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DMS-100 Family

North American DMS-100

Translations Guide Volume 18 of 20

Residential Enhanced Services (RES) Part 2 of 3

LEC0015 and up Standard 14.02 May 2001

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Emergency Number Services, GETS0001

1 Datafilling RES Display Functionality and Privacy

The following chapter describes the RES Display Functionality and Privacy, RES00003, functionality.

Anonymous Caller Rejection (ACRJ)

Ordering codes

Functional group ordering code: RES00003

Functionality ordering code: RES00021

Release applicability

NA010 and up

Prerequisites

To operate, Anonymous Caller Rejection (ACRJ) has the following prerequisites:

- BAS Generic, BAS00003
- MDC Minimum, MDC00001
- MDC Standard, MDC00003
- RES Service Enablers, RES00006

Network configuration

Common Channel Signaling No. 7 (CCS7) connectivity is required for network (interoffice) configuration of Anonymous Caller Rejection. The following prerequisites are required for CCS7 connectivity:

- Base ISUP, ISP70001
- TEL CCS7 Base, TEL00008
- BAS Generic, BAS00003

Description

The Anonymous Caller Rejection (ACRJ) feature allows a subscriber to reject calls from callers who block their names or directory numbers (DN). The system routes anonymous calls route to an announcement.

Custom Local Area Signaling Services (CLASS) features use Meridian Digital Centrex (MDC) or Subscriber Services (RES) as platforms in the DMS-100. The CLASS interoffice network is implemented with CCS7 connectivity.

CLASS display features

The CLASS features Calling Name Delivery (CNAMD), Dialable Number Delivery (DDN), and Calling Number Delivery (CND) display the calling party's name and number to a subscriber set. With this information, subscribers

Anonymous Caller Rejection (ACRJ) (continued)

can view the DN or the name of the calling party. CNAMD, DDN, and CND are referred to as “display features” throughout this feature description.

Note: For ISDN BRI and MDC agents, the DN display feature is considered automatic to those agent types and the name display feature is controlled by the customer group option NAMEDISP.

Callers can block the display of their DNs or names by using Calling Number Delivery Blocking (CNDB), Calling Number Blocking (CNB), Calling Name Delivery Blocking (CNAB), or Calling Name/Number Delivery Blocking (CNNB). CNDB, CNB, CNAB, and CNNB are referred to as “display blocking features” throughout this description.

The ACRJ feature can be assigned to a line with or without display features.

(A) Lines with ACRJ and no display features process calls as follows:

- Calls that block both the DN and name are rejected.
- Calls that provide both the DN and name are accepted.
- Calls that provide either the DN or the name but not both are accepted.
- Calls are accepted when no calling party information is available.

(B) Lines with ACRJ and display features process calls as follows:

- Calls that block both the DN and name are rejected.
- Calls that provide both the DN and name are accepted.
- Calls that block the DN with only a DN display feature are rejected.
- Calls that block the DN with both DN and name display features are accepted.
- Calls that block the name with only a name display feature are rejected.
- Calls that block the name with both DN and name display features are accepted.
- Calls are accepted when no calling party information is available.

Note: For calls involving the delivery of TCAP or an AIN provided name, ACRJ will base its accept/reject decision on the DN blocking status only, regardless of name status and line features.

Calls are rejected under the following circumstances:

the subscriber can only display a DN but the caller blocks the DN

Anonymous Caller Rejection (ACRJ) (continued)

a caller blocks the DN.

Calls are accepted when no calling party information is available.

Unless certain Screening List Editing (SLE) features are present on the ACRJ subscriber line, an incoming call is first examined to determine if it is anonymous. Regardless of whether the subscriber line is busy or idle, an anonymous call is routed to an ACRJ announcement. The ACRJ subscriber receives no indication that a call has been rejected.

ACRJ must be enabled for the office and added to the subscriber line. The ACRJ line option is classified as a RES option. (If a line is not already a RES line, it will become a RES line if ACRJ is assigned, provided that the RES_SO_SIMPLIFICATION office parameter has field RES_AS_POTS set to Y.) The ACRJ line option can be added through the service order system (SERVORD).

ACRJ rejection announcement datafill

ACRJ must have a rejection announcement defined in order to work properly. The announcement must be recorded using the DRAMREC utility, described in *Digital Recorded Announcement Machine DRAM and EDRAM Guide*. This section shows sample datafill for the announcement.

The sections that follow show recommended datafill for tables DRAMS, CLLI, ANNS, ANNMEMS, and DRAMTRK. Refer to *Digital Recorded Announcement Machine DRAM and EDRAM Guide* for more information on datafilling announcements.

Table DRAMS

Table DRAMS (Digital Recorded Announcement Machines) lists information about the trunk cards that constitute a DRAM. The following example shows recommended datafill for the table DRAM.

Table DRAMS

DRAMCARD		TMTYPE	TMNO	TMCKT	CARDCODE	CARDINFO
5	3	MTM	9	6	1X79AA	EEPROM(4) \$
5	4	MTM	9	8	1X79AA	EEPROM(5) \$

Anonymous Caller Rejection (ACRJ) (continued)

Table CLLI

Table CLLI (Common Language Location Identifier) codes are used to identify the far end of each announcement, tone, or trunk group. The following example shows recommended datafill for table CLLI.

Table CLLI

CLLI	ADNUM	TRKGRSIZ	ADMININF
ACRJANN	488	5	CLASSANNS

Table ANNS

Table ANNS (Announcements) contains data for each digital and analog announcement assigned in the switching unit. The following example shows recommended datafill for table ANNS.

Table ANNS

CLLI	ANTYPE	TRAFSNO	MAXCONN	CYTIME	MAXCYC
ACRJANN	STND	0	30	15	1

Table ANNMEMS

Table ANNMEMS (Announcement Members) lists the members for each announcement defined in table ANNS. The following example shows recommended datafill for table ANNMEMS.

Table ANNMEMS

ANNMEM	HDWTYPE	CARD	MEMINFO
ACRJANN 1	DRAM	DRA	(0 MTM 1 4) \$

Table DRAMTRK

Table DRAMTRK (Digital Recorded Announcement Machine Track) lists information for the trunk cards that constitute a DRAM. It specifies the actual phrase list used to generate the announcement. The following example shows recommended datafill for table DRAMTRK.

Anonymous Caller Rejection (ACRJ) (continued)

Table DRAMTRK

ANTRACK	PHSLIST

ACRJANN 0	(ACRJENG1 ACRJENG2) \$

Universal access

The ACRJ feature can be provided to all RES subscribers in an office through universal access when feature package NTXQ70AA, Universal Access to CLASS Features, is present in the office. For universal access, the value UNIVER instead of SUBSCR should be datafilled in subfield ACCESS in table RESOFC.

Universal access only changes the method of access, not the operation of a CLASS feature. When universal access is available in an office, the subscriber can still have the feature assigned as a line option. Accessing a CLASS feature assigned to the subscriber as a line option or customer group option takes precedence over accessing the feature through universal access.

The Software Optional Control (SOC) allows the operating company to enable the functionality of universal access for CLASS features through a Right to Use (RTU) access code. The subscriber is able to access the CLASS features without assigning the individual features to the line.

The SOC commands enable or disable the universal access for CLASS features. The RTU access code assignment to RES00011 and setting the state to ON enables the universal access for CLASS through SOC. The state is set to IDLE to disable the universal access for CLASS through SOC.

Note 1: Universal access to CLASS features is not applicable to Subscriber Services lines with IBN line class codes (LCC) through NA007.

Note 2: Universal access to CLASS features is not applicable to universal access to display features.

Note 3: Refer to "Universal Access to CLASS Features" for more information on universal access.

Operation

ACRJ does not include operating procedures.

Anonymous Caller Rejection (ACRJ) (continued)

Translations table flow

The ACRJ translations process is shown in the following figures . The first flowchart shows the table flow for ACRJ activation, and the second flowchart shows the table flow for an incoming call to an SCRJ subscriber.

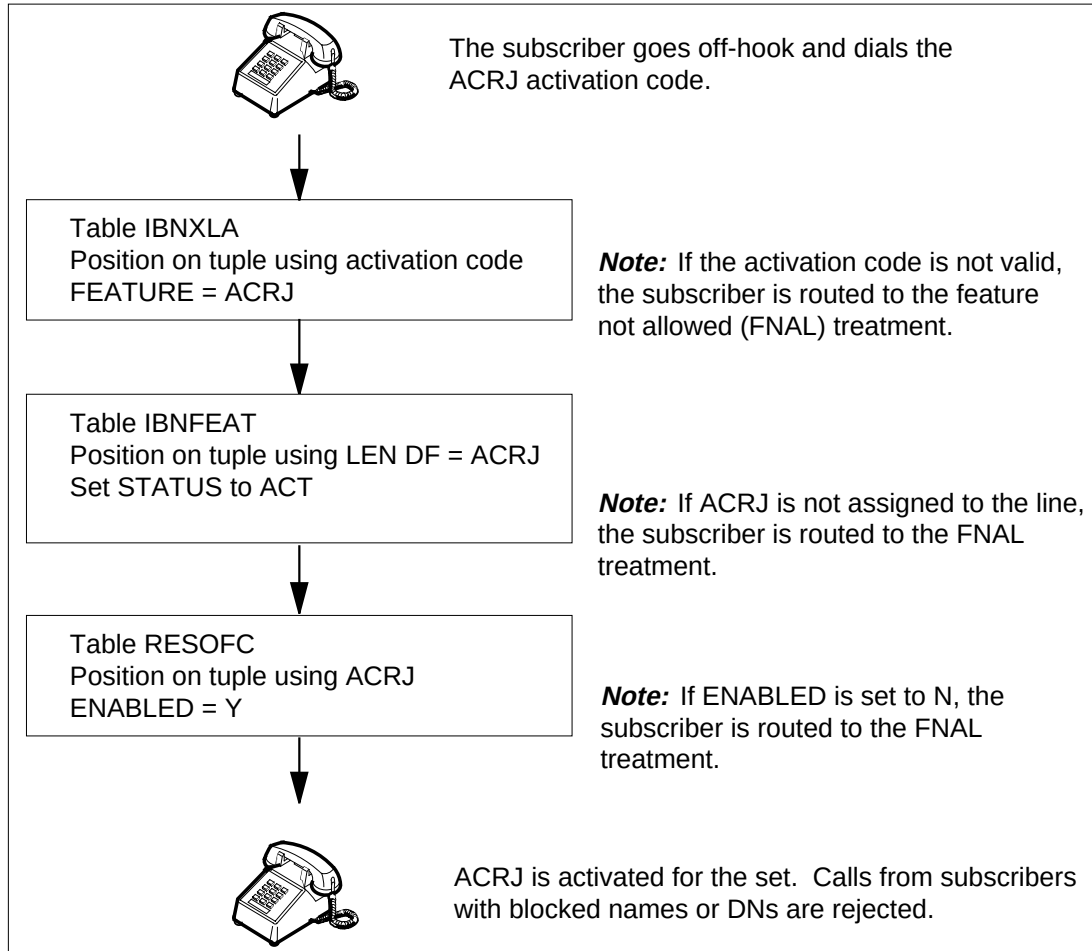
The Anonymous Caller Rejection (ACRJ) translations tables are described in the following list:

- Table IBNXLA provides the name of the feature associated with the dialed activation code.
- Table IBNFEAT lists the features assigned to a line equipment number (LEN). For ACRJ, field STATUS is set to ACT when ACRJ is activated, and it is set to INACT when ACRJ is deactivated.
- Table RESOFC determines whether ACRJ is enabled for an office. For this example, ACRJ is enabled.

The Anonymous Caller Rejection (ACRJ) translation process is shown in the flowchart that follows.

Anonymous Caller Rejection (ACRJ) (continued)

Table flow for Anonymous Caller Rejection (ACRJ)



The following table lists the datafill content used in the flowchart. The ACRJ activation code is 96 and LEN of subscriber is HOST 00 02 0 05.

Datafill example for Anonymous Caller Rejection (ACRJ)

Datafill table	Example data
IBXL	RXCFN 96 FEAT N N N ACRJA
IBFEAT	HOST 00 02 0 05 0 ACRJ ACRJ ACT
RESOFC	ACRJ Y SUBSCR ACRJ N \$

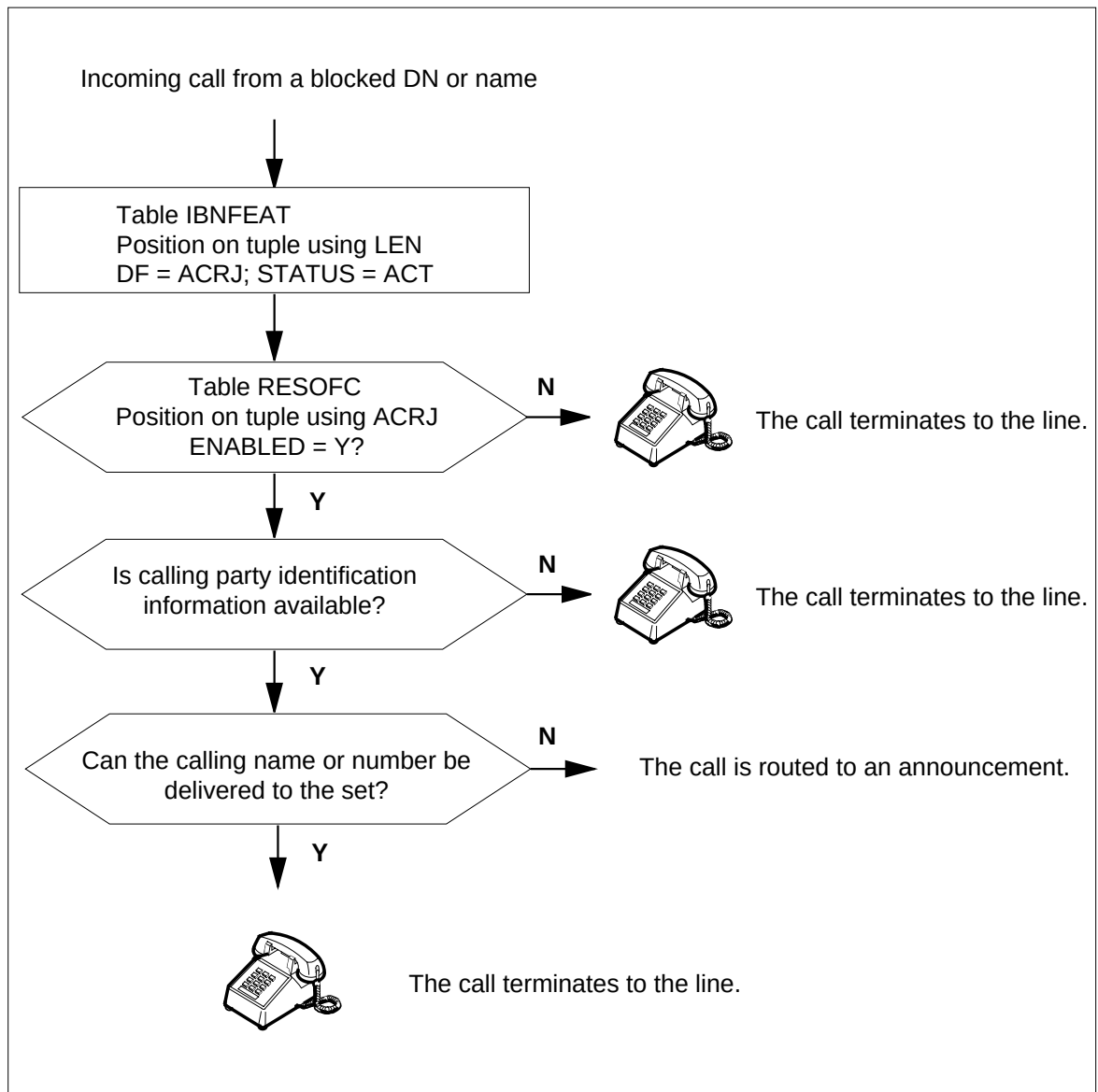
The following figure shows the table flow for an incoming call from a blocked DN.

Anonymous Caller Rejection (ACRJ) (continued)

Table IBNFEAT lists the features assigned to an LEN. For ACRJ, field STATUS is set to ACT when ACRJ is activated, and it is set to INACT when ACRJ is deactivated.

Table RESOFC controls the availability of individual CLASS features for an office. For this example, ACRJ is enabled.

Table flow for an incoming call to an Anonymous Caller Rejection (ACRJ) subscriber



Anonymous Caller Rejection (ACRJ) (continued)

Note: 500/2500 sets require an adjunct set with display capabilities in order to receive calling party display information. A CLASS Modem Resource (CMR) card is also required.

The following table lists the datafill content used in the flowchart. The LEN of subscriber is HOST 00 02 0 05.

Datafill example for an incoming call to an Anonymous Caller Rejection (ACRJ)

Datafill table	Example data
IBNFEAT	HOST 00 02 0 05 0 ACRJ ACRJ ACT
RESOFC	ACRJ Y SUBSCR ACRJ N \$

Limitations and restrictions

The following limitations and restrictions apply to Anonymous Caller Rejection (ACRJ):

- The ACRJ line option is not compatible with integrated voice and data sets (IVDS) and Integrated Services Digital Network (ISDN) stimulus and functional sets.
- ACRJ can be assigned on a flat-rate basis only.
- Subscription usage sensitive pricing (SUSP) is not available for ACRJ.
- There is no name-restricted indicator in either ISDN user part (ISUP) or primary rate access (PRA) messages. When a subscriber activates a display blocking feature for a network call, no information is made available to the terminating office. The terminator's set receives an O (out-of-area) indicator.
- Automatic Call Back (ACB) and Automatic Recall (AR) calls use transaction capability application part (TCAP) query messages to determine if a call should be queued. TCAP query messages do not indicate whether the calling party's name or number has been blocked.

Anonymous Caller Rejection (ACRJ) (continued)

Anonymous ACB or AR calls enter a queue, but they receive ACRJ treatment after they exit the queue.

- ACRJ is incompatible with the following features:
 - Automatic Call Distribution (ACD)
 - Common Control Software Arrangement (CCSA)
 - Denied Termination (DTM)
 - E911 PSAP table Control (LDTPSAP)
 - Group Intercom (GIC)
 - Uniform Call Distribution (UCD)

Interactions

The following paragraphs describe the interactions between Anonymous Caller Rejection (ACRJ) and other functionalities. Since an anonymous call does not terminate on an ACRJ subscriber's line, ACRJ takes precedence over most other terminating features. Exceptions to this rule are described in this section.

Call Forwarding (CFW)

ACRJ takes precedence over Call Forwarding (CFW).

Call Forwarding Don't Answer (CFDA)

When Call Forwarding Don't Answer (CFDA) attempts to forward an anonymous intranodal call and the remote DN rejects the call, the call will continue to ring the CFDA base station.

When CFDA attempts to forward an anonymous internodal call and the remote DN rejects the call, the calling party receives ACRJ treatment. CFDA cannot revert to the base station after receiving a treatment at the remote DN.

Call Forwarding on Busy Line (CFBL)

ACRJ takes precedence over Call Forwarding on Busy Line (CFBL).

Call Forwarding Variable (CFV)

ACRJ takes precedence over Call Forwarding Variable (CFV). When CFV attempts to forward the call, the calling party receives an ACRJ announcement.

Calling Name Delivery (CNAMD)

If calling number delivery is available with ACRJ and is the only display feature, then for calls that perform proprietary name lookup only the name needs be blocked for ACRJ to reject the call.

Anonymous Caller Rejection (ACRJ) (continued)

For calls that perform TCAP or AIN name lookup then the accept/reject decision is based on the DN blocking status only, regardless of the name status and line features.

Distinctive Ringing/Call Waiting (DRCW)

Distinctive Ringing/Call Waiting (DRCW) takes precedence over ACRJ and the call will be completed if the caller is in the called parties DRCW list.

Hunt groups

ACRJ can be assigned to the pilots and individual members of Multiline Hunt (MLH) and Distributed Line Hunt (DLH) groups. If ACRJ is assigned to the pilot of the hunt group or to the dialed line in a Directory Number Hunt (DNH) or MLH group with unique DNs, all anonymous calls are rejected for that group. When a call hunts to a member and is considered anonymous, the incoming call continues to hunt and does not receive ACRJ treatment. ACRJ must be assigned to DNH groups on an individual line basis.

Multiple Appearance Directory Number (MADN)

ACRJ can only be assigned to the primary member of a Multiple Appearance Directory Number (MADN) group. When ACRJ is assigned to the primary member, anonymous calls are rejected for the entire group.

Selective Call Acceptance (SCA)

Selective Call Acceptance (SCA) takes precedence over ACRJ and the call will be completed if the caller is in the called parties SCA list.

Selective Call Forwarding (SCF)

Selective Call Forwarding (SCF) takes precedence over ACRJ.

Selective Call Rejection (SCRJ)

Selective Call Rejection (SCRJ) takes precedence over ACRJ.

Table NETNAMES option SUPPRESS

The system can suppress numbers on a nodal basis, a network basis, or both with option SUPPRESS in table NETNAMES. If subfield EXTRNLDN is set to Y, all DNs for interoffice calls over that network are marked as private, even if originators unsuppress their names or DNs. As a result, the terminating switch uses this information to determine whether a call is anonymous. If subfield INTRNLDN is set to Y, this information is not used to determine anonymity for interoffice calls since the user cannot unblock the suppression.

Activation/deactivation by the end user

Once the operating company enables ACRJ at the office, it assigns activation (ACRJA) and deactivation (ACRJD) codes, which allow ACRJ subscribers to

Anonymous Caller Rejection (ACRJ) (continued)

turn the feature on and off. ACRJA and ACRJD are datafilled in table IBNXLA. If the feature has not been enabled, the subscriber receives a feature not allowed (FNAL) treatment.

A recorded announcement informs a subscriber of successful activation of ACRJ. CLASSANN, the existing CLASS announcement CLLI, provides ACRJ confirmation announcements. A confirmation tone is used, if an announcement is not available.

The call releases when the subscriber receives the confirmation announcement or tone. The call is routed to disconnect (DISC) treatment if the subscriber does not go on-hook within ten s. The line DISC treatment is usually datafilled with a route list. Refer to data schema section of this document.

Billing

Anonymous Caller Rejection (ACRJ) does not affect billing.

Station Message Detail Recording

Anonymous Caller Rejection (ACRJ) does not affect Station Message Detail Recording.

Datafilling office parameters

Anonymous Caller Rejection (ACRJ) does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement Anonymous Caller Rejection (ACRJ). The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Anonymous Caller Rejection (ACRJ) (Sheet 1 of 2)

Table	Purpose of table
RESOFC	Residential Line CLASS Office Data. This table contains data on CLASS features and enables ACRJ for the office.
IBNFEAT	IBN Line Feature. This table defines the features assigned to each Subscriber Services line. The ACRJ line option is a RES option. Note: This table is datafilled through SERVORD; therefore, no datafill procedure or example is provided. Refer to "SERVORD" for an example of using SERVORD to datafill this table.

Anonymous Caller Rejection (ACRJ) (continued)

Datafill tables required for Anonymous Caller Rejection (ACRJ) (Sheet 2 of 2)

Table	Purpose of table
IBNXLA	IBN Translations. This table contains the data for the digit translations of call from an MDC station, attendant console, incoming trunk group, or incoming side of a two-way MDC trunk group.
TMTCNTL. TREAT	Treatment Control. This table contains the subtable TREAT. The ACRJ feature is added to subtable TREAT to enable feature treatment to be mapped to the calling line and supply an announcement or tone.
TMTMAP	Treatment Map. This table provides a mapping from DMS treatments into call failure messages supported by certain CCS7 protocols. Datafill in the table determines whether the treatment is reported to the preceding exchange or whether the DMS applies the treatment locally.
OPTCTL	Option Control. This table is used by Northern Telecom to price certain new features on a "per 100 lines" basis. This table also increments the number of lines allowed to have the feature package.

Datafilling table RESOFC

Table RESOFC (Residential Line CLASS Office Data) contains data on CLASS features and enables ACRJ for the office.

The ACRJ entry in table RESOFC automatically datafills when the feature is initialized for the office. The operating company can only change field ENABLED for ACRJ.

The following table shows the datafill specific to Anonymous Caller Rejection (ACRJ) for table RESOFC. Only those fields that apply directly to Anonymous Caller Rejection (ACRJ) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table RESOFC (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfield	Key. This field consists of the subfield FEATNAME. This subfield is described below.
	FEATNAME	ACRJ	Feature name. This subfield is the key to the table. It specifies the name of the feature. Enter ACRJ.
ENABLED		Y or N	Enabled. This field specifies whether or not the feature is enabled in the office. Enter Y or N.

Anonymous Caller Rejection (ACRJ) (continued)**Datafilling table RESOFC (Sheet 2 of 2)**

Field	Subfield or refinement	Entry	Explanation and action
FEATDATA		see subfields	Feature data. This field consists of the subfields ACCESS, FEATNAME and ANSWRSUP. These subfields are described below.
	ACCESS	SUBSCR or UNIVER	Feature access. This subfield specifies how the feature is accessed. SUBSCR indicates subscription access only and UNIVER indicates universal access for all RES lines. Enter SUBSCR or UNIVER. Note: The value UNIVER is valid only when feature package NTXQ70AA, Universal Access to CLASS Features, is present in the office. Refer to "Universal Access to CLASS Features" for more information on universal access.
	FEATNAME	ACRJ	Feature name. This subfield specifies the feature name. Enter ACRJ.
	ANSWRSUP	Y or N	Answer supervision. This subfield specifies whether or not answer supervision is returned to the original switch (that is, whether the call was answered) when a rejected call goes to treatment. Enter Y or N.
FNALANN		see explanation	Feature not allowed announcement. This field consists of the subfields POTS_ACCESS and FNAL_CLLI.

Datafill example for table RESOFC

The following example shows sample datafill for table RESOFC.

MAP display example for table RESOFC

KEY	ENABLED FNALANN	FEATDATA
ACRJ	Y \$	SUBSCR ACRJ N

Anonymous Caller Rejection (ACRJ) (continued)

Datafilling table IBNXLA

Table IBNXLA (IBN Translations) contains the data for the digit translations of call from an MDC station, attendant console, incoming trunk group, or incoming side of a two-way MDC trunk group. This table makes it possible to recognize the activation (ACRJA) and deactivation (ACRJD) digits.

The following table shows the datafill specific to Anonymous Caller Rejection (ACRJ) for table IBNXLA. Only those fields that apply directly to Anonymous Caller Rejection (ACRJ) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table IBNXLA (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	Key. This field consists of the subfields XLANAME and DGLIDX. These subfields are described below and must be entered in succession.
	XLANAME	translator name	Translator name. This subfield specifies the 1- to 8-character name assigned to the translator. Enter the translator name.
	DGLIDX	access codes assigned to the digilator index	Digilator index. This subfield specifies the digit or digits assigned to the index. Enter the access codes assigned to the digilator index, for example, 96 for the activation access code and 97 for the deactivation access code.
RESULT		see subfields	Result. This field consists of the subfields TRSEL, ACR, SMDR, and FEATURE. These subfields are described below.
	TRSEL	FEAT	Translation selector. This subfield specifies the translation selector. Enter FEAT.
	ACR	N	Account code entry. This subfield specifies whether or not an account code entry is required for all calls to the special feature access code. Enter N.

Anonymous Caller Rejection (ACRJ) (continued)

Datafilling table IBNXLA (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	SMDR	N	Station message detail recording. This subfield specifies whether or not SMDR is required. Enter N.
	FEATURE	ACRJA or ACRJD	Feature. This field specifies the activation and deactivation of the ACRJ feature. Enter ACRJA to activate ACRJ. Enter ACRJD to deactivate ACRJ.

Datafill example for table IBNXLA

The following example shows sample datafill for table IBNXLA.

MAP display example for table IBNXLA

KEY		RESULT			
RXCFN	96	FEAT	N	N	ACRJA
RXCFN	97	FEAT	N	N	ACRJD

Datafilling table TMTCNTL.TREAT

Table TMTCNTL (Treatment Control) contains the subtable TREAT. The ACRJ feature is added to subtable TREAT to enable feature treatment to be mapped to the calling line and supply an announcement or tone.

The following table shows the datafill specific to Anonymous Caller Rejection (ACRJ) for table TMTCNTL.TREAT. Only those fields that apply directly to

Anonymous Caller Rejection (ACRJ) (continued)

Anonymous Caller Rejection (ACRJ) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling subtable TMTCNTL.TREAT

Field	Subfield or refinement	Entry	Explanation and action
TREATMT		ACRJ	Treatment. This field specifies the feature treatment. Enter ACRJ to the EXTENDED_TREATMENT range of this table. If a line has an announcement type ANN, this treatment works when an anonymous call is detected.
LOG		Y or N	Log. This field specifies whether or not a log report is to be generated each time treatment is activated. Enter Y or N.
FSTRTE		see subfields	First route. This field specifies the first route. It consists of the subfields FSTRTSEL and CLLI. These subfields are described below.
	FSTRTSEL	S, or T	First route selector. This subfield specifies the first route selector. Enter S (for standard) or T (for table). Enter S to provide answer supervision.
	CLLI	CLLI	Common language location identifier. This subfield specifies the CLLI of the tone to which translation has to route. Enter the CLLI.

Datafill example subtable TREAT

The following example shows sample datafill for subtable TREAT. If answer supervision (field ANSWRSUP) is datafilled as Y in table RESOFC, an S selector must be used.

MAP display example for table subtable TREAT

TREATMT	LOG	FSTRTE
ACRJ	N	S CLASSACRJ

Datafilling table TMTMAP

Table TMTMAP (Treatment Map) provides a mapping from DMS treatments into call failure messages supported by certain CCS7 protocols. Datafill in the

Anonymous Caller Rejection (ACRJ) (continued)

table determines whether the treatment is reported to the preceding exchange or whether the DMS applies the treatment locally.

The following table shows the datafill specific to Anonymous Caller Rejection (ACRJ) for table TMTMAP. Only those fields that apply directly to Anonymous Caller Rejection (ACRJ) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TMTMAP (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
TMTMPKEY		see subfields	Treatment map key. This field consists of the subfields PROTOCOL, TMT, and BC_CT. These subfields are described below.
	PROTOCOL	Q764	Protocol. This subfield specifies the PROTOCOL. Enter Q764.
	TMT	ACRJ	Treatment code. This subfield specifies the treatment codes defined in table TMTCNTL.TREAT field TREATMT. Enter ACRJ.
	BC_CT	ALLBC	BC_CT. This subfield specifies the BC_CT_TYPE. Enter ALLBC.
TMTMPVAR		see subfields	Treatment map variable. This field specifies the treatment map. This field consists of the subfield FORMAT. This subfield is described below.
	FORMAT	ISUP	Format. This subfield specifies the FORMAT. Enter ISUP.
	ISUPPROC	see subfields	ISUP procedure. This subfield consists of the subfield TMTPROC. This subfield is described below.
	TMTPROC	LOCAL, NOLOCAL, or ISLOCAL	Treatment procedure. This field specifies the treatment to apply locally. Enter LOCAL and skip the CAUSE and LOG subfields; enter NOLOCAL when the treatment is to be mapped to a cause and included in a release message without exception; or enter ISLOCAL when the treatment is to be applied locally, mapped to a cause, and included in a release message.

Anonymous Caller Rejection (ACRJ) (continued)

Datafilling table TMTMAP (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	CAUSE	see CAUSE subfields	ISUP cause. This subfield specifies the cause subfields. If TMTPROC is set to ISLOCAL, enter one of the CAUSE subfields listed in The data schema section of the <i>Translations Guide</i> for this table.
	LOG	Y or N	Log. This subfield specifies whether or not the LOG is to be generated. Generate ISUP Log if TMTPROC is set to NOLOCAL, ISLOCAL, or INTLOCAL. Enter Y to indicate that a log is to be generated when a release with cause is sent. Otherwise, enter N.

Datafill example for table TMTMAP

The following example shows sample datafill for table TMTMAP.

MAP display example for table TMTMAP

TMTMPKEY		TMTMPVAR	
Q764	ACRJ	ALLBC	ISUP LOCAL

Datafilling table OPTCTL

Table OPTCTL (Option Control) is used by Northern Telecom to price certain new features on a “per 100 lines” basis. This table also increments the number of lines allowed to have the feature package. For further details on table OPTCTL, refer to the data schema section of this document.

Translation verification tools

The following example shows the output from TRAVER command when it is used to verify translations for the Anonymous Caller Rejection (ACRJ) feature.

Anonymous Caller Rejection (ACRJ) (continued)

TRAVER output example for Anonymous Caller Rejection (ACRJ)

```

>TRAVER L 6211233 'B96' B
TABLE IBNLINES
  HOST 00 0 09 07 0 DP STN RES 6211233 0 $
TABLE LINEATTR
  0 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC
    LATA1 0 NIL NIL 00 Y RESGRP 0 2
    LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE NCOS
RESGRP 2 0 0 RNCOS2 ( XLAS RXCMN2 NXLA RES ) $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA,
VACTRMT, AND DIGCOL
RESGRP NXLA RESXLA RXCFN 0 RES
TABLE DIGCOL
  RES SPECIFIED: RES DIGIT COLLECTION
NCOS FEAT XLA NAME IS NIL.  GO TO NEXT XLA NAME.
TABLE IBNXLA: XLANAME RXCFN
  RXCFN 96 FEAT N N N (ACRJA)

++ TRAVER: SUCCESSFUL CALL TRACE ++

```

SERVORD

Table IBNFEAT (IBN Line Feature) is datafilled by SERVORD. Table IBNFEAT defines the features assigned to each Subscriber Services line. The ACRJ line option is a RES option. The tuple is automatically updated when ACRJ is activated or deactivated by the subscriber.

SERVORD is used to assign ACRJ to CLASS lines with the ACRJ line option.

ACRJ can be assigned to lines with a line class code (LCC) of RES or IBN, or to lines with an LCC of 1FR or 1MR when office parameter RES_SO_SIMPLIFICATION in table OFCENG has the field RES_AS_POTS set to Y. Note that ACRJ is incompatible with DTM.

If feature AF2244 (WATS on RES) is present in the office, ACRJ is compatible with LCCs OWT (outward WATS), EOW (enhanced outward WATS), 2WW (two-way WATS), and ETW (enhanced two-way WATS).

If feature AG1546 (CLASS on MVP Base) is present in the office, ACRJ can be assigned to lines with an LCC of IBN.

Anonymous Caller Rejection (ACRJ) (continued)

The ACRJ line option is also compatible with MBS sets. If feature package NTXF72AB, CLASS on MBS Phase I and II is present in the office, ACRJ can be assigned to lines with an LCC of PSET.

SERVORD limitations and restrictions

Anonymous Caller Rejection (ACRJ) has no SERVORD limitations and restrictions.

SERVORD prompts

The following table shows the SERVORD prompts used to assign Anonymous Caller Rejection (ACRJ) to an existing line.

SERVORD prompts for Anonymous Caller Rejection (ACRJ)

Prompt	Valid input	Explanation
OPTION	ACRJ	Assigns ACRJ to the line
STATUS	ACT, INACT	Assigns initial status (active or inactive) of ACRJ

SERVORD example for implementing Anonymous Caller Rejection (ACRJ)

The following SERVORD example shows how Anonymous Caller Rejection (ACRJ) is added to an existing line using the ADO command.

SERVORD example for setting up Anonymous Caller Rejection (ACRJ) using ADO in prompt mode

```
>SERVORD
S0:
> ADO
SONUMBER:  NOW 90 1 2 AM
>
DN_OR_LEN:
> 7211000
OPTION:
> ACRJ
STATUS:
> ACT
OPTION:
> $
COMMAND AS ENTERED:
ADO NOW 90 1 2 AM 7211000 (ACRJ ACT) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
> Y
```

Anonymous Caller Rejection (ACRJ) (end)

SERVORD example for setting up Anonymous Caller Rejection (ACRJ) using ADO in no-prompt mode

>ADO \$ 7211000 ACRJ ACT \$ Y

Call Logging (CALLOG)

Ordering codes

Functional group ordering code: RES00003

Functionality ordering code: RES00024

VSLE and Call Logging, RES00024, are described in two feature descriptions. This feature description includes the Call Logging feature. Refer to the Visual Screen List Editing (VSLE) module for a description of the VSLE feature.

Release applicability

CSP02, CALLOG with Bellcore-compliant ADSI (TR-1273)

Prerequisites

To operate, Call Logging (CALLOG) has the following prerequisites:

- RES Service Enablers, RES00006
- Distinctive Ringing Call Waiting, RES00034

Network configuration

Common Channel Signaling No. 7 (CCS7) connectivity is required for network (interoffice) configuration of Call Logging.

Description

Call Logging (CALLOG) provides a switch-based incoming callers list (ICL) to the customer premises equipment (CPE). This feature is accessed by dialing an appropriate activation code. The functions of the feature are then implemented using softkeys on an Analog Display Services Interface (ADSI) set. The feature provides the subscriber with information on each call that was logged. The information includes the directory number (DN) or name of calling party, the time and date of the call, the number of times the party called, and the status (unanswered, busy, or forwarded). If any part of this information is blocked by the calling party (such as the name or DN), the display indicates that status as well.

CALLOG provides the subscriber with information on up to 31 incoming calls. This is done using a DMS-stored list called the incoming callers list (ICL). CALLOG is offered independent of other Custom Local Area Signaling Services (CLASS) display features. A subscriber does not need to purchase the Calling Name Delivery (CNAMD) or Calling Number Delivery (CND) features in order to purchase the CALLOG feature. This independence is offered for flexibility, but it is unlikely that a subscriber with an ADSI set would not also want the CNAMD and CND features.

Call Logging (CALLOG) (continued)

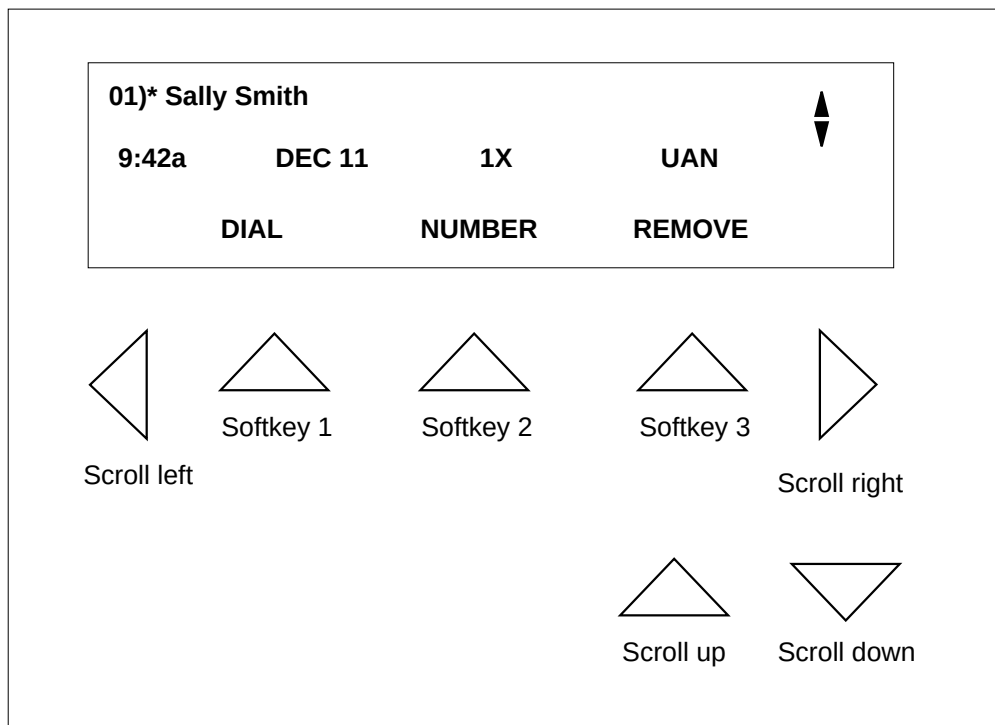
Call logging is transparent to the calling party. The calling party receives normal ringing or busy treatment upon termination to the CALLOG subscriber.

The call logging service is incorporated into table OPTCTL (Option Control) to provide individual line pricing capability for call logging in both the Subscriber Services and MDC environments.

Call logging display fields

Data fields are stored for each item in the ICL. Included in each log item are the item number, the new indicator, the caller's name or number, the time and date, a repeat counter, a state indicator. Name suppression or number suppression when appropriate, and the caller's number are stored in memory. See the following figure for an example of an ICL. Following the figure is a description of each possible field in a call log.

Incoming callers list



Item number

For each entry in the subscriber's ICL, there is an item number. Numbering begins at 1 for the most recent call and can continue to a maximum of 31. The 31st call is the oldest on the list. After the maximum is reached, no further calls are logged until the subscriber deletes some of the existing ICL entries.

Call Logging (CALLOG) (continued)

New indicator

The new indicator, denoted by an asterisk (*), appears next to the item number and identifies calls that have been logged in the subscriber's ICL since the last call logging session was activated. If the entry has appeared in a previous call logging session, the new indicator field is blank. All entries are marked as new when initially stored in the ICL.

Calling party name

Depending on the availability of the CNAMD feature in the subscriber's area, the caller's name is collected for viewing. Storing the caller's name for interoffice calls is dependent on full CCS7 availability. Up to 15 characters are available for the name. If the caller's name is unavailable, "Unknown Name" appears for the name. If the caller's name has been suppressed, "Private Name" appears for the name. If TCAP is being used for calling name delivery, the calling party's name is not delivered during CALLOG.

Note: For network (interoffice) calls, if the name is not delivered, there is currently no method for determining if a caller's name is unavailable or suppressed.

Calling party number

The calling number is stored in the ICL for each incoming call. The number is stored in the ten-digit CND format and later displayed to the subscriber in a Diable Number Delivery (DDN) format. The DDN format is obtained through reverse translations. For interoffice calls, availability of the calling number is dependent on full CCS7 and PRI connectivity. If available, the number is stored regardless of the suppression status of the calling number.

Note: Table RESOFC defines whether the name or the number appears in the primary field of the ADSI display.

Time and date

The time and date of the call are recorded when the caller disconnects. For repeat calls, the time and date are updated to that of the most recent call.

Repeat counter

The repeat counter indicates the number of times that a caller tried to reach the subscriber. The repeat counter counts from one to nine. Once the counter reaches nine, the counter is no longer incremented.

If a DN is already stored in the ICL as an old call (already viewed by the subscriber), a new entry is logged for the new call. Therefore, it is possible to have multiple entries in the ICL for the same DN. Once the new item is viewed, it is marked old in the next session but remains a separate entry from the original old call.

Call Logging (CALLOG) (continued)

If a name or DN is suppressed on an incoming intraoffice call, and the call is repeated, the suppression status for the name or DN is not updated. For example, if a call is logged with the name unsuppressed, and the caller calls back with the name suppressed, the repeat counter is incremented, but the suppression status for the name remains unsuppressed.

For interoffice repeat calls, if a call is logged with the name suppressed, the entry reads "Unknown Name." If that caller calls back with the name unsuppressed, a new entry is logged with the caller's name.

State

The state indicator shows why an incoming call was not answered by the subscriber. The field can be set to one of three possible choices: UNA (unanswered), BSY (busy), or FWD (forwarded). It is updated on repeat calls. For example, if a call is logged because the subscriber line is busy (BSY), and the caller then calls back and the call is unanswered, UNA will appear in the state field.

Softkey choices

The last part of the call log is the softkeys that are available to the subscriber for that entry. The choices available correspond to the arrow keys under the display. Translations determines what choices appear. Refer to the module Downloadable Softkeys for more information on translations.

For convenience, a summary of softkeys and their functions as they relate to table SOFTKEY follows:

- 2 - reverses erase
- 3 - reverses remove
- 4 - allows subscriber to move from the last log to the top
- 5 - allows subscriber to move from the first log to the bottom
- 6 - removes entire ICL
- 7 - erases a single ICL entry
- 8 - dials caller of log positioned on
- 9 - sends caller's name to primary column on display page
- 10 - sends caller's number to primary column on display page

Call Logging (CALLOG) (continued)

- 11 - overrides the down scroll key when the display is on the communication page and moves to the information page at the next ICL entry
- 12 - overrides the up scroll key when the display is on the communication page and moves to the information page at the next ICL entry

Note: Softkeys 11 and 12 are transparent to the subscriber.

Message waiting notification

The CALLOG feature provides two types of message waiting notification: stutter dial tone (STD) and CLASS message waiting indicator (CMWI). When an entry is marked as new in the ICL, message waiting is activated.

STD is applied when the subscriber goes off-hook to originate a call. STD functions the same as it does with MDC Executive Message Waiting (EMW).

For CALLOG, CMWI is limited to the lamp indicator. The STD and ring options that exist for CMWI are not supported for CALLOG.

Note: Feature package NTXJ39AA, Visual Message Waiting Indicator, is required if CMWI notification is assigned.

Translations table flow

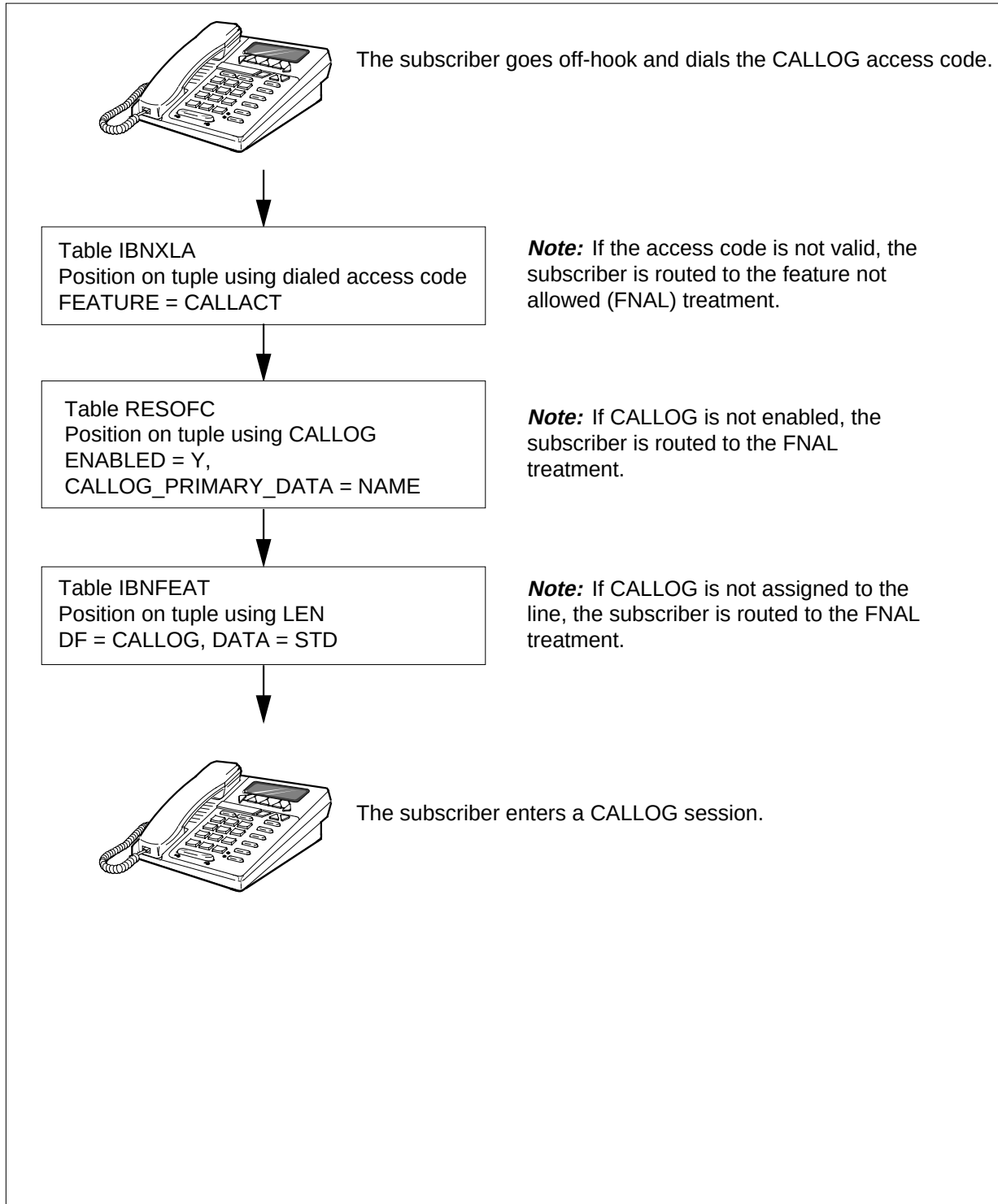
The Call Logging (CALLOG) translations tables are described in the following list:

- Table IBNXLA provides the name of the feature associated with an access code.
- Table RESOFC contains feature-specific data that is defined on an individual office basis. It allows operating company personnel to specify data required for the operation of CLASS features within the office. Subfield CALLOG_PRIMARY specifies whether the subscriber sees the names or numbers for items in their ICLs. Subfield CALLOG_TIMEOUT indicates how long the CALLOG feature waits for input before terminating the CALLOG session. The default timeout value is 5 min.
- Table IBNFEAT lists the software features assigned to each MDC station number, attendant console, and MADN supported by the switch. Datafill is required to support call logging.

The CALLOG translation process is shown in the flowchart that follows.

Call Logging (CALLOG) (continued)

Table flow for CALLOG



Call Logging (CALLOG) (continued)

The following tables list the datafill content used in the flowchart.

Datafill example for Call Logging (CALLOG)

Item	Example data
CALLOG access code	25
LEN of subscriber	HOST 00 0 00 03

Datafill table	Example data
IBNXLA	RXCFN 25 FEAT N N N CALLACT
IBNFEAT	HOST 0 0 00 03 0 CALLOG CALLOG STD
RESOFC	CALLOG Y SUBSCR CALLOG 15 NAME \$

The first figure shows the tables accessed when the subscriber receives the initial CALLOG messages. CALLOG access includes the following:

- The subscriber receives the service title: "Call Logging Service."
- If there are no new entries in the ICL, the subscriber receives the empty list message: "No Calls. Hang up." This terminates the CALLOG session.
- If there are new entries in the ICL, the subscriber receives the download message: "Processing XX Calls."
- The subscriber receives the header item: XX New XX Old.
- The subscriber receives the first entry in the ICL: "01) name or number time date repeat counter state."

Table TEXTLOG defines the logical phrases that make up the display phrases used to guide the subscriber during a CALLOG session. Field DEFNLIST lists the softkey definer numbers to be downloaded to the ADSI set with the display phrases. Refer to the module Downloadable Softkeys in this document for more information on the downloading process.

Table TEXTPHRS contains the instructional and prompting text strings that make up individual logical display phrases.

Table SOFTKEY contains tuples that define each ADSI softkey. The presence of the CALLOG feature in a switch provides default tuples for CALLOG.

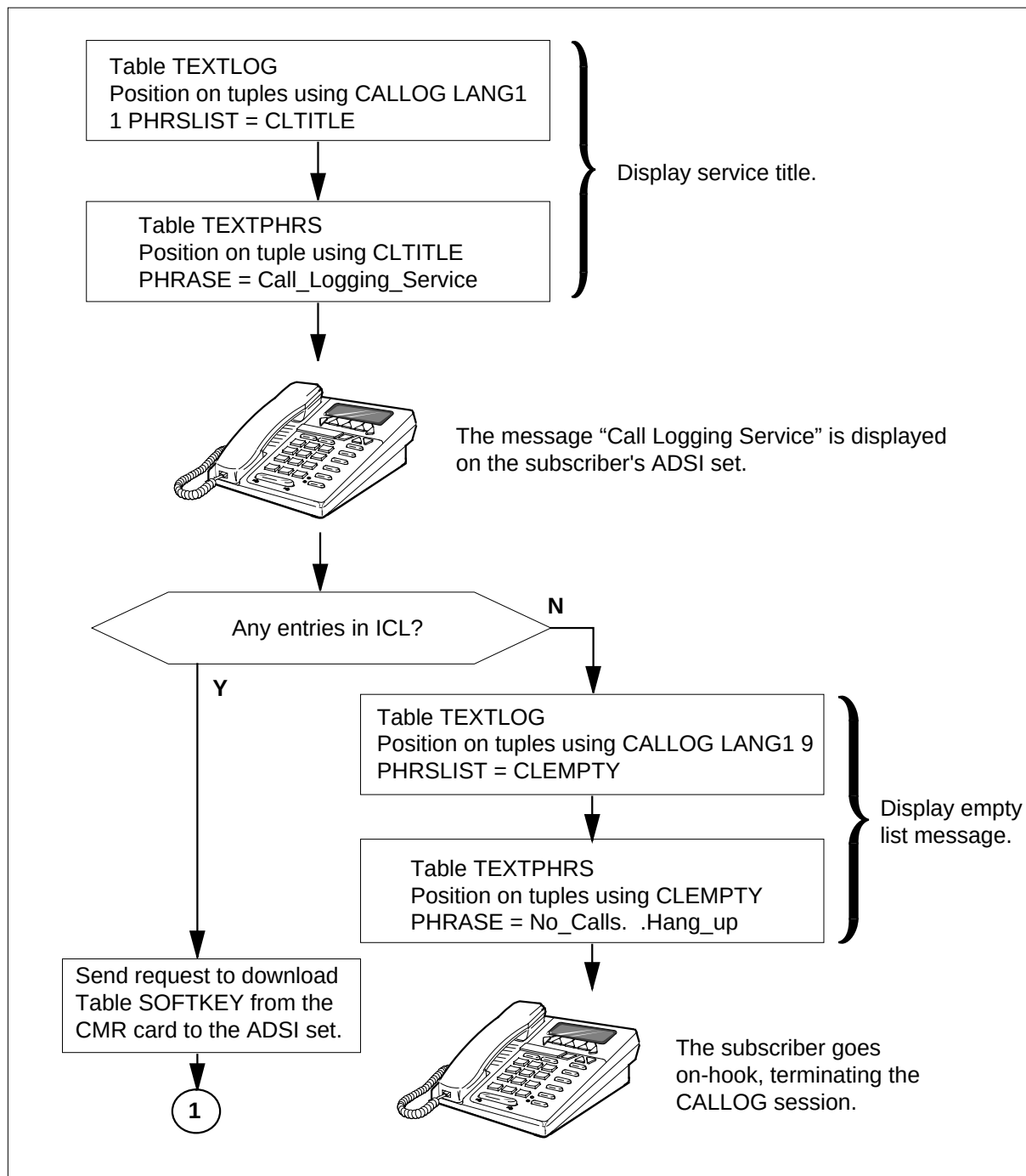
Call Logging (CALLOG) (continued)

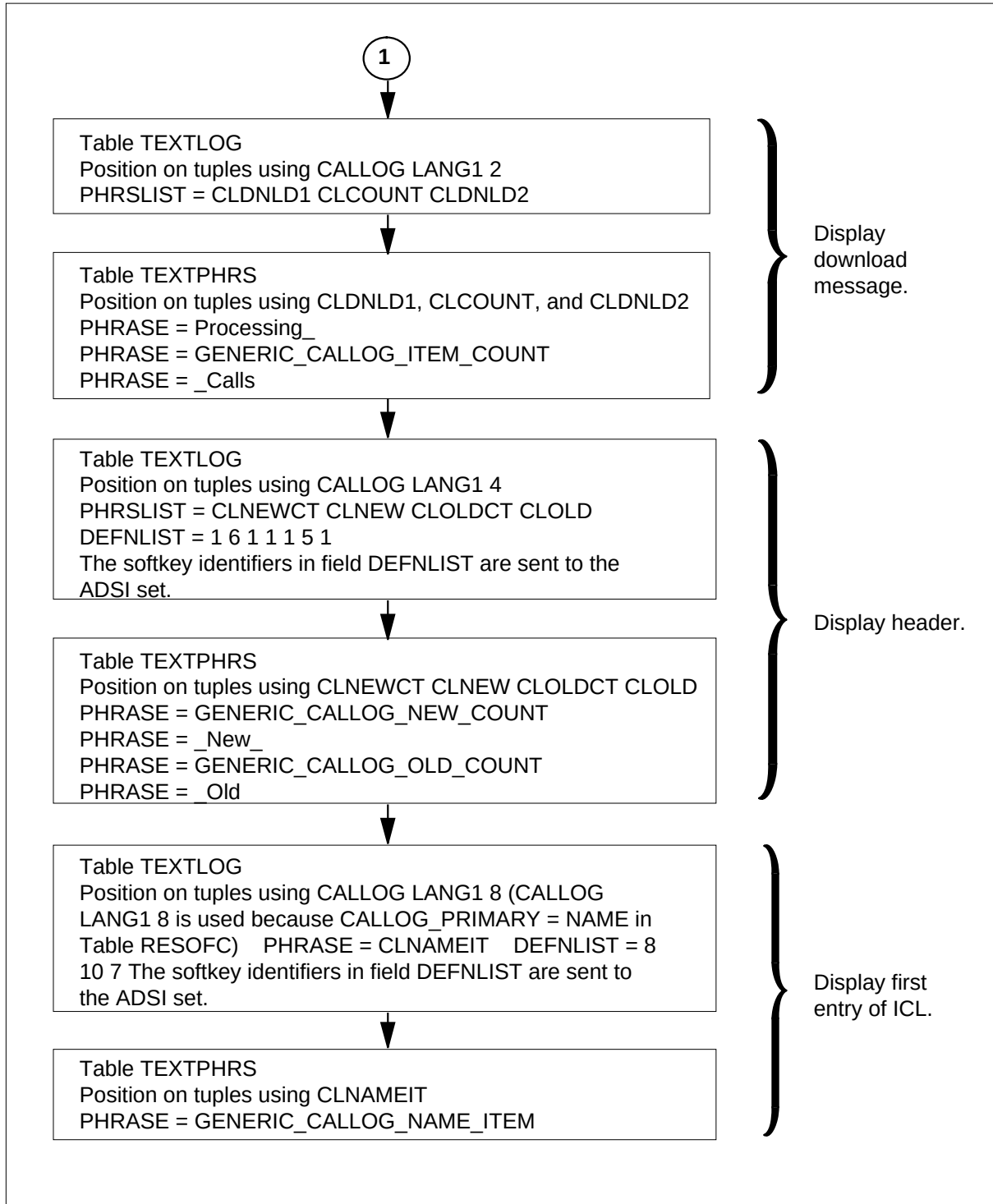
Table SOFTKEY is downloaded to the CMR card when the card is returned to service (RTS).

Note: Tables TEXTLOG, TEXTPHRS, and SOFTKEY should remain unchanged to ensure switch integrity. For more information, refer to these tables in the “Datafill procedure” section in this feature description.

Call Logging (CALLOG) (continued)

Table flow for CALLOG (service title, download, and header messages)



Call Logging (CALLOG) (continued)**Table flow for CALLOG (service title, download, and header messages) (continued)**

Call Logging (CALLOG) (continued)

The following table lists the datafill content used in the flowchart.

Datafill example for CALLOG (service title, download, and header messages)

Datafill table	Example data
TEXTLOG	CALLOG LANG1 1 S LEFT CLTITLE) \$ (1 N SRV) \$ CALLOG LANG1 2 S LEFT (CLDNLD1)(CLCOUNT)(CLDNLD2)\$ (1 N SRV) \$ CALLOG LANG1 4 S LEFT (CLNEWCT) (CLNEW) (CLOLDCT) (CLOLD) \$ (1 N SRV) (6 N SRV) (1 N SRV) (1 N SRV) (1 N SRV) (5 N SRV) (1 N SRV) \$ CALLOG LANG1 8 S LEFT (CLNAMEIT)\$ (8 N SRV) (10 N SRV) + (7 N SRV) \$ CALLOG LANG1 9 T LEFT (CLEMPTY) \$ (1 N SRV) \$
TEXTPHRS	CLCOUNT GENERIC_CALLOG_ITEM_COUNT \$ CLNEWCT GENERIC_CALLOG_NEW_COUNT \$ CLOLDCT GENERIC_CALLOG_OLD_COUNT \$ CLNAMEIT GENERIC_CALLOG_NAME_ITEM \$ CLTITLE Call_Logging_Service \$ CLOLD _Old \$ CLNEW _New_ \$ CLDNLD1 Processing_ \$ CLDNLD2 _Calls \$ CLEMPTY No_Calls. .Hang_up \$
SOFTKEY	CALLOG 5 BOTTOM BOTTOM \$ \$ CALLOG 6 ERASE ERASE 52 \$ CALLOG 7 REMOVE REMOVE 55 133 \$ CALLOG 8 DIAL DIAL 56 133 \$ CALLOG 9 NAME NAME 57 133 \$ CALLOG 10 NUMBER NUMBER 48 133 \$

Call Logging (CALLOG) (continued)

Blocking calling name delivery through translations manipulation

In some offices it is necessary to block calling name delivery. The following steps may be taken using translations to eliminate the name display choice from the ADSI set display:

- In table RESOFC, define which display the subscriber sees when accessing the ICL. Figure “RESOFC with name blocked” illustrates the way a tuple might appear in this table with name delivery blocked.
- In table SOFTKEY, determine which softkey provides the name function, and note the number of the softkey. See Figure “SOFTKEY with keys defined”.
- In table TEXTLOG, remove the softkey number that provides the name (as defined in table SOFTKEY). Replace it with the number 1, which is undefined, and therefore blank. See Figure “TEXTLOG with name key not presented”.

Note: The previous steps must be performed in the order indicated.

On the ADSI set, the softkey choice for name is now blank and cannot be used by the subscriber. See Figure “Incoming callers list with name blocked”.

Table RESOFC with name blocked

KEY	ENABLED	FNALANN	FEATDATA
CALLOG	Y	\$	SUBSCR CALLOG 10 NUMBER

Table SOFTKEY with keys defined

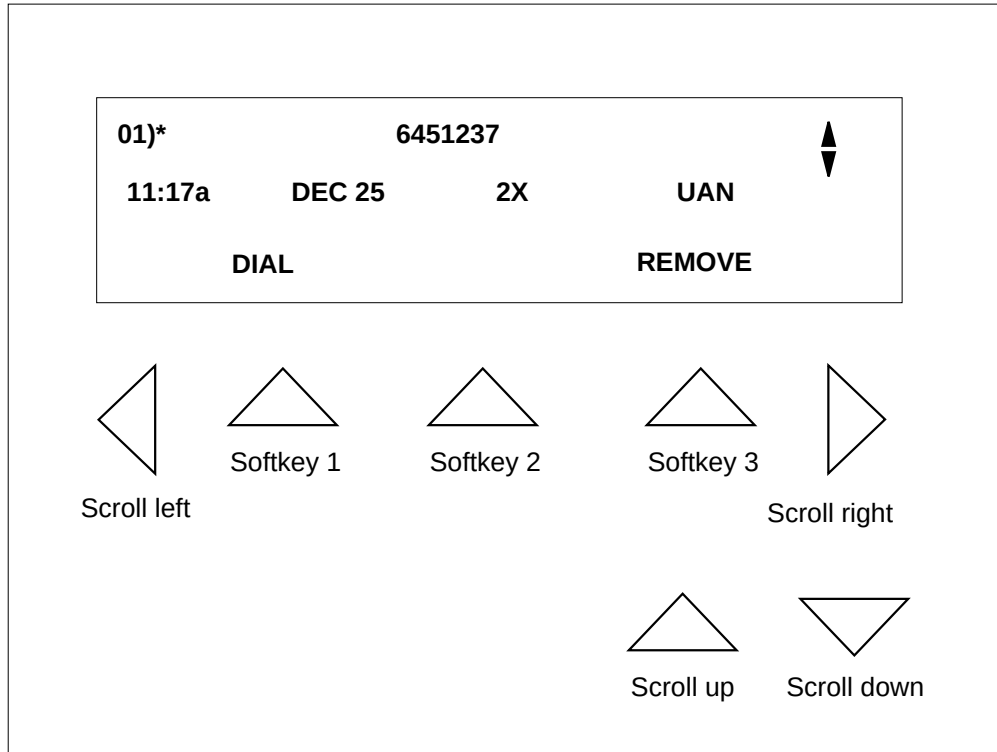
SERVID	DEFNUM	LLABEL	SLABEL	RETURN
CALLOG	7	REMOVE	REMOVE	55 133 \$
CALLOG	8	DIAL	DIAL	56 133 \$
CALLOG	9	NAME	NAME	57 133 \$

Table TEXTLOG with name key not presented

LPHRSKEY	DISPTYPE	LRCI	PHRSLIST	DEFNLIST
CALLOG	LANG1 7 S	LEFT	(CLDNIT) \$	(8 N SRV)
			(1 N SRV)	(7 N SRV) \$

Call Logging (CALLOG) (continued)

Incoming callers list with name blocked



Limitations and restrictions

The following limitations and restrictions apply to CALLOG:

- The maximum number of entries in the ICL is 31.

Note: Although call logging can handle calls from 31 different callers, any feature that queues requests against a line, such as voice mail, uses the same resources on a line that call logging uses. For example, if a voice mail call queues a request against a line, call logging will only be able to log 30 calls.

