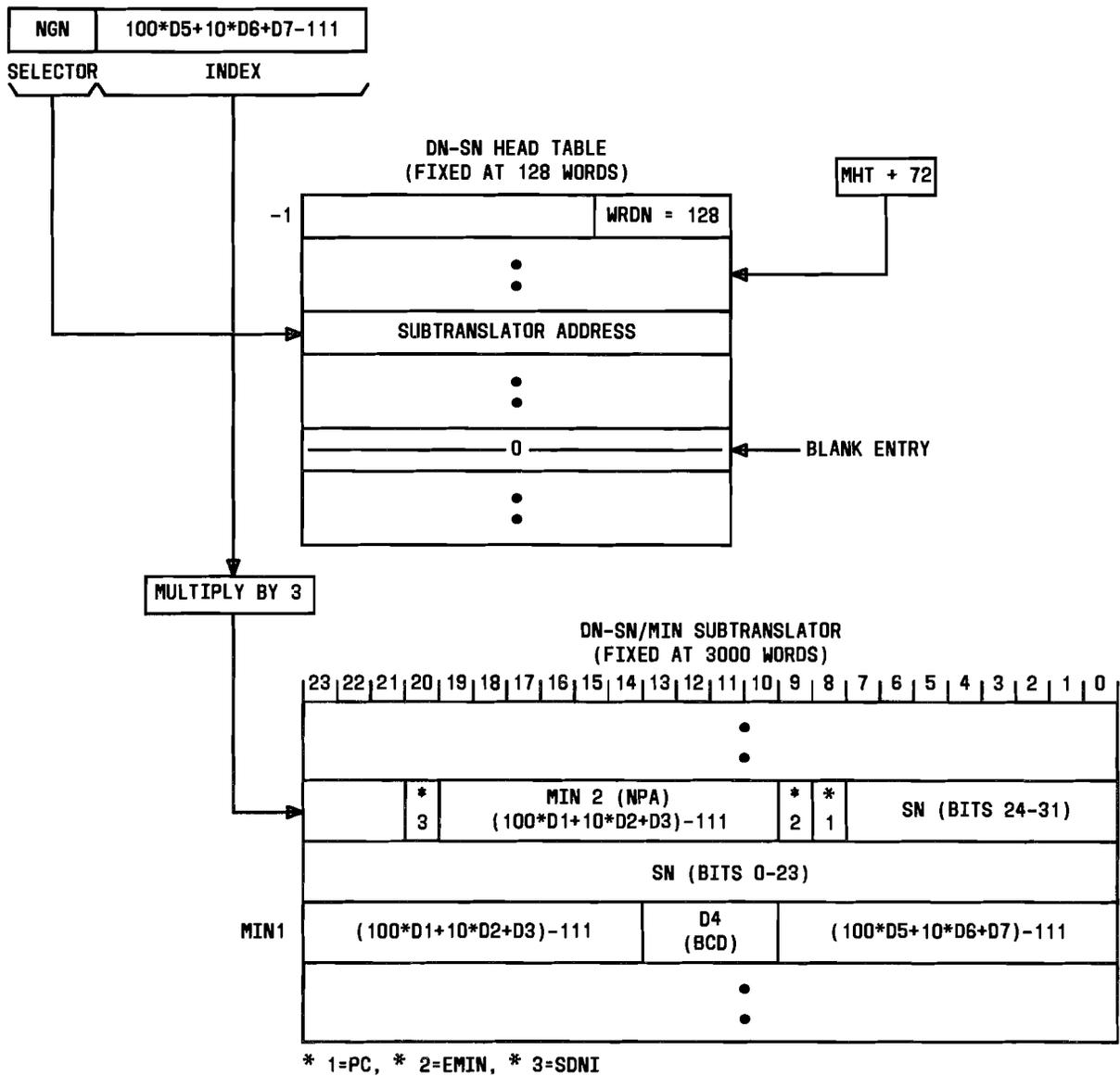
The ANT field is the physical antenna number ranging from 0 through 3. Antenna 0 represents the omnidirectional antenna. Antennas 1 through 3 represent directional antennas. Antenna 1 is the cell antenna closest to true North, with the other directional antennas numbered clockwise from antenna 1.

The SG 0 field is the primary SG, representing the preferred set of radios serving the mobile. The SG 1 field is the secondary SG and exists only for dual cells.

Each word in the first eight words contains the RI for the logical antenna number. There is only one RI allowed per logical antenna.

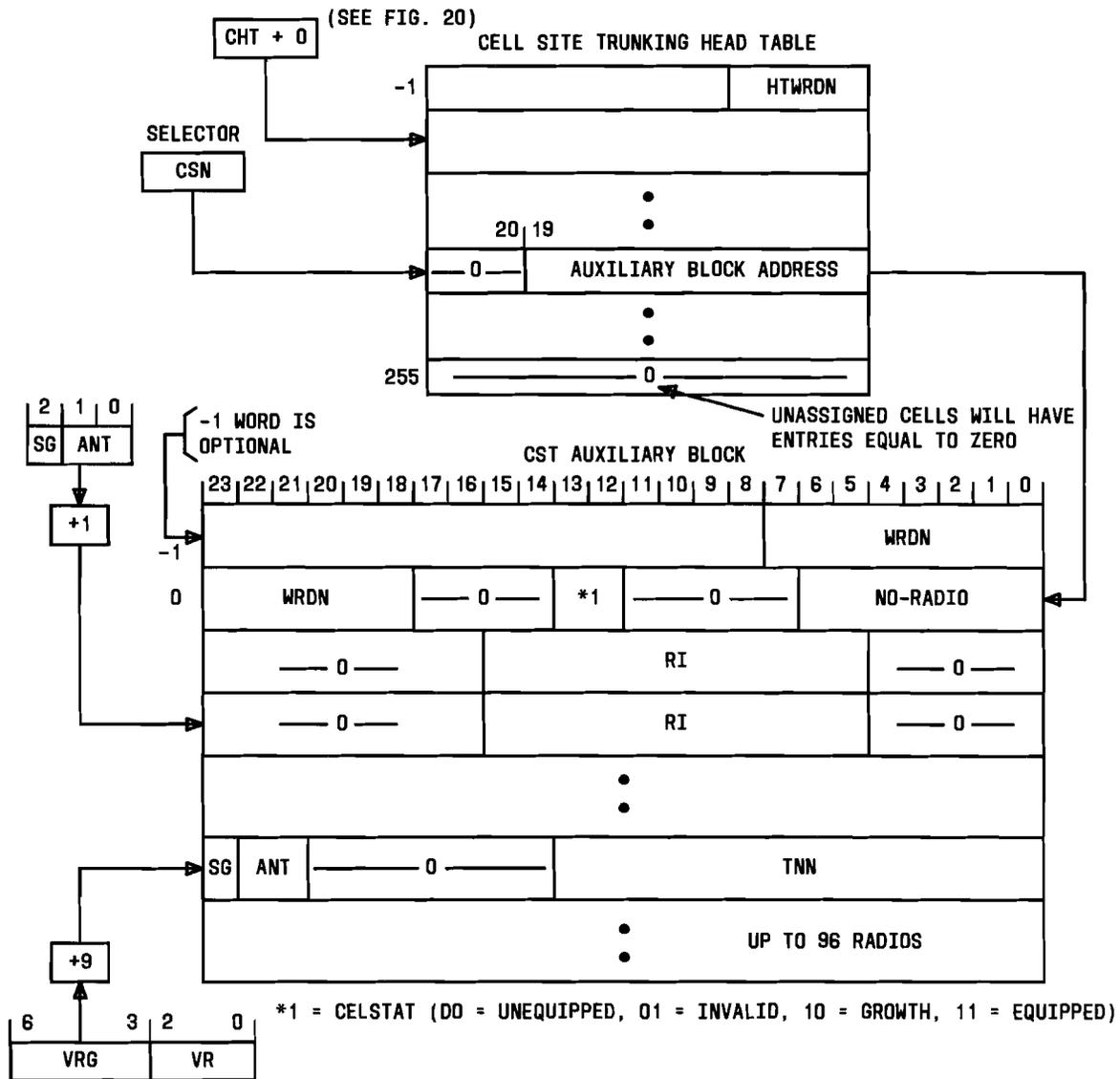
The second index into the auxiliary block is the voice radio number at the cell (0 through 7 per voice radio group). The voice radio group is equal to 0 through 11. This data word contains the TNN the voice radio is dedicated to, and the logical antenna number the radio belongs to at the cell.

The NO-RADIO field in word 0 indicates the total number of equipped radios in the cell. The CELSTAT field indicates whether the cell is unequipped, in the growth state, or is equipped.



LEGEND:
 BCD = BINARY CODED DECIMAL
 DN = DIRECTORY NUMBER
 EMIN = EXTENDED MOBILE IDENTIFICATION NUMBER
 MHT = MASTER HEAD TABLE
 NGN = NUMBER GROUP NUMBER
 PC = PAGING CHANNELS
 SDNI = SECOND DIRECTORY NUMBER INDICATOR
 SN = SERIAL NUMBER

Fig. 14 — DN-SN/MIN Translator



- LEGEND:**
- ANT = ANTENNA NUMBER
 - CELSTAT = CELL STATUS
 - CHT = CELL SITE HEAD TABLE
 - CSN = CELL SITE NUMBER
 - CST = CELL SITE TRUNKING
 - HTWRDN = NUMBER OF HEAD TABLE WORDS
 - MHT = MASTER HEAD TABLE
 - NO-RADIO = NUMBER OF VOICE RADIOS
 - RI = ROUTE INDEX
 - SG = SERVER GROUP
 - TNN = TRUNK NETWORK NUMBER
 - VR = VOICE RADIO NUMBER
 - VRG = VOICE RADIO GROUP

Fig. 15 — Cell Site Trunking Translator

4.2.3 System 100 Miscellaneous Information (AMI) Translator

The AMI translator (Fig. 16, Sheet 1) contains information needed for the MSA (mobile service area). It consists of a head table containing pointers to the various auxiliary blocks. The head table currently has space for 15 pointers, with the last 5 words unused.

The AMI translator auxiliary blocks provide the following information:

- System-wide parameters, most of which must be broadcast from the cell to the mobile.
- A list of PCSs (paging cell sites) which are used to initially access the mobile for a mobile terminating call.
- A list of NPA-NXXs of other MTSOs whose roamers are allowed to access this system.
- A list of fraudulent serial numbers of roamers that are not allowed to access this system.
- A limited service area list.
- The MTSO feature information block containing the Abut Service List (CN feature).
- The Network Service List containing NPA-NXXs of other MTSOs networked with this MTSO (CN feature).
- The extended Roamer Serial Number list that may be used to replace the FSL and can contain 512,000 entries.
- The Network Serial Number List that contains serial numbers of mobile subscribers belonging to other MTSOs networked with this MTSO (CN feature).
- The list of Public Service Access Point DNs for use with mobile E911.

AMI Auxiliary Block: The AMI auxiliary block (Fig. 16, Sheet 2) contains miscellaneous functional capabilities and MSA-wide data for System 100 software. The fields are:

- The RSV checking flag is used to enable the roamer service validation function at the MTSO. This function checks to see if the roamer is allowed access in this system. When this bit is set, the function is enabled.
- The LPB flag is used to enable the long page bundling function at the MTSO. This function puts packages of long pages into a single message before broadcasting to all the PCSs.
- The CPA bit, when set, indicates combined paging and access channels.
- The SRN bit is an indicator sent from the cell to the mobile. When set, it indicates to the mobile to send its SN when accessing the system.
- The DTX bit, when set, allows discontinuously transmitting mobiles (such as hand-held portables) to access the system.
- The RCF bit is an indicator sent from the cell to the mobile to read the control filler word. When set, the mobile will read the control filler word.
- The NWAC bit indicates that access channels start on a different channel than what is in the mobile's read only memory. When this parameter is set, fields CMAX and NEWACC should also be initialized.
- The CMAX bit indicates the maximum number of access channels the mobile has to scan and is input as a decimal number. When CPA is set, CMAX ranges from 1 through 21. When CPA is zero, the range may be from 1 through 127.

- The SID field is the 15-bit system identification of the MSA. Bit 0 of the SID field represents the channel set group, with 1 indicating channel set A, and 0 indicating channel set B. The SID field is input as a 5-digit decimal number.
- The NEWACC field is the starting channel number of the new set of access channels (see NWAC). The mobile will start at this channel after being told to look for a new start by NWAC, and it will then scan CMAX channels. Item NEWACC is a setup channel, input as a decimal integer ranging from 1 through 333 if in channel set A, and 334 through 666 if in channel set B.
- The NPC field is the number of paging channels the mobile has to scan. It is stored as NPC-1 to conform to the information sent to the mobile. The NPC field is input as a decimal number ranging from 1 through 21, and is stored as a 0 through 20 by subtracting 1 from the input.

Note: The following fields (OVRTLI and LOCREQ) are not to be set or changed frequently. They are initially input by the System 100 planning team and are defined as EA (expert assistance) fields.

- The OVRTLI field is the voice radio location time interval (in units of 102 milliseconds) between signal strength measurements of the mobile during overload. This field ranges from 1 through 255. The default for OVRTLI is 32. This default is for ODA (office data administration) purposes to first initialize the TDA (translation data assembler).
- The LOCREQ field is the location request limit. This is the maximum number of requests a cell will accept for signal strength measurements from other cells whose signal strengths have fallen below their primary signal strength threshold. This limit is used by overload to determine how many requests will be allowed to reach the cell on a per second basis before they are dropped. This ranges from 1 through 15 requests. The default for this field is six requests. The default is for ODA purposes.
- The TEVST (traffic event success threshold) field is a threshold used for traffic event recording. There are two traffic counters involved: EVSUCC (pegged whenever an event recording message is successfully transmitted) and EVFAIL (pegged whenever an event recording message cannot be transmitted). Whenever EVSUCC equals TEVST, EVFAIL is decremented by 1 and EVSUCC is zeroed. This field has eight bits with a range of 0 through 255.
- The TEVFT (traffic event failure threshold) field is also a threshold used for traffic event recording. When EVFAIL exceeds TEVFT, a minor alarm is sounded indicating an overload of the output channel. In this case, event recording should be stopped. This field has 16 bits with a range of 0 through 65535.
- The DAT (don't answer timing) field indicates the length of time the MTSO waits for a mobile to answer before forwarding the call. The range is from 0 through 60 seconds.
- The VVGDI (variable voice gain device indicator) field indicates whether a variable voice gain device will be used for interoffice call forwarding (0 = no, 1 = yes).
- The SFC (simultaneous forwarded calls) field indicates how many calls a mobile can have forwarded at the same time. This ranges from 0 through 7.
- The SDT (SAT detect threshold) field indicates the SATs collected from the cells being considered for handoff during location. These SATs will be compared to determine if they are within the valid spectrum. This field is eight bits long with a range of 0 through 40 (with 13 optimum value).

- The TLDNUP (TLDN unavailability period) field is the length of time a TLDN will remain unavailable before it is allowed to be reassigned. This field ranges from 0 through 60 (days).
- The GCPCF (global cell site power control flag) field is eight bits long with only the rightmost bit being used. This bit represents whether dynamic power control at the cell site is turned off (= 0) or on (= 1).
- The GMPCF (global mobile power control flag) field is eight bits long with only the rightmost bit being used. This bit represents whether dynamic power control at the mobile is turned off (= 0) or on (=1).
- The DCT (diversity counter threshold) field is the number of diversity state changes during a periodic locate interval below which a trending state may be activated. This field is eight bits long with a range of 0 through 255.
- The SLPV (skip locate period value) field is the number of locate periods skipped while in a trending state. This field is eight bits long with a range of 0 through 255.
- The MPCT (mobile process counter threshold) field is eight bits long with a range of 0 through 255. Further action is taken if the number of executions of a specific task within the mobile power adjustment process exceeds this value.
- The CPCT (cell site process counter threshold) field is eight bits long with a range of 0 through 255. Further action is taken if the number of executions of a specific task within the cell site power adjustment process exceeds this value.
- The FGDIF (frame gain differential factor) field is the difference gain (in dB) between the path from receive-antenna transmission line output to control-frame-radio (setup or locating) receiver input, and the path from receiver-antenna transmission line output to voice-channel-radio receiver input. This field ranges from 0 through 31 dB and is a decimal input from 0 through 31 in steps of 1 dB (e.g., 0 = 0 dB; 1 = 1 dB; 2 = 2 dB; etc.).
- The RCNHO field, when set, turns on the Restricted Cellular Network Handoff functions.
- The R3ACTF field, when set, turns on the 1A to APS cellular networking communications package.
- The CNACTF field, when set, activates the cellular networking call processing functions. If this bit is set, the R3ACTF bit must also be set. See AT&T Practice 231-252-000 for CN implementation details.

Note: All of the above fields are totally independent and are not affected by the values of another field. Unless stated otherwise, these fields should be initialized to zero for TDA.

PCS Auxiliary Block: The PCS auxiliary block (Fig. 16, Sheet 3) contains the list of PCSs for this MSA. The first parameter in word 0 contains the number of bytes (8 bits) in the auxiliary block (not including word 0). Word 1 starts with the list of PCSs, stored three cell site numbers to a word. The next byte after the last cell on the list contains the total number of PCSs.

RSL Auxiliary Block: The RSL (roamer service list) (Fig. 16, Sheet 3) consists of encoded NPAs or encoded NPA-NXXs of roamers allowed access to the system. Each entry is one word long and contains the upper 10 or 20 bits of a roamer DN. This data is input as decimal numbers and encoded as shown in the figure. If the encoded NXX is not given, bits 0 through 9 are zeroed. There are up to 300 entries in this list numerically ordered from smallest to largest. This list is linearly searched for a match. Bits 20-22 of the RSL entry, when set, indicate a roamer is assigned to sub service area 1, 2, or 3 respectively. Bit 23 of the RSL entry, when set, indicates the alternate pseudo LEN is to be used (Dual Roamer Service Area feature active).

RSNL Auxiliary Block: The RSNL (roamer serial number list) auxiliary block (Fig. 16, Sheet 3) contains the SNs of roamers either allowed access to this system ("positive" list) or denied access to this system ("negative" list). Each entry in the list is two words long and contains the 32-bit serial number of the roamer. This list is linearly searched for a match. There can be up to 1000 entries (2000 words) in this list numerically ordered from smallest to largest. The roamer serial number is input as an 11-digit octal number as defined in the DN-SN auxiliary block.

LSA Translator: The LSA (Limited Service Area) feature allows the customer to pay a reduced rate for calls placed within a defined local service area. For the LSA feature to be operational, FF012 set card must be loaded with a value of 1. The CGSA may be divided into 24 limited service areas. Word 4 of the AMI head table points to the LSA-CSN head table and is indexed by the LSA number. Each word of the LSA-CSN head table may contain an address of an auxiliary block containing the cell site numbers that make up the LSA.

MFI Auxiliary Block: The MFI (MTSO feature information) auxiliary block is used for storing CN abut service list and other CN dependent information. Word 5 of the AMI head table contains the address of this auxiliary block. The following describes the items contained in the auxiliary block:

- MAXIMT - Word 1, Bits 21 through 23. The total number of inter-MTSO trunks allowed on a single CN hand-off call.
- NIMRI - Word 1, Bits 16 through 20. Number of RI reserved for inter-MTSO trunk group.
- IMBRI - Word 1, Bits 5 through 15. The base RI for the inter-MTSO trunk groups.
- CAPEXP - Word 1, Bit 0. Reserved for future use.
- APIMB - Word 1, bit 1. This is the API call processing message bundling bit. This bit affects **only** CN messages sent from the 1A to the APS. If set, this bit indicates to the system to hold APS call processing messages until a quantity has accumulated and send the messages to the APS as a group ("bundle").
- NAPIMB - Word 1, Bit 2. API noncall processing message bundling bit.
- PGMSTO - Word 2, Bits 0 through 15. This field specifies MTSOs that are paged on a system basis. Each bit represents a specific MTSO to be paged if set (equals 1). Bit 0 is reserved for future use and must be set to 0. The remaining bits of PGMSTO represent the other MTSOs in the CN, and are assigned in ascending order (bitwise) of the MTSO appearance on the Abut Service List.

Words 3 through 18 of the MFI auxiliary block comprise the Abut Service List. This list contains the ESID (extended system identification) numbers of all MTSOs in the CN. The first ESID in the Abut Service List must be this MTSO's own ESID. The list can contain a maximum of 16 MTSOs. If System 10 MTSOs are part of the network, each DCS (digital cellular switch) of a System 10 requires one ESID (as does the ECP).

The ESID breaks down into the following fields:

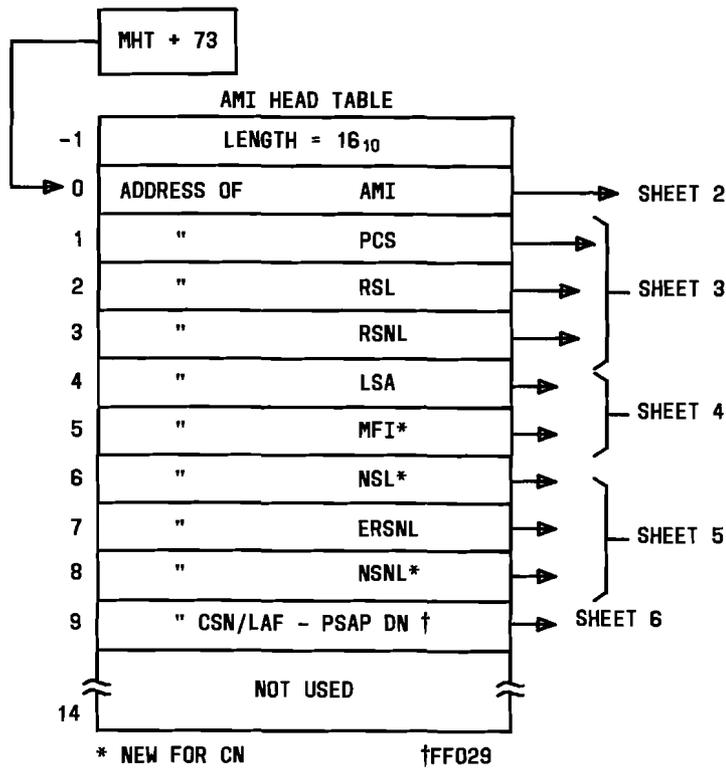
- **SID** - The system identification field occupies bits 0 through 14 of the ESID. The SID is the number that identifies a CGSA. Each MTSO serving the same CGSA will have the same SID. This field has a range of 0 through 32767.
- **MTSOID** - The MTSO identification field occupies bits 15 through 18 of the ESID. The MTSOID identifies each MTSO in the CGSA. For System 100 MTSOs, the value of this field is usually 0, unless some other MTSO in the CN has the same SID. This field has a range of 0 through 15.
- **DCSID** - The digital cellular switch field (bits 19 through 23) is used to identify System 10 DCSs. The value of this field can be 0 through 31. For System 100 MTSOs, this field is equal to 0.

NSL Auxiliary Block: The NSL (network service list) is used by the CN feature, and is a list of all NPA-NXXs of all members of the cellular network. Word 6 of the AMI head table contains the address of the NSL. The NSL has a maximum capacity of 999 entries.

ERSNL Auxiliary Block: The ERSNL (expanded roamer serial number list) may be used to replace the FSN list. It can contain 512,000 serial numbers, and may be either a "positive" or a "negative" list. A positive list contains serial numbers of roamers that are to be given any of the Roamer I or II services. If a negative list is defined, roamers that are to be denied service are entered on this list.

NSNL Auxiliary Block: The NSNL (network serial number list) is the record of all valid network roamer serial numbers from all abutting CGSAs in the CN. This list is a "positive" serial number list, that is, to obtain service, a network roamer must have a serial number on this list. The address of the NSNL subtranslator is contained in word 8 of the AMI head table. The NSNL has a maximum capacity of 512,000 serial numbers. The NSNL subtranslator consists of a maximum of 256 words indexed by bits 0 through 7 of the network serial number. Each word of this subtranslator points to an auxiliary block of up to 2002 words. The first two words are used to specify the length of the auxiliary block. Each of the remaining words may contain bits 8 through 31 of the network serial number. The auxiliary block is an ascending ordered list. Library program NSNLAPX3 (PR-6A1491, Library Package APT-32) is used to administer the NSNL. It is used to create a tape with a list of all home mobile's serial numbers in the office. This tape is then sent to other MTSOs in the network for use in rebuilding their NSNLs on a periodic basis. See the documentation in PR-6A1491 for details.

CSN/LAF Translator: The CSN/LAF (cell site number/logical antenna face) translator is used by the custom feature RSEC (routing service for emergency calls). With this feature, when a mobile dials 911, the call will be routed to a PSAP (public service access point) that is closest to the current location of the mobile. The CSN/LAF translator provides the PSAP DN based on the cell site and antenna face the mobile is using. Word 9 of the AMI head table contains the address of the 256-word CSN subtranslator. The index into this subtranslator is the cell site number. Each address contained in the subtranslator points to an auxiliary block that may contain six PSAP DNs depending on the antenna face and server group numbers.

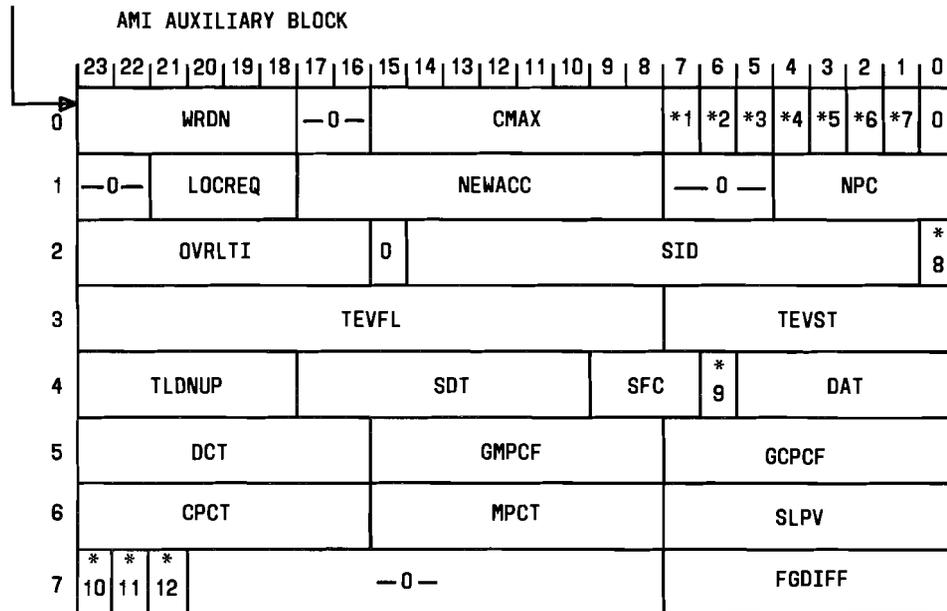


LEGEND:

- AMI - AUTOPLEX SYSTEM 100 MISCELLANEOUS INFORMATION
- ERSNL - EXTENDED SERIAL NUMBER LIST
- NSNL - NETWORK SERIAL NUMBER LIST
- PCS - PAGING CELL SITES
- RSL - ROAMER SERVICE LIST
- RSNL - ROAMER SERIAL NUMBER LIST
- LSA - LIMITED SERVICE AREA LIST
- MFI - MTSD FEATURE INFORMATION AUXILIARY BLOCK
- NSL - NETWORK SERVICE LIST
- CSN - CELL SITE NUMBER
- LAF - LOGICAL ANTENNA FACE
- PSAP - PUBLIC SERVICE ACCESS POINT
- CN - CELLULAR NETWORKING

Fig. 16 — AMI Translator (Sheet 1 of 6)

FROM SHEET 1, WORD 0



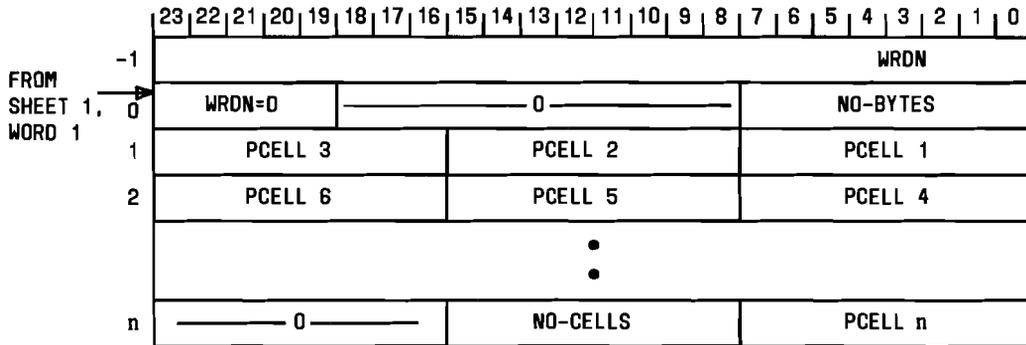
*1 = NWAC, *2 = RCF, *3 = DTX, *4 = SRN,
 *5 = CPA, *6 = LPB, *7 = RSV, *8 = CSI, *9 = VVGDI, *10 = CNACTF, *11 = R3ACTF *12 = RCNHO
 *12 = RCNHO

LEGEND:

- | | |
|---|---|
| <p>CMAX = MAXIMUM NUMBER OF ACCESS CHANNELS
 CNACTF = CELLULAR NETWORKING ACTIVATION FLAG
 CPA = COMBINED PAGING AND ACCESS
 CPCT = CELL SITE PROCESS COUNTER THRESHOLD
 CSI = CHANNEL SET INDICATOR
 DAT = DON'T ANSWER TIMING INDICATOR
 DCT = DIVERSITY COUNTER THRESHOLD
 DTX = ALLOW DISCONTINUOUS TRANSMITTING MOBILES
 FGDIFF = FRAME GAIN DIFFERENTIAL
 GCPCF = GLOBAL CELL SITE POWER CONTROL FLAG
 GMPCF = GLOBAL MOBILE POWER CONTROL FLAG
 LOCREQ = LOCATION REQUEST LIMIT
 LPB = LONG PAGE BUNDLING
 MPCT = MOBILE PROCESS COUNTER THRESHOLD
 NWAC = NEW START FOR ACCESS CHANNELS
 NEWACC = NEW SET OF ACCESS CHANNELS
 STARTING CHANNEL NO.
 NPC = NUMBER OF PAGING CHANNELS TO SCAN MINUS 1
 OVRLTI = VOICE RADIO LOCATION TIME INTERVAL
 R3ACTF = RELEASE 3 ACTIVATION FLAG
 RCF = READ CONTROL FILLER WORD
 RCNHO = RESTRICTED CN HANDOFF FLAG
 RSV = ROAMER SERVICE VALIDATION
 SID = FIVE DIGIT (DECIMAL) SYSTEM IDENTIFICATION.
 BIT 0 = 1, CHAN SET A; = 0-CHAN SET B</p> | <p>SDT = SAT DETECT THRESHOLD
 SFC = SIMULTANEOUS FORWARDED CALLS
 SLPV = SKIP LOCATE PERIOD VALUE
 SRN = SEND SERIAL NUMBER
 TEVFT = TRAFFIC EVENT FAILURE THRESHOLD
 TEVST = TRAFFIC EVENT SUCCESS THRESHOLD
 TLDNUP = TLPN UNAVAILABILITY PERIOD
 VVGDI = VARIABLE VOICE GAIN DEVICE INDICATOR
 WRDN = NUMBER OF WORDS</p> |
|---|---|

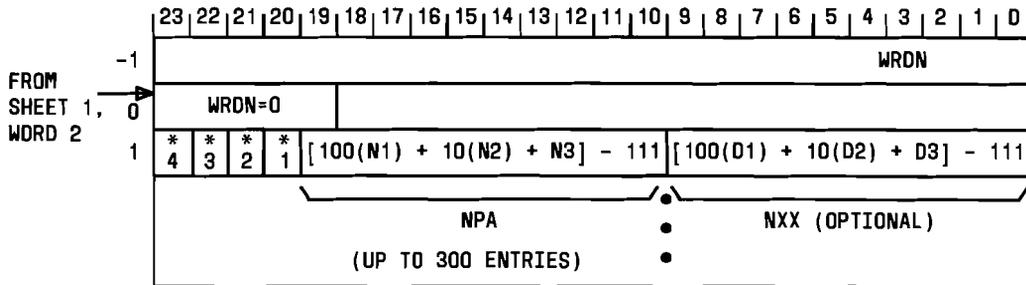
Fig. 16 — AMI Translator (Sheet 2 of 6)

PAGING CELL SITES (PCS) AUXILIARY BLOCK



LEGEND:
 NO-CELLS = TOTAL NUMBER OF PAGING CELL BYTES, INCLUDING ANY WITH ALL 0'S.
 PCELL = PAGING CELL
 WRDN = NUMBER OF WORDS

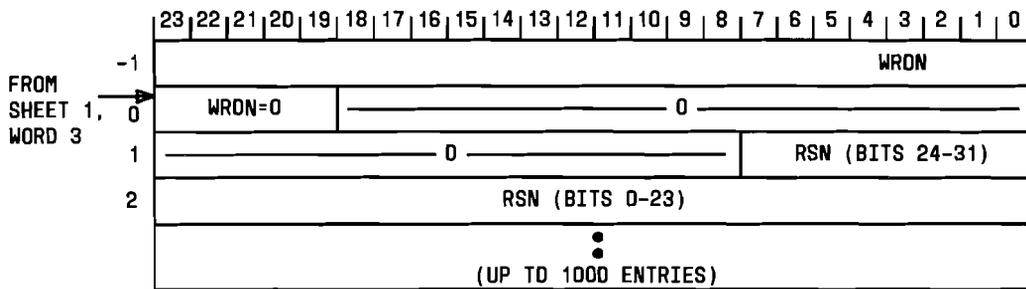
ROAMER SERVICE LIST (RSL) AUXILIARY BLOCK



*1=SSA1, *2=SSA2, *3=SSA3, *4=APLEN

LEGEND:
 D = NXX DIGIT APLEN = AUXILIARY PSEUDO LEN
 N = NPA DIGIT SSA1 = SUBSERVICE AREA 1
 NPA = NUMBERING PLAN AREA SSA2 = SUBSERVICE AREA 2
 WRDN = NUMBER OF WORDS SSA3 = SUBSERVICE AREA 3

ROAMER SERIAL NUMBER (RSN) AUXILIARY BLOCK



LEGEND:
 RSN = ROAMER SERIAL NUMBER
 WRDN = NUMBER OF WORDS

Fig. 16 — AMI Translator (Sheet 3 of 6)

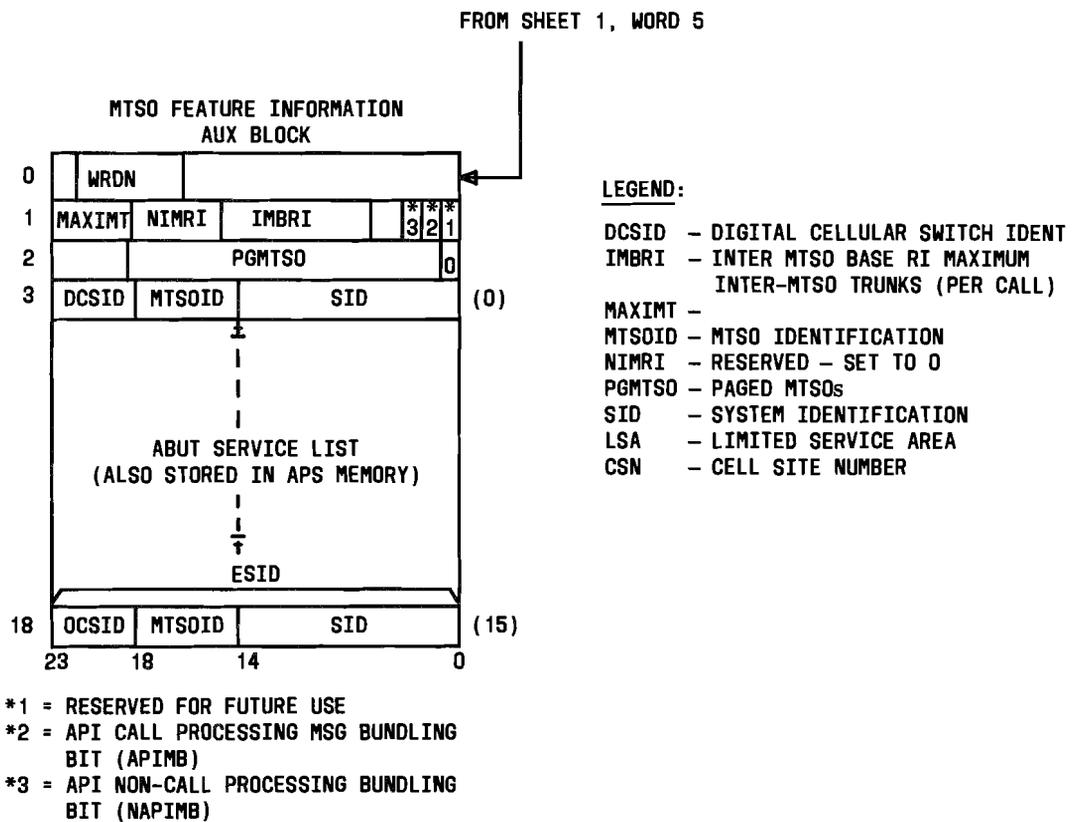
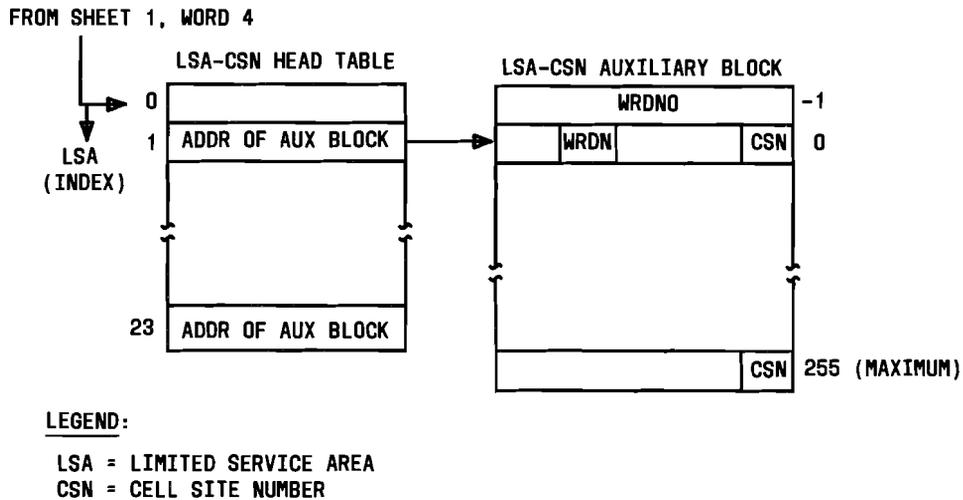


Fig. 16 — AMI Translator (Sheet 4 of 6)

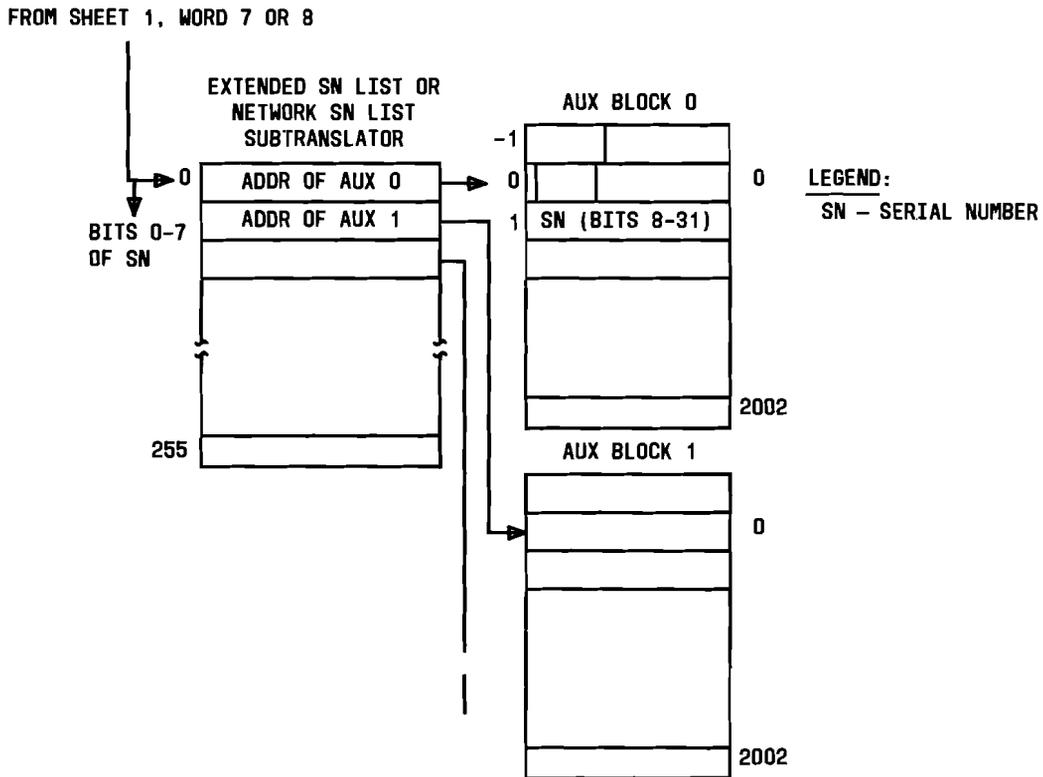
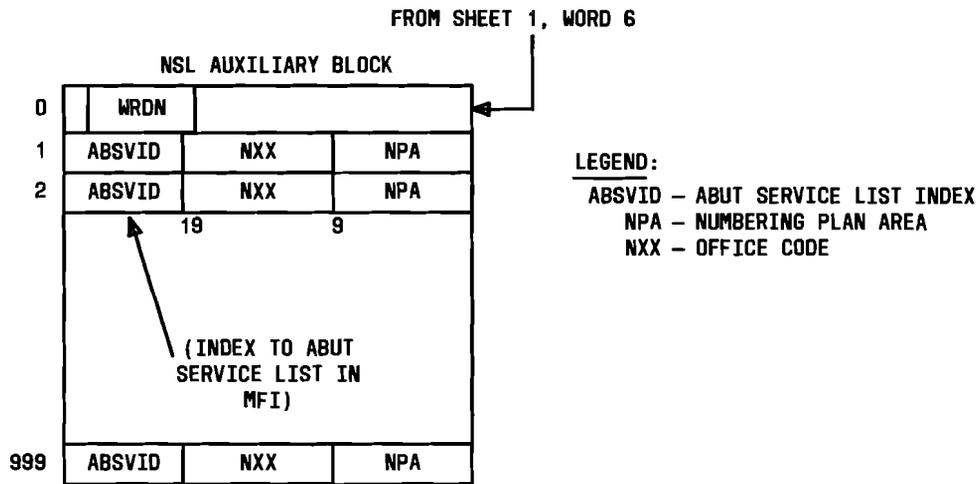