- CALLOG activation is not allowed on the add-on portion of any call.
- CALLOG cannot be assigned to Multiple Appearance Directory Number (MADN) groups.
- CALLOG cannot be assigned to Automatic Call Distribution (ACD) agents.
- CALLOG cannot be assigned to Uniform Call Distribution (UCD) agents.

Call Logging (CALLOG) (continued)

- CALLOG is incompatible with the following options:
 - AAK
 - ACD
 - AEMK
 - ASL
 - AUL
 - AVT
 - CAG
 - CCSA
 - CCV
 - DIN
 - DOR
 - DTM
 - EMW
 - FIG
 - LDTPSAP
 - MDN
 - MDNAME
 - MEMDISP
 - MLAMP
 - MREL
 - MRF
 - MWT
 - OBS
 - UCD
- If a call comes over the network on a trunk by way of ISDN user part (ISUP) using the trunk query method of name delivery, and terminates on a busy line, the call is logged, but the name appears as “Unknown Name.” This is because if the caller gets a busy treatment and hangs up, the trunk is released, and the name is not sent. If the busy treatment is applied locally, the trunk is immediately released and the name is not sent. For these reasons, the setup method is recommended to bring the name across in the ISUP initial address message (IAM).

Call Logging (CALLOG) (continued)

- For calls that come over the network on a trunk by way of ISUP using the query method and are forwarded using Call Forwarding (CFW), Call Forward Universal (CFU), or Call Forwarding Busy Line (CFBL), the call is logged but the name is not delivered. This is because when CFW, CFU, CFBL is applied, the call never actually terminates to the CALLOG subscriber, so the query is never sent.

When a call comes over the network on a trunk by way of ISUP using the query method to a line that has Call Forwarding Don't Answer (CFDA), and the call times out, the call is logged (including the name) and forwarded.

- Call logging logs unanswered, busy, and forwarded calls when the calling party goes on-hook. If, however, the calling party calls a CALLOG subscriber and does not go on-hook before the call goes to lockout, the call is not logged.
- The ICL is maintained over cold and warm restarts, a BCS upgrade, and a CC SWACT. The ICL is not maintained over a restart reload due to the reinitialization of memory.
- Currently, call logging does not follow display restrictions, as when CLID ONNET is datafilled in table CUSTNTWK. Caller information is displayed in a CALLOG entry whenever it is *not* marked "Private."
- TCAP name is not supported for Callog. Unknown name will display when a name is retrieved from TCAP query.

Interactions

The following paragraphs describe the interactions between Call Logging (CALLOG) and other functionalities.

Call Forwarding

The following call forwarding features interact with the CALLOG feature in the same manner:

- CBE—Call Forwarding Busy External Deny
- CBI—Call Forwarding Busy Intragroup Deny
- CBU—Call Forwarding Busy Unrestricted
- CDE—Call Forwarding Don't Answer External Deny
- CDI—Call Forwarding Don't Answer Intragroup Deny
- CDU—Call Forwarding Don't Answer Unrestricted
- CFB—Call Forwarding Busy
- CFD—Call Forwarding Don't Answer

Call Logging (CALLOG) (continued)

- CFDA—Call Forwarding Don't Answer (RES)
- CFDVT—Call Forwarding Don't Answer Variable Timer
- CFF—Call Forwarding Fixed
- CFGDA—Call Forwarding Group Don't Answer
- CFI—Call Forwarding Intragroup
- CFS—Call Forwarding Simultaneous/screening
- CFU—Call Forwarding Universal
- CFW—Call Forwarding
- IECFB—Internal/external Call Forwarding Busy
- IECFD—Internal/external Call Forwarding Don't Answer

Calls log with an item state of FWD whenever forwarding is attempted.

For intraoffice calls, call forwarding functions as follows:

- B and C are CALLOG subscribers.
- B has one of the call forwarding options listed above.
- B's phone is forwarded to C.
- A calls B, and the call forwards to C.
- A's call is entered in B's ICL and logged as FWD, and is not recorded in C's ICL.

Note: For intraoffice call forward chains, only the ICL of the first station in the call forwarding chain is updated.

For interoffice calls, call forwarding functions as follows (assuming A and B are in the same office and C is in a remote office):

- B and C are CALLOG subscribers.
- B has a call forwarding option.
- B's phone is forwarded to C.
- A calls B, and the call forwards to C.
- A's call is entered in B's ICL and logged as FWD. A's call is also added to C's ICL if C is busy or does not answer.

Call Logging (CALLOG) (continued)

As an alternate example of interoffice calls (assuming A, B, C, and D are all in different offices), call forwarding functions as follows:

- B, C, and D are CALLOG subscribers.
- B and C each have a call forwarding option.
- B's phone is forwarded to C.
- C's phone is forwarded to D.
- A calls B and is forwarded to C then D.
- A's call is entered in B's and C's ICL and logged as FWD. A's call is also entered in D's ICL if D is busy or does not answer.

Note 1: For interoffice calls, each party in the call forwarding chain who receives a network call and forwards, has the network call logged in the ICL.

Note 2: Calls which are not forwarded due to the CDI or CDE features are logged in the CALLOG subscriber's ICL with an item state of FWD.

Call Forwarding Ring Splash

When a CALLOG subscriber has the CLASS Message Waiting Indicator (CMWI) notification and also has call forwarding with ring splash, the lamp may not be lit immediately if the calling party hangs up at the time the ring splash is applied.

Call Hold

When a CALLOG subscriber has a party on Call Hold (CHD) and the held party rerings the CALLOG subscriber, the call is logged in the subscriber's ICL.

Call Pickup

If a station with Call Pickup (CPU) picks up a call that has terminated on a station with the CALLOG feature, the call is not logged, since it is considered an answered call. If the station that picked up the call has CALLOG, its ICL is also not updated, since the call is an answered call.

Call Transfer

When a CALLOG station is the add-on party of a Three-Way Calling (3WC) and the add-on abandons the call, the call is not logged.

When a call is transferred to a CALLOG station without first conferencing all parties, the transferred party is logged in the CALLOG subscriber's ICL. The item state is BSY if the CALLOG station is busy; the item state is UNA if the CALLOG station does not answer; the item state is FWD if the CALLOG station forwards the call.

Call Logging (CALLOG) (continued)

The following scenario illustrates the intraoffice interaction of CALLOG and CXR with regard to the privacy of calling parties:

- C has CALLOG.
- A calls B and B answers.
- A presses the conference key and calls C.
- While C is ringing, A goes on-hook and B continues to ring C.
- B goes on-hook.
- B is logged in C's ICL. In addition, if B's name and number are available, B's name and number are logged at C although B did not originate the call.

The following scenario illustrates the interoffice interaction of CALLOG and CXR with regard to the privacy of calling parties:

- C has CALLOG.
- A calls B (over ISUP or PRI trunk) and B answers.
- A presses the conference key and calls C (over ISUP or PRI trunk).
- While C is ringing, A goes on-hook and B continues to ring C.
- B goes on-hook.
- A (not B) is logged in C's ICL, because A's information, not B's, was sent over ISUP or PRI.

Call Waiting

When a CALLOG subscriber receives a Call Waiting (CWT) call but does not answer and the waiting party abandons the call, the call is not logged. When the waiting party rerings the CALLOG subscriber, the call is logged.

Enhanced Secondary Directory Number

Only calls that terminate to the primary directory number (PDN) of a line with enhanced secondary directory numbers (ESDN) are logged in the subscriber's ICL. CALLOG cannot be assigned to ESDNs.

Direct Inward System Access

Calls from a Direct Inward System Access (DISA) number log as if they were made from the originating station instead of from the DISA number.

Directory Number Hunt

When a directory number hunt (DNH) group member calls a station with CALLOG, information on the individual member is logged.

Call Logging (CALLOG) (continued)

CALLOG can be assigned to any member of a DNH hunt group. Each member with CALLOG has a separate ICL. Calls to any member that require logging are logged on that member's ICL.

Do Not Disturb, Make Set Busy

With the Do Not Disturb (DND) and Make Set Busy (MSB, MSBI) features, an incoming call is logged in the subscriber's ICL, if the call is routed by busy line treatment.

Group Intercom

When a group intercom call is received by a station with the CALLOG feature, the originator's real DN, not the group intercom (GIC) member number, is stored in the ICL.

Multiline Hunt and Distributed Line Hunt

When a multiline hunt (MLH) or distributed line hunt (DLH) group member calls a station with CALLOG, the MLH or DLH member's pilot DN is logged unless the member has a unique DN. If it does, the member's unique DN and the name associated with it are logged.

The following scenario illustrates the interaction of CALLOG and MLH and DLH groups:

- B has CALLOG.
- A (MLH group member 1) calls B, and the call is unanswered.
- A's MLH group pilot DN is logged in B's ICL.
- C (MLH group member 2) calls B, and the call is unanswered.
- B's ICL has a single entry (pilot information) with repeat calls indicated in the display (2x).
- D (MLH group member 3 with unique DN) calls B, and the call is unanswered.
- B's ICL now has two entries, with D being the most recent.

Note: CALLOG can only be applied to pilots of MLH and DLH hunt groups. Incoming calls to any member that require logging create a log entry on the pilot's ICL.

Multiparty lines

Intraoffice calls from multiparty lines are not logged in the CALLOG subscriber's ICL. Interoffice calls from multiparty lines are logged if the calling party information is delivered.

Call Logging (CALLOG) (continued)

Multiple Appearance Directory Number

When a secondary Multiple Appearance Directory Number (MADN) member calls a station that has CALLOG assigned, the MADN member is logged as the primary member of the MADN group.

The following scenario illustrates the interaction of CALLOG and MADN:

- B has CALLOG.
- A (MADN member 1) calls B.
- A abandons the call and is logged in B's ICL.
- C (MADN member 2) calls B.
- C abandons the call and is logged in B's ICL.
- B has a single ICL entry with repeat calls.

Screening Features

If a screening feature, such as Anonymous Caller Rejection (ACRJ), Selective Call Rejection (SCRJ), or Selective Call Acceptance (SCA), is active and prevents an incoming call from terminating, the incoming call is not logged.

Secondary DN

Calls that terminate on a secondary DN (SDN) are logged against the primary directory number (PDN). Call logging can only be assigned to the PDN.

Secondary Language

For BCS35, CALLOG is only available in English.

Selective Call Forwarding

The Selective Call Forwarding (SCF) feature allows the subscriber to define a special list of telephone numbers, called an SCF list, and the destination number to which these numbers will be forwarded. Calls that terminate on a line with this feature activated are forwarded only if the telephone number of the originating station matches one of the numbers in the SCF list.

The following scenario illustrates the interaction of CALLOG and SCF:

- B and C are CALLOG subscribers.
- B has option SCF, and A's number is listed in B's SCF list, and C is designated as the destination number.
- A calls B and is forwarded to C.
- A's call is logged in B's ICL, but not in C's ICL.

Call Logging (CALLOG) (continued)

Series Completion

Calls that terminate to the CALLOG subscriber by way of the series completion (SCMP) feature are logged. When a CALLOG subscriber also has SCMP assigned and an incoming call is forwarded to another station, the call is not logged in the subscriber's ICL.

TCAP for Calling Name Delivery

TCAP for CNAMD is not compatible with CALLOG. If the TCAP name is being used, the calling party's name is not delivered during call logging.

Three-Way Calling

When 3WC is set up so that calls can be transferred, the logging scenario is the same as for CXR.

When 3WC is set up so that calls cannot be transferred and the controller abandons, the logging scenario is as follows:

- For intraoffice calls, the call is not logged in the CALLOG subscriber's ICL.
- The resulting rering of the controller logs only when both legs are nodal and the first leg was not originated by the controller.

Activation/deactivation by the end user

Call Logging (CALLOG) requires no activation or deactivation by the end user.

CALLOG is invoked by dialing an access code. This code is defined in Table IBNXLA. When a subscriber dials the access code, ICL data is shipped to the subscriber set and information is presented on the display page.

Activation/deactivation of CALLOG by the end user

At your telephone:

- 1 Lift handset.

Response:

Receive stutter dial tone if there are any new messages in the ICL.

- 2 Dial CALLOG activation code.

Response:

Receive ADSI query tone.

ICL display information is downloaded from the system to the CPE information display page. A transient message is displayed indicating the number of calls being loaded to the CPE or indicating that there are no calls.

Call Logging (CALLOG) (continued)

A header page is displayed indicating the number of new and old messages (see Figure “Example of header page”).

- 3** Press scroll DOWN softkey.

Response:

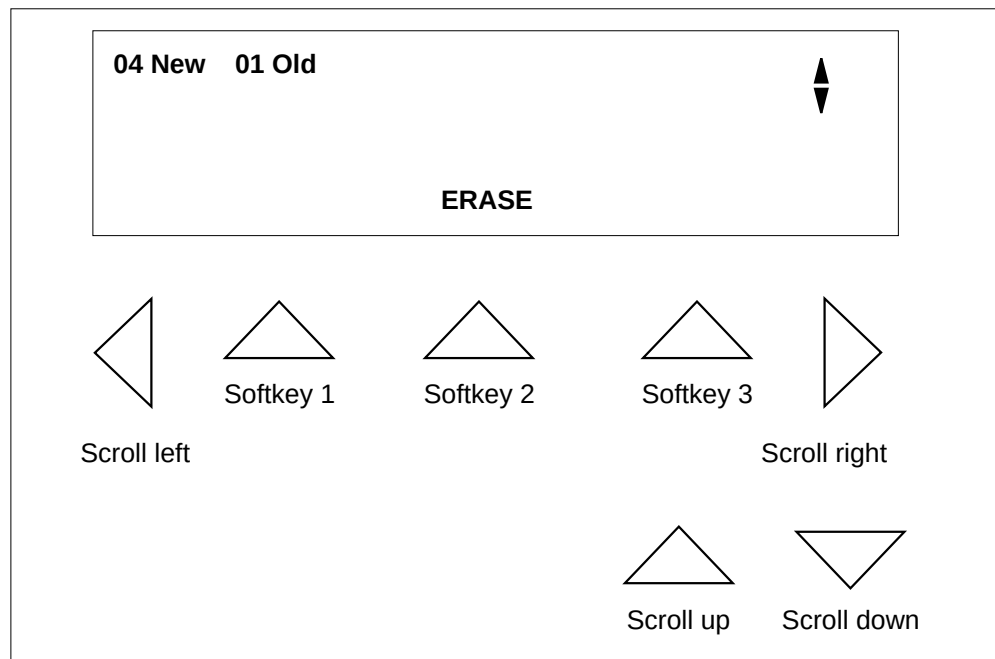
The most recent item in the ICL is displayed.

- 4** Observe the information presented and choose the desired action based on the softkeys available.

Response:

Depending on the choice of softkeys, the system shows other entries, deletes entries, returns calls, or restores accidentally deleted entries.

Example of header page



Billing

Call Logging (CALLOG) does not affect billing.

Station Message Detail Recording

Call Logging (CALLOG) does not affect Station Message Detail Recording.

Call Logging (CALLOG) (continued)

Datafilling office parameters

Two existing office parameters, FTRQ8WPERMS and FTRQ32WPERMS, must be engineered to handle the increased demand required for call logging. The office parameters are contained in table OFCENG.

Note: These office parameters appear when the FTRQPSUB subsystem is present in the load.

The following table shows the office parameters used by Call Logging (CALLOG). For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by CALLOG (Sheet 1 of 2)

Table name	Parameter name	Explanation and action
OFCENG	FTRQ8WPERMS and FTRQ32WPERMS	FTRQ8WPERMS and FTRQ32WPERMS are standard office engineering parameters and included as part of the standard feature processing environment. These parameters appear only when the FTRQPSUB subsystem is present in the load. FTRQ8WPERMS is used by call logging to store nodal (intraoffice) calls in a subscriber's ICL; FTRQ32WPERMS is used to store network (interoffice) calls in a subscriber's ICL. These parameters should be increased if there is any increase in the number of lines subscribing to call logging. The default value for both NT40 and Supernode is 1. For the formula for this parameter, refer to the <i>Office Parameters Reference Manual</i>. A warm restart is required to increase the value of either parameter. When either value is increased, the following warning messages are displayed:

Call Logging (CALLOG) (continued)

Office parameters used by CALLOG (Sheet 2 of 2)

Table name	Parameter name	Explanation and action
OFCENG (cont'd)	FTRQ8WPERMS and FTRQ32WPERMS	WARNING: Allocating Store for: n BLOCKS. WARNING: A warm restart is required to effect this change. A cold restart is required to decrease the value of either parameter. When either value is decreased, the following warning messages are displayed: WARNING: Allocating Store for: n BLOCKS WARNING: A cold restart is required to effect this change. The amount of memory (in words) used by each parameter is calculated as follows: $\text{FTRQ8PERMS} \times 10 \times 12$ $\text{FTRQ32WPERMS} \times 10 \times 36$ These parameters are associated with the FTRQ operational measurement (OM) group. Use this group to verify that the parameters are set and working properly.

Datafill sequence

The following table lists the tables that require datafill to implement Call Logging (CALLOG). The tables are listed in the order in which they are to be datafilled.

Datafill tables required for CALLOG (Sheet 1 of 2)

Table	Purpose of table
RESOFC	Residential Line CLASS Office Data. This table contains information on CLASS features and enables the CALLOG feature for the office.
IBNFEAT	IBN Line Feature Table. This table lists line features that are assigned to the IBN lines listed in table IBNLINES. Note: This table is datafilled through SERVORD; therefore, no datafill procedure or example is provided. Refer to "SERVORD" for an example of using SERVORD to datafill this table.

Call Logging (CALLOG) (continued)

Datafill tables required for CALLOG (Sheet 2 of 2)

Table	Purpose of table
IBNXLA	IBN Translation Table. This table stores data for the digit translation of calls from an IBN station, attendant console, incoming IBN trunk group, or incoming side of a two-way IBN trunk group.
SOFTKEY	Softkey Table. This table specifies softkey information for application services.
TEXTPHRS	Text Phrases Table. This table is used by Virtual Screen List Editing (VSLE) and other display features.
TEXTLOG	Logical Display Text Table. This table is used by Virtual Screen List Editing (VSLE) and other display features.

Datafilling table RESOFC

Table RESOFC (Residential Line CLASS Office Data) contains information on CLASS features and enables the CALLOG feature for the office. When the CALLOG feature package is installed, the CALLOG tuple is automatically added to Table RESOFC with a default setting. The CALLOG tuple contains the sanity timer value. It also contains an indicator of whether the name or number appears in the primary field in the call log.

The following table shows the datafill specific to CALLOG for table RESOFC. Only those fields that apply directly to CALLOG are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table RESOFC (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
KEY			KEY. This field consists of the subfield FEATNAME. This subfield is described below.
	FEATNAME	CALLOG	FEATURE NAME. This subfield is the key to the table. It specifies the name of the feature. Enter CALLOG.
ENABLED		Y, N	ENABLE. This field specifies whether or not the feature is enabled in the office. Enter Y.
FEATDATA			FEATURE DATA. This field consists of the subfields ACCESS, FEATNAME, CALLOG_TIMEOUT, and CALLOG_PRIMARY. These subfields are described below.

Call Logging (CALLOG) (continued)**Datafilling table RESOFC (Sheet 2 of 2)**

Field	Subfield or refinement	Entry	Explanation and action
	ACCESS	SUBSCR	FEATURE ACCESS. This subfield specifies how the feature is accessed. SUBSCR indicates subscription access and is the only valid value for the CALLOG feature. (UNIVER indicates universal access for all RES lines.) Enter SUBSCR.
	FEATNAME	CALLOG	FEATURE NAME. This subfield specifies the name of the feature. Enter CALLOG.
	CALLOG_ TIMEOUT	value from 2 to 30	CALLOG TIMEOUT. This subfield specifies how long (in minutes) the CALLOG feature will wait for input before terminating the session. Enter a value from 2 to 30.
	CALLOG_ PRIMARY_ DATA	NAME or NUMBER	CALLOG PRIMARY. This subfield specifies whether the name or number in the call log will appear first on the ADSI terminal. Enter NAME or NUMBER. The default is NUMBER.
FNALANN			FEATURE NOT ALLOWED ANNOUNCEMENT. This field consists of the subfields POTS_ACCESS and FNAL_CLLI. Refer to "Datafill procedure for Table RESOFC" for "Feature not allowed announcement" for details on these subfields.

Datafill example for table RESOFC

The following example shows sample datafill for table RESOFC.

MAP display example for table RESOFC

TABLE: RESOFC			
KEY	ENABLED	FEATDATA	FNALANN
CALLOG	Y	SUBSCR CALLOG 10 NAME	\$

Call Logging (CALLOG) (continued)

Datafilling table IBNXLA

Table IBNXLA (IBN Translations) contains the data for the digit translations of calls from an MDC station, attendant console, incoming trunk group, or incoming side of a two-way MDC trunk group.

The following table shows the datafill specific to CALLOG for table IBNXLA. Only those fields that apply directly to CALLOG are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table IBNXLA

Field	Subfield or refinement	Entry	Explanation and action
KEY			KEY. This field consists of the subfields XLANAME and DGLIDX. These subfields are described below and must be entered in succession.
	XLANAME	translator name	TRANSLATOR NAME. This subfield specifies the 1- to 8-character name assigned to the translator as the access code. Enter the translator name.
	DGLIDX	2-digit access code	DIGILATOR INDEX. This subfield specifies the digit or digits assigned to the index. Enter a 2-digit access code.
RESULT			RESULT. This field consists of the the subfields TRSEL, ACR, SMDR, and FEATURE. These subfields are described below.
	TRSEL	FEAT	TRANSLATION SELECTOR. This subfield specifies the translation selector. Enter FEAT.
	ACR	Y, N	ACCOUNT CODE ENTRY. This field specifies whether or not the account code entry is required. Enter N.
	SMDR	Y, N	STATION MESSAGE DETAIL RECORDING. This field specifies whether or not SMDR is required. Enter N when no recording is required.
	FEATURE	CALLACT	FEATURE. This field specifies the name of the feature to which the code is assigned. Enter CALLACT.

Call Logging (CALLOG) (continued)**Datafill example for table IBNXLA**

The following example shows sample datafill for table IBNXLA.

MAP display example for table IBNXLA

TABLE: IBNXLA

KEY

RESULT

RXCFN 25

FEAT N N N CALLCT

Datafilling table SOFTKEY

Table SOFTKEY (Softkey) contains tuples that define each softkey of ADSI applications and is datafilled automatically when the CALLOG feature is present. The only field the operating company can change is the LLABEL field. Field LLABEL defines the softkey display name on the ADSI set. For more information on softkeys and table SOFTKEY, refer to the module Downloadable Softkeys.

Datafill example for table SOFTKEY

The following example shows sample datafill for table SOFTKEY.

MAP display example for table SOFTKEY

TABLE: SOFTKEY

SERVID

DEFNUM

LLABEL

SLABEL

RETURN

CALLOG

7

REMOVE

REM

55 133 \$

CALLOG

8

DIAL

DIAL

56 133 \$

CALLOG

9

NAME

NAME

57 133 \$

Datafilling table TEXTPHRS

Table TEXTPHRS (Text Phrase) contains instructional and prompting text strings that work with table TEXTLOG to make up individual logical display phrases. This table is datafilled at initial program load (IPL) with default CALLOG tuples when the CALLOG feature is present. Field PHRASE in the table can be customized by the operating company. For more information on table TEXTPHRS, refer to the module Visual Screen List Editing (VSLE).

Call Logging (CALLOG) (continued)

Datafill example for table TEXTPHRS

The following example shows sample datafill for table TEXTPHRS.

MAP display example for table TEXTPHRS

TABLE: TEXTPHRS		
PHRSNAME	PHRASE	HLMODE
CLCOUNT	GENERIC_CALLOG_ITEM_COUNT	\$
CLTITLE	Call_Logging_Service	\$
CLDIAL	Dialing	\$

Note: Pseudo-phrases such as the one for CLCOUNT are default phrases that are replaced with appropriate integers when downloaded to the set.

Datafilling table TEXTLOG

Table TEXTLOG (Text Logical Phrase) defines the logical phrases that make up the display phrases used to guide the subscriber during a call logging session. This table is datafilled at IPL with default CALLOG tuples when the CALLOG feature is present. This table allows a variety of display messages to be datafilled by the operating company through the phrases defined in field PHRSLIST.

The logic of the key field LPHRSKEY should remain intact to ensure the integrity of the feature. Figure "Correct CALLOG order in Table TEXTLOG" shows the correct order of call logs and their functions as they should appear in Table TEXTLOG. For more information on Table TEXTLOG, refer "Visual Screen List Editing (VSLE)."

Datafill example for table TEXTLOG

The following example shows sample datafill for table TEXTLOG.

Call Logging (CALLOG) (continued)

MAP display example for table TEXTLOG

TABLE: TEXTLOG

LPHRSKEY	DISPTYPE	LCRI	PHRSLIST	DEFNLIST
CALLOG LANG1 1 S	LEFT	(CLTITLE) \$	(1 N SRV) \$	
CALLOG LANG1 2 S	LEFT	(CLDNLD1)(CLCOUNT)(CLDNLD2)\$	+(1 N SRV) \$	
CALLOG LANG1 3 S	LEFT	(CLERASED) \$	(1 N SRV)	(2 N SRV) \$
CALLOG LANG1 4 S	LEFT	(CLNEWCT)(CLNEW)(CLOLDCT) +	(CLOLD) \$	(1 N SRV) (6 N SRV) (1 N SRV)
		(5 N SRV) (1 N SRV) (1 N SRV) (1 N SRV) (5 N SRV) \$		

Correct CALLOG order in Table TEXTLOG

Table TEXTLOG phrase	Usage	Default phrase
CALLOG LANG1 1	Service title	Call Logging Service
CALLOG LANG1 2	Download msg.	Processing XX Calls
CALLOG LANG1 3	List erased msg.	Erased All Calls
CALLOG LANG1 4	List header item	XX New YY Old
CALLOG LANG1 5	Item dialed	Dialing. .name or number
CALLOG LANG1 6	Item removed	Removed. .name or number
CALLOG LANG1 7	DN first item	GENERIC_CALLOG_DN_ITEM
CALLOG LANG1 8	NAME first item	GENERIC_CALLOG_NAME_ITEM
CALLOG LANG1 9	Empty list msg.	No Calls. .Hang up
CALLOG LANG1 10	Dial failed	Cannot Return Call
CALLOG LANG1 11	Session timed out	Session Complete

Translation verification tools

Call Logging (CALLOG) does not use translation verification tools.

SERVORD

The line option CALLOG is added as a valid service order system (SERVORD) entry. CALLOG is compatible with the RES and MDC line class codes, with the exception of Meridian business sets (MBS).

Call Logging (CALLOG) (continued)

SERVORD limitations and restrictions

CALLOG has no SERVORD limitations and restrictions.

SERVORD prompts

The following table shows the SERVORD prompts used to assign CALLOG to a line.

SERVORD prompts for CALLOG

Prompt	Valid input	Explanation
NOTICE	STD, CMWI	This prompt defines the type of message waiting notification available on a subscriber set. Note: PRN and MWL are invalid for CALLOG and will generate an error. STD is recommended for most offices.

SERVORD example for adding CALLOG

The following SERVORD example shows how CALLOG is added to a line using the ADO command.

SERVORD example for setting up CALLOG using ADO in prompt mode

```
> SERVORD
S0:
> ADO
SONUMBER:  NOW  92  04  03
>
DN_OR_LEN:
> 6211234
OPTION
>CALLOG
NOTICE
> SID
OPTION
>$
COMMAND AS ENTERED:
ADO NOW 92 04 03 6211234 (CALLOG STD) $
ENTER Y TO CONFIRM, N TO REJECT, OR E TO EDIT
> Y
```

SERVORD example for setting up CALLOG using ADO in no-prompt mode

```
> ADO $ 6211234 CALLOG STD $ Y
```

Call Logging (CALLOG) (continued)

MAP display of the incoming callers list

A command is provided at the MAP that allows operating company personnel to examine the contents of a CALLOG subscriber's ICL. This command is CLOG. When entered, it allows the operating company personnel to view the ICL, to delete entries, or to add entries.

CLOG subcommands

The following table shows the CLOG subcommands that can be used to manipulate or view the ICL.

CLOG subcommands for CALLOG

Prompt	Valid input	Explanation
HELP	n/a	This command displays the CLOG subcommands and their parameters.
STATUS	DN of CALLOG subscriber	This subcommand displays the ICL entries for the DN requested.
RESET	DN of CALLOG subscriber	This subcommand resets the ICL of the DN requested.
DEQ	DN of CALLOG subscriber, L or N, and DN to be removed	This subcommand removes a specified ICL entry.
QUEUE	DN of CALLOG subscriber, L or N, DN of caller, and ICL information if specifics desired	This subcommand adds a specified entry to the ICL.
Note: L indicates an intraoffice call; N indicates an interoffice call.		

The following example shows how the CLOG command is used to display a CALLOG subscriber's ICL.

Call Logging (CALLOG) (end)

SERVORD example for using CLOG to check the status of CALLOG subscriber's ICL in prompt mode

```
> CLOG
CLOG:
> STATUS 6211234

REQUESTEE: 6136211234 TYPE: NCL
REQUESTEE TYPE: EMW MCOS: CLASSP
FTRQ FORMAT: NETWORK TERM STATE: BSY
MSG STATE: AUTO
SUPPRESS NM: N SUPPRESS DN: N
REQUESTOR: 6136432312
REQUESTOR NAME: Sally Smith
YEAR: 91 MONTH: DEC DAY: 11 TIME: 9:42
REPEAT CALLS: 1
NETWORK TYPE: EMW
NETWORK NAME: PUBLIC
```

SERVORD example for using CLOG to check the status of CALLOG subscriber's ICL in no-prompt mode

```
> CLOG; STATUS 6211234
```

The following example shows how the CLOG command is used to add to a CALLOG subscriber's ICL.

SERVORD example for using CLOG to add a CALLOG subscriber's ICL in prompt mode

```
> CLOG
CLOG:
> QUEUE 6211234 L 6215507
Message queued on line.
```

SERVORD example for using CLOG to add a CALLOG subscriber's ICL in no-prompt mode

```
>CLOG; QUEUE 6211234 L 6215507
```

Note: When the user inputs the caller's DN only, the system uses current information for date and time, as if the input line had actually terminated at that moment.

Call Redirect

Ordering codes

Functional group ordering code: RES00099

Functionality ordering code: RES00099

Release applicability

NA013 introduced the Call Redirect feature.

Requirements

The Call Redirect feature has no functional group requirements.

Description

The Call Redirect (CRT) feature provides residential subscribers with the ability to transfer calls to a pre-defined routing directory number (DN). The transfer occurs when the subscriber flashes and dials an access code during an established two-party call. After successful feature activation, the subscriber receives a confirmation treatment. Only the terminator in a two-party call can activate CRT. After activation, the terminator becomes the CRT controller.

The operating company can define the routing DN to route incoming calls to a switch-based tone or announcement, or to an external platform. The CRT feature is available to subscribers on a subscription or pay-per-use (PPU) basis.

Software optionality control (SOC) enables the Call Redirect feature for an entire office. The list that follows contains the SOC identifiers:

- SOC option name: RES_Call_Redirect
- SOC option title: Call Redirect
- SOC option control type: state

SOC state ON enables CRT for the office. An IDLE state disables CRT for the office. When enabled, all subscribers in the office have CRT available on a PPU basis. The following line options modify the CRT feature for individual lines within an office:

- The CRT option bills feature activation for a line on a subscription basis.
- The CRTDENY option prevents a line from invoking the CRT feature.

Operation

When the CRT called party presses the flash, the calling party is placed on hold and the CRT called party receives a special dial tone (SPDT). After receiving

Call Redirect (continued)

SPDT, the CRT called party dials the access code. The feature activates after the access code translation completes.

All subscribers in a customer group use the same CRT access code. The size limit of an access code is from one to eighteen digits. The access code must start with either a star (*) or an octothorp (#). The KEY field in table IBNXLA defines the access code. A customer group can support one or more access codes.

After activation, the feature extracts the CRT routing DN and the PPU AMA billing option from the CRT called party's customer group datafill in table IBNXLA. The CRT feature translates the CRT routing DN. A PPU feature activation billing record occurs if

- The CRT called party does not have the CRT line option on the line.
- The PPU AMA billing option for the CRT access code in table IBNXLA is set to Y.

The CRT called party receives confirmation treatment after successful CRT routing DN translation. Table TMTCNTL, subtable TREAT, defines the CRT confirmation treatment. A log generates if the CRT routing DN translation fails. If the translation fails, the system reconnects the caller and CRT controller.

The list that follows summarizes the Call Redirect feature activation requirements:

- The CRT feature SOC is ON.
- The called subscriber
 - is on a two-party call
 - is on a residential (RES) line (one-party flat rate, one-party measured rate)
 - does not have option CRTDENY assigned on the line
- The correct access code was dialed.
- The CRT routing DN translated successfully.

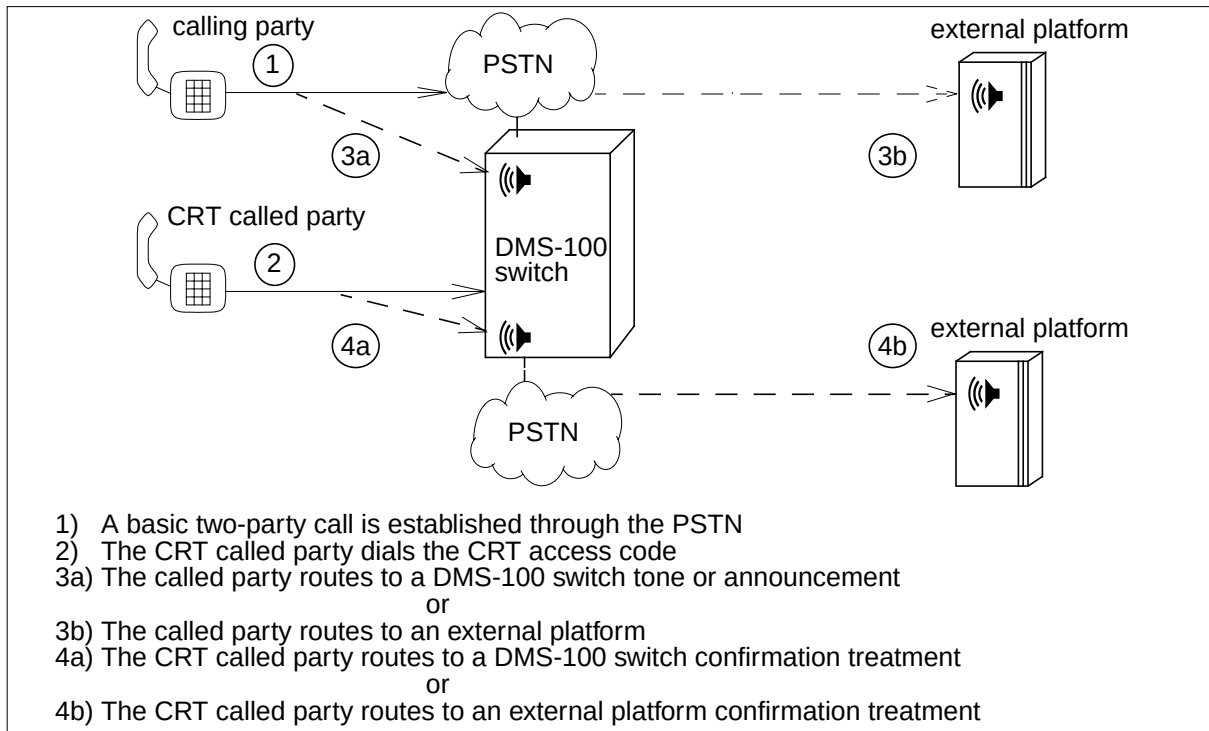
Network overview

The Call Redirect feature operates with other public switched telephone network (PSTN) nodes through the CRT called party's serving end office. The CRT called party activates the feature by pressing flash and dialing the access code while on a two-party call. After activation, the feature routes the calling party to the CRT routing DN. The operating company has the choice to route the calling party to a DMS-100 switch tone or announcement, or to an external

Call Redirect (continued)

platform. After the calling party route completes, the feature disconnects the CRT called party from the call and routes the called party to confirmation treatment. The operating company has the choice to route the CRT called party to a DMS-100 switch tone or announcement, or to an external platform. The figure that follows describes the Call Redirect feature network overview.

The Call Redirect feature network overview



Logs

The Call Redirect feature generates a CRT600 log when the CRT routing DN translation fails. The CRT600 log contains the following data fields:

- call ID
- 7–30 digit CRT controller DN
- 7–30 digit CRT routing DN
- translation failure reason

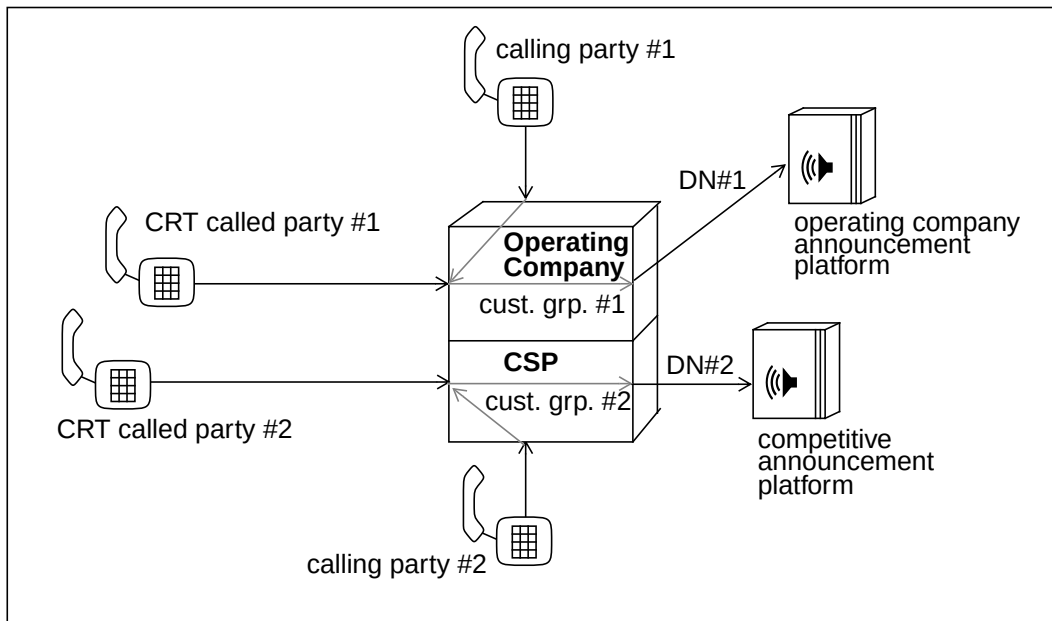
Competitive access

The Call Redirect feature allows an operating company to gain additional revenue by providing access to competitive service providers (CSP). The figure that follows describes a situation where an operating company and a CSP have separate customer groups on a DMS-100 switch. Each customer

Call Redirect (continued)

group has a separate CRT access code and routing DN. In this example the CSP routes to a CSP announcement platform. The option also exists for the CSP to use an operating company announcement platform.

The Call Redirect feature competitive access from multiple customer groups



Provisioning more than one access code for a residential customer group provides another option for competitive access. Each access code can service a different CSP and route to a different routing DN.

Query commands

The command interpreter (CI) commands that follow display the CRT or CRTDENY options if either option is assigned to a line.

- query directory number (QDN)
- query line equipment number (QLEN)

The figure that follows shows an example of command QDN for a RES line that was assigned the Call Send Again feature.

Call Redirect (continued)**Query command QDN displaying the Call Redirect feature****> QDN 6218008**

```

-----
DN: 6218008
TYPE: SINGLE PARTY LINE
SNPA: 613 SIG: DT LNATTIDX: 262
LINE EQUIPMENT NUMBER: HOST 00 0 04 07
LINE CLASS CODE: 1FR
IBN TYPE: STATION:
CUSTGRP: RESG200 SUBGRP: 0 NCOS: 0
CARDCODE: 6X17AC GND: N PADGRP: STDLN BNV: NL MNO: N
PM NODE NUMBER : 34
PM TERMINAL NUMBER : 136
OPTIONS:
DGT
RES OPTIONS:
ACB NOAMA AR NOAMA CRT
OFFICE OPTIONS:
U3WC
-----

```

Translations table flow

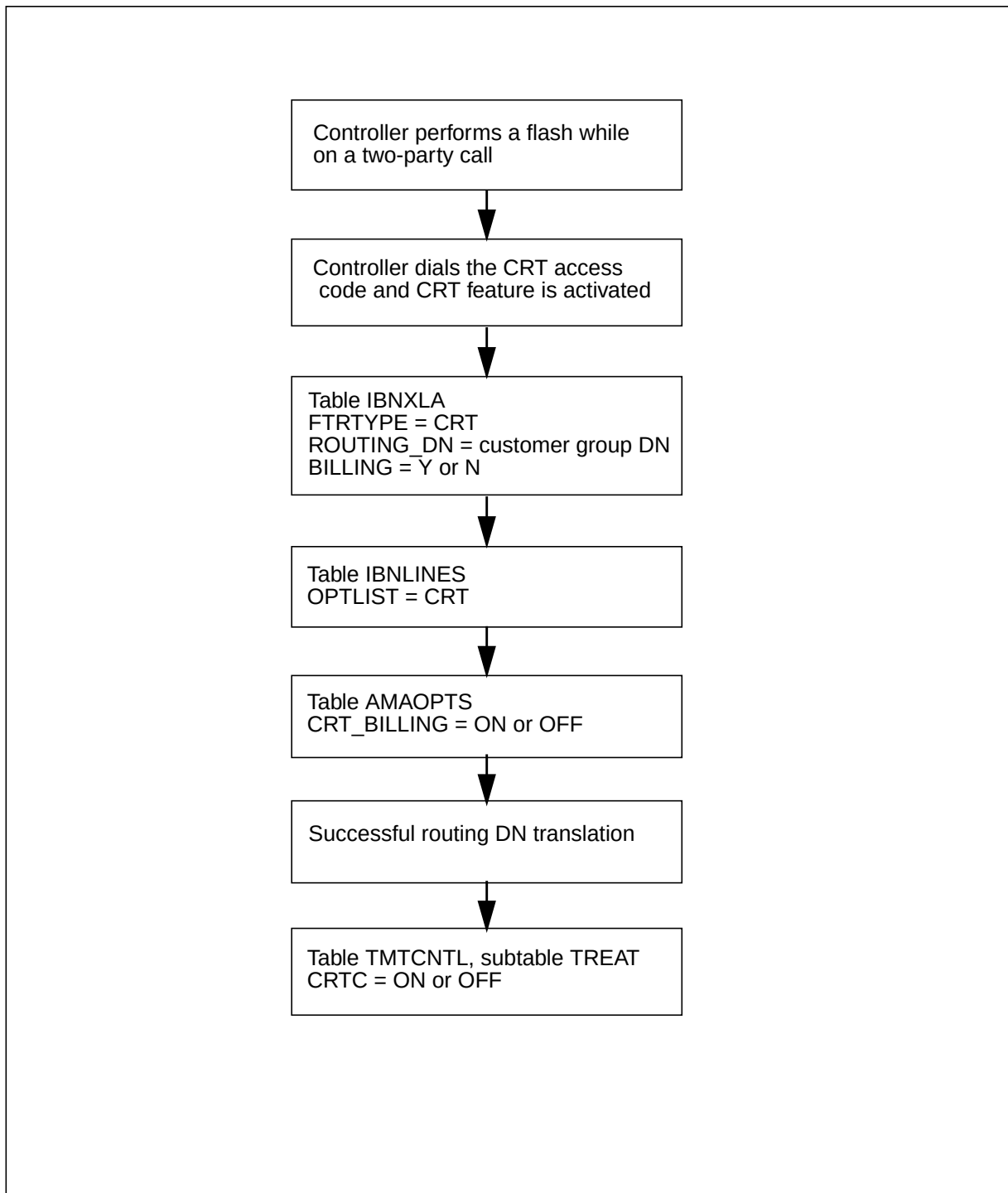
The list that follows includes the Call Redirect feature translations tables:

- AMAOPTS
- IBNLINES
- IBNXLA
- LCCOPT
- OPTOPT
- TMTCNTL

The flowchart that follows provides the Call Redirect feature translations process.

Call Redirect (continued)

Table flow for Call Redirect



Call Redirect (continued)

The table that follows lists the datafill content used in the flowchart.

Datafill example for Call Redirect

Datafill table	Example data
IBNXLA	STARXLA 55 FTR 2 CRT 6136200011 Y
IBNLINES	HOST 00 0 02 04 0 DT STN IBN 1690061 RES4716 0 0 047 (CRT) \$ HOST 00 0 03 04 0 DT STN IBN 1690062 RES4716 0 0 047 (CRTDENY) \$
TMTCNTL (subtable TREAT)	CRT Y S CONF
AMAOPTS	CRT_BILLING ON
Note: Tables OPTOPT and LCCOPT are read only tables that do not require datafill.	

Limitations and restrictions

The limitations and restrictions that follow apply to the Call Redirect feature:

- The Call Redirect feature is available to residential enhanced services (RES) lines with a line class code (LCC) of RES. The Call Redirect feature is also available to plain ordinary telephone service (POTS) lines converted to RES lines. The converted POTS line must have a previous LCC of one-party flat rate (1FR) or one-party message rate (1MR).
- If the user assigns the CRT feature on a pay-per-use basis in the IBNXLA table, there must be another flash feature assigned to the line.
- The Call Redirect feature does not support routing of calls to voice mail.
- The operating company can not specify the routing DN in table IBNXLA. A call forward DN from the call forward line option assigned on the controller's set is assumed to be the controller's routing DN. If the Call Forward DN of the call forwarding line option on the CRT controller's line is a voice mail DN, the CRT call terminates on the voice mail system as a direct call instead of a redirected call. This creates several restrictions.
 - The call forward line option can not be present on the controller's set. The system does not activate the CRT feature and give the FNAL treatment. The CRT feature connects back to the originator. The operating company must provision the call forward line option on the controller's set, if there is no routing DN in table IBNXLA.
 - The system can assign more than one type of call forward on the controller's set. The call forward options can have separate call

Call Redirect (continued)

forward DN. The system registers the call forward DN from the call forward option in the following order:

- CFDA (call forward don't answer) FDN (forward DN)
- CFBL (call forward busy line) FDN

Interactions

The paragraphs that follow describe how the Call Redirect feature interacts with other functionalities.

- The automatic call back (ACB) feature enables a subscriber to automatically call back the last dialed number. A call transferred as a result of CRT activation does not affect the ACB feature. The ACB feature recognizes the last number called before CRT activation.
- The advanced intelligent network (AIN) feature does not interact with the CRT feature for calls between the transferred party and the routing DN.
 - The CRT controller subscribers with the off-hook immediate (OHI) trigger feature cannot activate the CRT feature.
 - An AIN collect info response that contains the CRT access code in the collected digits field cannot start the CRT feature.
 - An AIN trigger cannot activate in an existing call from the other party to the CRT controller when CRT is activated.
- The call waiting (CWT) feature allows a subscriber to alternate between two parties. With the CWT feature active on a line, the controller cannot activate the CRT feature until one of the CWT calls ends. This interaction restriction also applies to the call waiting conference (CWTC) feature.
- The local number portability (LNP) feature can keep the CRT routing DN.
- The controller or the second party cannot activate the special delivery service (SDS) feature during CRT feature activation.
- A speed dial access code that contains the identical digits as the CRT access code initiates the CRT feature.
- The controller cannot activate the CRT feature with the spontaneous call waiting (SCWID) feature active on a line. This interaction restriction also applies to the SCWID with dispositions (DSCWID) feature.
- For all three-way calling (3WC) features:
 - The 3WC initiator cannot activate CRT until the call returns to a two-party status.
 - Participants of a 3WC can activate CRT only if they did not initiate the 3WC.

Call Redirect (continued)

- The Call Forwarding features include all parts of call forwarding and AIN call redirecting (for example, TAT with Forward_call response). The CRT features support the call forward chaining. For example, when the system activates the CRT feature and a call transfers to a CRT routing DN provisioned in the IBNXLA table. A CRT routing DN can forward a call to another DN using one of the Call Forward features. From here, a call can forward again.
- The teen service feature allows multiple directory numbers (DN) to be assigned to each single-party flat-rate line without the expense of additional line equipment. A primary DN and a maximum of six secondary DNs (SDN) can be assigned to a single line. A different ring pattern identifies the number called.
 - Each DN can have the following SDN_OPT: N,P,E (Enhanced SDN).

Activation and deactivation by the user

The Call Redirect feature requires activation by the user.

Activation of Call Redirect by the user

At your telephone

- 1 To activate the CRT feature during a two-party call, press the flash.
Response: The CRT called party receives special dial tone. The calling party goes on hold.
- 2 Dial the CRT access code.
Response: A confirmation tone indicates completion.

Billing

The Call Redirect feature activation billing can be either PPU or by line subscription. Both billing options require the CRT SOC defined as ON.

The list that follows describes PPU billing requirements:

- The CRT feature called party does not have the CRT line option assigned to the line.
- The PPU AMA billing option for the CRT access code in table IBNXLA is set to Y.

The list that follows describes line subscription billing requirements:

- The called party has the CRT option assigned to the line.
- The CRT feature access code is provisioned on the called party's customer group.

Call Redirect (continued)

Usage sensitive billing is switch-based when the called party's customer group has the billing option in table IBNXLA set to Y. A billing record contains the information that follows:

- billing record call type (049)
- service feature (214)
- existing structure code (00028)

Line subscription billing requires the CRT feature provisioned on the CRT called party's customer group.

The figure that follows is an example of an AMA record generated for call code 049.

Call code 049

```
TCSC13AU  AMAB117  JAN09 12:01:12 4200 INFO AMA RECORD DATA
STRUCTURE CODE = 00028          CALL CODE      = 049
CONNECT DATE   = 60109          CONNECT TIME = 1201108
ELAPSED TIME   = 00000000      ANSWERED      = YES
CALLING DN     = 9095502513
ORIG AGENT     = HOST 00 0 08 06  DN 9095502513
CALLED DN      = 9095502519
TERM AGENT     = HOST 00 1 14 00  DN 9095502514
```

The table that follows provides information for structure code 00028.

Structure code 00028

Information	Field number
Call type code indicates CRT activation.	1
Service feature indicates the CRT feature.	NA
Originating NPA indicates the CRT called party's numbering plan area (NPA).	13
Originating number indicates the CRT called party's directory number.	14
Connect time indicates the time to route the calling party to the CRT routing DN.	18

Call Redirect (continued)

Redirected call billing

The operating company controls redirected call billing record generation through table AMAOPTS. The CRT_BILLING field set to ON causes a billing record to generate when the called party redirects a call. The CRT_BILLING field has a default value set to OFF, which prevents redirected call bills to generate.

Any long distance charges required in redirecting a call to the routing DN are billed to the called party. The called party is the CRT controller. Long distance billing for redirected calls to the routing DN follows the same procedure used to bill a long distance call forward operation.

The calling party receives charges for a redirected call to the CRT routing DN when both conditions are true:

- the call between the calling party and the CRT controller is long distance
- the route from CRT controller to CRT routing DN is local

Station Message Detail Recording

The Call Redirect feature does not require Station Message Detail Recording.

Office parameters used by the Call Redirect feature

The Call Redirect feature does not generate office parameters.

Datafill sequence

The table that follows lists the tables that require datafill to put the Call Redirect feature into operation. You must enter data into the table in this order.

Datafill requirements for Call Redirect (Sheet 1 of 2)

Table	Purpose of table
OPTOPT	Incompatible options contains information about line options that are incompatible with other line options. The CRT feature adds CRT and CRTDENY option incompatibility information to this table (Note 1).
LCCOPT	Line class code (LCC) compatible options contains information about line options that are compatible with other line options. The CRT feature adds CRT and CRTDENY option compatibility information to this table (Note 1).
Note 1: Tables OPTOPT and LCCOPT are read-only tables. The operating company cannot modify these tables. This document does not provide datafill examples for table OPTOPT and LCCOPT. Note 2: Table IBNLINES requires datafill through SERVORD. This section does not provide a datafill example for table IBNLINES. Refer to the SERVORD section for more information.	

Call Redirect (continued)

Datafill requirements for Call Redirect (Sheet 2 of 2)

Table	Purpose of table
IBNXLA	IBN translations contains the data for the digit translations of calls from an MDC station, attendant console, incoming trunk group, or incoming side of a two-way MDC trunk group. IBN translations also stores data for feature translations on RES lines.
IBNLINES	IBN line assignment. This table contains line assignments for each 500/2500 set assigned to an IBN, RES, or multiple appearance directory number (MADN) station number. This table also contains line assignments for IBN attendant consoles (AC). The CRT feature modifies this table to support the CRT and CRTDENY options (Note 2).
TMTCNTL	Treatment control, subtable TREAT contains the treatment sent to the originator of a call if the call translation indicates a specified treatment code.
AMAOPTS	Automatic message accounting options controls the activation and scheduling of the recording options for automatic message accounting (AMA).
Note 1: Tables OPTOPT and LCCOPT are read-only tables. The operating company cannot modify these tables. This document does not provide datafill examples for table OPTOPT and LCCOPT. Note 2: Table IBNLINES requires datafill through SERVORD. This section does not provide a datafill example for table IBNLINES. Refer to the SERVORD section for more information.	

Datafill related to the Call Redirect feature for table IBNXLA

The table that follows provides the datafill related to the Call Redirect feature for table IBNXLA. This table includes only those fields that apply directly to the Call Redirect feature.

Datafill related to table IBNXLA (Sheet 1 of 2)

Field	Subfield	Entry	Explanation and action
KEY		see subfields	<i>Key</i> This field consists of subfields XLANAME and DGLIDX.
	XLANAME	alphanumeric (1 to 8 characters)	<i>Translator name</i> Enter the name assigned to the translator.

Call Redirect (continued)**Datafill related to table IBNXLA (Sheet 2 of 2)**

Field	Subfield	Entry	Explanation and action								
RESULT	DGLIDX	vector of up to 18 digits	<i>Digilator index</i> Enter the digit or digits assigned for the access code. The range of this field depends on field MAXDIG in table XLANAME. The DGLIDX can accept overdecadic digits. The allowable values for the digilator portion of DGLIDX of table IBNXLA are as follows: <table><tr><td>MAXDIG value</td><td><i>IBNXLA digilator values</i></td></tr><tr><td>9</td><td>Digits 0 to 9</td></tr><tr><td>C</td><td>Digits 0 to 9 and B to C</td></tr><tr><td>F</td><td>Digits 0 to 9 and B to F</td></tr></table> The allowable digit range for table IBNXLA digilator values is determined for each translator.	MAXDIG value	<i>IBNXLA digilator values</i>	9	Digits 0 to 9	C	Digits 0 to 9 and B to C	F	Digits 0 to 9 and B to F
	MAXDIG value	<i>IBNXLA digilator values</i>									
	9	Digits 0 to 9									
	C	Digits 0 to 9 and B to C									
	F	Digits 0 to 9 and B to F									
		see subfields	<i>Result</i> This field consists of subfields TRSEL, NO_ACCCODE_DIGITS, and FTR_TYPE.								
	TRSEL	FTR	<i>Translation selector</i> Enter the translation selector FTR.								
	NO_ACCCODE_DIGITS	0 to 7	<i>Number of activation code digits</i> Enter the number of digits in the activation code.								
	FTR_TYPE	CRT	<i>Feature result translation type</i> Enter CRT for the Call Redirect feature.								
	BILLING_OPTION	Y or N	<i>Billing option</i> Enter Y (yes) to select usage sensitive billing when members of the selected customer group activate the CRT feature. Enter N (no) if no recording is required.								

Datafill example for table IBNXLA

The figure that follows shows sample datafill for table IBNXLA. This figure shows routing DN 61362600011.

Call Redirect (continued)

Table IBNXLA datafill when routing_DN is specified

```
TABLE IBNXLA
>add
KEY:
>STARXLA 55
TRSEL:
>FTR
NO_ACCODE_DIGITS:
>2
FTR_TYPE:
>CRT
ROUTING_DN:
>6136200011
BILLING:
>y
TUPLE TO BE ADDED
STARXLA 55 FTR 2 CRT 6136200011 NOVMS Y
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>y
```

Datafill related to Call Redirect for table TMTCNTL, subtable TREAT

The table that follows provides the datafill related to the Call Redirect feature for table TMTCNTL, subtable TREAT. This table includes only those fields that apply directly to the Call Redirect feature.

Datafill related to table TMTCNTL, subtable TREAT (Sheet 1 of 2)

Field	Subfield	Entry	Explanation and action
TREATMT		alphanumeric (1 to 4 characters)	Treatment. Enter the treatment name.
LOG		Y or N	Log. Enter Y (yes) for a trunk or line message 138 printout each time translation is routed to a treatment. Otherwise, enter N (no).
FSTRTE		see subfields	First route. This field consists of subfields FSTRTSEL, TABID, and KEY.
	FSTRTSEL	T	First route selector. Enter the first route selector T.

Call Redirect (continued)**Datafill related to table TMTCNTL, subtable TREAT (Sheet 2 of 2)**

Field	Subfield	Entry	Explanation and action
	TABID	OFRT, OFR2, OFR3, or OFR4	Table name. Enter the office route table name.
	KEY	Table name. Enter the office route table name.	Key. Enter the index into the office route table which defines the route list for the treatment. The entry zero (0) cannot be datafilled by the operating company.

Datafill example for table TMTCNTL, subtable TREAT

The figure that follows shows sample datafill for table TMTCNTL, subtable TREAT.

MAP display example for table TMTCNTL, subtable TREAT

TREATMT	LOG		FSTRTE
CRTC	Y	T	OFRT 910

Datafilling table AMAOPTS

The following table shows datafill specific to the CRT feature for table AMAOPTS. Only those fields that apply directly to the CRT feature are shown. For a description of other fields, refer to the *Customer Data Schema Reference Manual*.

Datafilling table AMAOPTS (Sheet 1 of 2)

Field	Subfield	Entry	Explanation and action
OPTION		see subfield	Option. This field consists of subfield AMAOPT.
	AMAOPT	CRT_BILLING	AMA option. Enter CRT_BILLING.

Call Redirect (continued)

Datafilling table AMAOPTS (Sheet 2 of 2)

Field	Subfield	Entry	Explanation and action
SCHEDULE		see subfield	Schedule. This field consists of subfields AMASEL, ONDATE, OFFDATE, SCHED, ONTIME, and OFFTIME. Only subfield AMASEL applies to this feature.
	AMASEL	ON, OFF, DEFAULT	AMA selector. Enter one of the following: • ON: Activate the option immediately. • OFF: Deactivate the option immediately. • DEFAULT: Use the default schedule for the option. The value DEFAULT never appears in table AMAOPTS, since table control replaces it with the actual default value. The DEFAULT selector can be used at any time and the switch recalculates the default value if the default AMASEL value is PERIODIC.

Datafill example for table AMAOPTS

The following example shows sample datafill for table AMAOPTS.

MAP display example for table AMAOPTS

OPTION	SCHEDULE
CRT_BILLING	ON

Translation verification tools

The Call Redirect feature does not use translation verification tools.

SERVORD

The Service Order System (SERVORD) command query directory number (QDN) and query line equipment number (QLN) indicate if a RES line has access to the Call Redirect feature.

Call Redirect (continued)**SERVORD limitations and restrictions**

The Call Redirect feature has no SERVORD limitations or restrictions.

SERVORD prompts for CRT

The table that follows provides the SERVORD prompts used to add the Call Redirect feature to a subscriber line.

SERVORD prompts for Call Redirect

Prompt	Correct input	Explanation
SONUMBER	Refer to SONUMBER in the "Prompts" table in Chapter 2 for information on valid inputs.	The number of the service order to enter.
DN_OR_LEN	Refer to DN and LEN_OR_LTID in the "Prompts" table in Chapter 2 for information on valid inputs.	Enter the line DN or line equipment number (LEN). For MDN lines or MLH/DLH hunt members, if the user specifies a DN, SERVORD prompts the user for LEN. If the user enters the LEN, SERVORD does not prompt the user for the DN.
OPTION	CRT	The CRT option adds the call redirect option to a line.

SERVORD example to add the Call Redirect feature

The SERVORD example that follows shows how to add the Call Redirect feature to a subscriber line with the ADO command in prompt mode. Add the CRT option to a subscriber line to change feature activation billing from a PPU basis to a line subscription basis.

Call Redirect (continued)

SERVORD example for Call Redirect in prompt mode

```
> ADO
SONUMBER:           NOW   99   9   15   AM
> 5502611
OPTION:
> CRT
OPTION:
> $
```

The SERVORD example that follows shows how to add the Call Redirect feature to a subscriber line with the ADO command in no-prompt mode. Add the CRT option to a subscriber line to change feature activation billing from a PPU basis to a line subscription basis.

SERVORD example for the Call Redirect feature in no-prompt mode

```
>ADO 5502611 CRT $
```

SERVORD prompts for the Deny Call Redirect feature

The table that follows provides the SERVORD prompts used to add the Deny Call Redirect feature to a subscriber line.

SERVORD prompts for Deny Call Redirect (Sheet 1 of 2)

Prompt	Correct input	Explanation
SONUMBER	Refer to SONUMBER in the "Prompts" table in Chapter 2 for information on valid inputs.	The number of the service order to enter.

Call Redirect (end)**SERVORD prompts for Deny Call Redirect (Sheet 2 of 2)**

Prompt	Correct input	Explanation
DN_OR_LEN	Refer to DN and LEN_OR_LTID in the "Prompts" table in Chapter 2 for information on valid inputs.	Enter the line DN or LEN. For MDN lines or MLH/DLH members, if the user specifies a DN, SERVORD prompts the user for LEN. If the user enters the LEN, SERVORD does not prompt the user for the DN.
OPTION	CRTDENY	The CRTDENY option adds the deny call redirect option to a line.

SERVORD example to add the Deny Call Redirect feature

The SERVORD example that follows shows how to add the Deny Call Redirect feature to a subscriber line with the ADO command in prompt mode. Add the CRTDENY option to a subscriber line to disable the CRT feature on that line.

SERVORD example for the Deny Call Redirect feature in prompt mode

```
> ADO
SONUMBER:           NOW   99   9   15   AM
> 5502611
OPTION:
> CRTDENY
OPTION:
> $
```

The SERVORD example that follows shows how to add the Deny Call Redirect feature to a subscriber line with the ADO command in no-prompt mode. Add the CRTDENY option to a subscriber line to disable the CRT feature on that line.

SERVORD example for Deny Call Redirect in no-prompt mode

```
>ADO 5502611 CRTDENY $
```

Call Waiting Display (SCWID)

Ordering codes

Functional group ordering code: RES00003

Functionality ordering code: RES00025

Release applicability

CSP02, SCWID compliant with Bellcore TR-575 and TR-30

Prerequisites

To operate, Call Waiting Display (SCWID) requires RES Service Enablers, (RES00006).

Network configuration

Common channel signaling no. 7 (CCS7) connectivity is required for network (interoffice) configuration of Call Waiting Display (SCWID).

Description

Call Waiting Display, also called Spontaneous Call Waiting Identification or SCWID, allows the subscriber to view the name and directory number (DN) of a call in the call waiting (CWT) mode. The display appears after the CAS/SAS tone, alerting the subscriber that another call is incoming. With CLASS (Custom Local Area Signaling Services) SCWID, the subscriber can choose to accept or ignore the incoming call based on the information provided in the display.

Before the implementation of off-hook signaling, SCWID was not available. When off-hook signaling was introduced, the capability to provide off-hook display for features became possible. The SCWID feature is the first to offer off-hook display signaling to residential subscribers.

In CSP02, Bellcore-compliant SCWID was introduced. The SCWID functionality was modified to meet Bellcore requirements in TR-30 and TR-575 (feature AN0616, SCWID TR Compliance).

Subscriber Services subscribers who choose the CLASS SCWID calling feature must have a set with a display function capable of recognizing the customer premises equipment alerting signal (CAS) tone. When a call is placed in CWT, the name and DN of the caller display once for each call and remain in the display until a timeout occurs.

With CWT, the subscriber receives a rering if the subscriber goes on-hook before the call in CWT is answered. All CLASS information is sent to the

Call Waiting Display (SCWID) (continued)

subscriber during rering. CLASS SCWID subscribers receive a standard CWT and CAS tone.

For a line without Teen Service or Distinctive Ring Call Waiting (DRCW), the subscriber alerting signal (SAS) is 300ms of the normal call waiting tone, followed by a CAS 80 ms of the Analog Display Services Interface (ADSI) tone. The SAS tones broadcast for the line with the DRCW feature active uses the DRCW tones. The feature DISTCWTN is assigned by customer group in order to apply to Meridian Digital Centrex (MDC) lines. The ADSI tone card (6X69AD) supports the ADSI tone.

With the SCWID feature, the subscriber can also have Cancel Spontaneous Call Waiting Identification (CSCWID). CSCWID gives the subscriber the ability to suspend the SCWID feature before or during a call. When CSCWID is active, the caller can stop the display of the calling name and DN information of an incoming waiting call.

Translations table flow

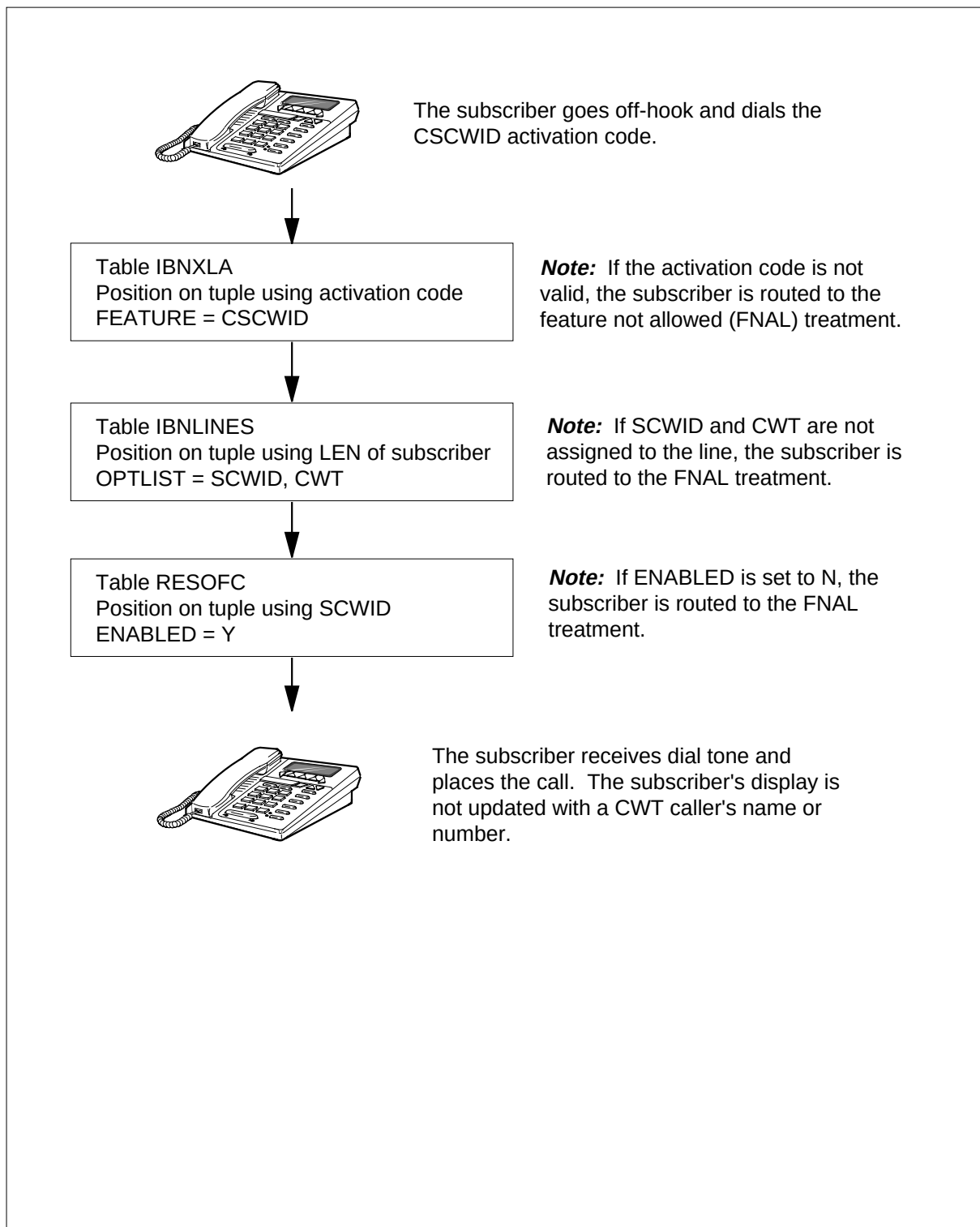
The CSCWID translations tables are described in the following list:

- Table IBNXLA provides the name of the feature associated with an activation code.
- Table IBNLINES lists the features assigned to a line equipment number (LEN).
- Table RESOFC controls the availability of individual CLASS features for an office. For this example, SCWID is enabled.

The CSCWID translation process is shown in the flowchart that follows.

Call Waiting Display (SCWID) (continued)

Table flow for CSCWID



Call Waiting Display (SCWID) (continued)

The following table lists the datafill content used in the flowchart.

Datafill example for Call Waiting Display (SCWID)

Item	Example data
CSCWID activation code	77
LEN	HOST 00 02 0 05
Datafill	Example data
IBNXLA	RXCFN 77 FEAT N N N CSCWID
IBNLINES	HOST 00 02 0 05 0 DT STN RES 6210011 0 (SCWID) (CWT) \$
RESOFC	SCWID Y SUBSCR SCWID Y \$

Limitations and restrictions

The following limitations and restrictions apply to Call Waiting Display (SCWID):

- The SCWID feature can only be supported on XPMs with unified processors (UP). (A UP-based XPM is an XPM+.)
- The XPM+ must have a universal tone receiver (UTR) to support SCWID.
- The XPM+ must have the 6X78AA/AB CLASS modem resource card (CMR) for the transmission of display information to the customer premise equipment.
- The SCWID feature requires the 6X69AD tone and messaging card, which supports the existing North American toneset and has the Bellcore-compliant ADSI tone.
- If basic Cancel Call Waiting (CCW) is active, operational measurement (OM) peg counts are not taken.
- CLASS display data appears with CWT rering only if the phone reringing the CLASS set originally terminated on that set.
- A SCWID-compatible CPE is required to receive SCWID data.

Interactions

The following paragraphs describe the interactions between Call Waiting Display (SCWID) and other functionalities.

Call Waiting Display (SCWID) (continued)

Attendant Console

If either the first or second call to a SCWID phone is from an attendant console, the SCWID subscriber will receive CWT tones but not receive display data until both the SCWID line and the attendant console line go on-hook.

Automatic Call Distribution

A call to a SCWID line will cause the SCWID line to receive CWT without caller identification data when the first call is to the SCWID line's ACD number and the second call is to the SCWID line's actual directory number.

Call Forward Don't Answer, Call Forwarding of Call Waiting

If the non-controller of the established call goes onhook during the transaction capability applications part (TCAP) name query, the SCWID subscriber goes into a disconnect-timing state as the SCWID subscriber is still offhook in a disconnect timing state, then the CFDA (Call Forward Don't Answer) or CFCW (Call Forwarding of Call Waiting) timer is started to give the waiting party the chance to forward through voicemail if the SCWID customer remains offhook.

If the SCWID subscriber is assigned the CFDA feature, the customer group for the SCWID subscriber is assigned the CFCW feature in table CUSTSTN, and the TCAP name retrieval method is used to acquire the calling party's name, the CFDA or CFCW timer is not started until the SCWID customer is alerted of the waiting call after the database response or timeout occurs.

Call Hold

The SCWID feature is incompatible with the Call Hold feature.

Call Waiting, Dial Call Waiting and Call Waiting Originating

The SCWID subscribers receive a standard CWT tone. SCWID tones are also heard by the subscriber. If, however, CSCWID is active, regular call waiting without display is operational.

Calling Name Delivery

If Calling Name Delivery (CNAMD) is a line feature that the subscriber has selected, then the name of the party in CWT displays when CWT is invoked.

Calling Name/Number Delivery Blocking

CNB, CNDB, and Calling Name Number Blocking (CNNB) are used to restrict calling name or number information. The privacy indicator displays to the SCWID subscriber.

Call Waiting Display (SCWID) (continued)

Calling Number Delivery

If the subscriber has CND, a waiting call updates the display with the calling number in accordance with the CND format.

Cancel Call Waiting

CCW cancels all call waiting functions including SCWID. CSCWID cancels the calling party identification display.

Dialable Number Delivery

If a SCWID subscriber has the DDN feature, the display updates in the DDN format.

Distinctive Ringing/Call Waiting

If the SCWID subscriber has Distinctive Ringing/Call Waiting (DRCW), Teen Service, or Distinctive Call Waiting Tones (DISTCWTN) assigned, the distinctive alerting pattern for the specific feature is substituted for the SCWID subscriber alerting tone (SAS). The feature DISTCWTN is assigned by customer group in order to apply to MDC lines. The customer premise equipment alerting signal remains unchanged.

Feature Groups

Feature Groups and SCWID should not be assigned to the same line.

Hunt Groups

SCWID is not compatible with Multiline Hunt (MLH), Distributed Line Hunt (DLH), or MPH hunt groups. SCWID is compatible with Directory Number Hunt (DNH) hunt groups.

Long Distance Indicator

If the Long Distance Indicator (LDI) package is installed, the call qualifier parameter is part of the off-hook message sent to the SCWID subscriber.

Multiple Appearance Directory Number

SCWID is delivered to Multiple Appearance Directory Number (MADN) groups through standard CWT. In some MADN groups, SCWID call waiting tones are delivered only to the primary member. Name delivery becomes compatible for MADN groups in feature AF2858, Calling Name Delivery on MADN (CNAMD on MADN).

Multiline Hunt Group

The pilot of a MLH group is the only member that is assigned the CWT feature and the SCWID feature. The CSCWID feature is not operational on MLH groups even though the pilot number is able to activate it. If other members of

Call Waiting Display (SCWID) (continued)

the hunt group try to activate CSCWID, the reorder treatment applies. The CWT feature applies to the last member of the hunt group only.

Selective Call Forwarding and Selective Call Rejection

Selective Call Forwarding (SCF) and Selective Call Rejection (SCRJ) override regular call waiting. These features also override SCWID.

Series Completion

When a line has both Series Completion (SCMP) and the SCWID option, SCMP will take precedence over the SCWID feature.

Sourcing of Patch FPA75

The Sourcing of Patch FPA75, AF7524 feature enhances the CCW feature. This feature is useful for ADSI for plain ordinary telephone service (POTS)/residential (RES) terminals.

Sourcing of Patch FPA75 provides the following:

- Allows an operating company to assign CCW activation without call waiting (CWT) to POTS/RES lines through the service order (SERVORD) system
- After an operating company assigns CCW, provides confirmation tone after CCW, even if the operating company does not assign CWT
- Allows the No Cancel Call Waiting Without Call Waiting (NCCW) SERVORD to deny this feature on a per-line basis
- A customer subscribing to an internet service provider (ISP) and using scripts where CCW is a prerequisite even if CWT is not present can use this feature

A subscriber to an internet service provider (ISP) and using scripts where CCW is a prerequisite can use this feature. This is true even if CWT is not present.

If POTS/RES lines do not have CWT, the application script for CCW is unusable. Sourcing of Patch FPA75 prevents an end user who does not subscribe to CWT from receiving No ACKnowledgement (NACK). Instead, the call will complete as dialed for POTS/RES lines.

Note: NCCW is incompatible with the integrated business networks (IBN) line class code.

Call Waiting Display (SCWID) (continued)

Teen Service

The Teen Service (SDN) feature provides distinctive ringing for up to three alternate DNs on a Teen Service line of the subscriber. Teen Service CWT applies with SCWID.

Three-Way Calling

If the SCWID subscriber has Three-Way Calling (3WC) and is the controller in a three-way call, SCWID will not function. Regular CWT tones apply if a SCWID subscriber is placed on hold by the controller of a 3WC call, and SCWID data is not delivered.

If the SCWID subscriber is not the 3WC controller and is not on hold, then SCWID delivery will be delivered. If the SCWID subscriber is placed on hold by a controller of a 3WC, SCWID data is not delivered if the call is intraswitched; however, SCWID data can be delivered to the subscriber if the same call is interswitched.

If a SCWID subscriber is placed on hold during TCAP name query and is still on hold after the database response or timeout occurs, the SCWID subscriber receives regular CWT tones and the SCWID data is not delivered. A held tone applies between the initial CWT alerting tone and the realerting tones as long as the SCWID subscriber remains on hold.

Uniform Call Distribution

A call to a SCWID line will cause the SCWID line to receive CWT without caller identification data when the first call is to the SCWID line's UCD number and the second call is to the SCWID line's actual directory number.

Activation/deactivation by the end user

The subscriber is not responsible for activating or deactivating the SCWID feature; however, he or she is responsible for activating the CSCWID feature (CSCWID is activated on each individual call). The CSCWID is available to the SCWID subscriber without adding the feature to the line. The CWT tone applies, but there is no display of the name or number when the CSCWID feature is activated.

To activate CSCWID, the subscriber dials an activation code. The dial tone is reapplied, and dialing continues. Once the subscriber goes back on-hook, CSCWID is deactivated. The activation code is defined in table IBNXLA. There is no recommended activation code.

A subscriber with the SCWID feature is able to override the feature temporarily by using CCW prior to originating a call or during a call. CCW is

Call Waiting Display (SCWID) (continued)

activated by accessing the 3WC feature and then entering the access code for CCW. There is no CWT, name, or number delivery with the CCW feature.

Billing

Call Waiting Display (SCWID) does not affect billing.

Station Message Detail Recording

Call Waiting Display (SCWID) does not affect Station Message Detail Recording.

Datafilling office parameters

Call Waiting Display (SCWID) does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement Call Waiting Display (SCWID). The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Call Waiting Display (SCWID)

Table	Purpose of table
RESOFC	Residential Line CLASS Office Data. This table contains information on CLASS features and enables the SCWID feature for the office.
IBNXLA	IBN Translation Table. This table stores data for the digit translation of calls from an IBN station, attendant console, incoming IBN trunk group, or incoming side of a two-way IBN trunk group.
IBNLINES	IBN Line Assignments Table. This table contains the line assignments for each 500 or 2500 set assigned to a RES station. Note: Table IBNLINES is datafilled through SERVORD; therefore, no datafill procedure or example is provided. Refer to "SERVORD" for an example of using SERVORD to datafill this table.

Datafilling table RESOFC

Table RESOFC (Residential Line CLASS Office Data) contains data on CLASS features and enables SCWID for the office. Two fields change and a new subfield is added to table RESOFC for the SCWID feature.

The following table shows the datafill specific to Call Waiting Display (SCWID) for table RESOFC. Only those fields that apply directly to Call

Call Waiting Display (SCWID) (continued)

Waiting Display (SCWID) are shown. For a description of the other fields, refer to the data schema section of the *Translations Guide*.

Datafilling table RESOFC (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
KEY			KEY. This field consists of the subfield FEATNAME. This subfield is described below.
	FEATNAME	SCWID	FEATURE NAME. This subfield is the key to the table. It specifies the name of the feature. Enter SCWID.
ENABLED		Y or N	ENABLED. This field specifies whether or not the feature is enabled for the office. Enter Y or N.
FEATDATA			FEATURE DATA. This field consists of the subfields ACCESS, FEATNAME and DATETIME. These subfields are described below.
	ACCESS	SUBSCR	FEATURE ACCESS. This subfield specifies how the feature is accessed. SUBSCR indicates subscription access and is the only valid value for the SCWID feature. (UNIVER indicates universal access for all RES lines.) Enter SUBSCR.
	FEATNAME	<CR>	FEATURE NAME. This subfield specifies the feature name. It defaults to the value in field FEATNAME listed above. Enter <CR>.

Call Waiting Display (SCWID) (continued)

Datafilling table RESOFC (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	DATETIME	Y or N	DATETIME. This subfield specifies whether or not the switch date and time information is delivered to the SCWID subscriber's customer premise equipment along with calling identity information. Enter Y to display the date and time. Otherwise, enter N. The default value is Y. An approximate interruption of 100 ms to the subscriber's speech path is given when the field DATETIME is set to Y. The longer interruption is avoided by setting this field to N.
FNALANN			FEATURE NOT ALLOWED ANNOUNCEMENT. This field consists of the subfields POTS_ACCESS and FNAL_CLLI. Refer to "Datafill procedure for table RESOFC" for "Feature not allowed announcement" for details on these subfields.

Datafill example for table RESOFC

The following example shows sample datafill for table RESOFC.

MAP display example for table RESOFC

KEY	ENABLED FNALANN	FEATDATA
SCWID	Y	SUBSCR SCWID Y
	\$	

Datafilling table IBNXLA

Table IBNXLA (IBN Translations) contains the data for the digit translations of calls from an MDC station, attendant console, incoming trunk group, or incoming side of a two-way MDC trunk group. The code for activating CSCWID is identified in this table. The fields are not affected by the SCWID feature, and, the datafill sequence remains the same.

The following table shows the datafill specific to Call Waiting Display (SCWID) for table IBNXLA. Only those fields that apply directly to Call

Call Waiting Display (SCWID) (continued)

Waiting Display (SCWID) are shown. For a description of the other fields, refer to the data schema section of the *Translations Guide*.

Datafilling table IBNXLA

Field	Subfield or refinement	Entry	Explanation and action
KEY			KEY. This field consists of the subfields XLANAME and DGLIDX. These subfields are described below and must be entered in succession.
	XLANAME	1- to 8-character name	TRANSLATOR NAME. This subfield specifies the 1- to 8-character name assigned to the translator as the access code. Enter the translator name.
	DGLIDX	2-digit access code	DIGILATOR INDEX. This subfield specifies the digit or digits assigned to the index. Enter a 2-digit access code.
RESULT			RESULT. This field consists of the subfields TRSEL, ACR, SMDR, and FEATURE. These subfields are described below.
	TRSEL	FEAT	TRANSLATION SELECTOR. This subfield specifies the translation selector. Enter FEAT.
	ACR	Y or N	ACCOUNT CODE ENTRY. This subfield specifies whether or not an account code entry is required. Enter Y or N.
	SMDR	Y or N	STATION MESSAGE DETAIL RECORDING. This subfield specifies whether or not SMDR is required for calls originated by a customer group station or an attendant console. Enter Y or N.
	FEATURE	CSCWID	FEATURE. This subfield specifies the feature assigned to the access code. Enter CSCWID.

Datafill example for table IBNXLA

The following example shows sample datafill for table IBNXLA.

Call Waiting Display (SCWID) (continued)

MAP display example for table IBNXLA

KEY		RESULT
RXCFN	77	FEAT N N N CSCWID

Translation verification tools

The following example shows the output from TRAVER when it is used to verify Call Waiting Display (SCWID).

TRAVER output example for Call Waiting Display (SCWID)

```
>TRAVER L 6211233 'B77' B
TABLE IBNLINES
  HOST 00 0 09 07 0 DP STN RES 6211233 0 $
TABLE LINEATTR
  0 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC
LATA1 0 NIL NIL 00 Y RESGRP 0 2
  LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE NCOS
RESGRP 2 0 0 RNCOS2 ( XLAS RXCMN2 NXLA RES ) $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA,
VACTRMT, AND DIGCOL
RESGRP NXLA RESXLA RXCFN 0 RES
TABLE DIGCOL
  RES SPECIFIED: RES DIGIT COLLECTION
NCOS FEAT XLA NAME IS NIL. GO TO NEXT XLA NAME.
TABLE IBNXLA: XLANAME RXCFN
  RXCFN 77 FEAT N N N (CSCWID)

++ TRAVER: SUCCESSFUL CALL TRACE ++
```

SERVORD

The SCWID feature is a line option assigned through SERVORD (service order) to the RES, 1FR, and 1MR line class codes.

To assign SCWID to a line, at least one of the display line options calling name display (CNAMD), calling number display (CND), or dialable directory number (DDN) is already assigned to the line or is concurrently added with the

Call Waiting Display (SCWID) (continued)

SCWID feature. An error message is generated if an attempt is made to delete the last display feature from the SCWID line.

The following packages allow for additional line class code compatibility:

- NTXE58 CLASS on MVP (multiline variety package) is the package to allow SCWID compatibility to the IBN (integrated business network) line class code.
- NTXA64 WATS on RES is the package to allow SCWID compatibility with the OWT (outward WATS) and EOW (enhanced outward WATS) lines class codes.

With Bellcore-compliant SCWID, it is no longer necessary to add CWT either before or concurrently with SCWID.

If CWT is not assigned to a line when SCWID is added, CWT is added automatically. The CWT feature is also removed automatically if not concurrently when the SCWID feature is deleted.

SERVORD limitations and restrictions

The following SERVORD limitations and restrictions apply to Call Waiting Display (SCWID):

- The call waiting intragroup (CWI) feature is added or deleted separately from SCWID on MDC lines. On a line that contains SCWID, CWT, and CWI or Call Waiting Ringback (CWR), CWT cannot be deleted without removing CWI or CWR first.
- SCWID cannot be added to a line that has the Call Hold (CHD) feature.
- SCWID cannot be added to a line with Feature Groups assigned.

SERVORD prompts

The following table shows the SERVORD prompts used to assign option Call Waiting Display (SCWID) to a line.

SERVORD prompts for Call Waiting Display (SCWID)

Prompt	Valid input	Explanation
OPTION	SCWID	The feature to be added, modified, or deleted

SERVORD example for adding Call Waiting Display (SCWID)

The following SERVORD example shows how Call Waiting Display (SCWID) is added to an existing line using the ADO command.

Call Waiting Display (SCWID) (end)

SERVORD example for setting up Call Waiting Display (SCWID) using ADO in prompt mode

```
> SERVORD
S0:
> ADO
SONUMBER:  NOW 89 10 04 AM
>
DN_OR_LEN:
> 6211234
OPTION:
> SCWID
OPTION:
>$
COMMAND AS ENTERED:
ADO NOW 89 10 04 AM 6211234 (SCWID) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>Y
```

SERVORD example for setting up Call Waiting Display (SCWID) using ADO in no-prompt mode

```
>ADO $ 6211234 SCWID $ Y
```

Calling Name Delivery (CNAMD)

Ordering codes

Functional group ordering code: RES00003

Functionality ordering code: RES00023

Release applicability

NA010 and up

Prerequisites

To operate, Calling Name Delivery (CNAMD) has the following prerequisites:

- BAS Generic, BAS00003
- MDC Minimum, MDC00001
- MDC Standard, MDC00003
- RES Service Enablers, RES00006

Network configuration

Common Channel Signaling No. 7 (CCS7) connectivity is required for network (interoffice) configuration of Name Display. The following prerequisites are required for CCS7 connectivity:

- Base ISUP, ISP70001
- TEL CCS7 Base, TEL00008

Description

All Custom Local Area Signaling Services (CLASS) display features extract calling party information from the incoming call memory that is provided for CLASS call processing. The extracted information is then processed to determine if the calling party's name and directory number (DN) are included and if display of the name and DN are blocked. An information message is then sent to the subscriber set. The receiving set displays the information between the first and second ring before the subscriber answers the call.

The discussion of these features has been combined in this feature description because of the similarity of the CLASS display features Calling Name Delivery (CNAMD), Calling Number Delivery (CND), and Dialable Number Delivery (DDN).

Note: For more information on the DDN feature, refer to *Dialable Number Delivery (DDN)*.

Calling Name Delivery (CNAMD) (continued)

CNAMD, CND, and DDN all deliver calling information to the subscriber set. However, there are differences between these features.

- CNAMD delivers the calling party's name.
- CND delivers the calling party's number in a ten-digit format.
- DDN converts the calling party's number from a ten-digit format into a dialable format (the digits that the subscriber dials to make a call to the calling party) before delivering the number to the subscriber.

Note: CLASS display features CND and DDN are incompatible and cannot be assigned to the same line; however, CNAMD can be assigned to a line with either CND or DDN.

Operation

Display data provided to CND and DDN subscribers

The calling information for an incoming call consists of the current date and time, the long distance status of the call, and information indicating one of the following:

- the DN of the originator in a ten-digit or dialable format
- the suppression of the DN

Note: The calling DN can be suppressed (made unavailable to the terminator) in several ways, as described in *Calling Number Delivery Blocking (CNDB)*.

- the DN is unavailable—examples are calls that:
 - originate from an operator
 - originate from an eight- or ten-party line
 - originate from an attendant console
 - are received on a non-ISDN User Part (non-ISUP) trunk
 - are received on an ISUP trunk where interworking has been encountered (that is, where the call origin to call destination switch-to-switch connection includes some non-ISUP trunks)

Note: The extended LCM processor card, 6X51AB, increases processor memory from 64KB to 256KB and is required for various features, including CLASS display for CND and CNAMD. The 6X51AB replaces 6X51AA, which cannot be used for CLASS display services.

Calling Name Delivery (CNAMD) (continued)

Display data provided to CNAMD subscribers

The calling information for an incoming call to a CNAMD subscriber consists of the current date and time, the long distance status of the call, and the name of the calling party.

Calling information is delivered for both interoffice calls (calls originating and terminating in the same switch) and intraoffice calls (calls originating and terminating in two different switches). Delivery of the calling name information over a network is only supported if full CCS7 connectivity exists and if all nodes recognize and transport the calling information.

Methods that are used to suppress the delivery of calling name information to a CNAMD subscriber are discussed in *Calling Name/Number Delivery Blocking (CNNB)*.

Note: The extended LCM processor card, 6X51AB, increases processor memory from 64KB to 256KB and is required for various features, including CLASS display for CND and CNAMD. The 6X51AB replaces 6X51AA, which cannot be used for CLASS display services.

Name delivery from non-DMS switches

Non-DMS name delivery provides calling name information for interswitch calls that originate from other vendors in a CCS7 network. Non-DMS name delivery requires that the names of all subscribers in adjacent nodes be datafilled in table DNATTRS, which is indexed by DN. In this way, the DMS has access to calling name information if the calling number is provided by the non-DMS office.

Non-DMS name delivery is controlled on an officewide basis with the office parameter NON_DMS_NAME_LOOKUP in table OFCVAR. When the first field of this office parameter is set to Y and the calling name information is not available, non-DMS name lookup is enabled. When the field is N, non-DMS name lookup is disabled.

Private name blocking is controlled with the second field of office parameter NON_DMS_NAME_LOOKUP. When this field is set to Y, name lookup is not performed for incoming numbers marked P (private). A number is marked P in the following situations:

- a caller's default suppression status is unsuppressed and a caller blocks the number with the Calling Number Delivery Blocking (CNDB) feature
- a caller's default suppression status is suppressed

Tables TOFCNAME and DNATTRS must be datafilled to implement non-DMS name lookup. In table TOFCNAME, each tuple allocates a range of

Calling Name Delivery (CNAMD) (continued)

DNs supported by an adjacent office. In the example that follows, three groups are defined.

In the example that follows, each tuple associates a delivery name to a DN for a non-DMS subscriber. A separate tuple is required for each subscriber if a name is to be delivered with a DN. The example shows one subscriber for each group defined in table TOFCNAME.

MAP display example for table TOFCNAME

AREACODE OFCCODE	OFCCODEAREACODE
314	469
312	858
312	858

MAP display example for table DNATTRS

KEY	DATA OPTDATA
314 469 1234	(PUBLIC (NAME JOHN_SMITH) \$) \$ \$
312 858 1234	(PUBLIC (NAME TOM_WATSON) \$) \$ \$
312 858 2198	(PUBLIC (NAME BILL_JOHNSON) \$) \$ \$

Refer to *Datafilling office parameters* in this feature description for more information.

Messaging to the subscriber set

Calling information is supplied in a message transmitted over the subscriber loop between the central office (CO) and the subscriber set.

The message used to transmit the calling number information to the subscriber set can be

- a single data format message
- a multiple data format message

Calling Name Delivery (CNAMD) (continued)

The message formats used by each of the CLASS display features (CND, DDN, CNAMD) are indicated in the following list:

- For CND subscribers, either the single data format or the multiple data format can be used.
- For DDN subscribers, the multiple data format must be used.
- For CNAMD subscribers, the multiple data format must be used.

Note: The same format must be used for all CND subscribers serviced from one CO. The message format to be used to send information to CND subscribers is specified in table RESOFC.

Single data message format

The single data message format is designed to carry a fixed set of information and is only used in a CND application.

Note: If the CND feature is datafilled to use a single data message format and the CNAMD feature is assigned to the same line, the CLASS display information, is delivered to the subscriber set in the multiple data message format, overriding the message format that was datafilled for CND.

The single data message format is made up of the following information:

- message type
- count of number of data bytes in message
- data bytes in American Standard Code for Information Interchange (ASCII) format consisting of
 - month
 - day
 - hour
 - minute
 - DN data consisting of one of the following:
 - P (indicates display information is suppressed)
 - O (indicates display information is unavailable)
 - ten-digit calling DN
- checksum

Calling Name Delivery (CNAMD) (continued)

Multiple data message format

The multiple data message format must be used for the CNAMD and DDN display features; however, the CND feature can use either the multiple or single data message format.

The design of the multiple data message format allows a variety of information to be transmitted. The maximum allowed message length for the multiple data message format is 44 bytes. If the name and DDN parameters within the multiple data message cause the total message length of 44 bytes to be exceeded, the DN of the calling party is displayed in the calling line identification (CLID) format rather than the DDN format. The call qualifier (LDI) parameter is only included in the multiple data message format if enough room exists in the message.

The multiple data message format consists of the following elements:

- message type
- count of number of data bytes in message
- series of parameters, each consisting of the following:
 - parameter type
 - count of number of data bytes in the parameter
 - data bytes in ASCII format
- checksum

The parameters included in the multiple data message format are determined by the specific CLASS display features that have been assigned to the subscriber line.

The following list gives all the possible parameters that may be included in the multiple data message format and indicates the display features that use each parameter:

- date parameter (all CLASS display features)
- CLID parameter (CND)
- DDN parameter (DDN)
- name parameter (CNAMD)
- parameter indicating the reason for no display data (all CLASS display features)
- call qualifier parameter (all CLASS display features)

Calling Name Delivery (CNAMD) (continued)

The date parameter contains the month, day, hour, and minute of the incoming call.

The CLID parameter contains the ten-digit DN of the calling party. The CLID parameter is used when the calling party's name is delivered with CND information.

The DDN parameter contains the dialable form of the calling party's number. This parameter is used when the calling party's name is delivered with DDN information.

The name parameter contains the 15-character ASCII name of the calling party.

The parameter indicating the reason CLASS display information is not available consists of two possible indicators: O indicates that the display information is not available, and P indicates that the display information is suppressed.

The call qualifier parameter indicates whether the incoming call is a long distance call (L).

Feature processing

Once the feature has been successfully activated, the operation of the CLASS display feature is as follows:

- A normal termination occurs on a line.
- The line is recognized as having one of the following options:
 - CNAMD
 - CNAMD SUSP
 - CND
 - CND SUSP
 - DDN
 - DDN SUSP
- The peripheral serving the line is checked to ensure that a CLASS Modem Resource (CMR) card is available. Calling information is sent to the peripheral only if a CMR card is available. When faults with the CMR card are detected, CMR maintenance indicates that the card is not available.
- If the feature and hardware are available for the line, checks are made on the availability of the calling name and DN for delivery to the called party.

Calling Name Delivery (CNAMD) (continued)

Refer to “Calling Number Delivery Blocking (CNDB)” for details on determining DN availability.

- For a DDN or DDN SUSP subscriber, the DN is converted from a ten-digit number to a 1- to 24-digit number using reverse translations.
- Calling information is then sent to the peripheral for delivery to the called party. The peripheral may be either a line trunk controller (LTC), a line group controller (LGC), a remote cluster controller (RCC), a Subscriber Carrier Module-100S (SMS), or a Subscriber Carrier Module-100 Urban (SMU).
- In the peripheral, calling information is forwarded to the CMR card that monitors the ringing of the terminating DN and delivers calling information to the subscriber set between the first and second rings.

Calling information cannot be delivered to an off-hook set. Therefore, the transmission is aborted if the CNAMD, CND, or DDN subscriber goes off-hook while the data is being transmitted.

Translations table flow

Refer to “Translation verification tools” for information on the CNAMD translation process.

Limitations and restrictions

The following limitations and restrictions apply to Calling Name Delivery (CNAMD):

- A CLASS display feature with option NOAMA can be added to or deleted from a feature group.
- A CLASS display feature with the AMA billing option in the feature group cannot be modified.
- A CLASS display feature with the AMA billing option cannot be added to the feature group.
- No changes can be made to the billing option of CLASS display features included in the feature group.

The following limitations and restrictions apply to CNAMD, CND, and DDN:

- Calling information cannot be delivered to a line that has either option SUS or PLP, since both these options prohibit terminations on the line. However, options SUS and PLP are generally only temporarily assigned to a line, so these options are not incompatible with CLASS display features.
- CLASS display features with the AMA billing option cannot be assigned to lines with option DOR or AUL since the Denied Origination (DOR) and

Calling Name Delivery (CNAMD) (continued)

Automatic Lines (AUL) features do not allow CLASS display feature activation and deactivation codes to be dialed. CLASS display features with option NOAMA can be assigned to DOR and AUL lines.

- CLASS display features can be assigned to lines that have option RSUS. However, CLASS display features with the AMA option cannot be activated while Requested Suspension (RSUS) is active.
- Calling information is delivered to the set of a CLASS display feature subscriber between the first and second rings. An interval of silence lasting a minimum of 3 s between the first and second rings is required.
- The CLASS display features are available on Subscriber Services (RES) lines and Integrated Business Network (IBN) lines set up to access the public dial plan serving Multiline Variety Package (MVP) subscribers. It is also possible to add CLASS display features to a one-party flat rate (1FR) line or a one-party message rate (1MR) line if office parameter RES_SO_SIMPLIFICATION field RES_AS_POTS in table OFCVAR is datafilled Y.
- For interoffice calls, CCS7 connectivity is required. Where CCS7 connectivity is not available for interoffice calls, the parameter O is included with other calling name and number delivery information to the subscriber set, in place of the calling number. Including parameter O does not mean that O is displayed.
- CLASS display feature subscribers require sets that are capable of receiving calling information.
- All CLASS display features are activated by the same activation code. Therefore, the subscriber cannot enable or disable individual display features if more than one feature is assigned to a line.
- Calling party name or number information cannot be delivered to a set that is off-hook.
- Calls that are directed to a CLASS display feature subscriber are not intraswitched by remote switching centers (RSC), remote line concentrating modules (RLCM), or dual RSCs.
- The CNAMD feature uses the multiple data message format exclusively to deliver information to the called party set.
- If CNNB has been activated on an interoffice call and a name from an adjacent DMS office is entered in table DNATTRS of the terminating office, the name is displayed on the CNAMD subscriber set.

Interactions

The following paragraphs describe the interactions between Calling Name Delivery (CNAMD) and other functionalities.

Calling Name Delivery (CNAMD) (continued)

Automatic Call Back

The Automatic Call Back (ACB) feature allows an ACB subscriber to automatically redial the last number dialed on his or her set by dialing an access code. If the called DN is busy, the ACB subscriber receives a confirmation tone or announcement. Once the called party becomes free, the ACB subscriber receives ringback.

If the ACB subscriber is also a CND or DDN subscriber, the DN of the person he or she is redialing is delivered with distinctive alert. Calling information is only displayed when the distinctive alert is given, not when the ACB feature is invoked.

The name of the person that the ACB subscriber is calling back is not delivered to the ACB subscriber regardless of whether the ACB subscriber is also a CNAMD subscriber.

If the person the ACB subscriber is calling is a CNAMD, CND, or DDN subscriber, the ACB subscriber's display information is delivered to this person's set.

Automatic Line

The Automatic Line (AUL) feature causes a telephone to automatically dial a predetermined number when the handset is lifted or a DN key is pressed. Activation codes cannot be used to set up calls on a line that is assigned the AUL feature. Therefore, when CNAMD is assigned as a line option on a line with the AUL feature, CNAMD must be specified with the NOAMA billing option.

Automatic Recall

The Automatic Recall (AR) feature allows an AR subscriber to automatically call the person who made the last incoming call on the AR subscriber line by dialing an access code. If the called DN is busy, the AR subscriber receives a confirmation tone or announcement. Once the called party becomes free, the AR subscriber receives ringback.

If the AR subscriber is also a CND or DDN subscriber, the DN of the person the AR subscriber is calling back is delivered to the AR subscriber with the distinctive alert. Calling information is only displayed when the distinctive alert is given, not when AR is invoked.

The name of the person that the AR subscriber is calling back is not delivered to the AR subscriber regardless of whether the AR subscriber is also a CNAMD subscriber.

Calling Name Delivery (CNAMD) (continued)

If the person the AR subscriber is trying to call back has options CNAMD, CND, or DDN on his or her line, the display information of the AR subscriber is delivered to this person's set.

Call Forwarding

The Call Forwarding (CFW) feature allows a CFW subscriber to transfer calls to another DN. If a CNAMD, CND, or DDN subscriber activates Call Forwarding Universal (CFU), Call Forwarding Busy line (CFBL), or Call Forwarding Fixed (CFF) to a second party that is not a CNAMD, CND, or DDN subscriber, CLASS display information is not forwarded to the second subscriber. However, if the second subscriber who is receiving the forwarded calls is also a CNAMD, CND, or DDN subscriber, CLASS display information is forwarded to the second subscriber.

If a call is forwarded to a CND or DDN subscriber, the originator's calling number information is delivered to the set to which the original call has been forwarded.

If a call is forwarded to a CNAMD subscriber, the calling party's name is delivered to the set to which the call has been forwarded.

In the case of the Call Forwarding Don't Answer (CFDA) feature, call forwarding only occurs when the call is not answered within a specified period of time. Once the call forwarding takes place, the rules that govern when CLASS display information is call forwarded are identical to those rules discussed above for the CFBL and CFF features.

Call Pickup

The Call Pickup (CPU) feature allows subscriber A to answer a call on subscriber B's line from subscriber A's line. When subscriber A performs call pickup for a call on subscriber B's line, subscriber A does not receive calling information for the "picked-up" call, because subscriber A is off-hook and there are no off-hook transmissions of display information. CLASS display information is delivered to subscriber B only when

- subscriber B is a CNAMD, CND, or DDN subscriber
- call pickup is not performed by subscriber A before the calling information is delivered to subscriber B

Call Waiting

The Call Waiting (CWT) feature sends a special call waiting tone to the CWT subscriber line if a call arrives while the subscriber line is busy. Since CLASS display information cannot be transmitted while the subscriber is off-hook, a CNAMD, CND, or DDN subscriber who also subscribes to CWT does not

Calling Name Delivery (CNAMD) (continued)

receive delivery of the calling information while the call waiting tone is being applied.

Denied Origination

Activation codes cannot be used to set up calls on a line that is assigned the Denied Origination (DOR) feature. Therefore, when CNAMD is assigned as a line option on a line with the DOR feature, CNAMD must be specified with the NOAMA billing option.

Group Intercom

The Group Intercom (GIC) feature connects the GIC subscriber to a member of his or her intercom group. When a GIC member calls a CNAMD subscriber, the name information that is delivered is always the name associated with the calling party's DN rather than the name associated with the intercom group.

Plug Up or Suspended Service

The Plug Up (PLP) and Suspended Service (SUS) features prevent calls from terminating on PLP or SUS subscriber lines. Delivery of calling party name information cannot occur on a line that has either option PLP or SUS assigned. Since options PLP and SUS are only temporarily assigned to a line, they are not regarded as incompatible with CNAMD.

Requested Suspension

Although the CNAMD line option is compatible with option RSUS, option CNAMD SUSP cannot be activated while RSUS is active.

Station ringer test

The station ringer test tests the subscriber's set by causing the on-hook phone to ring. For lines with CNAMD, CNAMD SUSP, CND, CND SUSP, DDN, or DDN SUSP, the digits 0123456789 are transmitted to the subscriber set in order to check the display of calling information on the set.

The test modem transmission part of the station ringer test is only performed for lines with options CNAMD, CNAMD SUSP, CND, CND SUSP, DDN, or DDN SUSP.

Teen Service

The Teen Service (SDN) feature provides distinctive ringing for up to three alternate DNs on a subscriber line. Delivery of CLASS display information to a subscriber with SDN is possible provided that the teen service distinctive ringing pattern has a silent period of at least 3 s to allow time for the transmission of the name and number information.

Calling Name Delivery (CNAMD) (continued)

When a CND or DDN subscriber receives a call from a line with Teen Service, the primary DN is delivered to the CND or DDN subscriber set. In addition, when a CNAMD subscriber receives a call from a line with Teen Service, the name associated with the primary DN is delivered to the CNAMD subscriber.

When a call terminates on the set of a CNAMD, CND, or DDN subscriber with SDN, calling name and number information is delivered to all sets on the Teen Service line.

Where a calling name or number delivery option is applied on a usage sensitive basis (CNAMD SUSP, CND SUSP, or DDN SUSP) to a subscriber with Teen Service, an AMA record showing the primary DN is generated each time display information is sent to that Teen Service line.

Three-Way Calling and Call Transfer

The Call Transfer (CXR) feature allows the CXR subscriber to transfer a call to another number. The CXR feature is similar to the Three-Way Calling (3WC) feature, with the exception that the person initiating CXR would go on-hook before the third party answers. 3WC is established by performing the following actions:

- Party A calls party B.
- Party A flashes.
- Party A calls party C.
- Party A flashes to establish the three-way call.

In the first step, the delivery of the calling party's name and number occurs just as in a two-way call. In the third step, if party C is a CNAMD, CND, or DDN subscriber, party A's name or number is delivered to party C's set between the first and second rings.

If party A performs a call transfer by dropping out of the call while party C's set is ringing, parties B and C do not receive any new display information.

The calling information that is displayed to party B and C is always calling information from the original calling party.

Activation/deactivation by the end user

Subscribers gain access to the CLASS display features CNAMD, CND, and DDN by having their operating company assign specific features to their lines by means of service orders.

No additional operations are required to activate the CNAMD, CND, and DDN features after they have been assigned to the subscriber line by means of

Calling Name Delivery (CNAMD) (continued)

service orders. After the features are assigned, CLASS display information is delivered to the subscriber set for each incoming call, provided that the display information is available.

The CNAMD SUSP, CND SUSP, and DDN SUSP features are not automatically activated after they are assigned to the subscriber line. For CNAMD SUSP, CND SUSP, and DDN SUSP, the subscriber must dial the feature activation code before CLASS display information is delivered to his or her set. CNAMD SUSP, CND SUSP, and DDN SUSP share the same activation code. If a subscriber is assigned two of these features (for example, CNAMD SUSP and CND SUSP), both features are activated simultaneously if the activation code is dialed by the subscriber. These features also share the same deactivation code.

Note: Options CND and DDN are incompatible and cannot be assigned to the same line; however, either option CND or DDN can be assigned to a subscriber line with CNAMD. Furthermore, it does not matter if one option has SUSP and the other option does not. For example, CNAMD without SUSP can be assigned to a line with CND SUSP.

The following rules apply to the activation and deactivation of the CNAMD SUSP, CND SUSP, and DDN SUSP features by a subscriber:

- If a subscriber dials the feature activation code, all features that are assigned to the subscriber line with the AMA option are activated.
- If a subscriber dials the feature deactivation code, all features that are assigned to the subscriber line with the AMA option are deactivated.
- If a subscriber activates a display feature with the AMA billing option, during the time interval in which this feature is activated, any additional display features that are added to the line are also activated.
- A subscriber who has several display features with the AMA option on his or her line cannot activate or deactivate one of the display features without activating or deactivating all the display features with AMA.

Activation codes

One activation code is used to activate CNAMD SUSP, CND SUSP, and DDN SUSP. This code has the following form:

- 11XX for dial pulse (DP) lines
- *XX for dual-tone multifrequency (DTMF) lines

Calling Name Delivery (CNAMD) (continued)

The recommended activation codes for CNAMD SUSP, CND SUSP, and DDN SUSP are as follows:

- 1165 for DP lines
- *65 for DTMF lines

Activation checks

When a subscriber dials an activation code, the following system checks are made:

- The call may be denied because of feature interactions. If so, the call is given the feature NACK treatment.
- For CND SUSP subscribers, a check is made to ensure that the CND feature is enabled for the office by means of table RESOFC and that line option CND is assigned to the subscriber line (this check also applies to DDN SUSP and CNAMD SUSP subscribers). If this check fails, the activation attempt is given feature not allowed (FNAL) treatment.
- If CNAMD SUSP, CND SUSP, or DDN SUSP is already active when the subscriber dials the activation code, the subscriber is given confirmation tone.
- If the software resources required to activate CNAMD SUSP, CND SUSP, DDN SUSP are unavailable, the call is given no software resources (NOSR) treatment.
- If the activation of a display feature with SUSP is denied due to feature interaction, the subscriber is given the feature NACK treatment.

Confirming successful activation

When all activation checks are successful, the subscriber is given an announcement confirming that the CLASS display feature has been activated (if the appropriate announcements have been datafilled by the operating company). If no confirmation announcements have been datafilled, the subscriber is given confirmation tone.

The display feature confirmation announcements are custom announcements. These announcements are made up of a series of phrases that can be combined to form complex announcements. The operating company is responsible for recording its own phrases.

If a display feature with SUSP is currently active on a line and feature activation is attempted again, a feature confirmation tone is applied.

Calling Name Delivery (CNAMD) (continued)

Calls involving CLASS display features are released in the same manner as normal single-party Subscriber Services calls. The subscriber has ten seconds in which to go on-hook before being routed to disconnect (DISC) treatment.

Once activation confirmation is given for a CLASS display feature, calling information is delivered for all incoming calls, until the subscriber dials the deactivation code to discontinue CNAMD SUSP, CND SUSP, or DDN SUSP service.

Deactivation codes

A CNAMD SUSP, CND SUSP, or DDN SUSP subscriber can discontinue CLASS display service by dialing a deactivation code. The same code is used for CNAMD SUSP, CND SUSP, and DDN SUSP deactivation.

The deactivation code for CNAMD SUSP, CND SUSP, and DDN SUSP has the following form:

- 11XX for DP lines
- *XX for DTMF lines

The recommended deactivation codes for CNAMD SUSP, CND SUSP, and DDN SUSP are as follows:

- 1185 for DP lines
- *85 for DTMF lines

Deactivation checks

When a subscriber dials a deactivation code, the following system checks are made:

- The call may be denied because of feature interactions. If so, the call is given the feature NACK treatment.
- For CND SUSP subscribers, a check is made to ensure that the CND feature is enabled for the office by means of table RESOFC and that line option CND is assigned to the subscriber line (this check also applies to DDN SUSP and CNAMD SUSP subscribers). If this check fails, the activation attempt is given FNAL treatment.
- If CNAMD SUSP, CND SUSP, or DDN SUSP is already deactivated when the subscriber dials the deactivation code, the subscriber is given confirmation tone.
- If the software resources required to deactivate CNAMD SUSP, CND SUSP, or DDN SUSP for the line are unavailable, the call is given NOSR treatment.

Calling Name Delivery (CNAMD) (continued)

If any of the above checks fail, the display feature CND SUSP, DDN SUSP, or CNAMD SUSP remains activated. Calling information for terminating calls continues to be delivered to the subscriber set, and AMA records continue to be generated.

Confirming successful deactivation

When all deactivation checks are successful, the subscriber is given an announcement confirming that the CLASS display feature has been deactivated (if the appropriate announcements have been datafilled by the operating company). If no confirmation announcement have been datafilled, the subscriber is given confirmation tone.

The call then releases in the same manner as a normal single-party Subscriber Services call, and the subscriber has ten s in which to go on-hook before being routed to DISC treatment. Calling information is no longer sent to the subscriber set, and AMA records are no longer generated.

Billing

When subscription usage sensitive pricing (SUSP) is set to ON in table AMAOPTS (Automatic Message Accounting Options), the AMA billing option is available for the CLASS SUSP display features CNAMD, CND, and DDN. See the following figure for an example of option SUSP in table AMAOPTS. The AMA billing option is then specified during the addition of option CNAMD, CND, or DDN to a subscriber line. This is done through service orders.

Example of option SUSP in table AMAOPTS

OPTION	SCHEDULE
SUSP	ON

If SUSP is enabled for the office, two billing options are available:

- No Automatic Message Accounting (NOAMA)
- AMA

If SUSP is not enabled for the office, the billing option defaults to NOAMA. All CNAMD, CND, and DDN lines in such an office have option NOAMA.

NOAMA billing option

With the NOAMA billing option, no AMA records are generated for CNAMD, CND, or DDN feature.

Calling Name Delivery (CNAMD) (continued)

In this feature description, the conventions listed below are followed:

- The CNAMD feature with NOAMA billing is referred to as CNAMD.
- The CND feature with NOAMA billing is referred to as CND.
- The DDN feature with NOAMA billing is referred to as DDN.

AMA billing option

With the AMA billing option, an AMA record is written once each day, providing total daily peg counts of calling information available and unavailable for each CLASS display feature.

In this feature description, the conventions listed below are followed:

- The CNAMD feature with AMA billing is referred to as CNAMD SUSP.
- The CND feature with AMA billing is referred to as CND SUSP.
- The DDN feature with AMA billing is referred to as DDN SUSP.

Call code and structure code

Call code 332 is replaced with call code 264, and structure code 9015 is replaced with structure code 110. A new module code, 111, is created to report information on multiple CLASS SUSP display features that a subscriber might have.

The CLASS Feature Code field is included in structure code 110 and module code 111 and replaces the Service Feature field in structure code 1030. This field indicates the CLASS feature under which the record was produced.

The following list describes the possible values of the CLASS Feature Code field, and their corresponding meanings:

- 032 AR (Automatic Recall) reactivation—delayed processing
- 033 ACB (Automatic Call Back) reactivation—delayed processing
- 034 AR reactivation—busy ringback
- 035 ACB reactivation—busy ringback
- 036 AR reactivation—timeout
- 037 ACB reactivation—timeout
- 038 AR reactivation—deactivation
- 039 ACB reactivation—deactivation
- 052 SCF (Selective Call Forwarding)
- 060 AR immediate processing

Calling Name Delivery (CNAMD) (continued)

- 061 ACB immediate processing
- 062 AR delayed processing
- 063 ACB delayed processing
- 064 AR busy ringback
- 065 ACB busy ringback
- 066 AR timeout
- 067 ACB timeout
- 068 AR deactivation
- 069 ACB deactivation
- 070 COT (Customer Originated Trace) activation
- 072 SCRJ (Selective Call Rejection)
- 073 DRCW (Distinctive Ringing/Call Waiting)
- 074 SLE (Screening List Editing) daily continuation
- 075 CNDB (Calling Number Delivery Blocking) and CNNB (Calling Name/Number Delivery Blocking) activation
- 076 Single-activation SCF (SASCF)
- 079 SCA (Selective Call Acceptance)
- 080 Calling Number Delivery
- 081 Dialable Number Delivery
- 082 Name Display
- 083 Name Display Blocking
- 084 Bulk Calling Line Identification
- 095 AR two-level activation—first level completion

The CNAMD feature also implements the reporting of peg counts for each CLASS SUSP display feature. It reports a minimum of once a day.

An AMA record with call code 264 and structure code 110 is also produced to report delivery counts when a CLASS SUSP display feature is changed to flat rate or removed from a line.

Note: Structure code 1030 is still used with CLASS SUSP features other than the CNAMD features, but the CLASS Feature Code field replaces the Service Feature field.

Calling Name Delivery (CNAMD) (continued)

The fields of the billing record are as follows:

- hexadecimal identifier
- structure code
- call code
- sensor type
- sensor identification
- recording office type
- recording office identification
- CLASS feature code
- date
- connect time
- terminating NPA
- terminating directory number
- count of available calling information
- count of unavailable calling information

An example of the AMA record produced for a CLASS SUSP display feature CND is shown in the following figure.

Example of CLASS SUSP display feature AMA record

```
HEX ID:AA STRUCTURE CODE:00110C CALL CODE:264C SENSOR TYPE:036C  
SENSOR ID:0000000C REC OFFICE TYPE:036C REC OFFICE ID:0000000C  
CLASS FEATURE:082C DATE:90712C CONNECT TIME:1049386C  
NPA:819C DIR NUMBER:6221999C AVAIL COUNT:000026C  
UNAVAIL COUNT:000005C
```

Module code

The first CLASS SUSP display feature assigned to a line is recorded with the basic structure code of 110. Additional CLASS SUSP display features are recorded with module code 111. Module code 111 provides total peg counts of the number of delivered, private, and unavailable information for the feature under which the record was produced.

An example of a SUSP record produced for a subscriber with two CLASS SUSP display features is shown in the following figure.

Calling Name Delivery (CNAMD) (continued)

Example of multiple CLASS SUSP display features AMA record

```
HEX ID:AA STRUCTURE CODE:00110C CALL CODE:264C SENSOR TYPE:036C
SENSOR ID:0000000C REC OFFICE TYPE:036C REC OFFICE ID:0000000C
CLASS FEATURE:080C DATE:90712C CONNECT TIME:1049386C
NPA:819C DIR NUMBER:6221999C AVAIL COUNT:000026C
UNAVAIL COUNT:000005C MODULE CODE:111C CLASS FEATURE:082C
AVAIL COUNT:000028C UNAVAIL COUNT:000003C MODULE CODE:000C
```

AMA record production

There are two situations that can cause AMA record production:

- the CLASS information delivery SUSP audit (CIDSUSPAUD) entry in table AMAOPTS executes
- one or more CLASS SUSP display features are removed from a subscriber line.

Option CIDSUSPAUD in table AMAOPTS

Option CIDSUSPAUD in table AMAOPTS controls the CLASS SUSP display feature audit. It provides peg counts of the deliveries to subscribers and allows the telephone company to schedule when the CLASS SUSP display delivery counts are to be recorded in the AMA stream. See the following Figure for an example of option CIDSUSPAUD in table AMAOPTS.

Example of option CIDSUSPAUD in table AMAOPTS

<u>OPTION</u>	<u>SCHEDULE</u>
CIDSUSPAUD PERIODIC	920608 0000 24 HRS

For recording peg counts, option CIDSUSPAUD defaults to once a day at midnight, which is the recommended schedule. However, the operating company is allowed to specify any start date and time as long as it is within one day of the current time.

Calling Name Delivery (CNAMD) (continued)

An explanation of the fields to be datafilled with option CIDSUSPAUD in table AMAOPTS follows.

Datafill for option CIDSUSPAUD in table AMAOPTS

Field	Subfield	Explanation and action
OPTION	CIDSUSPAUD	Option. This field specifies option AMA to be defined. Enter CIDSUSPAUD.
SCHEDULE	See subfields	Schedule. When field OPTION is datafilled with CIDSUSPAUD, this field consists of the subfields AMASEL, ONDATE, ONTIME, and SCHED. These subfields are described below.
	AMASEL	AMA selection. This subfield specifies the selector for the AMA schedule. The values for this field can be ON, OFF, DEFAULT, PERIODIC, or TIMED. Enter PERIODIC.
	ONDATE	On date. This subfield specifies the year (YY), month (MM), and day (DD) to start the auditing schedule. The format is YYMMDD.
	ONTIME	On time. This field specifies the hour (HH) and minutes (MM) to start the audit scheduling. The format is HHMM.
	SCHED	Schedule. This field specifies the time value (TV) of the audit and the time unit (TU). A value of 24 hours is recommended. Enter a value from 1 to 24 for the interval, and HRS for the unit.

Although option CIDSUSPAUD in table AMAOPTS cannot be disabled in a Bellcore format AMA office, the audit does not run if the SUSP entry in table AMAOPTS is set to OFF during the entire period of time since the last executed audit.

The audit produces a record for each subscriber with CLASS SUSP display feature delivery counts other than zero. As long as the CLASS SUSP display features are currently active during the last audit period, and a subscriber has not received any calls that increment the delivery counts, a record that contains zero in the available and unavailable count fields for that feature is produced. After the audit is complete, the AMA registers associated with each subscriber are set to zero in preparation for the next audit period.

If SUSP in table AMAOPTS is set to OFF and has not been on during the audit period, the audit does not run and records are not produced.

Calling Name Delivery (CNAMD) (continued)

Removing CLASS SUSP display features

Removing a CLASS SUSP display feature encompasses the actual removal of the feature from a subscriber line, the change of a CLASS display feature from SUSP to flat rate, or the removal of a line from an office.

When a CLASS SUSP display feature with delivery counts against it is removed, an AMA record with call code 264 and structure code 110 reports the delivery information at that time. Unlike the regular audit, if a subscriber has zero delivery counts at the time of removal, a record is not produced.

The number of AMA records produced for a subscriber is kept to a minimum. When removing multiple CLASS SUSP display features on a subscriber line with one command, the system produces as few records as possible.

If multiple CLASS SUSP display features have been removed with one command, the system produces a call code of 264, a structure code of 110, and an appended module code of 111. The following situations produce such a record:

- the subscriber line is removed from the office
- an automatic conversion of line class code results in the removal of multiple CLASS SUSP display features, for example, changing a line from RES to POTS
- A feature group with multiple CLASS SUSP display features is removed

Office datafill

To produce a record using structure code 110 and call type 265 without module code 111 appended, the following conditions must be met:

- The Bellcore AMA package must be present in the office.
- The SUSP entry in table AMAOPTS must be set to ON.
- A CLASS display feature with AMA must be assigned to a line.
- The feature must be enabled in table RESOFC.
- The feature must be activated on the subscriber line.
- The CIDSUSPAUD entry in table AMAOPTS must be scheduled or the corresponding tuple deleted from table RESFEAT.

To produce a record using structure code 110 and call type 265 with module code 111 appended, the following conditions must be met:

- The Bellcore AMA package must be present in the office.
- The SUSP entry in table AMAOPTS must be set to ON.

Calling Name Delivery (CNAMD) (continued)

- Two CLASS display features with AMA must be assigned to a line.
- The features must be enabled in table RESOFC.
- The features must be activated on the subscriber line.
- The CIDSUSPAUD entry in table AMAOPTS must be scheduled.

LAMA recording units

The extension block CRS_SUBRU_POOL3_SIZE in table OFCENG (Office Engineering) must be set so that it allows for the recording of billing records during the AMA audit. The range of this parameter is 0 to 131072. The default value is 100. The holding time of the subrecording units defined by this extension block is short.

If too little memory is allocated, AMA records could be lost; if too much memory is allocated, memory is wasted. It is recommended that CRS_SUBRU_POOL3_SIZE be set by multiplying the number of lines with CLASS SUSP display features or SLE SUSP features by 5 percent. When SUSP billing is not specified for any calling information delivery features, there is no impact on the usage of recording units.

Note: Running the AMA audit during high traffic hours increases the use of extension block subrecording units, thereby increasing the chance of lost AMA records. It is recommended that operating companies set the AMA audit time during the lowest traffic hours.

For more information on this and other extension blocks in table OFCENG, refer to *Office Parameters Reference Manual*.

Station Message Detail Recording

Calling Name Delivery (CNAMD) does not affect Station Message Detail Recording.

Datafilling office parameters

The following table shows the office parameters used by Calling Name Delivery (CNAMD). For more information about office parameters, refer to *Office Parameters Reference Manual*.

Note 1: Datafill the OFFICE_LANGUAGE parameter in table OFCENG to specify the primary and secondary languages (SL) for the office. All lines in the office receive their announcements in the language specified in the primary entry (which is the first of the two parameters) unless option SL has been added to the line using service orders.

Calling Name Delivery (CNAMD) (continued)

Note 2: Refer to “LAMA recording units” in this feature description for information on setting parameters in table OFCENG that affect AMA peg counts.

Office parameters used by Calling Name Delivery (CNAMD)

Table name	Parameter name	Explanation and action
	OFFICE_LANGUAGE	OFCENG. This parameter contains two fields, PRIMARY and SECONDARY. If the second language option is not used, the correct entry for field SECONDARY is NIL.
	NON_DMS_NAME_LOOKUP	OFCVAR. This parameter contains two fields. The first field specifies whether non-DMS name lookup is enabled for the office. If set to Y, name lookup is enabled. If calling name information is not available on a interswitch call from a non-DMS office to a CNAMD subscriber, a name lookup is performed. If set to N, name lookup is not performed. The second field specifies whether a name lookup is performed when the caller's number is blocked. (A blocked number is marked P, signifying a private number.) If set to Y, the name is blocked as well. If set to N, the name lookup is performed and, if available, delivered to the CNAMD subscriber. Note: Changes in this parameter take effect immediately.

Datafill sequence

The datafill required for CLASS display features CNAMD, CND, and DDN depends on whether option SUSP is enabled for the office. Option SUSP is enabled by setting field SUSP to ON in table AMAOPTS.

Calling Name Delivery (CNAMD) (continued)

Use of abbreviations for CNAMD, CND, and DDN

In this document, the following abbreviations are used for display features CNAMD, CND, and DDN when they are assigned to a subscriber line with the NOAMA billing option:

- CNAMD
- CND
- DDN

In this document, the following abbreviations are used for display features CNAMD, CND, and DDN when they are assigned to a subscriber line with the AMA billing option:

- CNAMD SUSP
- CND SUSP
- DDN SUSP

Before datafilling CNAMD, CND, or DDN

Before beginning datafill, the following steps should be performed:

- Ensure that the CLASS network base setup is complete.
- If AMA billing is required, check that the SUSP feature is enabled for the office.
- Check that a CMR card is installed in each unit of LTCs, LGCs, RCCs, SMUs, and SMSs that supports lines with the CLASS display features.
- Check that the DMS-100 is running a BCS28 or later load.

Tasks for datafilling CNAMD, CND, or DDN

If SUSP is disabled for the office in table AMAOPTS, the following steps should be performed to datafill the CNAMD, CND, or DDN feature:

- Identify in tables LTCINV and RCCINV, each LTC, LGC, RCC, SMS, and SMU that is equipped with CMR cards.
- If the CND feature is required, enable the CND feature for the office in table RESOFC.

Calling Name Delivery (CNAMD) (continued)

- If the CNAMD feature is required, enable the CNAMD feature for the office in table RESOFC.
- If the DDN feature is required, perform the following steps:
 - Set up reverse translations.
 - Define the local call regions in table DNREGION.
 - Define the reverse translations algorithms for subscribers in each region in table DNREVXLA.
 - Associate the algorithms with groups of CLASS subscribers in table CUSTNTWK.

Note: For more information on reverse translations for DDN, refer to “Translations data flow” in “Dialable Number Delivery (DDN)”.

- Enable the DDN feature for the office in table RESOFC.

Once the datafill has been completed, option CNAMD, CND, or DDN can be assigned to a subscriber line by means of service orders.

Tasks for datafilling CNAMD SUSP, CND SUSP, or DDN SUSP

If SUSP is enabled for the office in table AMAOPTS, the following steps should be performed to datafill the CNAMD SUSP, CND SUSP, or DDN SUSP feature:

- Identify in tables LTCINV and RCCINV, each LTC, LGC, RCC, SMS, and SMU that is equipped with CMR cards.
- If the CND feature is required, enable the CND feature for the office in table RESOFC.
- If the CNAMD feature is required, enable the CNAMD feature for the office in table RESOFC.
- If the DDN feature is required, perform the following steps:
 - Set up reverse translations.
 - Define the local call regions in table DNREGION.
 - Define the reverse translations algorithms for subscribers in each region in table DNREVXLA.
 - Associate the algorithms with groups of CLASS subscribers in table CUSTNTWK.
 - Enable the DDN feature for the office in table RESOFC.
- Using the DRAMREC utility, record the phrases that make up the CLASS display feature confirmation announcements. For instructions on using the

Calling Name Delivery (CNAMD) (continued)

DRAMREC utility, refer to *Digital Recorded Announcement Machine DRAM and EDRAM Guide*. For suggested announcement phrases, refer to "Datafill procedure for table DRMUSERS" in this feature description.

Note: Before datafilling announcements for CNAMD, CND, or DDN, read "Appendix Datafilling announcements" for Subscriber Services general announcement information.

- Provide the announcements for confirming the activation and deactivation of CLASS display features in tables CLLI, ANNS, ANNMEMS, and DRMUSERS.
- Specify the primary and secondary languages for the office (if two or more languages are supported) in table OFCENG.
- Provide the codes that CNAMD, CND, and DDN subscribers dial to activate and deactivate calling name number delivery in table IBNXLA.

The following table lists the tables that require datafill to implement Calling Name Delivery (CNAMD). The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Calling Name Delivery (CNAMD) (Sheet 1 of 2)

Table	Purpose of table
LTCINV	Line Trunk Controller Inventory. This table contains the inventory data (except the P-side link assignment) for the controller PMS, including each LTC, LGC, SMS, and SMU in the DMS-100 CO configuration.
RCCINV	Remote Cluster Controller Inventory. This table contains the same data for each RCC in the CO configuration.
RESOFC	Residential Line CLASS Office Data. This table contains data on CLASS features and enables and controls the operation of CLASS features.
CUSTHEAD	Customer Group Head table. This table lists the names assigned to the blocks of data in table IBNXLA that store the data for the translation of digits.
DRAMS	Digital Recorded Announcement Machines. This table contains the product engineering codes (PEC) codes of the announcement cards in the DRAM.
CLLI	Common Language Location Identifier. This table contains codes that uniquely identify the far end of each announcement (tone or trunk group).
ANNS	Announcements. This table contains data for each announcement (analog and digital) assigned in the switching unit.

Calling Name Delivery (CNAMD) (continued)

Datafill tables required for Calling Name Delivery (CNAMD) (Sheet 2 of 2)

Table	Purpose of table
ANNMEMS	Announcement Members. This table contains the assignments for each member assigned to the announcement CLLI in table ANNS.
DRMUSERS	Digital Announcement Machine Users. This table contains all the announcements required by a user and includes the utility for the operating company to specify the primary language for announcements.
IBNXLA	IBN Translation. This table specifies the digit translation of calls dialed by the MDC station end user.