Fig. 16 — AMI Translator (Sheet 5 of 6)

CSN/LAF TO PSAP DN TRANSLATOR

FROM SHEET 1, WORD 9

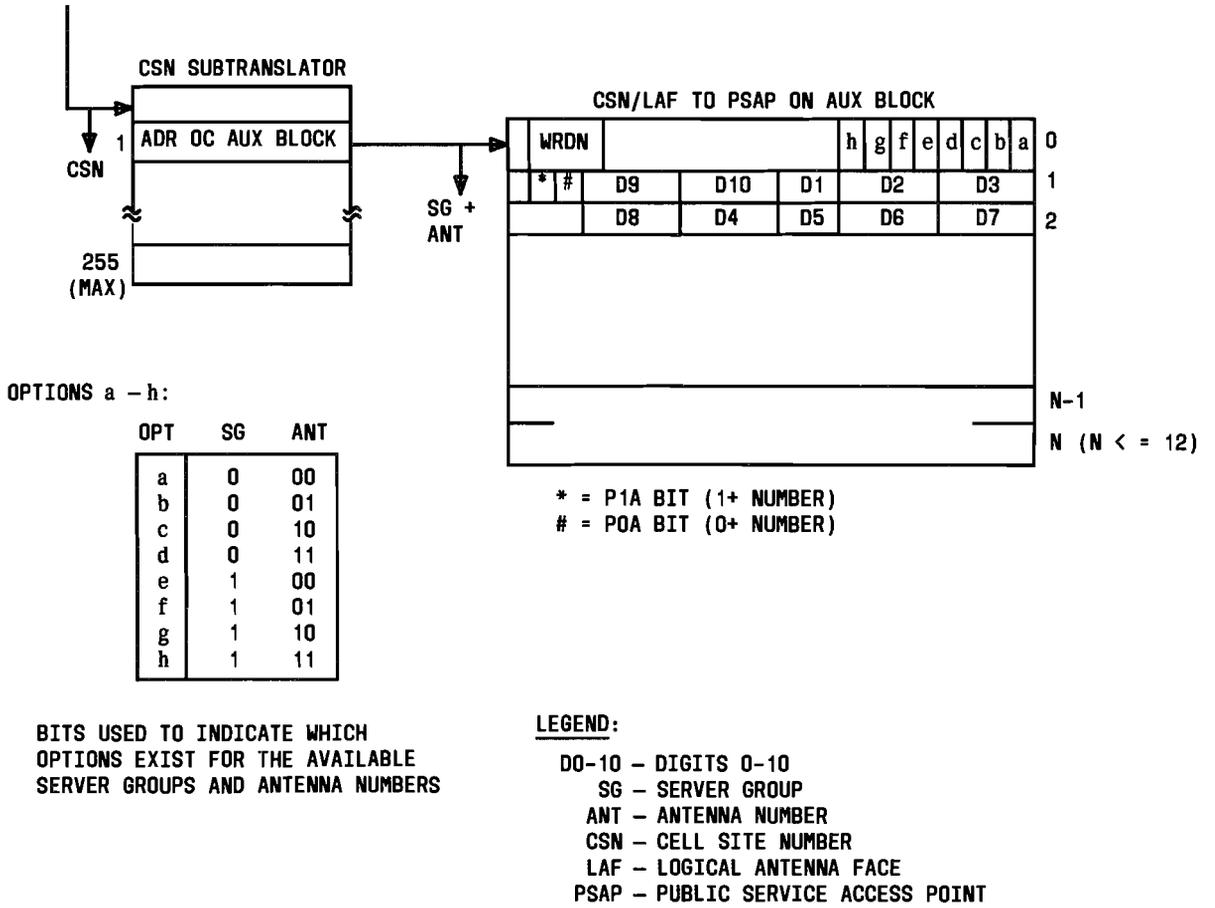


Fig. 16 — AMI Translator (Sheet 6 of 6)

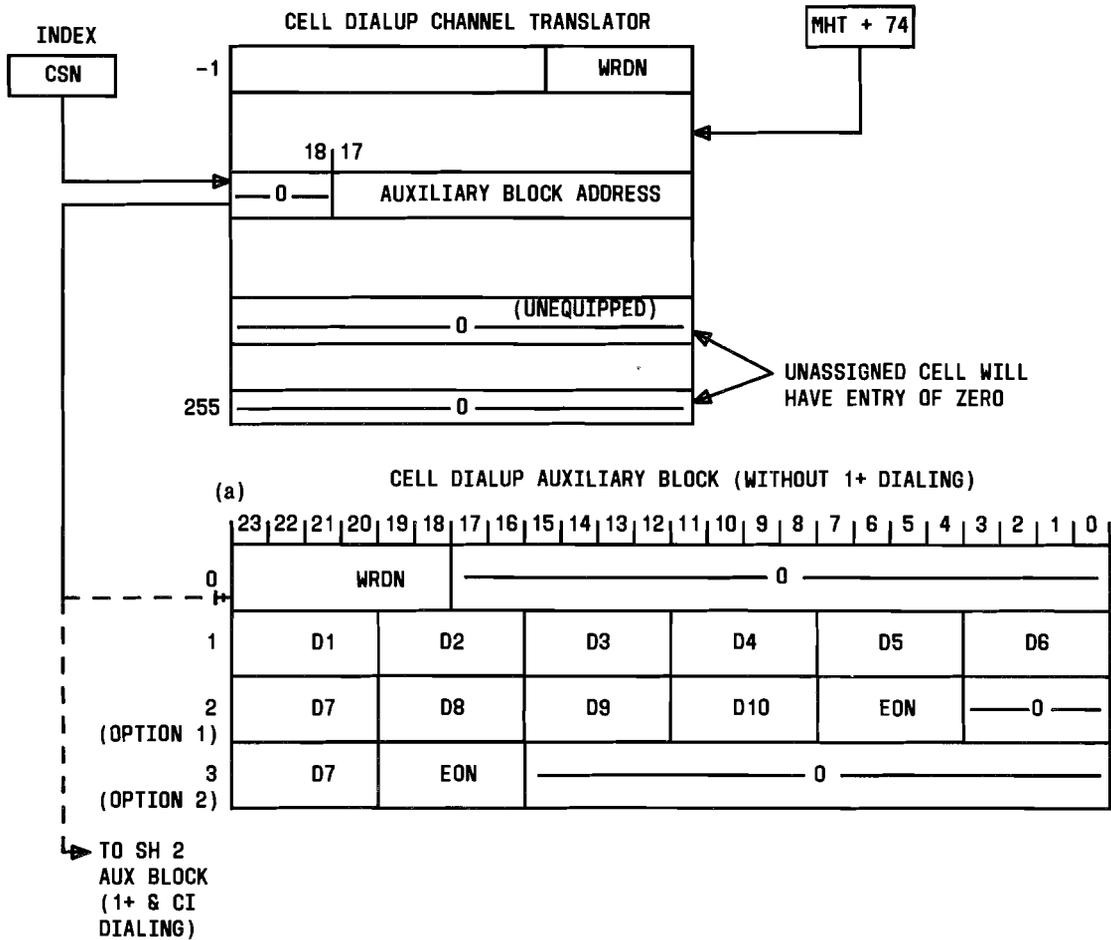
4.2.4 Cell Dialup Channel Translator

The function of the cell dialup translator (Fig. 17) is to obtain the DN of a cell site for secure dial-back procedure. The head table is indexed by a CSN, and each entry contains the address of a 3- or 4-word auxiliary block.

The auxiliary block contains the BCD representation of the 7- or 10-digit number as shown. The last low order byte following the last digit contains an end of number indicator (decimal value 15).

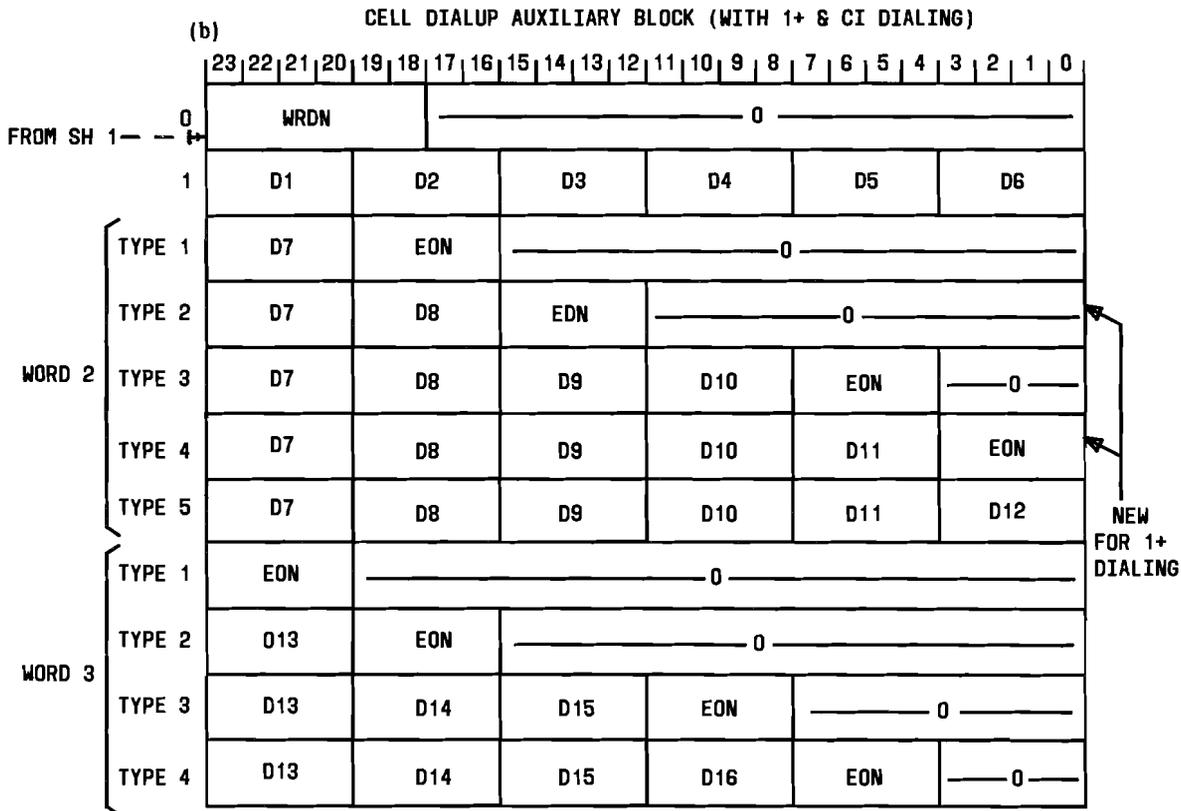
To allow for 1+ 7-digit or 10-digit dialing for a cell dialup number, the translator has one more byte allocated for the additional digit. If the DN does not have 1+ dialing, the optional translator applies.

The cell dialup translator is modified for the carrier interconnect feature to permit cell dialup numbers with CI digits. Word 2 type 5 and word 3 types 1 through 4 provide for CI 10XXX dialing options as shown in Fig. 17.



LEGEND:
 CSN = CELL SITE NUMBER
 D1-D10 = FIRST THRU TENTH DIGIT OF CELL DIALUP NUMBER
 EON = END OF NUMBER INDICATOR
 MHT = MASTER HEAD TABLE
 WRDN = NUMBER OF WORDS

Fig. 17 — Cell Dialup Channel Translator (Sheet 1 of 2)



NOTES:

- Types 2 and 4 are 7- and 10-digit numbers with 1+ dialing.
- Word 2 options are as follows:
 Type 1 = 7-digit DN
 Type 2 = 1 + 7-digit DN
 Type 3 = 10-digit DN
 Type 4 = 1 + 10-digit DN
 Type 5 = 10XXX +
- Word 3 options are as follows:
 Type 1 = 10XXX + 7-digit DN
 Type 2 = 10XXX + 1+ 7-digit DN
 Type 3 = 10XXX + 10-digit DN
 Type 4 = 10XXX + 1+ 10-digit DN
- Zeros are stored as zeros.
- Word 2 Type 5 must have Word 3.

LEGEND:

D1-D16 = FIRST THRU SIXTEENTH DIGIT OF CELL DIALUP NUMBER
 EON = END OF NUMBER INDICATOR
 WRDN = NUMBER OF WORDS

Fig. 17 — Cell Dialup Channel Translator (Sheet 2 of 2)

4.2.5 IOP KCODE-Cell Channel Member Number Translator

The purpose of this translator (Fig. 18) is to translate the logical CSN to a specific data link hardware location, used by the data link software to send messages. Each cell has a high-priority and low-priority data link.

The structure is actually two separate tables joined into one structure to save space. The two tables are the IOP KCODE-cell site channel number table and the cell site channel number-KCODE table. Although these two tables are the inverse of each other, they are of different lengths. Therefore, the KCODE and channel number contained in each word are not related to each other.

The cell site channel number-KCODE table is indexed by a 9-bit cell site channel number. Eight bits indicate the CSN and the high order bit indicates the low (1) or high (0) priority data link. Each entry contains the data link member number. Since each IOP unit has the capacity for eight data links, the length of the table is eight times the number of IOPs in the office for a fixed length of 512 entries.

The KCODE-cell site channel number structure is the opposite of the previous table, indexed by the data link member number to obtain the 9-bit channel number. The KCODE consists of the IOP number (0 through 63) and the member number within the IOP (0 through 15). Since each IOP has the capacity for 16 members (although only eight members can be System 100 data links), the length of this table is 16 times the number of IOPs in the office, for a maximum size of 1024 entries.

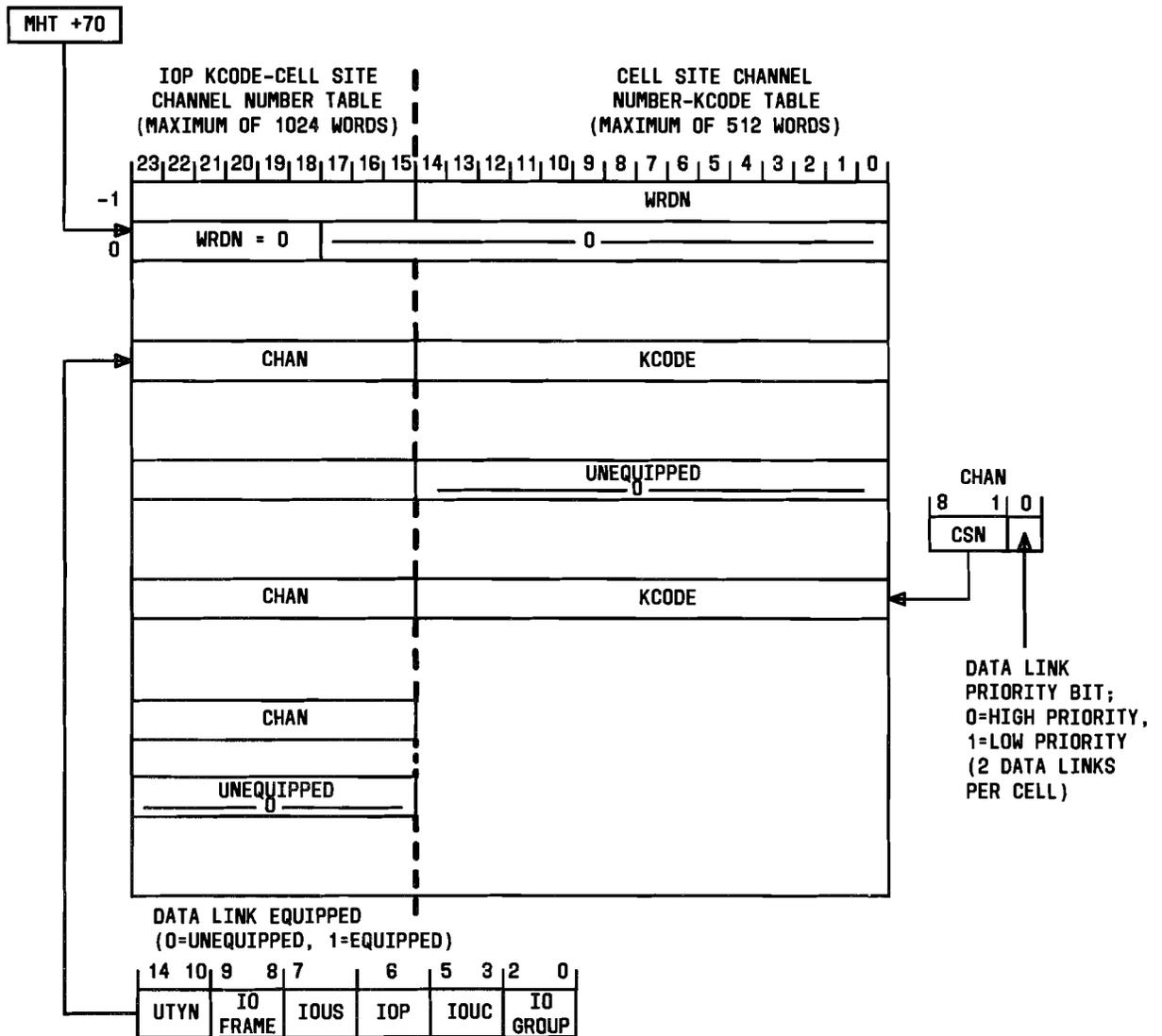
The IOP KCODE fields and their functions are:

- The IOUC (unit controller) field controls one data link. Since the TTY channels use the IOP for their control, the IOUC only exists for System 100 data links. Each output from the IOP has a designated IOUC number.
- The IOP (microprocessor) field controls eight IOUCs. Only one IOP and one fanout exist. The microprocessor which controls the TTY channels is designated as IOP 0, and the fanout for the System 100 data links is designated as IOP 1.
- The IOUS (unit selector) field controls two IO microprocessors.
- The IO frame field contains two IOUSs.
- The IO group field contains four IO frames.
- Input to the cell site channel number-IOP KCODE table is a CSN. The output will be the associated KCODE(s) for the high-priority data link (two data links per cell are possible).
- Input to the IOP KCODE-cell site channel number translator is by the first IO bits of the IOP KCODE. This consists of IOUS, IOUC, IO microprocessor (IOMP), IO frame, and IO group. The output will be the CSN and priority data link bit.

System 100 cell site data links can only exist on IOMP 1; therefore, for the channel to member number table, the IOMP field has to be set. For the member number to channel number table, the CHAN field is zeroed when indexed with an IOMP of 0.

An additional set of requirements is that each data link to a cell must be on a different IO frame and power bus. The IO frames are powered with two buses. Bus 0 powers IOUS 0 while bus 1

powers IOUS 1. Therefore, each pair of data links to a cell will link through an IOUS 0 and IOUS 1 on different IO frames.



LEGEND:

- CHAN = CELL SITE CHANNEL NUMBER
- CSN = CELL SITE NUMBER
- IO = INPUT OUTPUT
- IOMP = INPUT OUTPUT MICROPROCESSOR
- IOP = INPUT OUTPUT PROCESSOR
- IOUC = INPUT OUTPUT UNIT CONTROLLER
- IOUS = INPUT OUTPUT UNIT SELECTOR
- MHT = MASTER HEAD TABLE
- UTYN = UNIT TYPE
- WRDN = NUMBER OF WORDS

NOTE:

1. CHAN AND THE OTHER FIELDS ARE NOT RELATED IN THIS TABLE. THEY ARE SHARING THE SAME WORD TO CONSERVE MEMORY.

Fig. 18 — IOP KCODE-Cell Channel Member Number Translator

4.2.6 IOP Member Number Translator

The IOP member number translator (IOMTRANS) (Fig. 19) stores information about each IOUS and its channels. In non-System 100 usage, data for IOPs is stored in parameters with a limit of eight IOPs per office and a capacity of 128 data links. With the expansion of the number of IOPs allowed in an MTSO (up to a total of 64), and the flexibility that System 100 needs to increase or decrease these links, the System 100 feature stores this additional information into translations. For the first eight IOPs, the information contained in parameters is not changed and will not be used for the System 100 feature cell site links. For IOPs 8 through 64, the information System 100 needs are contained in the IOMTRANS. This translator must be identical to the XL1IOMTRANS data layouts stored in parameters, as there are some routines which use both sets of data identically. Therefore, some unused words are necessary in order to conform to the parameter-defined structure.

The IOMTRANS is a unit type translator, stored in the unit type head table [master head table (MHT) +512]. The IOMTRANS subtranslator address is contained in the unit type head table + 59. The subtranslator is indexed by the IOUS member number, which is made up of the IO group number (0 through 7), the IO frame number within the group (0 through 3), and the IOUS within the frame (0 and 1). The first eight entries in the subtranslator are zeroed out. (The information about IOUS 0 through 7 is stored in parameters.) Any unequipped IOUS has a subtranslator entry of 0. Each equipped entry in the subtranslator is a pointer to an auxiliary block of information whose fields are:

- Item WRDN is the number of words in the auxiliary block.
- Item MP0 is the equipage status of IOMP 0. This is a 2-bit field with 00 = unequipped, 10 = growth, 11 = equipped, and 01 = special growth which is not used by System 100.
- Item MP1 is the equipage status of IOMP 1 (the fanout). It has the same units as MP0.
- Item IOUS is the equipage status of the IOUS. It has the same units as MP0.
- Item IOUSTYPE is the type of IOUS currently being used. This field will always be 1 for System 100 to indicate that this IOUS contains a microprocessor.
- Item LDI is the hardware laboratories design information number which describes the current hardware version of the IOUS. This is represented as a MT (member type) number assigned in the hardware LDI. This is changed every time a class A change has occurred in the IOUS and is used by the diagnostic controller to determine which set of diagnostics to use for this IOUS.
- Item PPADR is the pulse point address or the address of the maintenance point needed to talk to the IOUS. Each IO frame will have a pair of GCP points, starting with IOUS 0 having the even-numbered pulse point and IOUS 1 the odd-numbered pulse point. The octal address is stored in this field and input as the pulse source name. These points must be assigned in the pulse source range PPU030 (octal address 00404001) to pulse source PPU093 (octal address 02001010). Pulse source PPU030 and PPU031 are the first pulse point pair in this range.
- Item PTSOURCE is a bit indicating the format of the IOUS pulse point source. This bit is set when a CC-GCP point is used and zeroed when another type of point is used. This bit is equal to one for System 100.
- Eight consecutive scan points are assigned per IO frame.
 - a. Item SCNPT, the supervisory master scanner octal scan point address of the power control switch assigned to each IOUS, is the address of the first of the two points of the given IOUS (e.g., for IOUS 0, SCNPT is the address of the first scan point for

IOUS 0, and for IOUS 1, SCNPT is the address of the first scan point for IOUS 1).

- b. Item PUBSCNPT, the supervisory master scanner octal scan point address for each PUB (peripheral unit bus), is the same for both PUBs of an IO frame. This field contains the address of the first of two scan points needed for PUB 0 of the frame. The scan point address for PUB 1 is calculated by adding four to the PUB 0 address.
- Eight CPD (central pulse distributor) points are assigned per IO frame.
 - a. Item MDPNT, the bipolar CPD point address of the signal distributor points for each IOUS, is assigned the same as for SCNPT above.
 - b. Item PUBMDPNT, the bipolar CPD point address of the signal distributor points for each PUB, is the same for both PUBs of an IO frame and is assigned identically as PUBSCNPT above.
- Item NMEMN is the other IO member number in the IO frame. This consists of the IOUS number within the frame (bit 0), the IO frame number within the group (bits 1 and 2), and the IO group number (bits 3 through 5). Bit 6 is zeroed.
- Item IOFSTMP is the IO frame number stamped on the IO frame.
- Items FRAME, LINE, and GRID are used to determine the physical location of the IO frame in the office. Item GRID is a group of IO frames in a certain section of the office. Item LINE is a specific line of frames in a particular GRID, and FRAME is the nth frame in a particular line.
- Item CPADR is the control pulse point octal address. This IOUS will be assigned a unipolar CPD point.
- Item CNTRLPT is a bit indicating whether the control pulse point is a CC-GCP point (=1) or another type of point (=0). This bit is zeroed for System 100.
- Items IOC0 through IOC7 are the equipage fields for IOUC 0 through 7. These are the TTY channels and hence will always be unequipped for System 100 (= 00).
- Item MP0TYPE indicates the type of microprocessor for IOMP 0. This is set to 1 to indicate a phase 1 microprocessor for System 100.
- Items IOC8 through IOC15 are the equipage of IOUC 8 through 15, designated the same as MP0.
- Item MP1TYPE indicates the type of microprocessor for IOMP 1. This is set to 2 to indicate a phase 2 IOMP for System 100.

The rest of the auxiliary block is information concerning each channel (two words per channel) in the IOUS, indexed by the IO member number. The index is made up of the IOMP (bit 3) and IOUC within the IOMP (bits 0 through 2). Since System 100 does not use the TTY channels, the first 16 words are zeroed. The fields needed for the cell data link channels are:

- Item PT0 is the equipage of port 0 in the same units as MP0.
- Item PT1 is the equipage of port 1 and is always unequipped for System 100 (= 00).
- Item PT2 is the equipage of port 2 and is always unequipped for System 100 (= 00).
- Item DSI0 is the data set indicator for port 0, indicating the type of port connection. This field is always set to 2 for System 100 to indicate a private line data set.
- Item DSI1 is the data set indicator for port 1 and is zeroed.

- Item DSI2 is the data set indicator for port 2 and is zeroed.
- Item AB0 is a bit indicating whether port 0 is equipped with answer back (handshaking). This is zeroed to indicate no answer back.
- Item AB1 is the answer back for port 1 and is zeroed.
- Item AB2 is the answer back for port 2 and is zeroed.
- Item CHNLSPD is the channel speed of the channel. This field will either be 0 to indicate 9.6 kb/s, or 7 to indicate 56 kb/s.
- Item IOCTYPE is the type of IOUC on the channel. This is always set to 7 to indicate a TN-82 circuit board doing BX.25 level 2 synchronous protocol.
- Item FDX is a bit indicating whether the channel is half or full duplex. This is set to 1 to indicate full duplex.
- Item ACU is a bit indicating whether there is an automatic call unit connected to the channel. This is always zeroed to indicate no call unit.
- Item DSTYPE is the type of data set on the channel. This is set to either decimal 13 to indicate a 500A data set, or decimal 14 to indicate a DATAPHONE® II data set.
- Item AP is a bit indicating whether an application (as opposed to common routines) is controlling this link. This bit is always set to indicate application control.
- Item SC is the type of transmission on the channel. A 0 indicates a continuous transmission, and 1 indicates a switched carrier or discontinuous transmission. This bit is always zeroed.

MHT +512 (UNIT TYPE TABLE)

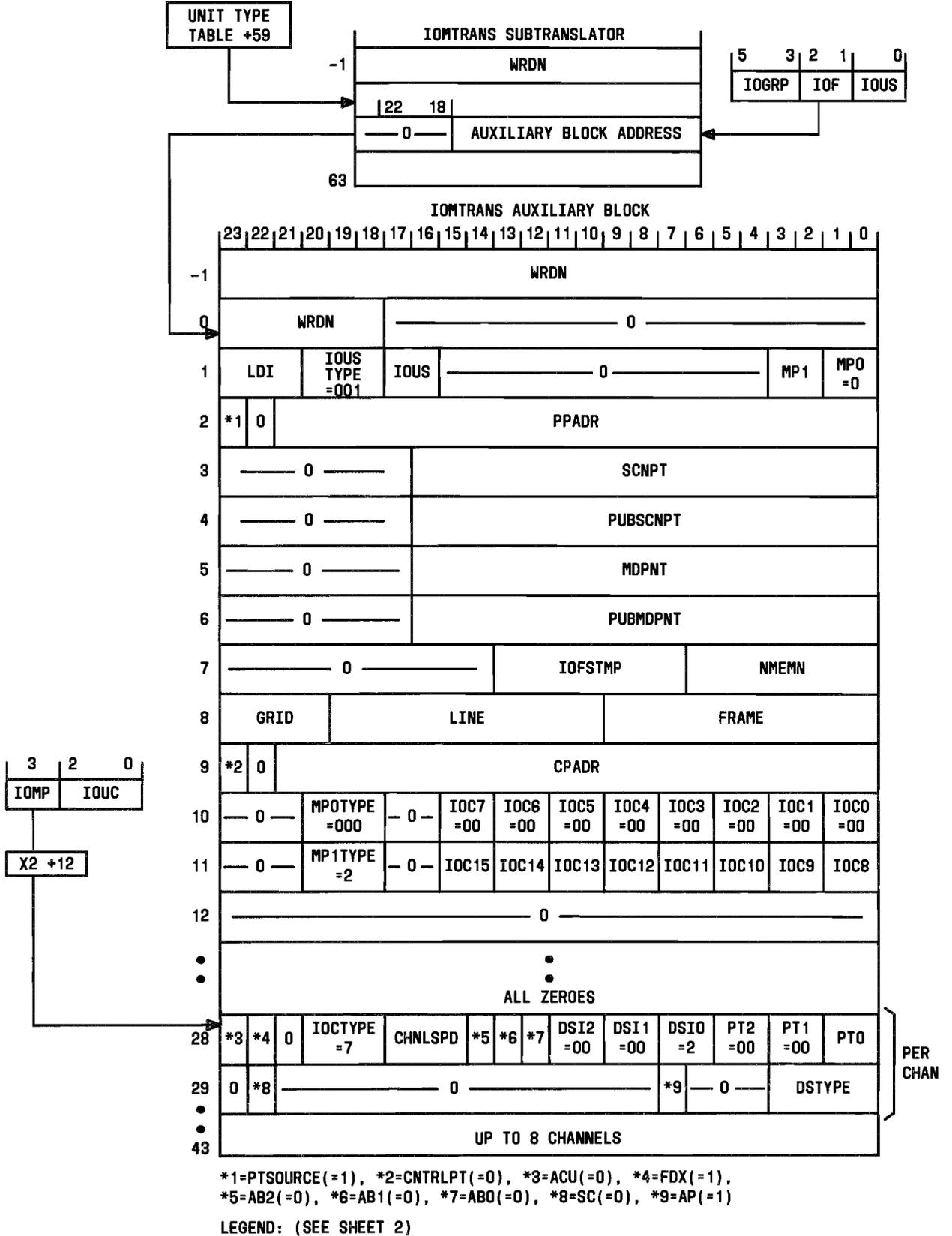


Fig. 19 — IOMTRANS Translator (Sheet 1 of 2)

LEGEND:

ABO-AB2 = ANSWER BACK FOR PORT 0 THRU 2
 ACU = AUTOMATIC CALL UNIT
 AP = APPLICATION BIT
 CHNLSPD = CHANNEL SPEED
 CNTRLPT = CONTROL PULSE POINT ADDRESS (=0) OR A CC-GCP POINT (=1)
 CPADR = CONTROL PULSE POINT ADDRESS OR A GCP POINT
 CPD = CENTRAL PULSE DISTRIBUTOR
 DSIO-DSI2 = DATA SET INDICATOR 0 THRU 2
 DSTYPE = DATA SET TYPE
 FDX = FULL DUPLEX INDICATOR
 IOCTYPE = INPUT OUTPUT UNIT CONTROLLER TYPE
 IOCO-IOC15 = INPUT OUTPUT CONTROLLER 0 THRU 15
 IOF = INPUT OUTPUT FRAME
 IOFSTMP = INPUT OUTPUT FRAME NUMBER STAMP
 IOGRP = INPUT OUTPUT GROUP
 IOMP = INPUT OUTPUT MICROPROCESSOR
 IOMTRANS = INPUT OUTPUT PROCESSOR (IOP) MEMBER NUMBER TRANSLATOR
 IOUS = INPUT OUTPUT UNIT SELECTOR
 IOUSTYPE = INPUT OUTPUT UNIT SELECTOR TYPE
 LDI = HARDWARE NUMBER OF IDUS
 MHT = MASTER HEAD TABLE
 MDPNT = CPD ADDRESS POINT
 MPO = MICROPROCESSOR 0
 MP1 = MICROPROCESSOR 1
 MPOTYPE = TYPE OF PROCESSOR FOR MICROPROCESSOR 0
 MP1TYPE = TYPE OF PROCESSOR FOR MICROPROCESSOR 1
 NMEMN = NUMBER OF OTHER INPUT OUTPUT MEMBER NUMBER
 PPADR = PULSE POINT ADDRESS
 PTSOURCE = PULSE POINT SOURCE
 PTO-PT2 = PORT 0 THRU 2
 PUB = PERIPHERAL UNIT BUS
 PUBMDPNT = PERIPHERAL UNIT BUS ADDRESS OF SCAN POINT
 PUBSCNPT = PERIPHERAL UNIT BUS SCAN POINT
 SC = TRANSMISSION TYPE (CONTINUOUS)
 SCNPT = SUPERVISORY MASTER SCANNER OCTAL SCAN POINT
 WRDN = NUMBER OF WORDS

Fig. 19 — IOMTRANS Translator (Sheet 2 of 2)

4.3 Cell Site Master Translators

The cell site master translators are those translators which are mainly used at the cell site. A master copy of the cell resident data is kept at the MTSO and used for initializing and updating the cell memory.

The translators at the cell are functionally divided into three translators: (1) the cell site status translator, (2) the cell site equipage translator, and (3) the cell site location translator. The cell site status translator is used mainly for information given in the overhead word which may change faster than the rest of the data at the cell. The cell site equipage translator contains initialization information about the peripheral equipment at the cell. The cell location translator contains information for voice channel selection and location.

4.3.1 Cell Site Head Table

Note: Although the cell site trunking translator is accessed through the cell site head table, it is functionally a part of the MTSO-only translators and is covered under that function.

The cell site head table (Fig. 20) keeps data needed about the cell sites. A master copy of the cell resident data is kept at the MTSO and is used for initialization and updating the cell memory. Each entry in the head table points to another head table for that particular cell site information.

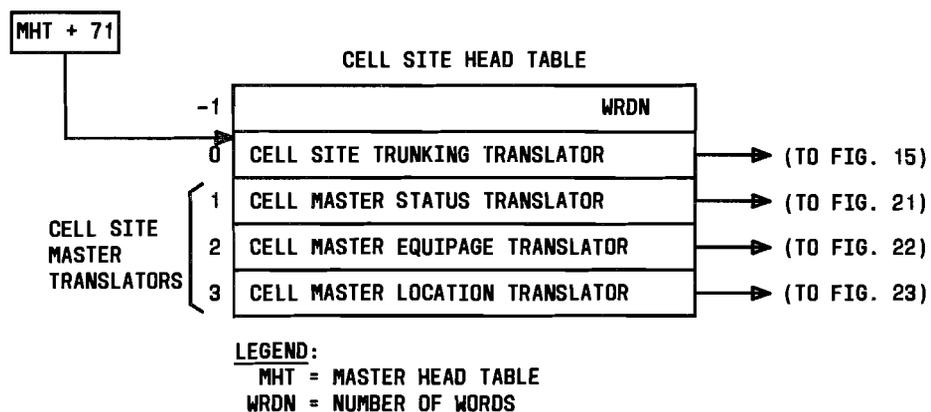


Fig. 20 — Cell Site Head Table

Warning: In some cases, the output message REPT:CELL TRANSLATION UPDATE COMPLETE may not print although the update was successful. Also, the RC rollback process does not download the rolled back translations to the cell. The "INIT:CELL a: SC!" input message is required after a rollback of a cell translator to restore the translations in the cell.

Whenever one of the cell master status, cell master equipage, or cell master location translators is changed via a recent change message, pidents CSTIAMPS and/or CSTUAMPS download the changed translator values to the affected cell(s). The success of this download results in "REPT:CELL TRANSLATION UPDATE INITIATED/UPDATE COMPLETE" TTY output messages. The lack of the "REPT:CELL TRANSLATION UPDATE" output message for a particular cell indicates an update failure. The cell must be operational with at least one data link in service for the update to be successful. Full translations may be downloaded to a cell via the message "INIT:CELL a: SC!"; however, this takes down all stable calls. Note that the output response messages may not print on all TTYs but they do print on the local maintenance TTY.

4.3.2 Cell Master Status Translator

The function of the cell master status translator (Fig. 21) is to provide the cell site with information that it needs to broadcast to the mobile. The head table is indexed by cell site number. Each entry in this table points to an auxiliary block (if assigned) of a fixed size of three words, containing the following data:

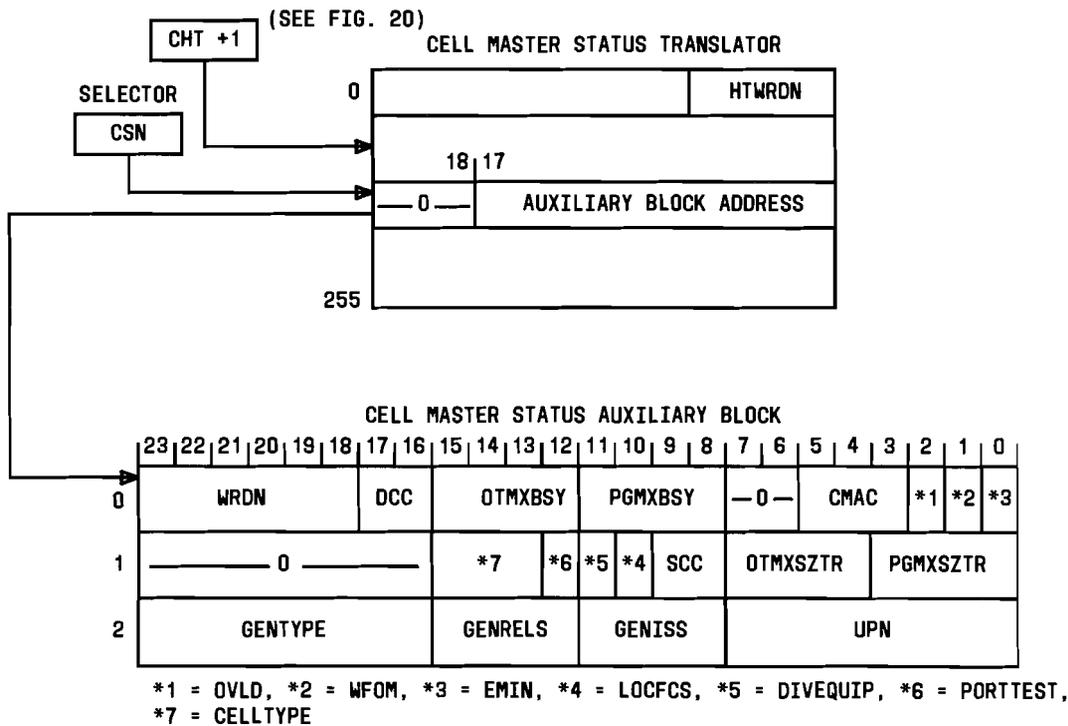
- The EMIN (extended MIN) bit, when set, indicates that the mobile should access the system using a 34-bit MIN.
- The WFOM (wait for overhead message) bit, when set, indicates the mobile must wait to read an overhead message from the cell.
- The CMAC field is the control mobile attenuation code given to the mobile to control its power level during initial accessing of the system. Item CMAC ranges from 0 through 7, and is input as a decimal number.
- Item PGMXBSY is the number of times a mobile is allowed to find a setup channel busy before giving up with its page response message. The maximum number of attempts allowed is 15. Item PGMXBSY is input as a decimal number.
- Item OTMXBSY is the same as PGMXBSY except that the mobile is attempting to access the system for another reason besides page response (origination or registration, for example).
- Item DCC is the digital color code of the cell used to uniquely identify a cell during access. Item DCC ranges from 0 through 3, and is input as a decimal number.
- Item WRDN is the length of the auxiliary block.
- Item PGMXSZTR is the number of times a mobile is allowed to try to seize a setup channel before giving up with its page response. The maximum amount of attempts allowed is 15. Item PGMXSZTR is input as a decimal number.
- Item OTMXSZTR is the same as PGMXSZTR except that the mobile is attempting to seize a channel with another type of message besides a page response (origination or registration, for example).

- Item SCC is the SAT (supervisory audio tone) color code of the cell and is input as a frequency in binary form. There are three frequencies that SAT is transmitted over: 00 = 5970 Hz, 01 = 6000 Hz, and 10 = 6030 Hz. Configuration 11 is an illegal entry. Item SCC is used by cell generics 1AMPS2C08 and earlier.
- The LOCFCS (location equipped faces) at the cell site, indicate which antennas are equipped for location measurements. When set, there is more than one antenna equipped for location.
- The UPN (update number) field is a number indicating the last update applied to the system. The range is from 0 through 99.
- The GENISS (generic issue) field is a number indicating the last load (issue) of the generic program. This value ranges from 1 through 15.
- The GENRELS (generic release number) field indicates the generic program release number and ranges from 1 through 9.
- The GENTYPE (generic type) field is the generic program type and is stored as the octal representation of an ASCII character. The decimal range for this field is from 65 through 90 (101 through 132 octal). These are ASCII characters A through Z. This field distinguishes between different operational cell generic programs and is initialized as ASCII character C (for TDA purposes only).

There are no restrictions put on the last four values for recent change. In the system, whenever a generic program tape is updated or a new one is added, the generic program issue, release, and type of the new tape are checked against those in translations. If one does not match, the tape is not loaded. Unless otherwise noted, these fields should be initialized to zero for TDA.

The following word 1 fields are applicable to System 100 MOD 1 and 2 cell sites.

- Item CELLTYPE defines the type of cell site equipment (MOD 1 or MOD 2, etc.), and ranges from 0 through 7. Currently 0 is reserved, 1 = MOD 1, and 2 = MOD 2.
- Item PORTTEST indicates whether the portable test equipment is connected to the cell site (0 = no; 1 = yes).
- Field DIVEQUIP indicates whether the optional diversity receive antenna system is equipped (0 = no; 1 = yes).