The following table summarizes the datafill tasks for each table.

Task to customer data table mapping (Sheet 1 of 2)

Task	Table(s) affected
Datafill CMR cards for LTCs, LGCs, RCCs, SMSs, and SMUs that host CNAMD, CND, or DDN lines.	LTCINV, RCCINV
If CND is to be offered, enable option CND for the office (this includes specifying the message format used to send data to the subscriber set).	RESOFC
If DDN or CNAMD is to be offered, enable option DDN or CNAMD for the office.	RESOFC
This table specifies the option Name Delivery Timeout (NDTIMOUT) for the CNAMD feature. The timer is set 1-6 seconds and the default is 3 seconds when the option is not datafilled.	CUSTHEAD

Calling Name Delivery (CNAMD) (continued)

Task to customer data table mapping (Sheet 2 of 2)

Task	Table(s) affected
If CND SUSP, DDN SUSP, or CNAMD SUSP is to be offered, set up calling name and number delivery confirmation announcements: - Define the product engineering codes for the announcements. - Define announcements for feature activation and deactivation. - Define feature announcements as type CLASSANN. - Define the announcement channel to be used for CLASSANN announcements. - Specify the phrases to be used for feature announcements. - If required, specify the primary and secondary languages for the office. - Define the feature activation and deactivation codes.	DRAMS CLLI ANNS ANNMEMS DRMUSERS OFCENG IBNXLA

After completing the datafill

Once the CNAMD, CND, or DDN feature has been datafilled, it can be assigned to a subscriber line by means of service orders.

Once the CNAMD SUSP, CND SUSP, or DDN SUSP feature has been datafilled, the CNAMD AMA, CND AMA, or DDN AMA billing option can be assigned to a subscriber line by means of service orders.

When performing the initial implementation of billing display features CNAMD, CND, or DDN with either options AMA or NOAMA, it is possible to delay the update to table RESOFC until after the option codes have been assigned to subscriber lines. This enables one or more display features to be enabled for all subscribers at one time.

Datafilling tables LTCINV and RCCINV

Identifying peripheral modules with CMR cards

Table LTCINV (Line Trunk Controller Inventory) contains the inventory data (except the P-side link assignment) for the controller PMs, including each LTC, LGC, SMS, and SMU in the DMS-100 CO configuration. Table

Calling Name Delivery (CNAMD) (continued)

RCCINV (Remote Cluster Controller Inventory) contains the same data for each RCC in the CO configuration.

Each controller PM hosting a CNAMD, CND, or DDN subscriber line must be equipped with a CMR card, and the corresponding tuple in table LTCINV or table RCCINV must be datafilled to record the following information:

- the peripheral that is equipped with a CMR card
- the slot in which the CMR card is located
- the CMR load that should be used in the CMR card

Datafill for LGC or LTC PMs

If an LGC or LTC PM is to host CNAMD, CND, or DDN lines, one occurrence of the field OPTCARD in the appropriate tuple should be datafilled in table LTCINV by entering the following:

- CMR13 in subfield OPTCARD, indicating that a CMR card is provisioned in slot 13 of each unit of the peripheral
- NILLOAD or CMRaann in subfield CMRLOAD, where CMRaann is the name of the CMR load to be used in the CMR card

Datafill for SMS or SMU PMs

If an SMS or SMU PM is to host CNAMD, CND, or DDN lines, one occurrence of the field OPTCARD in the appropriate tuple should be datafilled in table LTCINV by entering the following:

- CMR16 in subfield OPTCARD, indicating that a CMR card is provisioned in slot 16 of each unit of the peripheral
- NILLOAD or CMRaann in subfield CMRLOAD, where CMRaann is the name of the CMR load to be used in the CMR card

Datafill for RCC in a remote switching center

If an RSC is to host CNAMD, CND, or DDN lines, one occurrence of the field OPTCARD in the appropriate tuple should be datafilled in table RCCINV by entering the following:

- CMR18 in subfield OPTCARD, indicating that a CMR card is provisioned in slot 18 of each unit of the RCC peripheral in the RSC
- NILLOAD or CMRaann in subfield CMRLOAD, where CMRaann is the name of the CMR load to be used in the CMR card

Note: The CMR card must be located in slot 18 of each unit of an RCC. To free this slot for the CMR card, the 6X69BA card that combines the message and tone generator functions can be inserted in slot 17 of the RCC.

Calling Name Delivery (CNAMD) (continued)

After datafilling table LTCINV or table RCCINV, perform a return to service (RTS) sequence on the out-of-service inactive unit of the peripheral to inform the peripheral of the presence of the CMR card.

The datafill for tables LTCINV and RCCINV differs only in the slot for the CMR card. Therefore, follow the example of datafill for table LTCINV when datafilling table RCCINV.

The following table shows the datafill specific to Calling Name Delivery (CNAMD) for tables LTCINV and RCCINV. Only those fields that apply directly to Calling Name Delivery (CNAMD) are shown. Refer to the data schema section of this document for a description of the other fields.

Datafilling table LTCINV

Field	Subfield or refinement	Entry	Explanation and action
LTCNAME		line trunk controller name	Line trunk controller name. This field consists of the subfields XPMTYPE and XPMNO. These subfields are described below. Enter the line trunk controller name.
	XPMTYPE	PM type	68K peripheral module type. This subfield specifies the PM type. Enter the PM type.
	XPMNO	0 to 27	68K peripheral module number. This subfield specifies the PM number. Enter a value from 0 to 27.
OPTCARD		see subfields	Optional card. This field specifies the CMR cards provisioned and may have up to 10 entries. This field consists of the subfields OPTCARD and CMRLOAD. These subfields are described below.
	OPTCARD	CMR13 or CMR16	Optional card. This subfield specifies the card provisioned in the XPM. Enter CMR13 (for LTC or LGC) or CMR16 for (SMS or SMU).
	CMRLOAD	NILLOAD or CMRnnaa	Class modem resource load. This field specifies the load for the CMR card. Enter NILLOAD or CMRnnaa.
Note: For RCCs provisioned with CMR cards, enter values of CMR18 in field OPTCARD and NILLOAD or CMRaann in field CMRLOAD for the appropriate tuple in table RCCINV.			

Calling Name Delivery (CNAMD) (continued)

Datafill example for table LTCINV

The following example shows sample datafill for table LTCINV.

MAP display example for table LTCINV

LCTNAME							
FRTYPE	FRNO	SHPOS	FL00R	ROW	FRPOS	EQPEC	
LOAD							
EXECTAB							
						CSLNKTAB	
						OPTCARD	
TONESET		PECS6X45	E2LOAD			OPTATTR	
PEC6X40							
LTC	0						
PCTM	0	18	0	B	1	6X02AA	DUMM
(POTS	POTSEX)	(KEYSET	KSETEX)	(ABTRK	DTCEX)		
(RMM_TERM	RSMEX)\$						
	(0 20)	(0 37)	(1 32)	(0 46)	\$		
(TONE6X79)	(MSG6X69)	(CMR13)	(CMRAA01)\$				
	6x45AC		6X45AC	\$			
			NILLOAD				
6X40AA							

Datafilling table RESOFC

Table RESOFC (Residential Line CLASS Office Data) contains data on CLASS features and enables and controls the operation of CLASS features.

Enabling CNAMD and CNAMD SUSP

Datafill in table RESOFC enables CNAMD or CNAMD SUSP for the office and specifies the format for messages to the subscriber set.

Note: If the CNAMD feature is required for the office in *both* the AMA and NOAMA forms (CNAMD and CNAMD SUSP), option SUSP in table AMAOPTS must be set to ON. If SUSP is enabled, the choice between AMA billing and NOAMA billing is presented on an individual line basis when adding option CNAMD through SERVORD.

Table RESOFC can be datafilled after assigning options CNAMD or CNAMD SUSP to subscriber lines. In this way, the CNAMD or CNAMD SUSP service can be enabled for a number of lines simultaneously.

The following table shows the datafill specific to Calling Name Delivery (CNAMD) for table RESOFC. Only those fields that apply directly to Calling

Calling Name Delivery (CNAMD) (continued)

Name Delivery (CNAMD) are shown. Refer to the data schema section of this document for a description of the other fields.

Datafilling table RESOFC

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfield	Key. This field consists of the subfield FEATNAME. This subfield is described below.
	FEATNAME	CNAMD	Feature name. This subfield is the key to the table. It specifies the name of the feature. Enter CNAMD.
ENABLED		Enter Y or N	Enabled. This field specifies whether or not the feature is enabled in the office. Enter Y or N. Note: The default value for each CLASS feature included in the load is N (disabled).
FEATDATA		see subfields	Feature data. This field consists of the subfields ACCESS, FEATNAME and various subfields that are associated with each feature. For CNAMD, the subfields are ACCESS and FEATNAME. These subfields are described below.
	ACCESS	SUBSCR	Feature access. This subfield specifies how the feature is accessed. SUBSCR indicates subscription access and is the only valid value for the CNAMD feature. (UNIVER indicates universal access for all RES lines.) Enter SUBSCR.
	FEATNAME	CNAMD	Feature name. This subfield specifies the feature name. Enter CNAMD.
FNALANN		see explanation	Feature not allowed announcement. This field consists of the subfields POTS_ACCESS and FNAL_CLLI.

Datafill example for table RESOFC

The following example shows sample datafill for table RESOFC.

Calling Name Delivery (CNAMD) (continued)

MAP display example for table RESOFC

KEY	ENABLED	FEATDATA
	FNALANN	
CNAMD	Y	SUBSCR
	\$	CNAMD

Enabling CND and CND SUSP

Datafill in table RESOFC enables CND or CND SUSP for the office and specifies the format for messages to the subscriber set.

Note: If the CND feature is required for the office in *both* the AMA and NOAMA forms (CND and CND SUSP), option SUSP in table AMAOPTS must be set to ON. If SUSP is enabled, the choice between AMA billing and NOAMA billing is presented on an individual line basis when adding option CND through SERVORD.

Table RESOFC can be datafilled after assigning options CND or CND SUSP to subscriber lines. In this way, the CND or CND SUSP service can be enabled for a number of lines simultaneously.

The following table shows the datafill specific to Calling Name Delivery (CNAMD) for table RESOFC. Only those fields that apply directly to Calling Name Delivery (CNAMD) are shown. Refer to the data schema section of this document for a description of the other fields.

Datafilling table RESOFC (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfield	Key. This field consists of the subfield FEATNAME. This subfield is described below.
	FEATNAME	CND	Feature name. This subfield is the key to the table. It specifies the name of the feature. Enter CND.
ENABLED		Y or N	Enabled. This field specifies whether or not the feature is enabled in the office. Enter Y or N. Note: The default value for each CLASS feature included in the load is N (disabled).

Calling Name Delivery (CNAMD) (continued)**Datafilling table RESOFC (Sheet 2 of 2)**

Field	Subfield or refinement	Entry	Explanation and action
FEATDATA		see subfields	Feature data. This field consists of the subfields ACCESS, FEATNAME and various subfields that are associated with each feature. For CND, the subfields are ACCESS, FEATNAME and CND_MSGTYPE. These subfields are described below.
	ACCESS	SUBSCR	Feature access. This subfield specifies how the feature is accessed. SUBSCR indicates subscription access and is the only valid value for the CND feature. (UNIVER indicates universal access for all RES lines.) Enter SUBSCR.
	FEATNAME	CND	Feature name. This subfield specifies the feature name. Enter CND.
	CND_MSGTYPE	<CR> or MULTIPLE	CND message type. This subfield specifies whether or not the CND subscriber's set served by the office should receive calling information in a single or multiple format message. SINGLE is the default value. Enter <CR> or MULTIPLE.
FNALANN		see explanation	Feature not allowed announcement. This field consists of the subfields POTS_ACCESS and FNAL_CLLI.

Datafill example for CND in table RESOFC

The following example shows sample datafill for table RESOFC.

MAP display example for table RESOFC

KEY	ENABLED			FEATDATA
	FNALANN			
CND	Y	SUBSCR	CND	SINGLE
	\$			

Calling Name Delivery (CNAMD) (continued)

Enabling DDN and DDN SUSP

Datafill in table RESOFC enables DDN or DDN SUSP for the office and specifies the format for messages to the subscriber set.

Note: If the DDN feature is required for the office in *both* the AMA and NOAMA forms (DDN and DDN SUSP), option SUSP in table AMAOPTS must be set to ON. If SUSP is enabled, the choice between AMA billing and NOAMA billing is presented on an individual line basis when adding option DDN through SERVORD.

Table RESOFC can be datafilled after assigning options DDN or DDN SUSP to subscriber lines. In this way, the DDN or DDN SUSP service can be enabled for a number of lines simultaneously.

The following table shows the datafill specific to Calling Name Delivery (CNAMD) for table RESOFC. Only those fields that apply directly to Calling Name Delivery (CNAMD) are shown. Refer to the data schema section of this document for a description of the other fields.

Datafilling table RESOFC (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfield	Key. This field consists of the subfield FEATNAME. This subfield is described below.
	FEATNAME	DDN	Feature name. This subfield is the key to the table. It specifies the name of the feature. Enter DDN.
ENABLED		Y or N	Enabled. This field specifies whether or not the feature is enabled in the office. Enter Y or N. Note: Note: The default value for each CLASS feature included in the load is N (disabled).
FEATDATA		see subfield	Feature data. This field consists of the subfields ACCESS, FEATNAME and various subfields that are associated with each feature. For DDN, the subfields are ACCESS and FEATNAME. This subfield is described below.
	ACCESS	SUBSCR	Feature access. This subfield specifies how the feature is accessed. SUBSCR indicates subscription access and is the only valid value for the DDN feature. (UNIVER indicates universal access for all RES lines.) Enter SUBSCR.

Calling Name Delivery (CNAMD) (continued)

Datafilling table RESOFC (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	FEATNAME	DDN	Feature name. This subfield specifies the feature name. Enter DDN.
FNALANN		see explanation	Feature not allowed announcement. This field consists of the subfields POTS_ACCESS and FNAL_CLLI.

Datafill example for DDN in table RESOFC

The following example shows sample datafill for table RESOFC .

MAP display example for table RESOFC

KEY	ENABLED	FEATDATA
	FNALANN	
DDN	Y	SUBSCR DDN
	\$	

Datafilling table CUSTHEAD

The following table shows the datafill specific to Calling Name Delivery (CNAMD) for table CUSTHEAD. Only those fields that apply directly to Calling Name Delivery (CNAMD) are shown. Refer to the data schema section of this document for a description of the other fields.

Datafilling table CUSTHEAD

Field	Subfield or refinement	Entry	Explanation and action
OPTION		see subfield	Option. This field specifies the option NDTIMOUT and prompts for subfield NDTIMER.
	NDTIMER	1-6s	Name delivery timer. This subfield specifies the time a call is suspended while waiting for the calling party's name to return to the terminating node. Enter a value of 1-6s. The default is 3s.

Calling Name Delivery (CNAMD) (continued)

Datafill example for table CUSTHEAD

The following example shows sample datafill for table CUSTHEAD.

MAP display example for table CUSTHEAD

```
CUSTNAME CUSTXLA DGCOLNM IDIGCOL OPTIONS
-----
RESGRP      RESXLA    RES      NIL      (NDTIMOUT 4) $
```

Datafilling table DRAMS

Table DRAMS (Digital Recorded Announcement Machines) contains the product engineering codes (PEC) codes of the announcement cards in the DRAM.

The following table shows the datafill specific to Calling Name Delivery (CNAMD) for table DRAMS. Only those fields that apply directly to Calling Name Delivery (CNAMD) are shown. Refer to the data schema section of this document for a description of the other fields.

Datafilling table DRAMS (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
DRAMCARD		see subfields	Digital recorded announcement machine card. This field consists of the 1-line entry of subfields DRAM and CARD. These subfields are described below.
	DRAM	0 to 63	Digital recorded announcement machine. This subfield specifies the DRAM. Enter the DRAM number (a value from 0 to 63).
	CARD	the number	Card. This subfield specifies the announcement card. Enter the number. The controller card is in slot 0.
TMTYPE		MTM or STM	Trunk module type. This field specifies the TM type on which the prerecorded message card is located. Enter MTM if the TM is a maintenance trunk module, or enter STM if the TM is a service trunk module.

Calling Name Delivery (CNAMD) (continued)

Datafilling table DRAMS (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
TMNO		0 to 2047	Trunk module number. This field specifies the TM number assigned to the MTM or STM. Enter a value from 0 to 2047.
TMCKT		trunk module circuit number	Trunk module circuit. This field specifies the trunk module circuit number to which the trunk card is assigned. Enter the trunk module circuit number.
CARDCODE		PEC	Card code. This field specifies the PEC (NTX79AA) to store the customized announcements. Enter the PEC.
CARDINFO		see subfields	Card information. This field consists of the subfields CARDTYPE and BLKLIST. These subfields are described below.
	CARDTYPE	EEPROM	Card type. This subfield specifies the card type (PROM, RAM, or EEPROM). Enter EEPROM.
	BLKLIST	speech block numbers (0 and 1, 2 and 3, 4 and 5, or 6 and 7). (List 2, with values from 0 to 7, or list up to 16, with values from 0 to 31.)	Block list. This subfield consists of the refinement BLOCKNO. BLOCKNO: Enter the speech block numbers (0 and 1, 2 and 3, 4 and 5, or 6 and 7) that are assigned on the card. (List 2, with values from 0 to 7, or list up to 16, with values from 0 to 31.) Single-density cards have one speech block, and double-density cards have two speech blocks. Block numbers must not be repeated in the same DRAM, and a maximum of two speech blocks are allowed in the range of 0 to 7.

Datafill example for table DRAMS

Table DRAMS (Digital Recorded Announcement Machines) lists information about the trunk cards that constitute a DRAM. The following example shows sample datafill for table DRAMS.

Calling Name Delivery (CNAMD) (continued)

MAP display example for table DRAMS

DRAMCARD	TMTYPE	TMNO	TMCKT	CARDCODE	CARDINFO
5 3	MTM 9	6	1X79AA	EEPROM (4)	\$
5 4	MTM 9	8	1X79AA	EEPROM (5)	\$

Datafilling table CLLI

Table CLLI (Common Language Location Identifier) contains codes that uniquely identify the far end of each announcement (tone or trunk group).

Datafill in field CLLI in table CLLI identifies the announcements to be used for CLASS display features (CNAMD SUSP, CND SUSP, and DDN SUSP) activation and deactivation.

The following table shows the datafill specific to Calling Name Delivery (CNAMD) for table CLLI . Only those fields that apply directly to Calling Name Delivery (CNAMD) are shown. Refer to the data schema section of this document for a description of the other fields.

Datafilling table CLLI (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
CLLI		CLASSANN	Common language location identifier. This field specifies the far end of each announcement tone or trunk group. Enter a 1- to 16-character unique identifier. Enter CLASSANN.
ADNUM		0 to a number one less than the size of table CLLI	Administrative trunk group number. This field specifies the unique administrative trunk group number. Enter a value from 0 to a number one less than the size of table CLLI shown in table DATASIZE. The maximum size of table CLLI is 8192.

Calling Name Delivery (CNAMD) (continued)

Datafilling table CLLI (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
TRKGRSIZ		0 to 2047	Trunk group size. This field specifies the maximum number of trunk members that are assigned to the trunk group. Enter a value from 0 to 2047.
ADMININF		up to 32 characters	Administrative information. This field specifies the administrative information. The information in this field is not used by the switching unit. Enter up to 32 characters.

Datafill example for table CLLI

The following example shows sample datafill for table CLLI.

MAP display example for table CLLI

CLLI	ADNUM	TRKGRSIZ	ADMININF
CLASSANN	488	5	CLASS_ANNOUNCEMENT

Datafilling table ANNS

Table ANNS (Announcements) contains data for each announcement (analog and digital) assigned in the switching unit. Datafill in table ANNS defines the CNAMD SUSP, CND SUSP, or DDN SUSP confirmation announcements as CLASS announcements. CLASS announcements are custom announcements.

Since only one line can be connected to the announcement at a time, it is recommended that the maximum number of connections (MAXCONN) be set to 1. The cycle time (CYTIME) is ignored (set to 0) for custom announcements. It is recommended that field MAXCONN be set to 1 to provide one cycle for each CLASS announcement.

The following table shows the datafill specific to Calling Name Delivery (CNAMD) for table ANNS. Only those fields that apply directly to Calling

Calling Name Delivery (CNAMD) (continued)

Name Delivery (CNAMD) are shown. Refer to the data schema section of this document for a description of the other fields.

Datafilling table ANNS

Field	Subfield or refinement	Entry	Explanation and action
CLLI		CLASSANN	Announcement CLLI key. This field specifies the CLASS announcements in the table CLLI. Enter CLASSANN.
ANTYPE		CLASS	Announcement type. This field specifies the ANTYPE. Enter CLASS to define the CLASS announcement type. CLASS announcements are customized announcements. Enter CLASS.
TRAFSNO		0 to 127	Traffic separator number. This field specifies whether or not the switching unit has the optional traffic separation software. If traffic separation is required, enter the outgoing traffic separation number assigned to the announcement. If traffic separation is not required, enter 0. Enter a value from 0 to 127.
MAXCONN		1 to 255	Maximum connections. This field specifies the maximum number of simultaneous connections permitted for the announcement. Enter a value from 1 to 255. For CLASS announcements, enter 1.
CYTIME		1 to 18 or 0	Cycle time. This field specifies the time, in seconds, for one announcement cycle on one channel. Enter a value from 1 to 18. For CLASS announcements, enter 0.
MAXCYC		1 to 3	Maximum cycles. This field specifies the maximum number of times the complete announcement is to be heard before the call is advanced to the next route list. Enter a value from 1 to 3. For CLASS announcements, enter 1.

Datafill example for table ANNS

The following example shows sample datafill for table ANNS.

Calling Name Delivery (CNAMD) (continued)

MAP display example for table ANNS

CLLI	ANTYPE	TRAFSNO	MAXCONN	CYTIME	MAXCYC
CLASSANN	CLASS	26	1	0	1

Datafilling table ANNMEMS

Table ANNMEMS (Announcement Members) contains the assignments for each member assigned to the announcement CLLI in table ANNS.

Datafill in table ANNMEMS defines the announcement channels to be used for CLASS announcements. All CLASS announcements are single-track announcements.

The actual announcement specification is done in table DRMUSERS. Each announcement is identified by a CLLI (CLASSANN in this case) and a number. For CLASS display features enter the following in field ANNEM:

- CLASSANN 1 to identify the announcement that confirms CNAMD SUSP, CND SUSP, or DDN SUSP activation
- CLASSANN 2 to identify the announcement that confirms CNAMD SUSP, CND SUSP, or DDN SUSP deactivation

The following table shows the datafill specific to Calling Name Delivery (CNAMD) for table ANNMEMS. Only those fields that apply directly to

Calling Name Delivery (CNAMD) (continued)

Calling Name Delivery (CNAMD) are shown. Refer to the data schema section of this document for a description of the other fields.

Datafilling table ANNMEMS (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
ANNMEM		see subfields	Announcement member key. This field consists of the subfields ANN and MEM. These subfields are described below. Note: Field ANNMEM defines the announcement members and should be engineered to meet the needs of the office. In this table, two members are defined for CLASS to show the procedure for defining multiple members. For CLASS, enter CLASSANN 1 and CLASSANN 2.
	ANN	ANN code or leave blank	Announcement. This subfield specifies the code that represents the announcement group in table CLLI. If the trunk circuit is the first in the trunk list for the announcement member, enter the ANN code. If the trunk circuit is other than the first, leave this field blank.
	MEMBER	MEMBER code or leave blank	Member. This subfield specifies the code that represents the announcement group in table CLLI. If the trunk circuit is the first in the trunk list for the announcement member, enter the MEMBER code. If the trunk circuit is other than the first, leave this field blank.
HDWTYPE		DRAM	Hardware type. This field specifies the hardware type. Enter DRAM to indicate that the recorded announcement is digital.
CARD		DRA	Cardcode. This field specifies the card code. Enter DRA to indicate that the trunk member is digital.
MEMINFO		see subfields	Member information. This field consists of the subfields TRACK, TMTYPE, TMNO, and TMCKT. These subfields are described below.
	TRACK	0 to 31	Track number. This subfield specifies the track number assigned to the trunk circuit. Enter a value from 0 to 31.

Calling Name Delivery (CNAMD) (continued)

Datafilling table ANNMEMS (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	PMTYPE	MTM, DTM, or STM	Trunk module type. This subfield specifies the type of trunk module to which the trunk circuit is assigned. Enter MTM, DTM, or STM.
	TMNO	0 to 2047	Trunk module number. This subfield specifies the trunk module number assigned to the trunk module associated with the trunk circuit. If the trunk module type is MTM, the range is 0 to 255. If the trunk module type is TM8, the range is 0 to 2047. For offices with DRAMs, the trunk circuit consists of an assignment to one of the channels on the MTM in which the DRAM is located. A trunk circuit cannot be assigned to TM circuit number 0.
	TMCKT	0 to 29	Trunk module circuit number. This subfield specifies the trunk module circuit number assigned to the trunk circuit. Enter a value from 0 to 29.

Datafill example for table ANNMEMS

The following example shows sample datafill for table ANNMEMS.

MAP display example for table ANNMEMS

ANNMEM	HDWTYPE	CARD	MEMINFO
CLASSANN 1	DRAM	DRA	(0 MTM 1 4) \$
CLASSANN 2	DRAM	DRA	(0 MTM 1 5) \$

Datafilling table DRMUSERS

Table DRMUSERS (Digital Announcement Machine Users) contains all the announcements required by a user and includes the utility for the operating company to specify the primary language for announcements.

Datafill in table DRMUSERS provides phrases for CLASS display announcements and determines which phrases are associated with the primary and secondary languages for the announcements.

Calling Name Delivery (CNAMD) (continued)

The operating company is responsible for recording its own phrases using the DRAMREC utility. Refer to *Digital Recorded Announcement Machine DRAM and EDRAM Guide* for instructions on recording announcements.

The example in this section assumes that all the phrase names used have been assigned to phrases recorded on the CLASS PROM cards. The phrases beginning with CNDE are English phrases for CLASS display features (CNAMD SUSP, CND SUSP, and DDN SUSP) activation and deactivation announcements. Those beginning with CNDF are French phrases.

Suggested English phrases are as follows:

- CNDEINF—"information about incoming calls"
- CNDEACT—"will now be sent to your telephone"
- CNDEDACT—"will no longer be sent to your telephone"

Suggested codes for equivalent French phrases are:

- CNDFINF
- CNDFACT
- CNDFDACT

If a language other than English or French is required, phrases can be recorded in this language. The names of these phrases can then be datafilled after the appropriate language marker.

The following table shows the datafill specific to Calling Name Delivery (CNAMD) for table DRMUSERS. Only those fields that apply directly to Calling Name Delivery (CNAMD) are shown. Refer to the data schema section of this document for a description of the other fields.

Datafilling table DRMUSERS (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
USERANN		see subfields	User announcement. This field consists of the subfields CLLI and ANNUM. These subfields are described below.
	CLLI	CLLI	Common language location identifier. This subfield specifies the name associated with the announcement group in table ANNS. Enter the CLLI.

Calling Name Delivery (CNAMD) (continued)

Datafilling table DRMUSERS (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
PHSLIST	ANNUM	CLASSANN 1 or CLASSANN 2	Announcement number. This subfield specifies the number assigned to the announcement. For CLASS display features, enter CLASSANN 1 for the announcement that confirms CNAMD SUSP, CND SUSP, and DDN SUSP activation. Enter CLASSANN 2 for the announcement that confirms CNAMD SUSP, CND SUSP, and DDN SUSP deactivation.
		see subfield	Phrases list. This field consists of the subfield PHRASES. This subfield is described below.
	PHRASES	CNDEINF	Phrases. This subfield specifies up to 32 phrases associated with the announcement. Enter the phrase, such as CNDEINF.

Datafill example for table DRMUSERS

The following example shows sample datafill for table DRMUSERS.

MAP display example for table DRMUSERS

USERANN	PHSLIST
CLASSANN 1	
(CNDEINF) (CNDEACT) (CNDFINF) (CNDFACT)	\$
CLASSANN 2	
(CNDEINF) (CNDEDACT) (CNDFINF) (CNDFDACT)	\$

Datafilling table IBNXLA

Table IBNXLA (IBN Translations) contains the data for the digit translations of calls from an MDC station, attendant console, incoming trunk group, or incoming side of a two-way MDC trunk group.

Datafill in table IBNXLA defines the access codes used to activate and deactivate CLASS display features (CNAMD SUSP, CND SUSP, and DDN SUSP).

The recommended format of the access codes is 11XX for DP lines and *XX for DTMF lines, where XX is a two-digit code.

Calling Name Delivery (CNAMD) (continued)

The recommended activation codes for CLASS display features are as follows:

- 1165 for DP lines
- *65 for DTMF lines

The recommended deactivation codes for CLASS display features are as follows:

- 1185 for DP lines
- *85 for DTMF lines

The following table shows the datafill specific to Calling Name Delivery (CNAMD) for table IBNXLA. Only those fields that apply directly to Calling Name Delivery (CNAMD) are shown. Refer to the data schema section of this document for a description of the other fields.

Datafilling table IBNXLA (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	Key. This field consists of the subfields XLANAME and DGLIDX. These subfields are described below and must be entered in succession.
	XLANAME	RXCFN	Translator name. This subfield specifies the 1- to 8-character name assigned to the translator. Enter RXCFN.
	DGLIDX	65 or 85	Digilator index. This subfield specifies the digit or digits assigned to the index as the access code. Enter 65 for the activation code and 85 for the deactivation code.
RESULT		see subfields	Result. This field consists of the subfields TRSEL, ACR, SMDR, and FEATURE. These subfields are discussed below.
	TRSEL	FEAT	Translation selector. This subfield specifies the TRSEL. Enter FEAT.
	ACR	N	Account entry code. This subfield specifies whether or not an account entry code is required. Enter N.

Calling Name Delivery (CNAMD) (continued)

Datafilling table IBNXLA (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	SMDR	N	Station message detail recording. This subfield specifies whether or not SMDR is required. Enter N.
	FEATURE	CNDA or CNDD	Feature. This subfield specifies the name of the feature to which the code is assigned. Enter CNDA to indicate the access code for activating the CNAMD SUSP, CND SUSP, or DDN SUSP feature. Enter CNDD to indicate the access code for deactivating the CNAMD SUSP, CND SUSP, or DDN SUSP feature.

Datafill example for table IBNXLA

The following example shows sample datafill for table IBNXLA.

MAP display example for table IBNXLA

KEY		RESULT				
RXCFN	65	FEAT	N	N	N	CNDA
RXCFN	85	FEAT	N	N	N	CNDD

Translation verification tools

The following example shows the output from TRAVER (translations verification) command when it is used to verify Calling Name Delivery (CNAMD).

Calling Name Delivery (CNAMD) (continued)

TRAVER output example for Calling Name Delivery (CNAMD)

```
>TRAVER L 6211233 'B65' B
TABLE IBNLINES
  HOST 00 0 09 07 0 DP STN RES 6211233 0 $
TABLE LINEATTR
  0 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC
    LATA1 0 NIL NIL 00 Y RESGRP 0 2
  LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE NCOS
RESGRP 2 0 0 RNCOS2 ( XLAS RXCMN2 NXLA RES ) $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA,
VACTRMT, AND DIGCOL
RESGRP NXLA RESXLA RXCFN 0 RES
TABLE DIGCOL
  RES SPECIFIED: RES DIGIT COLLECTION
NCOS FEAT XLA NAME IS NIL.  GO TO NEXT XLA NAME.
TABLE IBNXLA: XLANAME RXCFN
  RXCFN 65 FEAT N N N ( CNDA )

++ TRAVER: SUCCESSFUL CALL TRACE ++
```

SERVORD

The service order system (SERVORD) is used to add, delete, or change the CNAMD, CND, or DDN features on subscriber lines.

Before adding CNAMD, CND, or DDN

Before adding CLASS display features CND, CNAMD, or DDN to a subscriber line, ensure that the following conditions are met:

- the feature (CND, CNAMD, or DDN) is enabled in table RESOFC.
- option SUSP for the office is specified in table AMAOPTS.
- a CMR card is datafilled in table LTCINV (or table RCCINV) for each LTC, LGC, RCC, SMU, or SMS that supports lines with option CND or DDN

Note 1: The CLASS display features can be enabled in table RESOFC *after* adding them to subscriber lines. This enables the features for all subscribers simultaneously.

Calling Name Delivery (CNAMD) (continued)

Note 2: If AMA records are to be generated for calling name or number delivery, option SUSP must be set to ON. If no AMA records are to be generated for calling name or number delivery, it is not necessary to datafill option SUSP, since this option defaults to OFF.

Note 3: If CND, DDN, or CNAMD is added to a line whose supporting peripheral does not have a CMR card datafilled, a warning message is given. The line will have option CND, but calling information will not be transmitted to the CNAMD, CND, or DDN subscriber.

Assigning CNAMD SUSP, CND SUSP, or DDN SUSP

Assigning option CNAMD SUSP, CND SUSP, or DDN SUSP to a subscriber line does not activate calling name or number delivery. The subscriber must dial the activation code to initiate the delivery of calling information to his or her set. The same activation code is used for CNAMD SUSP, CND SUSP, and DDN SUSP.

Once the activation code has been successfully dialed, calling information is delivered for each incoming call until the subscriber dials the deactivation code to discontinue the service.

Optins CNAMD, CND, and DDN (NOAMA) do not require activation or deactivation codes. If the corresponding display feature is enabled for the office, calling information can be delivered for each incoming call as soon as option CNAMD, CND, or DDN with the NOAMA billing option is assigned to the subscriber line.

Specifying the billing option for a line

The billing options available for CNAMD, CND, and DDN depend on whether SUSP is enabled for the office (that is, whether field SUSP is set to ON in table AMAOPTS).

Billing option with SUSP set to OFF

When field SUSP is set to OFF, the billing option defaults to NOAMA. In this case, no billing prompt is given when CNAMD, CND, or DDN is added to a line.

If SUSP was previously set to ON, AMA records are no longer generated for CNAMD, CND, and DDN subscribers who were previously assigned option AMA. New subscribers are automatically assigned option NOAMA CNAMD, CND, or DDN is added to their lines.

SERVORD limitations and restrictions

Calling Name Delivery (CNAMD) has no SERVORD limitations and restrictions.

Calling Name Delivery (CNAMD) (continued)

SERVORD prompts

The following table shows the SERVORD prompts used to add and delete CNAMD, CND, and DDN.

SERVORD prompts for Calling Name Delivery (CNAMD)

Prompt	Valid input	Explanation
OPTION	CNAMD, CND, DDN	Assigns, updates, and removes the CNAMD, CND, or DDN feature
BILLING_ OPTION	AMA NOAMA	Indicates the billing option to be specified, if required, when assigning a feature to a RES line. Enter AMA if an AMA record should be created; enter NOAMA if an AMA record should not be created.
Note: CND and DDN are incompatible features and cannot be assigned to the same line; however, CNAMD can be assigned to a line with either CND or DDN.		

SERVORD example for implementing CNAMD, CND, and DDN

The following examples show the procedures for adding or deleting CNAMD, CND, or DDN to or from a line with and without the AMA billing option. Examples also show how the system responds when SUSP is disabled or enabled.

Adding options with SUSP disabled

The following example shows how to add option CNAMD to a line when SUSP is disabled for the office. Since SUSP is not available, the BILLING_OPTION prompt does not appear.

Calling Name Delivery (CNAMD) (continued)

SERVORD example for setting up CNAMD using ADO in prompt mode

```
> SERVORD
S0:
> ADO
SONUMBER:  NOW 91 11 23 AM
>
DN_OR_LEN:
> 6211061
OPTION:
> CNAMD
OPTION:
> $
COMMAND AS ENTERED:
ADO NOW 91 11 23 AM 6211061 (CNAMD) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
> Y
```

SERVORD example for setting up CNAMD using ADO in no-prompt mode

```
> ADO $ 6211061 CNAMD $ Y
```

The following example shows how to add option DDN or CND to a line when SUSP is disabled for the office. Since SUSP is not available, the BILLING_OPTION prompt does not appear.

SERVORD example for setting up DDN or CND using ADO in prompt mode

```
> SERVORD
S0:
> ADO
SONUMBER:  NOW 91 11 23 AM
>
DN_OR_LEN:
> 6211061
OPTION:
> DDN (or enter CND)
OPTION:
> $
COMMAND AS ENTERED:
ADO NOW 91 11 23 AM 6211061 (DDN) $      (or shows CND)
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
> Y
```

Calling Name Delivery (CNAMD) (continued)

SERVORD example for setting up DDN or CND using ADO in no-prompt mode

```
> ADO $ 6211061 DDN $ Y (or shows CND)
```

The following example shows how to add option CNAMD to an existing line when SUSP is disabled for the office and the RES_SO_SIMPLIFICATION office parameter is enabled. Since SUSP is not available, the BILLING_OPTION prompt does not appear.

SERVORD example for setting up CNAMD using ADO (RES_SO_SIMPLIFICATION enabled) in prompt mode

```
>SERVORD
SO:
> ADO
SONUMBER: NOW 91 11 23 AM
>
DN_OR_LEN:
>6211061
OPTION:
>CNAMD
OPTION:
> $
COMMAND AS ENTERED:
ADO NOW 91 11 23 AM 6211061 (CNAMD) $
There is a RES specific option in the option set.
Line will become a RES line.
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
> Y
```

SERVORD example for setting up CNAMD using ADO (RES_SO_SIMPLIFICATION enabled) in no-prompt mode

```
>ADO $ 6211061 CNAMD $ Y
```

Adding options with SUSP enabled

When SUSP is enabled for the office, two billing options are available for CNAMD, CND, and DDN:

- AMA
- NOAMA

Calling Name Delivery (CNAMD) (continued)

NOAMA is the default value for the billing option. When adding CNAMD, CND, or DDN to a line, the BILLING_OPTION prompt appears to specify AMA or NOAMA.

The following example shows how to add option CNAMD to a line when SUSP is enabled for the office. Since SUSP is available, the BILLING_OPTION prompt appears. The AMA billing option is specified.

SERVORD example for setting up CNAMD SUSP using ADO (option AMA) in prompt mode

```
>SERVORD
S0:
>ADO
SONUMBER:  NOW 91 11 23 AM
>
DN_OR_LEN:
>6211061
OPTION:
>CNAMD
BILLING_OPTION: NOAMA
>AMA
OPTION:
> $
COMMAND AS ENTERED:
ADO NOW 91 11 23 AM 6211061 (CNAMD AMA) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
> Y
```

SERVORD example for setting up CNAMD SUSP using ADO (option AMA) in no-prompt mode

```
> ADO $ 6211061 CNAMD AMA $ Y
```

The following example shows how to add option CND or DDN to a line when SUSP is enabled for the office. Since SUSP is available, the BILLING_OPTION prompt appears. The AMA billing option is specified.

Calling Name Delivery (CNAMD) (continued)

SERVORD example for setting up DDN SUSP or CND SUSP using ADO (option AMA) in prompt mode

```
>SERVORD
SO:
> ADO
SONUMBER: NOW 91 11 23 AM
>
DN_OR_LEN:
>6211061
OPTION:
>DDN (or enter CND)
BILLING_OPTION: NOAMA
> AMA
OPTION:
> $
COMMAND AS ENTERED:
ADO NOW 91 11 23 AM 6211061 (DDN AMA) $ (or shows CND)
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
> Y
```

SERVORD example for setting up DDN SUSP or CND SUSP using ADO (option AMA) in no-prompt mode

```
>SERVORD
SO:
>ADO
SONUMBER: NOW 91 11 23 AM
>
DN_OR_LEN:
>6211061
OPTION:
>CNAMD
BILLING_OPTION: NOAMA
>NOAMA
OPTION:
>$
COMMAND AS ENTERED:
ADO NOW 91 11 23 AM 6211061 (CNAMD NOAMA) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>Y
```

The following example shows how to add option CNAMD to a line when SUSP is enabled for the office. Since SUSP is available, the BILLING_OPTION prompt appears. The NOAMA billing option is specified.

Calling Name Delivery (CNAMD) (continued)

SERVORD example for setting up CNAMD SUSP using ADO (option NOAMA) in prompt mode

```
>ADO $ 6211061 CNAMD NOAMA $ Y
```

SERVORD example for setting up CNAMD SUSP using ADO (option NOAMA) in no-prompt mode

```
>ADO $ 6211061 DDN AMA $ Y (or enter CND)
```

The following example shows how to add the DDN or CND feature to a line when SUSP is enabled for the office. Since SUSP is available, the BILLING_OPTION prompt appears. The NOAMA billing option is specified.

SERVORD example for setting up DDN SUSP or CND SUSP using ADO (option NOAMA) in prompt mode

```
>SERVORD
S0:
>ADO
SONUMBER: NOW 91 11 23 AM
>
DN_OR_LEN:
>6211061
OPTION:
>DDN (or enter CND)
BILLING_OPTION: NOAMA
>NOAMA
OPTION:
>$
COMMAND AS ENTERED:
ADO NOW 91 11 23 AM 6211061 (DDN NOAMA) $ (or shows CND)
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>Y
```

SERVORD example for setting up DDN SUSP or CND SUSP using ADO (option NOAMA) in no-prompt mode

```
>ADO $ 6211061 DDN NOAMA $ Y (or shows CND)
```

Calling Name Delivery (CNAMD) (end)

Deleting options

The following example shows how to delete options CNAMD, CND, or DDN from a line.

SERVORD example for deleting CNAMD, CND, or DDN using DEO in prompt mode

```
>SERVORD
SO:
>DEO
SONUMBER:  NOW 91 11 23 AM
>
DN_OR_LEN:
>6211061
OPTION:
>CNAMD                                (or enter CND)
BILLING_OPTION:  NOAMA

OPTION:
>$
COMMAND AS ENTERED:
ADO NOW 91 11 23 AM 6211061 (CNAMD) $ (or shows CND or DDN)
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>Y
```

SERVORD example for deleting CNAMD, CND, or DDN using DEO in no-prompt mode

```
>DEO $ 6211061 CNAMD $ Y                (or shows CND or DDN)
```

Calling Name Display Enhancements (CNAB & CNND)

Ordering codes

Functional group ordering code: RES00003

Functionality ordering code: RES00022

Release applicability

NA011 and up

Prerequisites

To operate, Calling Name Display Enhancements (CNAB & CNND) has the following prerequisites:

- BAS Generic, BAS00003
- MDC Minimum, MDC00001
- MDC Standard, MDC00003
- RES Service Enablers, RES00006

Network configuration

Common Channel Signaling No. 7 (CCS7) connectivity is required for network (interoffice) configuration of Calling Name Delivery Blocking for Lines and Calling Name/Number Delivery Blocking. The following prerequisites are required for CCS7 connectivity:

- Base ISUP, ISP70001
- TEL CCS7 Base, TEL00008

Description

The Calling Name Display Enhancements (CNAB & CNND) feature is delivered in two feature packages, as shown above. The Calling Name Delivery Blocking for Lines feature package provides the following capabilities:

- permanent name suppression at the network, customer group, or line level
- a line option, Calling Name Delivery Blocking (CNAB), used for blocking and unblocking name delivery on an individual call basis

Calling Name Display Enhancements (CNAB & CNND) (continued)

The Calling Name/Number Delivery Blocking feature package provides the following capabilities:

- a group option, CNAB, used for blocking and unblocking name delivery on an individual call basis
- a feature, Calling Name/Number Delivery (CNND), used for delivering name and number on an individual call basis

Calling Number Display Enhancements (CNAB & CNND) also provides a parameter that indicates one of two reasons for not displaying a Custom Local Area Signaling Services (CLASS) name: O indicates that the name is unavailable; P indicates that the name is private. The parameter is included with other calling name and number delivery information.

The following cards are required if announcements are to be used:

- NT1X75BA—Digital Recorded Announcement (DRA) Controller card on a digital recorded announcement machine (DRAM)
- NT1X79AA—Electronically Erasable Programmable Read-Only Memory (EEPROM) card
- NT1X77AA—Random Access Memory (RAM) card

Option SUPPRESS

Option SUPPRESS suppresses name delivery, directory number (DN) delivery, or both, at the network, group, or line levels. This feature adds name suppression to the existing DN suppression. Like DN suppression, network name suppression overrides all other suppression indicators, including blocking or unblocking by subscribers on an individual call basis. In addition, names can be suppressed on an intraoffice or interoffice basis.

For network suppression, option SUPPRESS is datafilled in table NETNAMES. The option has four refinements, each of which is datafilled with Y or N:

- INTRNLDN—internal DN suppression for intraoffice calls
- EXTRNLDN—external DN suppression for interoffice calls
- INTRNLNM—internal name suppression for intraoffice calls
- EXTRNLNM—external name suppression for interoffice calls

Refer to “Datafill procedure for table NETNAMES” in “CLASS Line Office Data” for more information on option SUPPRESS and its refinements.

For group suppression, option SUPPRESS is datafilled in table DNGRPS. SUPPRESS can be assigned to a range of DNs for a given numbering plan area

Calling Name Display Enhancements (CNAB & CNND) (continued)

(NPA) and office code. Option SUPPRESS has the following refinements (both require Y or N as datafill):

- SUPPRESS_DN—DN suppression for the group
- SUPPRESS_NAME—name suppression for the group

Refer to “Datafill procedure for table DNGRPS” in “CLASS Line Office Data” for more information on assigning SUPPRESS to a group of DNs.

For line suppression, option SUPPRESS is datafilled in table DNATTRS. Option SUPPRESS has the following refinements (both require Y or N as datafill):

- SUPPRESS_DN—DN suppression for the line
- SUPPRESS_NAME—name suppression for the line

Refer to “Datafill procedure for table DNATTRS” in “CLASS Line Office Data” for more information on assigning SUPPRESS to a group of DNs.

Subscribers with CNAB can toggle option SUPPRESS assigned at the group and line levels by activating CNAB. Furthermore, if they have an access code for CNND, subscribers can deliver both name and number, regardless of the suppression status.

Calling Name Delivery Blocking (CNAB)

This feature allows subscribers to control the delivery of their names on an individual call basis. CNAB is available to a subscriber in the following cases:

- CNAB is assigned to the subscriber's customer group
- CNAB is enabled for the subscriber's office and is assigned to the subscriber's line

If the SUPPRESS_NAME refinement set to Y is assigned to a subscriber's line or customer group, the subscriber can unsuppress the name by invoking CNAB before placing a call. Conversely, if SUPPRESS is not assigned, the subscriber can block the name by invoking CNAB before placing the call.

Network suppression takes precedence over CNAB.

The CNAB line option is a Subscriber Services (RES) option. If the RES_SO_SIMPLIFICATION office parameter has the field RES_AS_POTS set to Y, adding CNAB changes a plain old telephone service (POTS) line class code (LCC) to RES. If feature AF2244, WATS on RES, is available in the office, CNAB can be added to lines with LCCs of OWT (outward wide area

Calling Name Display Enhancements (CNAB & CNND) (continued)

telephone service [WATS]), EOW (enhanced outward WATS), INW (inward WATS), 2WW (two-way WATS), and ETW (enhanced two-way WATS).

If feature AG1546, CLASS on MVP Base, is available in the office, CNAB can be added to MDC lines through the service order system (SERVORD). SERVORD then assigns CNAB to table IBNLINES. The CNAB group option is compatible with Meridian business sets (MBS). Through SERVORD, CNAB can be assigned to a group in table CUSTSTN. Any line within a customer group with option CNAB has access to the CNAB, CNND, Calling Number Blocking (CNB), and Calling Name/Number Delivery Blocking (CNNB) features.

Note: For more information on how CNAB can be assigned to MDC lines (LCC of IBN), refer to "Datafilling CLASS on MDC."

Calling Name/Number Delivery (CNND)

If feature package NTXE46AA, Calling Name/Number Delivery Blocking, is present in the office, CNND is available to a subscriber in the following cases:

- CNAB is assigned to the subscriber's customer group
- CNAB is enabled for the subscriber's office and is assigned to the subscriber's line

Like CNAB, CNND requires an access code for activation on an individual call basis. Unlike CNAB, CNND delivers both the name and number regardless of the group or line suppression status. CNND does not toggle the suppression status.

Network suppression takes precedence over CNND.

Note: Feature package NTXE46AB also provides CNND if CNDB is assigned to a subscriber's customer group or if CNDB is enabled for the office and is assigned to the subscriber line.

CNAB and interoffice calls

The DN is always transmitted as part of the initial address message (IAM) for interoffice calls where CCS7 communications are used. Along with the DN, there exists a presentation restricted indicator (PRI), set to the display status of the DN. For the same calls, the name is transmitted in the IAM only if it can be displayed. Since there is no PRI for the name, the IAM contains no indication of why a name is unavailable for display.

When CNAB is activated by a subscriber whose permanent suppression status for the name is "unsuppressed," the name is not delivered to the terminating office. Conversely, when CNAB is activated by a subscriber whose permanent

Calling Name Display Enhancements (CNAB & CNND) (continued)

suppression status for the name is “suppressed,” the name is delivered to the terminating office.

When CNND is activated by a subscriber whose permanent network suppression status is “unsuppressed,” the PRI bit in the IAM is set to presentation unrestricted (DN display), and the name, if available, is included in the IAM (name display).

Enabling CNAB for an office

If feature package NTXQ29AA, Calling Name Delivery Blocking for Lines, is present in an office, table RESOFC contains a tuple for CNAB. Field ENABLED must be set to Y to enable CNAB active for the office. See “Datafill procedure for table RESOFC (line option)” in this feature description for more information on datafilling the CNAB tuple of table RESOFC.

Reason for absence of name parameter

The Calling Name Delivery (CNAMD) information is delivered to the subscriber set by means of a multiple data format message. The message includes information such as the message type, the message length, and the DN and name to be delivered. The Calling Name Display Enhancements (CNAB & CNND) feature adds a parameter that indicates the reason for an undeliverable name: O indicates that the name is unavailable; P indicates that the name is private.

CNAB confirmation announcement datafill

An announcement or confirmation tone confirms successful activation of CNAB but does not indicate the suppression status. If a confirmation announcement is not datafilled or if the announcement cannot be provided, a confirmation tone is used.

The announcement must be recorded using the DRAMREC utility, described in *Digital Recorded Announcement Machine DRAM and EDRAM Guide*. This section shows sample datafill for the announcement.

Table DRAMS

Table DRAMS (Digital Recorded Announcement Machines) lists information about the trunk cards that constitute a DRAM. The following example shows recommended datafill for the table DRAM.

Calling Name Display Enhancements (CNAB & CNND) (continued)

DRAMCARD	TMTYPE	TMNO	TMCKT	CARDCODE	CARDINFO
5 3	MTM	9	6	1X79AA	EEPROM (4) \$
5 4	MTM	9	8	1X79AA	EEPROM (5) \$

Table CLLI

Table CLLI (Common Language Location Identifier) uniquely identifies the far end of each announcement, tone, or trunk group. The following example shows a tuple in table CLLI for the CNAB confirmation announcement.

CLLI	ADNUM	TRKGRSIZ	ADMININF
CNABANN	488	5	CNAB_ANNOUNCEMENT

Table ANNS

Table ANNS (Announcements) contains data for each announcement assigned to the switch. The CNAB confirmation announcement type declarations must be datafilled. MAXCONN can be adjusted according to the office requirements; CYTIME, the approximate time in seconds, must be adjusted according to the length of the actual announcement. The following example shows a tuple in table ANNS for the CNAB confirmation announcement.

CLLI	ANTYPE	TRAFSNO	MAXCONN	CYTIME	MAXCYC
CNABANN	STND	0	30	15	1

Table ANNMEMS

Table ANNMEMS (Announcement Members) defines the announcement channel to be used for the CNAB announcement. The content of this announcement is determined in table DRAMTRK. The following example shows a tuple in table ANNMEMS for the CNAB confirmation announcement.

Calling Name Display Enhancements (CNAB & CNND) (continued)

ANNMEM	HDWTYPE	CARD	MEMINFO
CNABANN 1	DRAM	DRA	0 MTM 1 4) \$

Table DRAMTRK

Table DRAMTRK (Digital Recorded Announcement Machine Track) lists information for the trunk cards that constitute a DRAM. It specifies the actual phrase list used to generate the announcement. The following example shows a tuple in table DRAMTRK for the CNAB confirmation announcement.

ANNTRACK	PHSLIST
CNABANN 0	(CNABANN) \$

Universal access

The CNAB and CNND features can be provided to all RES subscribers in an office through universal access when feature package NTXQ70AA, Universal Access to CLASS Features, is present in the office. For universal access, the value UNIVER instead of SUBSCR should be datafilled in subfield ACCESS in table RESOFC.

Universal access only changes the method of access, not the operation of a CLASS feature. When universal access is available in an office, the subscriber can still have the feature assigned as a line option. Accessing a CLASS feature assigned to the subscriber as a line option or customer group option takes precedence over accessing the feature through universal access.

The Software Optional Control (SOC) allows the operating company to enable the functionality of common access for CLASS features through a Right to Use (RTU) access code. The subscriber is able to access the CLASS features without assigning each feature to the line.

The SOC commands enable or disable the universal access for CLASS features. The RTU access code assignment to RES00011 and setting

Calling Name Display Enhancements (CNAB & CNND) (continued)

the state to ON enables the universal access for CLASS through SOC. The state is set to IDLE to disable the universal access for CLASS through SOC.

Note 1: Universal access to CLASS features is not applicable to Subscriber Services lines with IBN line class codes (LCC) through NA007.

Note 2: Universal access to CLASS features is not applicable to universal access to display features.

Note 3: Refer to "Universal Access to CLASS Features" for more information on universal access.

Translations table flow

The Calling Name Display Enhancements (CNAB & CNND) translations tables are described in the following list:

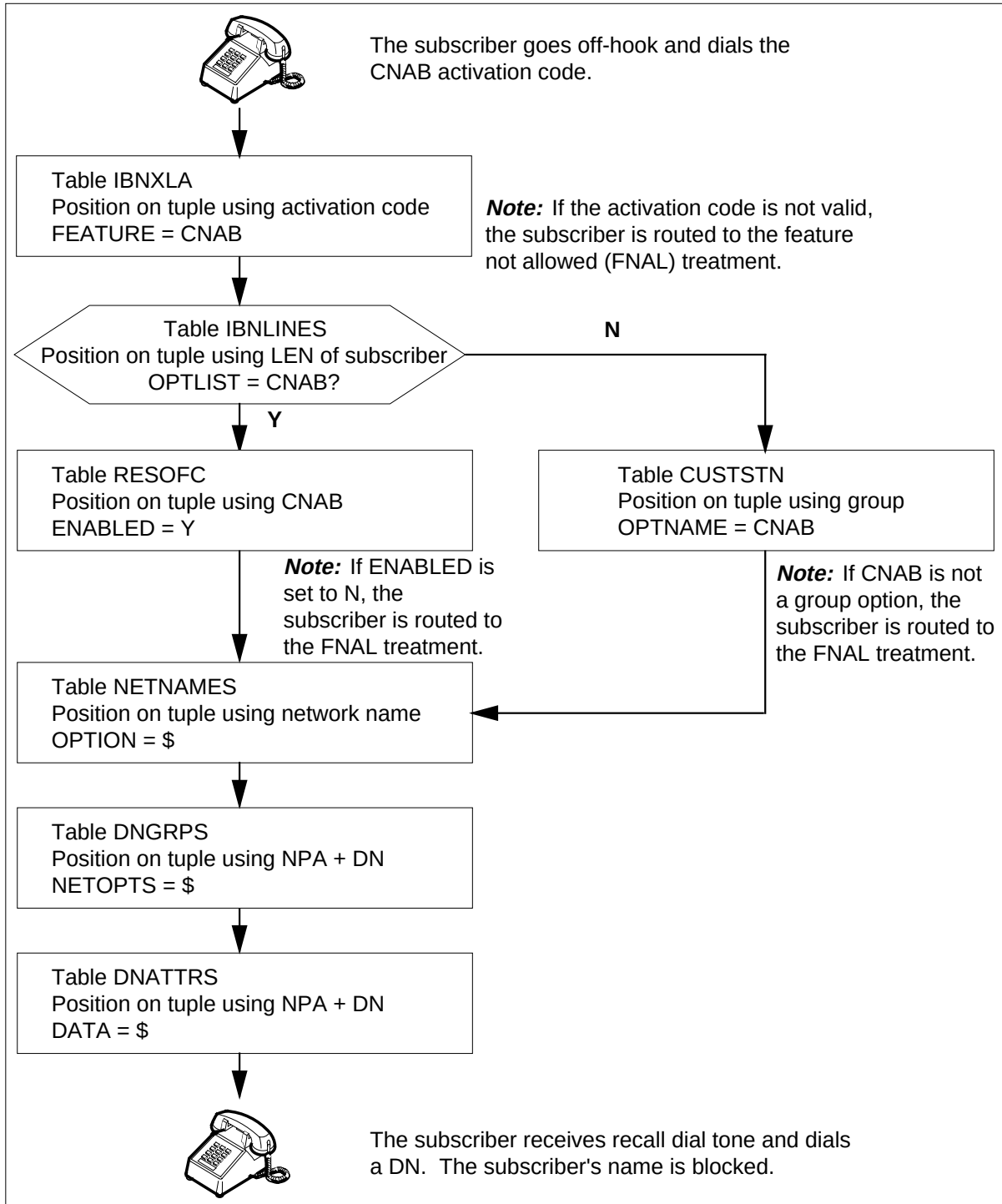
- Table IBNXLA provides the name of the feature associated with the dialed access code.
- Table IBNLINES identifies the options assigned to the subscriber's line equipment number (LEN). CNAB is used to access table RESOFC. If CNAB is assigned to the subscriber line, translations continues to table RESOFC, using CNAB as a key into the table. If CNAB is not assigned, translations continues to table CUSTSTN.
- Table RESOFC determines whether CNAB is enabled for an office. For this example, CNAB is enabled.
- Table CUSTSTN identifies the options assigned to a customer group.
- Table NETNAMES controls name and DN suppression at the network level. For this example, no suppression is assigned.
- Table DNGRPS controls name and DN suppression for groups of DNs. For this example, no suppression is assigned.
- Table DNATTRS controls name and DN suppression for individual lines. For this example, no suppression is assigned.

The following figure shows the translations data flow for the Calling Name Display Enhancements feature. For the following figure, CNAB can be assigned to a subscriber's line or customer group. In addition, name suppression is set to N at all levels.

The Calling Name Display Enhancements (CNAB & CNND) translation process is shown in the flowchart that follows.

Calling Name Display Enhancements (CNAB & CNND) (continued)

Table flow for Calling Name Display Enhancements (CNAB & CNND)



Calling Name Display Enhancements (CNAB & CNND) (continued)

The following table lists the datafill content used in the flowchart. For the example the LEN of subscriber is HOST 00 02 0 05 and the CNAB access code is 47.

Datafill example for Calling Name Display Enhancements (CNAB & CNND)

Datafill table	Example data
IBNXLA	RXCFN 47 FEAT N N N CNAB
IBNLINES	HOST 00 02 0 05 0 DT STN RES 6211234 0 (CNAB) \$
RESOFC	CNAB Y SUBSCR CNAB (CNABCONF CLLIX) \$
CUSTSTN	RESGRP CNAB CNAB
NETNAMES	PUBLIC 0 0 \$ <i>(Note)</i>
DNGRPS	613 621 1000 1999 (PUBLIC \$) \$
DNATTRS	613 621 1234 (PUBLIC \$) \$ \$
Note: For CNND over primary rate interface (PRI) trunks, table NETNAMES must be datafilled as follows: PUBLIC 0 10 (NMDSP SETUP) \$	

Limitations and restrictions

The following limitations and restrictions apply to Calling Name Display Enhancements (CNAB & CNND) :

- Subscription usage sensitive pricing (SUSP) is not supported.
- CNAB and CNND are not compatible with Attendant Consoles. If the caller activates CNAB or CNND before calling an attendant console, the name and / or number will be displayed at the Attendant Console.
- CNAB cannot be assigned to a bridged night number (BNN).
- CNAB and CNND activation affects the current call only; the options cannot be activated for more than one call at a time.

Interactions

The following paragraphs describe the interactions between Calling Name Display Enhancements (CNAB & CNND) and other functionalities.

With these interactions, the originator's name and the suppression status of intraoffice (calls originating and terminating in two different switches) and interoffice (calls originating and terminating in the same switch) are unsuppressed.

Calling Name Display Enhancements (CNAB & CNND) (continued)

Anonymous Caller Rejection

An intraoffice and interoffice CNAB call to a line with Anonymous Caller Rejection (ACRJ) and CNAMD assigned is not an anonymous call and is completed. However, an interoffice CNAB call to the same line is not anonymous, because a name restriction bit is not part of the IAM.

Authorization codes

CNAB and CNND access codes can be dialed prior to dialing authorization codes.

Automatic Call Back

CNAB and CNND access codes can be dialed prior to Automatic Call Back (ACB) activation.

Automatic Recall

CNAB and CNND access codes can be dialed prior to Automatic Recall (AR) activation.

Bridged Night Number

CNAB is incompatible with Bridged Night Number (BNN).

Call Forwarding

CNAB or CNND, if activated, remain in effect for the remote station in the case that the call is forwarded. When the originator activates CNAB, the originator's name is not displayed on the remote station. However, the name and number of the forwarding station are displayed, if available, as part of RNAME (redirecting Name) and RDN (redirecting DN).

CNAB and CNND cannot be activated when programming Call Forwarding (CFW) features, but they can be activated for call forward validation.

Call Park

CNAB and CNND stay in effect for Call Park (CPK) recall and for unparking calls. For example, if subscriber A activates CNAB and calls B, the name is suppressed. If subscriber B parks A and another subscriber, C, unparks A, the name is suppressed on C's display. If C parks A and A remains parked, C receives call park notification, but A's name is suppressed.

Call Pickup

CNAB and CNND stay in effect for Call Pickup (CPU) calls. For example, if subscriber A activates CNAB and calls B, A's name is suppressed no matter which member of B's call pickup group picks up the call.

Calling Name Display Enhancements (CNAB & CNND) (continued)

If subscriber A activates CNND and calls B, A's name and number are delivered no matter which member of B's call pickup group picks up the call.

Calling Name/Number Delivery Blocking and Calling Number Blocking

A line within a customer group with option CNAB has access to both the Calling Name Number Blocking (CNNB) and option CNB. Like CNAB and CNND, the features are activated with access codes. Like CNND, CNNB blocks both name and number regardless of the group or line suppression status. CNNB does not toggle the suppression status.

Conference Calls

CNAB and CNND can be activated prior to adding another party to a conference call. The CNAB subscriber with conferencing call features flashes the switchhook, receives a dial tone, then dials the CNAB or CNND access code before dialing the next party to be added.

The suppression status of the first leg of a conference call does not affect subsequent legs. That is, CNAB or CNND must be activated individually for each party.

Multiple Appearance Directory Number

Primary or secondary Multiple Appearance Directory Number (MADN) group members can activate CNAB, suppressing the group name or member name.

Ring Again

CNAB and CNND stay in effect for Ring Again (RAG) calls. For example, subscriber A activates CNAB, calls B, receives a busy tone, then activates RAG. When subscriber A receives notification that B's line is no longer busy and retries the call, CNAB is still in effect for the call. It is not necessary to reactivate CNAB.

Speed Calling

CNAB and CNND can be activated before placing a speed call. For example, subscriber A can dial the CNAB access code, then press the speed call cell number, suppressing his or her name for the call.

Activation/deactivation by the end user

The following procedure shows how to activate both CNAB and CNND. The access codes are not given in this procedure because they are datafilled by the operating company in table IBNXLA. See "Datafill procedure for table IBNXLA (line and group options)" in this feature description for information on assigning access codes to the options.

Calling Name Display Enhancements (CNAB & CNND) (continued)

Activation/deactivation of Calling Name Display Enhancements (CNAB & CNND) by the end user

At your telephone

1. Go off-hook.

Response:

Subscriber receives dial tone.

2. Dial the CNAB or CNND access code.

Response:

Subscriber receives a special dial tone or an announcement. See “CNAB confirmation announcement datafill” in this feature description for more information on datafilling an announcement for CNAB.

Subscriber receives feature not allowed (FNAL) treatment if any of the following are true:

- the subscriber does not have the CNAB line or group option
- the subscriber dialed the wrong access code
- the subscriber has the CNAB line option and the subscriber's office does not have CNAB enabled
- Dial the DN.

Response:

The call terminates.

Note: The subscriber can activate the option CNDB before dialing the DN. The blocking always acts on the permanent suppression status, rather than on what was previously blocked. For example, given that both name and number are set to “suppress”, a subscriber can unblock both name and number suppression by dialing the CNAB access code followed by the CNDB access code.

Billing

Calling Name Display Enhancements (CNAB & CNND) does not affect billing.

Station Message Detail Recording

Calling Name Display Enhancements (CNAB & CNND) does not affect Station Message Detail Recording.

Calling Name Display Enhancements (CNAB & CNND) (continued)

Datafilling office parameters

Calling Name Display Enhancements (CNAB & CNND) does not affect office parameters.

Note: Option CNAB can be assigned to POTS lines through SERVORD if the office parameter RES_SO_SIMPLIFICATION in table OFCVAR has the field RES_AS_POTS set to Y. Adding CNAB changes the LCC from POTS to RES.

Datafill sequence

The following table lists the tables that require datafill to implement Calling Name Display Enhancements (CNAB & CNND). The tables are listed in the order in which they are to be datafilled.

Note: For information on datafilling table NETNAMES, table DNGRPS, and table DNATTRS for permanent suppression status for networks, groups, or lines, refer to "CLASS Line Office Data".

Datafill tables required for Calling Name Display Enhancements (CNAB & CNND)

Table	Purpose of table
RESOFC	Residential Line CLASS Office Data. This table contains data on CLASS features and enables CNAB for the office.
IBNLINES	IBN Line Assignments. This table contains line assignments for RES station numbers. Note: This table is datafilled through SERVORD; therefore, no datafill procedure or example is provided. Refer to "SERVORD" for an example of using SERVORD to datafill this table.
IBNXLA	IBN Translations. This table contains the data for the digit translations of calls from an MDC station, attendant console, incoming trunk group, or incoming side of a two-way MDC trunk group.

Calling Name Display Enhancements (CNAB & CNND) (continued)

The following table lists the tables that are required to assign CNAB to customer groups. The tables are listed in the order in which they should be datafilled.

Datafill tables required for Calling Name Display Enhancements (CNAB & CNND)

Table	Purpose of table
CUSTSTN	Customer Group Station Option. This table contains the station options assigned to each customer group.
IBNXLA	IBN Translations. This table contains the data for the digit translations of calls from an MDC station, attendant console, incoming trunk group, or incoming side of a two-way MDC trunk group.

Datafilling table RESOFC (line option)

Table RESOFC (Residential Line CLASS Office Data) contains data on CLASS features and enables CNAB for the office.

The following table shows the datafill specific to Calling Name Display Enhancements (CNAB & CNND) for table RESOFC (line option). Only those fields that apply directly to Calling Name Display Enhancements (CNAB & CNND) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table RESOFC (line option) (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	Key. This field consists of the subfield FEATNAME. This subfield is described below.
	FEATNAME	CNAB	Feature name. This subfield is the key to the table. It specifies the name of the feature. Enter CNAB.
ENABLED		Y or N	Enabled. This field specifies whether or not CNAB is enabled for the office. Enter Y or N.
FEATDATA		see subfields	Feature data. This field consists of the subfields ACCESS, FEATNAME and ANNCS. These subfields are described below.

Calling Name Display Enhancements (CNAB & CNND) (continued)

Datafilling table RESOFC (line option) (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	ACCESS	SUBSCR or UNIVER	Feature access. This subfield specifies how the feature is accessed. SUBSCR indicates subscription access only and UNIVER indicates universal access for all RES lines. Enter SUBSCR or UNIVER. Note: The value UNIVER is valid only when feature package NTXQ70AA, Universal Access to CLASS Features, is present in the office. Refer to "Universal Access to CLASS Features" for more information on universal access.
	FEATNAME	CNAMD	Feature name. This subfield specifies the feature name. Enter CNAMD.
	ANNCS	\$, CNABCONF, or CLLI	Announcements. This subfield specifies whether or not a confirmation announcement should be provided for successful activation of CNAB. Enter \$ to indicate that a special dial tone should be used. For announcements, the following refinements must be datafilled. The CNABANCC refinement specifies the announcement name associated with CNAB. Enter CNABCONF. The ANNCCLLI refinement specifies the announcement CLLI for the CNAB announcement. Enter a CLLI from table CLLI. See the "CNAB confirmation announcement datafill" section of this feature for sample announcement datafill.
FNALANN		see subfields	Feature not allowed announcement. This field consists of the subfields POTS_ACCESS and FNAL_CLLI. Refer to "Datafill procedure for table RESOFC" for "Feature not allowed announcement" for details on these subfields.

Datafill example for table RESOFC

The following example shows sample datafill for table RESOFC. In the example, option CNAB is enabled for the office, and a confirmation announcement is datafilled.

Calling Name Display Enhancements (CNAB & CNND) (continued)

MAP display example for table RESOFC

KEY	ENABLED	FEATDATA	
	FNALANN		
CNAB	Y	SUBSCR	CNAB (CNABCONF CNABANN)
	\$		

Datafilling table CUSTSTN (group option)

Table CUSTSTN (Customer Group Station Option) contains the station options assigned to each customer group. Table CUSTSTN should be datafilled if CNAB is assigned to a customer group. CNND is assigned to the group with CNAB, but subscribers require an access code to use CNND. See “Datafill procedure for table IBNXLA (line and group option)” in this feature description for information on setting up access codes.

The following table shows the datafill specific to Calling Name Display Enhancements (CNAB & CNND) for table CUSTSTN. Only those fields that apply directly to Calling Name Display Enhancements (CNAB & CNND) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table CUSTSTN

Field	Subfield or refinement	Entry	Explanation and action
CUSTNAME		1- to 16-character name	Customer name. This field specifies a customer group name. Enter a 1- to 16-character name.
OPTNAME		CNAB	Option name. This field specifies an option name. Enter CNAB.
OPTION		see subfield	Option. This field consists of the subfield OPTION. This subfield is described below.
	OPTION	CNAB	Option. This subfield specifies an option. Enter CNAB.

Datafill example for table CUSTSTN

The following example shows sample datafill for table CUSTSTN. In the example, option CNAB is assigned to the customer group RESGRP.

Calling Name Display Enhancements (CNAB & CNND) (continued)

MAP display example for table CUSTSTN

CUSTNAME	OPTNAMA	OPTION
RESGRP	CNAB	CNAB

Datafilling table IBNXLA (line and group options)

Table IBNXLA (IBN Translations) contains the data for the digit translations of calls from an MDC station, attendant console, incoming trunk group, or incoming side of a two-way MDC trunk group. The feature translator is used to datafill an access code that requires an asterisk (*) as the leading digit.

The following table shows the datafill specific to Calling Name Display Enhancements (CNAB & CNND) for table IBNXLA. Only those fields that apply directly to Calling Name Display Enhancements (CNAB & CNND) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table IBNXLA (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	Key. This field consists of the subfields XLANAME and DGLIDX. These subfields are described below and must be entered in succession.
	XLANAME	RXCFN	Translator name. This subfield specifies the 1- to 8-character name assigned to the translator as the access code. Enter RXCFN.
	DGLIDX	2-digit access code	Digilator index. This subfield specifies the digit or digits assigned to the index. Enter a 2-digit access code, such as 47.
RESULT		see subfields	Result. This field consists of the subfields TRSEL, ACR, SMDR, and FEATURE. These subfields are described below.
	TRSEL	FEAT	Translation selector. This subfield specifies the translation selector. Enter FEAT.

Calling Name Display Enhancements (CNAB & CNND) (continued)

Datafilling table IBNXLA (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	ACR	N	Account entry code. This subfield specifies whether or not the account entry code is required. Enter N.
	SMDR	N	Station message detail recording. This subfield specifies whether or not SMDR is required. Enter N.
	FEATURE	CNAB or CNND	Feature. This subfield specifies the name of the feature to which the access code is assigned. Enter CNAB for the CNAB activation access code. Enter CNND for the CNND activation access code.

Datafill example for table IBNXLA

The following example shows sample datafill for table IBNXLA. In the example, the CNAB activation access code is 47, and the CNND activation access code is 49.

Note: BELLCORE has not recommended access codes.

MAP display example for table IBNXLA

	KEY	RESULT
RXCFN	47	FEAT N N N CNAB
RXCFN	49	FEAT N N N CNND

Translation verification tools

The following example shows the output from the TRAVER command when it is used to verify Calling Name Display Enhancements (CNAB & CNND) . The example simulates a subscriber at DN 621-5004 going off-hook and dialing 47, the CNAB activation code.

Calling Name Display Enhancements (CNAB & CNND) (continued)

TRAVER output example for Calling Name Display Enhancements (CNAB & CNND)

```
>TRAVER L 6215004 'B47' B
TABLE IBNLINES
HOST 00 0 09 20 0 DT STN RES 6215004 0 $
TABLE LINEATTR
0 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC
LATA1 0 NIL NIL 00 Y RESGRP 0 2
LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE DNATTRS
613 621 5004
( PUBLIC ( NONUNIQUE ) $ ) $ $
TABLE DNTRPS
TUPLE NOT FOUND
TABLE NCOS
RESGRP 2 0 0 RNCOS2 9 ( XLAS RXCMN2 NXLA RES ) $
TABLE DIGCOL
RES SPECIFIED: RES DIGIT COLLECTION
NCOS FEAT XLA NAME IS NIL. GO TO NEXT XLA NAME.
TABLE IBNXLA: XLANAME RXCFN
RXCFN 47 FEAT N N N CNAB

+++ TRAVER: SUCCESSFUL CALL TRACE +++
```

Note: TRAVER does not follow translations further than table IBNXLA because TRAVER does not support CNAB.

SERVORD

IBNLINES is datafilled by SERVORD. Table IBNLINES (IBN Line Assignments) contains line assignments for RES station numbers. Table IBNLINES should be datafilled if the CNAB feature is assigned to subscriber lines. If feature package NTXE46AB is in the office, CNND is available to subscribers as well.

SERVORD is used to assign options SUPPRESS and CNAB to lines. CNAB can be assigned to groups through the table editor only; SERVORD cannot be used.

Calling Name Display Enhancements (CNAB & CNND) (continued)

SERVORD limitations and restrictions

The following SERVORD limitations and restrictions apply to Calling Name Display Enhancements (CNAB & CNND) :

- CNAB cannot be assigned to a line with either of the following options:
 - Automatic Line (AUL)
 - Denied Origination (DOR)

SERVORD prompts

The following table shows the SERVORD prompts used to assign Calling Name Display Enhancements (CNAB & CNND) option SUPPRESS to an existing line.

SERVORD prompts for Calling Name Display Enhancements (CNAB & CNND)

Prompt	Valid input	Explanation
OPTION	SUPPRESS	Assigns SUPPRESS to a line.
SUPPRES S_DN	Y or N	Specifies whether the DN is suppressed. Enter Y to suppress the DN.
SUPPRES S_NAME	Y or N	Specifies whether the name is suppressed. Enter Y to suppress the name.

The following table shows the service order prompt used to assign option CNAB to a line.

SERVORD prompts for Calling Name Display Enhancements (CNAB & CNND)

Prompt	Valid input	Explanation
OPTION	CNAB	Assigns CNAB to a line.
Note: Option CNAB can be assigned to POTS lines through SERVORD if the office parameter RES_SO_SIMPLIFICATION in table OFCVAR has field RES_AS_POTS set to Y. Adding CNAB changes the LCC from POTS to RES.		

SERVORD example for adding Calling Name Display Enhancements (CNAB & CNND)

The following SERVORD example shows how Calling Name Display Enhancements (CNAB & CNND) option SUPPRESS is added to a line using the ADO command.

Calling Name Display Enhancements (CNAB & CNND) (continued)

SERVORD example for setting up option SUPPRESS using ADO in prompt mode

```
>SERVORD
SO:
> ADO
SONUMBER:  NOW 91 11 11 AM
>
DN_OR_LEN:
> 6211233
OPTION:
> SUPPRESS
NETNAME:
> PUBLIC
NETNAME:
> $
SUPPRESS_DN:
> Y
SUPPRESS_NAME:
> Y
OPTION:
> $
COMMAND AS ENTERED:
ADO NOW 91 11 11 AM 6211233 ( SUPPRESS ( PUBLIC ) $ Y Y
) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
> Y
```

SERVORD example for Calling Name Display Enhancements (CNAB & CNND) in no-prompt mode

```
> ADO $ 6211233 SUPPRESS PUBLIC $ Y Y $ Y
```

The following example shows how option CNAB is added to a line using the ADO command.

Calling Name Display Enhancements (CNAB & CNND) (end)

SERVORD example for adding Calling Name Display Enhancements (CNAB & CNND) using ADO in prompt mode

```
>SERVORD
SO:
> ADO
SONUMBER:  NOW 91 11 11 AM
>
DN_OR_LEN:
> 6211233
OPTION:
> CNAB
OPTION:
> $
COMMAND AS ENTERED:
ADO NOW 91 11 11 AM 6211233 ( CNAB ) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>Y
```

SERVORD example for adding Calling Name Display Enhancements (CNAB & CNND) in no-prompt mode

```
>ADO $ 6211233 CNAB $ Y
```

Calling Name TR Compliancy-Residential

Ordering codes

Functional group ordering code: RES00003

Functionality ordering code: RES00023

Release applicability

BCS36 and up

Prerequisites

To operate, Calling Name TR Compliancy-Residential has the following prerequisites:

- BAS Generic, BAS00003
- MDC Minimum, MDC00001
- MDC Standard, MDC00003
- RES Service Enablers, RES00006

Description

The custom local area signaling service (CLASS) feature Calling Name Delivery (CNAMD) is a terminating feature that allows the called party, with the CNAMD line option to receive the calling party name, the date, and the time during the first silent interval in the ringing cycle. The called party must be a conventional line with the required customer premises equipment (CPE) connected to receive the calling name, date, and time information.

Note: The information that is actually displayed on the CPE is dependent on the CPE terminal.

Calling Name TR Compliancy-Residential implements the call processing and application portion of the residential CNAMD architecture. The residential centralized name database architecture is used to obtain the calling name information for residential lines. The architecture uses the transaction capability application part (TCAP) interfaces provided by the feature CLASS: TCAP For Calling Name Delivery, AN0232. The TCAP is used to retrieve calling name information from a centralized database located at a service control point (SCP). The terminating switch retrieves the calling party name and the privacy status from the centralized database, based on the ten-digit calling party directory number (DN), and delivers it to the CNAMD subscriber. The residential subscribers in this feature refers to conventional lines with the Residential Enhanced Services (RES) line class code (LCC).

Calling Name TR Compliancy-Residential (continued)

Terminating TCAP queries for calling name information occur for both intraswitch and interswitch calls. For nodal calls, the ten-digit DN is obtained from the calling party line data on the switch. For interswitch calls, the ten-digit DN is obtained from the calling party number parameter of the integrated services digital network (ISDN) user part (ISUP) initial address message (IAM). Transporting calling name information for inter-office calls is dependent on Signaling System #7 (SS#7) connectivity among the originating and terminating offices.

The residential centralized name database is expected to provide a name of up to (and including) 15 characters in length as well as a permanent privacy indicator. The TCAP query with permission package provides a ten-digit North American numbering plan (NANP) directory number for use by the database to look up the calling name information. The information retrieved by the database is passed back to the terminating switch in a TCAP response package.

Calling identity delivery blocking features and the permanent privacy status of the calling line can alter the calling name information delivered to the CPE. An out-of-area (O) indication is sent to the CPE if the calling name is unavailable. A private (P) indication is sent to the CPE if the calling name information is determined to be blocked. The date and time of the call are also sent to the subscriber's CPE in conjunction with any calling name information. Throughout this document, references to calling name information imply that the name characters or an *O* or a *P* indication are sent to the called CPE.

Background information

In BCS30, the feature CLASS: Calling Name Delivery, AG1726 provides a proprietary means of delivering calling name information to residential subscribers. In BCS33, the feature CLASS: Calling Name Enhancements, AF3020 provides name blocking capabilities and enhancements to the multiple data message. Some of the functionality provided by AG1726 and AF3020 is used by the feature CLASS: Calling Name TR Compliancy-Residential and, therefore, it is assumed the reader has a working knowledge of both activities.

The TR-NWT-001188 describes CNAMD for the residential, the basic business group (BBG) and the multilocation business group (MBG) environments. This activity addresses only the compliancy issues for the residential centralized name database architecture described in the TR-NWT-001188.

Calling Name TR Compliancy-Residential (continued)

Office level control for CNAMD

The feature CLASS: Calling Name Delivery, AG1726 provides the office level control for the proprietary CNAMD. This functionality is also used for TCAP CNAMD.

CNAMD may be enabled or disabled for the entire office through table RESOFC. The CNAMD tuple is automatically added to table RESOFC when package NTXE52AA is present in the office. Field ENABLED must be set to Y, and field ACCESS must be datafilled as SUBSCR (subscribers only) for CNAMD to operate in the office. Refer to feature AG1726 for more information on office level control for CNAMD.

Line level control for CNAMD

Feature AG1726 provides the datafill and service order procedures for the proprietary CNAMD. (The following information is for background.) Refer to AG1726 for a detailed description of line level control for CNAMD.

When the CNAMD line option is assigned to the subscriber's line in an active status, the name of the calling party and the current time and date are delivered to the CPE. The line option CNAMD is classified as a RES option. It is assigned through the Service Order System (SERVORD) and appears as a valid line option in table RESFEAT (residential line feature).

When a line assigned CNAMD with subscription usage sensitive pricing (SUSP) active receives an incoming call, an associated calling information delivery automatic message accounting (AMA) register is incremented. If calling information is available, the AVAIL COUNT is incremented; if calling information is unavailable, the UNAVAIL COUNT is incremented. Refer to the "Billing" section in this module for additional information.

CPE signaling

Features AG1726 and AF3020 provide the signaling to the CPE for proprietary CNAMD. This same CPE signaling is also used by TCAP CNAMD. The delivery of name information to a subscriber's CPE requires the use of the multiple data message format. The multiple data message has a specific field to indicate the message is in multiple data message format. Following the message type, the multiple data message consists of the length of the data in the parameter, followed by the data bytes of the parameter. Refer to features AG1726 and AF3020 for additional details.

CNAMD architecture control

The DMS switch continues to support the proprietary name architecture for the residential and business group environment. However, with the implementation of TCAP CNAMD, the CNAMD line option does not imply a

Calling Name TR Compliancy-Residential (continued)

particular architecture, since the line option is used by both name architectures. This feature introduces a new method of determining which name architecture is in effect.

In BCS36 the TCAP CNAMD architecture supports conventional lines on the DMS switch that have a RES LCC. RES lines are associated with a customer group, and the CNAMD architectural control is on a customer group basis. A new option, Translations Capability Applications Part Name (TCAPNM), is added to the option field of existing table CUSTNTWK (customer network). When option TCAPNM is datafilled, RES lines in the associated customer group obtain calling name information using the TCAP CNAMD architecture.

The absence of option TCAPNM in table CUSTNTWK, for a particular customer group, allows the calling name information to be obtained using the proprietary name architecture for all line types that support this architecture. The proprietary name architecture is therefore the default name architecture and is used if option TCAPNM is not datafilled for a customer group. Non-RES LCCs, in which name display applies, can only get calling name information using the proprietary name architecture. Lines with non-RES LCCs in a customer group that have option TCAPNM datafilled in table CUSTNTWK default to the proprietary name architecture to obtain calling name information. If a name is unavailable, an out-of-area (O) indication is sent to the CPE.

The DMS switch allows calling information to be delivered to a subscriber with calling number delivery (CND) or CNAMD on a logical network basis. The existing option calling line identification (CLID), in table CUSTNTWK (customer group network), is used to determine whether a subscriber receives calling information on an intragroup (INTRAGRP), on-network (ONNET), or off-network (OFFNET) basis. TCAP CNAMD follows the same requirements currently in place for CND and proprietary CNAMD for determining whether calling information is allowed to be delivered. If it is determined that calling information is not allowed to be sent based on the logical network and CLID datafill, then an out-of-area (O) indication is sent to the CPE for calling name and number information. The date and time continue to be delivered.

Calling name suppression

The TCAP CNAMD is suppressed by the following levels:

- network level
- subscriber level
- call level

Calling Name TR Compliancy-Residential (continued)

Network level suppression is controlled in table NETNAMES (internal logical network names) through option SUPPRESS. This form of suppression overrides for each call blocking features. When option SUPPRESS is added, the user must specify whether the name should be suppressed on an intraoffice or interoffice basis. If option SUPPRESS is added with field EXTRNLNM (external suppression of name) set to Y, all names for interoffice calls over that network are marked as private. Likewise, if field INTRNLNM (internal suppression of name) is set to Y, all names for intraoffice calls are marked as private. Refer to feature AF3020, for more information about the network level suppression for name.

For TCAP CNAMD, the permanent privacy status for a subscriber is stored against the ten-digit DN in the name database. It is a preselected value for a calling party's name presentation status. The permanent privacy status may have a value of private or public. When the name database is queried, if the name is available, the permanent privacy status for the name is returned along with the name characters.

The SUPPRESS_NAME field in the SUPPRESS line option, used by the proprietary CNAMD method, has no effect in determining the suppression status of the name for the TCAP CNAMD method. Only the suppression status in the name database is used for TCAP CNAMD.

TCAP CNAMD uses the same name blocking features as proprietary CNAMD. When package NTXQ29AA is present in the office, the calling name delivery blocking (CNAB) feature is available. The CNAB line option is classified as a RES option. CNAB is assigned through SERVORD and appears as a valid line option in table IBNLINES (integrated business network line assignment). The CNAB feature allows the subscriber to control the delivery of the name for each originated call. Invoking the CNAB feature toggles the permanent privacy status of the name for the current call. For example, a subscriber with a permanent privacy status of public may block the name for an individual call by activating the CNAB feature. In this case, a private indicator is delivered to the CPE instead of the calling name.

The intraswitch or interswitch suppression status in table NETNAMES takes precedence over CNAB if the option SUPPRESS for the name is datafilled as Y. That is, a subscriber whose permanent privacy status is private who activates CNAB does not result in having the name unblocked if the option SUPPRESS for name is datafilled as Y.

CNAB may be enabled or disabled for the entire office through table RESOFC. The CNAB tuple is automatically added to table RESOFC when package NTXQ29AA is present in the office. Field ENABLED in table RESOFC must be set to Y for CNAB to operate in the office. Field ACCESS can be datafilled

Calling Name TR Compliancy-Residential (continued)

as SUBSCR or UNIVER (all RES lines). To datafill field ACCESS as UNIVER, package NTXQ70AA must be present in the office. Refer to feature AF3020 for more information on office level control for CNAB.

Calling identity delivery and suppression capability is provided on the DMS switch by way of the calling name and number delivery blocking (CNNB) and the calling name and number delivery (CNND) feature access codes. When package NTXE46AA is present in the office, the CNNB and CNND features are available. Any line with the CNAB or calling number delivery blocking (CNDB) line option or customer group option is given the ability to activate CNNB or CNND.

The CNNB and CNND features allow the subscriber to override the permanent privacy status and to make the name and the number private or public for the current call. Activating CNNB for a particular call results in a private indicator being delivered to the CPE regardless of the permanent privacy status of the name. Likewise, activating the CNND feature for a particular call causes the name and number, if available, to be delivered to the CPE.

The intraswitch or interswitch suppression status in table NETNAMES takes precedence over CNND if the option SUPPRESS for the name is datafilled as Y. Therefore, a subscriber's name and number are not delivered if CNND is activated and the option SUPPRESS for the name datafilled as Y.

A subscriber may activate CNAB, CNNB, and CNND through operating company-assignable feature access codes. The features CNAB, CNNB, and CNND are datafilled in table IBNXL (integrated business network translations). Refer to feature AF3020 for more information on datafilling feature activation codes for CNAB and CIDS.

Neither CNAB, CNNB, nor CNND has an effect on subsequent calls. A subscriber whose name has a permanent status of private, for example, who activates CNAB to unblock the name for the current call has the private permanent status reinstated for subsequent calls.

The CNAB, CNNB, and CNND feature access codes may be dialed in succession. The last feature that affected the name information takes precedence. In addition, the name blocking/delivery features always act on the permanent privacy status and not on what was previously blocked/displayed. For example, dialing CNND followed by CNAB results in the toggling of the permanent privacy status for the name and the delivery of the DN.

Intraswitch calls and blocking features

If the name is blocked at the network level or if the user dials the CNNB access code on an intraoffice call, a query to the name database is not made. Because

Calling Name TR Compliancy-Residential (continued)

both of these methods override the permanent privacy status, a query for the name and permanent privacy status is not required. In this case, a private indicator is delivered to the CPE for the name.

If the user dials the CNAB or CNND feature access codes or does not dial a blocking feature access code on an intraoffice call, a query is made to the name database. If the user dials the CNAB feature access code, a query is made to the database and the permanent privacy status retrieved from the database is toggled. If the user dials the CNND feature access code, a query is made to the name database and the name is delivered to the CPE, if one is available, regardless of the permanent privacy status. Finally, if the user does not dial a name blocking or display feature access code, a query to the name database is made. If the name is available and has a status of public, the name is delivered to the CPE. If the permanent privacy status is private, a private indicator is delivered. Otherwise, an out-of-area indicator is delivered to the CPE.

Block queries for private numbers

A new office parameter, TCAPNM_BLK_QUERY_PRIV_DNS, is added by the feature Calling Name TR Compliancy-Residential. This parameter is datafilled in table OFCVAR (office variable) and controls whether the name database is queried when

- the calling party does not activate CNAB, CNNB, CNND, or network name suppression does not apply
- the calling party number has a presentation restricted status

When the above two conditions are met, if the office parameter TCAPNM_BLK_QUERY_PRIV_DNS is datafilled as Y, the name database is not queried and a private indicator is delivered to the CPE for the calling name. (Note that when CNNB is activated, a query is never launched regardless of this parameter.) If the office parameter is datafilled as N, queries to the name database are not dependent on the calling party number's presentation status. The default for this parameter is Y.

Interswitch calls

To support TCAP query on interswitch calls, a new optional parameter is created for the ISDN ISUP IAM. The generic name (GN) parameter provides the terminating switch with information to determine if a name should display.

The GN parameter is included in the incoming ISUP IAM only if the originator of the call activates a feature that affects the availability of the name for display purposes. If no GN parameter is included in the IAM, the originator did not activate any call features for each call that affect display information.

Calling Name TR Compliancy-Residential (continued)

Originating side of the call

The following table shows how the GN parameter is initialized for originating calls when one of the display or blocking features is activated. It also shows how the GN parameter is initialized when the option SUPPRESS is datafilled in table NETNAMES for the originating lines network.

ISUP GN parameter initialization on origination

	Type of name subfield	Availability	Presentation subfield	Characters subfield
CNAB	calling name (001)	name available (0)	blocking toggle (10)	none
CNNB	calling name (001)	name available (0)	restricted (01)	none
CNND	calling name (001)	name available (0)	allowed (00)	none
Network suppression	calling name (001)	name available (0)	restricted (01)	none

For example, if the originating line dialed the CNAB access code prior to making a call, a GN parameter is included in the IAM with the subfield type of name set to calling name, the subfield availability set to name available, and the subfield presentation set to blocking toggle.

If a GN parameter is necessary, the only valid value for type of name is calling name. Also, the character subfield is not used, thus no data is placed in this area.

No GN parameter is included in the IAM unless one of the above features was dialed prior to making a call, or option SUPPRESS is assigned to the originating line network.

The originating side of the call is not able to determine if the name information is obtained by a TCAP query or by the proprietary method. If a GN parameter is necessary, it is added to the IAM. In the event an address complete message is received requesting calling name information, the message is processed normally to continue support of the proprietary method. If a GN parameter is necessary, it is included in the IAM even when the TCAP for CND package, NTXR95AA, is not present.

Calling Name TR Compliancy-Residential (continued)

Terminating side of the call

On receipt of an incoming IAM for a call destined to a line, it is determined if the terminating line is to receive name display. If the line is not to receive the name, the information in the IAM is saved for later use (if necessary), no TCAP query is performed, and the call terminates normally.

If the terminating line is to receive name information, but the line is busy, no TCAP query is performed and the call terminates normally. Although the proprietary CNAMD architecture supports the spontaneous call waiting identification (SCWID) feature, TCAP CNAMD does not support SCWID. Reference the "Feature interactions" section for more information on SCWID.

If a call is terminating to a line that is to receive name display information, table CUSTNTWK (customer group network) is referenced to determine if the call requires a TCAP query. If the option TCAPNM is assigned to the called line customer group, and the called line is one with a RES LCC, then a TCAP query is required based on information in the IAM. If the customer group of the called line does not have the option TCAPNM assigned in table CUSTNTWK, or the called line does not have a RES LCC, then the name information is obtained using the proprietary name architecture.

The following table shows the information that is delivered to the called lines CPE based on the various call scenarios. The information assumes the called line customer group has the option TCAPNM assigned in table CUSTNTWK, and the line is assigned the CNAMD feature. The information actually displayed depends on the CPE terminal.

Name information delivered to the called CPE (Sheet 1 of 2)

Feature activated	Type of name	Availability	Presentation	TCAP response	Information sent to CPE
none	no GN parameter			restricted	private
none	no GN parameter			allowed	name
none	invalid GN parameter			allowed	name
none	invalid GN parameter			restricted	private
none	name not available			no query	out-of-area

Calling Name TR Compliancy-Residential (continued)

Name information delivered to the called CPE (Sheet 2 of 2)

Feature activated	Type of name	Availability	Presentation	TCAP response	Information sent to CPE
CNND	calling name	available	allowed	allowed	name
CNND	calling name	available	allowed	restricted	name
CNAB	calling name	available	blocking toggle	allowed	private
CNAB	calling name	available	blocking toggle	private	name
CNNB	calling name	available	restricted	no query	private

InterLATA name query control

An office parameter in table OFCVAR (office variable) enables the operating company to decide if inter-LATA calls should require a TCAP query. The parameter TCAPNM_INTERLATA_QUERY has two possible values, Y and N. When set to Y, both intra-LATA and inter-LATA calls perform TCAP queries when necessary. When the parameter is set to N, only intra-LATA calls perform TCAP queries. The default data for this parameter is N.

To determine if a call is inter-LATA, the ten-digit calling party number must be available in the IAM, and the nature of address in the calling party number parameter must indicate a unique or non-unique national number. If the above is true, the LATA (local access and transport area) of the called line (obtained from table LINEATTR (line attribute) and the calling number are used to index into table LATAXLA. The tuple obtained from the table specifies if the call is an inter-LATA or intra-LATA call.

If the parameter TCAPNM_INTERLATA_QUERY is set to N and the call is determined to be inter-LATA, no TCAP query is performed, and an out-of-area indicator is sent to the called user's CPE. In the event table LATAXLA is not present in the switch, the parameter is not referenced, and a TCAP query is performed if necessary (based on the other criteria). If table LATAXLA is present, but the desired tuple does not exist in the table, the call is classified as intra-LATA, and a TCAP query is performed if necessary.

Query and setup ISUP name methods

The capability to obtain the originating caller's name with a TCAP query method is added with Calling Name TR Compliancy-Residential. The proprietary method used to obtain the name prior to this activity continues to be supported. (The switch is set up to receive name information using the TCAP method or the proprietary method.) If the option TCAPNM is datafilled in table CUSTNTWK (on the terminating side of the call) for the called line

Calling Name TR Compliancy-Residential (continued)

customer group, the TCAP method is used. If the option TCAPNM is not datafilled in table CUSTNTWK, the tuple associated with the called line network is referenced in table NETNAMES to determine the proprietary method to be used.

On the originating side of the call, when the ISUP IAM is created, all the necessary parameters are included to support the proprietary architecture. Then, if necessary, the GN parameter is added to the IAM. This necessity is based on the criteria mentioned previously in the description of the GN parameter.

Transaction capabilities application part

CNAM uses the TCAP layer of the SS#7 protocol to retrieve the name information from the centralized residence name database. The CNAM TCAP interface is provided by the feature CLASS: TCAP for CNAM, AN0232. For a detailed description of TCAP for CND refer to feature AN0232.

The TCAP query with permission package and the TCAP response package are the only two packages used for CNAM. The TCAP QWP package is sent from the terminating switch to the centralized residence name database to request the name and the permanent privacy status associated with the name. The ten-digit DN of the calling subscriber is included in the service key parameter of the TCAP QWP package. For intraswitch calls, the ten-digit DN is obtained directly from the originating subscriber. For interswitch calls, the ten-digit DN is obtained from the calling party number parameter in the ISUP IAM. The centralized residential name database performs the name lookup for the ten-digit DN included in the service key parameter and returns the name and the permanent privacy indicator associated with the name in a TCAP response package. Feature AN0232 provides the capability to encode and send the TCAP QWP package and the capability to receive and decode the TCAP response package. Refer to AN0232 for complete details.

Automatic call gapping procedures

When the SCP serving the centralized residence name database is overloaded, it instructs the service switching point (SSP) to reduce the number of CNAM TCAP database queries. The SCP instructs the SSP by including an automatic call gapping (ACG) request in the TCAP response package. The ACG request is included whenever ACG controls are put into effect or removed at the SSP. Feature AN0232 provides the six-digit SCP overload control procedures. A maximum of 64 simultaneous 6-digit SCP overload controls are supported. The list of active six-digit SCP overload controls is internally stored in the DMS switch.

Calling Name TR Compliancy-Residential (continued)

Transaction ID management

Feature AN0232 provides transaction ID management for CNAMD through the existing table TCAPTRID (transaction identifier interface). The TCAP application name, CNAMD, is added as a valid application in this table. The total number of transaction IDs is datafilled for CNAMD in table TCAPTRID. For a detailed description of the transaction ID for CNAMD, refer to feature AN0232.

Note: Table TCAPTRID is obsolete. See Data Schema Reference Manual for details.

TCAP timing

When a request is made for TCAP to initiate a query for calling name information, a name delivery timer is set to determine the length of time (in seconds) the call process waits for the TCAP response. The value of the timer is assigned through the customer group option NDTIMOUT (name delivery timeout). Option NDTIMOUT is datafilled in table CUSTHEAD. Prior to Calling Name TR Compliancy-Residential, the value of the timer was 1 to 3 s. The range of this option is extended to 1 to 6 s by this feature. If option NDTIMOUT is not datafilled in table CUSTHEAD, then a default value of 3 s is used. Refer to "Datafilling procedures" for table CUSTHEAD in this feature for details.

Option NDTIMOUT continues to be used for the proprietary calling name architecture provided by feature AG1726. The default value for the proprietary name architecture is also 3 s and the new range (1 to 6 s) applies.

Ringling supervision

When the TCAP CNAMD query is sent, audible ringling applies to the originator, and for ISUP, the ACM is sent to the originating office. Nil ringling applies to the terminator until the TCAP response is received or the Tname timer times out. These events occur simultaneously at the time the TCAP query is sent.

Once the TCAP response is received or the name delivery timer expires, the terminating line resumes applying power ringling to the line. Because the display is dependent on ringling, power ringling is not applied until after the response is received or the timeout occurs.

Operation

The TCAP contains no operating procedures.

Calling Name TR Compliancy-Residential (continued)

Translations table flow

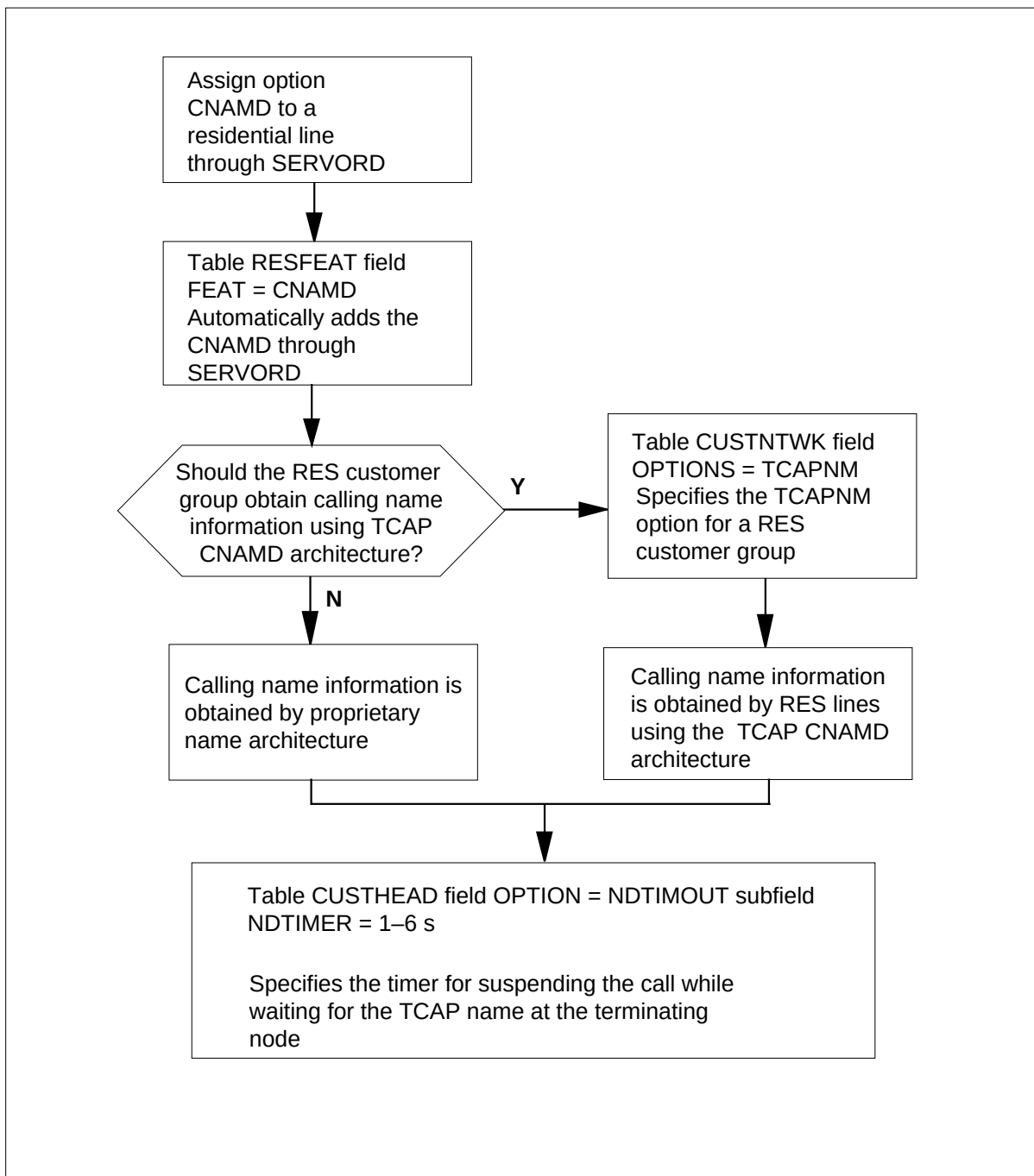
The Calling Name TR Compliancy-Residential translations tables are described in the following list:

- Table RESFEAT The residential line feature table specifies the assignment of the CLASS features for residential lines.
- Table CUSTNTWK The customer group network table specifies a network name associated with a customer group and provides the capability to assign or deny calling features to a customer group.
- Table CUSTHEAD The customer group head table specifies the names for the blocks of data assigned in table IBNXLA for translation of digits and options associated with a customer group.

The Calling Name TR Compliancy-Residential translation process is shown in the following flowchart.

Calling Name TR Compliancy-Residential (continued)

Table flow for Calling Name TR Compliancy-Residential



Calling Name TR Compliancy-Residential (continued)

The following table lists the datafill content used in the flowchart. LEN for RES subscriber is 00 0 11 20.

Datafill example for Calling Name TR Compliancy-Residential

Datafill table	Example data
CUSTHEAD	RESGRP RES1XLA RES NIL (NDTIMOUT 4) \$
CUSTNTWK	RESGRP PUBLIC 0 \$ (CLID OFFNET) (TCAPNM) \$
RESFEAT	HOST 00 0 11 20 0 CNAMD CNAMD AMA ACT 3 2 HOST 00 0 11 20 0 CND CND AMA ACT 1 1

Limitations and restrictions

The following limitations and restrictions apply to Calling Name TR Compliancy-Residential:

- Only RES LCCs support TCAP queries for calling name information.
- Calling name information is not delivered during the ringback of ACBAR (Automatic Callback/ Automatic Recall) activations.
- Calling name information is not delivered during call waiting ringback.
- Calling name information is not delivered to the ringing party of a call transfer or three way calling (3WC) if the TCAP query is pending when the 3WC is established or the call is transferred.
- Calling name information is not delivered to the RES members of a multiple appearance directory number (MADN) extension bridging (EXB) group even if TCAPNM applies to the customer group.
- Feature AN0323 is primarily an MDC (Meridian Digital Centrex) environment feature and is not supported on RES lines in which TCAP calling name applies.
- The BBG and MBG do not provide name delivery functionality referenced in TR 001188 relating specifically to BBGs and MBGs. This norm includes the residential centralized database architecture, other architectural options mentioned, operational measurements (OM), options for each group, and feature interactions specific to BBG or MBG lines.
- This feature is not compatible with Attendant Consoles. If an Attendant Console calls a user with CND, DDN and / or CNAMB, then unknown number and / or unknown name will be displayed instead of the DN of the attendant console.

Calling Name TR Compliancy-Residential (continued)

Interactions

The following paragraphs describe the interactions between Calling Name TR Compliancy-Residential and other functionalities.

Call Waiting

The Call Waiting feature does not support the ability to send calling party information to an off-hook line. TCAP calling name is not delivered on call waiting rerings.

Multiparty lines

CNAMD cannot be assigned to multiparty lines. The calling name from the origination of a multiparty line is the name in the centralized database associated with the DN used for the particular call.

Call Forwarding

If a base party that has CNAMD active forwards calls to a remote DN, the base party does not receive calling name information. If the remote party has CNAMD active, the calling name information associated with the originating party is delivered to the remote party's CPE. For all call forwarding scenarios that forward over ISUP, the calling name is not sent in the IAM. The terminating office is responsible for querying the database for calling name information based on the calling party number in the ISUP IAM.

Call Forwarding Don't Answer

A CNAMD subscriber with the Call Forwarding Don't Answer (CFDA) feature active receives calling name information because termination and ringing occurs for CFDA calls. When the call forwards to the remote party, calling name information associated with the originator is delivered to the remote party if CNAMD is active on the line.

Call Forwarding Busy Line

A CNAMD subscriber with the Call Forward Busy Line (CFBL) feature active does not receive calling party information. Calling name information cannot occur on a line in an off-hook state. When the call forwards to the remote party, calling name information associated with the originator is delivered to the remote party if CNAMD is active on the line.

Selective Call Forwarding

For a CNAMD subscriber with the Selective Call Forwarding (SCF) feature, the interactions are the same as call forwarding if SCF applies to the call and the call is forwarded. If SCF does not apply to the call, the call terminates to the CNAMD subscriber and calling name information is delivered.

Calling Name TR Compliancy-Residential (continued)

Distinctive Ringing/Call Waiting

A CNAMD subscriber with the Distinctive Ringing/Call Waiting feature receives calling name information for those calls in which distinctive ringing does not apply. If the Distinctive Ringing/Call Waiting feature does apply to the call (the DN is on the subscribers active list), calling name information can only be delivered if the silent interval of the distinctive ring pattern is equal to or greater than 3 s.

The interactions for CNAMD and Distinctive Ringing/Call Waiting features are the same as described in the call waiting interaction. Calling name information cannot be delivered to an off-hook line.

Teen Service

A CNAMD subscriber with the Teen Service feature receives calling name information for those calls if the silent interval of the ring pattern used is equal to or greater than 3 s.

Enhanced Teen Service

A call that originates from an enhanced secondary directory number (ESDN) delivers the number and database name that correspond to the ESDN. Calls from the primary number continue to deliver the number and name of the primary number.

ADDRESS option

The ADDRESS option in table DNGRPS can be used to deliver a different number for a range of DNs. The database name that corresponds to this ADDRESS number is delivered along with the number.

Automatic Callback and Automatic Recall

The calling name information is not supported during ringback of an Automatic Call Back or Automatic Recall feature activation.

Selective Call Acceptance

Calling name information is delivered to the CNAMD subscriber if the Selective Call Acceptance feature applies and the call is allowed to terminate. For those calls that are not accepted, termination to the CNAMD subscriber does not occur; therefore, calling name information is not delivered.

Selective Call Rejection

Calling name information is delivered to the CNAMD subscriber if the Selective Call Rejection feature does not apply to the call and the call is allowed to terminate. For those calls that are rejected, termination to the CNAMD subscriber does not occur; therefore, calling name information is not delivered.

Calling Name TR Compliancy-Residential (continued)

Calling Number Delivery and Dialable Directory Number

If Calling Number Delivery and CNAMD features are both assigned to a line, calling number and calling name information is delivered to the CPE using the multiple data message format and CPE interface procedures. If Calling Number Delivery and CNAMD are both assigned as usage-sensitive, the new AMA procedures described in the "Billing" section. The same interactions apply to dialable directory number (DDN).

The following interactions are specific to TCAP CNAMD. These interactions are different from those for the proprietary name architecture.

Three Way Calling and Call Transfer

In a 3WC or call transfer, the called party with CNAMD active receives calling name information if the TCAP query response is received prior to the call being transferred or 3WC being established. The following call scenarios describe the interaction:

- Party A has 3WC; party B and party C are RES lines and have CNAMD active. Party A calls party B, and A's calling name information is delivered to B. After B answers, A flashes to initiate 3WC and calls party C. Party A's calling name information is delivered to C if the TCAP response is received prior to A performing any other action. If, prior to receiving the TCAP response, Party A flashes to establish a 3WC or exits to complete a call transfer, an out-of-area indication is delivered for calling party name. Other display information, such as calling number, is delivered if applicable.
- Party B has 3WC; party B and party C are RES lines and have CNAMD active. Party A calls party B, and A's calling name information is delivered to B. After B answers, B flashes to initiate a 3WC and calls C. Party B's calling name information is delivered to C if the TCAP response is received prior to B performing any other actions. If, prior to receiving the TCAP response, party B flashes to establish a 3WC or exits to complete a call transfer, an out-of-area indication is delivered for calling party name. Other display information, such as calling number, is delivered if applicable.

If calling name is to be provided using the proprietary method, the name is available at the time the call is made and is delivered at all times.

Note: The interactions previously described are limited to the nodal case and do not include network calls, since a 3WC is not initiated by a trunk.

Calling Name TR Compliancy-Residential (continued)

Spontaneous Call Waiting Identification

The calling name is provided to a user in an off-hook state when the called line subscribes to SCWID. This capability is supported using the proprietary methods, but it is not supported using the TCAP method.

SCWID with Disposition

DSCWID (SCWID with Disposition) does not support the TCAP method.

Anonymous Caller Rejection

The status of the calling name information is not used to determine the anonymity of the calling party on terminations to lines in a customer group that has option TCAPNM datafilled in table CUSTNTWK. The calling number only is used to determine the anonymity of the calling party. The proprietary method for name delivery, the Anonymous Caller Rejection (ACRJ) feature, continues to use both the name and number information to determine anonymity.

Call Logging

Calling name is not logged on call logging subscriber lines for the CNAMD architecture. The privacy indicator is used for calls that have the name blocked. The blocked calls like the proprietary method over the network are shown as unknown name. Calling name information from the database continues to display to a CNAMD subscriber on termination even with the Call Logging feature on the line.

Multiple Appearance Directory Number Groups

MADN EXB is the only MADN type that supports RES lines and therefore interacts with TCAP CNAMD. MADN groups consist of a number of lines with the same DN. The members of a MADN EXB are in the same customer group. The MADN members are not necessarily the same type of line; that is, one member could be a residential line, and another could be a business line.

TCAP calling name is not supported for members of a MADN group. RES lines in a MADN EXB group receive an out-of-area indication for calling name if the line has CNAMD. The business lines continue to receive calling name using the proprietary method if the line has CNAMD.

Non-DMS Name Delivery

Non-DMS Name Delivery does not affect lines that apply to TCAP. An O is sent to the CPE if a name is not obtained using the TCAP method.

Activation/deactivation by the end user

The activation/deactivation procedure for Calling Name TR Compliancy-Residential is identical to feature AG1726. Refer to AG1726 for details.

Calling Name TR Compliancy-Residential (continued)

Billing

Calling Name TR Compliancy-Residential affects billing for the following cases:

- CNAMD and CND are both assigned to a line as AMA SUSP
- CNAMD and DDN are both assigned to a line as AMA (SUSP)

A new CLASS feature code, 087, has been defined to indicate a line that has both Calling Number Delivery and CNAMD assigned as AMA. Another new CLASS feature code, 088, has been defined to indicate a line that has both DDN and CNAMD assigned as AMA. The call code is 264.

Both of these records contain two delivery count fields that record

- the peg counts of the number of times that both a calling name and a calling number are delivered
- the peg counts of the number of times that neither a calling name nor a calling number are delivered

A new module code, 049, is defined and is always appended to the 110 record with CLASS feature code 087 or to the 110 record with CLASS feature code 088.

The module code 049 contains the peg counts of

- the number of times a calling name but not a calling number is delivered (CNAMD-only deliveries)
- the number of times a calling number but not a calling name is delivered (CND-only deliveries in the case of 087, or DDN-only deliveries in the case of 088)

For lines assigned CNAMD (SUSP) but not usage-sensitive CND or usage-sensitive DDN, the billing record continues to be the 110 structure code with 082 as the CLASS feature code (indicating CNAMD) and includes the available (AVAIL) and unavailable (UNAVAIL) peg counts of the calling name delivery.

Note: Prior to this feature, call type 264-Calling Information Delivery with structure code 110 was used to record CLASS display features, and module code 111 was used to report information on the additional CLASS SUSP Display features. The use of module code 111 is no longer necessary or supported with these new requirements.

Calling Name TR Compliancy-Residential (continued)

The following prerequisites are necessary before SUSP billing takes place:

- The SUSP entry in table AMAOPTS is set to ON for office level control for SUSP.
- The BELLCORE AMA format is applicable to the office.
- The CLASS Display feature is enabled in table RESOFC before billing takes place for the SUSP feature.
- The subscriber activates the feature.

AMA record production continues to take place under two different situations as follows:

- the CLASS Information Delivery SUSP audit executes (the CIDSUSPAUD entry in table AMAOPTS)
- the CLASS SUSP Display features are removed from a subscriber's line (a CLASS SUSP Display feature is removed from a subscriber's line; a CLASS SUSP Display feature is changed to flat-rate; the line is removed from the office)

With this feature, whenever changes are made through table control or the SERVORD to a feature pair, a record for the feature pair is generated and a record for the Calling Number Delivery or DDN feature may generate with zero counts. The record for the single feature that contains zero counts is generated because of the operation of table control.

The following figure is an example of an AMA record generated for call code 110.

Example 110 record with CLASS feature code 087 and module code 049

```

HEX ID: AA STRUCTURE CODE:40110C CALL CODE:264C SENSOR
TYPE:036C
SENSOR ID:0000000C REC OFFICE TYPE:036C REC OFFICE
ID:0000000C
CLASS FEATURE:087C DATE:92519C CONNECT TIME:1049386C
TERM NPA:819C TERM NUMBER:6221999C AVAIL COUNT:000026C
UNAVAIL COUNT:000005C MODULE CODE:049C AVAIL
COUNT:000028C
UNAVAIL COUNT:000003C MODULE CODE:000C

```

Calling Name TR Compliancy-Residential (continued)

The following datafill is required to produce a record using structure code 110, call code 264, with CLASS feature code 087, and module code 049:

- The BELLCORE AMA package is present in the office.
- The SUSP entry in table AMAOPTS is set to ON.
- CNAMD and CND features with AMA are assigned to a line.
- CNAMD and CND features are enabled in table RESOFC.
- CNAMD and CND features are enabled on the subscriber's line.
- The CIDSUSPAUD entry in table AMAOPTS is scheduled.

The following datafill is required to produce a record using structure code 110, call code 264, with CLASS feature code 088, and module code 049:

- The BELLCORE AMA package is present in the office.
- The SUSP entry in table AMAOPTS is set to ON.
- CNAMD and DDN features with AMA are assigned to a line.
- CNAMD and DDN features are enabled in table RESOFC.
- CNAMD and DDN features are enabled on the subscriber's line.
- The CIDSUSPAUD entry in table AMAOPTS is scheduled.

The record is also produced through changes completed by table control, such as deleting the line, removing the features from the line, or changing the AMA status of the features.

Example 110 record with CLASS feature code 088 and module code 049

```
HEX ID: AA STRUCTURE CODE:40110C CALL CODE:264C SENSOR  
TYPE:036C  
SENSOR ID:00000000C REC OFFICE TYPE:036C REC OFFICE  
ID:00000000C  
CLASS FEATURE:088C DATE:92519C CONNECT TIME:1049386C  
TERM NPA:819C TERM NUMBER:6221999C AVAIL COUNT:000026C  
UNAVAIL COUNT:000005C MODULE CODE:049C AVAIL COUNT:000028C  
UNAVAIL COUNT:000003C MODULE CODE:000C
```

Station Message Detail Recording

Calling Name TR Compliancy-Residential does not affect Station Message Detail Recording.

Calling Name TR Compliancy-Residential (continued)

Datafilling office parameters

The following table shows the office parameters used by Calling Name TR Compliancy-Residential. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by Calling Name TR Compliancy-Residential

Table name	Parameter name	Explanation and action
OFCVAR	TCAPNM_INTERLATA_QUERY	This parameter determines if inter-LATA calls require a TCAP query. Enter value of Y (yes) or N (no). If the value is set to Y, both inter-LATA and intra-LATA calls perform a TCAP query. If the value is set to N, only intra-LATA calls perform the TCAP query. The default is N.
OFCVAR	TCAPNM_BLK_QUERY_PRIV_DNS	This parameter determines whether a query of the name database occurs if the calling party does not activate a name blocking feature and the calling party number is blocked. Enter a value of Y (yes) or N (no). If the value is set to Y, the name database is not queried for the conditions described and a private indicator is sent to the CPE. If the parameter is set to N, the queries to the name database are not dependent on the calling party number presentation status. The default is Y.

Datafill sequence

The following table lists the tables that require datafill to implement Calling Name TR Compliancy-Residential. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Calling Name TR Compliancy-Residential (Sheet 1 of 2)

Table	Purpose of table
CUSTHEAD	This table changes the range for the existing option NDTIMOUT to 1-6 s. The default is 3 s when the option is not datafilled.

Calling Name TR Compliancy-Residential (continued)

Datafill tables required for Calling Name TR Compliancy-Residential (Sheet 2 of 2)

Table	Purpose of table
CUSTNTWK	This table specifies the option TCAPNM. TCAPNM uses TCAP CNAMD architecture to obtain calling name information for a RES line with the CNAMD line option.
RESFEAT	This feature changes the meaning of the existing AMA peg counts for the fields AVAIL and UNAVAIL in this table for lines with the CNAMD and CND features assigned with AMA, or the CNAMD and DDN features assigned.

Datafilling table CUSTHEAD

The following table shows the datafill specific to Calling Name TR Compliancy-Residential for table CUSTHEAD. Only those fields that apply directly to Calling Name TR Compliancy-Residential are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table CUSTHEAD

Field	Subfield or refinement	Entry	Explanation and action
OPTION		NDTIMOUT	Option. This field specifies the option NDTIMOUT and prompts for subfield NDTIMER. Enter the option NDTIMOUT.
	NDTIMER	1-6 s	Name delivery timer. This subfield specifies the time a call is suspended while waiting for the calling party's name to return to the terminating node. Enter a value of 1-6 s. The default is 3s.

Datafill example for table CUSTHEAD

The following example shows sample datafill for table CUSTHEAD. In the example, Calling Name TR Compliancy-Residential specifies option NDTIMOUT.

MAP display example for table CUSTHEAD

CUSTNAME	CUSTXLA	DGCOLNM	IDIGCOL	OPTIONS
RESGRP	RESXLA	RES	NIL	(NDTIMOUT 4) \$

Calling Name TR Compliancy-Residential (continued)

Datafilling table CUSTNTWK

The following table shows the datafill specific to Calling Name TR Compliancy-Residential for table CUSTNTWK. Only those fields that apply directly to Calling Name TR Compliancy-Residential are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table CUSTNTWK

Field	Subfield or refinement	Entry	Explanation and action
OPTIONS		see subfield	Options. This field specifies the option TCAPNM. The terminating switch queries the name database through TCAP for RES lines in the customer group that have option CNAMD.

Datafill example for table CUSTNTWK

The following example shows sample datafill for table CUSTNTWK. In the example, Calling Name TR Compliancy-Residential specifies option TCAPNM.

MAP display example for table CUSTNTWK

CUSTNAME	NETNAME	NETCGID	DNREVXLA	OPTIONS
RESGRP	PUBLIC	0	\$	(CLID OFFNET) (TCAPNM)

Datafilling table RESFEAT

The following table shows the datafill specific to Calling Name TR Compliancy-Residential for table RESFEAT. The following data applies to tuples associated with lines that have the SUSP CLASS display features. The peg counts specified in the CNAMD tuple appears in the 110 AMA record. The CND and DDN peg counts appear in the module code 049 of the AMA record. See the "Billing" section in this module for more information. Only those fields that apply directly to Calling Name TR Compliancy-Residential

Calling Name TR Compliancy-Residential (continued)

are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table RESFEAT

Field	Subfield or refinement	Entry	Explanation and action
VAR		see subfield	Var. This field consists of subfield Refinements.
	REFINEMENTS	see subfield	Refinements. This subfield consists of refinement fields, AVAILDLY and UNAVAILDLY and applies to lines that have the CNAMD and CND features assigned or the CNAMD and CND feature pair assigned.
	AVAILDLY	0-32767	Available delivery. The refinement specifies the number of times or AMA peg counts that occur when a calling name and calling number are delivered, or the number of times a calling name but not a calling number is delivered. Enter a value from 0-32767. The default is 0.
	UNAVAILDLY	0-32767	Unavailable delivery. This refinement specifies the number of times or AMA peg counts that neither a calling name or a calling number is delivered, or the number of times a calling number but not a calling name is delivered. Enter a value from 0-32767. The default is 0.

Datafill example for table RRESFEAT

The following example shows sample datafill for table RESFEAT. In the example, Calling Name TR Compliancy-Residential specifies the CLASS features CNAMD and CND with AMA records generated and the features active on the lines.

MAP display example for table RESFEAT

LINE	KEY	FEAT	VAR
HOST 00 0 11 20 0	CNAMD	CNAMD	AMA ACT 3 2
HOST 00 0 11 20 0	CND	CND	AMA ACT 1 1

Calling Name TR Compliancy-Residential (end)

Translation verification tools

Calling Name TR Compliancy-Residential does not use translation verification tools.

SERVORD

The service order procedures for TCAP CNAMD are identical to proprietary CNAMD. Refer to feature AG1726 for details.

Calling Number Blocking (CNB)

Ordering codes

Functional group ordering code: RES00003

Functionality ordering code: not applicable

Release applicability

NA008 and up

Prerequisites

To operate, Calling Number Blocking (CNB) has the following prerequisites:

- BAS Generic, BAS00003
- MDC Minimum, MDC00001
- MDC Standard, MDC00003
- RES Service Enablers, RES00006

Network configuration

Common Channel Signaling No. 7 (CCS7) connectivity is required for network (interoffice) configuration of Calling Number Block. The following prerequisites are required for CCS7 connectivity:

- Base ISUP, ISP70001
- TEL CCS7 Base, TEL00008

Description

The Calling Number Blocking (CNB) feature enables subscribers to block the display of their directory number (DN) information on the set of the called party on an individual call basis. By activating CNB, a subscriber can block the display of DN information on the subscriber set of the called party regardless of the default suppression value of the DN.

The CNB feature is automatically available for use by subscribers who have the CNDB line option assigned to their lines or who are members of a customer group that has the CNDB group option assigned.

Interoffice CNB

For interoffice calls, CCS7 provides the protocol for transmitting the calling DN and its current suppression status from the originating switch to the terminating switch.

Calling Number Blocking (CNB) (continued)

Feature processing

After the subscriber dials the CNB access code, the following steps are taken:

- If the subscriber has the CNDB line option, the system checks to ensure that CNDB is enabled for the office and that the CNDB line option is assigned to the subscriber line. If the checks fail, the call is given feature not allowed (FNAL) treatment.
- If the software resources required to activate CNB are unavailable, the call is given no software resources (NOSR) treatment.
- When CNB has been successfully invoked, the subscriber is given one of the following:
 - an announcement confirming that CNB has been invoked (if such an announcement has been supplied by the operating company) followed by recall dial tone
 - recall dial tone only (if no announcement has provided by the operating company)

Note 1: If the subscriber activates CNB and then dials a partial DN, the call is given partial dial (PDIL) treatment.

Note 2: Except in the case of ACB activation, CNB has no effect on subsequent calls.

Note 3: The CNB feature uses the CNDB confirmation announcements. The CNDB confirmation announcements are standard announcements. Existing announcements may be used for CNDB confirmation. However, the operating company may provide new announcements by recording new messages with the DRAMREC utility.

If the CNDB confirmation announcements are not datafilled, the subscriber who successfully activates the CNB feature is given recall dial tone. The CNDB subscriber then dials the DN he or she wishes to reach, or the activation code of other features such as Automatic Call Back (ACB) or Automatic Recall (AR). CNDB interactions with CNB are fully described in "Calling Number Delivery Blocking (CNDB)".

Note: Any subscriber who does not have the CNDB line option but is a member of a customer group with the CNDB customer group option can activate the CNB feature. However, the CNDB confirmation announcement that is used by the CNB feature is only provided to subscribers with the CNDB line option.

Operation

The Calling Number Blocking (CNB) feature has no operation instructions.

Calling Number Blocking (CNB) (continued)

Translations table flow

The CNB translations process is shown in the flowchart. The flowchart shows the tables accessed when a subscriber activates CNB. DN suppression is not enabled for the line, group, or network.

The Calling Number Blocking (CNB) translations tables are described in the following list:

- Table IBNXLA provides the name of the feature associated with an activation code.
- Table IBNLINES identifies the options assigned to a line equipment number (LEN). If CNDB is assigned to the line, translations continues to table RESOFC, using CNDB as a key into the table. If CNDB is not assigned, translations continues to table CUSTSTN.
- Table RESOFC controls the availability of individual CLASS features for an office. For this example, CNDB is enabled.
- Table CUSTSTN identifies the options assigned to a customer group. For this example, CNDB is assigned to the customer group.

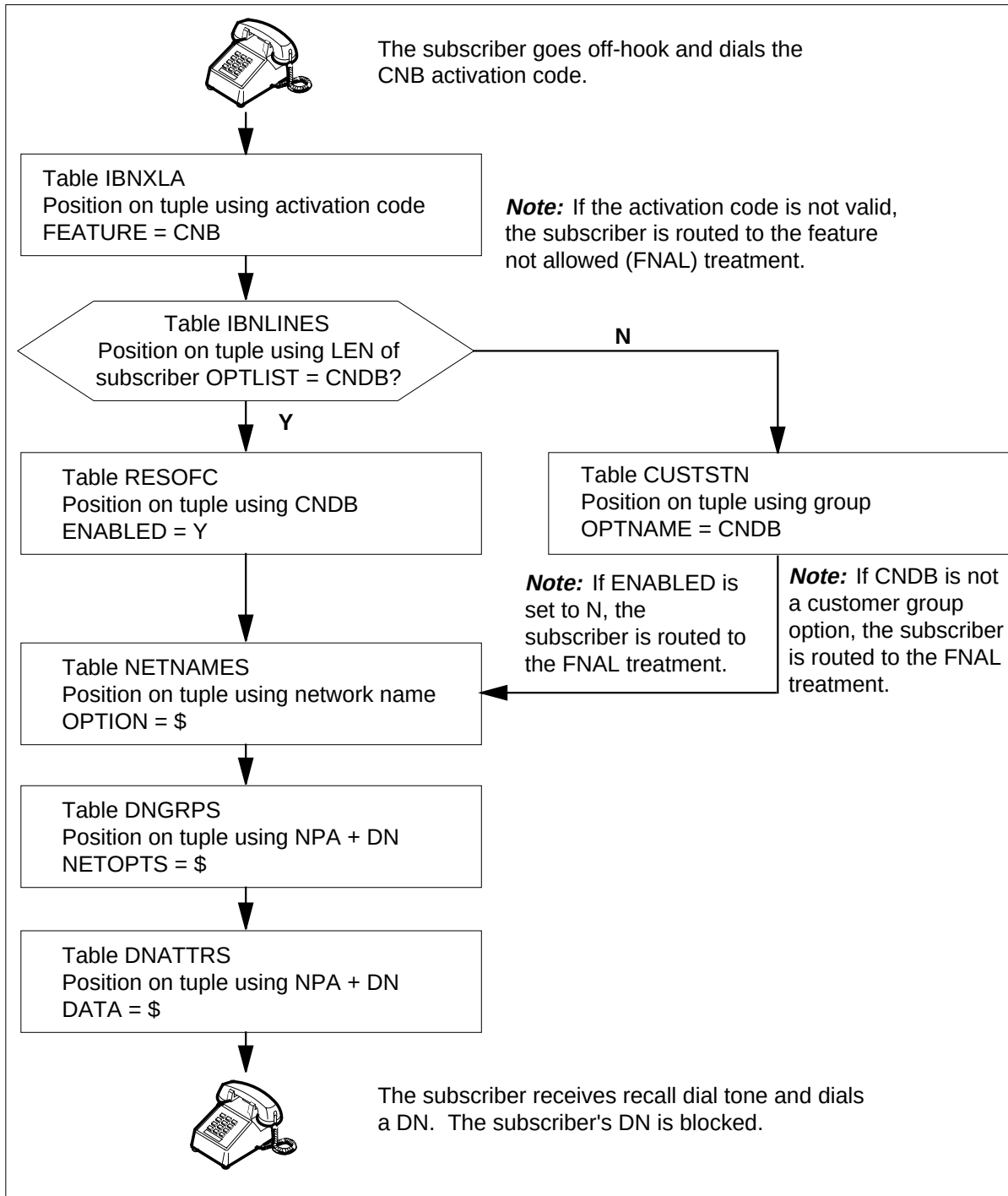
Note: CNDB can be assigned to either the line or the customer group. Datafill for both line and customer group assignments is shown for information only.