- LEGEND:**
- | | |
|--|---|
| CELLTYPE = TYPE OF CELL SITE EQUIPMENT | PORTTEST = PORTABLE TEST EQUIPMENT |
| CHT = CELL SITE HEAD TABLE | SCC = SUPERVISORY AUDIO TONE COLOR CODE
(CELL GENERICS PRIOR TO 3C00 ONLY) |
| CMAC = CONTROL MOBILE ATTENUATION CODE | UPN = UPDATE NUMBER |
| CSN = CELL SITE NUMBER | WFOM = WAIT FOR OVERHEAD MESSAGE |
| DCC = DIGITAL COLOR CODE | WRDN = NUMBER OF WORDS |
| DIVEQUIP = DIVERSITY EQUIPMENT STATUS | |
| EMIN = EXTENDED MOBILE IDENTIFICATION NUMBER | |
| GENISS = GENERIC ISSUE | |
| GENRELS = GENERIC RELEASE NUMBER | |
| GENTYPE = GENERIC TYPE | |
| LOCFCS = LOCATION EQUIPPED FACES | |
| OTMXBSY = ORIGINATION CHANNEL MESSAGE BUSY TIMES | |
| OTMXSZTR = ORIGINATION MOBILE MESSAGE BUSY TIMES | |
| OVLD = OVERLOAD CONTROL ENABLE | |
| PGMXBSY = PAGING MOBILE MESSAGE BUSY TIMES | |
| PGMXSZTR = PAGING CHANNEL MESSAGE BUSY TIMES | |

Fig. 21 — Cell Master Status Translator

4.3.3 Interpretation of Mobile Attenuation Code and Mobile Station Power Class

Provision must be made to identify the mobile-unit transmitter level associated with each face of each cell site. The CMAC (control mobile attenuation code) and VMAC (voice mobile attenuation code) indicate the mobile-unit transmitter power level for setup and voice channels, respectively. A CMAC value must be associated with each cell site, and a VMAC value must be associated with each face of each site. Classes I, II, and III signify maximum nominal transmitter power levels of 8, 4, and 0 dBW, respectively.

MA (mobile attenuation) is a positive number defined as the difference in dB between 8 dBW, and the power level at which a mobile unit of a particular MPC (mobile power class) transmits in response to a particular MA code (CMAC or VMAC). Table B shows the value of MA for every possible combination of power class and MA code.

The MPC equalization factor is a nonnegative number defined as the difference in dB between the level at which a class I mobile unit transmits in response to a particular MA code (CMAC or VMAC) and the level at which a mobile unit of another class transmits in response to the same CMAC or VMAC. Table C shows the value of the MPC equalization factor for certain combinations of power class and MA code. For any other combinations, the value is 0.

TABLE B			
MOBILE ATTENUATION CODES			
MAC	MOBILE-STATION POWER CLASS		
	I	II	III
000	0	4	8
001	4	4	8
010	8	8	8
011	12	12	12
100	16	16	16
101	20	20	20
110	24	24	24
111	28	28	28

TABLE C		
MOBILE POWER CLASS EQUALIZATION CODES		
MAC	MOBILE-STATION POWER CLASS	
	II	III
000	4	8
001	0	4

4.3.4 Cell Master Equipage Translator

Some of the fields contained in the cell master equipage translator (Fig. 22) involve detailed knowledge about the system (in a geographical or radio coverage sense), and hence would not be set or changed frequently by the personnel normally used for changing the translations data base. These values are determined by a System 100 planning team who finely tune a system into its environment at both installation time and system growth points. The fields which require this type of expert assistance to change or set are referred to as EA (expert assistance) fields. The fields which can be changed and modified by the craft personnel, as desired, are referred to as CM (craft modifiable) fields.

Normally, EA fields are placed into the ESS switch in the form of parameters. For System 100, some of this type of data has to be transmitted to the cell site and changed while the system is operating. System 100 transmits and changes this data out at the cell site through recent change procedures. Therefore, any parameters needed at the cell site are put into the cell master translators at the MTSO.

The purpose of this translator is to provide the cell with initialization information for peripheral equipment, maintenance power, and frequency thresholds. The indexing into the head table is done by cell site number. Each entry points to an auxiliary block whose fields are as follows:

- Item WRDN is the number of words in the auxiliary block.
- Item RSSIBD is the RSSI (received signal strength indicator) branch correlation difference threshold. This is the threshold used to indicate the minimum difference in signal strengths (in microvolts) received from the two diversities (two leads on an antenna) before one diversity is definitely chosen as having the stronger signal. This is determined at installation time (and therefore, is an EA field) and is input as a decimal number.
- Item VRLTI is the voice radio location time interval or the interval (in milliseconds) between signal strength measurements for location of the mobile. This is input as a decimal number with a range of 1 through 255. The default value for ODA purposes is equal to 16.
- Item RVDT is the reverse voice data time-out, or the time limit (0 through 255 seconds) waited for a data message on the reverse channel (the channel used by the mobile to communicate back to the cell site). This field is input as a decimal number.
- Item AAST is the access attempt success threshold. This is a parity check used in verifying data received in a radio message and is used to compare the number of uncorrectable reports received against the number of successful reports. This field is determined at installation and growth points, is an EA type field, and is input as a decimal number.
- Item AAFT is the access attempt failure threshold. This item is used to determine failure action on a setup radio, if exceeded. The value is determined at installation and growth points and is an EA type field.
- Item UBCHRT is the power threshold of an incoming signal before it is allowed to be processed as a message (this eliminates interference noise which may look like a message). This field is input as a decimal integer ranging from 0 through 127, determined by taking the integer part of the equation $v/.03906$, where v is measured in volts, ranging from 0 through 10. (At $v = 10$, use 127.) This field is determined at installation and growth points and is an EA type field.

- Item SIL is the system interference level threshold which is used to calibrate the signal leakage across the location radio frequency switches. This is an EA type field. The field is input as a decimal integer from 0 through 127, determined by the equation $(x + 130)/.7812$, where x is the dBm measured upon installation, ranging from -130 to -30.
- Item DDTSU is the dotting detection threshold for the setup radio transmission. This is the number of received bits needed to determine if a signal is being received. This is an EA type field, set at installation, and is input as a decimal integer.
- Item DDTVR is the same as DDTSU, except that this field is for the voice radio transmission.
- Items SU0, SU1, SU2, and SU3 are the status fields for setup radios 0 through 3 where 00 = unequipped, 11 = equipped, 10 = growth, and 01 = an illegal designation. This is a CM type field.
- Item SUCHNL1 is the setup channel number for setup radio 1. This field is input as a decimal digit ranging from 1 through 333 if in channel group A, and 334 through 666 if in channel group B. All setup and voice channel numbers are determined by the System 100 planning group and are EA type fields.
- Item SUCHNL2 is the setup channel number for setup radio 2.
- Items LC0 and LC1 are the status fields for location radios 0 and 1, respectively. These fields have the same designations as SU0.
- Item SUCHNL3 is the setup channel number for setup radio 3.
- Item RF is the status field for the test radio. It has the same units as SU0.
- Items RG0 and RG1 are the status fields for reference generators 0 and 1, respectively. These fields have the same designations as SU0.
- Item MI is the status for the measuring instruments. It has the same designation as SU0.
- Item AL is the status of the alarm interface. It has the same designation as SU0.
- Item CFEQB is the Cell Site Control Frame Equipage field. This item is a 4-bit binary field:

Bit	Name	Meaning
23	DLINK_0	Equipage of cell data link 0
22	DLINK_1	Equipage of cell data link 1
21	CNTRL_0	Equipage of cell controller 0
20	CNTRL_1	Equipage of cell controller 1.

For each of the CFEQP bits, 0 = equipped, 1 = unequipped. The value of CFEQP for a fully-equipped cell site is 0000.

- Item XVSU0 is the transmitter output value for setup radio 0, ranging from 250,000 to 4,000,000 microvolts. This is an EA type field, set during installation and growth, and input as a decimal digit.
- Items XVSU1, XVSU2, and XVSU3 are the transmitter output values for setup radios 1 through 3, respectively, and are set the same as for XVSU0.
- Items SUTRL0, SUTRL1, SUTRL2, and SUTRL3 are the setup radio transmit cable loss thresholds for setup radios 0 through 3, respectively. These items are input as decimal microvolts with a range of 250,000 to 4,000,000 microvolts. These are EA fields set during installation and growth and have a standard default of zero.
- Item BOGSU is the bog threshold for the setup radio functional tests. This field indicates the number of times the setup radio functional test fails to complete (or is "bogged

down") before the craftsperson is notified (via a TTY message sent from the cell). This is an EA field, input as a decimal number.

- Item BOGLC is the bog threshold for the location radio functional test. It is defined the same as BOGSU.
- Item BOGRD is the bog threshold for the routine diagnostics. It is defined the same as BOGSU.
- Item SUFTI is the setup radio functional test interval or the interval in seconds between performance of the setup radio functional test. This is an EA type field, input as a decimal number ranging up to 86,400 seconds.
- Item LCFTI is the location radio functional test interval, defined the same as SUFTI.
- Item TODRD is the time-of-day indicator for routine diagnostics to be performed at the cell. This is in seconds from midnight and is an EA type field. It is input as a decimal digit, ranging up to 86,400 seconds.
- The next 12 entries are used for information dealing with voice radio functional groups. Each entry is indexed by voice radio frame number (ranging from 0 through 5) and voice radio functional group within the frame (0 or 1). Each entry is an auxiliary block address. More explanation is given in the description of the auxiliary block.
- Item VRP0 is voice radio output power 0 (primary server group power). Each antenna may have up to two power levels although it may not be the same as another antenna. This is input in decimal microvolts, with the same range as XVSU0. This is an EA type field, determined at installation and growth points.
- Item ANTS is the antenna status used for diagnostics (the keyword for RC:CELEQ message is DIAGANT).
- Item VRP1 is voice radio output power 1 (secondary server group power).
- Item TCRL is the transmit return cable loss threshold with the same units as XVSU0. This is an EA type field.
- Item REPL is the return loss value from the test generator used to measure minimum signal loss across the cable to the return antenna (antenna used to receive messages from the mobile). This is measured in the same units as UBCHRT. This is an EA type field, determined during installation. The RC:CELEQ message keyword is RCL.
- Item RRL is the receive return loss threshold used to measure minimum signal loss across the return antenna. This is measured in the same units as UBCHRT. This is an EA type field, determined at installation.
- Items RFPC0 and RFPC1 are the radio frequency power control bits for SG 0 and SG 1, respectively. This field is input as a decimal digit ranging from a value of 0 (-28 dBm) through 7 (0 dBm) in increments of 4 dBm. This is a CM type field.

The voice radios at the cell site are grouped into hardware units of eight radios called a voice radio functional group. There are a maximum of two functional groups on a voice radio frame and a maximum of six frames at a cell site. The voice radio functional auxiliary block is indexed by the voice radio number. The fields (all CM types) are:

- Item FSTAT is the status of the entire functional group with the same units as SU0.
- Item WRDN is the number of words in the auxiliary block.
- Item VRCHNL is the radio transmitting channel number. This ranges from 355 through 666 if in group B, and 1 through 312 if in group A.

- Item STAT is the status of the voice radio with the same units as SU0.
- Item SCC is the Supervisory (auditory tone) Color Code associated with each voice radio. The SCC tones are 5970, 6000, or 6030 Hz, and stored as binary 00, 01 or 10, respectively in bits 12 and 13 of each word of the Voice Radio Functional Group auxiliary block. This item is valid only when cell generic 3C00 or later is installed.
- Item ANT is the number of the antenna connected to the voice radio. Voice radios 0 through 3 are connected to one antenna, and 4 through 7 to another antenna. This field is the same as explained for the ANT field in the TGN auxiliary block.
- Item SG is the server group the voice radio is transmitting over to its connecting antenna. It has the same designation as the SG field in the TGN auxiliary block.
- Item VRGCT is the voice radio group channel type. This field determines whether there are 8 or 16 channels on this VRG (VRGCT = 0 = 8 channels; = 1 = 16 channels).
- Item VG is the voice group. This item determines whether voice group 0 or 1 is being used when a cell is equipped with 16 channels. There are 8 channels per voice group.
- Field MODEL is the type of radio equipment used (00 = reserved, 01 = MOD 1, 10 = MOD 2, 11 = MOD 3).

Fields MODEL, VRGCT, and VG are called the VRGVERS (voice radio group hardware version). These fields are required to enable cell site software to determine the particular version of voice radio equipment assigned to each voice radio group. The fields are used collectively as the VRGVERS but should be input by subfield (e.g., VG = 1; VRGCT = 1; MODEL = 2).

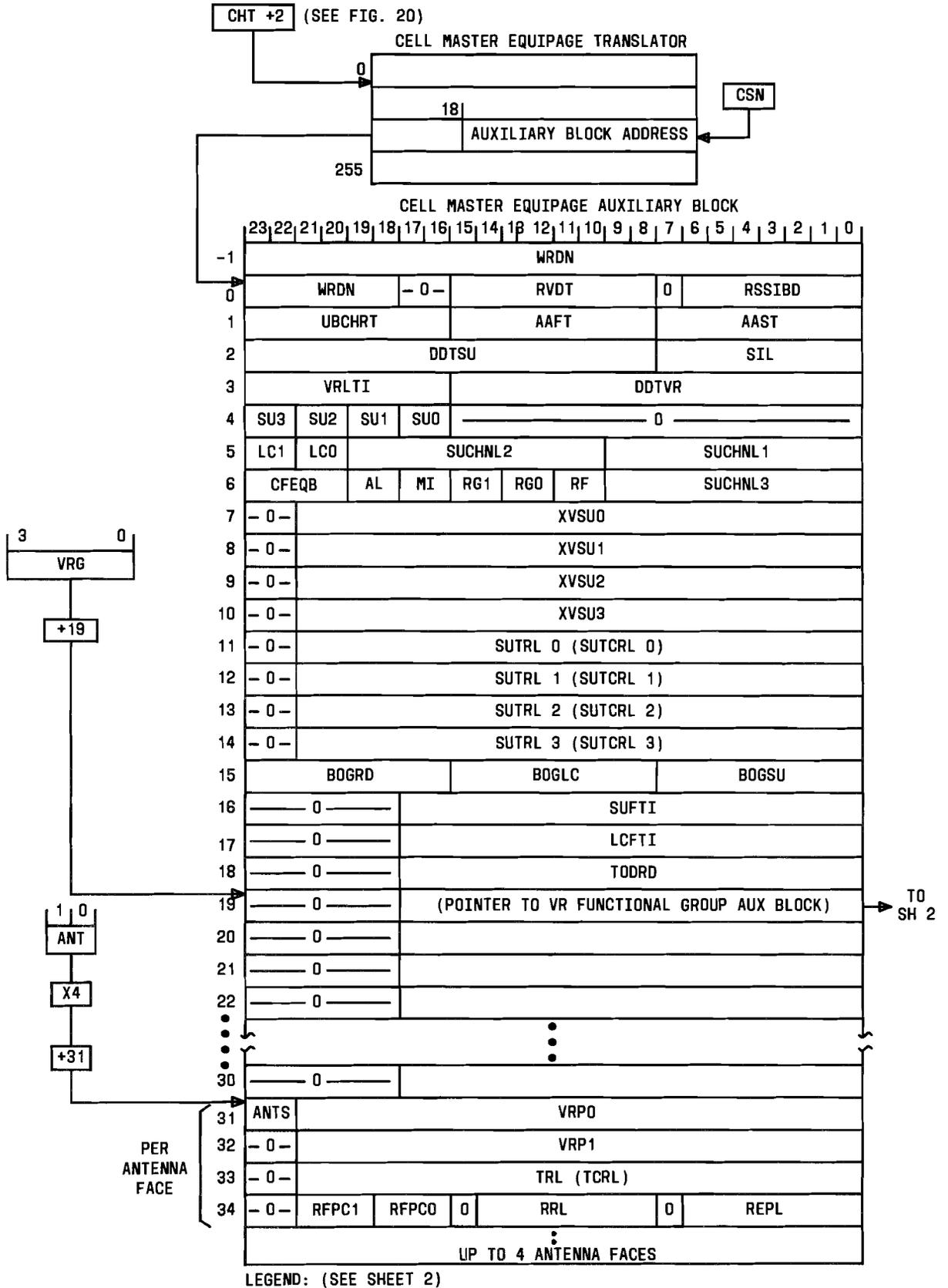
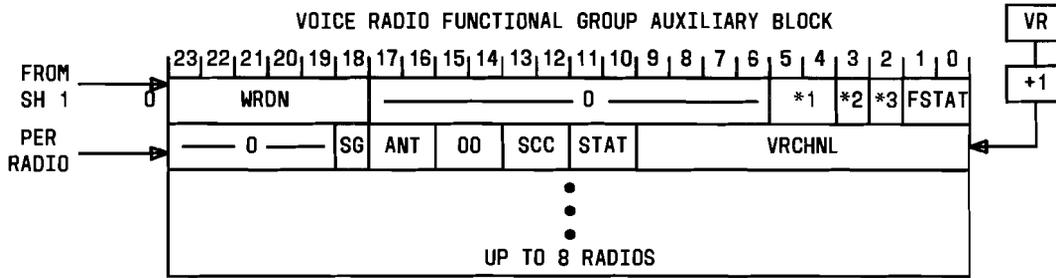


Fig. 22 — Cell Master Equipage Translator (Sheet 1 of 2)



*1 = MODEL; *2 = VRGCT; *3 = VG
 [*1, *2, & *3 = VOICE RADIO HARDWARE VERSION (VRGVERS)]

LEGEND:

- AAFT = ACCESS ATTEMPT FAILURE THRESHOLD
- AAST = ACCESS ATTEMPT SUCCESS THRESHOLD
- AL = ALARM INTERFACE STATUS
- ANT = ANTENNA NUMBER OF VOICE RADIO
- ANTS = ANTENNA STATUS FOR DIAGNOSTICS
- BOGLC = BOG THRESHOLD FOR LOCATION RADIO FUNCTIONAL TEST
- BOGRD = BOG THRESHOLD FOR ROUTINE DIAGNOSTICS
- BOGSU = BOG THRESHOLD FOR SETUP RADIO FUNCTIONAL TEST
- CFEQB = CELL SITE CONTROL FRAME EQUIPPAGE
- CHT = CELL SITE HEAD TABLE
- CSN = CELL SITE NUMBER
- DOTSU = DOTTING DETECTION THRESHOLD FOR SETUP RADIO TRANSMISSION
- DOTVR = DOTTING DETECTION THRESHOLD FOR VOICE RADIO TRANSMISSION
- FG = FUNCTIONAL GROUP
- FSTAT = FUNCTIONAL GROUP STATUS
- LCO,1 = LOCATION RADIO STATUS FIELDS
- LCFTI = LOCATION RADIO FUNCTIONAL TEST INTERVAL
- MI = MEASURING INSTRUMENTS STATUS
- MODEL = TYPE OF RADIO EQUIPMENT
- REPL = RETURN LOSS VALUE FROM TEST GENERATOR
- RF = TEST RADIO STATUS FIELD
- RFPCO,1 = RADIO FREQUENCY POWER CONTROL BITS
- RG0,1 = REFERENCE GENERATOR STATUS FIELD
- RRL = RECEIVE RETURN LOSS THRESHOLD
- RSSIBD = RECEIVED SIGNAL STRENGTH INDICATOR (RSSI) BRANCH CORRELATION DIFFERENCE
- RVDT = REVERSE VOICE DATA TIMEOUT
- SCC = SAT COLDR CODE (CELL GENERICS 3000 AND LATER)
- SG = SERVER GROUP OF VOICE RADIO
- SIL = SYSTEM INTERFERENCE LEVEL THRESHOLD
- STAT = VOICE RADIO STATUS
- SUO,3 = SETUP RADIO STATUS FIELDS (RADIOS 0-3)
- SUCHNL1-3 = SETUP RADIO STATUS FIELDS (RADIOS 0-3)
- SUFTI = SETUP RADIO FUNCTIONAL TEST INTERVAL
- SUTRL 0-3 = SETUP RADIO TRANSMIT RETURN LOSS THRESHOLD
- TRL = TRANSMIT RETURN LOSS THRESHOLD
- TODRD = TIME OF DAY FOR ROUTINE DIAGNOSTICS
- UBCHRT = INCOMING SIGNAL POWER THRESHOLD
- VG = VOICE GROUP
- VR = VOICE RADIO
- VRCHNL = VOICE RADIO TRANSMITTING CHANNEL NUMBER
- VRGCT = VOICE RADIO GROUP CHANNEL TYPE
- VRLTI = VOICE RADIO LOCATION TIME INTERVAL
- VRPO,1 = VOICE RADIO OUTPUT POWER
- WRDN = NUMBER OF WORDS
- XVSUO-3 = TRANSMITTER OUTPUT VALUE FOR SETUP RADIOS 0 THRU 3

Fig. 22 — Cell Master Equipage Translator (Sheet 2 of 2)

4.3.5 Cell Master Location Translator

The cell master location translator (Fig. 23) provides mobile signal location information to the cell site. As with the other cell master translators, the head table is indexed by the cell site number.

The cell location auxiliary block is indexed by the antenna face (0 through 3) and server group (0 and 1) as shown in Table D.

TABLE D CELL LOCATION AUX BLOCK INDEX		
LOGICAL ANTENNA FACE	ANTENNA FACE	SERVER GROUP
0	0	0
1	1	0
2	2	0
3	3	0
4	0	1
5	1	1
6	2	1
7	3	1

Each entry in the head table is a cell location auxiliary block address. The auxiliary block contains the following fields:

- Item WRDN is the number of words in the auxiliary block.
- Item LASTRY is the indicator signifying to the mobile whether or not it can be redirected to another cell site for alternate access (used when the cell cannot handle the call due to overloaded conditions) where 0 = the mobile may try again and 1 = last try.
- Item CTYPE is the type of cell (0 = single, 1 = dual).
- Item SG0 is composed of 3-bit fields needed for SG0, containing the following:
 - a. Item STYPE indicating the type of SG (0 = omni, 1 = directional).
 - b. Item SS indicating the serving/strongest indicator. This determines whether the serving logical antenna (face) or the strongest face should be used for obtaining location information (0 = use the serving face, 1 = use the strongest face).
 - c. Item SO is the strongest-only indicator, indicating, when set, that only the strongest face should be used for location candidate selection.
- Item SG1 contains the same information as SG0 for SG1.
- Item VCEQP is the field indicating which faces are equipped with voice radios. Each bit represents a face (0 through 7) with 0 = not equipped and 1 = equipped.
- Item NDSLTL is the number of times a signal level trigger is ignored during a delayed trigger state. This is used when the call is in a degraded state (the signal is weak) yet no other cell can handle the call. The signal is below the threshold strength, but the trigger to hand the call to another cell is ignored NDSLTL times. Item NDSLTL is input as a decimal digit ranging from 0 through 3. The directed retry channel offset list is input as a

list of decimal setup channel numbers (1 through 333 in group A and 334 through 666 in group B) and internally represented as a list of offsets from the setup channel number. The setup channel number is listed as SUCHNL1 in the cell master equiptage auxiliary block.

- Item DRL (directed retry list) is the list of cell site numbers the mobile is directed to for alternate cell site access. Each entry is eight bits and contains the actual cell site numbers that the mobile will be redirected to.

The rest of the cell master location auxiliary block is a list of eight pointers to cell site neighbor auxiliary blocks, indexed by the antenna face. The neighbor auxiliary block contains a list of information needed for every cell site neighbor (a cell which may take over the call that the current cell is handling). The auxiliary block contains the following fields:

- Item PRIM is the primary signal strength threshold (used to compare with the measured signal strength of the mobile radio). It is input as a decimal integer ranging from 0 through 127, where 0 is -130 dBm and 127 is -30 dBm. The rest of the integers are evenly distributed across the numerical range.
- Item SCND is the secondary signal strength threshold with units the same as PRIM.
- Item CNDLST is the minimum number of location candidates (cells to give the call to) allowed on the list which is sent to the MTSO for possible handoff. This is input as a decimal ranging from 0 through 3.
- Item INTP is the interference signal strength protection threshold used to determine if a signal is really being received on a channel or whether noise is being received. This field has the same units as PRIM.
- Item ACC is the access signal strength threshold used to measure the mobile radio signal strength upon access to the system. The units are the same as PRIM.
- Item VMAC is the voice mobile attenuation code used to tell the mobile what power level to transmit on the voice channel of the call. This is input as a decimal digit ranging from 0 through 7 and is represented the same as for CMAC in the cell master status translator.
- Item G1NGHBR is the number of group 1 neighbors. These cells are the preferred cells for handoff. These cell site neighbors are the first neighbors on the neighbor list (starting in the next word) with group 2 neighbors listed afterwards. Each cell site face may have up to a total of 12 cell site neighbors (group 1 plus group 2).
- Item NCS is the cell site number of the neighbor if ABSVID = 0 (local). If ABSVID is greater than 0, the NCS field corresponds to IMTNCS.
- Item NFCS0-NFCS3 is a 4-bit field indicating which of the antennas of the neighbor cell site are neighbor antennas. Bit 0 represents the neighbor omnidirectional antenna with bits 1, 2, and 3 representing the neighbor directional antenna. Either the omni bit or one or more of the directional bits may be set. If the neighbor is a dual cell, with one server group omnidirectional and the other directional, only one server group may be represented per neighbor entry. This means that a neighbor dual cell may be represented twice in this list if both of the server groups are neighbors.
- Item NSVG is the neighbor server group (0 = primary and 1 = secondary).
- Item NSBGRP is the subgroup number for the neighbor cell. Each of the neighbor groups as discussed in the G1NGHBR field may be further subdivided into three subgroups. This field is input as a decimal digit ranging from 0 through 2. The neighbors must be in numerical order according to subgroup number and ordered from group 1, subgroup 0 to group 2, subgroup 2.

- The CPCF (cell site power control flag) field is eight bits long, and may be set to the following values: 0 = no dynamic action, 1 = dynamic action in attenuation region only, and 2 = full dynamic action over all levels.
- The MPCF (mobile power control flag) field is eight bits long and may be set to the following values: 0 = no dynamic action, 1 = dynamic action in attenuation region only, and 2 = full dynamic action over all levels.
- The MPDIF (maximum power differential) field is a value in dB equal to the total gain ahead of a cell site voice radio receiver on the specific face minus the power that could be radiated on the specific cell site transmit antenna face if it were equipped with a programmable high power RF amplifier set for 0-dB attenuation plus the power that could be radiated by a class I mobile with 0 dB (i.e., +36 dBm) probably not to exceed 7.
- The SGPAID (server group power amplifier identifier) field indicates which power amplifier is currently used by the server group. This field is two bits long with 0 indicating a 45-watt nonprogrammable amplifier, 1 indicating a 45-watt programmable amplifier, and 2 indicating a 12-watt programmable amplifier.
- The STF (speed trending flag) field is a flag controlling the ability of the system to use speed trending to reduce real-time processing. When set (= 1), speed trending is used.
- The DPCI (dynamic power control indicator) bit, when set, indicates that the dynamic power control feature is allowed, and words 2 through 8 contain information for dynamic power control.

The following fields have been removed from the cell site neighbor auxiliary block in the 1AE9.03 generic program: HSTM, HSTC, LSTM, LSTC, HIGH, NMAL, and NCAL. Added fields for generic 1AE9.03 are:

- The CDPCWIND (cell dynamic power control window) is the value above or below the DPC target function for cell site power received at a mobile unit that defines a high and a low threshold respectively. The valid range for this field is 0 through 127 (decimal) with a default value of 15.
- The CDPCTRG (cell dynamic power control target) is the value of the DPC target function for cell site power received at a mobile unit that corresponds to a cell site transmitting at nominal power on the serving antenna face. The valid range for this field is 0 through 127 (decimal) with a default value of 0.
- The MDPCWIND (mobile dynamic power control window) is the value above or below the DPC target function for mobile unit power received at a cell site that defines a high and a low threshold respectively. The valid range for this field is 0 through 127 (decimal) with a default value of 15.
- The MDPCTRG (mobile dynamic power control target) is the value of the DPC target function for mobile unit power received at a cell site that corresponds to a class 1 mobile unit transmitting at nominal power on the serving antenna face. The valid range for this field is 0 through 127 (decimal) with a default value of 100.
- The CDPCSLOPE (cell dynamic power control slope) is an integer which corresponds to the number of 4-dB step changes in DPC target function corresponding to one 4-dB step change in the cell site transmit level. The valid range for this field is 0 through 3 with a default value of 2.
- The MDPCSLOPE (mobile dynamic power control slope) is an integer which corresponds to the number of 4-dB step changes in DPC target function corresponding to one 4-dB step change in the mobile unit transmit level. The valid range for this field is 0 through 3 with a default value of 2.

- The NG1T (neighbor group 1 target) is the number of 200 millisecond intervals the cell site will wait after transmitting a Group 1 neighbor cell location request for a neighbor cell location response. The valid range for this field is 1 through 25 with a default value of 10.
- The NG2T (neighbor group 2 target) is the number of 200 millisecond intervals the cell site will wait after transmitting a Group 2 neighbor cell location request for a neighbor cell location response. The valid range for this field is 1 through 25 with a default value of 10.
- The UPHYST (upward hysteresis adjustment) is the amount by which the signal strength must exceed an appropriate primary threshold in order for an upward handoff to occur. The valid range for this value is 0 through 127 (decimal) with a default value of 8.

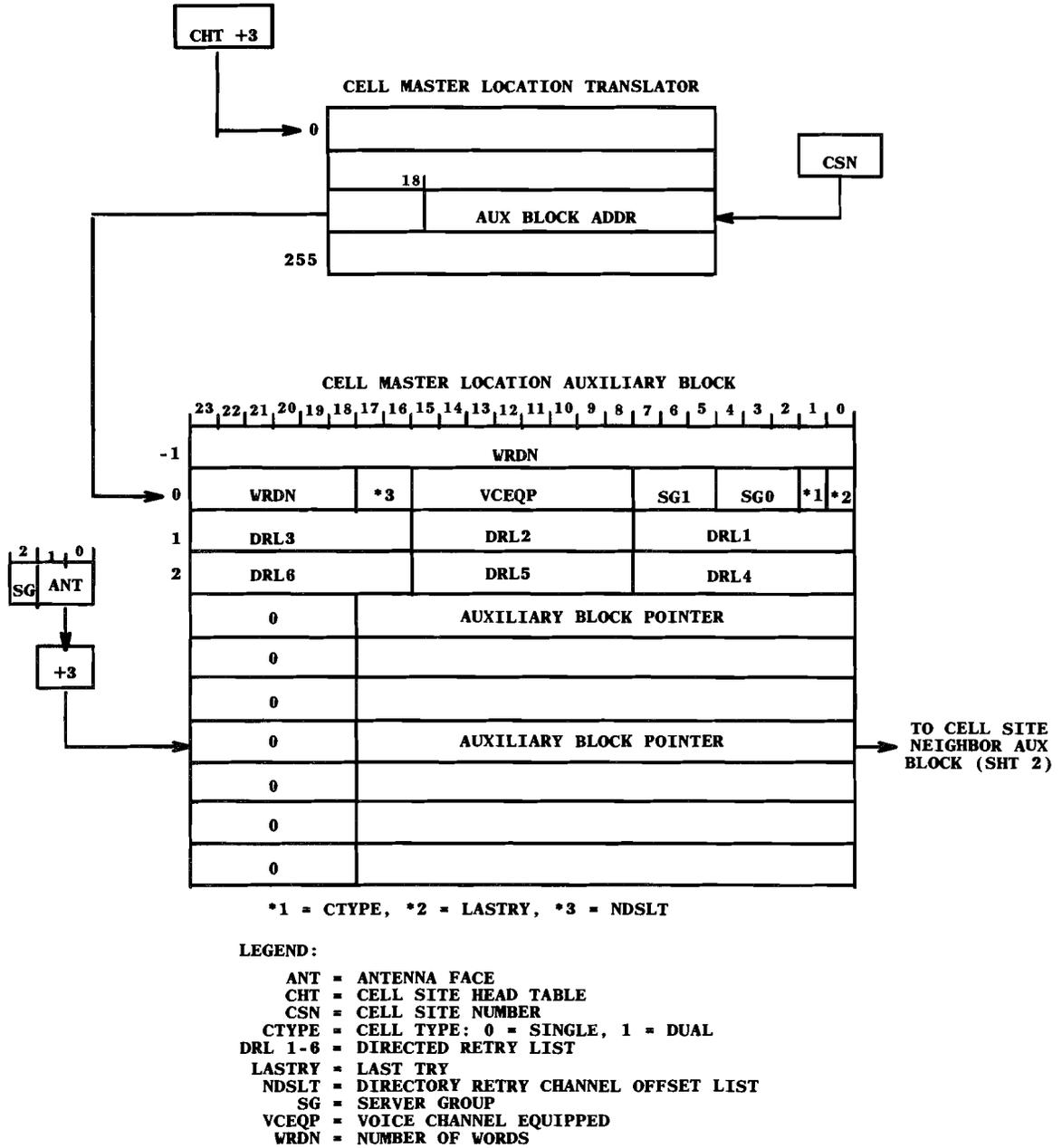


Fig. 23 — Cell Master Location Translator (Sheet 1 of 2)

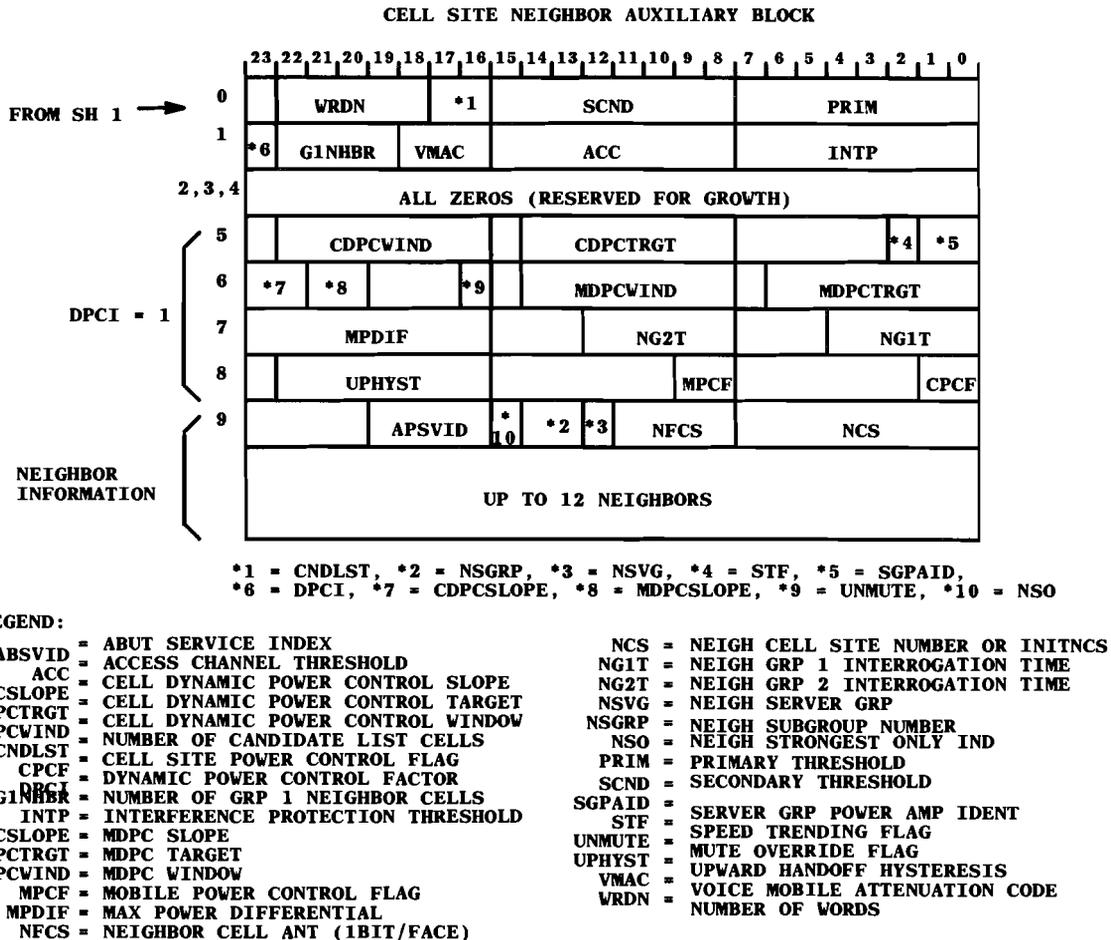


Fig. 23 — Cell Master Location Translator (Sheet 2 of 2)

4.3.6 MIN-TLDN and MIN-SDN Translators

The two Roamer II translators (MIN/TLDN and MIN/SDN translators) (Fig. 24) have identical layouts. The only difference is their location in the master head table. The MIN/TLDN translator is located at AUX MHT +58 and the MIN/SDN translator is located at AUX MHT +91.

The head tables for the two translators are indexed into the last two digits of the mobile DN before MIN encoding. The head table is a 100-word block whose entries are addresses to variable length auxiliary blocks for MINs of the same indexes. If there are no MINs assigned for that index, the head table entry equals zero and no auxiliary block is built. At TDA initialization, no MINs will yet be assigned; therefore, the head table will consist of zero entries. Up to a maximum of 100 of these auxiliary blocks will exist.

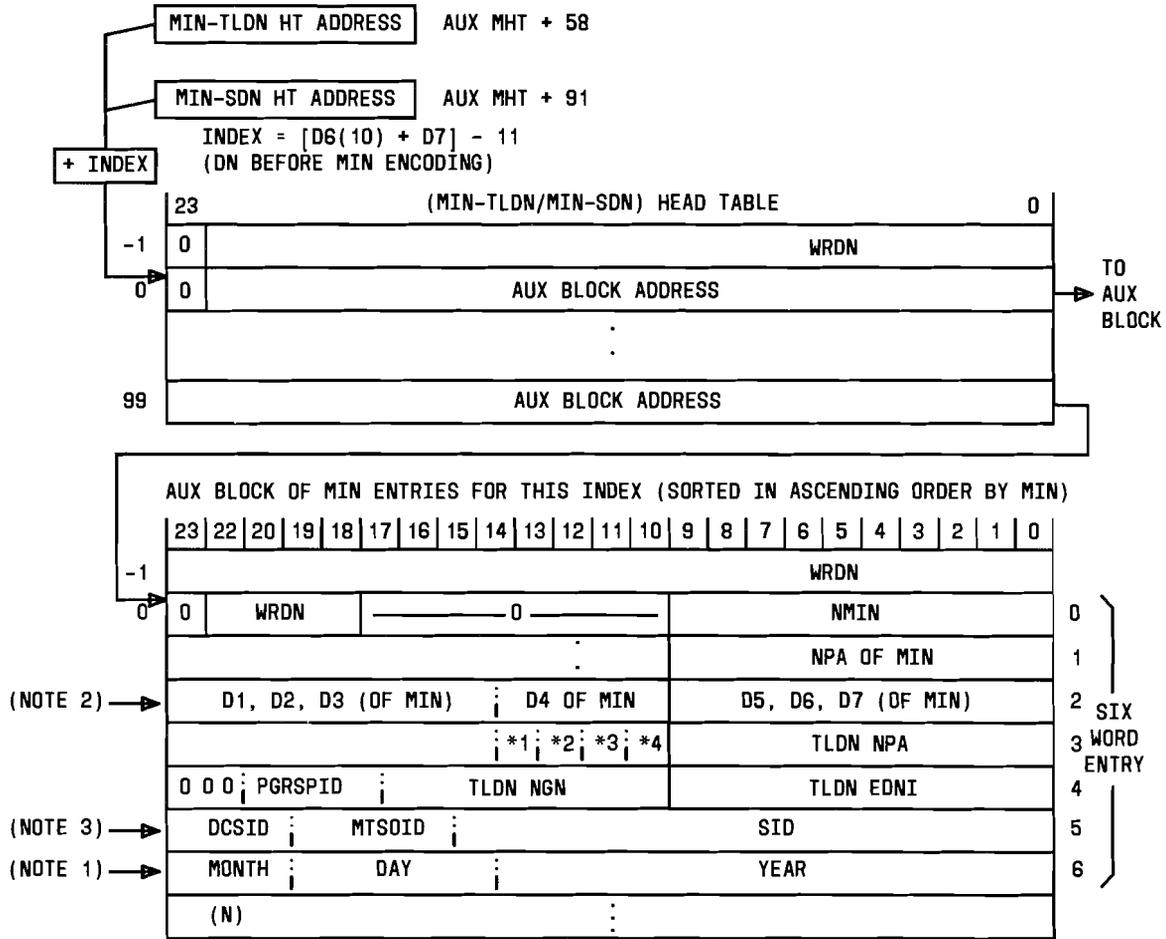
Field NMIN (bits 9 through 0) in the auxiliary block indicates how many entries are in the auxiliary block. The entries consist of five words for each MIN. The following list presents the layout of each 5-word entry:

- The first word contains the 10-bit MIN NPA ($[100(N1) + 10(N2) + N3] - 111$). When a TLDN is in the out-of-service state, this word is zeroed.
- The second word contains the 24-bit MIN. Its structure is: $[100(D1) + 10(D2) + N3] - 111$, D4, and $[100(D5) + 10(D6) + D7] - 111$. When a TLDN is in the out-of-service state, this word is zeroed.
- The third word contains the 10-bit encoded TLDN NPA. This is represented as $[100(N1) + 10(N2) + N3] - 111$. The word also contains the TLDN in-service indicator (item TISI), the call delivery indicator (item CDI), and the channel set indicator (item CSI). Item TISI, when set (= 1), indicates that the TLDN is assigned and also in service. When TISI is not set (= 0), the TLDN is assigned but is unavailable for service. Item CDI, when set (= 1), indicates that a mobile's home MTSO has been contacted to forward the mobile's calls to this TLDN. Item CGI, when set (= 1), indicates which channel set group is being used (0 = channel set B, 1 = channel set A).

Note: Item SID must match in the MIN-TLDN/MIN-SDN translators for the TLDN being used as an SDN.

- The fourth word contains the 17-bit encoded TLDN, which consists of the NGN (7 bits) and the 10-bit encoded DN index (field TLDN EDNI).
- The fifth word contains the 15-bit system identification (SID) number.
- The sixth word contains the expiration date (E4DATE). When a TLDN is in service, this date indicates when the TLDN becomes out of service. When a TLDN is out of service, this date indicates when the TLDN expires and is to be removed from the auxiliary block (bit 9 of DNCL3 in Fig. 4 is also deactivated). When the TLDN expires, the DN is removed from service (unassigned). The entries in the MIN-TLDN/ MIN-SDN translators will also be removed. If the TLDN is a roamer SDN, the date in the MIN-SDN translator can not be greater than the date in the MIN-TLDN translator. If the TLDN is being used for a home mobile's SDN, the expiration date is zeroed (because a home mobile can use this TLDN as long as it uses its home number). The expiration date is stored in the E4DATE format (for RC information).

The MIN entries in the auxiliary block are in ascending order sorted by MIN. When a TLDN is assigned, bit 9 of DNCL3 is set, the MIN is stored in the DN-SN/MIN translator, and an entry is made in the MIN-TLDN auxiliary block. If the TLDN is used as an SDN, item SDNI is also set, but instead of an entry in the MIN-TLDN auxiliary block, an entry is made in the MIN-SDN auxiliary block.