- Table NETNAMES controls name and DN suppression on the network level. For this example, no suppression is assigned.
- Table DNGRPS controls name and DN suppression for groups of DNs. For this example, no suppression is assigned.
- Table DNATTRS controls name and DN suppression for individual lines. For this example, no suppression is assigned.

The Calling Number Blocking (CNB) translation process is shown in the flowchart that follows.

Calling Number Blocking (CNB) (continued)

Table flow for Calling Number Blocking (CNB)



Calling Number Blocking (CNB) (continued)

The following table lists the datafill content used in the flowchart when CNDB is assigned to a line. The CNB activation code is 69 and the LEN of subscriber is Host 00 02 0 05.

Datafill example for Calling Number Blocking (CNB)

Datafill table	Example data
IBNXLA	RXCFN 69 FEAT N N N CNB
IBNLINES	HOST 00 02 0 05 0 DT STN RES 6211234 0 (CNDB) \$
RESOFC	CNDB Y SUBSCR CNDB \$ \$
CUSTSTN	No tuple for RESGRP CNDB
NETNAMES	PUBLIC 0 0 \$
DNGRPS	613 621 1000 1999 (PUBLIC \$) \$
DNATTRS	613 621 1234 (PUBLIC \$) \$ \$

The following table lists the datafill content used in the flowchart when CNDB is assigned to a customer group. The CNB activation code is 69, the LEN of subscriber is Host 00 02 0 05, and Subscriber's group is RESGRP.

Datafill example for Calling Number Blocking (CNB)

Datafill table	Example data
IBNXLA	RXCFN 69 FEAT N N N CNB
IBNLINES	HOST 00 02 0 05 0 DT STN RES 6211234 0 \$
RESOFC	CNDB Y SUBSCR CNDB \$ \$
CUSTSTN	RESGRP CNDB CNDB
NETNAMES	PUBLIC 0 0 \$
DNGRPS	613 621 1000 1999 (PUBLIC \$) \$
DNATTRS	613 621 1234 (PUBLIC \$) \$ \$

Calling Number Blocking (CNB) (continued)

Limitations and restrictions

The following limitations and restrictions apply to Calling Number Blocking (CNB):

- These features are not compatible with CNB:
 - Denied Origination (DOR)
 - Automatic Line (AUL)
- The CNB feature is not compatible with Attendant Consoles. If the caller activates CNB before calling an attendant console, then the name and / or number will be displayed at the Attendant Console.
- Except in the case of ACB, CNB does not affect subsequent calls.
- CNB translations must be assigned on a customer group basis.

Interactions

Feature interactions for CNB are described in “Feature interactions” in “Calling Number Delivery Blocking.

Activation/deactivation by the end user

The CNB feature becomes automatically available to a subscriber as soon as the CNDB line or group option is assigned to the subscriber line.

The subscriber activates the CNB feature for a call by

- going off-hook
- obtaining dial tone
- dialing the CNB access code
- receiving special dial tone or treatment
- dialing the DN of the called party

The CNDB subscriber must dial the CNB access code before each call in order to block the display of DN information on the subscriber set of the called party.

The access code for the CNB feature has the following form:

- 11XX for dial pulse (DP) lines
- 11XX or *XX for dual-tone multifrequency (DTMF) lines

The recommended access codes for CNB are as follows:

- 1168 for DP lines
- 1168 or *68 for DTMF lines

Calling Number Blocking (CNB) (continued)

Billing

Refer to "Billing" in "Calling Number Delivery Blocking (CNDB)."

Station Message Detail Recording

Calling Number Blocking (CNB) does not affect Station Message Detail Recording.

Datafilling office parameters

Calling Number Blocking (CNB) does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement Calling Number Blocking (CNB). The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Calling Number Blocking (CNB)

Table	Purpose of table
IBNXLA	IBN Translations. This table contains the data for the digit translations of calls from an MDC station, attendant console, incoming trunk group, or incoming side of a two-way MDC trunk group.

Datafilling table IBNXLA

Table IBNXLA (IBN Translations) contains the data for the digit translations of calls from an MDC station, attendant console, incoming trunk group, or incoming side of a two-way MDC trunk group.

Datafill in table IBNXLA defines the access code that corresponds to the CNB feature. Option CNB and the CNB access code are added to table IBNXLA.

The CNB access code takes the following form:

- *XX or 11XX for DTMF lines
- 11XX for DP lines

The XX part of the access code can be changed on an individual office basis. Recommended CNB access codes for DTMF and DP lines are *68 and 1168, respectively.

Note 1: Any subscriber with the CNDB line or customer group option automatically has full access to the CNB and CNNB features. Since CNB and CNNB are automatically available to all CNDB subscribers, you do not need to enable CNB and CNNB in table RESOFC. The CNB and CNNB

Calling Number Blocking (CNB) (continued)

features use the announcements provided by the CNDB feature and do not require any additional datafill for announcements.

Note 2: The recommended Subscriber Services datafill should be used. This prevents speed call long cells overlapping with the CNB access code.

The following table shows the datafill specific to Calling Number Blocking (CNB) for table IBNXLA. Only those fields that apply directly to Calling Number Blocking (CNB) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table IBNXLA

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	Key. This field consists of the subfields XLANAME and DGLIDX. These subfields are described below and must be entered in succession.
	XLANAME	RXCFN	Translator name. This subfield specifies the 1- to 8-character name assigned to the translator. Enter RXCFN.
	DGLIDX	68	Digilator index. This subfield specifies the digit or digits assigned to the index. Enter 68.
RESULT		see subfields	Result. This subfield consists of the subfields TRSEL, ACR, SMDR, and FEATURE. These subfields are described below.
	TRSEL	FEAT	Translation selector. This subfield specifies the translation selector. Enter FEAT.
	ACR	N	Account entry code. This subfield specifies whether or not an account entry code is required. Enter N.
	SMDR	N	Station message detail recording. This subfield specifies whether or not SMDR is required. Enter N.
	FEATURE	CNB	Feature. This subfield specifies the name of the feature to which the code is assigned. Enter CNB.

Datafill example for table IBNXLA

The following example shows sample datafill for table IBNXLA.

Calling Number Blocking (CNB) (end)

MAP display example for table IBNXLA

KEY						RESULT
RXCFN	68	FEAT	N	N	N	CNB

Translation verification tools

The following example shows the output from TRAVER when it is used to verify Calling Number Blocking (CNB).

TRAVER output example for Calling Number Blocking (CNB)

```
>TRAVER L 6211233 'B68' B
TABLE IBNLINES
  HOST 00 0 09 07 0 DP STN RES 6211233 0 $
TABLE LINEATTR
  0 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL NILSFC
LATA1 0 NIL NIL 00 Y RESGRP 0 2
  LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE NCOS
RESGRP 2 0 0 RNCOS2 ( XLAS RXCMN2 NXLA RES ) $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT,
AND DIGCOL
RESGRP NXLA RESXLA RXCFN 0 RES
TABLE DIGCOL
  RES SPECIFIED: RES DIGIT COLLECTION
NCOS FEAT XLA NAME IS NIL.  GO TO NEXT XLA NAME.
TABLE IBNXLA: XLANAME RXCFN
  RXCFN 68 FEAT N N N (CNB)

++ TRAVER: SUCCESSFUL CALL TRACE ++
```

SERVORD

Refer to "Service orders" in "Calling Number Delivery Blocking (CNDB)" for information on service orders.

Calling Number Delivery (CND)

Ordering codes

Functional group ordering code: RES00003

Functionality ordering code: not applicable

Release applicability

NA008 and up

Prerequisites

To operate, Calling Number Delivery (CND) has the following prerequisites:

- BAS Generic, BAS00003
- MDC Minimum, MDC00001
- MDC Standard, MDC00003
- RES Service Enablers, RES00006

Network configuration

Common Channel Signaling No. 7 (CCS7) connectivity is required for network (interoffice) configuration of Calling Number Display. The following prerequisites are required for CCS7 connectivity:

- Base ISUP, ISP70001
- TEL CCS7 Base, TEL00008
- BAS Generic, BAS00003

Description

The Calling Number Delivery (CND) feature is an incoming call service that provides the ability to deliver the following to a CND subscriber's set:

- the directory number (DN) of the calling party in a ten-digit format (NPA-NXX-XXXX)
- the date and time of the incoming call

Refer to "Calling Name Delivery (CNAMD)" for details on the CND feature.

Translations table flow

The CND translations process is shown in the following figure. The flowchart shows the translations flow for CND activation.

Calling Number Delivery (CND) (continued)

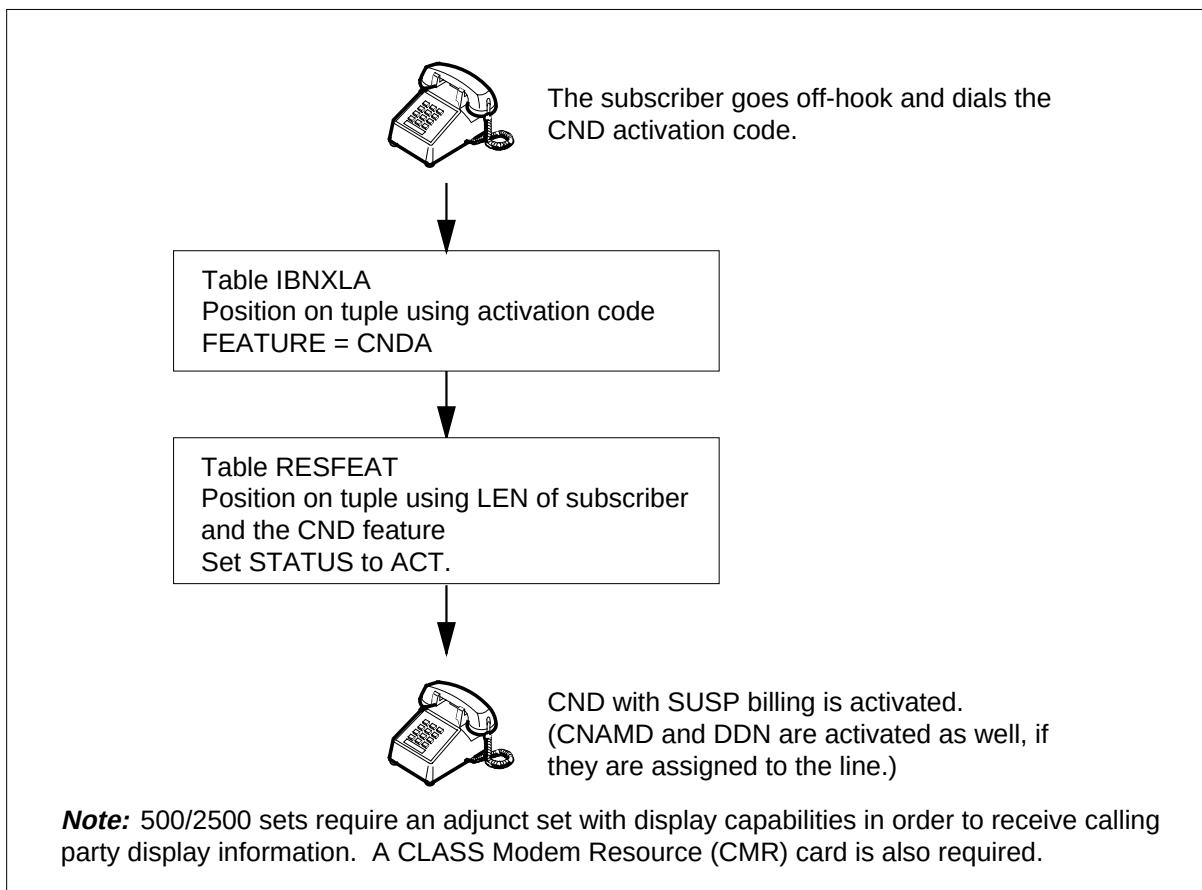
The Calling Number Delivery (CND) translations tables are described in the following list:

- Table IBNXLA provides the name of the feature associated with an activation code.
- Table RESFEAT contains the assignment of CLASS features for RES lines.

Note: The operating company must enable CND in table RESOFC for the complete office before a subscriber can activate the feature. The system does not check RESOFC after the operating company personnel activates the office for CND and a subscriber activates CND.

The Calling Number Delivery (CND) translation process is shown in the flowchart that follows.

Table flow for Calling Number Delivery (CND)with SUSP billing



Calling Number Delivery (CND) (continued)

The following lists the datafill content used in the flowchart. For the example the CND activation code 65 and the LEN of subscriber is HOST 00 02 0 05.

Datafill example for Calling Number Delivery (CND)

Datafill table	Example data
IBNXLA	RXCFN 65 FEAT N N N CNDA
RESFEAT	HOST 00 02 0 05 0 CND CND AMA ACT 0 0

Limitations and restrictions

Calling Number Delivery (CND) has no limitations or restrictions.

Interactions

Refer to "Feature interactions" in "Calling Name Delivery (CNAMD)" for information on CND feature interactions.

Activation/deactivation by the end user

Refer to "Activation/deactivation by end the user" in "Calling Name Delivery (CNAMD)" for information on CND activation and deactivation.

Billing

When subscription usage sensitive pricing (SUSP) is set to ON in table AMAOPTS (Automatic Message Accounting Options), the AMA billing option is available for the CLASS SUSP display features CNAMD, CND, and DDN. See the following figure for an example of option SUSP in table AMAOPTS. The AMA billing option is then specified during the addition of option CND to a subscriber line. This is done through service orders.

Example of option SUSP in table AMAOPTS

OPTION	SCHEDULE
SUSP	ON

If SUSP is not enabled for the office, the billing option for CND lines defaults to NOAMA.

AMA billing option

With the AMA billing option, an AMA record is written once each day, providing total daily peg counts of calling information available and

Calling Number Delivery (CND) (continued)

unavailable for each CLASS display feature. The CND feature with AMA billing is referred to as CND SUSP.

Call code and structure code

Call code 264 and structure code 110 are used for generating CND SUSP AMA records. These codes are used by CLASS features operating in a SUSP environment. If a line is assigned option CND SUSP, an AMA record is generated after delivery of calling information to the set, and after successful activation of the line's CND SUSP feature.

The fields of the billing record are as follows:

- hexadecimal identifier
- structure code
- call code
- sensor type
- sensor identification
- recording office type
- recording office identification
- CLASS feature code
- date
- connect time
- terminating NPA
- terminating directory number
- count of available calling information
- count of unavailable calling information

An example of the AMA record produced for a CLASS SUSP display feature CND is shown in the following figure.

Example of CLASS SUSP display feature AMA record

```
HEX ID:AA STRUCTURE CODE:00110C CALL CODE:264C SENSOR TYPE:036C  
SENSOR ID:0000000C REC OFFICE TYPE:036C REC OFFICE ID:0000000C  
CLASS FEATURE:082C DATE:90712C CONNECT TIME:1049386C  
TERM NPA:819C TERM NUMBER:6221999C AVAIL COUNT:000026C  
UNAVAIL COUNT:000005C
```

Calling Number Delivery (CND) (continued)

Option CIDSUSPAUD in table AMAOPTS

Option CIDSUSPAUD in table AMAOPTS controls the CLASS SUSP display feature audit. It provides peg counts of the deliveries to subscribers and allows the operating company to schedule when the CLASS SUSP display delivery counts are to be recorded in the AMA stream. See the following figure for an example of option CIDSUSPAUD in table AMAOPTS.

Example of option CIDSUSPAUD in table AMAOPTS

OPTION	SCHEDULE
CIDSUSPAUD PERIODIC 920608 0000	24 HRS

For recording peg counts, option CIDSUSPAUD defaults to once a day at midnight, which is the recommended schedule. However, the operating company can specify any start date and time as long as it is within one day of the current time. The period of time for the audit can be specified in field SCHEDULE as a value from 1 to 24 for the interval and HRS (hours) for the unit of time.

The following figure is an example of an AMA record generated for the CND feature.

Example of CND feature AMA record

```

HEX ID:AA STRUCTURE CODE:09015C CALL CODE:264C SENSOR
TYPE:036C
SENSOR ID:0200200C REC OFFICE TYPE:036C REC OFFICE
ID:0200200C
DATE:90712C CONNECT TIME:1547286C TERM NPA:613C TERM
NUMBER:6211234C
AVAIL DN COUNT:00001C UNAVAIL DN COUNT:00000C

```

Billing log output

When option LOGAMA in table AMAOPTS is set to ON, the generation of an AMA record by the CND SUSP feature causes an AMAB117 log to be generated. See the following figure for an example of the AMAB117 log.

Calling Number Delivery (CND) (end)

Example of AMAB117 log

OFCCLI	AMAB117	JUL28: 08:00:01	8700	INFO	AMA	RECORD	DATA
STRUCTURE CODE	=	00110		CALL CODE		=	264
CONNECT DATE	=	70728		CONNECT TIME		=	0800~002
ELAPSED TIME	=	00000000		ANSWERED		=	NA
CALLING DN	=	6225251089					
ORIG AGENT	=						
CALLED DN	=	\$					
TERM AGENT							

In the above example, ELAPSED TIME is zero because this record bills for usage of a subscriber feature and not for a toll call. Field CONNECT TIME contains the time at which the billing record is generated.

Station Message Detail Recording

Calling Number Delivery (CND) does not affect Station Message Detail Recording.

Datafilling office parameters

No office parameters are used by Calling Number Delivery (CND).

Datafill sequence

Refer to "Datafill sequence" in "Calling Name Delivery (CNAMD)" for information on the required datafill sequence for CND.

Datafilling table CND

Refer to the "Datafill procedure" sections in "Calling Name Delivery (CNAMD)" for information on the datafill procedure for CND.

Translation verification tools

Refer to "Verification tools" in "Calling Name Delivery (CNAMD)" for information on verification tools for CND.

SERVORD

Refer to "SERVORD" in "Calling Name Delivery (CNAMD)" for information on service orders for CND.

Calling Number Delivery Blocking (CNDB)

Ordering codes

Functional group ordering code: RES00003

Functionality ordering code: not applicable

Release applicability

NA010 and up

Prerequisites

To operate, Calling Number Delivery Blocking (CNDB) has the following prerequisites:

- BAS Generic, BAS00003
- MDC Minimum, MDC00001
- MDC Standard, MDC00003
- RES Service Enablers, RES00006

Network configuration

Common Channel Signaling No. 7 (CCS7) connectivity is required for network (interoffice) configuration of Calling Name Delivery Blocking for Lines and Calling Name/Number Delivery Blocking. The following prerequisites are required for CCS7 connectivity:

- Base ISUP, ISP70001
- TEL CCS7 Base, TEL00008

Description

The Calling Number Delivery Blocking (CNDB) feature enables subscribers to control the availability of their directory numbers (DN) to called parties. CNDB works on an individual call basis. By activating CNDB, a subscriber can reverse the DN suppression status of his or her DN for each call.

Any subscriber who is assigned the CNDB line option or who is a member of a customer group with the CNDB group option is automatically eligible to use the CNDB, Calling Number Blocking (CNB), or Calling Name/Number Delivery Blocking (CNNB) features for the calls he or she originates.

A subscriber can be assigned both the CNDB line option and the CNDB group option.

Calling Number Delivery Blocking (CNDB) (continued)

Levels of suppression control

CNDB is a suppression control feature that operates at the call level. The other levels of suppression control are as follows:

- Office level suppression provides the ability to suppress all DNs assigned within an office. When enabled, this level overrides all other suppression levels.
- Group level suppression provides the ability to suppress blocks of DNs.
- Subscriber or line level suppression provides the ability to suppress subscribers' DNs on an individual line basis

Default suppression status

A subscriber's DN has a default suppression status based on the line and group levels of suppression control discussed above. A default status of "suppressed" results in all calls originated by the subscriber having the DN unavailable for presentation to the terminating set.

Conversely, a default status of "unsuppressed" results in the originating DN being made available for presentation for all calls the subscriber originates.

Suppression status resulting from CNDB activation

Activating CNDB reverses the suppression status of the subscriber's DN, for the current call, from the default status to its opposite. That is, a CNDB subscriber whose DN has a default status of "suppressed" unsuppresses the DN for the current call by activating CNDB. In this case, the DN is made available to the called party.

Similarly, a CNDB subscriber whose DN has a default suppression status of "unsuppressed" suppresses the DN for the current call by activating CNDB. In this case, the DN is made unavailable to the called party.

The subscriber's default DN suppression status is reinstated for all subsequent calls except those for which the subscriber reactivates CNDB.

Note: The CNDB feature does not suppress the display of the calling party's name on the set of the called party. Suppression of the calling party's name and DN on an individual call basis is controlled by the Calling Name/Number Delivery Blocking (CNCB) feature.

Except for Automatic Call Back (ACB) calls, CNDB has no effect on subsequent calls. Refer to "Feature interactions" in this feature description for more information.

Calling Number Delivery Blocking (CNDB) (continued)

The CNDB feature is implemented for both interoffice calls (calls originating and terminating in the same switch) and intraoffice calls (calls originating and terminating in two different switches).

Interoffice CNDB calls

For interoffice calls, CCS7 provides the protocol for transmitting the calling DN and its current suppression status from the originating switch to the terminating switch.

For calls placed over trunks served by CCS7, a ten-digit field containing the calling DN is included in the calling party address parameter of the initial address message (IAM) field. The IAM also contains the presentation restriction indicator (PRI), which is set to indicate the availability of the DN for display to the terminating subscriber.

The PRI is set to "presentation restricted" when a CNDB subscriber whose default DN suppression status is "unsuppressed" activates CNDB. The PRI is set to "presentation unrestricted" when a CNDB subscriber whose default DN suppression status is "suppressed" activates CNDB.

Intraoffice CNDB calls

Intraoffice calls do not require the CCS7 protocol. As a result of activating the CNDB feature before dialing an interoffice call, a CNDB subscriber makes the suppression status for that call the reverse of the default suppression status.

Feature processing

The CNDB feature processing description that follows applies to both the CNDB line option and the CNDB customer group option.

When the CNDB subscriber dials the CNDB access code, the following steps are taken:

- If CNDB is a line option, the system checks to ensure that the CNDB feature is enabled for the office and is assigned to the subscriber line. If the checks fail, the call is given feature not allowed (FNAL) treatment.
- If the software resources required to activate CNDB are unavailable, the call is given no software resources (NOSR) treatment.
- If CNDB is successfully invoked by a subscriber with the CNDB line option, the subscriber receives a confirmation announcement, followed by recall dial tone. If CNDB is successfully invoked by a member of a customer group with the CNDB group option who does not have the

Calling Number Delivery Blocking (CNDB) (continued)

CNDB line option, this CNDB group member receives recall dial tone only.

- The subscriber can then dial the DN he or she wishes to reach. If the subscriber activates CNDB and then dials a partial DN, the call is given partial dial (PDIL) treatment.

Note: The CNDB confirmation announcements are standard announcements. Existing announcements may be used for CNDB confirmation. However, the operating company may provide new announcements by recording new messages with the DRAMREC utility.

If the CNDB confirmation announcements are not datafilled, the subscriber is given recall dial tone. The CNDB subscriber then dials the DN he or she wishes to reach, or the activation code of other features such as ACB or Automatic Recall (AR). See "Feature interactions" in this feature description for information on how CNDB interacts with CNB, CNNB, and other features.

Universal access

The CNDB feature can be provided to all RES subscribers in an office through universal access when feature package NTXQ70AA, Universal Access to CLASS Features, is present in the office. For universal access, the value UNIVER instead of SUBSCR should be datafilled in subfield ACCESS in table RESOFC.

Universal access only changes the *method* of access, not the operation of a Custom Local Area Signaling Services (CLASS) feature. When universal access is available in an office, the subscriber can still have the feature assigned as a line option. Accessing a CLASS feature assigned to the subscriber as a line option or customer group option takes precedence over accessing the feature through universal access.

The Software Optional Control (SOC) allows the operating company to enable the functionality of universal access for CLASS features through a Right to Use (RTU) access code. The subscriber is able to access the CLASS features without assigning the individual features to the line.

The SOC commands enable or disable the universal access for CLASS features. The RTU access code assignment to RES00011 and setting the state to ON enables the universal access for CLASS through SOC. The state is set to IDLE to disable the universal access for CLASS through SOC.

Note 1: Universal access to CLASS features is not applicable to Subscriber Services lines with IBN line class codes (LCC) through NA007.

Calling Number Delivery Blocking (CNDB) (continued)

Note 2: Universal access to CLASS features is not applicable to universal access to display features.

Note 3: Refer to “Universal Access to CLASS Features” for more information on universal access.

Operation

The CNDB translations do not contain operating procedures.

Translations table flow

The CNDB translations process is shown in the following figure. The flowchart shows the tables accessed when a subscriber activates CNDB. For this example, neither name nor DN suppression is enabled for the line, group, or network.

The Calling Number Delivery Blocking (CNDB) translations tables are described in the following list:

- Table IBNXLA provides the name of the feature associated with an activation code.
- Table IBNLINES identifies the options assigned to a line equipment number (LEN). If CNDB is assigned to the line, translations continues to table RESOFC, using CNDB as a key into the table. If CNDB is not assigned, translations continues to table CUSTSTN.
- Table RESOFC controls the availability of individual CLASS features for an office. For this example, CNDB is enabled.
- Table CUSTSTN identifies the options assigned to a customer group. For this example, CNDB is assigned to the customer group.

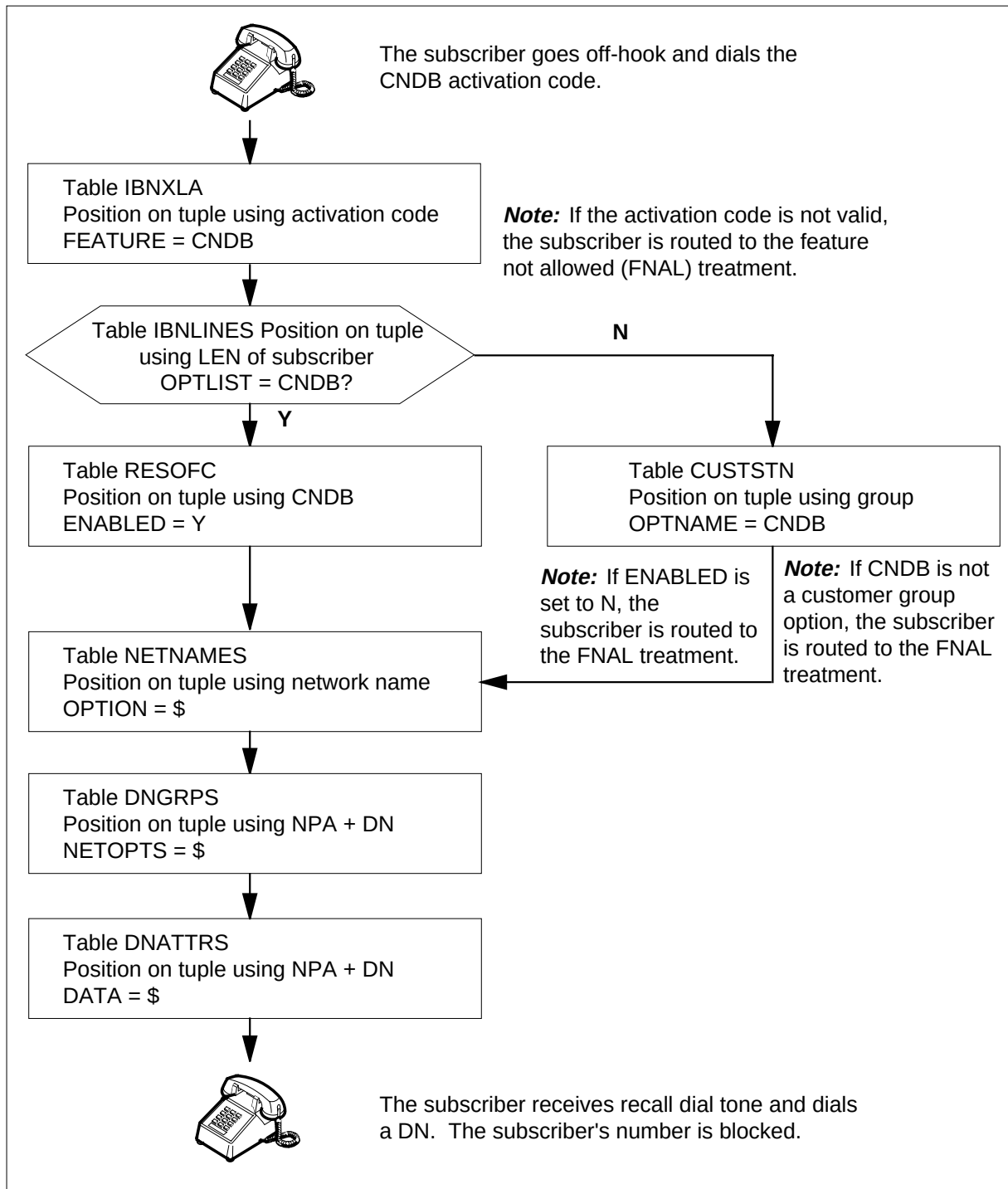
Note: CNDB can be assigned to either the line or the customer group. Datafill for both line and customer group assignments is shown for information only.

- Table NETNAMES controls name and DN suppression on the network level. For this example, no suppression is assigned.
- Table DNGRPS controls name and DN suppression for groups of DNs. For this example, no suppression is assigned.
- Table DNATTRS controls name and DN suppression for individual lines. For this example, no suppression is assigned.

The Calling Number Delivery Blocking (CNDB) translation process is shown in the flowchart that follows. CNDB activation code is 67 and LEN of subscriber is Host 00 02 0 05.

Calling Number Delivery Blocking (CNDB) (continued)

Table flow for Calling Number Delivery Blocking (CNDB)



Calling Number Delivery Blocking (CNDB) (continued)

The following table lists the datafill content used in the flowchart. The CNDB customer group option cannot be added to table CUSTSTN without feature package NTXE46AA.

Datafill example for Calling Number Delivery Blocking (CNDB)

Datafill table	Example data
IBNXLA	RXCFN 67 FEAT N N N CNDB
IBNLINES	HOST 00 02 0 05 0 DT STN RES 6211234 0 (CNDB) \$
RESOFC	CNDB Y SUBSCR CNDB \$ \$
CUSTSTN	No tuple for RESGRP CNDB
NETNAMES	PUBLIC 0 0 \$
DNGRPS	613 621 1000 1999 (PUBLIC \$) \$
DNATTRS	613 621 1234 (PUBLIC \$) \$ \$

The following table lists the datafill content used in the flowchart when CNDB is assigned to a customer group.

Datafill example for Calling Number Delivery Blocking (CNDB)

Datafill table	Example data
IBNXLA	RXCFN 67 FEAT N N N CNDB
IBNLINES	HOST 00 02 0 05 0 DT STN RES 6211234 0 \$
RESOFC	CNDB Y SUBSCR CNDB CNDBCONF CNDBANN \$
CUSTSTN	RESGRP CNDB CNDB
NETNAMES	PUBLIC 0 0 \$
DNGRPS	613 621 1000 1999 (PUBLIC \$) \$
DNATTRS	613 621 1234 (PUBLIC \$) \$ \$

Limitations and restrictions

The following limitations and restrictions apply to Calling Number Delivery Blocking (CNDB):

- Subscriber Services (RES), one-party flat rate (1FR), and one-party message rate (1MR) lines that are assigned the CNDB line option or the CNDB customer group option can activate the CNDB, CNB, or CNNB

Calling Number Delivery Blocking (CNDB) (continued)

features, provided that the customer group of the CLASS line has the feature translator.

- These features are incompatible with CNDB:
 - Denied Origination (DOR)
 - Automatic Line (AUL)
- This feature is not compatible with Attendant Consoles. If the caller activates CNDB or CNNB before calling an attendant console, then the name and / or number will be displayed at the Attendant Console.
- Except in the case of ACB, the CNDB feature does not affect subsequent calls.
- CNDB translations must be assigned on a customer group basis.

Interactions

The following paragraphs describe the interactions between Calling Number Delivery Blocking (CNDB) and other functionalities.

Automatic Call Back

The ACB feature can be employed on a call in which the CNDB, CNB, or CNNB feature is activated. The subscriber follows the steps outlined in the "Activation/deactivation by the end user" section of this feature until recall dial tone is heard indicating that CNDB, CNB, or CNNB has been activated. The subscriber then dials the ACB activation code to activate ACB.

The order of activation is important. CNDB, CNB, or CNNB must be activated before ACB is activated.

The effect of CNDB on an ACB call is as follows:

- A subscriber who successfully activates both ACB and CNDB in the same call, and who has a default DN suppression status of "suppressed," has the DN unsuppressed for the ACB call.
- A subscriber who successfully activates both ACB and CNDB in the same call, and who has a default DN suppression status of "unsuppressed," has the DN suppressed for the ACB call.

The preceding description of the effect of CNDB on an ACB call applies to both immediate and delayed ACB processing.

Calling Number Delivery Blocking (CNDB) (continued)

An ACB call will have CNDB, CNB, or CNNB activated if

- the CNDB, CNB, or CNNB access code is dialed explicitly for the ACB call
- the CNDB, CNB, or CNNB access code is dialed on the previous call
- the CNDB, CNB, or CNNB access code is dialed on both the previous call and the ACB call

Automatic Recall

The AR feature can be employed on a call in which the CNDB, CNB, or CNNB feature is activated. The subscriber activates CNDB, CNB, or CNNB and hears a second dial tone. The subscriber then dials the AR activation code to activate AR.

The order of activation is important. CNDB, CNB, or CNNB must be activated first before AR is activated.

The effect of CNDB on an AR call is as follows:

- A subscriber who successfully activates both AR and CNDB in the same call, and who has a default DN suppression status of “suppressed,” has the DN unsuppressed for the AR call.
- A subscriber who successfully activates both AR and CNDB in the same call, and who has a default DN suppression status of “unsuppressed,” has the DN suppressed for the AR call.

The preceding description of the effect of CNDB on an AR call applies to both immediate and delayed AR processing.

When an AR subscriber activates AR, the number being called is voiced back unless delivery of the calling number was suppressed on the original call.

Call Forwarding

If subscriber A activates CNDB, CNB, or CNNB, then places a call to subscriber B while subscriber B has his or her set call forwarded to subscriber C, the name and number display information from subscriber A is not displayed on subscriber C's set. However, if subscriber B in the preceding case has either the redirecting name (RENAME) or redirecting directory number (RDN) feature assigned to the line while his or her set is call forwarded to subscriber C, subscriber C receives subscriber B's name and number display information.

The CNDB, CNB, and CNNB features cannot be activated while the process of call forwarding is underway.

Calling Number Delivery Blocking (CNDB) (continued)

Call Park

The CNDB, CNB, or CNNB features stay in effect during Call Park (CPK) recall or when the calls are unparked.

If subscriber A activates CNDB, CNB, or CNNB and calls subscriber B, subscriber A's name and number information is not displayed on subscriber B's set.

If subscriber B parks subscriber A and subscriber C unparks subscriber A, subscriber A's name and number information is not displayed on subscriber C's set.

If subscriber C parks subscriber A again, and subscriber A is not unparked before call park recall notification is given to subscriber C, the CNDB, CNB, or CNNB feature will be in effect when subscriber A is unparked.

Call Pickup

The following case illustrates how CNDB, CNB, or CNNB functions with the Call Pickup (CPU) feature:

- A calling party activates CNDB, CNB, or CNNB and places a call to a member in a CPU group (the calling party is not a member of the same CPU group).
- A second member of the same CPU group activates the CPU feature and picks up the incoming call.
- The availability of the display information from the calling party is affected according to the feature that is employed.

Call Transfer

A subscriber can use the CNDB, CNB, or CNNB feature to control the availability of CLASS display information when transferring a call to a third party. After flashing to activate Call Transfer (CXR), the subscriber receives recall dial tone. The activation code for CNDB, CNB or CNNB can now be dialed to suppress or block CLASS display information to the the third party. If the CNDB, CNB, or CNNB activation request is successful, recall dial tone is given to the subscriber. The subscriber can then dial the number of the third party.

The order of activation is important. The flash occurs first, followed by the dialing of the CNDB, CNB, or CNNB access code, followed by the dialing of the third party's number.

Calling Number Delivery Blocking (CNDB) (continued)

The effect of CNDB, when activated with CXR, is as follows:

- A subscriber who successfully activates CXR and then CNDB in the same call, and who has a default DN suppression status of “suppressed,” has the DN unsuppressed to the third party.
- A subscriber who successfully activates CXR and then CNDB in the same call, and who has a default DN suppression status of “unsuppressed,” has the DN suppressed to the third party.

The suppression status of the first leg of a call transfer does not affect the suppression status of the second leg.

Members of a CPU group who activate the CPU feature to pick up calls within their CPU group cannot use the CNDB, CNB, or CNNB features on these incoming calls.

Last Number Redial

The CNDB, CNB, or CNNB feature cannot be activated using Last Number Redial (LNR) because the LNR feature cannot store CNDB, CNB, or CNNB activation codes.

Multiple Appearance Directory Number

Both primary and secondary Multiple Appearance Directory Number (MADN) group members can activate the CNDB, CNB, or CNNB features. When a MADN group member activates the CNDB feature, the DN and the group name are suppressed.

Ring Again

A subscriber can activate Ring Again (RAG) while CNDB, CNB, or CNNB is activated; however, the CNDB, CNB, or CNNB access code must be dialed during the original call.

The subscriber must perform the following steps to activate CNDB, CNB, or CNNB and RAG:

- Go off-hook and receive dial tone.
- Dial the CNDB, CNB, or CNNB access code.
- Dial the DN of the person to whom the subscriber wishes to speak.
- Upon receiving a busy tone, dial the RAG access code.
- The subscriber receives notification that the line is now idle.

The call is completed with CNDB, CNB, or CNNB in effect.

Calling Number Delivery Blocking (CNDB) (continued)

Three-Way Calling

Subscribers can use the CNDB, CNB, or CNNB feature to control the availability of display information to the third party of a three-way call. After flashing to activate Three-Way Calling (3WC), the subscriber receives recall dial tone. The CNDB activation code can now be dialed to change the availability of the DN to the third party.

If the CNDB, CNB, or CNNB activation request is successful, recall dial tone is given to the subscriber. The subscriber can then dial the number of the third party.

The order of activation here is important. The flash occurs first, followed by the dialing of the CNDB, CND, or CNNB access code, followed by the dialing of the third party's number.

The effect of CNDB, when activated with 3WC, is as follows:

- A subscriber who successfully activates 3WC and then CNDB in the same call, and who has a default DN suppression status of "suppressed," has the DN unsuppressed to the third party.
- A subscriber who successfully activates 3WC and then CNDB in the same call, and who has a default DN suppression status of "unsuppressed," has the DN suppressed to the third party.

The suppression status of the first leg of a three-way call does not affect the suppression status of the second leg.

Speed Calling

The CNDB, CNB, and CNNB features are functionally compatible with the Speed Calling feature, provided that the speed call cell number is dialed after the CNDB, CNB, or CNNB feature is activated.

Activation/deactivation by the end user

Subscribers must contact the operating company to have option CNDB added to their lines by means of service orders. The CNDB group option is assigned to a customer group by the operating company by datafilling table CUSTSTN. Once assigned to a customer group, option CNDB is available to all members of the customer group.

Calling Number Delivery Blocking (CNDB) (continued)

Once option CNDB has been added to a line or customer group, the subscriber changes the suppression status of his or her DN from the default status for the current call by

- going off-hook
- obtaining a dial tone
- dialing the CNDB access code

The subscriber must dial the CNDB access code before each call in order to change the suppression status of his or her DN.

Except for ACB calls, CNDB has no effect on subsequent calls. That is, a subscriber whose DN has a default status of “suppressed,” and who has invoked CNDB to unsuppress the DN for the current call, has the “suppressed” default status reinstated for subsequent calls.

Similarly, a subscriber whose DN has a default status of “unsuppressed,” and who has invoked CNDB to suppress the DN for the current call, has the “unsuppressed” default status reinstated for subsequent calls.

CNDB access code

The access code is identical for both the CNDB line option and the CNDB customer group option, and has the following form:

- 11XX for dial pulse (DP) lines
- 11XX or *XX for dual-tone multifrequency (DTMF) lines

The recommended access codes for CNDB are as follows:

- 1167 for DP lines
- 1167 or *67 for DTMF lines

Billing

When subscription usage sensitive pricing (SUSP) is set to ON in table AMAOPTS (Automatic Message Accounting Options), the AMA billing option is available for CNDB in the office. The AMA billing option is specified during the addition of option CNDB to a subscriber line. This is done through the service order system (SERVORD). See the following figure for an example of option SUSP in table AMAOPTS.

Calling Number Delivery Blocking (CNDB) (continued)

Example of option SUSP in table AMAOPTS

<u>OPTION</u>	<u>SCHEDULE</u>
SUSP	ON

If a valid route is found based on the digits dialed, even if the call does not actually complete, an AMA record is generated if translations are set for an AMA record.

If SUSP is enabled for the office, two billing options are available when CNDB is added to a line:

- No Automatic Message Accounting (NOAMA)
- AMA

If SUSP is not enabled for the office, the billing option defaults to NOAMA. All CNDB lines in such an office have option NOAMA.

NOAMA billing option

With the NOAMA billing option, no AMA records are generated for CNDB service.

In this feature description, option CNDB with NOAMA billing is referred to as CNDB.

If SUSP is set to ON, option CNDB is datafilled by specifying the billing option of NOAMA when adding CNDB to a subscriber line. If SUSP is set to OFF, the billing option default is NOAMA, and no billing option is specified when CNDB is added to a subscriber line.

AMA billing option

With the AMA billing option, AMA records are generated each time CNDB is activated, followed by the dialing of a valid DN. For AMA billing to occur, SUSP must be set to ON in table AMAOPTS. In this feature description option CNDB with AMA or individual billing is referred to as CNDB SUSP.

Option CNDB SUSP is datafilled by specifying the billing option of AMA when adding CNDB to a subscriber line.

Note: Members of a customer group with the CNDB customer group option must have option CNDB SUSP assigned to individual lines if AMA billing is required for the subscribers within the customer group.

Calling Number Delivery Blocking (CNDB) (continued)

CNDB SUSP call code and structure code

CNDB with AMA billing uses call code 330 and structure code 1030. See the following figure for an example AMA record.

Example of CNDB SUSP AMA record

```
HEX ID:AA STRUCT CODE:01030C CALL CODE:330C SENSOR TYPE:036C  
SENSOR ID:0200200C REC OFC TYPE:036C REC OFC ID:0200200C  
DATE:80501C SERVICE FEAT:075C ORIG NPA:613C ORIG NUMBER:7652707C  
OVERSEAS IND:0C TERM NPA:00613C TERM NUMBER:7652040C  
CONNECT TIME:1400116C ELAPSED TIME:000000000C CLASS FUNCTION:000C  
FEATURE STATUS:000C SCRNLIST:000C SCRNLIST SCR:000C  
SCRNLIST DRCW:000C
```

The following codes are specific to CNDB SUSP:

- Structure code: 1030C
- Call code: 330C
- Service feature: 075C
- CLASS function: 000C
- Feature status: 000C
- Screening list size for SCF: 000C
- Screening list size for SCRJ: 000C
- Screening list size for DRCW: 000C

Station Message Detail Recording

Calling Number Delivery Blocking (CNDB) does not affect Station Message Detail Recording.

Datafilling office parameters

Calling Number Delivery Blocking (CNDB) does not affect office parameters.

Datafill sequence

The CNDB feature is available both as a line option and as a customer group option. A subscriber can be assigned the CNDB line option and be a member of a customer group with the CNDB group option. However, a subscriber can also have the CNDB feature assigned to his or her line without becoming a member of a customer group, or can be a member of a customer group with option CNDB and not have the CNDB line option.

Calling Number Delivery Blocking (CNDB) (continued)

Before beginning datafill for CNDB

Before beginning CNDB datafill, the following steps should be performed:

- Determine if a new announcement is required to confirm CNDB activation and deactivation. CNDB uses standard announcements. If an existing announcement is to be used for CNDB confirmation, ensure that the following tables are datafilled:

- CLI
- ANNS
- ANNMEMS
- DRAMS
- DRAMTRK

Note: Datafill for the above tables is described in the data schema section of this document.

- If AMA billing is required for CNDB, ensure that field SUSP is set to ON in table AMAOPTS.

To datafill the CNDB feature the following steps should be performed:

- Datafill the new standard announcement (if required).
- Enable the CNDB feature for the office in table RESOFC. The CNDB feature may be enabled after option CNDB has been assigned to subscriber lines. This allows the operating company to provide CNDB service to a number of CNDB subscribers simultaneously.
- Provide the CNDB access code to allow subscribers to invoke CNDB.
- Add the CNDB line option to subscriber lines through SERVORD.
- If required, add the CNDB customer group option to table CUSTSTN.

Calling Number Delivery Blocking (CNDB) (continued)

The following table lists the tables that require datafill to implement Calling Number Delivery Blocking (CNDB). The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Calling Number Delivery Blocking (CNDB)

Table	Purpose of table
RESOFC	Residential Line CLASS Office Data. This table contains data on CLASS features and enables the CNDB feature for the office.
IBNXLA	IBN Translations. This table contains the data for the digit translations of calls from an MDC station, attendant console, incoming trunk group, or incoming side of a two-way MDC trunk group.
CUSTSTN	Customer Group Station Option. This table lists the station options assigned to each customer group.

Datafilling table RESOFC

Table RESOFC (Residential Line CLASS Office Data) contains data on CLASS features and enables the CNDB feature for the office. The CNDB feature is enabled by setting field ENABLED to Y.

If a new announcement is to be provided for CNDB confirmation, datafill field ANNCS as well. This field defines the CNDB confirmation announcement.

Table RESOFC can be datafilled after assigning option CNDB to subscribers' lines. This allows the operating company to provide CNDB service to a number of lines simultaneously.

The following table shows the datafill specific to Calling Number Delivery Blocking (CNDB) for table RESOFC. Only those fields that apply directly to Calling Number Delivery Blocking (CNDB) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table RESOFC (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfield	Key. This field consists of the subfield FEATNAME. This subfield is described below.
	FEATNAME	CNDB	Feature name. This subfield is the key to the table. It specifies the name of the feature. Enter CNDB.

Calling Number Delivery Blocking (CNDB) (continued)

Datafilling table RESOFC (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
ENABLED		Y or N	Enabled. This field specifies whether or not the feature is enabled in the office. Enter Y or N. Note: The default value for each CLASS feature included in the load is N (disabled).
FEATDATA		see subfields	Feature data. This field consists of the subfields ACCESS, FEATNAME and ANNCS. These subfields are described below.
	ACCESS	SUBSCR or UNIVER	Feature access. This subfield specifies how the feature is accessed. SUBSCR indicates subscription access only and UNIVER indicates universal access for all RES lines. Enter SUBSCR or UNIVER. Note: The value UNIVER is valid only when feature package NTXQ70AA, Universal Access to CLASS Features, is present in the office. Refer to "Universal Access to CLASS Features" for more information on universal access.
	FEATNAME	CNDB	Feature name. This subfield specifies the feature name. Enter CNDB. If confirmation announcements are not provided, enter \$ to indicate end of entry. If announcements are to be provided, datafill subfield ANNCS as well.
	ANNCS	CNDBCONF or \$	Announcement. This subfield specifies whether or not a confirmation announcement is to be provided for CNDB. Enter CNDBCONF to identify the CNDB confirmation announcement, followed by the CLLI of the previously defined announcement. For CNDB, the recommended datafill for the new announcement is CNDBCONF. Enter \$ if no confirmation announcement is to be provided.
FNALANN		see subfields	Feature not allowed announcement. This field consists of the subfields POTS_ACCESS and FNAL_CLLI. Refer to "Datafill procedure for table RESOFC" for "Feature not allowed announcement" for details on these subfields.

Calling Number Delivery Blocking (CNDB) (continued)

Datafill example for table RESOFC

The following example shows sample datafill for table RESOFC.

MAP display example for table RESOFC

KEY		ENABLED		FEATDATA		
		FNALANN				
CNDB	Y	SUBSCR	CNDB	CNDBCONF	CNDBANN	
	\$					

Datafilling table IBNXLA

Table IBNXLA (IBN Translations) contains the data for the digit translations of calls from an MDC station, attendant console, incoming trunk group, or incoming side of a two-way MDC trunk group.

Datafill in table IBNXLA defines the access code that corresponds to the CNDB feature. Option CNDB and the CNDB access code are added to table IBNXLA.

The CNDB access code takes the following form:

- *XX or 11XX for DTMF lines
- 11XX for DP lines

The XX part of the access code can be changed on an individual office basis. Recommended CNDB access codes for DTMF and DP lines are *67 and 1167 respectively.

Note: The recommended Subscriber Services datafill should be used. This prevents speed call long cells overlapping with the CNDB access code.

The following table shows the datafill specific to Calling Number Delivery Blocking (CNDB) for table IBNXLA. Only those fields that apply directly to

Calling Number Delivery Blocking (CNDB) (continued)

Calling Number Delivery Blocking (CNDB) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table IBNXLA

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	Key. This field consists of the subfields XLANAME and DGLIDX. These subfields are described below and must be entered in succession.
	XLANAME	RXCFN	Translator name. This subfield specifies the 1- to 8-character name assigned to the translator. Enter RXCFN.
	DGLIDX	67	Digilator index. This subfield specifies the digit or digits assigned to the index. Enter 67.
RESULT		see subfields	Result. This field consists of the subfields TRSEL, ACR, SMDR, and FEATURE. These subfields are described below.
	TRSEL	FEAT	Translation selector. This subfield specifies the translation selector. Enter FEAT.
	ACR	N	Account entry code. This subfield specifies whether or not the account entry code is required. Enter N.
	SMDR	N	Station message detail recording. This subfield specifies whether or not SMDR is required. Enter N.
	FEATURE	CNDB	Feature. This subfield specifies the name of the feature to which the code is assigned. Enter CNDB.

Datafill example for table IBNXLA

The following example shows sample datafill for table IBNXLA.

Calling Number Delivery Blocking (CNDB) (continued)

MAP display example for table IBNXLA

KEY		RESULT			
RXCFN	67	FEAT	N	N	N CNDB

Datafilling table CUSTSTN

Table CUSTSTN (Customer Group Station Option) lists the station options assigned to each customer group. Datafill in table CUSTSTN assigns the CNDB feature to a customer group. Any line within a customer group with name and number control features can activate them, but no CNDB announcement is provided to lines without the CNDB line option. This option provides CNDB features capability to all its subscribers. Any line within a customer group that has the CNDB customer group option overrides the table RESOFC datafill for CNDB features.

When the CLASS package is present in the load, any line with the CNDB, CNB, or CNNB line option can activate the features. Because table RESOFC datafill controls feature activation in this case, the CNDB announcement is provided to users with the CNDB line option.

The following table shows the datafill specific to Calling Number Delivery Blocking (CNDB) for table CUSTSTN. Only those fields that apply directly to Calling Number Delivery Blocking (CNDB) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table CUSTSTN

Field	Subfield or refinement	Entry	Explanation and action
CUSTNAME		1- to 16-characters	Customer group name. This field specifies the name of the customer group. Enter 1- to 16-characters.
OPTNAME		CNDB	Option name. This field specifies the option name. Enter CNDB.
OPTION		CNDB	Option. Enter CNDB.

Datafill example for table CUSTSTN

The following example shows sample datafill for table CUSTSTN.

Calling Number Delivery Blocking (CNDB) (continued)

MAP display example for table CUSTSTN

CUSTNAME	OPTNAME	OPTION
RESGRP	CNDB	CNDB

Translation verification tools

The following example shows the output from the TRAVER (translations verification) command when it is used to verify Calling Number Delivery Blocking (CNDB).

TRAVER output example for Calling Number Delivery Blocking (CNDB)

```
>TRAVER L 6211233 'B67' B
TABLE IBNLINES
  HOST 00 0 09 07 0 DP STN RES 6211233 0 $
TABLE LINEATTR
  0 1FR NONE NT FR01 0 613 P621 L613 TSPS 10 NIL          NILSFC
LATA1 0 NIL NIL 00 Y RESGRP 0 2
  LCABILL OFF - BILLING DONE ON BASIS OF CALLTYPE
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE NCOS
RESGRP 2 0 0 RNCOS2 ( XLAS RXCMN2 NXLA RES ) $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA, CUSTXLA, FEATXLA, VACTRMT,
AND DIGCOL
RESGRP NXLA RESXLA RXCFN 0 RES
TABLE DIGCOL
  RES SPECIFIED: RES DIGIT COLLECTION
NCOS FEAT XLA NAME IS NIL.  GO TO NEXT XLA NAME.
TABLE IBNXLA: XLANAME RXCFN
  RXCFN 67 FEAT N N N (CNDB)

++ TRAVER: SUCCESSFUL CALL TRACE ++
```

SERVORD

The CNDB feature can be added, deleted, or changed using SERVORD commands such as ADO, DEO, and CHF.

Calling Number Delivery Blocking (CNDB) (continued)

Assigning the CNDB line option to a subscriber line through SERVORD provides the CNDB subscriber with full access to the CNB and CNNB features. Deleting the CNDB line option from a subscriber line deletes the CNB and CNNB features. However, a subscriber who is a member of a customer group with the CNDB customer group option has access to the CNB and CNNB features regardless of whether the CNDB line option is assigned to his or her line.

Before adding CNDB

Before adding CNDB to a subscriber line, ensure that the following conditions are met:

- The CNDB feature is enabled in table RESOFC.
- Option SUSP for the office is set as required in table AMAOPTS.

Note 1: The CNDB feature can be enabled in table RESOFC after adding it to subscriber lines. This enables the feature for all subscribers simultaneously.

Note 2: If AMA records are to be generated for CNDB, option SUSP must be set to ON. If no AMA records are to be generated for CNDB, it is not necessary to datafill option SUSP, since this option defaults to OFF.

Note 3: If option CNDB SUSP is assigned to a subscriber line, AMA billing records are generated for the subscriber usage of CNDB, CNB, and CNNB.

Assigning CNDB

Assigning the CNDB feature to a subscriber line makes the CNDB, CNB, and CNNB features available to the subscriber. The subscriber must then dial a different access code to activate CNDB, CNB, or CNNB for each outgoing call.

Specifying the billing option for a line

The billing options available for CNDB depend on whether SUSP is enabled for the office (that is, whether field SUSP is datafilled set to ON in table AMAOPTS).

Billing option with SUSP set to OFF

When field SUSP is set to OFF, the billing option defaults to NOAMA. In this case, no billing prompt is given when CNDB is added to a line.

If SUSP was previously datafilled as ON, AMA records are no longer generated for CNDB subscribers who were previously assigned option AMA.

Calling Number Delivery Blocking (CNDB) (continued)

New subscribers are automatically assigned option NOAMA when CNDB is added to their lines.

SERVORD limitations and restrictions

CNDB does not have any limitations or restrictions.

SERVORD prompts

The following table shows the SERVORD prompts used to assign Calling Number Delivery Blocking (CNDB).

SERVORD prompts for Calling Number Delivery Blocking (CNDB)

Prompt	Valid input	Explanation
OPTION	CNDB	Assigns, updates, and removes the CNDB feature
BILLING_ OPTION	AMA NOAMA	Indicates the billing option to be specified, if required, when assigning a feature to a RES line. Enter AMA if an AMA record should be created; enter NOAMA if an AMA record should not be created.

SERVORD example for implementing Calling Number Delivery Blocking (CNDB)

The following SERVORD examples shows how Calling Number Delivery Blocking (CNDB) is added to a line without the AMA billing option.

Adding options with SUSP disabled

The following example shows how to add option CNDB to a line when SUSP is disabled for the office. Since SUSP is not available, the BILLING_OPTION prompt does not appear.

Calling Number Delivery Blocking (CNDB) (continued)

SERVORD example for setting up CNDB using ADO in prompt mode

```
>SERVORD
S0:
>ADO
SONUMBER:  NOW 91 02 14 AM
>
DN_OR_LEN:
>8658172
OPTION:
> CNDB
OPTION:
>$
COMMAND AS ENTERED:
ADO NOW 91 02 14 AM 8658172 (CNDB) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
> Y
```

SERVORD example for Calling Number Delivery Blocking (CNDB) in no-prompt mode

```
>ADO $ 8658172 CNDB $ Y
```

The following example shows how to add the CNDB line option to a line when SUSP is disabled for the office and the RES_SO_SIMPLIFICATION office parameter is enabled. Since SUSP is not available, the BILLING_OPTION prompt does not appear.

Calling Number Delivery Blocking (CNDB) (continued)

SERVORD example for setting up CNDB using ADO (RES_SO_SIMPLIFICATION enabled) in prompt mode

```
>SERVORD
S0:
>ADO
SONUMBER:  NOW 91 11 23 AM
>
DN_OR_LEN:
>6211061
OPTION:
>CNDB
OPTION:$
>$
COMMAND AS ENTERED:
ADO NOW 91 11 23 AM 6211061 (CNDB) $
There is a RES specific option in the option set.
Line will become a RES line.
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>Y
```

SERVORD example for Calling Number Delivery Blocking (CNDB) in no-prompt mode

```
>ADO $ 6211061 CNDB $ Y
```

Adding options with SUSP enabled

When SUSP is enabled for the office, two billing options are available for CNDB:

- AMA
- NOAMA

NOAMA is the default value for the billing option. When adding CNDB to a line, the BILLING_OPTION prompt appears to specify AMA or NOAMA.

The following example shows how to add option CNDB to a line when SUSP is turned on for the office. Since SUSP is available, the BILLING_OPTION prompt appears. The AMA billing option is specified.

Calling Number Delivery Blocking (CNDB) (continued)

SERVORD example for adding CNDB SUSP using ADO (option AMA) in prompt mode

```
>SERVORD
S0:
>ADO
SONUMBER:  NOW 91 11 23 AM
>
DN_OR_LEN:
>6211061
OPTION:
>CNDB
BILLING OPTION: NOAMA
>AMA
OPTION:
>$
COMMAND AS ENTERED:
ADO NOW 91 11 23 AM 6211061 (CNDB AMA) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>Y
```

SERVORD example for Calling Number Delivery Blocking (CNDB) in no-prompt mode

```
>ADO $ 6211061 CNDB AMA $ Y
```

The following example shows how to add option CNDB to a line when SUSP is enabled for the office. Since SUSP is available, the BILLING_OPTION prompt appears. The NOAMA billing option is specified.

Calling Number Delivery Blocking (CNDB) (continued)

SERVORD example for setting up CNDB using ADO (option NOAMA) in prompt mode

```
>SERVORD
S0:
>ADO
SONUMBER:  NOW 91 11 23 AM
>
DN_OR_LEN:
>6211061
OPTION:
>CNDB
BILLING OPTION: NOAMA
>$
COMMAND AS ENTERED:
ADO NOW 91 11 23 AM 6211061 (CNDB NOAMA) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>Y
```

SERVORD example for Calling Number Delivery Blocking (CNDB) in no-prompt mode

```
>ADO $ 6211061 CNDB NOAMA $ Y
```

Deleting options

The following example shows how to delete the option CNDB from a line.

Calling Number Delivery Blocking (CNDB) (end)

SERVORD example for deleting CNDB using DEO in prompt mode

```
>SERVORD
S0:
>DEO
SONUMBER:  NOW 91 11 23 AM
>
DN_OR_LEN:
>6211061
OPTION:
>CNDB
OPTION:
>$
COMMAND AS ENTERED:
ADO NOW 91 11 23 AM 6211061 (CNDB) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>Y
```

SERVORD example for deleting CNDB using DEO in no-prompt mode

```
>DEO $ 6211061 CNDB $ Y
```

Calling Number Delivery Blocking (CNDB) for POTS

Ordering codes

Functional group ordering code: RES00003

Functionality ordering code: not applicable

Release applicability

BCS33 and up

Prerequisites

To operate, Calling Number Delivery Blocking (CNDB) for POTS has the following prerequisites:

- BAS Generic, BAS00003
- MDC Minimum, MDC00001
- MDC Standard, MDC00003
- RES Service Enablers, RES00006

Description

The Calling Number Delivery Blocking (CNDB) for POTS feature provides CNDB for all unconverted plain old telephone service (POTS) lines. CNDB for POTS is provided for the following line class codes (LCC):

- 1FR
- 2FR
- 4FR
- 1MR
- 2WW
- CDF
- CCF
- CSP
- CFD
- EOW
- ETW
- INW
- OWT
- PBM

Calling Number Delivery Blocking (CNDB) for POTS (continued)

- PMX
- TWX
- ZMD
- ZMZPA

Since CNDB for POTS is assigned on an officewide basis, there is no line option for the feature, and it is not assigned to individual lines. When CNDB for POTS is active in an office, all unconverted POTS line subscribers can dial a CNDB access code and toggle the permanent suppression status of their line on an individual call basis.

Operation

Directory number (DN) delivery can be activated or deactivated on an officewide basis for a block of DNs, for an individual DN, or for an individual call. Option SUPPRESS turns on permanent suppression for an office, a block of DNs, or a line. Option CNDB allows subscribers to toggle the permanent suppression setting on an individual call basis, unless SUPPRESS is enabled for an office. This level of permanent suppression overrides CNDB. For more information on call delivery and blocking options, refer to “Calling Number Delivery Blocking (CNDB)”.

Translations table flow

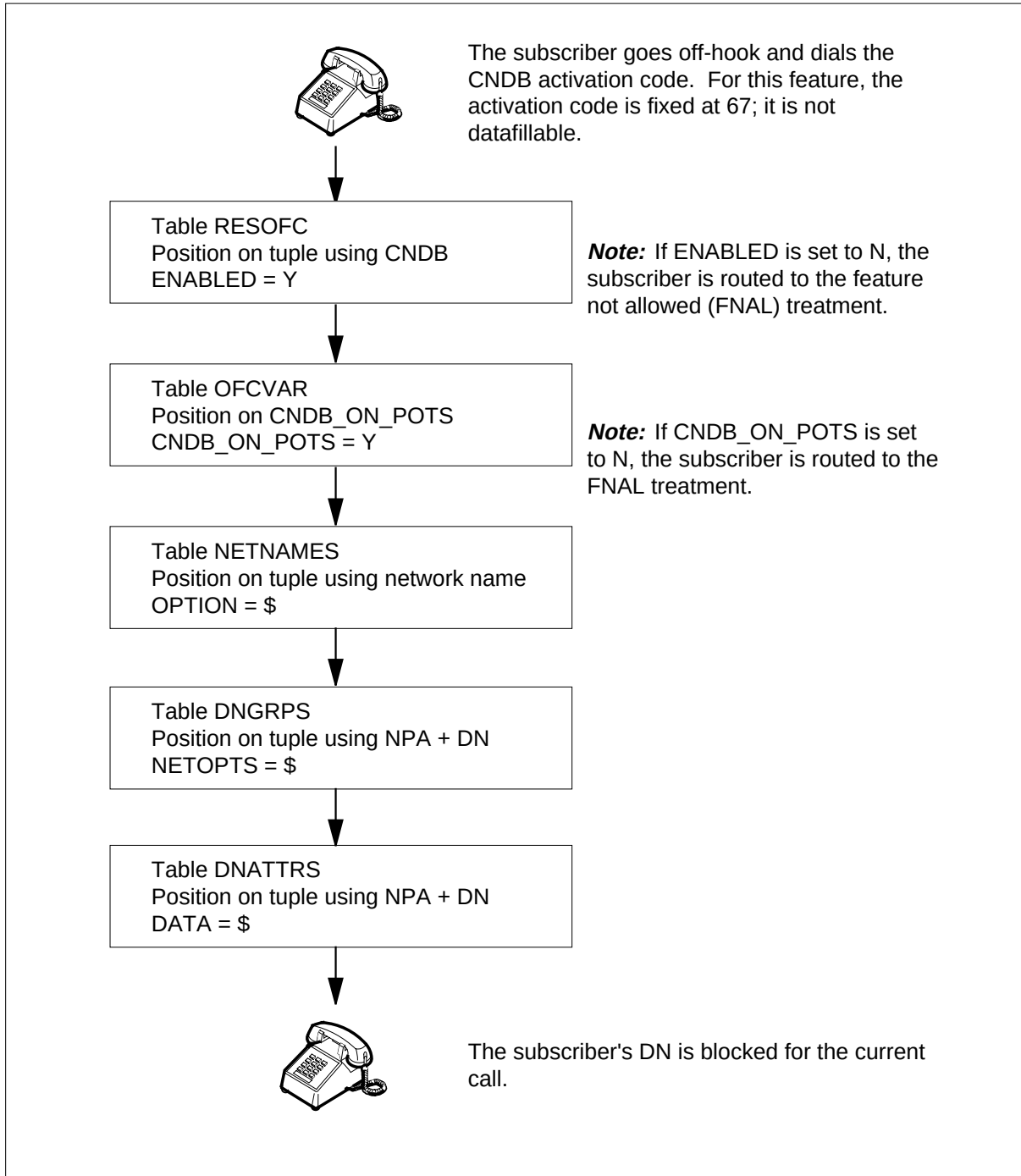
The Calling Number Delivery Blocking (CNDB) for POTS translations tables are described in the following list:

- Table RESOFC determines whether CNDB is enabled for an office. For this example, CNDB is enabled.
- Table OFCVAR is an office parameter table containing information that can change from office to office. CNDB for POTS can be enabled and disabled on an officewide basis by setting the CNDB_ON_POTS office parameter in table OFCVAR to Y or N, respectively.
- Table NETNAMES controls name and DN suppression on the network level. For this example, no suppression is assigned.
- Table DNGRPS controls name and DN suppression for groups of DNs. For this example, no suppression is assigned.
- Table DNATTRS controls name and DN suppression for individual lines. For this example, no suppression is assigned.

The Calling Number Delivery Blocking (CNDB) for POTS translation process is shown in the flowchart that follows.

Calling Number Delivery Blocking (CNDB) for POTS (continued)

Table flow for Calling Number Delivery Blocking (CNDB) for POTS



Calling Number Delivery Blocking (CNDB) for POTS (continued)

The following table lists the datafill content used in the flowchart.

Datafill example for Calling Number Delivery Blocking (CNDB) for POTS

Datafill table	Example data
RESOFC	CNDB Y SUBSCR CNDB \$ \$
OFCVAR	CNDB_ON_POTS Y
NETNAMES	PUBLIC 0 0 \$
DNGRPS	613 621 1000 1999 (PUBLIC \$) \$
DNATTRS	613 621 1234 (PUBLIC \$) \$ \$

Limitations and restrictions

The limitations and restrictions that apply to Calling Number Delivery Blocking (CNDB) also apply to CNDB for POTS. In addition, the following limitations and restrictions apply:

- Subscription usage sensitive pricing (SUSP) is not supported.
- Like CNDB, CNDB for POTS does not support lines that do not receive dial tone signals (manual and automatic lines).

Interactions

The following paragraphs describe the interactions between Calling Number Delivery Blocking (CNDB) for POTS and other functionalities.

Call Forwarding

For a forwarded call, the originating DN is displayed or suppressed according to the originator's intentions. In other words, if a caller dials a DN and is forwarded to another station, the caller's DN is displayed on the terminating station only if its permanent suppression status is unsuppressed or the caller activated an option specifically to deliver the DN.

Cancel Call Waiting

CNDB for POTS and Cancel Call Waiting (CCW) can be activated in succession for the same call. Dialed in either order, the validated access codes return a receive recall dial tone. The options are then activated for the call that follows.

Speed Calling

CNDB for POTS can be used with Speed Calling (SC1 or SC8) calling codes. Subscribers enter the CNDB access code, receive a recall dial tone, then dial a speed calling code.

Calling Number Delivery Blocking (CNDB) for POTS (continued)

A CNDB access code, a CNDB for POTS access code, and a destination DN cannot be strung together in a speed calling cell.

Three-Way Calling

CNDB for POTS can be used with Three-Way Calling (3WC). Subscribers can control DN delivery for the third party of a three-way call. subscribers flash to activate 3WC, receive recall dial tone, dial the CNDB for POTS access code, receive recall dial tone again, then dial the third party.

Warm Line

CNDB for POTS can be activated prior to Warm Line (WML) time-out to alter the availability of the calling party DN to the WML DN.

Activation/deactivation by the end user

CNDB for POTS access codes are *67 or 1167 for dual-tone multifrequency (DTMF) lines and 1167 for dial pulse (DP) lines. These values cannot be changed.

Activation/deactivation of Calling Number Delivery Blocking (CNDB) for POTS by the end user

The following procedure shows how to activate CNDB for POTS. The procedure assumes that office level suppression is disabled in table NETNAMES.

At your telephone:

- 1 Go off-hook.
Response:
Receive dial tone.
- 2 Dial the CNDB on POTS access code: *67 or 1167 (DTMF lines) or 1167 (DP lines).
Response:
 1. If the CNDB feature is enabled in table RESOFC and the CNDB_ON_POTS parameter is set to Y, receive one of the following:
 - an announcement followed by a recall dial tone (see Note 1)
 - recall dial tone
 2. If CNDB_ON_POTS is set to N, the call is routed to feature not allowed (FNAL) treatment.
 3. If a system failure occurs, the call is routed to no software resources (NOSR) treatment.
 4. If partial digits are dialed, the call is routed to partial dial (PDIL) treatment.
- 3 Dial the destination DN (see Note 2).

Calling Number Delivery Blocking (CNDB) for POTS (continued)

Response:

If the permanent suppression status for the originating line is unsuppressed, the call is routed to the destination DN without the originating DN. Conversely, if the suppression status is suppressed, the call is routed to the destination DN with the originating DN.

Note 1: The announcement is supplied by the operating company and datafilled in table RESOFC. It does not indicate the permanent suppression status or toggled suppression status of the call. Refer to "Calling Number Delivery Blocking (CNDB)" for more information on datafilling the announcement.

Note 2: A second option access code can be dialed before the DN. Refer to "Interactions" in this document.

Billing

Calling Number Delivery Blocking (CNDB) for POTS does not affect billing.

Station Message Detail Recording

Calling Number Delivery Blocking (CNDB) for POTS does not affect Station Message Detail Recording.

Datafilling office parameters

The following table shows the office parameters used by Calling Number Delivery Blocking (CNDB) for POTS. CNDB for POTS adds the office parameter CNDB_ON_POTS which is used for enabling CNDB for POTS in an office. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by Calling Number Delivery Blocking (CNDB) for POTS

Table name	Parameter name	Explanation and action
OFCVAR	CNDB_ON_POTS	Specifies whether CNDB is available to POTS subscribers in an office. To enable CNDB, enter Y; to disable CNDB, enter N.
Note: Changes to this parameter take effect immediately.		

Datafill sequence

The CNDB for POTS feature does not affect datafill sequence.

Datafilling table CNDB

The CNDB for POTS feature does not affect datafill procedure.

Calling Number Delivery Blocking (CNDB) for POTS (end)

Translation verification tools

Calling Number Delivery Blocking (CNDB) for POTS does not use translation verification tools.

SERVORD

Calling Number Delivery Blocking (CNDB) for POTS does not use SERVORD.

CLASS Message Waiting Indicator (CMWI)

Ordering codes

Functional group ordering code: RES00003

Functionality ordering code: RES00027

Release applicability

NA008 and up

Prerequisites

To operate, CLASS Message Waiting Indicator (CMWI) has the following prerequisites:

- BAS Generic, BAS00003
- MDC Minimum, MDC00001
- MDC Standard, MDC00003
- RES Service Enablers, RES00006

Network configuration

Common Channel Signaling No. 7 (CCS7) connectivity is required for network (interoffice) configuration of Visual Message Waiting Indicator. The following prerequisites are required for CCS7 connectivity:

- Base ISUP, ISP70001
- TEL CCS7 Base, TEL00008

Description

The CLASS Message Waiting Indicator (CMWI) feature builds on the Message Waiting (MWT) feature. The MWT feature allows a user to have a list of messages stored against his or her station in the DMS switch or at a message center. When a message is queued against the user's station, the message waiting indicator associated with the user's station is activated. When the last message is retrieved by the user, the message waiting indicator is deactivated. For complete details on the MWT feature, refer to the data schema section of this document.

The CMWI feature provides a means of controlling the message waiting indicator on a Custom Local Area Signaling Services (CLASS) set. Prior to this feature, lamps on 2500 sets could only be controlled through the NT6X19 line card. A line not equipped with such a line card could only receive stuttered dial tone to indicate when a message was waiting. With the CMWI feature, special line cards are no longer a prerequisite for a visual display of the message waiting indicator.

CLASS Message Waiting Indicator (CMWI) (continued)

The CMWI feature option can be assigned to lines with the line class codes (LCC) of IBN and RES.

The prerequisites for the CMWI feature are as follows:

- The subscriber must have option MWT assigned to his or her line before option CMWI can be added.
- The subscriber must be equipped with a set capable of receiving and understanding CLASS modem transmissions. The CLASS Modem Resource (CMR) card is used to transmit the lamp/display information to the set.

CMR transmissions require that a physical path be established between the peripheral containing the CMR card and the subscriber's set. This requirement means that while the path is established (that is, during transmission), calls are not allowed to terminate to the set. Current estimates show that CMR transmissions busy the set to incoming calls from 0.75 to 9.0 seconds, depending on how the CMWI feature is datafilled.

If the subscriber attempts to originate a call while the CMR card is transmitting to his or her set, transmission is immediately aborted, and the origination is handled. Transmission to an off-hook set is not allowed to protect the subscriber from hearing the modem burst.

CMR retransmissions are required when the CMR card cannot handle an initial transmission request or when a subscriber goes off-hook while a transmission is taking place. The maximum number of retransmissions is defined in datafill.

CMWI enhancements for Universal Digital Loop Carriers

This feature provides ringing on activation, deactivation, and retransmissions of CMWI for lines that physically exist on universal digital loop carriers (UDLC). CMWI requires a path for transmission to be established from the DMS-100 switch to the set. Previously, for lines on a UDLC, a path was not established on a terminating call until physical ringing had been detected at the UDLC.

This feature provides a half second of ringing to establish a path to the customer set prior to activating or deactivating the lamp and display information to the set and on retransmissions. This functionality is provided on a per line basis, through datafill, as part of the MWT line option.

CLASS Message Waiting Indicator (CMWI) (continued)

There are three differences in feature functionality when a line has the 20CMWIRING field in table IBNFEAT set to UDLC instead of Y or N:

- Message activation and deactivation
- Retransmissions
- CMWIRING feature access code.

Message activation and deactivation

When a CMWI message is queued against a line that has the CMWIRING field set to UDLC, a ring splash of approximately one half second precedes the message to activate or deactivate the CMWI lamp. Previously, CMWI messages could have a ring burst as part of activation, when the CMWIRING field was set to Y, but could not ring prior to deactivation, without feature NC0499.

The ringing capability of this feature also applies to delayed activations and deactivations. When a message is queued against a UDLC line that is off-hook, the ring burst and the lamp message will be sent shortly after the line goes to an on-hook state.

Retransmissions

For lines with CMWI, a retransmission attempt is made if an attempt to activate or to deactivate a message waiting indicator fails. For most lines with CMWI, this retransmission attempt occurs less than two seconds after the failure is reported.

For lines existing on UDLCs with CMWI, the retransmission occurs one minute after the failure is reported, to prevent an activation or deactivation followed by one or more retransmissions from sounding like a normal ring on an incoming call.

The ring slash on retransmission will only occur when there is no response from the lamp and on the successful retransmission. The ring splash will not be heard when a failure message is received from the phone. The number of retransmission attempts is the same as for all CMWI and is controlled by field RETRANSMIT in tuple CMWI of table RESOFC.

If a new request is in queue against a line while a retransmission is pending, the retransmission is cancelled and the new request processed.

CMWIRING feature access code

If the CMWIRING field is set to Y, subscribers can dial an access code to activate or deactivate ringing preceding a lamp activation message. This option is not available when this field is set to UDLC. Attempts by a

CLASS Message Waiting Indicator (CMWI) (continued)

subscriber to dial this access code from a UDLC line with result in feature not allowed (FNAL) treatment, as a protective measure to prevent subscribers from disabling their lamp activation for CMWI.

Note: Lines that have message waiting with CMWI and the CMWIRING field set to UDLC should be physically located on a Universal Digital Loop Carrier.

Operation

A subscriber with option CMWI receives a visual and (optionally) an audible notification when messages have been queued for his or her set.

The CMWI feature is invoked when an MWT subscriber with option CMWI needs to be notified of the presence or absence of messages. The request to notify the MWT subscriber of messages can occur while the set is in any state; however, transmission does not take place unless the set is on-hook. For example, the calling party calls the MWT subscriber and receives dial tone. The calling party is prompted to leave a message. The calling party chooses to leave a message, and this, in turn, creates a request to notify the MWT subscriber that a message is waiting for him or her. Similarly, when the MWT subscriber has retrieved all of his or her messages, the message center can request that the message waiting indicator (lamp or display) for the subscriber be deactivated.

Notification to activate or deactivate the message waiting indicator on a set can also arrive while the set is idle. A message center that has received a message for an MWT subscriber may wish to activate that station's message waiting indicator. A calling party can retrieve a message previously left for an MWT subscriber, and this also causes the message waiting indicator to deactivate if it was the only message in queue for that MWT subscriber.

Regardless of when the notification request is initiated, the MWT subscriber only receives the notification when his or her set is idle. If a notification request arrives when the MWT subscriber set is busy, the notification request is delayed by the DMS switch until the station is idle again. When the set returns to idle, a 3-s delay occurs before actual transmission takes place. This allows the modem on the set to stabilize if the station was ringing immediately prior to returning on-hook.

A queued notification request is handled as follows:

- A path is established to the MWT subscriber set, making it busy to terminating calls.
- The request to activate or deactivate the message waiting indicator is set to the peripheral on which the line subtends.

CLASS Message Waiting Indicator (CMWI) (continued)

- A request is sent to the CMR card to transmit the information on the appropriate port and channel.
- When the transmission is completed, an acknowledgment is sent to the DMS switch, which then deallocates the physical path to the MWT subscriber set.

If the CMR card cannot transmit the information (if no modem or ringing detector is available), a negative acknowledgment is sent to the DMS switch. Retransmission is attempted if allowed (specified in datafill).

Audible notification

CMWI subscribers have the option of receiving an audible notification in addition to the visual notification when messages are queued for their sets. Audible notifications come in two forms: ringing and stuttered dial tone.

Ringing

A CMWI subscriber can choose to be notified by a ring burst when his or her set is receiving a notification to activate the message waiting indicator. The ring burst precedes the CMR transmission to the subscriber set. The ring burst consists of one full ring cycle of the basic ring pattern (2.0 s on, 4.0 s off).

No ringing is provided under the following conditions:

- The CMWI feature is being deactivated.
- An initial attempt at transmitting the information fails and retransmission is attempted.
- A delayed request is being handled after the set has returned to the idle state.
- An activation request is received from the lamp audit process.

Note: When the ringing option is chosen, a set might be busy for up to 9.0 s.

Activation or deactivation of ringing option by CMWI subscriber

The CMWI subscriber can activate or deactivate the ringing option by dialing the CMWIRING activation and deactivation codes from his or her set. The CMWIRING activation and deactivation codes are in the form of 11XX for dial pulse (DP) lines and *XX for dual-tone multifrequency (DTMF) lines, where XX is a two-digit code defined by the operating company on an individual office basis in table IBNXL A.

Note: For UDLC, ringing is required to update the MWI. Therefore, activation of the ringing cannot be disabled through datafill or by dialing a feature access code.

CLASS Message Waiting Indicator (CMWI) (continued)

Treatments on activation

Once the CMWIRING activation code is entered, the system checks to ensure that the CMWI feature is enabled for the office and that the line has option CMWI assigned. If the checks pass, feature confirmation tone is given to the subscriber. If either of the checks fails, the subscriber is given FNAL treatment. If CMWIRING activation is denied because of feature interactions, the subscriber is given negative acknowledgement (NACK) treatment

Once the subscriber successfully activates the ringing option, the call releases as any normal single-party call. The subscriber has 10 s to go on-hook before being routed to disconnect (DISC) treatment.

Treatments on deactivation

When the CMWIRING deactivation code is entered, the DMS switch checks to ensure that the CMWI feature is enabled for the office and that the line has the CMWI ringing option assigned. If either of the checks fail, the subscriber is given FNAL treatment. If feature deactivation is successful, the subscriber receives confirmation tone.

Stuttered dial tone

The CMWI subscriber can choose to receive stuttered dial tone in addition to the visual notification when there are messages waiting for him or her. When the subscriber attempts to originate a call and there are messages waiting, the subscriber hears the stuttered dial tone. The stuttered dial tone is not affected by possible failures to activate or deactivate the message waiting indicator for a given set. For example, if a request to activate a message waiting indicator is discarded after the allowable number of retransmissions is exceeded, the stuttered dial tone is set to reflect the true state of the message list; that is, the subscriber hears the stuttered dial tone even though the visual display may not indicate that there are messages waiting.

Lamp audit

Lamp audits run periodically to keep all lamps in sync. The lamp audit verifies if there is at least one message waiting in queue for a given set. If there is a message in queue, the lamp is turned on. No attempt is made to update the lamp when there are no messages in queue.

A notification request received from the lamp audit process while a subscriber is off-hook is ignored (that is, it is not delayed). No attempt is made to retransmit the request.

Activation or deactivation of CMWI by the operating company

The operating company activates and deactivates the CMWI feature through datafill in table RESOFC. Note that during deactivation of the CMWI feature,

CLASS Message Waiting Indicator (CMWI) (continued)

the stuttered dial tone and ringing options associated with CMWI are also deactivated. When the CMWI feature is deactivated, the MWT feature is still activated. Subscribers can still leave and receive messages; however, visual notification is not provided.

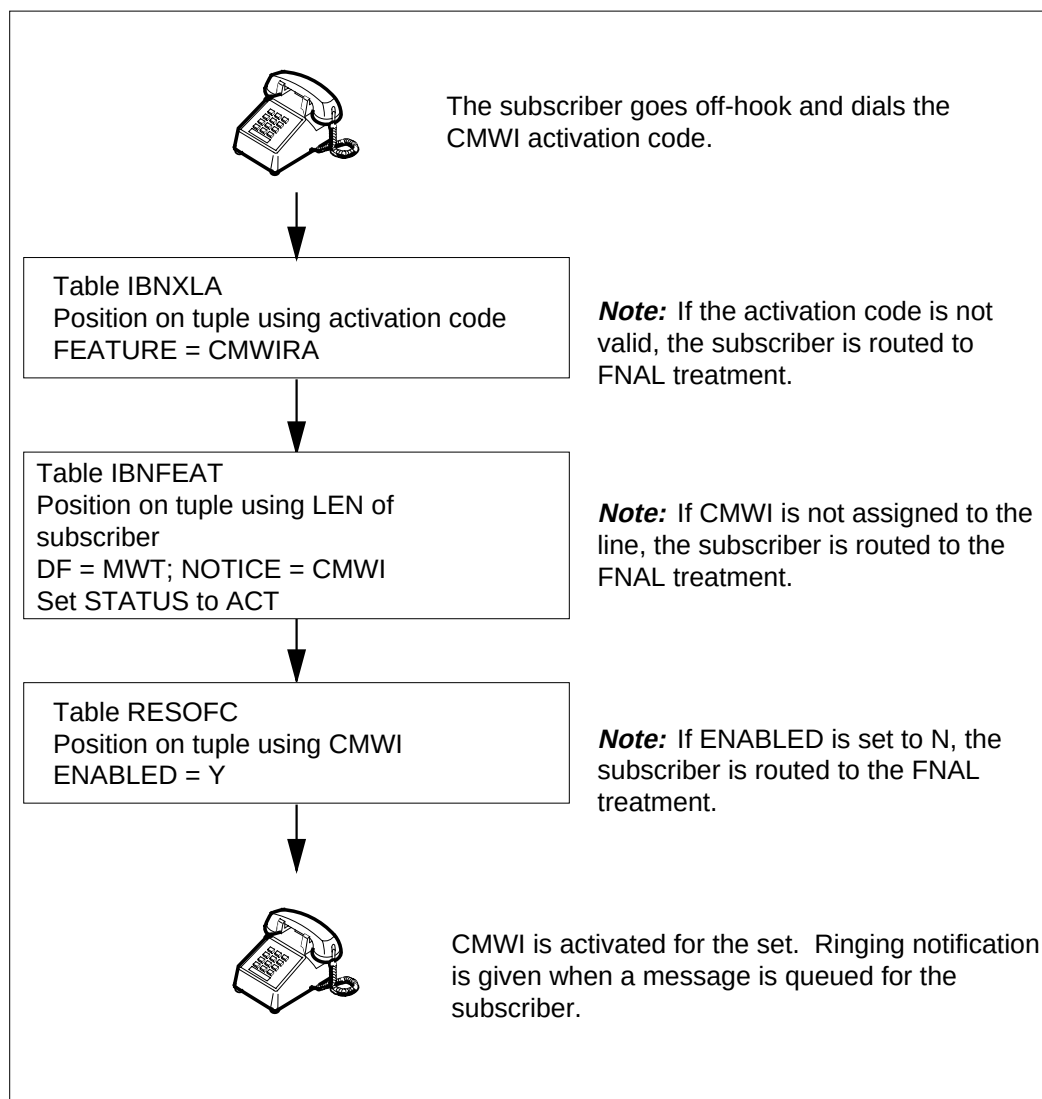
Note: If the CMWI feature is deactivated while a subscriber has messages in queue, the subscriber can retrieve his or her messages; however, the lamp remains lit.

Translations table flow

The CLASS Message Waiting Indicator (CMWI) translations tables are described in the following list:

- Table IBNXLA provides the name of the feature associated with an activation code.
- Table IBNFEAT lists the features assigned to a line equipment number (LEN). For CMWI, the feature assigned is MWT, and the notice type is CMWI. Field STATUS is set to ACT when CMWI ringing is activated, and it is set to INACT when CMWI ringing is deactivated.
- Table RESOFC determines whether CMWI is enabled for an office. For this example, CMWI is enabled.

The CLASS Message Waiting Indicator (CMWI) translation process is shown in the flowchart that follows.

CLASS Message Waiting Indicator (CMWI) (continued)**Table flow for CLASS Message Waiting Indicator (CMWI)**

The following table lists the datafill content used in the flowchart. For this example the CMWI activation code is 67 and the LEN of subscriber is HOST 00 02 0 05.

Datafill example for CLASS Message Waiting Indicator (CMWI) (Sheet 1 of 2)

Datafill table	Example data
IBNXLA	RXCFN 67 FEAT N N N CMWIRA

CLASS Message Waiting Indicator (CMWI) (continued)**Datafill example for CLASS Message Waiting Indicator (CMWI) (Sheet 2 of 2)**

Datafill table	Example data
IBNFEAT	HOST 00 02 0 05 0 MWT MWT CMWI N Y N ACT Y NO Y
RESOFC	CMWI Y SUBSCR CMWI SINGLE 5 \$

Limitations and restrictions

The following limitations and restrictions apply to CLASS Message Waiting Indicator (CMWI):

- CMWI notification requests are handled for idle sets and are delayed for busy sets. A CMWI subscriber only sees his or her message waiting indicator updated when the set is in an on-hook state.
- A maximum number of CMR retransmissions is allowed. When that number is reached, the CMWI request is discarded, and the subscriber does not receive the information necessary to update the message waiting indicator until a lamp audit is executed for that line. CMR retransmissions are required when the CMR card cannot handle an initial transmission request or when a subscriber goes off-hook while a transmission is taking place. The maximum number of retransmissions is defined in datafill.
- CMWI is not supported in feature groups or on key telephone sets (KSETS). Neither is the CMWI Enhancements for UDLC feature supported in feature groups or on KSETS. The assignment of CMWI for MWT lines in table FTRGOPTS is blocked.
- CMWI is not available to subscribers with the Executive Message Waiting (EMW) feature.
- The CMWI feature is only compatible on peripherals capable of supporting the CMR card.

Interactions

All the features listed below can queue requests against the CMWI subscriber set and indicate that the request should be handled when the station returns to the idle state. All such requests are handled in the queuing order. Some features queue requests at the head of the queue to avoid interactions with Ring Again (RAG), Automatic Call Back (ACB), and Automatic Recall (AR). CMWI follows this pattern; therefore, CMWI requests are always handled first if they are at the head of the queue.

The lines for a CMWI subscriber set physically located on a UDLC can be set to UDLC in the CMWIRING field in table IBNFEAT, feature NC0499. Lines set for this option will be considered busy and attempts to terminate to these lines will receive busy treatment during the start of the ring splash until the

CLASS Message Waiting Indicator (CMWI) (continued)

message to activate or deactivate the message waiting indicator (MWI) has been sent.

The following features interact with CLASS Message Waiting Indicator (CMWI).

- Attendant Camp On
- Automatic Call Back
- Automatic Call Distribution
- Automatic Recall
- Call Back Queuing
- Call Hold
- Query Busy Station
- Ring Again
- Uniform Call Distribution

Activation/deactivation by the end user

The CMWI feature is activated when enabled in the office and assigned to the line. The CMWI subscriber can activate or deactivate the ringing option by dialing the CMWIRING activation and deactivation codes from his or her set.

Billing

CLASS Message Waiting Indicator (CMWI) does not affect billing.

Station Message Detail Recording

CLASS Message Waiting Indicator (CMWI) does not affect Station Message Detail Recording.

Datafilling office parameters

The following table shows the office parameters used by CLASS Message Waiting Indicator (CMWI). These parameters are used by the lamp audit for lines from Subscriber Carrier Module-100S (SMS) and Subscriber Carrier

CLASS Message Waiting Indicator (CMWI) (continued)

Module-100 Urban (SMU). For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by CLASS Message Waiting Indicator (CMWI)

Table name	Parameter name	Explanation and action
OFCENG	LSCM_SYNC_BURST	This parameter indicates the number of lines from each peripheral that are audited in one audit cycle. The value can be from 0 to 10. The default is 1.
OFCENG	LSCM_SYNC_DELAY	This parameter specifies the time, in seconds, between the start of each audit cycle. The value can be from 5 to 6000. The default is 15.

Datafill sequence

The following table lists the tables that require datafill to implement CLASS Message Waiting Indicator (CMWI). The tables are listed in the order in which they are to be datafilled.

Datafill tables required for CLASS Message Waiting Indicator (CMWI)

Table	Purpose of table
OFCENG	Office Engineering Table. This table contains data on engineering parameters for the office. Refer to "Datafilling office parameters" for how CLASS Message Waiting Indicator (CMWI) affects office parameters.
RESOFC	Residential Line CLASS Office Data. This table contains data on CLASS features and enables the CMWI feature for the office.
IBNFEAT (Note)	IBN Line Feature. This table defines the features assigned to each Subscriber Services line.
IBNXLA	IBN Translations. This table contains the data for the digit translations of calls from an MDC station, attendant console, incoming trunk group, or incoming side of a two-way MDC trunk group.
FTRGOPTS	Feature Group Options.
Note: This table is datafilled through SERVORD; therefore, no datafill procedure or example is provided. Refer to "SERVORD" for an example of using SERVORD to datafill this table.	

Datafilling table RESOFC

Table RESOFC contains data on CLASS features and enables the CMWI feature for the office. In addition to enabling the feature for the office, table

CLASS Message Waiting Indicator (CMWI) (continued)

RESOFC also specifies the message type format used and the maximum number of CMR retransmissions allowed.

The following table shows the datafill specific to CLASS Message Waiting Indicator (CMWI) for table RESOFC. Only those fields that apply directly to CLASS Message Waiting Indicator (CMWI) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table RESOFC (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
KEY		FEATNAME	Key. This field consists of the subfield FEATNAME. This subfield is described below.
	FEATNAME	CMWI	Feature name. This subfield is the key to the table. It specifies the name of the feature. Enter CMWI.
ENABLED		Y or N	Enabled. This field specifies whether or not the feature is enabled in the office. Enter Y for enabled or N for disabled.
FEATDATA		see subfields	Feature data. This field consists of the subfields ACCESS, FEATNAME, MSGTYPE, and RETRSMIT. These subfields are described below.
	ACCESS	SUBSCR	Feature access. This subfield specifies how the feature is accessed. SUBSCR indicates subscription access and is the only valid value for the CMWI feature. (UNIVER indicates universal access for all RES lines.) Enter SUBSCR.
	FEATNAME	CMWI	Feature name. This subfield specifies the feature name. Enter CMWI.
	MSGTYPE	see explanation	Message type. This subfield specifies whether the subscriber sets served by the office should receive calling information in a single or multiple data format message. SINGLE is the default value. Enter <CR> or MULTIPLE.

CLASS Message Waiting Indicator (CMWI) (continued)**Datafilling table RESOFC (Sheet 2 of 2)**

Field	Subfield or refinement	Entry	Explanation and action
	RETRSMIT	numeric (0 to 14)	Retransmission. This subfield specifies the number of retransmissions allowed. Enter a value from 0 to 14.
FNALANN		see explanation	Feature not allowed announcement. This field consists of the subfields POTS_ACCESS and FNAL_CLLI. Refer to "Datafilling table RESOFC" for "Feature not allowed announcement" for details on these subfields.

Datafill example for table RESOFC

The following example shows sample datafill for table RESOFC.

MAP display example for table RESOFC

KEY	ENABLED	FEATDATA
	FNALANN	
CMWI	Y \$	SUBSCR CMWI SINGLE 5

Datafilling table IBNXLA

Table IBNXLA contains the data for the digit translations of calls from an MDC station, attendant console, incoming trunk group, or incoming side of a two-way MDC trunk group. Two options in subfield FEATURE allow translations to recognize the activation and deactivation codes for the ringing notification option.

The following table shows the datafill specific to CLASS Message Waiting Indicator (CMWI) for table IBNXLA. Only those fields that apply directly to

CLASS Message Waiting Indicator (CMWI) (continued)

CLASS Message Waiting Indicator (CMWI) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table IBNXLA

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	KEY. This field consists of the subfields XLANAME and DGLIDX. These subfields are described below and must be entered in succession.
	XLANAME	alphanumeric (1 to 8 characters)	Translator name. This field specifies the 1-to 8-character name assigned to the translator. Enter the translator name.
	DGLIDX	see explanation	Digilator index. This field specifies the digit or digits assigned to the index as the access code. Enter the access codes assigned to the digilator index, for example, 67 for the activation access code and 87 for the deactivation access code.
RESULT		see subfields	Result. This field consists of the subfields TRSEL, ACR, SMDR, and FEATURE. These subfields are described below.
	TRSEL	FEAT	Translation selector. This field specifies the translation selector. Enter FEAT.
	ACR	Y or N	Account code entry. This field specifies whether or not an account code entry is required. Enter Y or N.
	SMDR	N	Station message detail recording. This field specifies whether or not SMDR is required for calls originated by a customer group station or an attendant console. Enter N.
	FEATURE	see explanation	Feature. This subfield specifies the indicators for the activation and deactivation codes for the CMWIRING options associated with CMWI. CMWIRA is used to indicate the access code for activation, and CMWIRD is used to indicate the code for deactivation. Enter the indicators.

Datafill example for table IBNXLA

The following example shows sample datafill for table IBNXLA.

CLASS Message Waiting Indicator (CMWI) (continued)

MAP display example for table IBNXLA

KEY						RESULT
RXCFN	67	FEAT	N	N	N	CMWIRA
RXCFN	87	FEAT	N	N	N	CMWIRD

Datafilling table FTRGOPTS

Option CMWI is added to field NOTICE of table FTRGOPTS (Feature Group Options). Even though MWT is supported for feature groups, CMWI is not supported. Option CMWI appears when a range is performed on the table; however, it is not valid for feature groups.

Translation verification tools

The following example shows the output from the translation verification command when it is used to verify CLASS Message Waiting Indicator (CMWI).

CLASS Message Waiting Indicator (CMWI) (continued)**TRAVER output example for CLASS Message Waiting Indicator (CMWI)**

```

>TRAVER L 6211233 'B67' B
TABLE IBNLINES
  HOST 00 0 09 07 0 DP STN RES
6211233 0 $
TABLE LINEATTR
  0 1FR NONE NT FR01 0 613 P621
L613 TSPTS 10 NIL NILSFC
LATA1 0 NIL NIL 00 Y RESGRP 0 2
  LCABILL OFF - BILLING DONE ON
BASIS OF CALLTYPE
TABLE DNATTRS
TUPLE NOT FOUND
TABLE DNGRPS
TUPLE NOT FOUND
TABLE NCOS
RESGRP 2 0 0 RNCOS2 ( XLAS RXCMN2
NXLA RES ) $
TABLE CUSTHEAD: CUSTGRP, PRELIMXLA,
CUSTXLA, FEATXLA, VACTRMT, AND
DIGCOL
RESGRP NXLA RESXLA RXCFN 0 RES
TABLE DIGCOL
  RES SPECIFIED: RES DIGIT
COLLECTION
NCOS FEAT XLA NAME IS NIL.  GO TO
NEXT XLA NAME.
TABLE IBNXLA: XLANAME RXCFN
  RXCFN 67 FEAT N N N (CMWIRA)

++ TRAVER: SUCCESSFUL CALL TRACE ++

```

SERVORD

SERVORD is used to add option CMWI to IBN or RES lines. CMWI is assigned as a suboption to option MWT. Also, CMWI can operate on lines which physically exist on UDLCS.

When CMWI is assigned to a line, the operating company must also specify whether audible notification (ringing or stuttered dial tone) is also to be

CLASS Message Waiting Indicator (CMWI) (continued)

provided in addition to the visual display. If ringing notification is provided, the operating company must specify the initial state (active or inactive).

Note: The CMR card is required for the CMWI feature. If the CMWI feature is added to a line on a peripheral that does not have a CMR card datafilled, a warning message is displayed.

SERVORD limitations and restrictions

CLASS Message Waiting Indicator (CMWI) has no SERVORD limitations and restrictions.

SERVORD prompts

The following table shows the SERVORD prompts used to assign CLASS Message Waiting Indicator (CMWI) to a line.

SERVORD prompts for CLASS Message Waiting Indicator (CMWI) (Sheet 1 of 2)

Prompt	Valid input	Explanation
DN_OR_LEN	7-digit DN or LEN	Specifies the 7-digit DN or LEN of the line to be changed
OPTION	MWT	Specifies the option assigned to the line.
NOTICE	CMWI	Assigns, updates, and removes the CMWI feature
CMWISTD	Y, N	Activates or deactivates the stuttered dial tone option.
CMWIRING	Y, N, UDLC	Activates or deactivates the ringing option; if set to UDLC the ability to dial an access code to activate or deactivate ringing preceding a lamp activation message is not allowed, as it would be if set to Y.
IRN	ALWAYS, OFFHOOK	Specifies the type of immediate ring notification With ALWAYS, an immediate ring is given whether or not the subscriber is off-hook. In either case, the ring is applied when the subscriber goes on-hook. With OFFHOOK, an immediate ring is given only if the subscriber is off-hook when a message is queued against the subscriber line. The ring is applied to the line when the subscriber goes on-hook.

CLASS Message Waiting Indicator (CMWI) (continued)

SERVORD prompts for CLASS Message Waiting Indicator (CMWI) (Sheet 2 of 2)

Prompt	Valid input	Explanation
STATUS	ACT, INACT	This field specifies the status of primary ringing. This field is updated when subscribers activate and deactivate PRN or CMWI by dialing an access code.
CAR	Y, N	Specifies whether or not lines are able to make and receive call requests
CRRCFW	NO, ALL, DISPLAY	Specifies how call forwarding is handled if a subscriber activates CRR. With NO, the CRR call is never forwarded. With ALL, the CRR call can be forwarded. With DISPLAY, the CRR call is forwarded only if the subscriber activating CRR has a display set.
CRX	Y, N	Specifies whether or not the line is exempt from receiving call requests.

SERVORD example for adding CLASS Message Waiting Indicator (CMWI)

The following SERVORD example shows how CLASS Message Waiting Indicator (CMWI) is added to a line with MWT using the ADO command.

CLASS Message Waiting Indicator (CMWI) (end)**SERVORD example for CLASS Message Waiting Indicator (CMWI) in prompt mode**

```

>SERVORD
S0:
> ADO
SONUMBER:    NOW 91 4 16 AM
>
DN_OR_LEN:
> 6211234
OPTION:
> MWT
NOTICE:
> PRN
CMWISTD:
> Y
CMWIRING:
> Y
IRN:
> ALWAYS
STATUS:
> ACT
CAR:
> Y
CRRCFW:
> NO
CRX:
> N
OPTION:
> $
COMMAND AS ENTERED:
ADO NOW 91 4 16 AM 6211234 ( MWT PRN Y Y ALWAYS ACT Y
NO N ) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
> Y

```

SERVORD example for CLASS Message Waiting Indicator (CMWI) in no-prompt mode

```

> ADO $ 6211234 MWT PRN Y Y ALWAYS ACT Y NO N $ Y

```

CLASS TCAP for Calling Name Delivery

Ordering codes

Functional group ordering code: RES00003

Functionality ordering code: RES00023

Release applicability

NA009 and up

Prerequisites

To operate, CLASS: TCAP for Calling Name Delivery has the following prerequisites:

- BAS Generic, BAS00003
- MDC Minimum, MDC00001
- MDC Standard, MDC00003
- RES Service Enablers, RES00006

Network configuration

Common Channel Signaling No. 7 (CCS7) connectivity is required for network (interoffice) configuration of Calling Number Block. The following prerequisites are required for CCS7 connectivity:

- Base ISUP, ISP70001
- TEL CCS7 Base, TEL00008

Description

The CLASS: TCAP for Calling Name Delivery feature provides the transaction capabilities application part (TCAP) interface for CLASS calling name delivery (CND). The TCAP interface provides support for the residence database architecture that is described in TR-NWT-001188, CLASS Calling Name Delivery Generic Requirements. There are two different CNAMD architectures described in TR-TSY-001188: residence and business group. This feature provides the CNAMD TCAP interface to support the residence architecture described in TR-NWT-001188.

In the residential version of CNAMD, names are stored in a centralized database located at a service control point (SCP). The terminating switch retrieves the name associated with the calling party and the permanent privacy status associated with the name from this centralized database. The centralized database is accessed for both intraswitch and interswitch calls. The CNAMD application uses the TCAP layer of the Signaling System #7 (SS#7) protocol to retrieve the name information stored in the centralized database.

CLASS TCAP for Calling Name Delivery (continued)

Operation

The TCAP Query with Permission (QWP) package and TCAP Response package are the only two TCAP packages used for CNAMD. A TCAP QWP package is launched from the terminating switch to the centralized database to request the name information. The ten-digit directory number (DN) of the calling subscriber is included as the service key parameter in the TCAP QWP package.

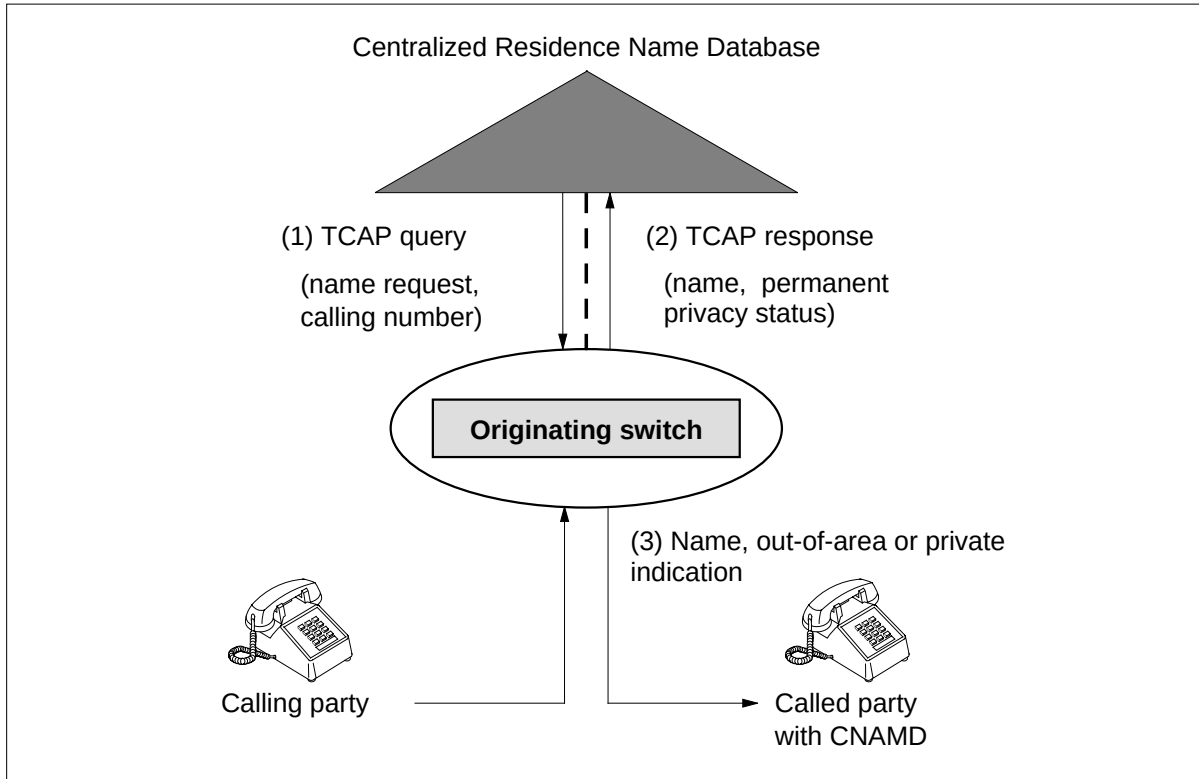
For intraswitch calls, the ten-digit DN is derived directly from the originating subscriber. For interswitch calls, the ten-digit DN is obtained from the calling party number parameter of the integrated services digital network (ISDN) user part (ISUP) initial address message (IAM). The centralized database responds with a TCAP Response package containing the name and the permanent privacy status associated with the name for the ten-digit DN included in the service key parameter.

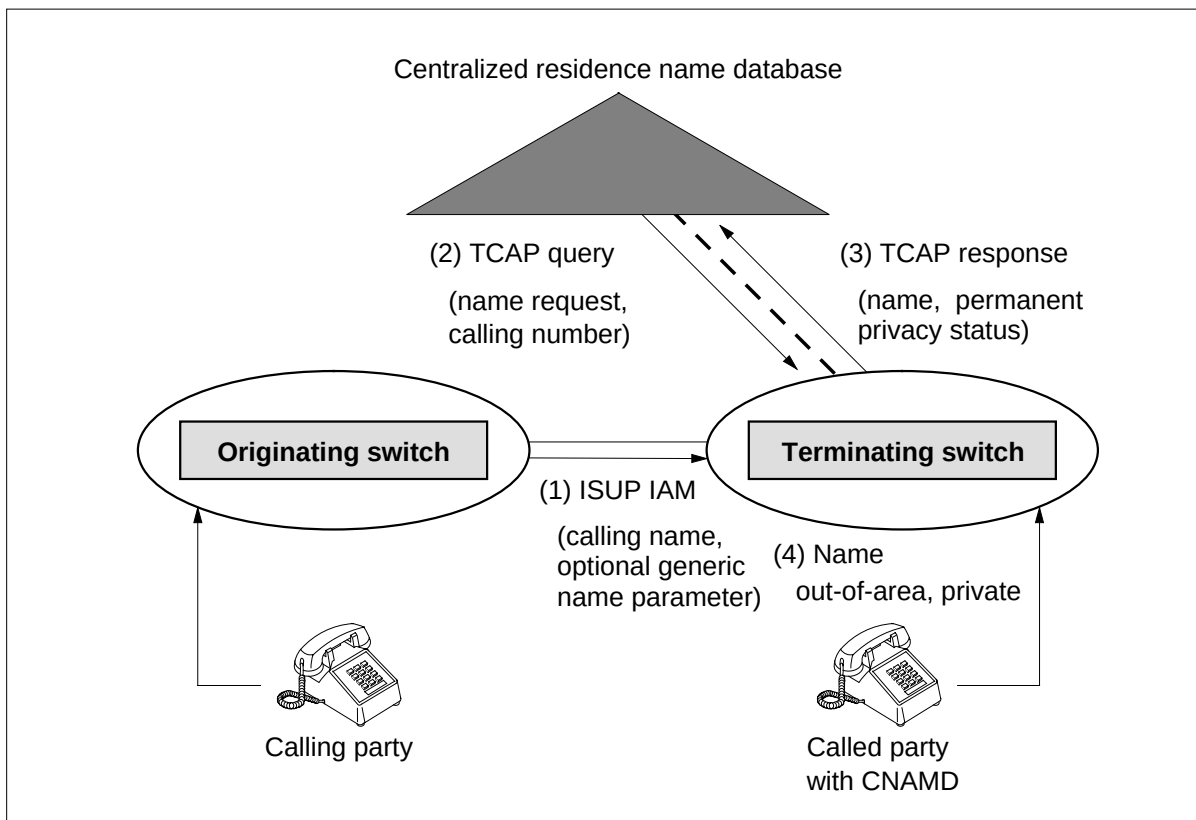
The example call flows in the following flowcharts specify that the centralized database is queried for an intraswitch and an interswitch call. In these figures, the letter P indicates that a private indication is sent to the called party's customer premises equipment (CPE), and the letter O indicates that an out-of-area or unavailable indication is sent to the called party's CPE.

Based on the response received from the database and whether the originating subscriber activated any blocking features, either the name, date, and time information, a private indication, or an out-of-area or unavailable indication is sent to the called party's CPE. Refer to feature AN0323 for further information regarding the indication delivered to the CPE of the called party.

CLASS TCAP for Calling Name Delivery (continued)

CNAMD intra-switch example call flow



CLASS TCAP for Calling Name Delivery (continued)**CNAMD interswitch example call flow****TCAP packages**

The QWP package is sent from the terminating switch to the centralized residence name database to request the name information. The QWP package for CND contains only one component, invoke. Within the invoke component there is a single parameter set that includes the generic name identifier parameter and the service key identifier parameter. An automatic call gapping (ACG) encountered identifier parameter is also included in the invoke (last) component if the DN of the calling party is currently under ACG control.

The service key identifier parameter consists of a single digits identifier, which contains the ten-digit DN of the calling party. The ten-digit DN of the calling party is derived directly from the originating subscriber for intraswitch calls, or it is obtained from the calling party number parameter in the ISUP IAM for interswitch calls. The centralized residence name database retrieves the name and permanent privacy status associated with the name for the ten-digit calling party number included in the single digits identifier. A coding of 0 indicates a presentation status of presentation allowed. A coding of 1 indicates a presentation status of presentation restricted.

CLASS TCAP for Calling Name Delivery (continued)

The generic name identifier parameter contains a length of 0 to indicate that the contents of this parameter are empty. The centralized residence name database is required to update this parameter with the name and permanent privacy status associated with the description name and to return the updated parameter in the TCAP Response package.

Response package

The TCAP Response package is sent from the centralized residence name database in response to the CNAMD feature TCAP QWP package. The TCAP Response package contains one of three types of components: return result, return error, or reject. The TCAP Response package contains an additional invoke (last) component. The additional invoke (last) component is included when ACG controls are to be put into effect or removed. Refer to the "Automatic call gapping" section in this feature.

The TCAP Response package contains a return result component when the database lookup is successful (the name and permanent privacy status is retrieved). The return result component contains a single parameter set consisting of the generic name identifier parameter. The generic name identifier parameter contains the name and permanent privacy status associated with the name.

If an error is detected when decoding or processing the TCAP Response package containing the return result component, an out-of-area or unavailable indication is sent to the called party's CPE. Possible error conditions include protocol violations, unexpected parameters, and unexpected data values.

In the event that the TCAP Response package containing the return result component is successfully decoded and processed by CNAMD TCAP, either the name returned from the database, a private indication, or an out-of-area or unavailable indication is sent to the called party's CPE. The indication sent to the called party's CPE is dependent on the information returned in the generic name identifier parameter and whether the originating subscriber activated any blocking features. Refer to feature AN0323 for further information about the indication sent to the called party's CPE.

Return error component

The TCAP Response package contains a return error component when the database lookup is not successfully performed. The return error component contains an error code identifier and an empty parameter set. An error code is in the error code identifier to indicate the type of error encountered. Whenever

CLASS TCAP for Calling Name Delivery (continued)

a return error component is received, an out-of-area or unavailable indication is sent to the called party's CPE. Valid TCAP error codes include

- 00000010: unexpected data value (national TCAP)
The network node sending the response has the capability to perform a name search, but the calling number specified in the query is not present in the database because it is outside the served area.
- 00000011: unavailable resource (national TCAP)
The network node sending the response does not have the capability to perform the name search or does not have the name database.
- 00000100: missing customer record (national TCAP)
The network node sending the response has the capability to perform the name search, and the calling number is in the served area, but the calling number specified is not present in the database.
- 00000110: data unavailable (national TCAP)
The network node sending the response has the capability to perform a name search, and the calling number is present in the database, but no name is found for the specified calling number.
- 11111100: missing group (private TCAP)
The database is capable of performing a name search, but the group record is not found.
- 11111101: vacant group (private TCAP)
No working lines are associated with the group.
- 11111110: non-participating group (private TCAP)
The group has working line numbers associated with it, but the group belong to the domain of an exchange carrier that does not participate in services involving the database.
- 11111010: screened response (private TCAP)
The node originating the query is not authorized to receive information from the database.

Reject component

The TCAP Response package contains a reject component when the database lookup is not performed because of a protocol violation found in the TCAP QWP package. Protocol errors can be in the format of a component or a parameter, or detection of duplicate or missing components or parameters. The reject component contains a problem code identifier and an empty

CLASS TCAP for Calling Name Delivery (continued)

parameter set. Whenever a reject component is received, an out-of-area or unavailable indication is sent to the called party's CPE.

TCAP response timing

Timer Tname starts when the TCAP QWP package is sent to the centralized residence name database. Timer Tname specifies the maximum amount of time the switch waits for the receipt of a TCAP Response package from the centralized residence name database.

The timeout value for Timer Tname is datafilled through the existing option, NDTIMOUT, in table CUSTHEAD. NDTIMOUT is presently limited to a range of 1-3 s with a default value of 2 s. Feature AN0323 changes the NDTIMOUT range to allow a range of 1-6 s (datafilled in 1s intervals) and a new default value of 3 s. Refer to feature AN0323 for more information on the changes to NDTIMOUT.

If Timer Tname expires before the receipt of the TCAP Response package, an out-of-area or unavailable indication is sent to the called party's CPE. Timer Tname is canceled upon receipt of a TCAP Response package or a signaling connection control part (SCCP) unit data services message, or in the event the calling party abandons the call.

TCAP transaction ID management

For each TCAP QWP package sent to the centralized residence name database, a unique transaction ID is allocated and included in the TCAP QWP package as the originating transaction ID. Existing table TCAPTRID provides a transaction ID allocation utility for DMS switch TCAP applications. Table TCAPTRID is used by CNAMD TCAP for transaction ID allocation.

Note: Table TCAPTRID is obsolete. See Data Schema Reference Manual for details.

Several different events may occur that cause the completion of a CNAMD TCAP transaction. Whenever one of these events occurs, the transaction ID associated with the TCAP QWP package is released and made available for use by a subsequent TCAP transaction. The following events cause the completion of a CNAMD TCAP transaction:

- A TCAP Response package containing a valid responding transaction ID is received.
- An SCCP unit data services message is received.
- The calling party abandons the call.
- Timer Tname expires.

CLASS TCAP for Calling Name Delivery (continued)

In the event a TCAP Response package is received with an invalid responding transaction ID (a transaction ID for which no CNAMD TCAP QWP package is sent), the TCAP Response package is ignored.

The transaction ID allocation utility provided through existing table TCAPTRID is used by CNAMD TCAP. The new TCAP application name, CNAMD, is added as a valid application name for field TCAPAPPL in table TCAPTRID. The total number of transaction IDs required for CNAMD TCAP is datafilled for CNAMD in table TCAPTRID. Each transaction ID allocated requires 50 words of data store. The component ID allocation utility provided by table TCAPTRID is not used for CNAMD. Field NUMCOMPS is datafilled as 0 in table TCAPTRID. Failure to datafill field NUMCOMPS to 0 increases the data store requirement by 20 words times the number of component IDs datafilled.

Automatic call gapping

When the SCP serving the centralized residence name database is overloaded, it instructs the service switching point (SSP) to reduce the number of CNAMD TCAP database queries. The SCP instructs the SSP by including an ACG request in the TCAP Response package. The ACG request is included only when ACG controls are put into effect or removed at the SSP.

The ACG request is included in the TCAP Response package as a last component. The ACG invoke component includes a parameter set consisting of a digits identifier parameter and an ACG indicators identifier parameter. The digits identifier parameter consists of a six-digit code control. The ACG indicators identifier parameter consists of a control cause, a control duration interval, and a control gap interval.

The six-digit code control, duration interval, and gap interval supplied by the SCP are used by the SSP to reduce the number of CNAMD TCAP database queries. The six-digit code control is the calling party numbering planning area XX combination to which the SCP overload control applies.

For every call that requires a CNAMD database query, the first six digits of the calling party's DN are screened against the currently active six-digit code controls to determine if ACG overload controls are in effect. If overload controls are in effect, the CNAMD database query is sent or blocked based on the duration interval and the gap interval.

The duration interval is the length in time that a six-digit code control is in effect. When the duration interval expires, the six-digit code control is removed. The gap interval is the length in time between calls permitted to perform a CNAMD database query. The gap interval begins following the first CNAMD database query performed for a call whose calling party DN matches

CLASS TCAP for Calling Name Delivery (continued)

the six-digit code control. Subsequent calls from calling party DNs that match the six-digit code control are not permitted to perform the CNAMD database query until the gap interval expires.

After the gap interval expires, one call is permitted to perform the CNAMD database query. The gap interval is then reset to start another blocking period. The gap interval is continually reset until the duration interval expires or until the SCP requests the removal of the code control.

A maximum of 64 simultaneous six-digit SCP overload controls are supported. If a TCAP Response package from the SCP specifies a new ACG control for an NPANXX already under ACG control, the new control replaces the old control.

An out-of-area or unavailable indication is sent to the called party's CPE when the CNAMD database query is blocked due to SCP overload control. When the SSP encounters an active SCP overload control on a call, and the gap interval has expired or the overload control has a gap interval of zero, the SSP includes the ACG encountered identifier parameter in the invoke component of the TCAP QWP package. Inclusion of the ACG encountered identifier serves as notification to the SCP that overload controls are in effect for the NPANXX range of the calling party's DN.

SCCP translations and routing

The feature, CLASS: TCAP for CNAMD creates the new subsystem CNAMD and the new translation type CNAMDGT for SCCP translations and routing. The new subsystem CNAMD is added as a valid subsystem name in the SCCP routing tables: C7GTT, C7LOCSSN, C7RPLSSN. The new translation type CNAMDGT is added as a valid translation type name in the SCCP routing table C7GTTYPE.

The feature, CLASS: TCAP for CNAMD does not change the functionality of the SCCP routing tables. Datafill procedures for these tables are unchanged. With appropriate datafill in the SCCP routing table C7GTT, the CNAMD TCAP QWP package can be routed with or without using global title translations. When global title translations are used to route the CNAMD TCAP QWP package, the SCCP called party address contains a null subsystem number and the translation type value datafilled in table C7GTTYPE. When global title translations are not used to route the CNAMD, TCAP, QWP package, the SCCP called party address contains the subsystem number datafilled for CNAMD.

CLASS TCAP for Calling Name Delivery (continued)

The following table provides example SCCP datafill for routing the CNAMD, TCAP, QWP with global title translations.

SCCP example datafill with global title translations

Table	Example Data
C7LOCSSN	CNAMD 240 1 N N \$
C7GTTTYPE	CNAMDGT ANSI7 15 (CNAMDGT) \$
C7GTT	CNAMDGT 09 PCONLY (C7RTESET1 0) \$ GT
C7NETSSN	C7RTESET1 (CNAMD 240) \$

The following table provides example SCCP datafill for routing the CNAMD, TCAP, QWP without global title translations.

SCCP example datafill without global title translations

Table	Example Data
C7LOCSSN	CNAMD 240 1 N N \$
C7GTTTYPE	CNAMDGT ANSI7 15 (CNAMDGT) \$
C7GTT	CNAMDGT 09 PCSSN (C7RTESET2 CNAMD 0) \$ SSN
C7NETSSN	C7RTESET2 (CNAMD 240) \$

SCCP unitdata and unitdata services message

SCCP transports TCAP packages in an SCCP unitdata (UDT) message. The protocol class parameter in the SCCP UDT message is always coded as connectionless class 0 and return-on-error for CNAMD. The return-on-error option allows the return of a TCAP package in the event of an SCCP routing failure. When the TCAP package is returned, it is included in an SCCP UDT message. An out-of-area or unavailable indication is sent to the called party's CPE when the SCCP UDT message is received containing the CNAMD, TCAP, QWP package. The out-of-area or unavailable indication is sent regardless of the diagnostic code in the SCCP UDT message.

Valid SCCP UDT diagnostic codes include

- 00000000: no translation for an address of such nature
- 00000001: no translation for this specific address
- 00000010: subsystem congestion

CLASS TCAP for Calling Name Delivery (continued)

- 00000011: subsystem failure
- 00000100: unequipped user
- 00000101: network failure
- 00000110: network congestion

Translations table flow

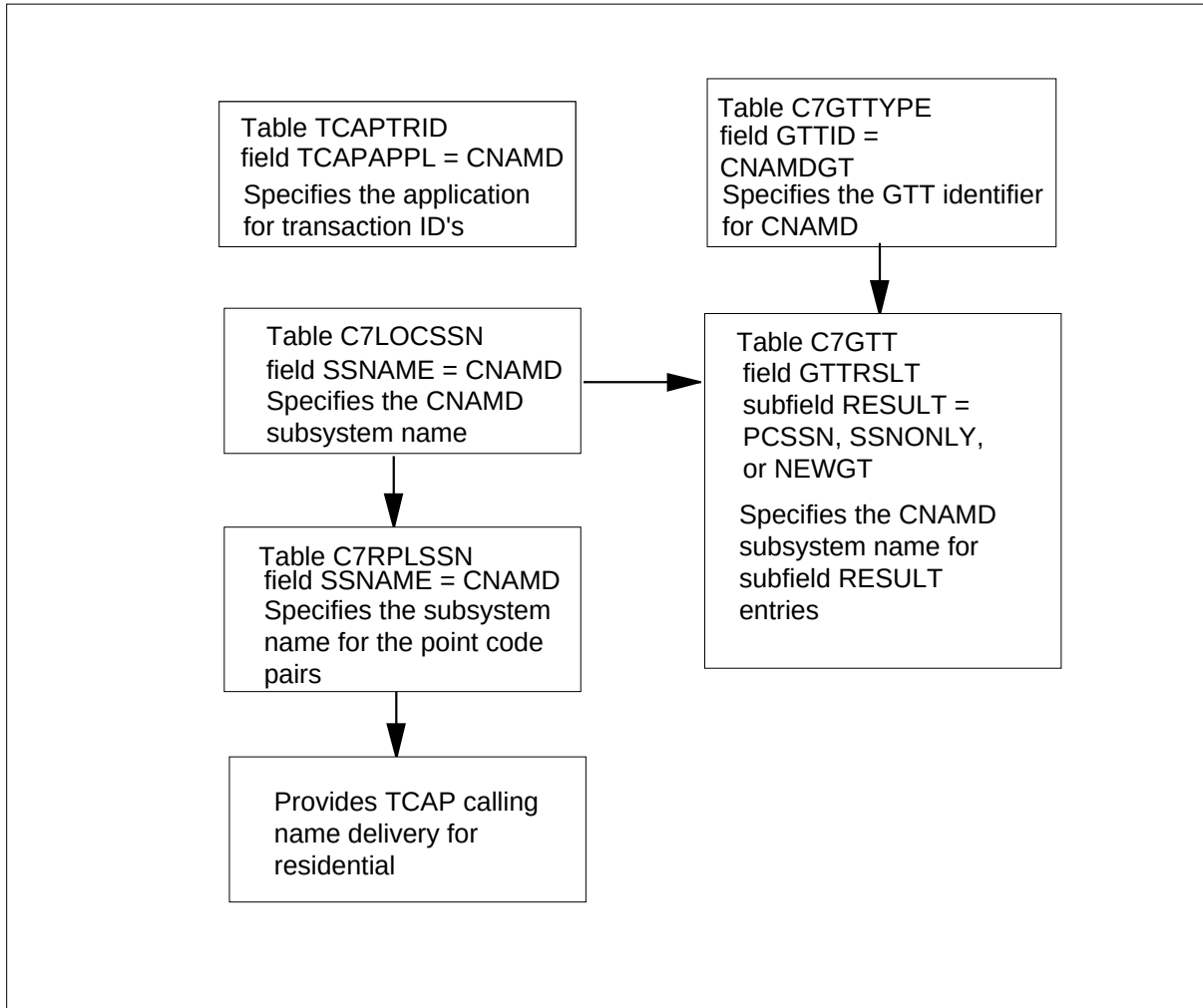
The CLASS: TCAP for Calling Name Delivery translations tables are described in the following list:

- Table TCAPTRID (Transaction Identifier) contains tuples that indicate the number of TCAP identifiers required by a variety of features.

Note: Table TCAPTRID is obsolete. See Data Schema Reference Manual for details.

- Table C7LOCSSN (Common Channel Signaling No. 7 Local Subsystem) contains information for the local subsystem. It includes the traffic mix information requirement, replication information, an adjacent intermediate node translator list (ADFTRANSNODES), and a concerned node list (PCNAMES).
- Table C7GTT (Common Channel Signaling No. 7 Global Title Translation) contains the mapping of a GTT, of a particular translation type, to a CCS7 network address used by the SCCP and message transfer part (MTP) to route messages to their destination.
- Table C7GTTYPE (Common Channel Signaling No. 7 Global Title Translation Type) contains the mapping of an operating company-defined GTT name (GTTNAME), the network type (NETWK), a network-defined GTT type number (GTTNUM), and a predefined GTT identifier (GTTID).
- Table C7RPLSSN (Common Channel Signaling No. 7 Replicate Subsystem) contains the set of remote subsystem replicate pairs. It has a one part key, the subsystem name. For each subsystem, a list of point code pairs at which the replicated subsystems reside must be given.

The CLASS: TCAP for Calling Name Delivery translation process is shown in the following flowchart.

CLASS TCAP for Calling Name Delivery (continued)**Table flow for CLASS: TCAP for Calling Name Delivery**

The following table lists the datafill content used in the flowchart.

Note: Table TCAPTRID is obsolete. See Data Schema Reference Manual for details.

Datafill example for CLASS: TCAP for Calling Name Delivery (Sheet 1 of 2)

Datafill table	Example data
C7GTTYPE	CNAMDGT ANSI7 15 (CNAMDGT) \$
C7GTT	CNAMDGT 0 9 PCSSN (C7RTESET2 CNAMD 0) \$ SSN
C7LOCSSN	CNAMD 240 1 N N \$

CLASS TCAP for Calling Name Delivery (continued)

Datafill example for CLASS: TCAP for Calling Name Delivery (Sheet 2 of 2)

Datafill table	Example data
C7RPLSSN	CNAMD (C7RTESET1 C7RTESET2 N) \$
TCAPTRID	CNAMD 100 0

Limitations and restrictions

The following limitations and restrictions apply to CLASS: TCAP for Calling Name Delivery:

- The TCAP procedures required to support the business group architecture and business group switch procedures are not provided.
- The capability to support different subsystem numbers and translation types for business group architecture is not provided.
- The software management system originated code control procedures and manual code control are not supported.
- The TCAP procedure for supporting the transmittal of name information to an ACBAR subscriber is not provided.

Interactions

CLASS: TCAP for Calling Name Delivery has no functionality interactions.

Activation/deactivation by the end user

CLASS: TCAP for Calling Name Delivery requires no activation or deactivation by the end user.

Billing

CLASS: TCAP for Calling Name Delivery does not affect billing.

Station Message Detail Recording

CLASS: TCAP for Calling Name Delivery does not affect Station Message Detail Recording.

Datafilling office parameters

CLASS: TCAP for Calling Name Delivery does not affect office parameters.

CLASS TCAP for Calling Name Delivery (continued)

Datafill sequence

The following table lists the tables that require datafill to implement CLASS: TCAP for Calling Name Delivery. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for CLASS: TCAP for Calling Name Delivery

Table	Purpose of table
TCAPTRID	Transaction identifier. This table specifies the valid TCAP applications name, CNAMD.
C7GTTTYPE	Common Channel Signaling No. 7 Local Subsystem. This SCCP routing table specifies the CNAMDGTT translation type name.
C7GTT	Common Channel Signaling No. 7 Global Title Translation. This SCCP routing table specifies the CNAMD valid subsystem name.
C7LOCSSN	Common Channel Signaling No. 7 Global Title Translation Type. This SCCP routing table specifies the CNAMD subsystem name.
C7RPLSSN	Common Channel Signaling No. 7 Replicate Subsystem. This SCCP routing table specifies the CNAMD subsystem name.