NOTES:

1. Expiration date (E4 date format). For home mobile's SDN entry, the expiration date = 0.
2. Binary encoding uses 0's as 10's.
3. For the MIN to SDN translator, the DCSID and the MTSOID in word 5 are not assigned.

LEGEND:

- *1 - PTLDN - PSEUDO TLDN
 - = 0 - NOT A PTLDN
 - = 1 - IS A PTLDN
 - *2 - TLDNST - TLDN STATUS
 - = 0 - THE ROAMER HAS NOT BEEN MADE AWARE OF THE TLDN
 - = 1 - THE ROAMER HAS BEEN MADE AWARE OF THE TLDN
 - *3 - CDI - CALL DELIVERY INDICATOR
 - *4 - TISI - TLDN IN-SERVICE INDICATOR
- AUX = AUXILIARY
 DN = DIRECTORY NUMBER
 EDNI = ENCODED DN INDEX
 HT = HEAD TABLE
 MHT = MASTER HEAD TABLE
 MIN = MOBILE IDENTIFICATION NUMBER
 NMIN = NUMBER OF MINS
 SDN = SECOND DN
 TLON = TEMPORARY LOCAL DN

Fig. 24 — MIN-TLDN and MIN-SDN Translators

5. RECENT CHANGE VERIFICATION INFORMATION

5.1 VF:AMPS Input Message

The VF:AMPS message initiates a search of the System 100 translators for specified data and, if that data which satisfies the input parameters is located, that data will be output.

Verify the contents of System 100 translators using Fig. 25 and Table E.

A VF02 start-of-job message will be output to indicate that a verification request has begun execution. A VF02 end-of-job message will be output when the verification has ended successfully. If no match is found, the VF02 end-of-job message will be output with a count of zero.

System response is a PF TACK followed by one or more of the following output messages:

- A TR116 message printing the MTSO feature information.
- A TR117 message printing the abut service identification information.
- A TR122 message printing the SN and DN of the System 100 feature when keywords DN or SN are input.
- A TR123 message printing the system-wide parameters which are broadcast from the cell to the mobile for the System 100 feature when keyword MISC is input. Effective with 1AE8A and later generic programs, the following additional fields will print:
 - a. Traffic Event Success Threshold (TEVST)
 - b. Traffic Event Failure Threshold (TEVFT)
 - c. Don't Answer Timing Interval (DAT)
 - d. Variable Voice Gain Device Indicator (VVGDI)
 - e. Simultaneous Forwarded Calls (SFC)
 - f. SAT Detect Threshold (SDT)
 - g. Global Cell Site Power Control Flag (GCPCF)
 - h. Global Mobile Power Control Flag (GMPCF)
 - i. Diversity Counter Threshold (DCT)
 - j. Skip Locate Period Value (SLPV)
 - k. Mobile Process Counter Threshold (MPCT)
 - l. Cell Site Process Counter Threshold (CPCT)
 - m. TLDN Unavailability Period (TLDNUP).
- A TR124 message printing a single (or list of) paging cell(s) or roamers which are allowed access to the system when keywords PAGE or NPA/NXX are input.
- A TR125 message printing a list of fraudulent SNs when keyword FSN is input.
- A TR126 message printing a specific data link hardware location from the logical cell site number and vice-versa when keywords IOPKC or CSN/PRI are input.

- A TR127 message printing information for the cell site to broadcast to the mobile when keywords CSN/MSTAT are input. Effective with 1AE8A and later generic programs, the following additional fields will print:
 - a. Generic Type (GENTYPE)
 - b. Generic Release Number (GENRELS)
 - c. Current Generic Issue (CGENISS)
 - d. Current Update Number (CUPDNO).
- A TR128 message printing the cell site trunking information when keywords CSN/RADN are input.
- A TR129 message printing the DN (including 1+ dialing indication) of the dedicated maintenance TTY channel to the cell site when keywords CSN/CDU are input.
- A TR130 message printing all cell site numbers having the EMIN and/or WFOM bits set when keywords CSN, EMIN/WFOM and, optionally, LIST are input. The TR130 message will print one of the following:
 - a. If LIST = YES and EMIN are input, the output will be "EMIN" followed by a list of the cell site numbers that have the EMIN bit set (word 0, bit 0 of the cell master status auxiliary block) and a count of cell site numbers with the EMIN bit set.
 - b. If LIST = NO and EMIN are input, the output will be a count of the cell site numbers found with the EMIN bit set.
 - c. If LIST = YES and WFOM are input, the output will be "WFOM" followed by a list of the cell site numbers that have the WFOM bit set (word 0, bit 1 of the cell master status auxiliary block) and a count of cell site numbers with the WFOM bit set.
 - d. If LIST = NO and WFOM are input, the output will be a count of the cell site numbers found with the WFOM bit set.
 - e. If LIST = YES, EMIN, and WFOM are input, the output will be "EMIN" and "WFOM" followed by a list of the cell site numbers that have both the EMIN and WFOM bits set and a count of cell site numbers found with both bits set.
 - f. If LIST = NO, EMIN, and WFOM are input, the output will be a count of the cell site numbers found with the EMIN and WFOM bits set.

Default for keyword LIST is "yes". Keyword CSN can be input as a single value or a range of values. Default for CSN is the entire range of possible values for the keyword. If no match is found, the output will be only a VF02 end-of-job message with a count of zero.

- A TR131 message printing the results of a search of the voice radio functional group auxiliary block of the cell master equipage auxiliary block of the input CSN for the voice radio number that:
 - a. Has a particular status (STAT) and/or;
 - b. Is associated with a particular SG and antenna face (SGANT) and/or;
 - c. Transmits and receives on a certain frequency channel (VRCH) at a cell.

The search continues through the requested range. If keyword RADN is not input, voice radio number (RADN) is formed by the index into the cell master equipage auxiliary block (frame number and functional group) appended by the index into the voice radio

functional group auxiliary block.

The TR131 output message will output one of the following:

- a. A count and list of radio numbers, and the associated data auxiliary word for each, which either transmit and receive on a certain frequency channel at a cell, and/or are associated with a particular SG and antenna face, and/or have the status of equipped or growth;
 - b. A count of radio numbers which either transmit and receive on a certain frequency channel at a cell, and/or are associated with a particular server group and antenna face, and/or have the requested status. If keyword STAT is not input, the output will reflect radio numbers with the status of equipped (STAT = 3) only. If no match is found, the output will be only a VF02 end-of-job message and count of zero. Keywords CSN, VRCH, RADN, and SGANT can be input as single values or a range of values. Default for all four keywords is the entire range of possible values for the keyword. Default for keyword LIST is "yes".
- A TR132 message printing one of the following in response to keywords CSN, ANT, and optionally, LIST:
 - a. A count and list of the (assigned) antenna face(s) followed by the four auxiliary words associated with the antenna face(s).
 - b. A count of assigned antenna faces found.

If no match is found, the output will be only a VF02 end-of-job message and count of zero. Keywords CSN and ANT can be input as a single value or a range of values. Default for the keywords is the entire range of possible values.

- A TR133 message printing data about neighbors of a cell in response to keywords CSN, SGANT, and GRP. The cell master location translator of the input CSN will be indexed by the input SG and SGANT to retrieve the address of the cell site neighbor auxiliary block. The TR133 output message includes a list of the data found in the first two words of the cell site neighbor auxiliary block plus one of the following:
 - a. If CSN, SGANT, and GRP (without data) are input, all the neighbors (group 1 and group 2) of the cell site, SG, and antenna face.
 - b. If CSN, SGANT and GRP = 1 are input, all group 1 neighbors of the cell site, SG, and antenna face.
 - c. If CSN, SGANT and GRP = 2 are input, all group 2 neighbors of the cell site, SG, and antenna face.

Keyword SGANT can be input as a single value or a range of values. Default for the keyword is the entire range of possible values for the keyword.

- If the DPCI bit is set, the following fields will print:
 - a. Cell Dynamic Power Control Window (CDPCWIND)
 - b. Cell Dynamic Power Control Target (CDPCTRGT)
 - c. Speed Trending Flag (STF)
 - d. Server Group Power Amplifier Identifier (SGPAID)
 - e. Cell Dynamic Power Control Slope (CDPCSLOPE)

- f. Mobile Dynamic Power Control Slope (MDPCSLOPE)
- g. Override Indicator (UNMUTE)
- h. Mobile Dynamic Power Control Window (MDPCWIND)
- i. Mobile Dynamic Power Control Target (MDPCTRGT)
- j. Maximum Power Differential (MPDIF)
- k. Neighbor Group 1 Interrogation Time (NG1T)
- l. Neighbor Group 2 Interrogation Time (NG2T)
- m. Upward Handoff Hysteresis (UPHYST)
- n. Mobile Power Control Flag (MPCF)
- o. Cell Site Power Control Flag (CPCF).

When Cellular Networking is implemented the following fields will print:

- a. Group Number (GRP)
 - b. Abut Service List Identification (ABSVID).
- A TR134 message printing the CSN when keywords CSN and RETRY are entered. The CSN is followed by the data from the first word of the cell master location translator plus the directed retry list. The six DRL fields which contain the CSNs that the mobile will be redirected to will be retrieved from the cell master location translator of the input CSN or range of CSNs.
 - A TR135 message printing a list of words 1 through 11 of the IOMTRANS auxiliary block for that IOUS if keyword IOUS only is input. If keywords IOUS and CHAN are both input, in addition to the above data output, the TR135 output message will print out the two data words associated with each requested channel (CHAN).
 - A TR139 message printing the cell equipage translator contents when keywords CSN and EQUIP are input.
 - A VF07 output message printing the TLDN when keyword TLDN is input. A survey will be made for the DN to determine if the DN is a TLDN. If bit 9 in DNCL3 is set, the DN is a TLDN. The DN auxiliary block is then checked to determine if the TLDN is a secondary DN by checking the SDN indicator in the DN auxiliary block. If the indicator is set, the MIN-SDN translator is used to extract the TLDN information. If the indicator is not set, the MIN-TLDN translator is used. Once the information is gathered, the VF07 message will print.
 - A VF07 message printing the MIN when keyword MIN is input. A survey will be made in the MIN-TLDN and MIN-SDN translators to gather the MIN information. Once gathered, one or two VF07 messages will print, depending upon whether a TLDN and/or SDN is assigned to the MIN.
 - A VF08 message printing the status of TLDNs. A survey will be made in the MIN-TLDN and MIN-SDN translators checking for the status of the TLDNs. If the status found matches the desired status, a VF08 message will print a list of TLDNs and/or a final count total. Existing keyword LIST will determine whether or not a successful match generates an output and/or final count total.

VF:AMPS:

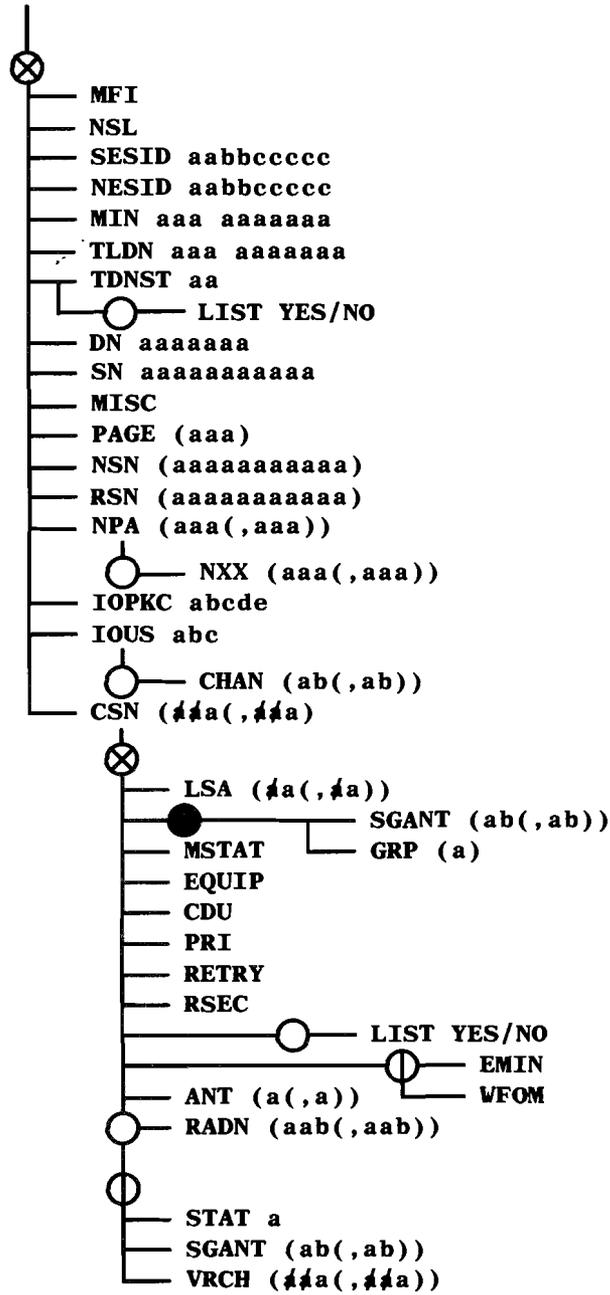


Fig. 25 — VF:AMPS Message

TABLE E	
VF:AMPS KEYWORD DEFINITIONS	
KEYWORD	DEFINITION
ANT (a,b))	Initiates search for list of data associated with a particular antenna face. Variables a and b = 0-3 where a is less than or equal to b. See output message TR130.
CDU	Requests output of the cell dialup translator. Used to obtain DN of the dedicated maintenance TTY to a cell site. See output message TR129.
CHAN (ab,(ab))	Initiates search for equipage information about IOUS and its channels. Variable a (0-1) = IOMP. Variable b (0-7) = IOUC within IOMP. See output message TR135.
CSN (a/a,(a/a))	Initiates search for information from translators which are indexed by a cell site number. Variable a = 1-255. See output messages TR126, TR128, or TR129.
DN aaaaaa	Initiates search for mobile phone serial number associated with the input DN. See output message TR122.
EMIN	Initiates search for all cell site numbers that have the EMIN bit set. See output message TR130.
EQUIP	Requests printout of first 19 words of each cell equipage translator.
GRP (a)	Initiates search for all neighbors, all group 1 neighbors, or all group 2 neighbors of a cell site. Variable a = 1 or 2 (group 1 or 2). If variable not specified, search will be for all neighbors. See output message TR133.
IOPKC abcde	Initiates search for a cell site channel number. a (0-3) = IO frame b (0-1) = IOUS c (0-1) = IOMP d (0-7) = IOUC e (0-7) = IO Group. See output message TR126.
IOUS abc	Initiates search for equipage information about IOUS. a (0-7) = IO group number b (0-3) = IO frame number within group c (0,1) = IOUS within frame. See output message TR135.
LIST YES/NO	YES = Each successful match will generate an output as well as generating the final count totals. Default equals YES if keyword is not input. NO = Only a final count will be given. Keyword LIST is not valid with RETRY, PRI, or SGANT/GRP.

TABLE E (Contd)
VF:AMPS KEYWORD DEFINITIONS

KEYWORD	DEFINITION
LSA (a(a))	Initiate search for information from the LSA to CSN translator indexed by the LSA number(s). Variable a = 0-23. See output message TR121.
MFI	Initiates display of information from the MTSO Feature Information auxiliary block. See output message TR116.
MIN aaa aaaaaa	Initiates search for all Roamer II customer data associated with the MIN (A 10-digit MIN, encoded as an NPA and a 7-digit DN).
MISC	Requests output of the System 100 auxiliary block containing miscellaneous functional capabilities and MSA data for System 100 software. See output message TR123.
MSTAT	Requests printout of the cell master status auxiliary block. See output message TR127.
NESID aabbccccc	Initiates search of the network service list matching the ABSVID of the ESID input. Variable a = DCSID (0-31), b = MTSOID (0-15), c = SID (1-32767).
NPA (aaa,(aaa))	Initiates search for NPAs of roamers which are allowed access to the system. If input without argument, the roamer service auxiliary block will be output containing all roamers allowed access to this MSA. See output message TR124.
NSL	Initiates display of Network Service List.
NSN (aaaaaaaaa)	Requests printout of network serial number auxiliary block if input without argument. If argument is used, printout is network serial number output only if an exact match is found. Output message is TR125.
NXX (aaa,(aaa))	Initiates search for the encoded NPA NXXs of roamers which are allowed access to the system. NXX is valid only with NPA. See output message TR124.
PAGE (aaa)	Requests a list of paging cell sites auxiliary block if input without argument. If aaa is input, a valid paging cell site is output only if an exact match is found. Variable a = 1-255. See output message TR124.
PRI	Initiates search for the IOP K-code associated with an existing cell site number which will be converted to a cell site channel number. See output message TR126.
RADN (aab,(aab))	Index into the voice radio functional group auxiliary block. Variable aa (00-11) = voice radio group. Variable b (0-7) = voice radio number. See output messages TR128 and TR131.
RETRY	Requests directed retry list which will be output as cell site numbers. See output message TR134.

TABLE E (Contd)	
VF:AMPS KEYWORD DEFINITIONS	
KEYWORD	DEFINITION
RSEC	Routing Service for Emergency Calls. See output message VF23.
RSN (aaaaaaaaa)	Requests printout of roamer serial number auxiliary block if input without argument. If argument is used, printout is roamer serial number output only if an exact match is found. Output message is TR125.
SESID aabbcccc	Initiates search for information from the Cell Site Neighbor Auxiliary block matching the ABSVID of the ESID input. Variable a = DCSID (0-31), b = MTSOID (0-15), c = SID (1-32767). See output message TR117.
SGANT (ab,(ab))	Initiates search for list of radio numbers which are associated with a particular server group and antenna face. Variable a (0,1) = server group, b (0-3) = antenna face. See output messages TR131 and TR133.
SN (aaaaaaaaa)	Requests printout of all entries of the roamer serial number list if input without argument. If argument is used, printout is roamer serial number that is on the roamer serial number list and will be output only if an exact match is found. Output message is TR125.
STAT a	Initiates search for all radios within a voice radio functional group with status equal to variable a. Variable a = 0 = unassigned, 1 = future use, 2 = growth, 3 = equipped. See output message TR131.
TDNST aa	Initiates search for all TLDNs with the requested status. Status is determined using the TLDN in-service indicator and TLDN expiration date. Available status includes IN (in-service and the TLDN is assigned), EX (TLDN in-service but has reached its expiration date and should be made available), AV (TLDN ready for reuse), UN (unavailable for service but TLDN assigned), RE (TLDN made known (revealed) to roamer, and PT (assigned pseudo TLDN).
TLDN aaa aaaaaa	Initiates search for all Roamer II customer data associated with the TLDN (A 10-digit TLDN, encoded as an NPA and a 7-digit DN).
VRCH (a a(b b))	Initiates search for the radio number which transmits and receives on a certain channel at a cell site. Variables a and b (0-666) = channel numbers. Variable a must be less than or equal to b. See output message TR131.
WFOM	Initiates search for all cell site numbers that have the WFOM bit set. See output message TR130.

5.2 VF:TNNSVY Input Message

The existing VF:TNNSVY message is changed for System 100 to allow a search for loop-around trunks and to allow the TR14 output message to print the System 100 optional words.

Verify System 100 radio number and MTSO loop-around trunk group data using Fig. 26 and Table F.

System response is a PF TACK followed by a TR14 message including the following System 100 TNN data:

- The voice radio number
- The voice radio group
- The 1- to 3-digit radio channel number (CHN), or zeros
- The other TNN if a System 100 MTSO loop-around trunk group exists; otherwise, all zeros.

Note: The information in subparagraphs (a) and (b) above is equivalent to the RADN (radio number) for the System 100 feature. If an MTSO loop-around TG (trunk group) is found, subparagraphs (a) and (b) are zero.

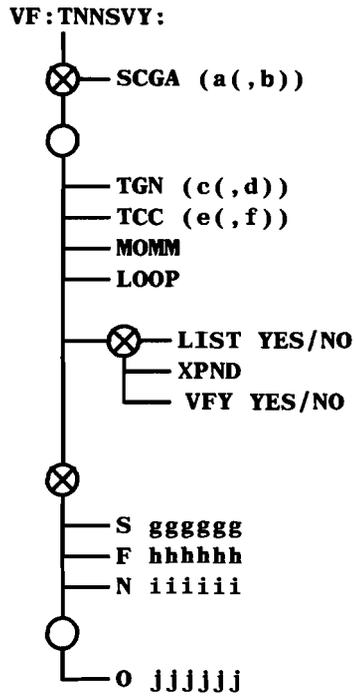


Fig. 26 — VF:TNNSVY Message

TABLE F	
VF:TNN SVY KEYWORD DEFINITIONS	
KEYWORD	DEFINITION
SCGA (aaaa (,bbbb))	Lists TNNs assigned to SCG (software carrier groups) specified by variables a and b (0-4095).
TGN (ccc c(ddd d))	Restricts survey of TNNs to TGNs specified by variables c and d.
TCC (eee e(fff f))	Restricts survey of TNNs to TCCs specified by variables e and f.
MOMM	Match on mismatch. Only the mismatching comparisons of the input parameters will be identified and/or counted. Omission of this keyword allows identifying and/or counting only the matching comparisons. If keywords TGN and TCC are input, MOMM will apply to TCC only. Keyword MOMM is not applicable for LOOP.
LOOP	Restricts the survey of TNNs to loop-around trunks.
LIST YES/NO	If YES, an output of each successful match and final count totals are generated. If NO, an output for each match is not generated. A total count of all successful matches is generated.
XPND	Initiates an expanded verify consisting of the universal trunk circuit number points.
VFY YES/NO	If YES, indicates a full verify output. If NO, only TNNs will be printed which satisfy the requested input parameters.
S gggggg	Surveys the single TNN specified by variable g.
F hhhhhh	Surveys TNNs on a frame starting with the TNN specified by variable h through the last TNN on the frame.
N iiiiii	Surveys TNNs on a network starting with the TNN specified by variable i through the last TNN on the network.
O jjjjjj	Surveys TNNs in an office starting with the TNN specified by variable j through the last TNN in that office.

5.3 VFY-TKGN Input Message

Verify System 100 TGN data by inputting:

VFY-TKGN-aa bbb.

aa = 14 = Requests a single TGN verification.

aa = 07 = Requests verification of all TGNs when bbb is 001.

bbb = Number (000 through 999) used to specify the TG for which verification is requested.

System response should be an OK TACK followed by a TR10 message which includes the following System 100 TGN data:

- System 100 SG
- Antenna number (ANT)
- CSN.

5.4 VFY-TNN Input Message

Verify System 100 TNN information by inputting:

VFY-TNN-aa bb c d e f.

aa = 04 = Verify all TNNs on a trunk switch frame.

aa = 11 = Verify one TNN.

bb = Trunk link network (00 through 15).

c = Trunk switch frame (0 through 7).

d = Grid (0 through 3).

e = Switch (0 through 7).

f = Level (0 through 7).

System response is an OK TACK followed by a TR14 message containing TNN data.

5.5 VF:DNSVY Input Message

The existing VF:DNSVY message is changed for System 100 to allow a search for the following information:

- Whether or not the DN is being used as a TLDN
- Whether or not the TLDN is being used as an SDN
- Whether or not a System 100 2-word option block for customer changeable CFBL/DA is included in the DN auxiliary block. If it is included, its information will be output in a VF05 or VF06 message.

Verify the System 100 DN data using Fig. 27.

The new keywords added to the VF:DNSVY message for System 100 are:

- TLDN -- Initiates a survey for DNs that are used as temporary local directory numbers.
- SDN -- Initiates a survey for TLDNs that are used as secondary directory numbers.
- CCF -- Initiates a survey for DNs whose auxiliary block contains a System 100 2-word option block for customer changeable conditional CFBL/DA.
- LSA -- Initiates a survey for DNs that have the Limited Service Area feature.
- PAS -- Initiates a survey for DNs that have the Project Accounting Service feature.
- PAG -- Initiates a survey for DNs with the Paging Option.
- PMTSO -- Initiates a survey for DNs with the Paging Option and print MTSOs to be paged.

5.5.1 Valid Keyword Combinations and Responses

A VF02 start-of-job message will be output to indicate that a verification request has begun execution. A VF02 end-of-job message will be output when the survey has ended successfully. If no match is found, the VF02 end-of-job message will be output with a count of zeros.

The existing keyword LIST will determine whether or not a successful match generates an output message and/or a final count. A NO input with TLDN and SDN can be used to determine whether or not the matching/nonmatching comparisons of the input parameters will be identified and counted.

Keyword TLDN is required whenever keyword SDN is input. An analysis error will be given should a "TLDN NO, SDN YES" request be input since this is not a valid survey.

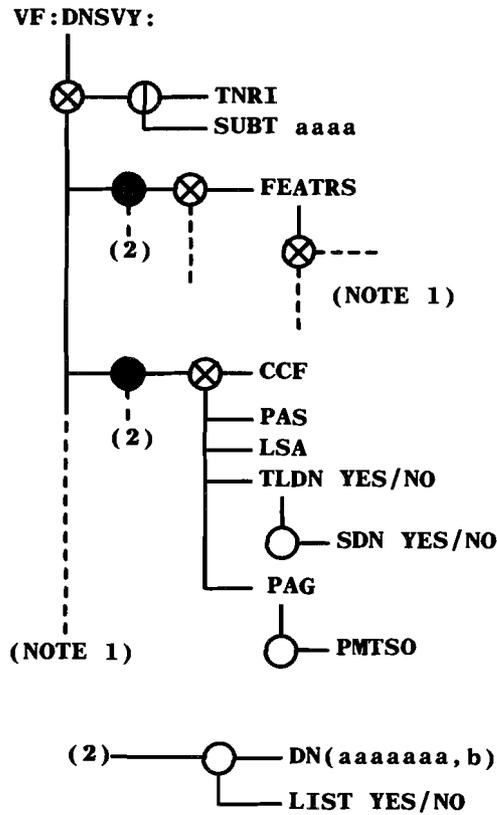
Keyword TLDN and the VFO5 Output Message: With keyword TLDN input, a survey will be made of one or more DNs in an office that are being used as temporary local DNs. For each successful match found, a VF05 message will be printed should an output be desired.

Keyword SDN and the VF05 Output Message: With keyword SDN input, a survey will be made of one or more DNs in an office that are TLDNs being used as secondary DNs. For each successful match found, a VF05 message will be printed should an output be desired.

Keyword CCF and the VF06 Message: With keyword CCF input, a survey will be made of one or more DNs in an office to determine if the DN's auxiliary block contains a System 100 2-word option block for customer changeable conditional CFBL/DA. For each successful match found, a VF06 message will be printed should an output be desired.

Output Message TR01 Modifications: The TR01 output message has two new bits assigned for System 100 to identify the customer changeable conditional CFBL/DA feature. These bits (bit 17 in DNCL2 and bit 10 in DNCL3) equal 1 if the option block is included in the DN auxiliary block.

Error Conditions: Errors caused by invalid data either input or internal to the data base will be checked for and reported using the existing error reporting methods.



NOTE:

1. Only parts of the VF:DNSVY message related to System 100 are shown. Refer to IM-6A001 for complete details of this message.

Fig. 27 — VF:DNSVY Message

5.6 Verifying CI (Carrier Interconnection) Inter-LATA Carrier Information Translations

The contents of the ICI (Inter-LATA Carrier Information) translator can be verified by use of the VF:ICSVY message. The ICI translator contains data about individual inter-LATA carriers, INCs (international carriers), or both.

5.6.1 VF:ICSVY Input Message

The VF:ICSVY input message surveys the ICI translator for a carrier, or a range of carriers, and identifies and/or counts those carriers which satisfy the input parameters.

The contents of the ICI translator can be determined using the VF:ICSVY message. See IM-6A001 for details.

6. MODIFIED STANDARD 1A ESS SWITCH RECENT CHANGE MESSAGE FORMATS

6.1 Adding, Changing, or Deleting a Trunk Group RC:TG (RCTG, PR-6A359)

Refer to Table G for keyword definitions.

6.1.1 Adding a Trunk Group to a Zone Office

Refer to Fig. 28.

Initial Conditions: The TGN translator and the TGN supplementary translator exist and the trunk group is unassigned.

Results of Message: An entry is made in the TGN subtranslator and (if needed) in the TGN supplementary subtranslator. An auxiliary block may be required for either translator. If so, it is seized, linked to the translator, and entries are made for the specified data.

6.1.2 Changing a Trunk Group (But Not Its Members) to a Zone Office

Refer to Fig. 29.

Initial Conditions: The trunk group is assigned.

Results of Message: Only the specified data is replaced.

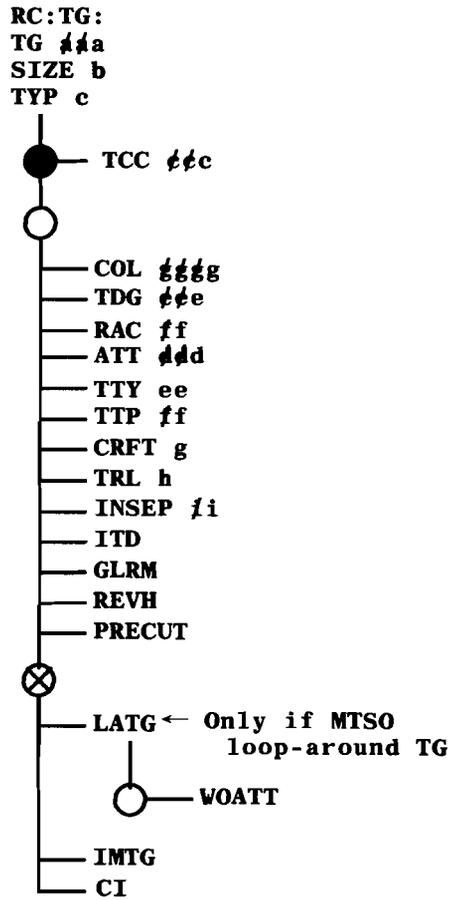


Fig. 28 — Adding a Trunk Group (RC: TG)

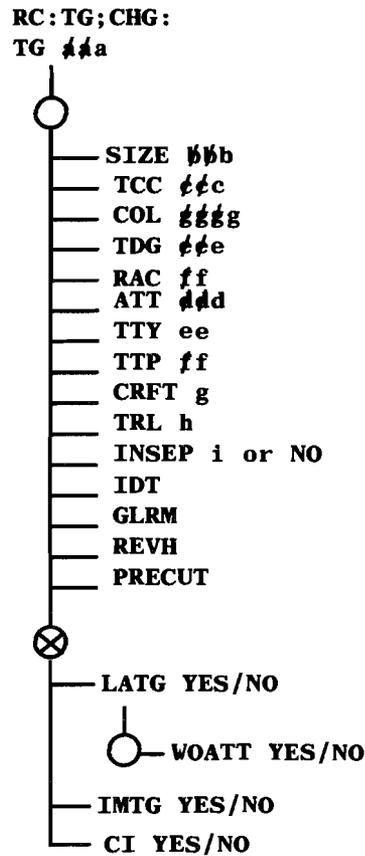


Fig. 29 — Changing a Trunk Group (RC:TG;CHG)

6.1.3 Adding a Trunk Group (Type 13) to a System 100 Cell Site

Refer to Fig. 30.

Initial Conditions: The TGN translator exists. The trunk group is unassigned.

Results of Message: The TGN translator entry is made in a PTW (primary translation word). An auxiliary block will be seized, linked to the translator, and entries made for the specified data.

6.1.4 Changing a Trunk Group (But Not Its Members) to a System 100 Cell Site

Refer to Fig. 31.

Initial Conditions: The trunk group is assigned and is a type 13.

Results of Message: Only the specified data is replaced.

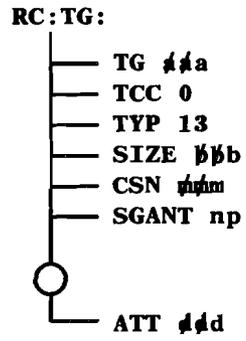


Fig. 30 — Adding a Trunk Group to a Cell Site (RC:TG)

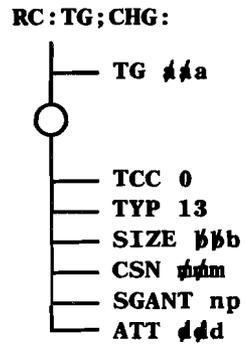


Fig. 31 — Changing a Trunk Group to a Cell Site (RC:TG;CHG)

TABLE G
RC:TG KEYWORD DEFINITIONS

KEYWORD	DEFINITION	FORM
ATT ddd	Automatic trunk test table number. Omit for incoming trunks.	ESS 1504 Cols. 28-30
CI	Trunk group used for direct connection to inter-exchange carrier	ESS 1216A/B Col. 69
CRFT g	Administrative responsibility for trunk group. Variable g = 0 or 1.	ESS 1216A/B Col. 33
GLRM	Glare Master. If set, other trunk yields.	ESS 1216A/B Col. 38
IMTG	Inter-MTSO trunk group.	ESS 1216A/B Col. 69
INSEP yi	Incoming Separation of Revenue Class.	ESS 1216A/B Col. 36
ITD	Inhibit system generated diagnostics on this trunk group.	ESS 1216A/B Col. 35
LATG	Loop-Around Trunk Group.	
PRECUT	Pre-cutover for trunk group (PKG:TCCP).	ESS 1216A/B Col. 40
REXH	Reverse Hunt. On two-way trunks, start hunt for idle trunk at bottom of list.	ESS 1216A/B Col. 37
SIZE bbb	Maximum size of trunk group. Used for 2-way trunks. This is the number of possible trunk members for which space in the TG auxiliary block is provided. Since member numbers start with 0, size is equal to 1 plus the highest member number for which space is provided in the TG auxiliary block.	
TCC ccc	Trunk Class Code. For cell site trunks, variable c must equal 0 for 1-way outgoing.	
TG aaa	Trunk Group Number	ESS 1202 Cols. 25-27

TABLE G (Contd)
RC:TG KEYWORD DEFINITIONS

KEYWORD	DEFINITION	FORM
TRL h	Transmission Reference Level (test pad reference point). Variable h = 1 for 0 dBm and h = 2 for -2 dBm reference point. Variable h = 0 (Not applicable).	ESS 1216A/B Col. 34
TTP ff	Trunk Test Position. Trunk group test panel member number.	ESS 1216A/B Cols. 28-30
TTY ee	Trunk Group Maintenance TTY Channel. Valid numbers for variable ee are 00 (local maintenance channel), 12, 13, 14, and 15.	ESS 1216A/B Cols. 31-32
TYP ꞑc	Trunk Group Type. Decimal equivalent of the 4-bit (20-17) index in translation word 1 of the TG auxiliary block that identifies a trunk type. Variable c = 2 for 2-way trunks and 13 for MTSO to cell site trunk groups.	
WOATT	Loop-around trunk group without attenuation padding.	

6.1.5 Deleting a Trunk Group to a Zone Office or Cell Site

Initial Conditions: The trunk group is assigned, but has no members (see RC:TGMEM,UNASGN).

Results of Message: The trunk group will be unassigned. If an auxiliary block was in use, it will be released.

To delete a trunk group, enter:

RC:TG;OUT: (Note)

TG aaa!

Note: A trunk group cannot be deleted until all trunk members have been deleted from it.

Verification Information: Refer to Part 5 for information to verify trunk group information.

6.2 Assigning and Moving Trunk Group Members RC:TGMEM (RCTM, PR-6A362)

Refer to Table H for keyword definitions.

6.2.1 Assigning Trunks to Trunk Group Zero

Refer to Fig. 32.

Initial Conditions: The TNN is equipped and unassigned in TNN-PEN (trunk network number to peripheral equipment number) translations.

Results of Message: Each segment builds a PTW entry in the TNN-TGN translator, assigning the trunk to trunk group zero. No verification is necessary since no record of the number of trunks is kept in trunk group zero.

6.2.2 Moving Trunks to a Trunk Group From Trunk Group Zero

Note: If the trunk has a different TCC (trunk class code), an RC:TGMEM;UNASGN: and an RC:TGMEM;ASGN: message must be used to change the TCC.

Refer to Fig. 33.

Initial Conditions: The trunks are assigned to trunk group zero and have the same TCC as the trunk group.

Results of Message: The TGN is changed in the TNN-TGN translator from zero to the number specified. If other data is specified, an auxiliary block is seized, built, and linked.

6.2.3 Moving Trunks From a Trunk Group to Trunk Group Zero

Refer to Fig. 34.

Initial Conditions: The trunks are assigned to a trunk group other than zero.

Results of Message: Each segment builds a PTW entry in the TNN-TGN translator with TG equal to zero, releasing the auxiliary block if one existed.

6.2.4 Unassigning Trunks From Any Trunk Group (Including Zero)

Refer to Fig. 35.

Initial Conditions: The trunks are assigned to a trunk group.

Results of Message: The trunk is assigned in the TNN-TGN translator. If an auxiliary block was in use, it is released.

Verification Information: Refer to Part 5 for information to verify trunk groups and TNNs.

RC: TGMEM; ASGN:

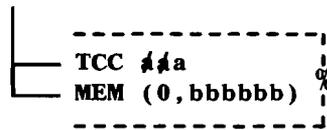
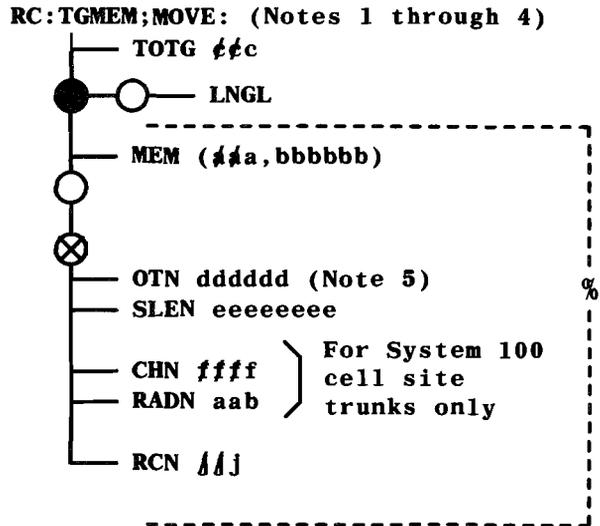


Fig. 32 — Assigning Trunks to Trunk Group Zero (RC:TGMEM)

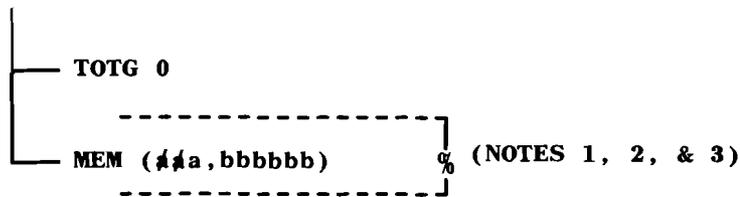


NOTES:

1. For cell site trunks only, the STAT field in the equipage auxiliary block for the radio must be equipped. CSN is derived from the TOTG input.
2. For both MTSO loop-around trunks and cell site trunks, supervision of the TCC must be 3.
3. For cell site trunks, the input TNN must already be assigned in the cell site trunking translations.
4. When a System 100 number is being added, a bit in the voice radio equipped (VCEQP) field in the cell master location translator will be set, based on the SGANT (SGANT 0 corresponds to bit 0 of VCEQP, SGANT 1 corresponds to bit 1, etc.). The VCEQP bit will be reset when the last number associated with the SGANT is deleted.
5. For MTSO loop-around trunk groups, keyword OTN must be input with a trunk number.

Fig. 33 — Moving Trunks From Trunk Group Zero (RC:TGMEM)

RC:TGMEM;MOVE:

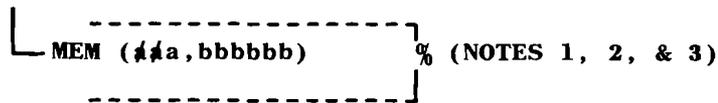


NOTES:

1. Variable a must equal zero if the trunks do not have member numbers. The member number is used to index into the selected TG's auxiliary block to find the trunk. The member number is the position of the trunk in this list. Such a list exists for 2-way trunks.
2. Every trunk removed in the same message must come from the same trunk group.
3. Before trunk can be removed, any existing TMB or CGA words must be removed using RC:TMBCGA: message, any software CGA removed with RC:SCGA, and any dynamic channel allocation words removed with RC:DCHA: message.

Fig. 34 — Moving Trunks to Trunk Group Zero (RC:TGMEM)

RC:TGMEM;UNASGN:



NOTES:

1. Variable a must equal zero if the trunk group (including trunk group zero) has no auxiliary block annex.
2. Every trunk removed in the same message must come from the same trunk group.
3. Before a trunk can be unassigned, any existing TMB, CGA, software CGA, and dynamic allocation words must be removed with RC:TMBCGA, RC:SCGA, or RC:DCHA messages.

Fig. 35 — Unassigning Trunks From Any Trunk Group (RC:TGMEM)

TABLE H		
RC:TGMEM KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
CHN <i>ffff</i>	Radio channel number the radio is using to transmit and receive. Variable <i>ffff</i> = 1-1023. Channels 800 through 990 are reserved and can not be used. See RC:VRAD message in this practice for more information on channel numbers.	ESS 1900 Cols. 36-39
LNGL	Long Lines test.	ESS 1200 Col. 62
MEM (<i>aa</i> , <i>bbbbbb</i>)	Trunk Member. Consists of member number and TNN. Variable <i>a</i> = member number. Variable <i>a</i> must equal 0 if the TG has no auxiliary block annex. In this case, TNNs are not listed in a TGN auxiliary block. Such a list exists for 2-way TGs and TGs having the busy verify feature. Otherwise <i>a</i> = 1-511. Variable <i>b</i> = the TNN.	ESS 1202 Cols. 28-30
OTN <i>dddddd</i>	Other TNN of an associated 2-wire or 4-wire pair of TNNs for MTSO loop-around trunks.	ESS 1222 Cols. 25-30
RADN <i>aab</i>	Radio Number. Variable <i>aa</i> = voice radio group number 00-11. Variable <i>b</i> = voice radio number 0-7.	ESS 1900 Cols. 21-23
RCN <i>jjj</i>	Recording Completing Number. Variable <i>j</i> = 1-511.	ESS 1206 Cols. 21-23
SLEN <i>eeeeeee</i>	Screening LEN.	ESS 1208 Cols. 31-38
TCC <i>aa</i>	Trunk Class Code	ESS 1202 Cols. 31-33
TOTG <i>cc</i>	Trunk Group Number. The trunk group (including zero) to which the trunk member is being moved.	ESS 1202 Cols. 25-27

6.3 Adding or Deleting a Thousands Group RC:NOCNOG (RCNN, PR-6A339)

Refer to Table I for keyword definitions.

6.3.1 Adding a Common Number (Thousands) Group

Refer to Fig. 36.

Initial Conditions: The Normalized Office Code/Number Group table exists. The DN head table contains at least one unassigned entry, and its corresponding entry in the left side of the NOC/NOG table is unassigned, or the input NOG is assigned as common (all ones) on the left side of the NOC/NOG table. In the right side of the table, 10 times NOC +D4 (D4 = t in the OC4 data) is unassigned.

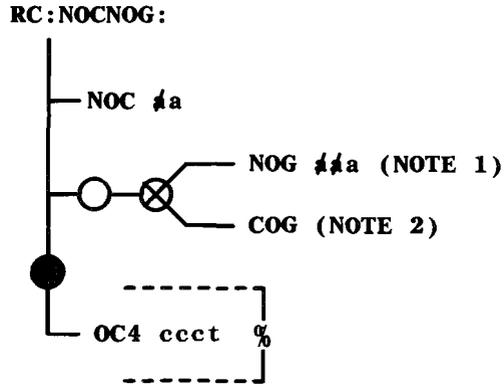
Results of Message: If the NOG entry is unassigned (all zeros) in the DN head table, its index, the NOG, is printed in an RC18 INFO output message. An RC (permanent status) containing RI 86 (blank number intercept) is placed on that DN head table entry. Two permanent RCs are placed on the NOC/NOG table: an entry of all ones on the left side and an entry containing the NOG on the right side. If the NOG is assigned as common (all ones), an entry containing the input NOG will be made on the right side.

6.3.2 Deleting a Common Number (Thousands) Group

Refer to Fig. 37.

Initial Conditions: The specified NOC +D4 (D4 = t in the OC4 data) entry in the right side of the NOC/NOG table contains an assigned common (all ones) NGN.

Results of Message: The specified NOC +D4 entry in the right side of the NOC/NOG table is unassigned (zeroed). The left side (NOG) entry will be unassigned when the last right side entry containing that NOG is unassigned.



NOTES:

1. When NOG is input, the left side entry in the NOC/NOG table must be assigned as common (all ones).
2. When COG is input, the first unassigned NOG will be assigned as a common NGN (all ones).

Fig. 36 — Adding a Thousands Group (RC:NOCNOG)

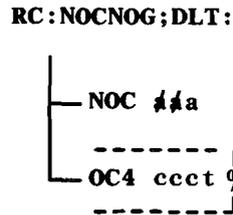


Fig. 37 — Deleting a Thousands Group (RC:NOCNOG)

TABLE I RC:NOCNOG KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
COG	Common Number Group Number.	
NOC <i>aa</i>	Normalized Office Code	ESS 1501 Cols. 22-23
NOG <i>aaa</i>	Number Group Number.	
OC4 <i>ccct</i>	Office Code and thousands digit. Variable c = office code, t = thousands digit.	ESS 1501 Cols. 25-27

6.4 Building, Changing, or Deleting IC Common Blocks and/or Carrier Routing Information RC:ICCB (RCIC, PR-1A1350)

Refer to Table J for keyword definitions.

6.4.1 Building an IC Common Block

Refer to Fig. 38.

Initial Conditions: The IC information translator head table exists and the XXX code is unassigned or marked as a changed XXX code.

Results of Message: An auxiliary block (common block) is seized and built.

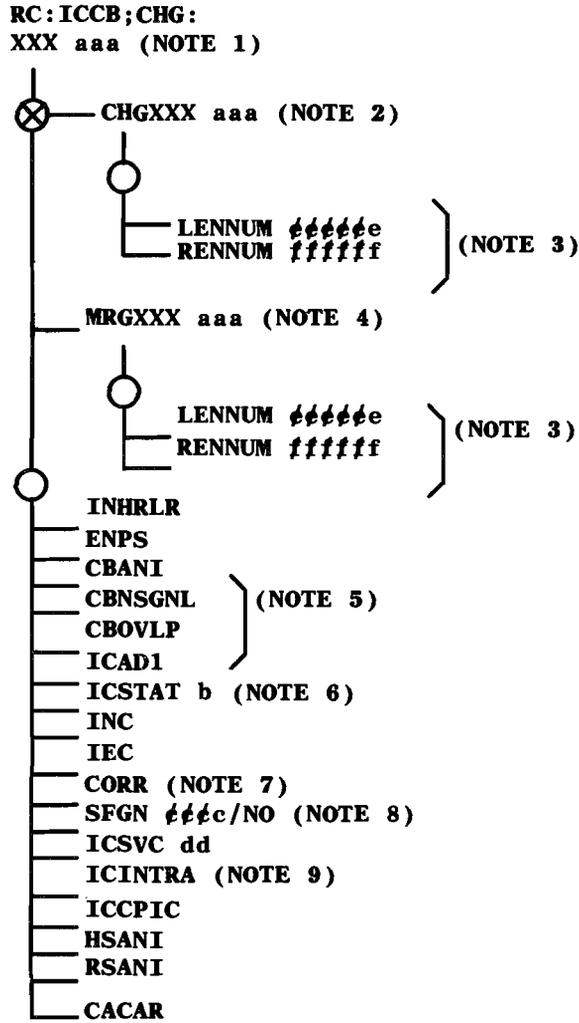
6.4.2 Changing an IC Common Block

Refer to Fig. 39.

Initial Conditions: The IC information translator head table and the common block exist.

Results of Message: Data in the common block is changed as specified.

Message Requirements and Considerations: When a carrier code is changed (CHGXXX) or merged (MRGXXX), the old carrier code is marked as a changed XXX and is, therefore, not unassigned. Instead, the common block address in the IC information translator for the old carrier code, is replaced with the BCD (binary coded decimal) carrier code of the XXX being changed to (CHGXXX) or being merged with (MRGXXX).



See notes on next sheet.

Fig. 39 — Changing an IC Common Block (RC:ICCB) (Sheet 1 of 2)

NOTES:

1. The carrier code for keyword XXX when used with MRGXXX must be assigned and may not have any routes associated with it.
2. Inputting keyword CHGXXX will move the IC common block and all associated route information to another unassigned XXX code and zero the number of LENS/RENS field in the IC common block.
3. LENNUM and/or RENNUM are required if there are lines predesignated to the carrier whose XXX code is being changed (CHGXXX) or merged (MRGXXX).
4. The carrier code for MRGXXX must be assigned and not marked as a CHGXXX.
5. CBANI, CBNSGNL, and CBOVLP with NO cannot be input if any IC routes exist.
6. If keyword ICSTAT equals 1, CBNSGNL, CBANI, and INC should not be set.
7. No routes may be present when CORR is input.
8. If SFGN is input, it must have an application of CI.
9. ICINTRA can be set only for non-INC only carriers.

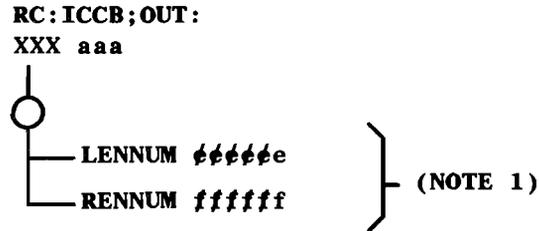
Fig. 39 — Changing an IC Common Block (Sheet 2 of 2)

6.4.3 Deleting an IC Common Block

Refer to Fig. 40.

Initial Conditions: The IC head table exists. The carrier is marked as a changed XXX code or the common block exists. The route lists must not exist.

Results of Message: The entry in the IC head table is marked as unassigned and the auxiliary block (common block), if it exists, is returned to the idle link list.

**NOTE:**

1. LENNUM and/or RENNUM are required if there are lines predesignated to the carrier whose XXX code is being deleted.

Fig. 40 — Deleting an IC Common Block (RC:ICCB)

6.4.4 Adding, Changing, or Deleting Route Lists or Route List Entry Information in the IC Common Block Route Lists

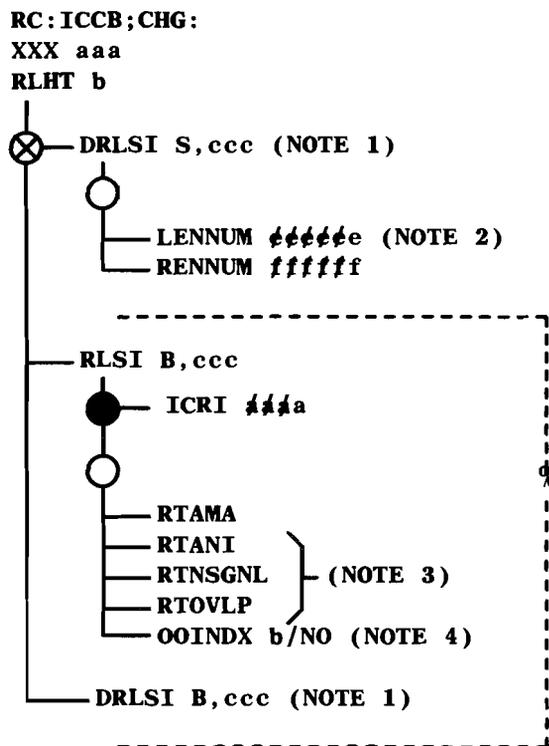
Refer to Fig. 41.

Initial Conditions: The IC information translator head table and the common block exist.

Results of Message: Data in the specified route list is built, changed, or deleted as specified. If the last route is removed from the route list, the route list is returned to the idle link list. If there are no other route lists present in the route list head table, the route list head table is returned to the idle link list. Also, the word that points to the route list head table is zeroed (unassigned).

Message Requirements and Considerations:

- (1) Originating DN IC access should always have the AMA (keyword RTAMA) bit set for noninterim carriers (keyword ICSTAT not equal to 01).
- (2) In the route list, the RI specified must be an MF, CCIS (common channel interoffice signaling), or manual transmitter type. CCIS and manual signaling require old signaling and no ANI.
- (3) For a combined carrier (i.e., an IC and INC carrier), the cut-through access route index can only be assigned in the IC primary route list.



NOTES:

1. An S input with DRLSI will remove the route list. A B input with DRLSI will remove a single route.
2. LENNUM and/or RENNUM are required if there are lines predesignated to the carrier whose route list is being deleted.
3. Keyword RTANI requires CBANI; RTNSGNL requires CBNSGNL and RTOVLP requires CBOVLP.
4. For primary route lists, OOINDX is optional only for the originating IC DN access route index, the nonoperator access route index, the operator access route index, the cut-through access route index, and the zero plus operator route index. For nonprimary route lists, OOINDX is optional for every route entry.

Fig. 41 — Adding, Changing, or Deleting Route Lists or Route List Entry Information in the IC Common Block (RC:RCCB)

TABLE J		
RC:ICCB KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
CACAR	10XXX access to this carrier is restricted to this carrier's presubscribers only.	ESS 1333 Col. 55
CBANI	IC Common Block Automatic Number Identification indicator. When turned on, indicates that automatic number identification is allowed (enables RTANI).	ESS 1333 Col. 19=A Col. 35
CBNSGNL	IC Common Block New Signaling Indicator. CBNSGNL YES = new signaling allowed for the carrier. CBNSGNL NO = old signaling allowed for the carrier (enables RTNSGNL).	ESS 1333 Col. 19=A Col. 34
CBOVLP	Common Block Overlap Indicator. When turned on, indicates overlap outpulsing is allowed (enables RTOVLP).	ESS 1333 Col. 19=A Col. 33
CHGXXX aaa	Change Carrier Designation Code. Used on a change message when a carrier changes designation codes from XXX to CHGXXX. Used to index into the IC translator head table. Variable aaa = 000-999.	ESS 1333 Col. 19=A Cols. 26-28
CORR	Corridor Traffic Indicator. When on, indicates that inter-LATA calls routed to carriers equipped to handle corridor calls will be routed as intra-LATA calls. When CORR YES is inputted, the IEC and INC indicators in the IC common block will be zeroed.	
DRLSI S, ccc or DRLSI B, ccc	Delete Route List Selector and/or Index. Variable S = selector; deletes the entire route list. Variable B = both selector and index; deletes an individual route. Variable ccc = 3 alphanumeric characters which identify which entry in the CISLID table is to be used to derive the route list selector and index into the IC information translator. The 3-character alphanumeric code must be assigned in the CISLID table.	ESS 1335 Cols. 25-27 Cols. 28-30
ENPS	Enable Non-Payer Screening (ENPS). Enables the nonpayer indicator in the supplementary LEN/REN translators. With the ENPS bit set, any call from a line that has its nonpayer indicator set that attempts to access this carrier will be blocked.	ESS 1333 Col. 19=A Col. 36

TABLE J (Contd)		
RC:ICCB KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
HSANI	Home System ANI (Automatic Number Identification)	
ICAD1	Common Block Cut-Through Option Indicator. When turned on, indicates the cut-through option is allowed.	ESS 1333 Col. 19=A Col. 32
ICCPIC	Inhibit Customer Changeable Primary Inter-LATA Carrier (ICCPIC) inputs to this inter-LATA carrier.	
ICINTRA	Intra-LATA Traffic Indicator. When turned on, indicates the carrier is able to route intra-LATA traffic (allowed only for non-INC only carriers).	ESS 1333 Col. 19=A Col. 53
ICRI a/a/a	Inter-LATA Route Index. Route index to be assigned to the input selector and index. Variable a = 0-2047.	
ICSTAT b	Common Block Transition Status Indicator. Indicates if the carrier has an interim, transition, or long-term status as follows: If = 0 - Long-term status. If = 1 - Interim status. If = 2 - Transition status.	ESS 1333 Col. 19=A Col. 31
ICSVC dd	Inter-LATA Carrier Service Indicator. Keyword ICSVC is not allowed with CHGXXX. If = 00 - In service. If = 10 - Precut out of service. If = 11 - Postcut out of service	ESS 1333 Col. 19=A Col. 25
IEC	Inter-LATA Carrier. An inter-LATA carrier without IDDD capabilities. When turned on, indicates carrier is an inter-LATA carrier.	ESS 1333 Col. 19=A Col. 29
INC	International Carrier. A non-IEC IC carrier. Can handle IDDD calls as well as NPA/NXX calls to excepted codes (world zone 1) only. When turned on, indicates carrier is an international carrier.	ESS 1333 Col. 19=A Col. 30

TABLE J (Contd)		
RC:ICCB KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
INHRLR	Inhibit Route List Routing Indicator. When turned on, enables CIW/SCIW (Call Information Word/Supplementary Call Information Word, both within the data base) routing and screening and disables route list routing (except for IC DN access routes, and 10XXX, #, 0+, 0-) for all inter-LATA calls.	ESS 1333 Col. 19=A Col. 37
LENNUM e/e/e/e/e	Number of LENSs. Number of line equipment numbers predesignated to the specified carrier. Used on out and change messages to check the number of LENSs field in the IC common block.	ESS 1333 Col. 19=A Cols. 42-47
MRGXXX aaa	Merge with another carrier designation code. Used on a change message to merge an existing carrier (XXX) with another existing carrier (MRGXXX) (i.e., "XXX" gets "changed IC" treatment to "MRGXXX"). Variable aaa = 000-999.	
OOINDX b/NO	Office Options Index. Identifies the ZZZ code entry in the office options table. Variable b = 0-3.	ESS 1333 Col. 19=1-4 Col. 33
RENNUM f/f/f/f/f	Number of RENs. Specifies the number of remote equipment numbers predesignated to the specified carrier. Used on out and change messages to check the number of RENs field in the IC common block.	ESS 1333 Col. 19=A Cols. 48-52
RLHT b	Route List Head Table. Indicates which route list head table in the IC translator is to be modified as follows: If = 0 = IC nonoperator route list head table If = 1 = IC operator route list head table If = 2 = INC nonoperator route list head table If = 3 = INC operator route list head table.	ESS 1333 Col. 19=0-3
RLSI B,ccc	Route List Selector and Index. Identifies which entry in the CISLID table is to be used to derive the route list selector and route list index into the IC information translator. The 3-character alphanumeric code must be assigned in the CISLID table.	ESS 1335 Cols. 25-27 Cols. 28-30
RSANI	Roamer System ANI (Automatic Number Identification)	

TABLE J (Contd)		
RC:ICCB KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
RTAMA	Detailed Inter-LATA AMA Record. Required for routes completing via route list entry. Valid only for originating and incoming IC DN access route indexes.	ESS 1333 Col. 19=0-3 Col. 29
RTANI	Automatic Number ID for Route List option. When turned on, indicates automatic number identification for route list entry. This bit can only be set if the corresponding bit (CBANI) in the IC common block is previously set.	ESS 1333 Col. 19=0-3 Col. 30
RTNSGNL	New Signaling for Route List option. Yes = new signaling; no = old signaling. This bit can only be set if the corresponding bit (CBNSGNL) in the IC common block is previously set.	ESS 1333 Col. 19=0-3 Col. 31
RTOVLP	Overlap Outpulsing for Route List option. Used only with new signaling. This bit can only be set if the corresponding bit (CBOVLP) in the IC common block is previously set.	ESS 1333 Col. 19=0-3 Col. 32
SFGN $\phi\phi\phi c/NO$	Simulated Facilities Group Number. The SFGN must be of carrier interconnect type (type 0). Used for traffic count when calls to this carrier are routed via a shared trunk group to an access tandem.	ESS 1333 Col. 19=A Cols. 38-41
XXX aaa	Carrier Designation Code. Used to index into the IC translator head table. Used as the XXX portion of the 10XXX carrier access code. Variable aaa = 000-999.	ESS 1333 Cols. 16-18

7. MTSO-ONLY RECENT CHANGE MESSAGE FORMATS

7.1 Building, Changing, or Deleting Entries in DN, LEN, DN-SN, MIN-TLDN, and MIN-SDN Translators RC:MOBL (RCMOAMPS, PR-6A1149)

Refer to Table K for keyword definitions.

7.1.1 Building Entries (Auxiliary Block and Abbreviated Code Data) in DN, LEN, DN-SN, MIN-TLDN, and MIN-SDN Translators

Refer to Fig. 42.

Initial Conditions: The DN and LEN are unassigned. The head tables and subtranslators (if any) for DN, LEN, DN-SN, MIN-TLDN, and MIN-SDN translators must exist or be built using general purpose RC messages before using the RC:MOBL message.

Results of Message: An entry is built in the DN-SN translator. The mobile indicator of the DN specified and the pseudo LEN (PLEN) specified will be set to indicate mobile service. An entry will be made in the MIN-TLDN/MIN-SDN translator, if required.

7.1.2 Changing Entries in DN, LEN, DN-SN, MIN-TLDN, and MIN-SDN Translators

Refer to Fig. 43.

Initial Conditions: The DN and LEN are assigned. There is an entry for the DN in the DN-SN translator head table.

Results of Message: The changes specified are made in the DN, LEN, DN-SN, and/or MIN-TLDN/MIN-SDN translators.

7.1.3 Deleting Entries in DN, LEN, DN-SN, MIN-TLDN, and MIN-SDN Translators

Refer to Fig. 44.

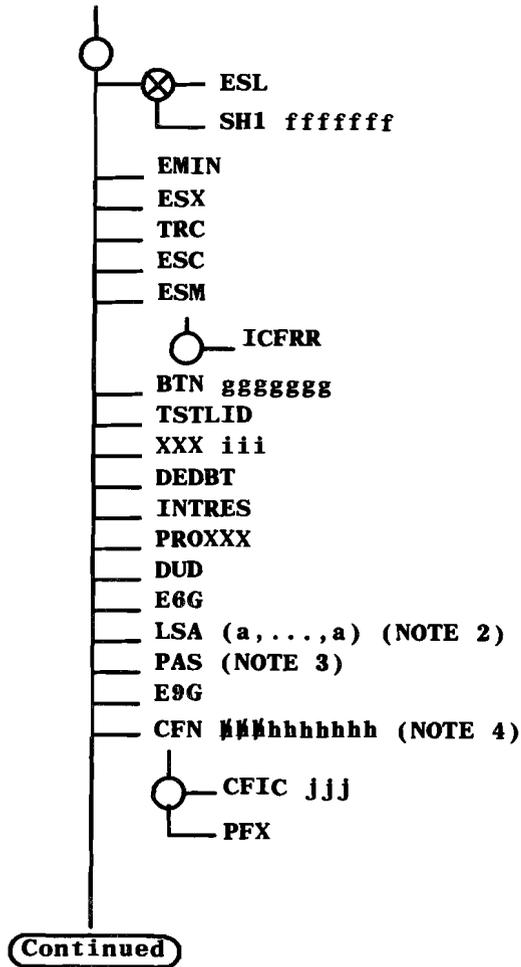
AT&T 231-218-301

Initial Conditions: The DN and LEN are assigned. There is an entry for the DN in the DN-SN head table.

Results of Message: The DN and LEN are unassigned. The specified DN's entry is removed from the DN-SN head table and/or MIN-TLDN/MIN-SDN head table.

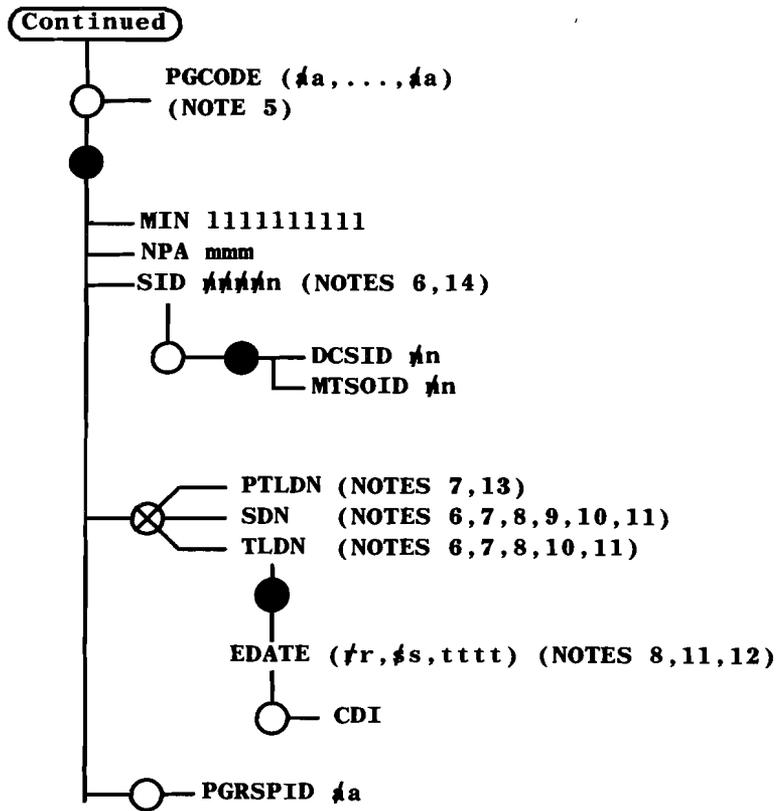
Verification Information: Refer to Part 5 for information to verify System 100 DN and SN translation data.

RC:MOBL:
 ORD ######
 PLEN aaaaaaaaa
 TN bbbbbbb
 SN cccccccccc
 PC d (NOTE 1)
 LCC eee



See notes on last sheet.

Fig. 42 — Building Entries in Mobile Line Translators (RC:MOBL) (Sheet 1 of 3)



See notes on last sheet.

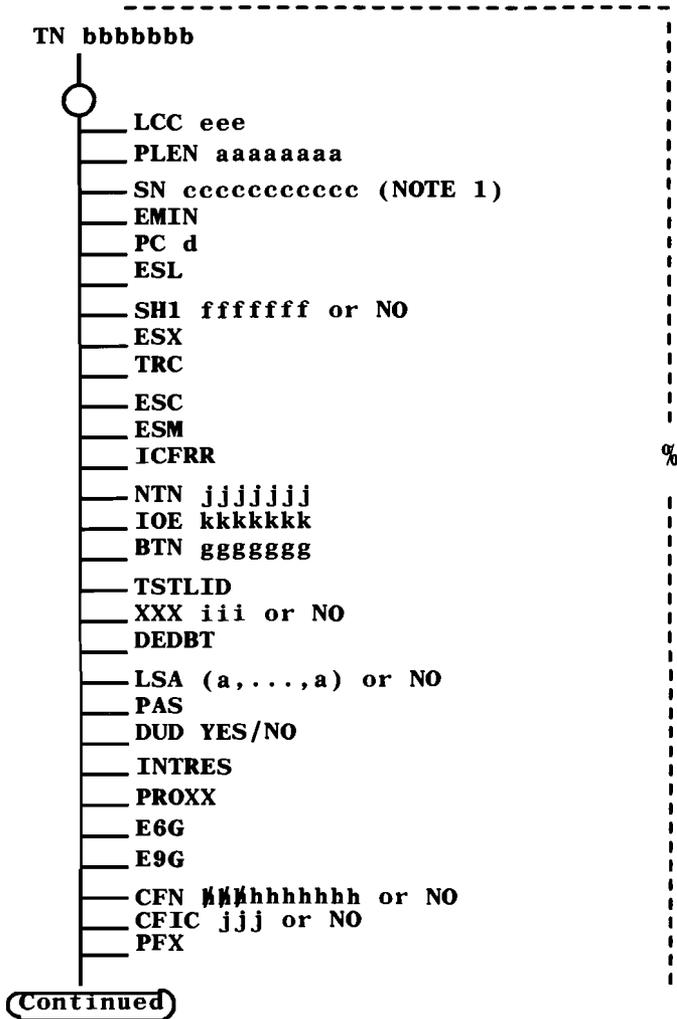
Fig. 42 — Building Entries in Mobile Line Translators (Sheet 2 of 3)

NOTES:

1. TLDNs, PTLDNs, and SDNs can have an SN of zero.
2. Available only with LSA feature.
3. Available only with PAS feature.
4. If CFN is input, E6G and/or E9G must be input.
5. Each paging code must have a corresponding entry built in the abut service list (MFI translator). Also if the bit corresponding to the paging code is already set in the PGMSTO field of the MFI, it should not be set for the DN.
6. For roamer service, an SDN cannot be assigned without a TLDN. The SID of the SDN must match the SID of the TLDN.
7. Keywords TLDN and PTLDN not allowed for home service.
8. Keywords SDN/EDATE must be less than or equal to TLDN/EDATE for roamer service.
9. An SDN must have denied origination class of service.
10. A TLDN cannot be removed without the corresponding SDN being removed (prior SDN) first.
11. When a change message is run on a TLDN or SDN line, the EDATE field will be checked for expiration. If EDATE has expired, the line will be either marked unavailable or deleted.
12. Keyword EDATE not allowed for home SDN.
13. PTLDNs cannot have associated SDN.
14. If the NPA-NXX of the MIN is on the NSL, then DCSID, MTSOID, and SID (ESID) are required and must match the corresponding entry in the Abut Service List in the MFI. It is an error if an exact match is not made or if the MFI does not exist.
If the NPA-NXX of the MIN is not on the NSL, then neither DCSID or MTSOID are required. If input, however, they must be input together, but no validity checks are made on their input values and the MFI may not exist.

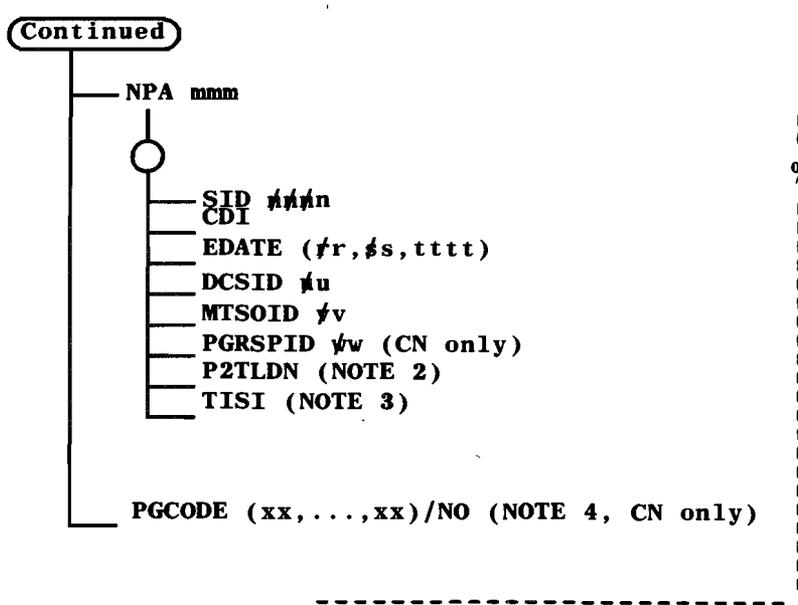
Fig. 42 — Building Entries in Mobile Line Translators (Sheet 3 of 3)

RC:MOBL;CHG:
ORD *****n



See notes on next sheet.

Fig. 43 — Changing Entries in Mobile Line Translators (RC:MOBL) (Sheet 1 of 2)



NOTES:

1. For 1AE9.02 and later, TLDNs, PTLDNs, and SDNs can have an SN of zero.
2. When using keyword P2TLDN to change a PTLDN to a TLDN, keywords NTN, PLEN, IOE, and EDATE must be input.
3. TISI can only be used to put an unavailable TLDN/SDN back in service. An EDATE greater than or equal to the current date is required.
4. Each paging code must have a corresponding entry built in the Abut Service List in the MFI translator. If the bit corresponding to the paging code is already set in the PGMTSO :field of the MFI, it should not be set for the DN.

Fig. 43 — Changing Entries in Mobile Line Translators (Sheet 2 of 2)

```
RC:MOBL:OUT
ORD *****n
-----
TN bbbbbbb
  |
  O—NPA mmm (NOTE)
-----%
```

NOTE:

1. NPA is required if the TN is a TLDN, SDN, or PTLDN.

Fig. 44 — Deleting Entries in Mobile Line Translators (RC:MOBL)

TABLE K		
RC:MOBL KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
BTN gggggggg	Billing Telephone Number.	ESS 1107 Type 00
CDI	Call Delivery Indicator. YES indicates that the mobile's home MTSO has been contacted to forward calls to a TLDN/SDN.	ESS 1907/8 Col. 44
CFIC jjj/NO	Call Forwarding Interconnection Carrier. Variable j must be assigned and must be a non-CHGXXX carrier.	
CFN yyy hhhhhhhh	Call Forwarding Telephone Number. Input as 7- or 10-digit TN.	
DCSID y n	DCS Identifier. Variable n = 0-31.	ESS 1907 Cols. 57-58
DEDBT	Nonpayment Indicator	
DUD	Don't Use Default interexchange carrier	
E6G	Call Forwarding Busy Line.	ESS 1107 Type 00
E9G	Call Forwarding Don't Answer.	ESS 1107 Type 00
EDATE (/r, /s, tttt)	Expiration Date of TLDN/SDN. Variable r = month (1-12), s = day (1-31), t = year (1983-9999). For a new message, EDATE must be greater than current date.	ESS 1907/8 Cols. 45-52
EMIN	Extended Mobile Identification Number Indicator.	ESS 1107 Type 07 Col. 44
ESL	1-Digit Speed Calling	ESS 1107 Type 00
ESC	3-Way Calling.	ESS 1107 Type 00
ESM	Call Forwarding Variable.	ESS 1107 Type 00
ESX	Call Waiting.	ESS 1107 Type 00
ICFRR	Inhibit Call Forwarding Ring Reminder.	ESS 1107 Type 00
INTRES	Inter-LATA Restriction	
LCC eee	Line Class Code. Denied origination; individual and manual allowed.	ESS 1306

TABLE K (Contd)		
RC:MOBL KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
LSA (1,.....,1)/NO	Limited Service Area. Each 1 may have a unique value of 0-23. 1 to 24 1s may be specified. Each entry is a pointer to the list of cell sites assigned to each LSA.	
MIN IIIIIIIII	Mobile Identification Number.	ESS 1907/8 Cols. 16-27
MTSOID n	MTSO Identifier. Variable n = 0-15.	ESS 1907 Cols. 59-60
NPA mmm	Numbering Plan Area of TLDN/SDN.	ESS 1907/8 Cols. 33-35
ORD nnnnnnn	Used to identify the service order associated with the RC message. The first character of the order number (m) may be a letter or a number. If a number, it can only be 0 or 1. The remaining part of the order number (nnnnnnnn) is decimal numbers (leading zeros may be omitted). If all numeric, range = 1-16777215.	
P2TLDN	Change PTLDN to TLDN.	
PAS	Project Accounting Service. Enables mobile customers to associate individual calls with different client account numbers.	
PC d	Paging Channel. Variable d = A = paging channel set to 0; d = B = paging channel set to 1.	ESS 1102 Type 07 Col. 46
PEX	Prefix Code. If YES call forwarding TN is prefixed by 1.	
PGCODE(a ,..., a)/NO	Paging Code(s) (0-15). Up to 16 paging codes may be input. All paging codes needed must be input each time this keyword is used.	ESS 1107 Type IP Cols. 40-59
PGRSPID a	Paging Response Index. Variable a = 0 to 15.	ESS 1907 Cols. 55,56
PLEN aaaaaaa	Pseudo Line Equipment Number.	ESS 1101
PROXXX	Prohibit 10XXX dialing.	ESS 1101 Col. 66
PTLDN	Pseudo TLDN	ESS 1907 Col 54
SDN	Secondary Directory Number.	ESS 1107 Type 00
SH1 fffffff	Shared 1-digit Speed Call.	ESS 1107

TABLE K (Contd)		
RC:MOBL KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
SID nnnn n	System Identification number associated with the MIN. Variable n = 1-32767.	ESS 1907/8 Cols. 28-32
SN cccccccccc	Serial Number. Input as 11 octal digits with most significant digit in range of 0-3.	ESS 1107 Type 07 Cols. 48-58
TISI	TLDN In-service Indicator. Puts unavailable TLDN/SDN back in service.	
TLDN	Temporary Local Directory Number.	ESS 1107 Type 00
TN bbbbbbb	Telephone Number.	
TRC	Call Trace.	ESS 1107 Type 00
TSTLID	Test Line Identification.	ESS 1107 Type 00
XXX iii/NO	Predesignated carrier code. Must be assigned and must be a non-CHCXXX carrier. Variable iii = 000-999.	ESS 1101 Cols. 62-64

7.2 Building, Changing, or Deleting Cell Site Trunking Data RC:CST (RCCSAMPS, PR-6A1163)

Refer to Table L for keyword definitions.

The cell site trunking translator is used to:

- a. Determine the voice trunk route index for a set of voice radios assigned to a SGANT
- b. Determine the SGANT serving a cell site voice radio
- c. Determine the TNN of the trunk connecting a voice radio to an MTSO.

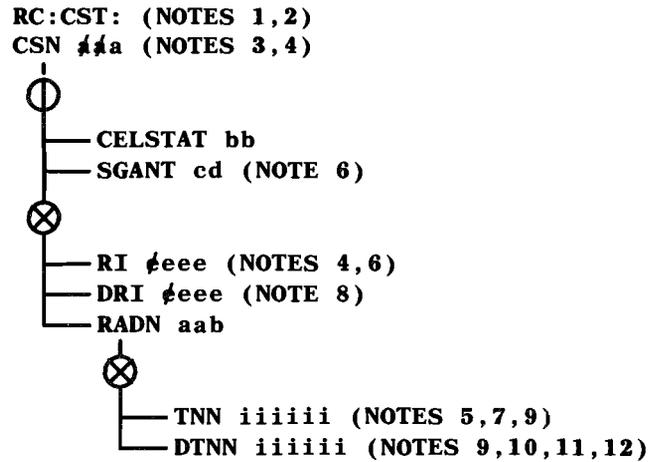
7.2.1 Building and Changing Cell Site Trunking Data

Note: In an RC:CST;CHG message, CHG is a default input.

Refer to Fig. 45.

Initial Conditions: The cell site trunking translator is assigned.

Results of Message: (a) When building the trunking translations for a new cell site, an auxiliary block of the needed length (minimum of 9 words, maximum of 106 words) will be seized and linked to the CST head table. The length of the auxiliary block will be calculated internally by the message; (b) when changing the routing information (trunking translations) for an existing cell site, the new information will be added to the existing data. If the size of the auxiliary block increases or decreases, a new block will be seized and all necessary data will be copied into the new block.

**NOTES:**

1. The size of the CST aux block is determined by the largest radio number in the block. If a radio is entered, and the block is not long enough, the block is grown for the radio being added. If the last radio in the block is being removed, the block is shrunk. If there are no radios in the block, the size is 9.
2. The number of radio (NO-RADIO) field in word 0 of the CST aux block will be incremented each time a new radio is added and decremented when a radio is deleted.
3. The cell site number cannot be greater than the length of the head table.
4. If the RI is input, the CSN must match the cell site number of the TG found in the RI expansion.

Fig. 45 — Building and Changing Cell Site Trunking Data (RC:CST) (Sheet 1 of 2)

NOTES: (Continued)

5. If TNN is input, it must be equipped (TNN/PEN translations exist) but must not be assigned to any TG other than 0.
6. If RI is input, then SGANT must match the server group antenna face of the TG found in the RI expansion.
7. The TNN cannot already exist on the list.
8. If DRI is input, the RI to be deleted must match the RI stored in the CST aux block.
9. To change a TNN in the block, the existing entry must be removed before the changed entry can be made.
10. If DTNN is input, the TNN to be deleted must match the TNN stored in the aux block.
11. If DTNN is input, the TNN being deleted must not be assigned to a nonzero TG.
12. Before the CST aux block can be removed (RC:CST;OUT) all TNNs must be removed from the block.

Fig. 45 — Building and Changing Cell Site Trunking Data (RC:CST) (Sheet 2 of 2)

TABLE I
RC:CST KEYWORD DEFINITIONS

KEYWORD	DEFINITION	FORM
CELSTAT bb	Cell Status Indicator. Variable bb = UE (stored as 00) cell is unequipped, bb = GR (stored as 10) cell is in growth state, bb = EQ (stored as 11) cell is equipped.	ESS 1900 Col. 57
CSN aa	Cell Site Number. Variable a = 1-255.	ESS 1900 Cols. 16-18
DRI eee	Delete Route Index. Used to delete an RI from the cell site trunking auxiliary block. Variable e = 201-2048.	
DTNN iiiiii	Delete Trunk Network Number. Used to delete a TNN from the CST auxiliary block.	
RI eee	Route Index. Used to assign an RI from the cell site trunking auxiliary block. Variable e = 201-2048.	ESS 1900 Item 00A Cols. 26-56
RADN aab	Radio Number. Used as an index to server group and antenna face serving a cell site, and a TNN connecting a voice radio to an MTSO. Variable a = voice radio group 00-11; b = voice radio number 0-7.	ESS 1900 Cols. 21-32
SGANT cd	Server Group Antenna. Used as an index to a voice trunk RI, or identifies the server group and antenna face serving a cell site voice radio. Variable c = 0 or 1 = server group on which mobile is to be served; d = 0-3 = antenna number. If d = 0 = omni antenna. If d = 1-3 = directional antenna.	ESS 1900 Cols. 25-26
TNN iiiiii	Trunk Network Number. Used to add or change a TNN in the CST auxiliary block.	ESS 1900 Cols. 27-32

7.2.2 Deleting an Existing Cell Site Trunking Auxiliary Block

Initial Conditions: The CST auxiliary block is assigned for the input cell site number (keyword CSN). All TNNs must be removed from the block.

Results of Message: The cell site translations for the input CSN will be unassigned and the auxiliary block will be released.

To delete data, enter:

RC:CST;OUT: (Note)

CSN ~~aaa~~!

Note: Before the CST auxiliary block can be removed, all TNNs must be removed from the block.

Verification Information: Refer to Part 5 for information to verify System 100 cell site trunking data.

7.3 Building and Changing the Miscellaneous Auxiliary Block in the System 100 Miscellaneous Information Translator RC:AMI (RCAMAMPS, PR-6A1143)

Refer to Table M for keyword definitions.

7.3.1 Building a Miscellaneous Auxiliary Block in the AMI Translator

Refer to Fig. 46.

Initial Conditions: The AMI head table is assigned.

Results of Message: The System 100 miscellaneous auxiliary block is assigned.

7.3.2 Changing the Miscellaneous Auxiliary Block in the AMI Translator

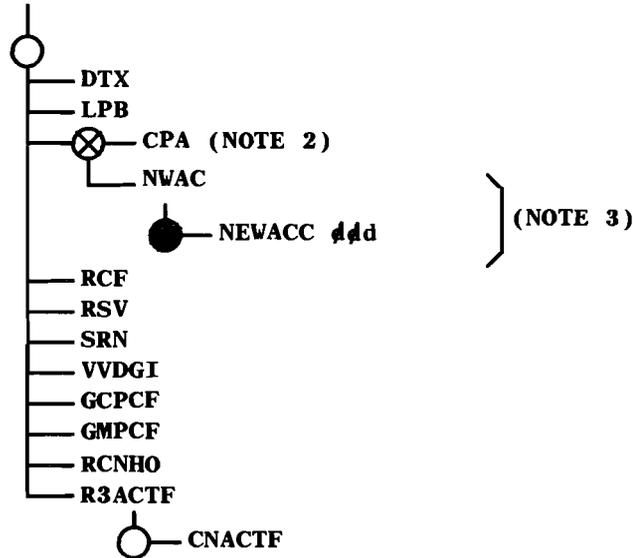
Refer to Fig. 47.

Initial Conditions: The System 100 miscellaneous auxiliary block is assigned.

Results of Message: Only the specified data is replaced.

Verification Information: Refer to Part 5 for information to verify System 100 miscellaneous data.

RC:AMI:
 CMAX *ddd*
 NPC *bb* (NOTE 1)
 SID *ccc*
 OVRITI *ee*
 LOCREQ *ff*
 CPCT *aaa*
 DAT *a*
 DCT *aaa*
 SDT *a*
 SFC *a*
 SLPV *aaa*
 TEVFT *aaaa*
 TEVST *aaa*
 TLDNVP *a*
 FGDIF *a*



NOTES:

1. NPC is input as 1 through 21, but 1 is subtracted from input value before storing in translations.
2. When CPA is set, NPC and CMAX must be equal.
3. NEWACC must be input with NWAC, and when NEWACC is input for channel set B, NEWACC plus CMAX must be less than or equal to 666. When NEWACC is input on channel set A, NEWACC minus CMAX must be greater than or equal to 0.

Fig. 46 — Building AMI Translator Data (RC:AMI)

RC:AMI;CHG:

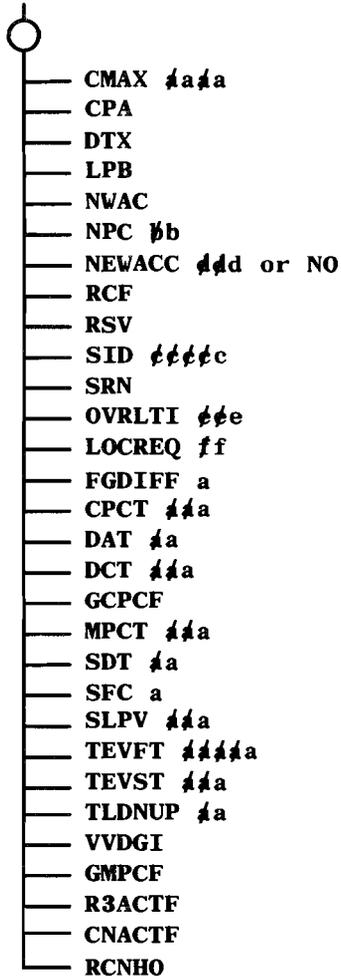


Fig. 47 — Changing AMI Translator Data (RC:AMI)

TABLE M
RC:AMI KEYWORD DEFINITIONS

KEYWORD	DEFINITION	FORM
CMAX <i>aa</i>	Maximum number of access channels the mobile must scan. Variable a = 1-127.	ESS 1906 Item 00A Cols 33-35
CNACTF	Cellular Network Activation Flag.	ESS 1906 ITEM 00A Col 52
CPA	Combined Paging and Access Channel Indicator.	ESS 1906 Item 00A Col. 28
CPCT <i>aa</i>	Cell Site Processor Counter Threshold. Variable a = 0-255.	ESS 1906 Item 00B Cols. 67-69
DAT <i>aa</i>	Don't Answer Timing Interval. Indicates length of time MTSSO waits for mobile to answer before forwarding the call. Variable a = 0-60 seconds.	ESS 1906 Item 00B Cols. 33-34
DCT <i>aa</i>	Diversity Counter Threshold. Variable a = 0-255.	ESS 1906 Item 00B Cols. 58-60
DTX	Discontinuous Transmission Indicator. Indicates whether or not a discontinuous transmitter mobile is allowed to access the system.	ESS 1906 Item 00A Col. 30
FGDIFF <i>aa</i>	Frame Gain Differential Factor. Variable a = 0-31 (1-dB increments).	ESS 1902 Item 00B Cols. 54-55
GCPCF	Global Cell Site Power Control Flag.	ESS 1906 Item 00A Col. 42
GMPCF	Global Mobile Power Control Flag.	ESS 1906 Item 00A Col. 50
LOCREQ <i>ff</i>	Location Request Limit. The maximum number of requests a cell will accept for signal strength measurements from other cells whose signal strengths have fallen below their primary signal strength threshold. Variable f = 1-15.	ESS 1906 Item 00A Cols. 50,51
LPB	Long Pages Bundling Indicator. Indicates whether or not packages of long pages should be put into a single message before broadcasting to all paging cells.	ESS 1906 Item 00A Col. 27
MPCT <i>aa</i>	Mobile Process Counter Threshold. Variable a = 0 to 255.	ESS 1906 Item 00B Col. 64-66

TABLE M (Contd)		
RC:AMI KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
NWAC	New Access Channels. Indicates that access channels start on a different channel than what is burned into the mobile.	ESS 1906 Item 00A Col. 32
NPC bb	Number of paging channels the mobile must scan. Variable b = 1-21.	ESS 1906 Item 00A Cols. 45,46
NEWACC aa /NO	New Access Channel Number. Indicates starting channel number of the new set of access channels. Variable a = 0-666.	ESS 1906 Item 00A Cols. 36-39
OVRLTI ee	Voice Radio Location Time Interval (in units of 102 milliseconds) between signal strength measurements of the mobile during overload. Variable e = 1-255.	ESS 1906 Item 00A Cols. 47-49
R3ACTF	Release 3 Activation Flag.	ESS 1906 ITEM 00A Col 53
RCF	Read Control Filler. Indicates whether or not the mobile will read the control filler word.	ESS 1906 Item 00A Col. 30
RCNHO	Restricted Cellular Networking Handoff activation flag. If YES, CN handoffs will be restricted to only those networked systems which are individually identified by their associated bit(s) being set in the subscriber's optional DN paging word. If NO, CN handoffs are not restricted and will be allowed to any networked system.	
RSV	Roamer Service Validity Checking Indicator. Indicates whether or not the function to check the DN of the roamer against the roamer service list is enabled.	ESS 1906 Item 00A Col. 26
SDT aa	SAT Detect Threshold. Variable a = 0-40. The optimum value is 13.	ESS 1906 Item 00B Cols. 37-39
SFC a	Simultaneous Forwarded Calls. Variable a = 0-7.	ESS 1906 Item 00B Col. 36
SID ccc	System Identification. Identifies the MSA. If SID is odd, the channel set is A. If SID is even, the channel set is B. Variable c = 1-32767.	ESS 1906 Item 00A Cols. 40-44
SLPV aa	Skip Locate Period Value. Variable a = 0-255.	ESS 1906 Item 00B Cols. 61-63

TABLE M (Contd)		
RC:AMI KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
SRN	Send Serial Number. Indicates to mobile to send serial number when accessing the system.	ESS 1906 Item 00A Col. 29
TEVFT aaaa	Traffic Event Failure Threshold. Variable a = 0-65535.	ESS 1906 Item 00B Cols. 28-32
TEVST aa	Traffic Event Success Threshold. Variable a = 0-255.	ESS 1906 Item 00A Cols. 50,51
TLDNUP aa	Temporary Local Directory Number Unavailability Period. Variable a = 0-60 days.	ESS 1906 Item 00B Cols. 40-41
VVDGI	Variable Voice Gain Device Indicator.	ESS 1906 Item 00B Col. 35

7.4 Adding or Deleting Cell Site Numbers From the Paging Cell Site Auxiliary Block of the AMI Translator RC:PCS (RCPAAMPS, PR-6A1151)

Refer to Fig. 48.

Refer to Table N for keyword definitions.

Initial Conditions: The cell master equipment head table exists and an auxiliary block exists for the specified CSN (keyword APCSN or DPCSN). The AMI head table exists.

Results of Message: The CSNs are added to or deleted from the list of paging CSNs in the auxiliary block.

Verification Information: Refer to Part 5 for information to verify CSNs.

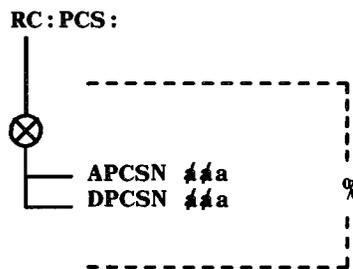


Fig. 48 — Adding or Deleting Cell Site Numbers From the AMI Auxiliary Block (RC:PCS)

TABLE N		
RC:PCS KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
APCSN ###a	Add Paging Cell Site Number. Variable a = 1-255.	ESS 1902-1 Item 00B Col. 32
DPCSN ###a	Delete Paging Cell Site Number. Variable a = 1-255.	

**7.5 Adding or Deleting Entries in the Roamer Service List Auxiliary Block of the AMI Translator
RC:RSL (RCROAMPS, PR-6A1152)**

Refer to Fig. 49.

Refer to Table O for keyword definitions.

Initial Conditions: The AMI translator head table exists.

Results of Message: For each segment specified, an NPA or NPANXX entry will be added or deleted in the roamer service list auxiliary block. If the roamer service list auxiliary block exists, it will be returned to the idle link list. If needed, a new auxiliary block will be seized. The list will be repacked when a word is zeroed.

Verification Information: Refer to Part 5 for information to verify roamer service list data.

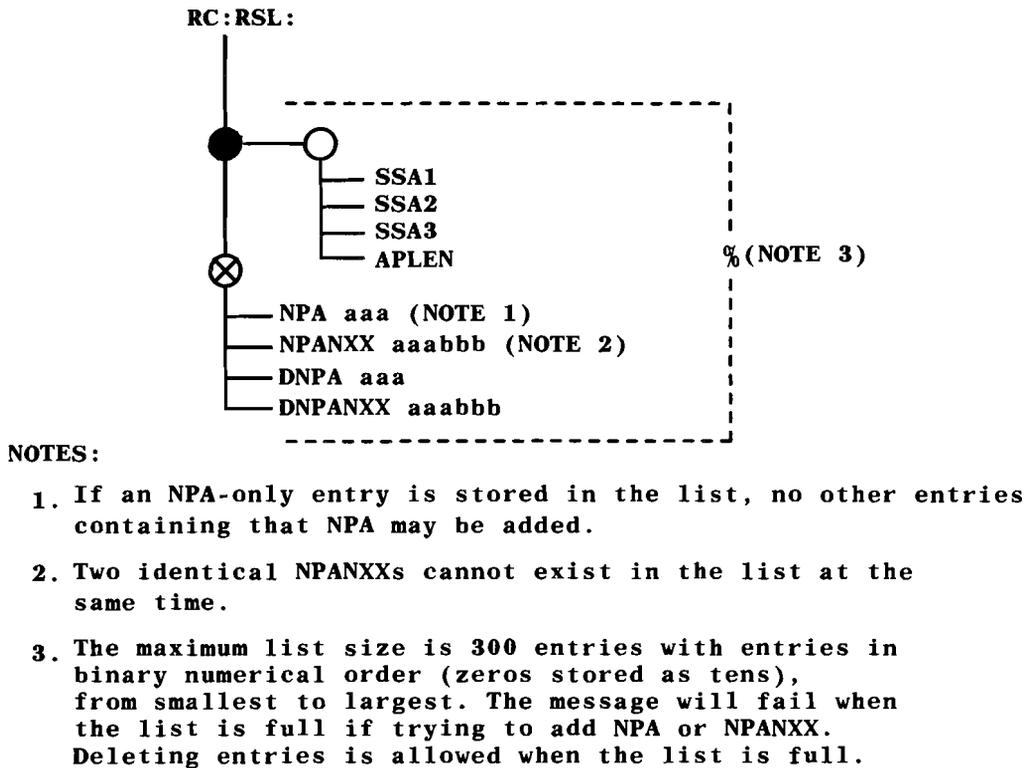


Fig. 49 — Adding or Deleting Entries in the Roamer Service List (RC:RSL)

TABLE O		
RC:RSL KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
APLEN	Alternate Pseudo LEN. If YES, associated roamer originations will use the office PLEN-3 instead of PLEN as the base pseudo LEN for originating processing. If NO, PLEN is used as the base pseudo LEN.	
DNPA aaa	Delete NPA entry.	
DNPANXX aaa bbb	Delete NPANXX entry.	
NPA aaa	Numbering Plan Area. The NPA number will be input as a decimal number.	
NPANXX aaa bbb	NPA and 3-Digit Office Code allowed within the specified NPA. The NPA NXX number will be input as a decimal number.	ESS 1507 Cols. 30-32
SSA1	Sub Service Area 1. Indicates that a roamer is assigned and associated with sub service area 1.	
SSA2	Sub Service Area 2. Indicates that a roamer is assigned and associated with sub service area 2.	
SSA3	Sub Service Area 3. Indicates that a roamer is assigned and associated with sub service area 3.	

7.6 Adding or Deleting Entries in Serial Number Lists RC:SN (RCFLAMPS, PR-6A1146)

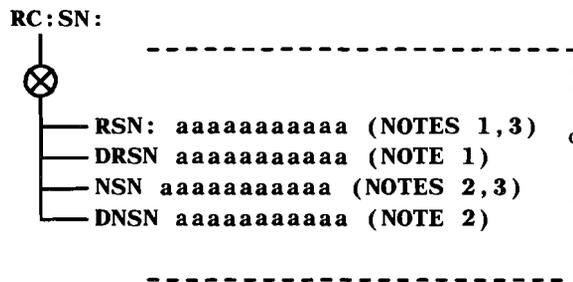
This message is used to add and delete entries in the Roamer Serial Number List, Extended Roamer Serial Number List, and the Network Serial Number List.

Refer to Fig. 50. Refer to Table P for keyword definitions.

Initial Conditions: If the IFSN feature is not operational, the fixed length (2002 words) Roamer Serial Number auxiliary block must exist. If the IFSN feature is operational, the Extended Roamer Serial Number subtranslator (256 words) must exist. If the Network Serial Number keywords are used, then the CN feature must be operational, and the Network Serial Number subtranslator (256 words) must exist.

Results of Message: For each segment specified, a serial number will be added or deleted to/from the Roamer Serial Number list or the Network Serial Number list. If the IFSN feature is operational, then entries will be added or deleted to or from the Extended Roamer Serial Number list; otherwise, the Roamer Serial Number list will be used.

Verification Information: Refer to VF:AMPS input message.



NOTES:

1. If the IFSN feature is operational, the list can have up to 2000 entries for each of the 256 possible low order byte of a serial number. If the feature is not operational, the list can have up to 1000 entries.
2. The NSN can have up to 2000 entries for each of the 256 possible low order bytes of a serial number.
3. When adding a serial number, the RC message will fail if the list is full or if the entry already exists in the list.

Fig. 50 — Adding or Deleting Entries in Serial Number Lists (RC:SN)

TABLE P		
RC:SN KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
RSN aaaaaaaaaa	Roamer Serial Number. The 32-bit serial number to be added to the roamer serial number list where a = 0000000001-3777777777.	ESS 1906 Cols. 25-35
DRSN aaaaaaaaaa	Delete Roamer Serial Number.	
NSN aaaaaaaaaa	Network Serial Number. The 32-bit serial number to be added to the network serial number list where a = 0000000001-3777777777.	ESS 1910 Cols. 25-35
DNSN aaaaaaaaaa	Delete Network Serial Number.	

7.7 Building, Changing, or Deleting Local Service Area Data in the LSA/CSN Translator RC:LSVA (RCLSAMPS)

Refer to Table Q for keyword definitions.

7.7.1 Building or Changing Local Service Area Data

Refer to Fig. 51.

Initial Conditions: The AMI head table exists. The LSA/CSN head table exists. The LSA feature is active.

Results of Message: For each segment specified, a cell site number is either added, or deleted in the LSA/CSN auxiliary block for the input LSA. A new CSN entry is inserted into the block in ascending order. A deleted CSN entry is released and the LSA/CSN auxiliary block is repacked. If an auxiliary block does not already exist for the LSA, one will be seized. If the last CSN for an LSA is removed, its auxiliary will be released and the LSA head table word will be unassigned.

7.7.2 Deleting Local Service Area Data

Initial Conditions: The LSA/CSN auxiliary block exists for the input CSN.

Results of Message: The LSA/CSN head table word for the input LSA will be unassigned and the auxiliary block (containing the CSNs associated with the LSA) will be released.

To remove the LSA, enter:

RC:LSVA;OUT:

LSA ~~aa~~!

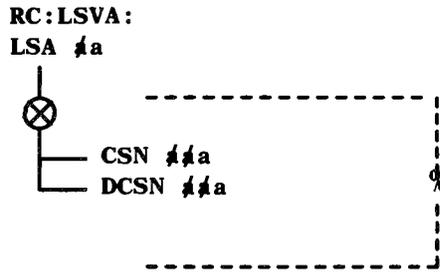


Fig. 51 — Building Local Service Area Data (RC:LSVA)

TABLE Q		
RC:LSVA KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
CSN ##a	Cell Site Number. Variable ##a = 1-255.	N/A
LSA #a	Local Service Area. Variable #a = 0-23.	
DCSN ##a	Delete Cell Site Number. Variable ##a same as above.	

7.8 Building or Deleting Emergency Call Data in the CSN/LAF to PSAP DN Translator RC:RSEC (RCECAMPS)

Refer to Table R for keyword definitions.

7.8.1 Building or Deleting Emergency Call Data

Refer to Fig. 52.

Initial Conditions: The AMI head table and the CSN/LAF subtranslator exist. The Routing Service for Emergency Calls feature is active.

Results of Message: For each segment specified, emergency call data is either added or deleted in the CSN/LAF auxiliary block. Within the auxiliary block, entries are sorted and bit optioned according to SGANT. If an auxiliary block does not exist for a CSN, one will be seized. If the last SGANT for a CSN is removed, its auxiliary block will be released and the CSN/LAF head table word will be unassigned.

7.8.2 Deleting Emergency Call Data for an Entire Cell Site

Initial Conditions: The CSN/LAF auxiliary block exists for the input cell site number.

Results of Message: The CSN/LAF head table word for the input CSN will be unassigned and the auxiliary block will be released.

To remove the Emergency Call Data for an entire cell site, enter:

RC:RSEC;OUT:

CSN ~~aa~~!

Where variable a = cell site number (1 through 255)

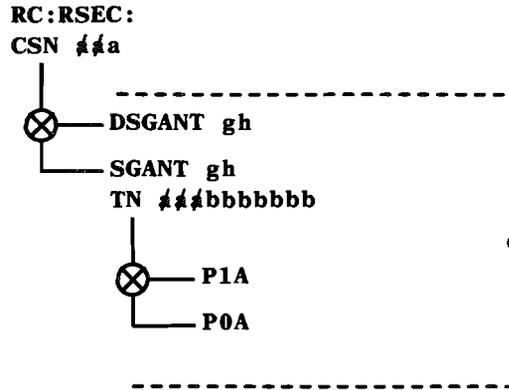


Fig. 52 — Building Emergency Call Data (RC:RSEC)

TABLE R RC:RSEC KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
CSN ##a	Cell Site number. Variable a = 1-255.	N/A
SGANT gh	Server Group Antenna Number. Variable g = 0 = primary server group; Variable g = 1 = secondary server group. Variable h = 0-3 where 0 represents an omnidirectional antenna and 1-3 represent directional antennas.	
DSGANT gh	Delete Server Group Antenna. Variables g and h same as above.	
TN ##abbbbbbb	Telephone Number of Public Service Access Point. Variable aabbbbbbb may be 1, 3, 7, or 10 digits.	
P1A	Plus 1 Access	
P0A	Plus 0 Access	

7.8.3 Adding, Changing, or Deleting MTSO Feature Information (RC:MFI)

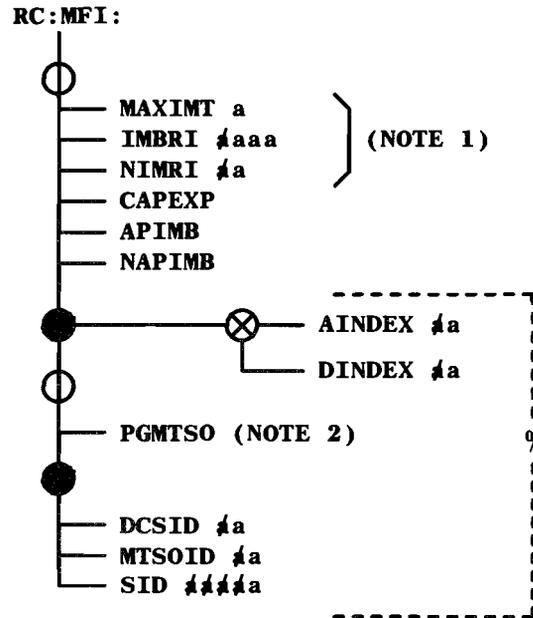
7.8.3.1 Building Entries

Refer to Fig. 53. Refer to Table S for keyword definitions.

Initial Conditions: This message is valid only when the CN feature is loaded. The AMI translator must exist or be built using general purpose RC messages before using the RC:MFI message.

Results of Message: For each segment specified, the MTSO Feature Information is added, changed, or deleted.

Verification Information: Refer to VF:AMPS input message.



NOTES:

1. MAXIMT, IMBRI, and NIMRI must be input when building a new MFI block. NIMRI is reserved for future use, but must be input with a = 0.
2. The PGMTSO bit may be set when assigning the ESID index, or after the index is already assigned. In the case where the index is assigned, the ESID keywords (DCSID, MTSOID, and SID) need not be input again in the RC:MFI message, only AINDEX and PGMTSO. The PGMTSO bit may be reset by specifying DINDEX and PGMTSO NO, only, or by deleting the ESID index in the regular manner. PGMTSO NO is not required in this case because when an index is deleted, a check is done to see if PGMTSO is set, and if so, is reset.

Fig. 53 — Building MTSO Feature Information (RC:MFI)

TABLE S		
RC:MFI KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
AINDEX <i>da</i>	Index in ABSVID list to add ESID (0-15).	ESS 1912 Cols.20-21
APIMB	API Call Processing Message Bundling.	ESS 1912 Col 26
CAPEXP	Cellular Network Capacity Expansion.	ESS 1912 Col 25
DCSID <i>da</i>	APX-10 Digital Cellular Switch Identification (0-31).	ESS 1912 Cols. 32-33
DINDEX <i>da</i>	Index in ABSVID list to delete ESID (0-15).	
IMBRI <i>daaa</i>	Base Route Index for the Inter-MTSO Trunk Group (200-2031).	ESS 1912 Cols. 28-31
MAXIMT a	Maximum Number of Inter-MTSO Trunk Groups for a single CN hand-off call (0-7).	ESS 1912 Col. 34
MTSOID <i>da</i>	MTSO Identification (0-15).	ESS 1912 Cols. 30-31
NAPIMB	API Non-Call Processing Message Bundling.	ESS 1912 Col. 27
NIMRI <i>da</i>	Number of route indices reserved for Inter-MTSO Trunk Groups (0-31).	ESS 1912 Cols. 32-33
SID <i>daaaa</i>	System Identification Number (1-32767).	ESS 1912 Cols. 25-29
PGMTSO	MTSOs to be paged on a system basis.	ESS 1912 Cols. 35-50

7.8.4 Adding, Changing, or Deleting Network Service List Information (RC:NSL)

This RC is used to input the Abut Service Index in the NSL Translator.

Refer to Table T for keyword definitions.

7.8.4.1 Building Entries

Refer to Fig. 54.

Initial Conditions: This message is valid only when the CN feature is loaded. The AMI head table and the MFI (MTSO Feature Information) must exist.

Results of Message: For each segment entered, the Abut Service information will be either inserted into or deleted from the NSL auxiliary block. If no NSL auxiliary block exists, one will be seized.

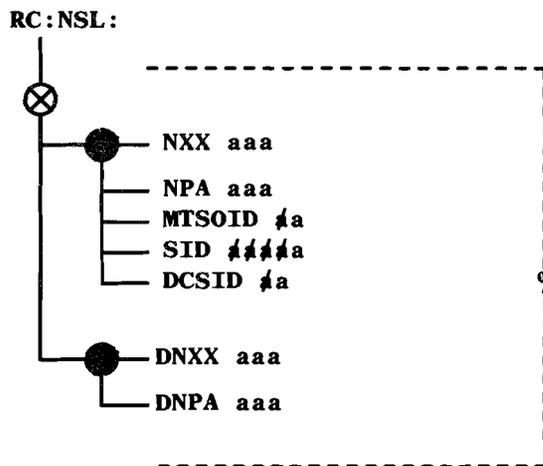


Fig. 54 — Building the Network Service List (RC:NSL)

TABLE T				
RC:NSL KEYWORD DEFINITIONS				
KEYWORD	DEFINITION	FORM		
NXX aaa	Office Code.	ESS	1911	Cols. 21-23
NPA aaa	Numbering Plan Area.	ESS	1911	Cols. 18-20
DCSID <i>aa</i>	APX-10 Digital Cellular Switch Identification (0-31).	ESS	1912	Cols. 32-33
MTSOID <i>aa</i>	Mobile Telephone Switching Office Identification Number (0-15).	ESS	1912	Cols. 30-31
SID <i>aaaa</i>	System Identification Number (1-32767).	ESS	1912	Cols. 25-29
DNXX aaa	Delete Office Code.			
DNPA aaa	Delete Numbering Plan Area.			

7.9 Building or Deleting IOP KCODE-Cell Channel Number Data RC:IOP (RCIOAMPS, PR-6A1147)

Refer to Table U for keyword definitions.

7.9.1 Building IOP KCODE-Cell Channel Number Data

Refer to Fig. 55.

Initial Conditions: The IOP KCODE-cell channel number translator exists. The cell master equipage auxiliary block exists for the cell channel number.

Results of Message: The cell channel number is added to the IOP KCODE left portion of the table. The IOP KCODE is added to the right portion of the IOP KCODE table.

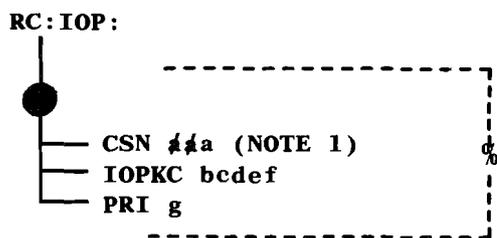
7.9.2 Deleting IOP KCODE-Cell Channel Number Data

Refer to Fig. 56.

Initial Conditions: The data being removed must be built in the translator and it must be identical to the values already input.

Results of Message: The CSN is removed from the left portion of the table. The IOP KCODE is removed from the right portion of the IOP KCODE table.

Verification Information: Refer to Part 5 for information to verify IOP KCODE and cell channel number data.



NOTE:

1. The existing data in the IOP KCODE cell channel number translator for the CSN field must be unassigned or the new message will fail. A nonzero CSN value indicates that there is currently data for that CSN and it must be removed (using RC:IOP;OUT:.) before new data can be added.

Fig. 55 — Building IOP KCODE-Cell Channel Number Data (RC:IOP)

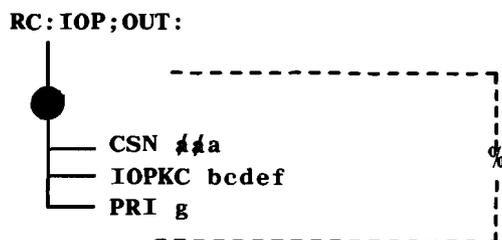


Fig. 56 — Deleting IOP KCODE-Cell Channel Number Data (RC:IOP)

TABLE U		
RC:IOP KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
CSN aa a	Cell Site Number. Variable a = 1-255.	ESS 1902 Cols. 16-18
IOPKC bcdef	Input/Output Processor KCODE. b = 0-3 = Frame (contains two IOUs); c = 0 or 1 = IOUS (controls two IOMPs); d = 1 = IOMP (controls eight IOUCs); e = 0-7 = IOUC (controls one data link); f = 0-7 = IO group (contains two IO frames).	ESS 1902 Item 00C Cols. 35-39 or 40-44
PRI g	High Priority Data Link Indicator. g = 0 indicates high priority; g = 1 indicates low priority.	ESS 1902 Item 00C Cols. 35-39 or 40-44

7.10 Building, Changing, or Deleting IOM (Input Output Member) Translator Data RC:IOMT (RCIMAMPS, PR-6A1173)

Refer to Table V for keyword definitions.

7.10.1 Building IOM Auxiliary Blocks

Refer to Fig. 57.

Initial Conditions: Eight consecutive scan points, starting at the scan point relating to the peripheral bus, must be assigned. The CPD for keyword CPADR must exist in the CPDN translator. The IOUS must be unassigned.

Results of Message: An auxiliary block is built for the specified IOUS.

7.10.2 Changing IOM Auxiliary Blocks

Refer to Fig. 58.

Initial Conditions: The IOM auxiliary block exists for the input IOUS.

Results of Message: The IOM auxiliary block for the input IOUS is changed.

7.10.3 Deleting IOM Auxiliary Blocks

Initial Conditions: The IOM auxiliary block exists for the input IOUS.

Results of Message: The IOUS auxiliary block for the input IOUS is deleted.

To delete an auxiliary block, enter:

RC:IOMT;OUT:

IOUS abc!

Verification Information: Refer to Part 5 for information to verify IOM translator data.

```

RC:IOMT:
IOUS abc
MP1 aa
IOUSTAT aa } (NOTE 1)
LDI n
PPU nnn
PUBSCNPT aa bb cc
PUBMDPMT abcde
CPADR abcde
IOC8 aa
IOC9 aa
IOC10 aa
IOC11 aa
IOC12 aa
IOC13 aa
IOC14 aa
IOC15 aa

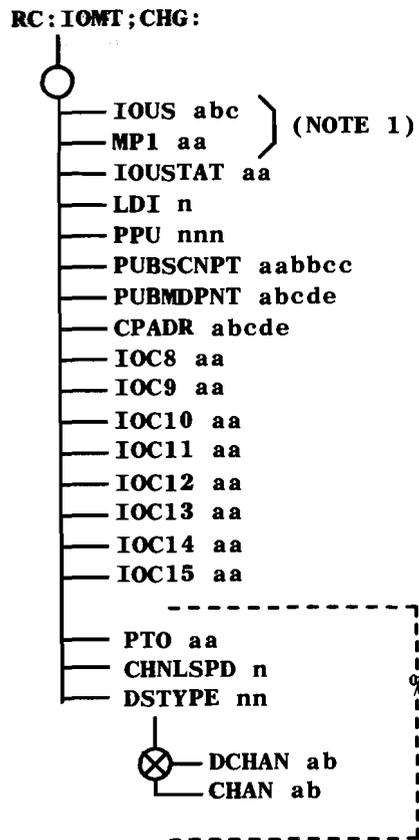
CHAN ab
PTO aa
CHNLSPD n
DSTYPE nn

```

NOTE:

1. MP1 cannot be greater than the IOUSTAT field and must be greater than or equal to fields IOC8 through IOC15.

Fig. 57 — Building IOM Auxiliary Blocks (RC:IOMT)



NOTE:

1. MP1 cannot be greater than the IOUSTAT field and must be greater than or equal to fields IOC8 through IOC15.

Fig. 58 — Changing IOM Auxiliary Blocks (RC:IOMT)

TABLE V
RC:IOMT KEYWORD DEFINITIONS

KEYWORD	DEFINITION	FORM
CHAN ab	Input/Output Channel Selector. Variable a (IOMP) = 1; b (IOUC) = 0-7.	
CHNLSPD n	Channel speed of the channel. Variable n= 0 to indicate 9.6 kb/s or 7 to indicate 56 kb/s.	ESS 1519 CHAN 8-18 Cols. 35
CPDAR abcde	Control Pulse Point Octal Address. Variable a(pair) = 0-7; b(half) = 0 or 1; c(group)= 0-7; d(row) = 0-7; e(column) = 0-7.	ESS 1519 Item 0C Cols. 34-38
DCHAN ab	Delete Input/Output Channel Selector. Variable a(IOMP) = 1; b(IOUC) = 0-7.	
DSTYPE nn	Type of Data Set on the Channel. Variable nn = 13 to indicate a 500A data set or 14 to indicate DATAPHONE II data set.	ESS 1519 CHAN 8-15 Cols. 39-40
IOC8 through IOC15 aa*	Equipage of IO unit controller 8-15. Variable aa = UE, GR, or EQ.	ESS 1519 Item 0A Cols. 53-60
IOUS abc	Input/Output Unit Selector. Variable a(group number) = 0-7; b(frame within group) = 0-3; c(IOUS) = 0 or 1.	
IOUSTAT aa*	Equipage Status of the IOUS. Variable aa = UE, GR, or EQ.	ESS 1519 Item 0A Col. 25
LDI n	The hardware LDI number which describes the current version of the IOUS. Variable n = 0-7.	ESS 1519 Item 0A Col. 27
<p>*For all keywords having UE, GR, or EQ as possible values:</p> <p style="margin-left: 40px;">UE = Unequipped; stored as 00.</p> <p style="margin-left: 40px;">GR = Growth; stored as 10.</p> <p style="margin-left: 40px;">EQ = Equipped; stored as 11.</p>		

TABLE V (Contd)
RC:IOMT KEYWORD DEFINITIONS

KEYWORD	DEFINITION	FORM
MPI aa	Equipage status of microprocessor 1(IOMP). Variable aa = UE, GR, or EQ.	ESS 1519 Item 0A Col. 51
PPU nnn	Pulse point address or the address of the maintenance point needed to talk to the IOUS. Variable nnn = 030-093.	ESS 1519 Item 0B Cols. 31-38
PTO aa	Equipage of Port 0. Variable aa = UE, GR, or EQ.	ESS 1519 Cols. 25-27
PUBMDPNT abcde	Central Pulse Distributor. Variable a(pair) = 0-7; b(half) = 0 or 1; c(group) = 0-7; d(row) = 0-7; e(column) = 0-7.	ESS 1519 Item 0C Cols. 68-72
PUBSCNPT aabbcc	Master Scanner Number. Variable aa(frame) = 00-63; bb(row) = 00-63; cc(column) = 00-15.	ESS 1519 Item 0B Cols. 67-72

7.11 Building, Changing, or Deleting Cell Dialup Blocks RC:CDU (RCDUAMPS, PR-6A1144)

Refer to Table W for keyword definitions.

7.11.1 Building Cell Dialup Blocks

Refer to Fig. 59.

Initial Conditions: The cell dialup channel head table exists and does not have an auxiliary block for the specified CSN.

Results of Message: A 3-word auxiliary block is seized and the TN and NPA, if specified, are built for the specified CSN.

7.11.2 Changing Cell Dialup Blocks

Refer to Fig. 60

Initial Conditions: The cell dialup channel head table exists as well as a 3-word auxiliary block for the specified CSN.

Results of Message: The TN and NPA (if specified) are modified in the 3-word auxiliary block associated with the specified CSN.

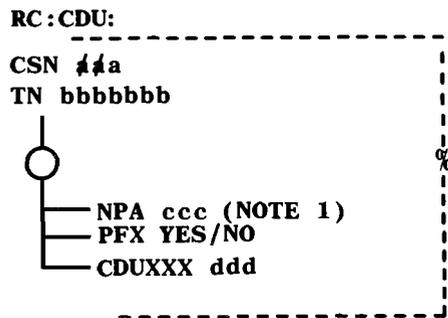
7.11.3 Deleting a Cell Dialup Block

Refer to Fig. 61.

Initial Conditions: The cell dialup channel head table exists as well as a 3-word auxiliary block for the specified CSN.

Results of Message: The TN in the cell dialup block is unassigned from the CSN, and the 3-word auxiliary block is returned to the idle link list.

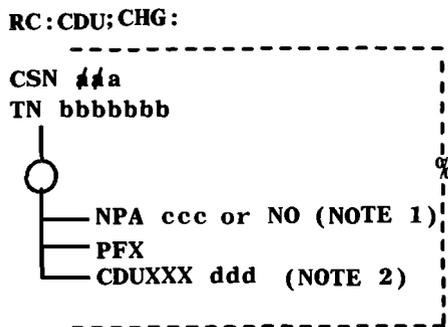
Verification Information: Refer to Part 5 for information to verify cell dialup block data.



NOTE:

1. NPA will be input if the cell dialup number is a 10-digit number.

Fig. 59 — Building Cell Dialup Blocks (RC:CDU)



NOTES:

1. NPA will be input if the cell dialup number is a 10-digit number.
2. On the change message, the entire contents of the cell dialup auxiliary block will be replaced by inputting CDUXXX.

Fig. 60 — Changing Cell Dialup Blocks (RC:CDU)

RC:CDU;OUT:

CSN #a! }
----- }
----- }

Fig. 61 — Deleting Cell Dialup Blocks (RC:CDU)

TABLE W		
RC:CDU KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
CSN aaa a	Cell Site Number (index). Variable a = 1-255.	ESS 1902-1 Cols. 16-18
CDUXXX ddd	Cell Dialup Interconnection Carrier. Variable d = 000-999.	
NPA ccc/NO	Numbering Plan Area. Required only if cell dialup number is a 10-digit number. Variable c = NPA.	ESS 1902-1 Item 00C Cols. 25-34
PFX	Prefix Code. YES if cell dialup number is prefixed by 1.	
TN bbbbbb	Telephone Number.	

8. CELL SITE MASTER RECENT CHANGE MESSAGES

8.1 Building, Changing, or Deleting Cell Master Status Blocks RC:MSTAT (RCMSAMPS, PR-6A1150)

Note: System 100 cell site data cannot be rolled back. This includes all cell site data inserted, changed, or deleted by an RC:MSTAT message.

Refer to Table X for keyword definitions.

8.1.1 Building Cell Master Status Blocks

Refer to Fig. 62.

Initial Conditions: The cell master status head table exists and no auxiliary block exists for the associated CSN. The cell master location head table must exist and have an auxiliary block for the specified CSN.

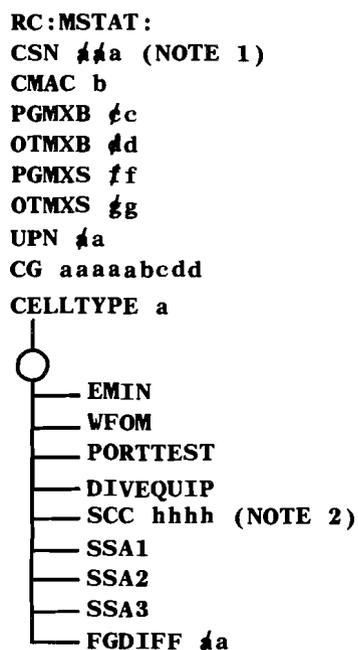
Results of Message: A 2-word auxiliary block is built and the data entered for the specified CSN.

8.1.2 Changing Cell Master Status Blocks

Refer to Fig. 63.

Initial Conditions: The cell master status head table exists, as well as a 2-word auxiliary block for the specified CSN. The cell master location head table exists and has an auxiliary block for the specified CSN.

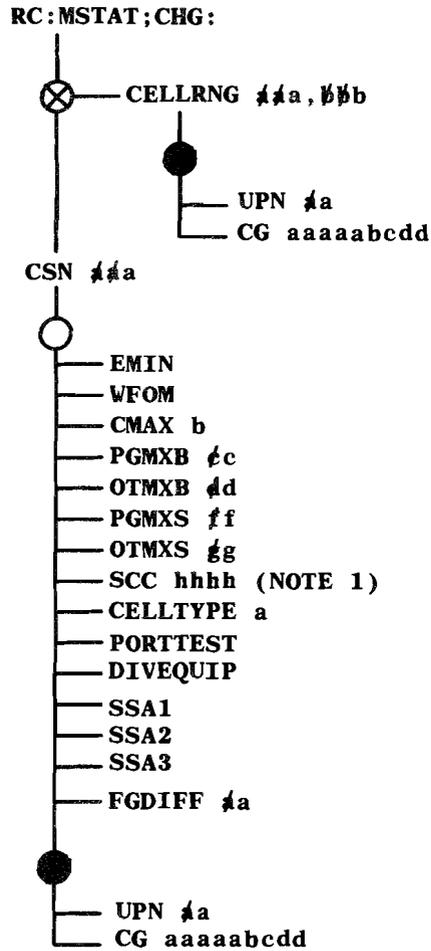
Results of Message: Data will be updated in the 2-word auxiliary block associated with the specified CSN.



NOTES:

1. The LOCFCS indicator (located in word 1, bit 10 of the cell master status aux block) will be determined by looking at the cell master location head table aux block, indexed by the specified CSN. If there are two or more aux block addresses found in words 3 through 10, then LOCFCS will be set; otherwise, LOCFCS will not be specified. This note does not apply to the RC:MSTAT;CHG message.
2. The SCC input is either 5970, 6000, or 6030, and is stored as binary 00, 01, or 10 respectively. Applies to cell generics 2C08 and earlier only.

Fig. 62 — Building Cell Master Status Blocks (RC:MSTAT)



NOTE:

1. The SCC input is either 5970, 6000, or 6030, and is stored as binary 00, 01, or 10 respectively. Applies to cell generics 2C08 and earlier only.

Fig. 63 — Changing Cell Master Status Blocks (RC:MSTAT)

TABLE X
RC:MSTAT KEYWORD DEFINITIONS

KEYWORD	DEFINITION	FORM
CELLTYPE a	Defines the cell equipment. Variable a = 0-7. 1 = MOD 1, 2 = MOD 2, etc. (0 is reserved).	ESS 1902-1 Item 00B Col. 47
CG aaaaabccd	Cell Generic. Variables: a = system type (5-digit alphanumeric character); b = release number (1-9); c = generic type (A-Z); d = generic issue (00-15).	ESS 1902-1 Item 00B Cols. 43,44
CMAC b	Control Mobile Attenuation Code. Used by the mobile to control power level during setup. Variable b = 0-7.	ESS 1902-1 Item 00B Col. 28
CSN aa a	Cell Site Number. Variable a = 1-255.	ESS 1902-1 Cols. 16-18
DCC e	Digital Color Code. Used to uniquely identify a cell during system access. Variable e = 0-3.	ESS 1902-1 Item 00B Col. 29
DIVEQUIP	Optional Diversity Receive Antenna System Equipped.	
EMIN	Extended Mobile Identification Number. When set, the mobile will access the system using the 34-bit MIN; otherwise, it will use the 24-bit MIN.	ESS 1902-1 Item 00B Col. 25
FGDIFF aa a	Frame Gain Differential. Variable a = 0-31 (1-dB increments).	ESS-1902-1 Item 00B Cols. 54-55
OTMXB ad d	Number of times a mobile is allowed to find a setup channel busy before giving up trying to access the system for another reason besides page response (e.g., an originating message). Variable d = 0-15.	ESS 1902-1 Item 00B Cols. 35,36
OTMXS gg g	Number of times a mobile is allowed to try and seize a setup channel before giving up trying to access the system for another reason besides page response (e.g., an originating message). Variable g = 0-15.	ESS 1902-1 Item 00B Cols. 39,40

TABLE X (Contd)		
RC:MSTAT KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
PGMXB <i>gc</i>	Number of times a mobile is allowed to find a setup channel busy before giving up with its page response. Variable c = 0-15.	ESS 1902-1 Item 00B Cols. 33,34
PGMXS <i>ff</i>	Number of times a mobile is allowed to try and seize a setup channel before giving up with its page response. Variable f = 0-15.	ESS 1902-1 Item 00B Cols. 37,38
PORTTEST	Portable Test Equipment.	
SCC <i>hhhh</i>	Supervisory Audio Tone Color Code. Variable <i>hhhh</i> = 5970, 6000, or 6030 (internally stored as binary 00, 01, or 10 respectively). Valid keyword for cell generics 2C08 and earlier.	ESS 1902-1 Item 00B Col. 30
SSA1	Sub Service Area 1. When set a roamer may, on a per RSL entry (NPA/NXX) basis, be denied service from sub service area 1.	
SSA2	Sub Service Area 2. When set a roamer may, on a per RSL entry (NPA/NXX) basis, be denied service from sub service area 2.	
SSA3	Sub Service Area 3. When set a roamer may, on a per RSL entry (NPA/NXX) basis, be denied service from sub service area 3.	
UPN <i>ga</i>	Current Update Number. Variable a = 0-99.	ESS 1902-1 Item 00B Cols. 41,42
WFOM	Wait For Overhead Message Indicator. When set, the mobile must wait for an overhead message from the cell.	ESS 1902-1 Item 00B Col. 26

8.1.3 Deleting Cell Master Status Blocks

Initial Conditions: The cell master status head table exists, as well as a 2-word auxiliary block for the specified CSN.

Results of Message: The CSN is unassigned and the 2-word auxiliary block is returned to the idle link list.

To delete data, enter:

RC:MSTAT;OUT:

CSN ~~aa~~!

Verification Information: Refer to Part 5 for information to verify cell master status data.

8.2 Adding, Changing, or Deleting Cell Site Equipage Auxiliary Block's RC:CELEQ (RCEQAMPS, PR-6A1145)

Note: System 100 cell site data cannot be rolled back. This includes all cell site data inserted, changed, or deleted by an RC:CELEQ message.

Refer to Table Y for keyword definitions.

8.2.1 Adding a Cell Site Equipage Auxiliary Block

Refer to Fig. 64.

Initial Conditions: The cell equipage head table exists and there is no auxiliary block for the specified CSN (keyword CSN).

Results of Message: An auxiliary block is built with data relating to the specified CSN (keyword CSN). For each segment, information pertaining to a physical antenna (keyword ANT) is built.

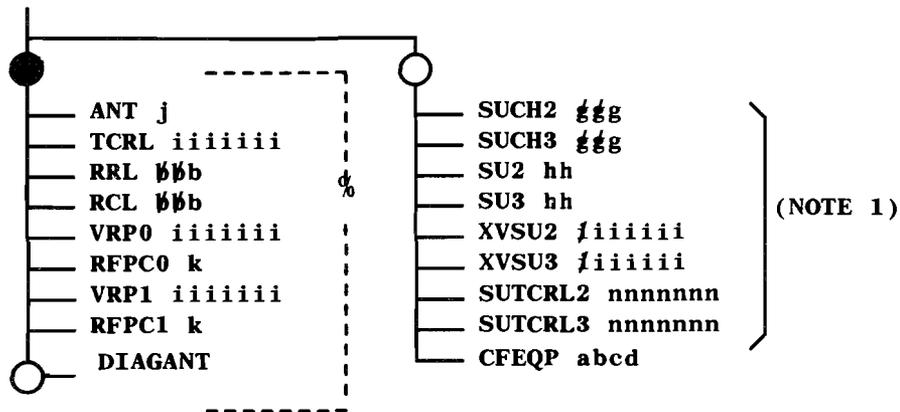
8.2.2 Changing Data in a Cell Site Equipage Block

Refer to Fig. 65.

Initial Conditions: The cell site equipage head table exists and an auxiliary block exists for the specified CSN (keyword CSN).

Results of Message: Specified data relating to the input CSN is modified. For each segment specified, an antenna is either added (keyword ANT), changed (keyword ANT), or deleted (keyword DANT).

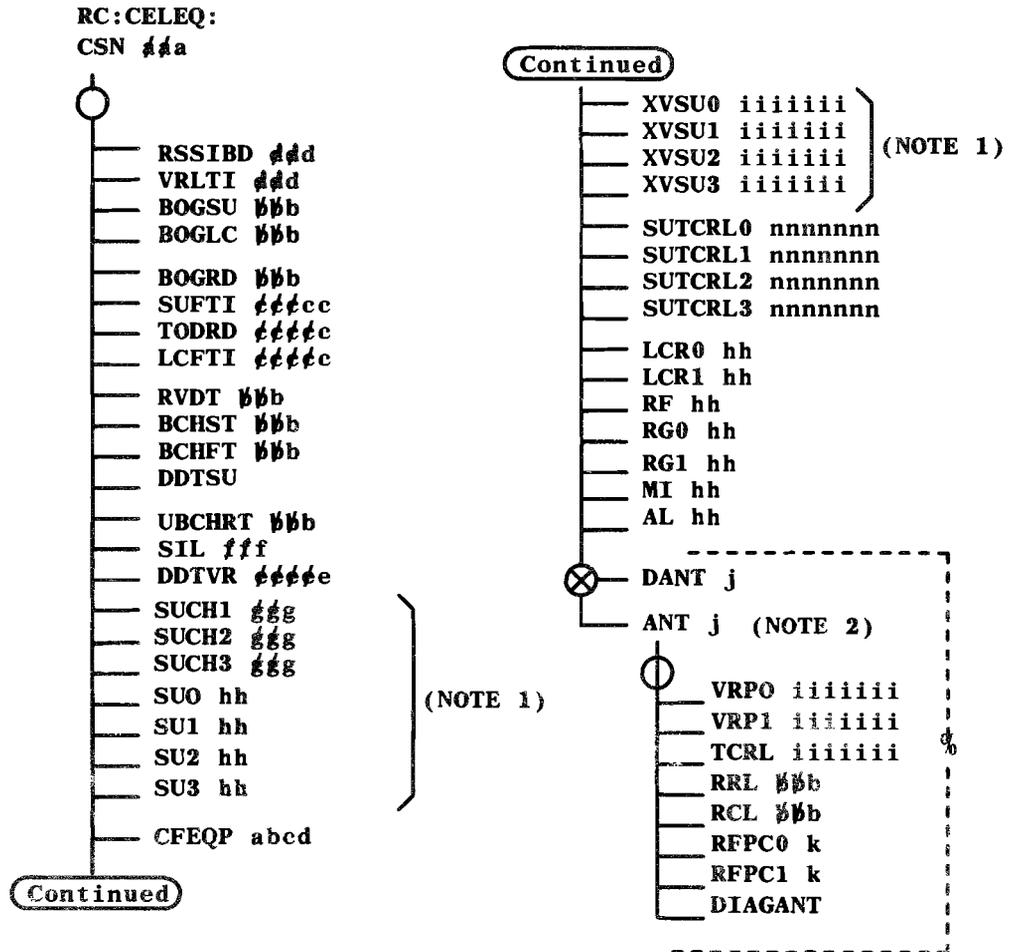
RC:CELEQ:
 CSN *aza/a*
 BOGRD *bbb*
 BOGLC *bbb*
 BOGSU *bbb*
 SUFTI *cccc*
 TODRD *cccc*
 LCFTI *cccc*
 RSSIBD *ddd*
 VRLTI *ddd*
 RVDT *bbb*
 BCHST *bbb*
 BCHFT *bbb*
 DDTSU *eeee*
 UBCHRT *bbb*
 SIL *fff*
 DDTVR *eeee*
 SUCH1 *ggg*
 SU0 *hh*
 SU1 *hh*
 XVSU0 *iiiiiii*
 XVSU1 *iiiiiii*
 LCRO *hh*
 LCR1 *hh*
 RF *hh*
 RG0 *hh*
 RG1 *hh*
 MI *hh*
 AL *hh*
 SUTCRL0 *nnnnnnn*
 SUTCRL1 *nnnnnnn*



NOTE:

1. SUCH2, XVSU2, and SUTCRL are required when SU2 is equipped (in EQ or stored as 11). SUCH3, XVSU3, and SUTCRL3 are required when SU3 is equipped.

Fig. 64 — Adding a Cell Site Equipage Auxiliary Block (RC:CELEQ)



NOTES:

1. SUCH2, XVSU2, and SUTCRL2 are required when SU2 is equipped (input as EQ or stored as 11). SUCH3, XVSU3, and SUTCRL3 are required when SU3 is equipped as indicated for SU2 above.
2. If the antenna (ANT) is being added, the nonexclusive or symbol following ANT becomes an AND symbol. The flowchart as it appears illustrates the case in which the antenna is being modified.

Fig. 65 — Changing a Cell Site Equipage Auxiliary Block (RC:CELEQ)

TABLE Y		
RC:CELEQ KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
AL hh	Status of Alarm Interface. Variable hh = UE, GR, or EQ (UnEquipped, GRowth, or EQuipped).	ESS 1903A Item 00A Col. 35
ANT j	Antenna Number. Variable j = 0-3.	ESS 1903A Items 000-00B Cols. 21-23
BOGRD bbb	Bog Threshold for Routine Diagnostics. Variable bbb = 0-255.	ESS 1903A Item 00D Cols. 31,33
BOGLC bbb	Bog Threshold for the Location Radio Functional Test. Variable bbb = 0-255.	ESS 1903A Item 00D Cols. 28,30
BOGSU bbb	Bog Threshold for the Setup Radio Functional Tests. Variable bbb = 0-255.	ESS 1903A Item 00D Cols. 25,27
BCHFT bbb	BCH (Bose-Chaudhuri-Hocquengham) Code Failure Report Threshold. Variable bbb = 0-255.	ESS 1903A Item 00D Cols. 37,39
BCHST bbb	BCH Report Success Threshold. Variable bbb = 0-255.	ESS 1903A Item 00D Cols. 34,36
CFEQP abcd	Cell Site Control Frame Equipage attributes. Variable a - Cell Data Link 0 (DLINK_0) Variable b - Cell Data Link 1 (DLINK_1) Variable c - Cell Controller 0 (CNTRL_0) Variable d - Cell Controller 1 (CNTRL_1) Where: a,b,c,d = 0 (equipped) or 1 (unequipped)	
CSN aaa	Cell Site Number. Variable a = 1-255.	ESS 1903A Cols. 16-18
DDTSU eeee	Dotting Detection Threshold for the Setup Radio Transmission. Variable eeeee = 0-65535.	ESS 1903A Item 00B Cols. 46,50
DDTVR eeee	Dotting Detection Threshold for the Voice Radio Transmission. Variable eeeee = 0-65535.	ESS 1903A Item 00B Cols. 50,51
DANT j	Antenna Number to Delete. Variable j = 0-3.	
DIAGANT	Diagnostic Indicator for Each Antenna.	
LCFTI cccc	Location Radio Functional Test Interval. The interval in seconds between performance of the location radio functional test. Variable ccccc = 0-86400.	ESS 1903A Item 00A Cols. 39,43

TABLE Y (Contd)
RC:CELEQ KEYWORD DEFINITIONS

KEYWORD	DEFINITION	FORM
LCR0 hh	Status of Location Radio 0. Variable hh = UE, GR, or EQ (UnEquipped, GRowth, or EQuipped).	ESS 1903A Item 00A Cols. 29
LCR1 hh	Status of Location Radio 1. Variable hh = UE, GR, or EQ.	ESS 1903A Item 00A Col. 30
MI hh	Status of Measuring Instruments. Variable hh = UE, GR, or EQ.	ESS 1903A Item 00A Col. 34
RCL bbb	Receive Cable Return Loss Threshold. Variable bbb = 0-127.	ESS 1903A Item 00D Cols. 48-50
RF hh	Status of Test Radio. Variable hh = UE, GR, or EQ.	ESS 1903A Item 00A Col. 31
RFPC0 k	Radio Frequency Power Control for Server Group 0. Variable k = 0-7. Input value ranges from -28 dBm (0) to 0 dBm (7) in steps of 4 dBm.	ESS 1903A Items 000-003 Col. 32
RFPC1 k	Radio Frequency Power Control for Server Group 1. Variable k = 0-7. Input values range from -28 dBm (0) to 0 dBm (7) in steps of 4 dBm.	ESS 1903A Items 000-003 Col. 40
RG0 hh	Status of Reference Generator 0. Variable hh = UE, GR, or EQ.	ESS 1903A Item 00A Col. 32
RG1 hh	Status of Reference Generator 1. Variable hh = UE, GR, or EQ.	ESS 1903A Item 00A Col. 33
RSSIBD ddd	Receive Signal Strength Indicator Branch Correlation Difference Threshold. Variable d = 1-127.	ESS 1903B Item 00B Cols. 25-27
RSSICAL bbb	Received Signal Strength Calibration. Variable bbb = 1-255.	
RRL bbb	Receive Return Loss Threshold. Variable bbb = 0-127.	ESS 1903A Items 000-003 Cols. 51-53
RVDT bbb	Reverse Voice Data Time-out. Time limit (in seconds) waited for a data message on the reverse channel. Variable bbb = 0-127.	ESS 1903A Item 00B Cols. 31-33

TABLE Y (Contd)		
RC:CELEQ KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
SIL <i>fff</i>	Switch Isolation Limit Threshold. Used to calibrate the signal leakage across the location radio frequency switch. The input value is determined by the equation $(x+130)/.7812$, where x is the dBm measured upon installation, ranging from -130 to -30 dBm. Variable <i>fff</i> = 0-127.	ESS 1903A Item 00B Cols. 43-45
SU0 through SU3 <i>hh</i>	Status of Setup Radio 0-3. Variable <i>hh</i> = UE, GR, or EQ.	ESS 1903A Item 00A Cols. 25-28
SUCH1 <i>ggg</i>	Setup Channel Number for setup radio 1. Variable <i>ggg</i> = 1-666 with 1-333 for channel group A, and 334-666 for channel group B.	ESS 1903A Item 00C Cols. 25-27
SUCH2 <i>ggg</i>	Setup Channel Number for setup radio 2. Variable <i>ggg</i> = 1-666 with 1-333 for channel group A, and 334-666 for channel group B.	ESS 1903A Item 00C Cols. 28-30
SUCH3 <i>ggg</i>	Setup Channel Number for setup radio 3. Variable <i>ggg</i> = 1-666 with 1-333 for channel group A and 334-666 for channel group B.	ESS 1903A Item 00C Cols. 31-33
SUFTI <i>cccc</i>	Setup Radio Functional Test Interval. The interval in seconds between performance of the setup radio functional test. Variable <i>cccc</i> = 0-86400.	ESS 1903A Item 00A Cols. 34,48
SUTCRL0 through SUTCRL3 <i>nnnnnn</i>	Setup Transmit Cable Loss threshold for setup radio 0-3. Variable <i>n</i> = 0250000-4000000.	ESS 1903A Item 00C Cols. 49,76
TCRL <i>iiiiii</i>	Transmit Cable Loss Threshold in microvolts. Variable <i>i</i> = 0250000-4000000.	ESS 1903A Items 001-003 Cols. 41-74
TODRD <i>cccc</i>	Time-of-Day Indicator for Routine Diagnostics to be performed at the cell. Measured in seconds from midnight. Variable <i>c</i> = 0-86406.	ESS 1903A Item 00D Cols. 44-48
UBCHRT <i>bbb</i>	Power threshold of an incoming signal before it is allowed to be processed as a message. Keyword UBCHRT is measured in same units as keyword RCL. Variable <i>bbb</i> = 0-127.	ESS 1903A Item 00B Cols. 40-44

TABLE Y (Contd)
RC:CELEQ KEYWORD DEFINITIONS

KEYWORD	DEFINITION	FORM
VRLTI ddd	Voice Radio Location Time Interval. Interval in milliseconds between signal strength measurements for location. Variable ddd = 0-255.	ESS 1903A Item 00B Cols. 28-30
VRP0 iiiiii	Voice Radio Output Power 0. Measured in microvolts. Variable i = 0250000-4000000.	ESS 1903A Items 000-003 Cols. 25-31
VRP1 iiiiii	Voice Radio Output Power 1. Measured in microvolts. Variable i = 0250000-4000000.	ESS 1903A Items 000-003 Cols. 33-39
XVSU0 through XVSU3 iiiiii	Transmitter Output Value for Setup Radio 0-3. Measured in microvolts. Variable i = 0250000-4000000.	ESS 1903A Item 00C Cols. 34-61

8.2.3 Deleting a Cell Site Equipage Auxiliary Block

Initial Conditions: The cell equipage head table exists and an auxiliary block exists for the specified CSN (keyword CSN). Words 11 through 22 of this auxiliary block contain all zeros. (If this is not the case, there exists at least one auxiliary-in-auxiliary block pertaining to a voice radio functional group. These blocks must be deleted before the cell equipage auxiliary block can be removed.)

Results of Message: The cell equipage auxiliary block is deleted for the input CSN, and the auxiliary block is returned to the idle link list.

To delete the auxiliary block, enter:

RC:CELEQ;OUT:

CSN *aaa!*

Verification Information: Refer to Part 5 for information to verify cell site equipage data.

8.3 Adding, Changing, or Deleting Voice Radio Functional Group Auxiliary-in-Auxiliary Blocks RC:VRAD (RCVRAMPS, PR-6A1153)

Table Z provides channel number information for the VRCH keyword. Refer to Table AA for keyword definitions.

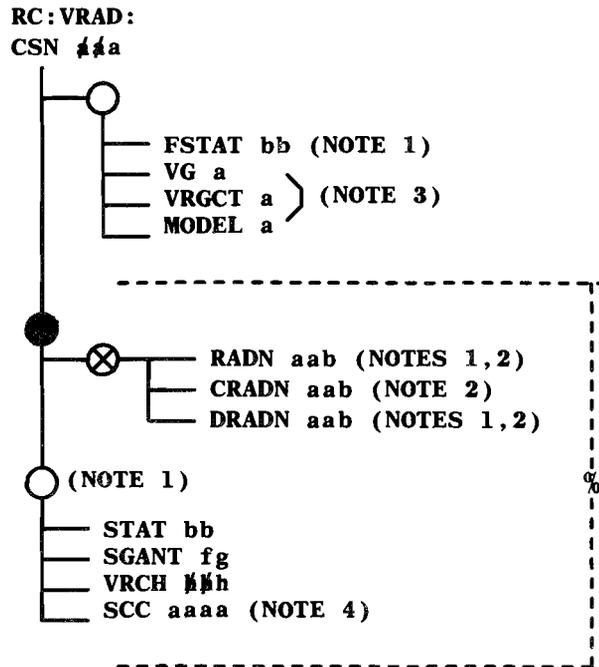
Refer to Fig. 66.

Initial Conditions: The cell equipage head table exists and an auxiliary block exists for the specified CSN (keyword CSN). The System 100 miscellaneous information (AMI) auxiliary block exists.

Results of Message: For each segment, a voice radio auxiliary-in-auxiliary block is added, changed, or deleted. Within an RC:VRAD message, separate segments must have the same functional group and frame number.

Verification Information: Refer to Part 5 for information to verify voice radio functional group data.

TABLE Z					
CHANNEL NUMBER ASSIGNMENTS					
BAND	WIDTH (MHz)	NUMBER OF CHANNELS	BOUNDARY CHANNEL NUMBER	TRANSMITTER CENTER FREQUENCY (MHz)	
				MOBILE	LAND
NOT USED	—	1	990	824.010	869.010
A''	1	33	991	824.040	869.040
			1023	825.000	870.000
A	10	333	1	825.030	870.030
			333	834.990	879.990
B	10	333	334	835.020	880.020
			666	844.980	889.980
A'	1.5	50	667	845.010	890.010
			716	846.480	891.480
B'	2.5	83	717	846.510	891.510
			799	848.970	893.970
RESERVED	2	67	800	849.000	849.000
			866	850.980	895.980



NOTES:

1. FSTAT must be input when RADN is specified. Also, with RADN, the option symbol preceding STAT becomes an AND symbol; and, if DRADN is specified, this option leg cannot be used.
2. The frame and functional group of RADN must be identical from segment to segment within a message. The voice radio portion of RADN may vary. This also applies to DRADN and CRADN.
3. When VRGCT is set to 8 channels, VG must be 0.
4. The SCC input is either 5970, 6000, or 6030, and is stored as binary 00, 01, or 10 respectively. Applies to cell generics 3C00 and later only.

Fig. 66 — Adding, Changing, or Deleting Voice Radio Functional Groups (RC:VRAD)

TABLE AA
RC:VRAD KEYWORD DEFINITIONS

KEYWORD	DEFINITION	FORM
CRADN aab	Radio Number to Change. Variable aa = voice radio group 00-11; variable b = voice radio number 0-7.	
CSN aa	Cell Site Number (index). Variable a = 1-255.	ESS 1903B Cols. 16-18
DRADN aab	Radio Number to Delete. Variable aab same as above.	
FSTAT bb *	Status of Entire Functional Group. Variable bb = EQ, ER, or UE.	ESS 1903B Col. 25
MODEL a	Radio Equipment Model. Variable a = 1 = MOD1, a = 2 = MOD2, a = 3 = MOD3.	
RADN aab	Radio Number to Add. Variable aa = Voice radio group 00-11; variable b = voice radio number 0-7.	ESS 1903B Col. 21 (c), 22 (d), 32-73 (e)
SCC aaaa	SAT Color Code. Variable a = 5970, 6000, or 6030 (stored as binary 00, 01, or 10, respectively). Valid keyword for cell generics 3C00 and later.	ESS 1903B Cols. 38, 50, 62, 74
SGANT fg	Server Group Antenna. Variable f = 0-1 = Server group or set of radios (in an antenna) on which the mobile is to be served. Variable g = 0-3 = antenna face.	ESS 1903B Cols. 32, 44, 56, 68(f), 33, 45, 57, 69(g)
STAT bb *	Status of the Individual Radio. Variable bb = EQ, ER, or UE.	ESS 1903B Cols. 34, 46, 58, 70
VG a	Voice Group. Determines which voice group is being used with 16 channels.	
VRCH hh	Channel number on which radio is transmitting. Variable h = 1-1024. Channels 800 through 990 are reserved and must not be used. (See Table Z).	ESS 1903B Cols. 35-37, 42-49, 59-61, 71-73
VRGCT a	Voice Radio Group Channel Type. Determines whether there are 8 or 16 channels. Variable a = 0 = 8 channels, a = 1 = 16 channels.	

* For keywords FSTAT and STAT, the following applies:

UE = Unequipped (stored as 00)

GR = Growth (stored as 10)

EQ = Equipped (stored as 11)

8.3.1 Example of Changing Status of Voice Radios

To change the status of a voice radio in the voice radio functional group auxiliary block from equip (EQ) to growth (GR) or unequipped (UE), the following procedures should be followed. The TNN must be in trunk group 0 and removed from the cell site trunking translator.

1. Input

VF:AMPS:

CSN ~~aaa~~

STAT e!

2. Verify the status of the voice radio auxiliary block using the cell site number (a) and status (e) above by inputting the following (expect a TR131 output message):

VFY-TNN-11 dddddd.

3. Verify the member number of the 2-way TNN serving the particular voice radio (expect a TR14 output message):

T-TNN-MB 00dddddd.

4. Make the TNN MTCE DSBLD (expect an AMPS06 output message):

RC:TGMEM;MOVE:

TOTG 0

MEM a, dddddd!

5. Move the TNN member number (a) into trunk group 0:

RC:CST:

CSN ~~i~~

SGANT cc

RADN bbb

DTNN dddddd!

6. Remove the TNN (dddddd) from the cell site trunking translator specifying the radio number (bbb) and server group antenna (cc):

RC:VRAD:

CSN jji

CRADN bbb

STAT e!

7. Change the status (e) of the voice radio (bbb):

VF:AMPS:

CSN ijji

STAT e!

8. Verify the new status of the particular voice radio:

VF:AMPS:

CSN jji

RADN bbb!

8.3.2 Example of Returning Voice Radios to Original Status

To return the voice radio to the original status, do the following:

1. Input

```
RC:VRAD:
CSN j/i
CRADN bbb
STAT e!
```

2. Input

```
RC:CST:
CSN j/i
SGANT cc
RADN bbb
TNN ddddd!
```

3. Input

```
RC:TGMEM;MOVE:
TOTG fff
MEM a ddddd
CHN hhh
RADN bbb!
```

4. Add the TNN to the original trunk group (fff) specifying the channel number (hhh) and the radio number (bbb) along with the original member number (a) and TNN (dddddd) by typing:

```
T-TNN-MI 00dddddd.
```

5. Make the TNN MA ACT.

8.4 Adding or Deleting Interfering TNN to or from the TNN-TGN Auxiliary Block RC:DCHA (PR-6A1601)

Refer to Fig. 67.

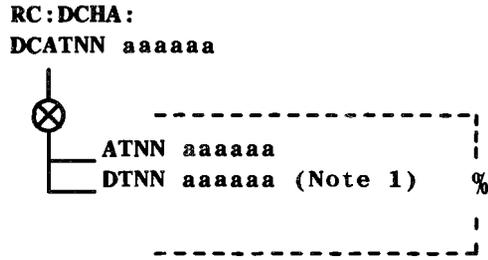
Refer to Table AB for keyword definitions.

Initial Conditions: The TNN-TGN auxiliary blocks for the primary (DCATNN) and secondary (ATNN or DTNN) auxiliary blocks of correct size exist and are linked to their head table. All TNNs specified by DCATNN, ATNN, or DTNN are equipped and assigned to the appropriate trunk groups.

If adding interfering TNNs (ATNN), the DCATNN must not appear in the TNN-TGN auxiliary block of DCATNN. If deleting interfering TNNs (DTNN), the DCATNN must be in the TNN-TGN auxiliary block of DCATNN.

Results of Message: For each segment specified for DCATNN and ATNN one word is added at the end of the primary DCATNN TNN-TGN auxiliary block. The TNN specified by ATNN is put in this word and the word function (WRDFN) bits are set to 5 to indicate this trunk is an interfering TNN. Bit 23 of word 1 is set to indicate DCA (Dynamic Channel Allocation). The same message adds one word at the end of the secondary (ATNN) TNN-TGN auxiliary block. The TNN specified by DCATNN is put in this word, and the WRDFN bits are set to 5. Bit 23 of word 1 is set to indicate DCA.

For each segment specified for DCATNN and DTNN, DTNN is deleted from the primary (DCATNN) TNN-TGN auxiliary block. If this is the last interfering TNN in the auxiliary block, bit 23 of word 1 is set to zero. DCATNN is deleted from the secondary (DTNN) TNN-TGN auxiliary block. If this is the last interfering TNN in the secondary auxiliary block, bit 23 of word 1 is set to zero.



NOTE:

1. A trunk must first be deleted from the list of interfering TNNs using the RC:DCHA message before it can be deleted from the trunk group using the RC:TGMEM message.

Fig. 67 — Adding or Deleting Interfering TNN (RC:DCA)

TABLE AB		
RC:DCHA KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
DCATNN aaaaaa	Dynamic Channel Allocation Trunk Network Number	
ATNN aaaaaa	Add an interfering trunk network number	
DTNN aaaaaa	Delete an interfering trunk network number	

8.5 Building, Changing, or Deleting Auxiliary and/or Auxiliary-in-Auxiliary Blocks in the Cell Master Location Translator RC:MLOC (RCMLAMPS, PR-6A1148)

Note: System 100 cell site data cannot be rolled back. This includes all cell site data inserted, changed, or deleted by an RC:MLOC message.

Refer to Table AC for keyword definitions.

8.5.1 Building an Auxiliary and/or Auxiliary-in-Auxiliary Block in the Cell Master Location Translator

Refer to Fig. 68.

Initial Conditions: The cell master location head table exists and does not have an auxiliary block associated with the specified CSN (keyword CSN). The cell equipage head table exists. A cell equipage auxiliary block for the CSN also exists.

Results of Message: An auxiliary block is built for the specified CSN and an auxiliary-in-auxiliary block is built for the specified antenna number.

8.5.2 Changing an Auxiliary Block and Changing or Deleting an Auxiliary-in-Auxiliary Block in the Cell Master Location Translator

Refer to Fig. 69.

Initial Conditions: The cell master location head table exists. Also, a cell master location auxiliary block for the CSN exists.

Results of Message: The specified changes are made to the master location auxiliary and/or auxiliary-in-auxiliary blocks.

8.5.3 Removing a Cell Site Number's Entry From the Cell Master Location Head Table

Initial Conditions: The cell master location head table exists. A cell master location auxiliary block for the CSN exists and all auxiliary-in-auxiliary blocks have been deleted.

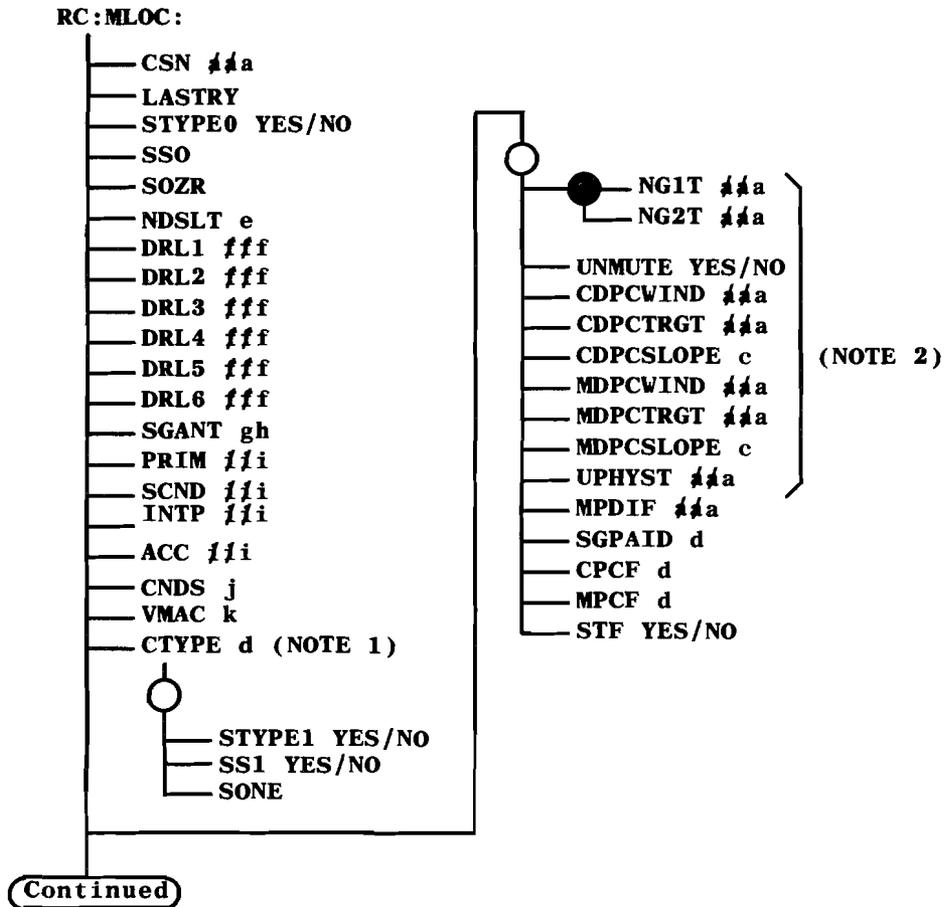
Results of Message: The specified CSN's entry is removed from the cell master location head table.

To remove a CSN, enter:

RC:MLOC;OUT:

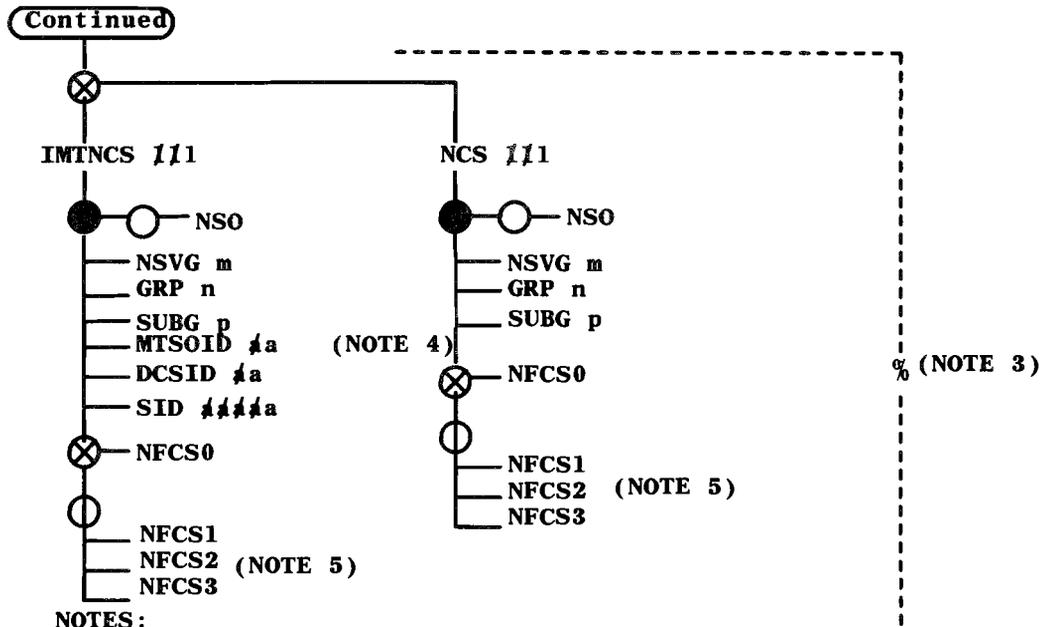
CSN *aaa!*

Verification Information: Refer to Part 5 for information to verify cell master location data.



See notes on next sheet.

Fig. 68 — Building an Auxiliary Block in the Cell Master Location Translator (RC:MLOC) (Sheet 1 of 2)

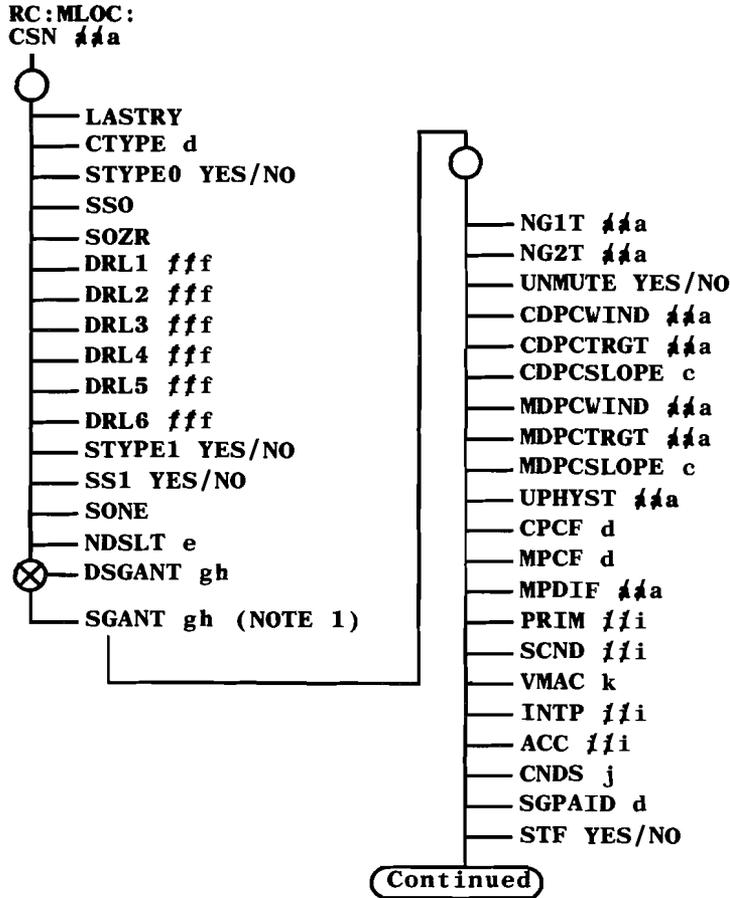


NOTES:

1. When CTYPE is input as single (0), the option flowing from CTYPE is not allowed.
2. For the CDPCxxxx keyboards, if a default value of 0 is used for CDPCTRGT, the cell will internally infer values for all three of these attributes from the values of the corresponding MDCPxxxx attributes. The dynamic power control block will always be built. When adding a new SGANT, the following keywords will have nonzero default values unless otherwise input:

CDPCWIND, CDPCSLOPE, MDPCWIND, MDPCSLOPE,
UPHYST, NG1TY, and NG2T.
3. The maximum number of neighbor cell sites is 12. When the aux-in-aux block is full, and an attempt is made to enter another neighbor cell site, the message fails.
4. If SID, DCSID, and MTSOID are input and there is no match in the MFI aux block, the message fails. These keywords are required for adding inter-MTSO neighbor cell sites. These keywords retrieve the ABSVID. The ABSVID for inter-MTSO neighbor cell sites must be greater than 0. The ABSVID for local neighbor cell sites is always 0.
5. If NFCS0 is built for an NCS, NSVG then NFCS1, NFCS2, and NFCS3 may not be built for the same NCS, NSVG. If NSVG1 is built for an NCS, NSVG, SUBG, then it may not be built for the same NCS, NSVG and different SUBG. It must be removed from the first SUBG and then added to the new SUBG.

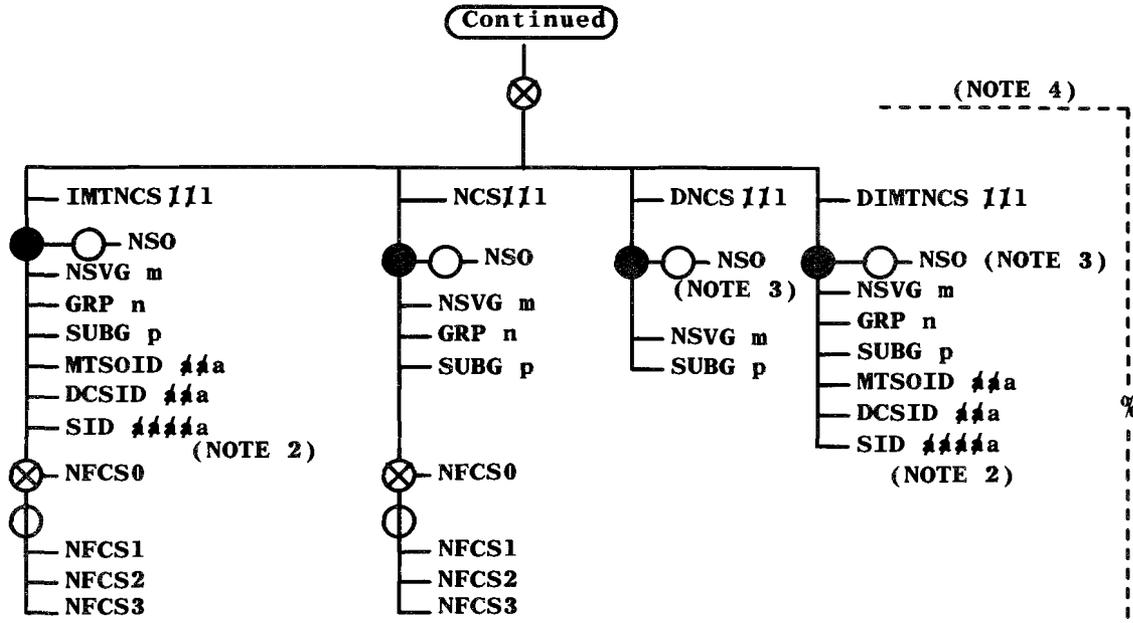
Fig. 68 — Building an Auxiliary Block in the Cell Master Location Translator (RC:MLOC) (Sheet 2 of 2)



NOTE:

1. SGANT is used to either add an aux-in-aux block or change an existing aux-in-aux block. When using SGANT to add a new block, the NON-EXCLUSIVE OR symbol following SGANT becomes an AND symbol (DNCS is not allowed).

Fig. 69 — Changing or Deleting an Auxiliary Block in the Cell Master Location Translator (RC:MLOC) (Sheet 1 of 2)



NOTES:

2. MTSOID, DCSID, and SID are required for adding, changing, or deleting inter-MTSO neighbor cell sites. These keywords retrieve the ABSVID. The ABSVID for inter-MTSO neighbor cell sites must be greater than zero. The ABSVID for local neighbor cell sites is zero.
3. If NSO is on an entry that is to be deleted, then it must be input. Otherwise, it is not required.
4. The maximum number of neighbor cell sites is 12. When the aux-in-aux block is full and an attempt is made to add a new neighbor cell site, the message will fail.

Fig. 69 — Changing or Deleting an Auxiliary Block in the Cell Master Location Translator (RC:MLOC) (Sheet 2 of 2)

TABLE AC		
RC:MLOC KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
ACC $\gamma\gamma i$	Access signal strength threshold. Variable i = 0-127.	ESS 1902-1,2 Cols. 54-56
CDPCSLOPE c	Cell Dynamic Power Control Slope. Variable c = 0-3 (default = 2).	ESS 1902-1,2 Col. 65
CDPCTRGT $\beta\beta a$	Cell Dynamic Power Control Target. Variable a = 0-127.	ESS 1902-1,2 Cols 65-68
CDPCWIND $\beta\beta a$	Cell Dynamic Power Control Window. Variable a = 0-127 (default = 15).	ESS 1902-1,2 Cols 69-71
CNDS j	Minimum number of location candidates for voice channel selection. Variable j = 0-7.	
CPCF d	Cell Site Power Control Flag. Variable d = 0 = no dynamic action (default value); 1 = dynamic action in attenuation region only; 2 = full dynamic action over all levels.	ESS 1902-1,2 Col. 25
CSN $\beta\beta a$	Cell Site Number. Variable a = 1-255.	ESS 1902-1 Cols. 16-18
CTYPE d	Call type. Variable c = 0 = single, 1 = dual.	ESS 1902-1 Item 00A Col. 26
DCSID βa	Digital Cellular Switch Identification. Variable a = 0-31.	
DIMTNCS	Delete Inter-MTSO Neighbor Cell Site. Variable l = 1-255. MTSOID, DCSID, and SID are required to obtain an ABSVID greater than zero.	
DIMTNCS $\gamma\gamma l$	Delete Inter-MTSO Neighbor Cell Site. Variable l = 1-255.	
DNCS $\gamma\gamma l$	Delete Local Neighbor Cell Site. Variable l = 1-255.	

TABLE AC (Contd)		
RC:MLOC KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
DRL1 through DRL6 <i>fff</i>	Alternate cell site numbers. Input as cell site number. Variable f = 0-255.	ESS 1902-1 Item 00A Cols. 42-59
DSGANT <i>gh</i>	Delete server group antenna. Variable g = 0 = primary server group; = 1 = secondary server group. Variable h = 0-3 where 0 represents an omni antenna and 1-3 represent directional antennas.	
GRP <i>n</i>	Group type. Variable n = 1 = group 1; n = 2 = group 2.	
IMTNCS <i>l</i>	Inter-MTSO Neighbor Cell Site Number. Variable l = 1-255. MTSOID, DCSID, and SID are required to obtain an ABSVID greater than zero.	
INTP <i>i</i>	Interference signal strength protection threshold. Variable i = 0-127.	ESS 1902-1,2 Cols. 51-33
LASTRY	Redirect mobile to another cell for access.	ESS 1902-1 Item 00A Col. 25
MDPCSLOPE <i>c</i>	Mobile Dynamic Power Control Slope. Variable c = 0-3 (default = 2).	ESS 1902-1,2 Cols. 61-62
MDPCTRGT <i>a</i>	Mobile Dynamic Power Control Target. Variable a = 0-127 (default = 100).	ESS 1902-1,2 Cols. 53-55
MDPCWIND <i>a</i>	Mobile Dynamic Power Control Window. Variable a = 0-127 (default = 15).	ESS 1902-1,2 Cols 56-58
MPCF <i>d</i>	Mobile Power Control Flag. Variable d = 0 = no dynamic action (default value); 1 = dynamic action in attenuation region only; 2 = full dynamic action over all levels.	ESS 1902-1,2 Col. 33
MPDIF <i>a</i>	Maximum Power Differential. Variable a = 0 (-30 dBm) through 127 (-130 dBm). The difference between the maximum possible power level of a field and a class I mobile radio.	ESS 1902-1,2 Neighbor 0A Cols. 50-52
MTSOID <i>a</i>	MTSO Identification. Variable a = 0-15.	

TABLE AC (Contd)
RC:MLOC KEYWORD DEFINITIONS

KEYWORD	DEFINITION	FORM
NCS $\gamma\gamma 1$	Local Neighbor Cell Site Number. Variable $1 = 1-255$.	ESS 1902-1,2 Cols. 27-29
NDSL T e	Number of times signal level trigger is ignored during a delayed trigger state. Variable $e = 0-3$.	ESS 1902-1,2 Col. 57
NFCS0 through NFCS3	Neighbor Faces of the Neighbor Cell Site. Keyword NFCS0 indicates that the neighbor is an omni cell.	ESS 1902-1,2 Cols. 30-33
NG1T δa	Neighbor Group 1 Interrogation time (in .2-second increments). Variable $a = 0-25$ (default = 10).	ESS 1902-1,2 Cols. 44-46
NG2T δa	Neighbor Group 2 Interrogation time (in .2-second increments). Variable $a = 0-25$ (default = 10).	ESS 1902-1,2 Cols. 47-49
NSO	Per neighbor "strongest only" indicator.	ESS 1902-1,2 Col. 34
NSVG m	Neighbor Server Group. Variable $m = 0 =$ primary; $m = 1 =$ secondary.	ESS 1902-1,2 Col. 25
PRIM $\chi\chi i$	Primary signal strength threshold. Variable $i = 0-127$.	ESS 1902-1,2 Cols. 45-47
SCND $\chi\chi i$	Secondary signal strength threshold. Variable $i = 0-127$.	ESS 1902-1,2 Cols. 48-50
SGANT gh	Server Group Antenna Number. Variable $g = 0 =$ primary server group; $= 1 =$ secondary server group. Variable $h = 0-3$ where 0 represents an omni antenna and 1-3 represent directional antennas.	ESS 1902-1,2 Cols. 20,21
SGPAID d	Server Group Power Amplifier Identifier. $d = 0 = 45$ watt nonprogrammable amplifier $d = 1 = 45$ watt programmable amplifier $d = 2 = 12$ watt programmable amplifier.	ESS 1902-1,2 Neighbor 0A Col. 63
SID $\delta\delta\delta\delta a$	System Identification Number. Variable $a = 1-32767$.	

TABLE AC (Contd)		
RC:MLOC KEYWORD DEFINITIONS		
KEYWORD	DEFINITION	FORM
SONE	Strongest face only. Used for antenna face candidate list for server group 1.	ESS 1902-1 Item 00A Col. 32
SOZR	Strongest face only. Used for antenna face candidate list for server group 0.	ESS 1902-1 Item 00A Col. 29
SS0	Strongest/Serving indicator for server group 0. YES = strongest face, NO = serving face.	ESS 1902-1 Item 00A Col. 28
SS1	Strongest/Serving indicator for server group 1. YES = strongest face, NO = serving face.	ESS 1902-1 Item 00A Col. 31
STF	Speed Trending Flag.	
STYPE0	Server group type for server group 0. YES = directional, NO = omni.	ESS 1902-1 Item 00A Col. 27
STYPE1	Server group type for server group 1. YES = directional, NO = omni.	ESS 1902-1 Item 00A Col. 30
SUBG p	Subgroup type. Variable p = 0-2.	ESS 1902-1,2 Col. 26
UNMUTE	Unmute Override Indicator.	ESS 1902-1,2 Cols. 59-60
UPHYST $\neq a$	Upward Handoff Hysteresis. Variable a = 0-127 (default = 8)	ESS 1902-1,2 Cols. 41-43
VMAC k	Voice Mobile Attenuation Code. Variable k = 0-7.	ESS 1902-1,2 Col. 58

9. RECENT CHANGE IMPLEMENTATION PROCEDURES

A flow diagram showing the recommended sequence for implementing System 100 translations is shown in Fig. 1.

Once the head tables and subtranslators have been built and linked, the RC data input procedures must be done in the sequence shown, starting with building cell master equipage translations (RC:CELEQ/RC:VRAD).

Note: The MHT (master head table) for the 1A ESS switch consists of the first 128 decimal words in the base translator block which is 1376 words long. The block is located at address 7720000 (refer to AT&T Practice 231-048-311).

9.1 Building and Linking Head Tables and Subtranslators

Caution: Recent changes are immediately effective in call processing, and since few data checks can be made for the RC:PSWD message, a bad RC:PSWD message can result in serious system problems, depending upon the nature of the error. These problems can appear immediately or at any time following the RC message. If serious translation data mutilation occurs, a rollback of all RC messages (through and including the bad message) should be performed. Refer to AT&T Practice 231-048-301 for a general explanation of recent change rollback and AT&T Practice 231-048-305 for detailed procedures for rollback of an RC:PSWD message. If noncritical translation data errors are introduced, the RC message may be reentered in correct form along with any additional RC:PSWD message needed to undo bad recent changes not corrected by reentering the original RC message.

Note: All head tables and subtranslators should be put in HUCS (high unduplicated call store) unless otherwise indicated. For example, the DN subtranslator should be put in LUCS (low unduplicated call store).

9.1.1 Build and Link the DN Subtranslator

Seize and initialize to zero a DN subtranslator:

1. Input

RC:SUBTRAN:

DATA 0

NOGL $\ell/\ell/\ell/e$ (LUCS)

or

NOGH $\ell/\ell/\ell/e$ (HUCS)

OTHER!

$\ell/\ell/\ell/e$ = Length of block in decimal.

Following an OK TACK is

RC18 17 0 INFO

ADD aaaaaaaa OCT bbbbbbbb

RC18 17 0 ACPT

aaaaaaa = Octal PS (program store) address of subtranslator.

bbbbbbbb = Octal length of subtranslator PS block.

9.1.2 Build the DN Abbreviated Code Expansion Table

Build a 4-word DN abbreviated code expansion table:

1. Input

RC:PSWD:

ADD aaaaaaa

OLDDAT 0

DAT b%

DAT c%

DAT d%

DAT e!

aaaaaaa = Octal address of first PS word to be written (MHT + 47 (octal 57)).

bcde = Abbreviated data.

Following an IP TACK is

RC18 1 0 ACPT.

2. Verify expansion by entering

DUMP:CSS,ADR aaaaaaa, L4!

System response is a DUMP:CSS message containing the contents of the PS block (all zeros).

9.1.3 Build and Link the LEN Subtranslator

Seize and initialize to zero a LEN subtranslator:

1. Input

RC:SUBTRAN:

DATA 0

LNGH $\ell/\ell/\ell/e$ (HUCS)

OTHER!

$\ell/\ell/\ell/e$ = Length of block in decimal.

Following an OK TACK is

RC18 17 0 INFO

ADD aaaaaaa OCT bbbbbbbb

RC18 17 0 ACPT

aaaaaaa = Octal PS address of subtranslator.

bbbbbbbb = Octal length of subtranslator PS block.

2. Verify PS block location, size, and contents by entering

DUMP:CSS, ADR aaaaaa, L $\ell/\ell/\ell/\ell/\ell/\ell/\ell/\ell!$

System response is a DUMP:CSS message containing the contents of the PS block (all zeros).

3. Link the LEN subtranslator to the LEN head table:

Input

```
RC:PSWD:
```

```
ADD cccccc
```

```
OLDDAT 0
```

```
DAT aaaaaaa!
```

```
ccccc = Head table address.
```

```
aaaaaaa = Subtranslator address.
```

Following an IP TACK is

```
RC18 1 0 ACPT.
```

4. Verify linkage by entering

```
DUMP:CSS,ADR aaaaaa, L1!
```

System response is a DUMP:CSS message containing the subtranslator address.

9.1.4 Build the LEN Abbreviated Code Expansion Table

Build a 4-word abbreviated code expansion:

1. Input

RC:PSWD:

ADD aaaaaaa

OLDDAT 0

DAT b%

DAT c%

DAT d%

DAT e!

aaaaaaa = Octal address of first PS word to be written [MHT + 46 (octal 56)].

bcde = Abbreviated data.

Following an IP TACK is

RC18 1 0 ACPT.

2. Verify expansion by entering

DUMP:CSS,ADR aaaaaaa, L4!

System response is a DUMP:CSS message containing the contents of the PS block (all zeros).

9.1.5 Build and Link the DN-SN/MIN Head Table

Seize and initialize to zero a block of PS words (129 words) for the head table:

1. Input

```
RC:SUBTRAN:  
DATA 0  
LNGH 129 (HUCS)  
OTHER!
```

Following an OK TACK is

```
RC18 17 0 INFO  
ADD aaaaaaa OCT 201  
RC18 17 ACPT
```

aaaaaaa = Octal starting address of -1 word of PS block seized.

2. Verify PS block location, size, and contents by entering

```
DUMP:CSS,ADR aaaaaaa, L129!
```

System response is a DUMP:CSS message containing the contents of the PS block (all zeros).

3. Build the DN-SN/MIN head table by typing:

```
RC:PSWD:  
ADD aaaaaaa  
OLDDAT 0  
DAT 201!
```

aaaaaaa = Octal address of -1 word.

Following an IP TACK is

```
RC18 1 0 ACPT.
```

4. Verify the word length by entering

DUMP:CSS,ADR aaaaaaa, L129!

System response is a DUMP:CSS message containing the contents.

5. Link the DN-SN/MIN head table to the MHT +72 (octal 110):

Input

RC:PSWD:

ADD bbbbbbb

OLDDAT 0

DAT ccccccc!

bbbbbbb = Octal address of MHT +72 (octal 110).

ccccccc = Octal starting address of the PS block + 1 (from Step 1).

Following an IP TACK is

RC18 1 0 ACPT.

6. Verify linkage by entering

DUMP:CSS,ADR bbbbbbb, L1!

System response is a DUMP:CSS message containing ccccccc.

9.1.6 Build and Link the DN-SN/MIN Subtranslator

Seize and initialize to zero a block of PS words (3000 words) for the DN-SN/MIN subtranslator:

1. Input

RC:SUBTRAN:

DATA 0

DNSN aaa!

Where aaa = Number group number (decimal) of DN-SN/MIN subtranslator.

Following an OK TACK is

RC18 17 0 INFO

ADD aaaaaaa OCT 5670

RC18 17 0 ACPT

aaaaaaa = Octal PS address of subtranslator.

2. Verify PS block location, size, and contents by entering

DUMP:CSS,ADR aaaaaaa, L3000!

System response is a DUMP:CSS message containing the contents (all zeros).

3. Link the DN-SN subtranslator to the DN-SN head table:

Input

RC:PSWD:

ADD aaaaaaa

OLDDAT 0

DAT bbbbbbbb!

aaaaaaa = Octal address of head table.

bbbbbbbb = Octal address of subtranslator.

Following an IP TACK is

RC18 1 0 ACPT.

4. Verify linkage by entering

DUMP:CSS,ADR aaaaaa, L1!

System response is a DUMP:CSS message containing the subtranslator address.

9.1.7 Build and Link the MIN-TLDN Head Table

Seize and initialize to zero a block of PS words (101 words) for the head table:

1. Input

RC:SUBTRAN:

DATA 0

LNGH 101 (HUCS)

OTHER!

Following an OK TACK is

RC18 17 0 INFO

ADD aaaaaaa OCT 145

RC18 17 ACPT

aaaaaaa = Octal starting address of -1 word of PS block seized.

2. Verify PS block location, size, and contents by entering

DUMP:CSS,ADR aaaaaa, L101!

System response is a DUMP:CSS message containing the contents of the PS block (all zeros).

- Build the MIN-TLDN head table:

Input

RC:PSWD:

ADD aaaaaaa

OLDDAT 0

DAT 145!

aaaaaaa = Octal address of -1 word.

Following an IP TACK is

RC18 1 0 ACPT.

- Verify the word length by entering

DUMP:CSS,ADR,aaaaaaa, L101!

System response is a DUMP:CSS message containing the contents.

- Link the MIN-TLDN head table to the Aux MHT +58 (octal 72):

Input

RC:PSWD:

ADD bbbbbbb

OLDDAT 0

DAT ccccccc!

bbbbbbb = Octal address of Aux MHT +58 (octal 72).

ccccccc = Octal starting address of the PS block +1 (from Step 1).

Following an IP TACK is

RC18 1 0 ACPT.

- Verify the linkage by entering

DUMP:CSS,ADR,bbbbbbb, L1!

System response is a DUMP:CSS message containing ccccccc.

9.1.8 Build and Link the MIN-SDN Head Table

Seize and initialize to zero a block of PS words (101 words) for the head table (refer to AT&T Practice 231-048-305):

1. Input

RC:SUBTRAN:

DATA 0

LNGH 101 (HUCS)

OTHER!

Following an OK TACK is

RC18 17 0 INFO

ADD aaaaaaaa OCT 145

RC18 17 ACPT

aaaaaaa = Octal starting address of -1 word of PS block seized.

2. Verify the PS block location, size, and contents by entering

DUMP:CSS,ADR,aaaaaaa, L101!

System response is a DUMP:CSS message containing the contents of the PS block (all zeros).

3. Build the MIN-SDN head table:

Input

RC:PSWD:

ADD aaaaaaa

OLDDAT 0

DAT 145!

aaaaaaa = Octal address of -1 word.

Following an IP TACK is

RC18 1 0 ACPT.

4. Verify the word length by entering

DUMP:CSS,ADR aaaaaaa, L10!

System response is a DUMP:CSS message containing the contents.

5. Link the MIN-SDN head table to the Aux MHT +91 (octal 133):

Input

RC:PSWD:

ADD bbbbbbb

OLDDAT 0

DAT ccccccc!

bbbbbbb = Octal address of Aux MHT +91 (octal 133).

ccccccc = Octal starting address of the PS block +1 (from Step 1).

Following an IP TACK is

RC18 1 0 ACPT.

6. Verify the linkage by entering

DUMP:CSS,ADR,bbbbbbb, L1!

System response is a DUMP:CSS message containing ccccccc.

9.1.9 Build and Link the Cell Site Head Table

Seize and initialize to zero a 5-word PS block for the cell site head table (refer to AT&T Practice 231-048- 305):

1. Input

```
RC:SUBTRAN:  
DATA 0  
LNGH 5 (HUCS)  
OTHER!
```

Following an OK TACK is

```
RC18 17 0 INFO  
ADD aaaaaaaa OCT 5  
RC18 17 0 ACPT
```

aaaaaaa = Octal starting address of -1 word of the PS block seized.

2. Verify the PS block location, size, and contents by entering

```
DUMP:CSS,ADR aaaaaa, L5!
```

System response is a DUMP:CSS message containing the contents of the PS block (all zeros).

3. Build the cell site translator head table (refer to AT&T Practice 231-048-305):

Input

RC:PSWD:

ADD aaaaaaa

OLDDAT 0

DAT 5!

aaaaaaa = Octal address of -1 word.

Following an IP TACK is

RC18 1 0 ACPT.

4. Verify word length by entering

DUMP:CSS,ADR aaaaaaa, L5!

System response is a DUMP:CSS message containing the length.

5. Link the cell site translator head table:

Input

RC:PSWD:

ADD aaaaaaa

OLDDAT 0

DAT bbbbbbbb!

aaaaaaa = Octal address of MHT +71 (octal 107).

bbbbbbbb = Octal starting address of PS block +1 (from Step 1).

Following an IP TACK is

RC18 1 0 ACPT.

6. Verify linkage by entering

DUMP:CSS,ADR aaaaaa, L1!

System response is a DUMP;CSS message containing the cell site translator starting address.

9.1.10 Build the Cell Site Trunking Translator and Link to the Cell Site Head Table

Seize and initialize to zero a block of 257 PS words for the cell site trunking translator head table:

1. Input

RC:SUBTRAN:

DATA 0

LNGH 257 (HUCS)

OTHER!

Following an OK TACK is

RC18 17 0 INFO

ADD aaaaaaaa OCT bbbbbbbb

RC18 17 0 ACPT.

2. Verify PS block location, size, and contents by entering

DUMP:CSS,ADR aaaaaaa, L257!

System response is a DUMP:CSS message containing the contents of the PS block (all zeros).

3. Build the cell site trunking translator head table by entering:

RC:PSWD:

ADD aaaaaaa

OLDDAT 0

DAT 401!

aaaaaaa = Octal address of the cell site trunking translator head table (-1 word).

4. Verify length by entering

DUMP:CSS,ADR aaaaaaa, L257!

System response is a DUMP:CSS message containing the length.

5. Link the cell site trunking translator head table to the cell site translator by entering

RC:PSWD:

ADD cccccc

OLDDAT 0

DAT dddddddd!

ccccc = Octal address of the cell site translator [MHT +71 (octal 107) +0].

ddddddd = Octal address of cell site trunking head table +1 (from Step 1).

Following an IP TACK is

RC18 1 0 ACPT.

6. Verify linkage by entering

DUMP:CSS,ADR cccccc, L1!

System response is a DUMP:CSS message containing the cell site trunking translator starting address.

9.1.11 Build the Cell Master Status Translator HT and Link to the Cell Site Translator HT

Seize and initialize to zero a 257-word block of words for the cell site master status translator head table (refer to AT&T Practice 231-048-305):

1. Input

RC:SUBTRAN:

DATA 0

LNGH 257 (HUCS)

OTHER!

Following an OK TACK is

RC18 17 0 INFO

ADD aaaaaaa OCT 401

RC18 17 0 ACPT.

2. Verify PS block location, size, and contents by entering

DUMP:CSS,ADR aaaaaaa, L257!

System response is a DUMP:CSS message containing the contents of the PS block (all zeros).

3. Build the cell master status head table:

Input

RC:PSWD:

ADD aaaaaaa

OLDDAT 0

DAT 401!

aaaaaaa = Octal address of cell master status head table (-1 word).

4. Verify length by entering

DUMP:CSS,ADR aaaaaa, L257!

System response is a DUMP:CSS message containing the length.

5. Link the cell master status translator to the cell site translator head table:

Input

RC:PSWD:

ADD cccccc

OLDDAT 0

DAT dddddddd!

ccccc = Octal address of the cell site translator [MHT +71 (octal 107) +1].

ddddddd = Octal address of the cell master status translator + 1 (from Step 1).

6. Verify linkage by entering

DUMP:CSS,ADR cccccc, L1!

System response is a DUMP:CSS message containing the cell master status starting address.

9.1.12 Build the Cell Master Equipage Translator HT and Link to the Cell Site Translator HT

Build the cell master equipage translator (refer to AT&T Practice 231-048-305):

1. Seize and initialize to zero a 257-word block of words for the cell master equipage translator head table by typing

RC:SUBTRAN:

DATA 0

LNGH 257 (HUCS)

OTHER!

Following an OK TACK is

RC18 17 0 INFO

ADD aaaaaaa OCT 401

RC18 17 0 ACPT.

2. Verify PS block location, size, and contents by entering

DUMP:CSS,ADR aaaaaaa, L257!

System response is a DUMP:CSS message containing the contents of the PS block (all zeros).

3. Input

RC:PSWD:

ADD aaaaaaa

OLDDAT 0

DAT 401!

aaaaaaa = Octal address of the cell master equipage head table.

4. Verify length by entering

DUMP:CSS,ADR aaaaaaa, L257!

System response is a DUMP:CSS message containing the length.

5. Link the cell master equipage translator to the cell site translator by entering

RC:PSWD:

ADD cccccc

OLDDAT 0

DAT dddddddd!

ccccc = Octal address of the cell site translator [MHT +71 (octal 107) +2].

ddddddd = Octal address of the cell master equipage head table + 1 (Step 1).

6. Verify linkage by entering

DUMP:CSS,ADR cccccc, L256!

System response is a DUMP:CSS message containing the cell master equipage translator starting address.

9.1.13 Build the Cell Master Location Translator HT and Link to the Cell Site Translator HT

Seize and initialize to zero a 257-word block of PS words for the cell master location translator head table (refer to AT&T Practice 231-048-305):

1. Input

```
RC:SUBTRAN:
DATA 0
LNGH 257 (HUCS)
OTHER!
```

Following an OK TACK is

```
RC18 17 0 INFO
ADD aaaaaaa OCT 401
RC18 17 0 ACPT.
```

2. Verify PS block location, size, and contents by entering

```
DUMP:CSS,ADR aaaaaaa, L257!
```

System response is a DUMP:CSS message containing the contents of the PS block (all zeros).

3. Build the cell master location translator by entering

```
RC:PSWD:
ADD aaaaaaa
OLDDAT 0
DAT 401!
```

aaaaaaa = Octal address of the cell master location head table.

4. Verify length by entering

DUMP:CSS,ADR aaaaaa, L257!

System response is a DUMP:CSS message containing the length.

5. Link the cell master location translator to the cell site translator head table by entering

RC:PSWD:

ADD cccccc

OLDDAT 0

DAT dddddddd!

ccccc = Octal address of the cell site translator [MHT +71 (octal 107) +3].

ddddddd = Octal address of the cell master location translator.

6. Verify linkage by entering

DUMP:CSS,ADR cccccc, L1!

System response is a DUMP:CSS message containing the cell master location translator starting address.

9.1.14 Build and Link the System 100 Miscellaneous Information Translator HT

Seize and initialize to zero a 17-word block of PS words for the AMI translator (refer to AT&T Practice 231-048-305):

1. Input

RC:SUBTRAN:

DATA 0

LNGH 17 (HUCS)

OTHER!

Following an OK TACK is

RC18 17 0 ACPT

ADD aaaaaaa OCT 5

RC18 1 0 ACPT.

2. Verify the PS block location, size, and contents by entering

DUMP:CSS,ADR aaaaaa, L17!

System response is a DUMP:CSS message containing the contents of the PS block (all zeros).

3. Build the AMI translator head table by entering

RC:PSWD:

ADD aaaaaaa

OLDDAT 0

DAT 21!

aaaaaaa = Octal address of -1 word.

Following an IP TACK is

RC18 1 0 ACPT.

4. Link the AMI translator head table to the MHT +73 (octal 111) by entering

RC:PSWD:

ADD bbbbbbb

OLDDAT 0

DAT ccccccc!

bbbbbbb = Octal address of AMI translator [MHT +73 (octal 111)].

ccccccc = Octal starting address of PS block.

5. Verify linkage by entering

DUMP:CSS,ADR ccccccc, L1!

System response is a DUMP:CSS message containing the AMI translator starting address.

9.1.15 Build and Link the Cell Dialup Channel Head Table

Seize and initialize to zero a block of 257 PS words for the cell dialup channel head table (refer to AT&T Practice 231-048-305):

1. Input

```
RC:SUBTRAN:  
DATA 0  
LNGH 257 (HUCS)  
OTHER!
```

Following an OK TACK is

```
RC18 17 0 ACPT  
ADD aaaaaaa OCT bbbbbbbb  
RC 18 17 0 ACPT.
```

2. Verify the PS block location, size, and contents by entering

```
DUMP:CSS,ADR aaaaaa, L257!
```

System response is a DUMP:CSS message containing the contents of the PS block (all zeros).

3. Build the cell dialup channel head table by entering

RC:PSWD:

ADD aaaaaaa

OLDDAT 0

DAT 401!

aaaaaaa = Octal address of -1 word.

Following an IP TACK is

RC18 1 0 ACPT.

4. Verify length by entering

DUMP:CSS,ADR aaaaaaa, L257!

5. Link the cell dialup channel head table to the MHT +74 (octal 112) by entering

RC:PSWD:

ADD bbbbbbb

OLDDAT 0

DAT ccccccc!

bbbbbbb = Octal address of the MHT +74 (octal 112).

ccccccc = Octal starting address of the cell dialup channel head table.

6. Verify linkage by entering

DUMP:CSS,ADR ccccccc, L1!

System response is a DUMP:CSS message containing the cell dialup channel starting address.

9.1.16 Build and Link the IOP KCODE-Cell Member Number Translator HT

Seize and initialize to zero a 1025-word block of PS words for the head table (refer to AT&T Practice 231-048-305):

1. Input

```
RC:SUBTRAN:
DATA 0
LNGH 1025 (HUCS)
OTHER!
```

Following an OK TACK is

```
RC18 17 0 ACPT
ADD aaaaaaaa OCT 4001!
RC18 1 0 ACPT.
```

2. Verify PS block location, size, and contents by entering

```
DUMP:CSS,ADR aaaaaaa, L1025!
```

System response is a DUMP:CSS message containing the contents of the PS block (all zeros).

3. Build the IOP KCODE-cell channel member number head table by entering

RC:PSWD:

ADD aaaaaaa

OLDDAT 0

DAT 4001!

aaaaaaa = Octal address of the IOP KCODE-cell channel number head table (-1 word).

Following an IP TACK is

RC18 1 0 ACPT.

4. Verify length by entering

DUMP:CSS,ADR aaaaaaa, L1025!

System response is a DUMP:CSS message containing the length.

5. Link the IOP KCODE-cell member number head table to the MHT +70 (octal 106) by entering

RC:PSWD:

ADD bbbbbbb

OLDDAT 0

DAT ccccccc!

bbbbbbb = Octal address of MHT +74 (octal 106).

ccccccc = Octal starting address of the PS block.

6. Verify linkage by entering

DUMP:CSS,ADR ccccccc, L1!

System response is a DUMP:CSS message containing the IOP KCODE-cell channel member number starting address.

9.1.17 Build and Link the IOM Translator Unit Type 59 Translator

Note: The unit type 59 (IOM) translator MHT index = decimal 512 +59. The translator length MHT index = decimal 640 +45.

Seize and initialize to zero a 45-word block of PS words as follows:

1. Input

```
RC:SUBTRAN:
DATA 0
LNGH 45 (HUCS)
OTHER!
```

Following an OK TACK is

```
RC18 17 0 INFO
ADD aaaaaaa OCT 55
RC18 17 0 ACPT
```

aaaaaaa = Octal starting address of word 0 of the PS block seized.

2. Verify the PS block location, size, and contents by entering

```
DUMP:CSS,ADR aaaaaa, L45!
```

System response is a DUMP:CSS message containing the contents of the PS block (all zeros).

3. Link the IOM unit type 59 translator by entering

RC:PSWD:

ADD aaaaaaa

OLDDAT 0

DAT bbbbbbbb!

aaaaaaa = Octal address that points to the unit type 59 translator
MHT + decimal 512 +59.

bbbbbbbb = Octal address of word 0 of the PS block seized above.

Following an OK TACK is

RC18 1 0 ACPT.

4. Verify linkage by entering

DUMP:CSS,ADR aaaaaaa, L1!

System response is a DUMP:CSS message containing the starting address of the PS block.

5. Put the head table length into the length head table by entering

RC:PSWD:

ADD cccccc

OLDDAT 0

DAT ddd!

ccccc = Octal address of the length HT (MHT + decimal 640 +45).

ddd = Octal data (length = 45 decimal, 55 octal).

Following an IP TACK is

RC18 1 0 ACPT.

6. Verify the size by entering

DUMP:CSS,ADR cccccc, L1!

System response is a DUMP:CSS message containing the length of the table.

9.2 ADDING TRANSLATOR RECENT CHANGE DATA

Note: The following translation data input procedures should be done in the sequence shown.

9.2.1 Adding Cell Master Equipage Translator Data

Add cell site antenna and radio data to the cell master equipage translator (refer to Part 4) using the RC:CELEQ and RC:VRAD messages as shown in Part 7.

9.2.2 Adding Data to the AMI Auxiliary Block

Add data to the AMI auxiliary block (refer to Part 4) using the RC:AMI message as shown in Part 7.

9.2.3 Adding IOP KCODE-Cell Channel Member Number Data

Add IOP KCODE-cell channel member number data (refer to Part 4) using the RC:IOP message as shown in Part 7.

9.2.4 Adding Master Scanner Number Data

Add master scanner number data (refer to AT&T Practice 231-048-310):

RC:MSN:

MSN aaaaaa

NPI 27

UTY 59

MEMN b/b/b/b!

aaaaaa = Master scanner number.

b/b/b/b = Member number (even number).

9.2.5 Assigning CPD in CPDN Translator

Assign CPD in the CPDN translator (refer to AT&T Practice 231-048-310):

RC:CPD:

CPD abcde

UTY \not{f}

MEMN $g/g/g!$

abcde = CPD point where:

a = Pair

b = Half

c = Group

d = Row

e = Column

\not{f} = Unit type (decimal).

$g/g/g$ = Member number (decimal).

9.2.6 Adding IOM Equipage Data

Add IOM equipage data (refer to Part 4) using the RC:IOMT message as shown in Part 7.

9.2.7 Equipping TNN-PEN Translations

Note: The TNNs are equipped, but unassigned.

Equip TNNs using RC:TRK as shown in AT&T Practice 231-048-303.

9.2.8 Building Trunk Group Translations

Build trunk group translations (refer to Part 4) for type 2 (2-way trunks from the MTSO to the zone office), type 13 (trunk groups from the MTSO to the cell site) and customer changeable call forwarding using the RC:TG message as shown in Part 6.

9.2.9 Adding Route Index Expansion and Pseudo Route Index Data

Refer to Part 4 for RI translations description.

Add fixed RI expansion data (refer to AT&T Practice 231-048-304):

RC:RI:

RI 131 (Note)

NRI $\phi\phi\phi c$

TG $h/h/b$

RICDE 0!

Note: An RI of 131 is assigned to System 100 for a dedicated group of milliwatt test lines used for loop-around trunk diagnostics.

$\phi\phi\phi c = \text{RI}$.

$h/h/b = \text{Pseudo RI}$.

Following an OK TACK is

RC18 3 0 ACPT.

Add pseudo RI expansion:

RC:RI:

RI $\phi\phi\phi a$

PRI $h/bb!$

$\phi\phi\phi a = \text{RI}$.

$h/bb = \text{Pseudo RI}$.

Following an OK TACK is

RC18 3 0 ACPT.

Verify RI and pseudo RI expansion:

VFY-EXP-aa $\phi\phi\phi c$ d.

aa = NR for RI or NP for pseudo RI.

$d/c = RI$ or PRI.

$d = 0$ to verify one RI or PRI; 1 to verify a group of RIs or PRIs.

Following an OK TACK is a TR05 message containing d/c .

9.2.10 Building Cell Site Trunking Translations

Build cell site trunking translations (refer to Part 4) using the RC:CST message as shown in Part 7.

9.2.11 Building TNN-TGN Translations

Build TNN-TGN translations (refer to Part 4) using the RC:TGMEM message as shown in Part 6.

9.2.12 Building Cell Site Master Status Translations

Build cell site master status translations (refer to Part 4) using the RC:MSTAT message as shown in Part 7.

9.2.13 Building Cell Site Master Location Translations

Build cell site master location translations (refer to Part 4) using the RC:MLOC message as shown in Part 7.

9.2.14 Adding Data to the Paging Cell Site Auxiliary Block

Add data to the paging cell site auxiliary block (refer to Part 4) using the RC:PCS message as shown in Part 7.

9.2.15 Adding Data to the Roamer Service List Auxiliary Block

Add data to the roamer service list auxiliary block (refer to Part 4) using the RC:RSL message as shown in Part 7.

9.2.16 Adding Data to the Roamer Serial Number Auxiliary Block

Add data to the roamer serial number auxiliary block (refer to Part 4) using the RC:SN message as shown in Part 7.

9.2.17 Building Cell Dialup Translations

Build cell dialup translations (refer to Part 4) using the RC:CDU message as shown in Part 7.

9.2.18 Assigning an NGN in the NOC Table

Assign a NGN (number group number) in the NOC (normalized office code) table by (refer to AT&T Practice 231-048-304):

RC:NOCNOG:

NOC \varnothing /a

OC4 ccct!

\varnothing /a = Normalized office code.

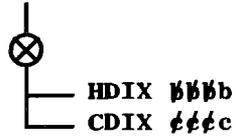
ccct = Office code (ccc) and thousands digit (t).

Following an OK TACK is an RC18 18 0 INFO message plus the DN head table index [NOG (number group)].

9.2.19 Adding H and C Traffic Count Translations

Add translations data for H and C traffic counts for TMC 116 and EGO 000 through EGO 111 as shown in Fig. 70. (Refer to AT&T Practice 231-048-307.)

RC:TRFCH:
 TMC 116
 EGO ###a



EGO a = Equipment group or office
 count number (000-111)

HIDX b = Index for traffic measurements
 H (hourly) schedule (TMTH) table

CIDX c = Index for traffic measurements
 C (continuous) schedule (TMTC) table.

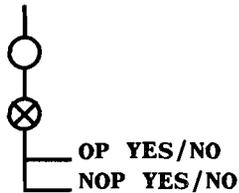
Fig. 70 — Adding H and C Traffic Counts (RC:TRFHC)

9.2.20 Building Translations for a Range of DNs

Assigning a New Range of DNs to an RI: Assign a new range of DNs to a RI as shown in Fig. 71.

Changing the RI Assignment of a Range of DNs: To change the RI assignment of a range of DNs, refer to Fig. 72.

RC:DNRNG:
 ORD ~~nnnnnn~~n
 DNR aaaaaaa-bbbbbbb
 RI ~~ccc~~c (NOTE 1)



NOTE:

1. Unless otherwise specified (by keywords OP or NOP), the PI (program index) is determined by the data in the RI expansion table. Bit 22 of word 0 set indicates outpulsing. PI is as follows:

- PI = 2 = outpulsing
- PI = 1 = maintenance trunks not allowed
 (fixed RI 92, 93, 96-111, 153,
 166-179, 187, and 188)
- PI = 0 = all other cases.

Fig. 71 — Assigning a New Range of DNs to an RI (RC:DNRNG)

```

RC:DNRNG;CHG:
ORD #####n
DNR aaaaaaa-bbbbbbb
RI q/q/c

```

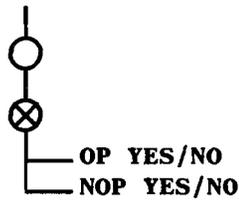


Fig. 72 — Changing the RI Assignment of a Range of DNs (RC:DNRNG)

Removing a Range of DNs from Service: Remove a range of DNs from service by inputting:

```

RC:DNRNG;OUT:

ORD m/n/n/n/n/n/n

DNR aaaaaaa - bbbbbbb!

```

Definitions of keywords used in RC:DNRNG, RCDNRNG;CHG, and RC:DNRNG;OUT messages are:

DNR = Range of DNs where aaaaaaa = beginning DN and bbbbbbb = ending DN. The first DN must be less than or equal to (if only one DN is to be assigned) the second DN. Zeroes are stored as tens. Both DNs must be in the same number group.

NOP = No outpulsing. Used when the associated RI does not need outpulsing. Keyword NOP overrides the outpulsing type found in the RI expansion table.

OP = Outpulsing. Used when the RI requires outpulsing. Keyword OP overrides the outpulsing type found in the RI expansion table.

ORD = Order number.

RI = Route index the DNs are to be assigned to. Variable $q/q/c$ = decimal number up to four digits.

9.2.21 Building DN-SN Translations

Build DN-SN translations (refer to Part 4) using the RC:MOBL message as shown in Part 7.

9.2.22 Building System 100 DN and Roamer II Translations

Build System 100 DN and Roamer II translations (refer to Part 4) using the RC:MOBL message as shown in Part 7.

9.2.23 Adding Common Number (Thousands) Group

Add common number (thousands) group using the RC:NOCNOG message as shown in Part 6.

9.2.24 Building System 100 LEN Translations

Build System 100 LEN translations (refer to Part 4) using the RC:MOBL message as shown in Part 7.

9.2.25 Adding or Changing Codes in the Speed Call List

Note: For System 100, the RC:SCLIST message can be used for the individual 1- or 2-digit speed call list. The list memory is assigned (or removed) by using RC:MOBL. The entries can be entered initially and subsequently changed by customer keying (dialing) without the use of RC:SCLIST.

Add or change codes in the speed call list as shown in Fig. 73. (refer to AT&T Practice 231-048-312):

To delete speed call list data, refer to Fig. 74.

Definitions of keywords used in RC:SCLIST and RC:SCLIST;OUT messages are:

ACC *q* *q*/c = Access code.

ADN *e*/e = Abbreviated directory number (speed calling code).

DGS a...a = Speed calling list telephone number.

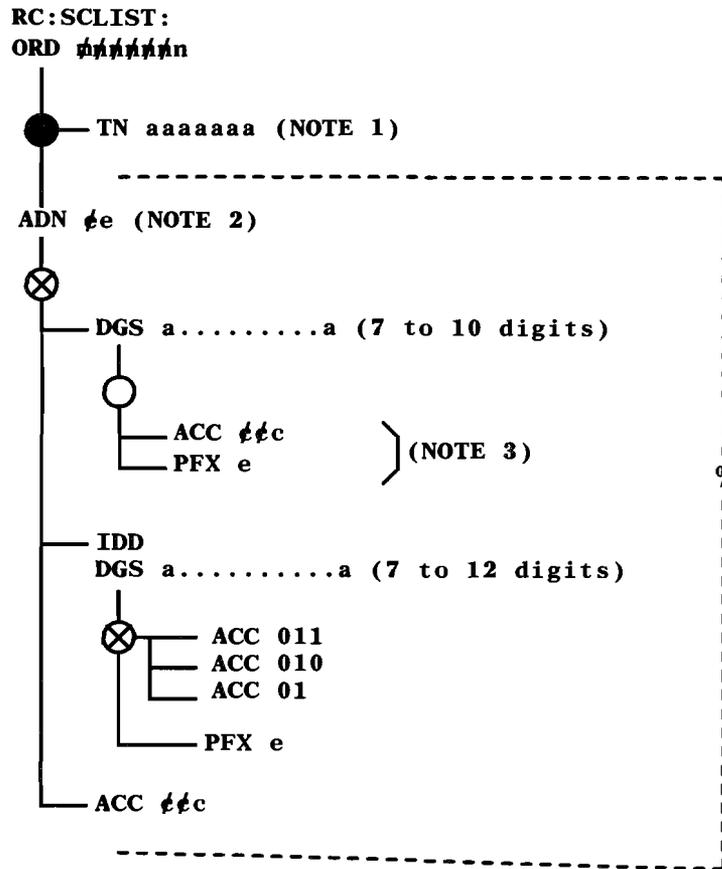
IDD = International direct distance dialing.

ORD *m*/*r*/*r*/*r*/*r*/*r*/*nn* = Order number.

PFX e = Prefix code.

SCG = Speed calling group number.

TN eeeeeee = Telephone number.



NOTES:

1. Use with RC:MOBL message for individual line with 1 or 2-digit list.
2. A maximum of 14 2-digit ADNs may be entered in each RC:SCLIST message.
3. When the distant office requires a 0 or 1 to be included with the 7 or 10 digits received, the data to be entered with the DGS keyword should be preceded by a 0 or 1. In this case, PFX0 or PFX1 should not be entered.

Fig. 73 — Adding or Changing Codes in the Speed Call List (RC:SCLIST)

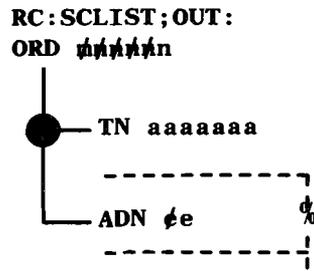


Fig. 74 — Deleting Speed Call List Data (RC:SCLIST)

9.2.26 Activating Customer Changeable Conditional Call Forwarding

To activate customer changeable conditional call forwarding, input the following (refer to AT&T Practice 231-048-312):

RC:CFV:
 BASE aaaaaaa
 TO b/b/b/nnnnnnn
 PFX
 CCF!

Definitions of keywords are:

BASE aaaaaaa = Base TN. The telephone number of the line which has the call forwarding variable (ESM) feature.

TO b/b/b/nnnnnnn = Remote TN. The TN of the line that incoming calls are to be forwarded to.

PFX = Prefix Code. Prefix of 1 (0 is not allowed).

CCF = Conditional Call Forwarding. Indicates customer changeable call forwarding busy line/don't answer.

10. GLOSSARY OF ABBREVIATIONS AND ACRONYMS

The following abbreviations and acronyms are used in this practice.

ABSVID	Abut Service List Identification
AMI	AUTOPLEX System 100 Miscellaneous Information
ANT	Antenna
APS	Attached Processor System
ATB	System 100 Translation Data Base
AUX	Auxiliary
BCD	Binary Coded Decimal
C	Continuous
CFBL/DA	Call Forwarding Busy Line/Don't Answer
CHAN	Channel
CHN	Channel Number
CM	Craft Modifiable
CN	Cellular Networking
CMAC	Control Mobile Attenuation Code
CPD	Central Pulse Distributor
CPI	Circuit Program Index
CSN	Cell Site Number
CST	Cell Site Trunking
DN	Directory Number
DNCL	Directory Number Class
EA	Expert Assistance
EGO	Equipment Group or Office
EMIN	Extended Mobile Identification Number
ERSNL	Expanded Roamer Serial Number List"
H	Hourly
HILO	High-Low
HUCS	High Unduplicated Call Store
IA	Ineffective Attempts
IO	Input/Output
IOM	Input/Output Member Number
IOMP	Input/Output Microprocessor

IOMTRANS Input/Output Processor Member Number Translator

IOP	Input/Output Processor
IOUC	Input/Output Unit Controller
IOUS	Input/Output Unit Selector
LDI	Laboratories Design Information
LEN	Line Equipment Number
LENCL	Line Equipment Number Class
LUCS	Low Unduplicated Call Store
MA	Mobile Attenuation
MHT	Master Head Table
MF	Multifrequency Pulsing
MIN	Mobile Identification Number
MPC	Mobile Power Class
MSA	Mobile Service Area
MT	Member Type
MTSO	Mobile Telephone Switching Office
NSL	Network Service List
NSNL	Network Serial Number List
NGN	Number Group Number
NOC	Normalized Office Code
NOG	Number Group
NPA	Numbering Plan Area
ODA	Office Data Administration
OMAJ	Originating Major Class
ORD	Order
PC	Paging Channel
PCS	Paging Cell Site
PEN	Peripheral Equipment Number
PLEN	Pseudo LEN
PRI	Pseudo Route Index
PS	Program Store
PTLDN	Pseudo Temporary Listed Directory Number
PTW	Primary Translation Word
PUB	Peripheral Unit Bus
PSAP	Public Service Access Point
R3	Release 3

RADN	Radio Number
RC	Recent Change
RI	Route Index
RSL	Roamer Service List
RSNL	Roamer Serial Number List
RSSI	Received Signal Strength Indicator
SAT	Supervisory Audio Tone
SCIW	Supplementary Call Identification Word
SDN	Secondary Directory Number
SG	Server Group
SGANT	Server Group Antenna Face
SN	Serial Number
STAT	Status
TCC	Trunk Class Code
TDA	Translations Data Assembler
TG	Trunk Group
TGN	Trunk Group Number
TLDN	Temporary Local Directory Number
TMC	Traffic Measurement Code
TN	Telephone Number
TNN	Trunk Network Number
TPI	Trunk Program Index
TTY	Teletypewriter
VMAC	Voice Mobile Attenuation Code
WFOM	Wait For Overhead Message.

11. ISSUING ORGANIZATION

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