Datafilling table TCAPTRID

The following table shows the datafill specific to CLASS: TCAP for Calling Name Delivery for table TCAPTRID. Only those fields that apply directly to CLASS: TCAP for Calling Name Delivery are shown. For a description of the other fields, refer to the data schema section of this document.

Note: Table TCAPTRID is obsolete. See Data Schema Reference Manual for details.

Datafilling table TCAPTRID

Field	Subfield or refinement	Entry	Explanation and action
TCAPAPPL		CNAMD	Transaction capability application. This field specifies the name of the TCAP application name requiring transaction IDs. Enter CNAMD.

Datafill example for table TCAPTRID

Note: Table TCAPTRID is obsolete. See Data Schema Reference Manual for details.

CLASS TCAP for Calling Name Delivery (continued)**Datafilling table C7GTTYPE**

The following table shows the datafill specific to CLASS: TCAP for Calling Name Delivery for table C7GTTYPE. Only those fields that apply directly to CLASS: TCAP for Calling Name Delivery are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table C7GTTYPE

Field	Subfield or refinement	Entry	Explanation and action
GTTID		CNAMDGT	Global title translation identifier. This field specifies the GTT identifier used by the TCAP for Calling Name Delivery. Enter CNAMDGT.

Datafill example for table C7GTTYPE

The following example shows sample datafill for table C7GTTYPE. In the example, the global title translations identifier CLASS: TCAP for CNAMD is CNAMDGT.

MAP display example for table C7GTTYPE

GTTNAME	GTTTYPE	GTTID
CNAMDGT	5	(CNAMDGT) \$

Datafilling table C7GTT

The following table shows the datafill specific to CLASS: TCAP for Calling Name Delivery for table C7GTT. Only those fields that apply directly to

CLASS TCAP for Calling Name Delivery (continued)

CLASS: TCAP for Calling Name Delivery are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table C7GTT

Field	Subfield or refinement	Entry	Explanation and action
GTTRSLT		see subfields	Global title translation result. This field consists of subfield RESULT and refinements.
	RESULT	PCSSN	Global title translation type. This subfield specifies the global title translations result type for a specific translation name and range. Enter PCSSN. Note: The specific entry in subfield RESULT and refinements depend on the operating company's routing plan. Refer to data schema section of this document for the description of all entries.
If RESULT is set to PCSSN, the following subfields are prompted for: PCNAME, SSNAME, and COST.			
	PCNAME	alphanumeric (1 to 16 characters)	Point code name. This subfield specifies the point code name. Enter a 1- to 16-character name.
	SSNAME	CNAMD	Subsystem name. This subfield specifies the subsystem name. Enter CNAMD.
	COST	0-99	Cost. This subfield specifies a routing preference when there is no difference in cost for different routes. Enter a value from 0 to 99.

Datafill example for table C7GTT

The following example shows sample datafill for table C7GTT. In the example, table C7GTT contains the mapping of a GTT of a particular translation type to a CCS7 network address used by the SCCP and MTP to route messages to their destination. The field RESULT is set to point code subsystem name (PCSSN). Therefore, the subsystem name (SSNAME) association for this feature is CNAMD.

The subsystem name, CNAMD, is datafilled for the PCSSN, subsystem name only (SSNONLY), or the new global title (NEWGT) result refinements for field GTTRSLT.

CLASS TCAP for Calling Name Delivery (continued)**MAP display example for table C7GTT**

GTTKEY	GTTRSLT
CNAMDGT 0 9	PCSSN (C7RTESET2 CNAMD 0) \$ SSN

Datafilling table C7LOCSSN

The following table shows the datafill specific to CLASS: TCAP for Calling Name Delivery for table C7LOCSSN. Only those fields that apply directly to CLASS: TCAP for Calling Name Delivery are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table C7LOCSSN

Field	Subfield or refinement	Entry	Explanation and action
SSNAME		CNAMD	Subsystem name. Specifies the subsystem name. Enter CNAMD.

Datafill example for table C7LOCSSN

The following example shows sample datafill for table C7LOCSSN.

MAP display example for table C7LOCSSN

SSNAME	SSNUMBER	MININST	REPLINFO	TFMI	PCNAMES
CNAMD	240	1	N	N	\$

Datafilling table C7RPLSSN

The following table shows the datafill specific to CLASS: TCAP for Calling Name Delivery for table C7RPLSSN. Only those fields that apply directly to

CLASS TCAP for Calling Name Delivery (end)

CLASS: TCAP for Calling Name Delivery are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table C7RPLSSN

Field	Subfield or refinement	Entry	Explanation and action
SSNAME		CNAMD	Subsystem name. Specifies the subsystem name. Enter CNAMD.

Datafill example for table C7RPLSSN

The following example shows sample datafill for table C7RPLSSN. In the example, table C7RPLSSN contains the set of remote subsystem replicate pairs. It has a one part key, the subsystem name. A list of point code pairs at which the replicated subsystems reside is given for each subsystem. The subsystem name for the feature CLASS: TCAP for Calling Name Delivery is CNAMD.

MAP display example for table C7RPLSSN

SSNAME	REPLIST
CNAMD	(C7RTESET1 C7RTESET2 N)\$

Translation verification tools

CLASS: TCAP for Calling Name Delivery does not use translation verification tools.

SERVORD

CLASS: TCAP for Calling Name Delivery does not use SERVORD.

CNAMD (TCAPNM Local Lookup)

Ordering codes

Functional group ordering code: RES00003

Functionality ordering code: RES00080

Release applicability

NA009 and up

Prerequisites

CNAMD (TCAPNM Local Lookup) has the following prerequisites:

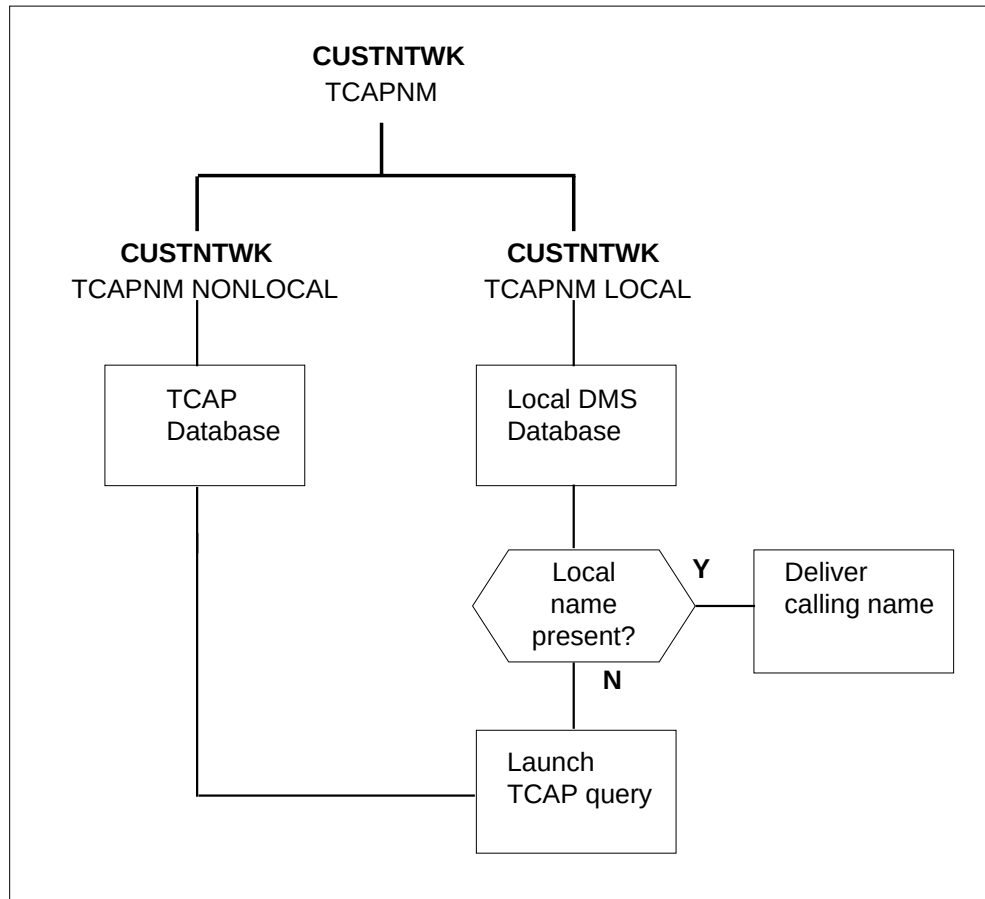
- BAS Generic, BAS00003
- CLASS: TCAP for Calling Name Delivery, RES00023
- MDC Minimum, MDC00001
- MDC Standard, MDC00003
- RES Service Enablers, RES00006

Description

This feature allows the operating company personnel to datafill table CUSTNTWK for the TCAPNM customer group option with a new suboption. This new suboption permits a local name lookup to occur if available. This option enables operating company personnel to more efficiently control costs by saving transactions capability application part (TCAP) name queries.

Operation

Through the use of the new TCAPNM suboption shown in the diagram below, the operating company personnel are given the flexibility of datafilling names locally on the DMS switch in order to avoid performing TCAP name queries. The operating company personnel use this feature to avoid the time consuming and costly process of building and sending a TCAP name query through a service transfer point (STP) to the TCAP name database located at a service control point (SCP).

CNAMD (TCAPNM Local Lookup) (continued)

The local DMS database is used by the local lookup feature to obtain the calling directory number (DN) name when the TCAPNM suboption is set to LOCAL. Another source for the calling DN name is the Party Info Parm (PIP) parameter of the initial address message (IAM) of a terminating ISDN user part (ISUP) trunk.

The following table shows how the PIP obtains the calling DN name based on the DNATTRS table datafill.

Table DNATTRS (Sheet 1 of 2)

TCAPNM LOCAL Trunks with PIP	TCAPNM LOCAL Trunks without PIP	TCAPNM LOCAL Line to line	TCAPNM NONLOCAL
Local DNATTRS proprietary name	Local DNATTRS proprietary name	Local DNATTRS proprietary name	TCAP Name

CNAMD (TCAPNM Local Lookup) (continued)

Table DNATTRS (Sheet 2 of 2)

TCAPNM LOCAL Trunks with PIP	TCAPNM LOCAL Trunks without PIP	TCAPNM LOCAL Line to line	TCAPNM NONLOCAL
IAM PIP Name	TCAP name	TCAP name	
TCAP name			

The PIP may or may not be present on trunks terminating to the DMS containing the TCAP name local lookup feature. It is dependent on the datafill of the originating DMS switch and whether or not the adjacent node is a DMS.

The local lookup feature is made active by datafilling table CUSTNTWK, option TCAPNM, with a suboption of LOCAL. When active, it intercepts any attempt to launch a TCAP name query and searches for a local name for a particular calling DN. If a local name is not found, a TCAP name query is launched.

TCAP name applies only to a calling DN name, not to called or redirecting DN name. The TCAP name local lookup feature does not change this current functionality.

Privacy control

Privacy for TCAP name local lookup uses all current privacy settings as normal for line to line calls. This is because, on the terminating switch we do have access to the permanent name suppression status of the originator through table DNATTRS. Suppression can include local line and network SUPPRESSION status and various blocking/toggling features activated by the originator.

For trunk to line calls, the terminating switch cannot determine the name suppression status. For ISUP name delivery the name status is computed on the originating switch and the name by presence or absence from the IAM determines suppression status. Likewise, for a TCAP name delivery the permanent suppression status is returned in the TCAP name query to the SCP. With the TCAP Name local lookup feature, names may be obtained from the terminating switch in table DNATTRS.

For ISUP to line calls, the name privacy status cannot be determined for TCAPNM name local lookup, and thus name privacy is tied to number privacy in this scenario.

Whenever a local name is used the suppression status associated with the calling number is used. If the calling number is blocked then TCAP name

CNAMD (TCAPNM Local Lookup) (continued)

local does not apply. However, depending on the office parameter TCAPNM_BLK_QUERY_PRIV_DNS a TCAP name query may still be launched. For this reason ensure the TCAP name database privacy indicator matches the SUPPRESS NAME line option on each DMS switch that uses the TCAP name local lookup feature.

Also the integrity of the “name follows number” for each call blocking feature (Calling Name/Number Blocking (CNNB) or Calling Identity Delivery and Suppression (CIDSSUP)) conformity between local lookup and TCAP name are preserved.

Permanent suppression status is set using the suppress number line option and by setting the office parameter, TCAPNM_BLK_QUERY_PRIV_DNS in table OFCVAR to yes (Y). This informs the DMS not to launch a TCAP name query for calls where the DN is blocked but the name is unblocked. It also ensures that neither a TCAP name query is launched nor a local lookup is performed when the DN is blocked for trunk to line calls.

Datafilling local names

Local DMS names are datafilled by adding entries into table DNATTRS. This table stores the physical name, up to 15 characters long. For local lines off the DMS switch, this is accomplished by adding the NAME line option to the particular DN.

Adding lines that are not physically datafilled on the DMS requires the operating company personnel to datafill tables Serving Numbering Plan Area Name (SNPANAME), Terminating Office Name (TOFCNAME), and modifying DNATTRS.

Table SNPANAME allows the operating company to define up to 128 variable length serving numbering plan areas (SNPA).

Table TOFCNAME is used to define all the terminating offices in the switch. A terminating office (TOFC) is a combination of area code and office code. The area code must be defined in table HNPACONT or SNPANAME.

Translations table flow

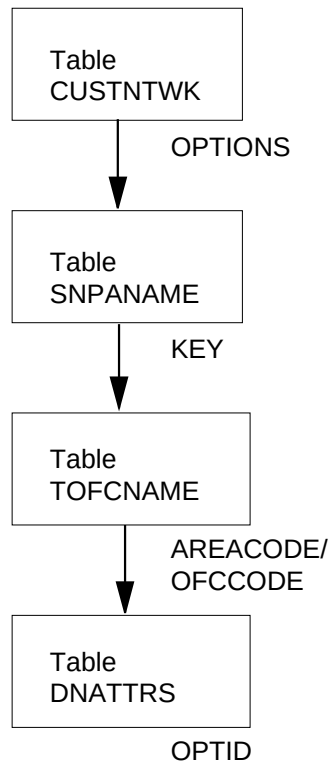
The CNAMD (TCAPNM Local Lookup) translations tables are described in the following list:

- CUSTNTWK
- SNPANAME
- TOFCNAME
- DNATTRS

CNAMD (TCAPNM Local Lookup) (continued)

Note: Tables SNPANAME, TOFCNAME, and DNATTRS are datafilled respectively, only to store non-DMS names. Names datafilled in these tables occupy lines that are not local to the DMS switch.

The CNAMD (TCAPNM Local Lookup) translation process is shown in the flowchart that follows.

CNAMD (TCAPNM Local Lookup) (continued)**Table flow for CNAMD (TCAPNM Local Lookup)**

CNAMD (TCAPNM Local Lookup) (continued)

The following table lists the datafill content used in the flowchart.

Datafill example for CNAMD Interwork (TCAPNM Local Lookup)

Datafill table	Example data
CUSTNTWK	RES1 PUBLIC 0 \$ (TCAPNM NONLOCAL) \$
SNPANAME	51 52
TOFCNAME	200 234
DNATTRS	001 366 5678 (PUBLIC (SUPPRESS Y N)\$) (ESNNET (NAME JOHN_DOE)\$)\$

Limitations and restrictions

The following limitations and restrictions apply to CNAMD (TCAPNM Local Lookup):

- Originating trunk calls must be ISUP trunks.
- The administrative requirement that the operating company must keep two name databases up to date:
 - TCAP name database
 - local DMS name database
- The local DMS database includes entries in a DMS table and names passed through the PIP in the IAM. These names can be passed from a competitor's adjacent DMS switch. Names in the local DMS table will have precedence.
- The SUPPRESS NAME line option on a line-to-line call affects the local name lookup privacy status. This is different from the TCAP name, because the TCAP name privacy is stored at the SCP.
- The TCAP name privacy status located at the SCP does not determine local name lookup privacy.

Interactions

The following paragraphs describe the interactions between CNAMD (TCAPNM Local Lookup) and other functionalities.

Advanced intelligent network (AIN)

AIN has the capability to change the calling party DN. If an AIN response message is generated that contains a different DN for the originator, the local lookup feature does not apply. Instead a TCAP name query is generated based upon the new DN provided by AIN. AIN messages that do not change the

CNAMD (TCAPNM Local Lookup) (continued)

calling party DN, function normally and local lookup prevents launching a TCAP name query.

Network ID Interaction for Local Lookup

When indexing into the local table DNATTRS to find a local name, the network identifier of the call is used. This ensures that private customer groups deliver their private names when making private network calls.

Non-DMS name delivery (multi-vendor name support)

This feature does not interact with TCAPNM. If the TCAPNM option is on the customer group, the non-DMS name delivery does not apply. This feature only applies to terminations to CLASS lines from incoming trunks.

SUPPRESS NAME line option

The SUPPRESS NAME line option blocks the calling name from being delivered to a subscriber with TCAPNM LOCAL, when a local name is found in the local DMS name database.

TCAP_INTERLATA_QUERY

If a subscriber customer group has TCAPNM LOCAL and a local name is found that local name is delivered regardless, of how office parameter TCAP_INTERLATA_QUERY is set. This office parameter is meant to save unnecessary TCAP queries by not obtaining a name for interlata calls.

MADN Names

Like TCAP name, the local name lookup feature finds the calling name based on the calling DN. The secondary MADN members, which have one shared DN, obtains the local name based upon the MADN DN as in TCAP name delivery.

TCAPNM NONLOCAL

No local lookup is performed when option TCAPNM is set to NONLOCAL.

Activation/deactivation by the end user

CNAMD (TCAPNM Local Lookup) requires no activation or deactivation by the end user.

Billing

CNAMD (TCAPNM Local Lookup) does not affect billing.

Station Message Detail Recording

CNAMD (TCAPNM Local Lookup) does not affect Station Message Detail Recording.

CNAMD (TCAPNM Local Lookup) (continued)

Datafilling office parameters

The following table shows the office parameters used by CNAMD (TCAPNM Local Lookup). For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by CNAMD Interwork Local Lookup

Table name	Parameter name	Explanation and action
OFCVAR	TCAPNM_BLK_QUERY_PRIV_DNS	This office parameter, when set to a Y, instructs the DMS not to launch a TCAP name query for calls where the DN is blocked but name is unblocked.
OFCVAR	TCAP_INTERLATA_QUERY	This office parameter saves unnecessary TCAP queries by not obtaining a name for interlata calls. Since the local lookup is relatively free, the local name is delivered if applicable.

Datafill sequence

The following table lists the tables that require datafill to implement CNAMD (TCAPNM Local Lookup). The tables are listed in the order in which they are to be datafilled.

CNAMD (TCAPNM Local Lookup)

Table	Purpose of table
CUSTNTWK	Customer Group Network contains network names with which a customer group is associated.
DNATTRS	Directory Number Attributes contains directory number attributes for specific DNs.
SNPANAME	Serving number planning area contains up to 128 variable-length serving numbering plan areas (SNPA).
TOFCNAME	Terminating Office Name contains the number plan area (NPA) and terminating office code (NXX) that the switch serves. A terminating office number (TOFCNO) consists of both an NPA and an NXX. The NPA, also called area code, must be defined in table HNPACONT or SNPANAME.

Datafilling table CUSTNTWK

The following table shows the datafill specific to CNAMD (TCAPNM Local Lookup) for table CUSTNTWK. Only those fields that apply directly to

CNAMD (TCAPNM Local Lookup) (continued)

CNAMD (TCAPNM Local Lookup) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table CUSTNTWK

Field	Subfield or refinement	Entry	Explanation and action
OPTIONS			Options.
	TCAPNM	LOCAL or NONLOCAL	Transactions Capability Application Part (TCAP) Name. Allow users to select a local name lookup before a TCAP name query is launched.

Datafill example for table CUSTNTWK

The following example shows sample datafill for table CUSTNTWK.

MAP display example for table CUSTNTWK

CUSTNAME	NETNAME	NETCGID	DNREVLXLA OPTIONS
RES1	Public	0 \$ (TCAPNM LOCAL)\$	

Datafilling table DNATTRS

The following table shows the datafill specific to CNAMD (TCAPNM Local Lookup) for table DNATTRS. Only those fields that apply directly to

CNAMD (TCAPNM Local Lookup) (continued)

CNAMD (TCAPNM Local Lookup) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table DNATTRS

Field	Subfield or refinement	Entry	Explanation and action
DATA		see subfields	<i>Network attributes</i> This field consists of subfields NETNAME, NETOPTS, and OPTID. This vector consists of up to two network names and their attributes.
	OPTID	NAME SUPPRESS	<i>Network option identifier</i> The options that can be specified for each network are station or multiple appearance DN (MADN) group name, MADN member name, and whether address and name display are suppressed or not.
	OPTID (cont'd)		If a station or MADN group name is displayed, enter NAME and complete refinement DNAME. If the number display and or name is suppressed, enter SUPPRESS and datafill refinements SUPPDN and SUPPNAME. If a MADN member name is displayed, enter MEMDISP. No additional fields are required with option MEMDISP.

OPTID = SUPPRESS

If the entry in field OPTID is SUPPRESS, datafill refinements SUPPDN and SUPPNAME.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	SUPPDN	Y or N	<i>Suppress directory number</i> Enter Y (yes) to indicate the DN is suppressed. Otherwise, enter N.
	SUPPNAME	Y or N	<i>Suppress name</i> Enter Y to indicate the name is suppressed. Otherwise, enter N.

CNAMD (TCAPNM Local Lookup) (continued)**OPTID = NAME**

If the entry in field OPTID is NAME, datafill refinement DNAME.

Field descriptions for conditional datafill

Field	Subfield or refinement	Entry	Explanation and action
	DNAME	15 alphanumeric	<i>Display name</i> Enter the associated station name. For blanks use underscores. The name is enclosed in single quotes for mixed case names.

Datafill example for table DNATTRS

The following example shows sample datafill for table DNATTRS.

MAP display example for table DNATTRS with option SUPPRESS

KEY	DATA	OPTDATA
001 366 5678	(PUBLIC (SUPPRESS Y N) (NONUNIQUE) \$)	
	(ESNNET (NAME JOHN_DOE) \$)\$	\$

Datafilling table SNPANAME

The following table shows the datafill specific to CNAMD (TCAPNM Local Lookup) for table SNPANAME. Only those fields that apply directly to CNAMD (TCAPNM Local Lookup) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table SNPANAME

Field	Subfield or refinement	Entry	Explanation and action
KEY		0 to 9 and A to F (vector of up to 7 entries)	<i>Network attributes</i> Enter the serving numbering plan area (SNPA) code for the switch

Datafill example for table SNPANAME

The following example shows sample datafill for table SNPANAME.

CNAMD (TCAPNM Local Lookup) (continued)**MAP display example for table SNPANAME**

KEY
51
52

Datafilling table TOFCNAME

The following table shows the datafill specific to CNAMD (TCAPNM Local Lookup) for table TOFCNAME. Only those fields that apply directly to CNAMD (TCAPNM Local Lookup) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TOFCNAME

Field	Subfield or refinement	Entry	Explanation and action
AREACODE		0 to 9999999 (vector of up to 7 digits)	<i>Area code</i> The area code (NPA) identifies a major geographical area served by the switch. This field can contain one to seven digits. In an office that uses the North American numbering plan, the area code must be three digits. Enter an area code defined in table SNPANAME or table HNPACONT.
OFCCODE		0 to 9999999 (vector of up to 7 digits) or \$	<i>Office code</i> The office code is a subregion of the area code. It can have zero to seven digits. In an office that uses the North American numbering plan, the office code must be three digits. Enter a \$ (dollar sign) for smaller countries with a parameter of UNIVERSAL.

Datafill example for table TOFCNAME

The following example shows sample datafill for table TOFCNAME.

CNAMD (TCAPNM Local Lookup) (end)

MAP display example for table TOFCNAME

AREACODE	OFCCODE
200	234
784	324
201	786
613	621
245	879

Translation verification tools

CNAMD (TCAPNM Local Lookup) does not use translation verification tools.

SERVORD

CNAMD (TCAPNM Local Lookup) does not use SERVORD.

Dialable Number Delivery (DDN)

Ordering codes

Functional group ordering code: RES00003

Functionality ordering code: not applicable

Release applicability

NA008 and up

GL04

This module does not apply to the DMS-100G switch. For information on Dialable Number Delivery on the DMS-100G switch, see the "Services Guide".

Prerequisites

To operate, Dialable Number Delivery (DDN) has the following prerequisites:

- BAS Generic, BAS00003
- MDC Minimum, MDC00001
- MDC Standard, MDC00003
- RES Service Enablers, RES00006

Network configuration

Common Channel Signaling No. 7 (CCS7) connectivity is required for network (interoffice) configuration of Dialable Number Delivery. The following prerequisites are required for CCS7 connectivity:

- Base ISUP, ISP70001
- TEL CCS7 Base, TEL00008
- BAS Generic, BAS00003

Description

The Dialable Number Delivery (DDN) feature is an incoming call service that provides the ability to deliver the following to a DDN subscriber's set:

- the directory number (DN) of the calling party in a dialable format (the digits that the DDN subscriber would dial to make a call to the calling party)
- the date and time of the incoming call

Dialable Number Delivery (DDN) (continued)

The DDN feature description describes in detail the reverse translations for the DDN feature.

Note: For other information on the DDN feature, refer to “Calling Name Delivery (CNAMD)”. Because the CLASS display features CNAMD, CND, and DDN are similar, the discussion of these features has been combined in the CNAMD feature description.

DDN is built on the Calling Number Delivery (CND) feature. To offer DDN, the DMS-100 switch must be equipped with the CND and DDN feature packages.

Note: Although the CND feature package is required for DDN, CND and DDN are incompatible features and cannot be assigned to the same line.

DDN application of reverse translations

The DDN feature converts a DN between the following formats:

- ten-digit format (NPA-NXX-XXXX) of the calling number supplied to the call destination by the Custom Local Area Signaling Services (CLASS) base capabilities
- 1- to 24-digit format of the dialable calling numbers delivered to a DDN subscriber set

Note: The 7-digit, 8-digit, and 11-digit dialing requirements are used by most subscribers using the public dial plan. In a few cases, subscribers dial a ten-digit number for local calls. For these calls, no conversion is carried out, and the DDN feature delivers the calling number as received.

The process used to convert the ten-digit numbers is called reverse translations. The following data tables perform reverse translations:

- Table DNREGION groups DNs into regions. For example, table DNREGION is used to identify seven-digit regions (groups of telephone numbers within which calls can be made by dialing seven digits).
- Table DNREVXLA contains sets of digit manipulation algorithms. In the DDN application of reverse translations, a digit manipulation algorithm is used for all calls where the dialable DN is not a ten-digit number

Dialable Number Delivery (DDN) (continued)

Reverse translations is also used by the following:

- the Automatic Recall (AR) feature, where conversion is required between the 10-digit format (as held in CLASS incoming call memory) and the 7-digit, 8-digit, or 11-digit dialed format used for call setup.
- the Automatic Call Back (ACB) feature, where, for some calls, conversion from a seven-digit dialed format into a ten-digit format requires selection between two numbering plan areas (NPA).

Note: AR and ACB are not described in detail in this chapter. Consult “Automatic Call Back/Automatic Recall (ACB/AR)” for details on AR and ACB.

- the Meridian Digital Centrex (MDC) Network Dial Plan display application

Table DNREGION

Table DNREGION (Directory Number Region) is used to group DNs into regions. In the DDN application, entries in this table are used to reflect the dial plan for the areas served by the central office (CO).

Each DN region shown in table DNREGION has a unique region name and comprises one or more ranges of DNs.

A tuple in table DNREGION associates a region name with one range of DNs. A DN region that consists of two or more ranges of DNs is defined using multiple tuples.

Examples of DN regions used for processing DDN calls are as follows:

- local calling areas within which calls are made by dialing seven digits
- local NPAs, each of which includes
 - all or part of a local calling area
 - a local toll area within which calls are made by dialing eight digits(1 + seven digits)

Datafill example for table DNREGION

The following example shows the table DNREGION tuples used to define a local calling area LOCAL_R, which includes all the DNs beginning with digits 613822, 613823, and 613952.

Dialable Number Delivery (DDN) (continued)**MAP display example for table DNREGION**

REGION	FROMDIGS	TODIGS
LOCAL_R	613822	613823
LOCAL_R	613952	613952

Table DNREVXLA

Table DNREVXLA (Directory Number Reverse Translations) contains tuples defining sets of digit manipulation algorithms.

Tuples for DDN processing

Multiple tuples are used by the DDN feature. Each tuple applies to a range of calling DNs. Each tuple can contain several digit manipulation algorithms. Each digit manipulation algorithm within a tuple is associated with a DN region. An algorithm is applied when the calling DN and the DDN subscriber's DN are both within the DN region.

Datafill example for table DNREVXLA

The following example shows the table DNREVXLA tuples for an office serving numbers in the 613 NPA only and where all the numbers served are in the same local calling area.

MAP display example for table DNREVXLA

RXLNAME	FROMDIGS	TODIGS	RESULTS
POTS	000	612	(DEFAULT 0 1 N) \$
POTS	613	613	(LOCAL_R 3 N N) \$
			(DEFAULT 0 1 N) \$
POTS	614	999	(DEFAULT 0 1 N) \$

Dialable Number Delivery (DDN) (continued)

Applying reverse translations

When an incoming call terminates on a DDN subscriber line, DDN attempts to access the ten-digit calling number received with the call. This access is successful under the following circumstances:

- the calling party and the DDN subscriber are served by the same CO
- the origin CO is set up to supply calling party information and the call is passed between the origin and destination over Common Channel Signaling No. 7 (CCS7) trunks only

When the access is successful, DDN uses reverse translations to convert the ten-digit number into a dialable format (the digits that the DDN subscriber would dial to make a call to the calling party). The resulting dialable DN is passed to the subscriber set.

DDN reverse translations use dial plan information and conversion algorithms stored in tables DNREGION and DNREVXLA to determine whether reverse translations are datafilled and to obtain the correct digit manipulation algorithm to reverse translate the ten-digit DN. If translations are not datafilled, the ten-digit DN, as received from origin, is delivered to the subscriber set.

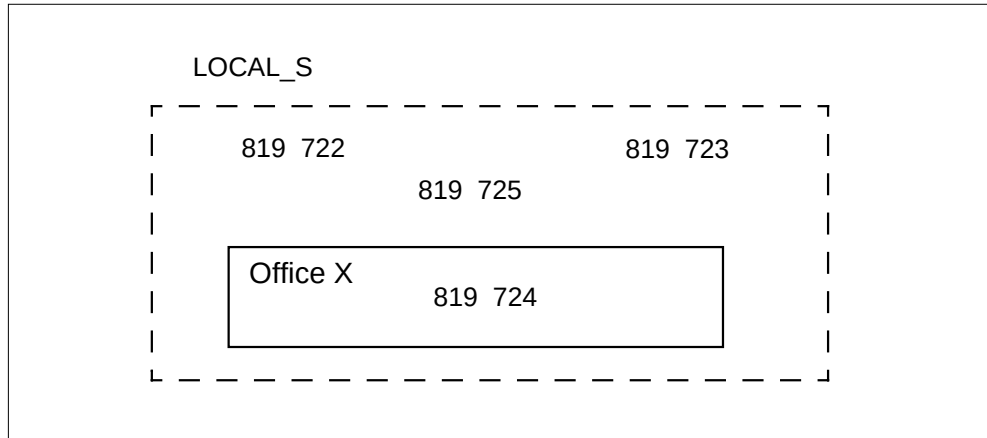
Table DNREVXLA and its algorithms work in the following ways:

- If an 11-digit DN would be dialed to set up a call to the calling party, the algorithm appends a prefix digit to the 10-digit DN.
- If an eight-digit DN would be dialed to set up a call to the calling party, the algorithm deletes the first three digits of the ten-digit DN and then appends a prefix digit.
- If a seven-digit DN would be dialed to set up a call to the calling party, the algorithm deletes the first three digits of the ten-digit DN.

Example scenario 1 and example scenario 2 show the DDN reverse translations datafill and data flow sequences for two hypothetical offices, each with its own dial plan.

Example scenario 1: DDN reverse translations datafill

This example illustrates the DDN reverse translations datafill required for hypothetical office X. The following figure shows the dial plan for office X.

Dialable Number Delivery (DDN) (continued)**Public dial plan supported by office X**

Office X serves DN's in NPA 819. The DN's served by this office are all included in local calling area LOCAL_S.

The conversion algorithm supported by this office conforms to the standard dialing plan for local and long-distance calls. This dialing plan offers the following:

- seven-digit dialing for local calls
- eight-digit (1 + seven-digit) dialing for toll calls in the same NPA
- 11-digit (1 + NPA-NXX-XXXX) dialing for calls to other NPAs

The following table illustrates the results of calling DN conversion (reverse translations) required for DDN subscribers in office X.

Calling DN conversions for office X

Calling DN	DDN subscriber number	Dialable DN delivered to DDN subscriber
819-724-XXXX	819-724-XXXX	724XXXX
891-722-XXXX	819-724-XXXX	722XXXX
819-723-XXXX	819-724-XXXX	723XXXX
819-725-XXXX	819-724-XXXX	725XXXX
819-820-XXXX	819-724-XXXX	1820XXXX
613-224-XXXX	819-724-XXXX	1613224XXXX

Dialable Number Delivery (DDN) (continued)

For calling DNs with an NPA other than 819, the conversion simply requires a prefix of 1 to be added to the 10-digit calling DN.

For calling DNs with an NPA of 819, the 10-digit calling DN is converted to the following:

- a seven-digit dialable DN, where the DDN subscriber's DN and the calling DN are in the LOCAL_S local calling area
- an eight-digit (1 + seven-digit) dialable DN, where the calling DN is outside the LOCAL_S local calling area

The first step in creating the necessary DDN reverse translations for Office X is to define the LOCAL_S calling region in table DNREGION. The following example shows how the local calling area served by office X is datafilled in table DNREGION.

MAP display example for table DNREGION

REGION	FROMDIGS	TODIGS
LOCAL_S	819722	819725

The second step in creating the necessary DDN datafill for office X to define the digit manipulation algorithms in table DNREVXLA. Three algorithms are required:

- no leading digits are to be deleted (DELDIGS = 0), add prefix of 1 (PRFXDIGS = 1 and OPTPRFX = N)
- three leading digits are to be deleted (DELDIGS = 3), no prefix added (PRFXDIGS = N and OPTPRFX = N)
- three leading digits are to be deleted (DELDIGS=3), add prefix of 1 (PRFXDIGS = 1 and OPTPRFX = N)

The algorithms are applied to the following call scenarios:

- For calling DNs with NPAs not equal to 819, the 10-digit calling DN is converted to 11 digits by adding a prefix of 1 (use algorithm 1).
- For calling DNs with NPAs equal to 819, where the DDN subscriber's number and the calling DN are in the LOCAL_S region, the 10-digit

Dialable Number Delivery (DDN) (continued)

calling DN is converted to 7 digits by deleting the three leading digits (use algorithm 2).

- For calling DN's with NPAs equal to 819, the 10-digit calling DN is converted to 8 digits by deleting the three leading digits and adding a prefix of 1 (use algorithm 3).

Datafill example for table DNREVVLA

The following example illustrates the conversion algorithm datafilled in table DNREVVLA for office X.

MAP display example for table DNREVVLA

RXLNAME	FROMDIGS	TODIGS	RESULTS
RESRX	000	818	(DEFAULT 0 1 N) \$
RESRX	819	819	(LOCAL_S 3 N N) (DEFAULT 3 1 N) \$
RESRX	820	999	(DEFAULT 0 1 N) \$

The detailed processing sequence below shows how tables DNREVVLA and DNREGION are used to obtain the appropriate digit manipulation result for a given set of calling party digits and a DDN subscriber's DN.

Assume the calling party's DN is 819-820-1234 and the DDN subscriber's DN is 891-724-5678. The processing steps to obtain the result are as follows:

- The calling DN is used to locate the appropriate tuple in table DNREVVLA. In this example, the following tuple is used since it includes all numbers beginning with the digits 819:

RESRX	819	819	(LOCAL_S 3 N N) (DEFAULT 3 1 N) \$

- Screening tests are then performed using the first algorithm specified in the tuple. This algorithm specifies that the LOCAL_S region is to be used for DN screening. Table DNREGION is accessed to obtain the group of DN's that comprise the LOCAL_S region:

LOCAL_S	819722	819725

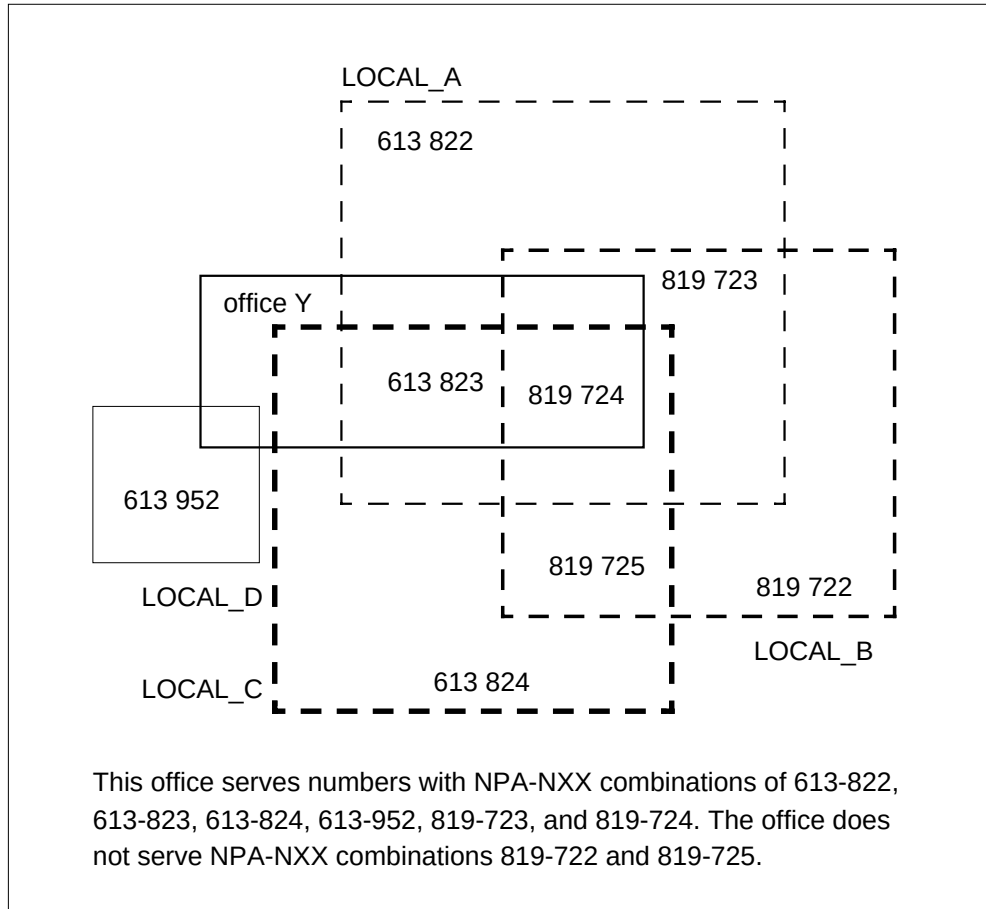
Dialable Number Delivery (DDN) (continued)

- For the screening test to be successful, both the calling DN and the DDN subscriber's DN must be found in the digit ranges that define the given region. In this case, the DDN subscriber's DN is found in the range 819722 to 819725, but the calling DN is not found in region LOCAL_S. Therefore, the screening test fails.
- Since screening for the first algorithm failed, the second algorithm in the tuple is examined. This algorithm specifies the DEFAULT region (the DEFAULT region is a group that contains all DNs).
- The calling DN and the DDN subscriber's DN always exist in the DEFAULT region; therefore, this screening test is successful.
- The digit manipulation algorithm associated with the successful test is then applied to the calling DN. This algorithm specifies that the leading three digits are to be deleted (DELDIGS = 3) and that digit 1 is to be prefixed to the result (PRFXDIGS = 1 and OPTPREFIX = N), giving the following dialable DN:

DIGITS REQUIRED FOR DIALABLE NUMBER DELIVERY: 18201234

Example scenario 2: DDN reverse translations datafill

This example illustrates the DDN reverse translations datafill required for hypothetical office Y. The following figure shows the dial plan for office (or node) Y.

Dialable Number Delivery (DDN) (continued)**Public dial plan supported by office Y**

Office Y serves DN in NPA 613 and NPA 819. Also, the DN served by this office are included in at least one of four different local calling areas: LOCAL_A, LOCAL_B, LOCAL_C, and LOCAL_D.

The conversion algorithm supported by this office conforms to the standard dialing plan for local and long distance calls. This dialing plan offers the following:

- seven-digit dialing for local calls
- eight-digit (1 + seven-digit) dialing for toll calls in the same NPA
- 11-digit (1 + NPA-NXX-XXXX) dialing for toll calls to other NPAs

Dialable Number Delivery (DDN) (continued)

The following table illustrates the results of calling DN conversion (reverse translations) required for DDN subscribers in office Y.

Calling DN conversions for office Y

Calling DN	DDN subscriber number	Dialable DN delivered to DDN subscriber
613-823-XXXX	613-824-XXXX	823XXXX
613-822-XXXX	819-723-XXXX	822XXXX
613-822-XXXX	613-824-XXXX	1822XXXX
613-777-XXXX	613-824-XXXX	1777XXXX
613-952-XXXX	819-723-XXXX	1613952XXXX
516-444-XXXX	819-724-XXXX	1516444XXXX

For calling DNs with an NPA other than 613 or 819, the conversion simply requires a prefix of 1 to be added to the ten-digit calling DN.

For calling DNs with an NPA of 613, the ten-digit calling DN is converted to the following:

- a seven-digit dialable DN, where the DDN subscriber's DN and the calling DN are both in local calling area LOCAL_A, or are both in local calling area LOCAL_C, or are both in local calling area LOCAL_D
- an eight-digit dialable DN, where the DDN subscriber's DN and the calling DN both have an NPA of 613 but are not in the same local calling area
- an 11-digit dialable DN, where the calling DN does not have an NPA of 613

For calling DNs with an NPA of 819, the ten-digit calling DN is converted to the following:

- a seven-digit dialable DN, where the DDN subscriber's DN and the calling DN are both in local calling area LOCAL_A, or are both in local calling area LOCAL_B, or are both in local calling area LOCAL_C
- an eight-digit dialable DN, where the DDN subscriber's DN and the calling DN both have an NPA of 819 but are not in the same local calling area
- an 11-digit dialable DN, where the DDN subscriber's DN does not have an NPA of 819

Dialable Number Delivery (DDN) (continued)

The first step in creating the necessary DDN reverse translations for Office Y is to define all the local calling areas and the toll (NPA) areas that include office Y subscribers in table DNREGION.

Datafill example for table DNREGION

The following example shows table DNREGION datafill for office Y.

MAP display example for table DNREGION

REGION	FROMDIGS	TODIGS
LOCAL_A	613822	613823
LOCAL_A	819723	819724
LOCAL_B	819722	819725
LOCAL_C	613823	613824
LOCAL_C	819724	819725
LOCAL_D	613952	613952
TOLL_613	613	613
TOLL_819	819	819

Note: Two toll regions, TOLL_613 and TOLL_819, must be defined, since this office serves more than one serving NPA (SNPA).

The second step in creating the necessary DDN datafill for office Y is to define the digit manipulation algorithms in table DNREVXLA. Three algorithms are required:

- no leading digits are to be deleted (DELDIGS = 0), add prefix of 1 (PRFXDIGS = 1 and OPTPRFX = N)
- three leading digits are to be deleted (DELDIGS = 3), no prefix added (PRFXDIGS = N and OPTPRFX = N)
- three leading digits are to be deleted (DELDIGS = 3), add prefix of 1 (PRFXDIGS = 1 and OPTPRFX = N)

Dialable Number Delivery (DDN) (continued)

The algorithms are applied to the following call scenarios:

- For calling DN's with NPAs not equal to 819 or 613, the 10-digit calling DN is converted to 11 digits by adding a prefix of 1 (use algorithm 1).
- For calling DN's with NPAs equal to 613, the tests shown in the following table are applied in sequence. As soon as a test is passed, the corresponding conversion is carried out, and no further tests are applied.
- For calling DN's with NPAs equal to 819, the tests shown in the following table are applied in sequence. As soon as a test is passed, the corresponding conversion is carried out and no further tests are applied.

Conversion for calling DN's with an NPA of 613

Test no.	Screening test	Conversion
1	Where the DDN subscriber's DN and the calling DN are • both in the LOCAL_A region • both in the LOCAL_C region • both in the LOCAL_D region	The 10-digit calling DN is converted to seven digits by deleting the three leading digits (use algorithm 2).
2	Where the DDN subscriber's DN and the calling DN both have an NPA of 613	The 10-digit calling DN is converted to eight digits by deleting the three leading digits and adding a prefix of 1 (use algorithm 3).
3	In all other instances	The 10-digit calling DN is converted to 11 digits by adding a prefix of 1 (use algorithm 1).

Dialable Number Delivery (DDN) (continued)**Conversion for calling DNs with a 819 NPA**

Test no.	Screening test	Conversion
1	Where the DDN subscriber's DN and the calling DN are • both in the LOCAL_A region • both in the LOCAL_B region • both in the LOCAL_C region	The 10-digit calling DN is converted to seven digits by deleting the three leading digits (use algorithm 2).
2	Where the DDN subscriber's DN and the calling DN both have an NPA of 819	The 10-digit calling DN is converted to eight digits by deleting the three leading digits and adding a prefix of 1 (use algorithm 3).
3	In all other instances	The 10-digit calling DN is converted to 11 digits by adding a prefix of 1 (use algorithm 1).

Datafill example for table DNREVLXLA

The following example illustrates the conversion algorithms datafilled in table DNREVLXLA for office Y.

Dialable Number Delivery (DDN) (continued)**MAP display example for table DNREVVLA**

RXLNAME	FROMDIGS	TODIGS	RESULTS
RESRX	000	612	(DEFAULT 0 1 N) \$
RESRX	613	613	(LOCAL_A 3 N N)
			(LOCAL_C 3 N N)
			(LOCAL_D 3 N N)
			(TOLL_613 3 1 N)
			(DEFAULT 0 1 N) \$
RESRX	614	818	(DEFAULT 0 1 N) \$
RESRX	819	819	(LOCAL_A 3 N N)
			(LOCAL_C 3 N N)
			(LOCAL_D 3 N N)
			(TOLL_819 3 1 N)
			(DEFAULT 0 1 N) \$
RESRX	820	999	(DEFAULT 0 1 N) \$

The combination of these table DNREVVLA entries and the table DNREGION entries (shown previously in “Datafill example for table DNREGION”) converts the incoming DNs from the ten-digit format to the dialable format.

The detailed processing sequence below shows how tables DNREVVLA and DNREGION are used to obtain the appropriate digit manipulation result for a given set of calling party digits and a DDN subscriber's DN.

Assume the calling party's DN is 613-823-1234 and the DDN subscriber's DN is 819-725-5678. The processing steps to obtain the result are as follows.

- The calling DN is used to locate the appropriate tuple in table DNREVVLA. In this example, the following tuple is used because it includes all numbers beginning with the digits 613:

RESRX	613	613	(	LOCAL_A	3	N	N	)
			(	LOCAL_C	3	N	N	)
			(	LOCAL_D	3	N	N	)
			(	TOLL_613	3	1	N	)
			(	DEFAULT	0	1	N	) \$

- Screening tests are then performed using the first algorithm specified in the tuple. This algorithm specifies that the LOCAL_A region be used for DN screening:

Dialable Number Delivery (DDN) (continued)

LOCAL_A	613822	613823
LOCAL_A	819723	819724

- For the screening test to be successful, both the calling DN and the DDN subscriber's DN must be found in the digit ranges that define the given region. In this case, the calling DN is found in the range 613822 to 613823, but the DDN subscriber's DN is not found in region LOCAL_A. Therefore, the screening test fails.
- Since screening for the first algorithm failed, the second algorithm in the tuple is examined. This algorithm specifies the LOCAL_C region:

LOCAL_C	613823	613824
LOCAL_C	819724	819725

- In this case, the calling DN is found in the range 613823 to 613824, and the DDN subscriber's DN is found in the range 819724 to 819725 of region LOCAL_C. The screening test is successful.
- The digit manipulation algorithm associated with the successful test is then applied to the calling DN. This algorithm specifies that the leading three digits are to be deleted (DELDIGS = 3) and that no digits are to be prefixed to the result (PRFXDIGS = N and OPTPRFX = N), giving the following result:

DIGITS REQUIRED FOR DIALABLE NUMBER DELIVERY :8231234

Translations table flow

The Dialable Number Delivery (DDN) translations tables are described in the following list:

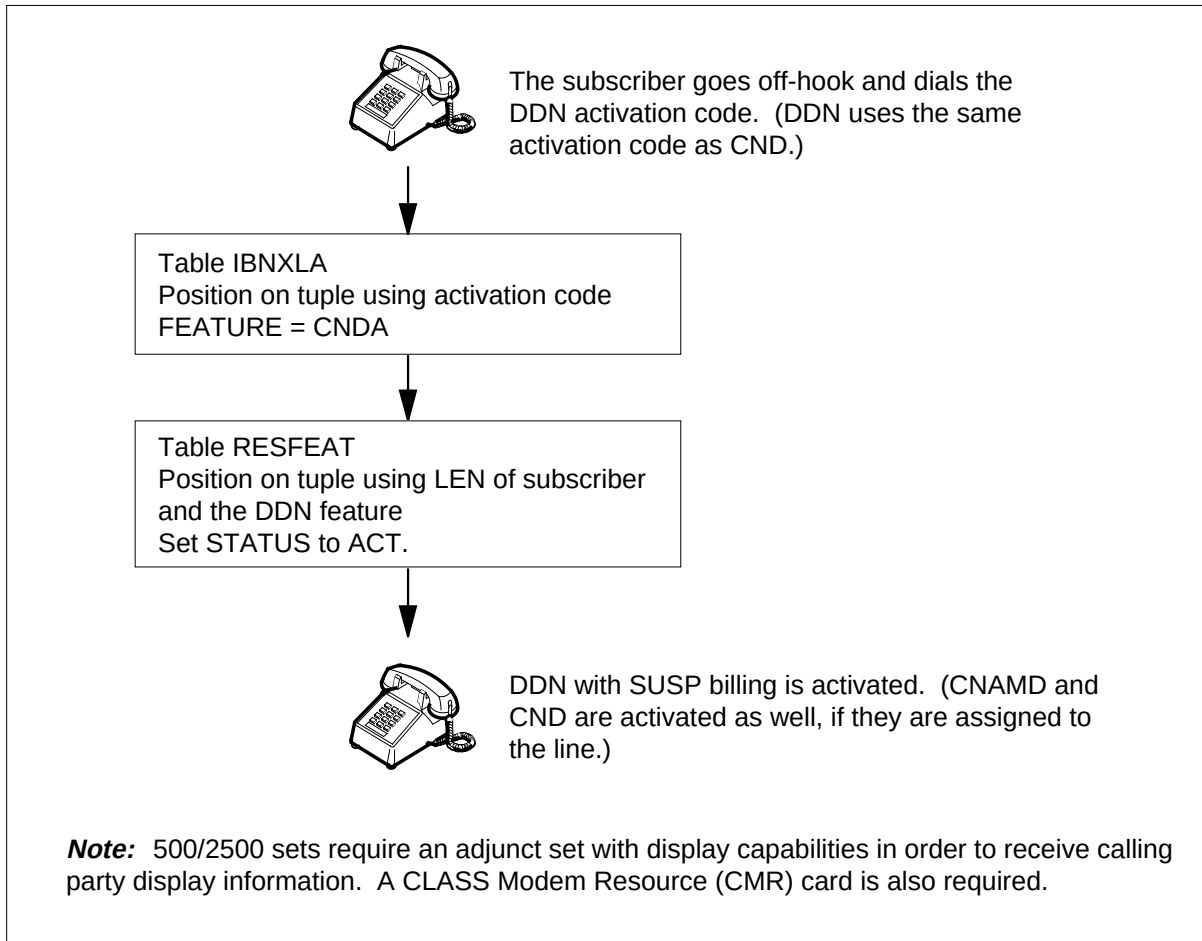
- Table IBNXLA provides the name of the feature associated with an activation code.
- Table RESFEAT contains the assignment of CLASS features for RES lines.

Note: Table RESOFC is not checked for DDN activation. CNAMD, CND, and DDN can be enabled for an office through table RESOFC after they are activated by subscribers.

Dialable Number Delivery (DDN) (continued)

The Dialable Number Delivery (DDN) activation translation process is shown in the flowchart that follows.

Table flow for Dialable Number Delivery (DDN) with SUSP billing



The following table lists the datafill content used in the flowchart. The DDN activation code is 65 and the LEN of subscriber is Host 00 02 0 05.

Datafill example for Dialable Number Delivery (DDN)

Datafill table	Example data
IBNXLA	RXCFN 65 FEAT N N N CNDA
RESFEAT	HOST 00 02 0 05 0 DDN DDN AMA ACT 0 0

Dialable Number Delivery (DDN) (continued)

Limitations and restrictions

Refer to "Feature limitations and restrictions" in "Calling Name Delivery (CNAMD)" for information on DDN limitations and restrictions.

Interactions

Refer to "Interactions" in "Calling Name Delivery (CNAMD)" for information on interactions among DDN and other features.

Activation/deactivation by the end user

Refer to "Activation/deactivation by the end user" in "Calling Name Delivery (CNAMD)" for information about activation/deactivation by the end user.

Billing

Refer to "Billing" in "Calling Name Delivery (CNAMD)" for information on billing.

Station Message Detail Recording

Dialable Number Delivery (DDN) does not affect Station Message Detail Recording.

Datafilling office parameters

Dialable Number Delivery (DDN) does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement Dialable Number Delivery (DDN). The tables are listed in the order in which they are to be datafilled.

Note: DDN-equipped lines can be divided into several customer groups, each with its own set of table DNREVLXA tuples. In this document, it is assumed that all DDN-equipped lines are in a single customer group.

Datafill tables required for Dialable Number Delivery (DDN)

Table	Purpose of table
DNREGION	Directory Number Region. This table contains information that groups DNs into regions.
DNREVLXA	Directory Number Reverse Translations. This table contains information on defining sets of digit manipulation algorithms.
CUSTNTWK	Customer Group Network. This table specifies the network name (NETNAME) with which a customer group is associated.

Dialable Number Delivery (DDN) (continued)

Datafilling table DNREGION

Table DNREGION (Directory Number Region) contains information that groups DNs into regions.

The following table shows the datafill specific to Dialable Number Delivery (DDN) for table DNREGION. Only those fields that apply directly to Dialable Number Delivery (DDN) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table DNREGION

Field	Subfield or refinement	Entry	Explanation and action
DNRGNKEY		see subfields	Directory number region key. This field contains the subfields REGION, FROMDIGS, and TODIGS. These subfields are described below.
	REGION	1 to 15 alphanumeric characters	Dn region name. This subfield specifies the DN region that the tuple defines. Enter 1 to 15 alphanumeric characters.
	FROMDIGS	1 to 11 digits	From digits. This subfield specifies the lower bounds of a range of numbers belonging to the DN region indicated in subfield REGION. Enter 1 to 11 digits.
	TODIGS	1 to 11 digits	To digits. This subfield specifies the upper bounds of a range of numbers belonging to the DN region indicated in subfield REGION. Enter a value consisting of 1 to 11 digits, but equal to or greater than the number indicated in subfield FROMDIGS.

Datafill example for table DNREGION

The following example shows sample datafill for table DNREGION.

MAP display example for table DNREGION

REGION	FROMDIGS	TODIGS
LOCAL_A	613822	613823
LOCAL_A	819723	819724
TOLL_613	613	613
TOLL_819	819	819

Dialable Number Delivery (DDN) (continued)

Datafilling table DNREVLXLA

Table DNREVLXLA (Directory Number Reverse Translations) contains information on defining sets of digit manipulation algorithms.

Each tuple can contain several digit manipulation algorithms. Each digit manipulation algorithm within a tuple is associated with a DN region. An algorithm is applied when the calling DN and the DDN subscriber's DN are both within the associated DN region.

The digit manipulation algorithms within a tuple are shown in the following sequence:

- algorithm for ten-digit to seven-digit conversion (used for calls within a local calling area)
- algorithm for ten-digit to eight-digit conversion (used for 1+ calls within the local NPA)
- algorithm for 10-digit to 11-digit conversion (used for calls to “outside” NPAs)

Note: Outside NPAs may be defined as an NPA group or the DEFAULT region (a region that contains all DNs).

Each DDN-equipped line is associated with a customer group name. The table DNREVLXLA tuples are accessed using this customer group name. The link between the customer group name and the DN translator name is provided in table CUSTNTWK.

The following table shows the datafill specific to Dialable Number Delivery (DDN) for table DNREVLXLA. Only those fields that apply directly to Dialable

Dialable Number Delivery (DDN) (continued)

Number Delivery (DDN) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table DNREVLXA (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
RVXLAKEY		see subfields	Reverse translations key. This field contains the subfields RXLANAME, FROMDIGS, and TODIGS. These subfields are described below.
	RXLANAME	1 to 8 alphanumeric characters	Reverse translator name. This subfield specifies the DN translator name. A DN translator can have more than one tuple in table DNREVLXA. All tuples belonging to the same DN translator should have the same DN translator name. Enter 1 to 8 alphanumeric characters, for the example, RESRX.
	FROMDIGS	1 to 11 digits	From digits. This subfield specifies the lowest DN of a range of calling party DNs to which this tuple applies. Enter 1 to 11 digits.
	TODIGS	1 to 11 digits	To digits. This field contains the highest DN of a range of calling party DNs to which this tuple applies. Enter a value consisting of 1 to 11 digits, but equal to or greater than the number indicated in subfield FROMDIGS.
RESULTS		see subfields	Translations results. This field consists of the subfields REGION, DELDIGS, PRFXDIGS, and OPTPRFX. These subfields are described below.
	REGION	region name	Region name. This subfield specifies the DN region name, previously defined in table DNREGION. Enter the region name. Note: The DEFAULT region name can be specified in this subfield. DEFAULT specifies a region that includes all possible DNs.
	DELDIGS	0 to 15	Delete digits. This subfield specifies the number of digits to delete from the calling party DN. Digits are deleted starting from the left. Enter a value from 0 to 15.

Dialable Number Delivery (DDN) (continued)**Datafilling table DNREVXLA (Sheet 2 of 2)**

Field	Subfield or refinement	Entry	Explanation and action
	PRFXDIGS	N	Prefix digits. This subfield specifies the digits to be prefixed to the destination DN. Enter the prefix digits, or N if no digits are to be added.
	OPTPRFX	N	Optional prefix. This subfield specifies digits that may optionally be prefixed to the input digit string. For DDN DN translators, enter N.

Datafill example for table DNREVXLA

The following example shows sample datafill for table DNREVXLA.

MAP display example for table DNREVXLA

RXLANAME	FROMDIGS	TODIGS	RESULTS
RESRX	613235	613237	(LOCAL_D 3 N N) (NPA_613 3 1 N) (DEFAULT 0 1 N) \$

This tuple applies to incoming calls that are destined for a DDN subscriber served by DN translator RESRX and to incoming calls from a calling party with a DN in the range 613-235-0000 to 613-237-9999.

The meaning of the RESULTS entry list is as follows:

- Screening tests are performed using the first algorithm specified in the tuple. This algorithm specifies that the LOCAL_D region is to be used for DN screening.
- For the screening test to be successful, both the calling party DN and the DDN subscriber's DN must be found in the digit ranges that define the given region. If the screening test passes, the algorithm specifies that the leading three digits are to be deleted (DELDIGS = 3) and that no digits are to be prefixed to the result (PRFXDIGS = N and OPTPRFX = N).
- If screening for the first algorithm fails, the second algorithm in the tuple is examined. This algorithm specifies that the NPA_613 region is used for DN screening.

Dialable Number Delivery (DDN) (continued)

- If the second screening test passes, the algorithm specifies that the leading three digits are to be deleted (DELDIGS =3) and that the digit 1 is to be prefixed to the result (PRFXDIGS = 1 and OPTPRFX = N).
- If screening for the second algorithm fails, the third algorithm in the tuple is examined. This algorithm specifies that the DEFAULT region is to be used for DN screening.
- As the DEFAULT region contains all DNs, the third screening test always passes. The algorithm specifies that no leading digits are to be deleted (DELDIGS = 0) and that the digit 1 is to be prefixed to the result (PRFXDIGS = 1 and OPTPRFX = N).

Datafilling table CUSTNTWK

Table CUSTNTWK (Customer Group Network) specifies the network name (NETNAME) with which a customer group is associated. It also provides a predetermined global numeric identifier (NETCGID) within the specified network name that is used for the customer group throughout the network.

For each customer group with DDN lines, a tuple must exist in table CUSTNTWK. Each tuple must include the following:

- the network (for RES implementation, the network is always PUBLIC)
- the network group ID (not used by DDN)
- customer group ID (the customer group to which the DDN subscribers are allocated)
- the reverse translator name identifying the tuples in table DNREVLXA to be used for DDN reverse translations

In the example shown below, it is assumed that all DDN subscribers belong to the same customer group, RESGRP.

The following table shows the datafill specific to Dialable Number Delivery (DDN) for table CUSTNTWK. Only those fields that apply directly to

Dialable Number Delivery (DDN) (continued)

Dialable Number Delivery (DDN) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table CUSTNTWK (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
CUSTNAME		customer name	Customer group name. This field specifies the name for the customer group. Enter the customer name, such as RESGRP.
NETNAME		PUBLIC	Network name. This field specifies the name of the network. Enter PUBLIC. RES lines must always be public.
NETCGID		1 to 4096	Network customer group identifier. This field specifies the identifier for the customer group specified in CUSTNAME. Each tuple in the table must have a unique NETCGID. Enter the a value from 1 to 4096.
DNREVLXA		see subfields	Directory number reverse translator. This field consists of the subfields NETNAME, RXLANAME, and NUMDIGS.
	NETNAME	RESRX	Network name. This subfield identifies the name of the network with which the reverse translator specified in subfield RXLANAME is associated. Enter RESRX.
	RXLANAME	see subfields	Reverse translator name. This subfield identifies the reverse translator to be associated with the network name in the subfield NETNAME.
	NUMDIGS	see subfield	Number of digits. This subfield specifies the number of digits to be used for the reverse translations process by applications that use the reverse translator identified in RXLANAME.

Dialable Number Delivery (DDN) (continued)**Datafilling table CUSTNTWK (Sheet 2 of 2)**

Field	Subfield or refinement	Entry	Explanation and action
OPTIONS		see subfield	Options. This field contains the subfield CLIDOPT. This subfield is described below.
	CLIDOPT	ONNET, OFFNET, or INTRAGROUP	Calling line identification option. This subfield indicates the type of calls for which calling party information is displayed. A value of ONNET enables option CLID for all calls within the same network as the called party; a value of OFFNET enables option CLID for all networked calls, regardless of their origin; a value of INTRAGROUP enables option CLID only for calls originating and terminating within the same customer group. Enter ONNET, OFFNET, or INTRAGROUP.

Datafill example for table CUSTNTWK

The following example shows sample datafill for table CUSTNTWK.

MAP display example for table CUSTNTWK

CUSTNAME	NETNAME	NETCGID	DNREVXLA	OPTIONS
RESGRP	PUBLIC	7	(PUBLIC RESRX 10) (NRXLA 10)	\$

Translation verification tools

REVXLVER (reverse translations verification) is a datafill verification utility, similar to TRAVER (translations verification), that simulates reverse translations from a specified origination to a specified destination.

REVXLVER examines and displays translations data for reverse translations call processing. It also can display the reverse translations number result.

Reverse translations tables

Two data tables perform reverse DN translations. The first table, DNREGION, is used to identify groups of DNs belonging to the same region (or community of interest). The second table, DNREVXLA, is used to provide reverse translations algorithms based on the various regions defined in table

Dialable Number Delivery (DDN) (continued)

DNREGION. Together, these two tables specify the manner in which destination digits are to be manipulated based on whether or not the originator and the destination share a particular region.

For each Subscriber Services and MDC customer group containing lines using the DDN feature, a tuple must exist in table CUSTNTWK. Table CUSTNTWK tuple identifies the reverse translator to be used by the AR and DDN features.

The tables referenced by each REVXLVER subcommand are discussed below as part of the descriptions of the individual subcommands.

REVXLVER subcommands

The REVXLVER tool is divided into four subcommands:

- AR: allows the user to analyze AR reverse translations.
- ACB: allows the user to analyze ACB reverse translations.

Note: AR and ACB are not described in detail in this chapter. Consult “Automatic Call Back/Automatic Recall (ACB/AR)” for details on AR and ACB.

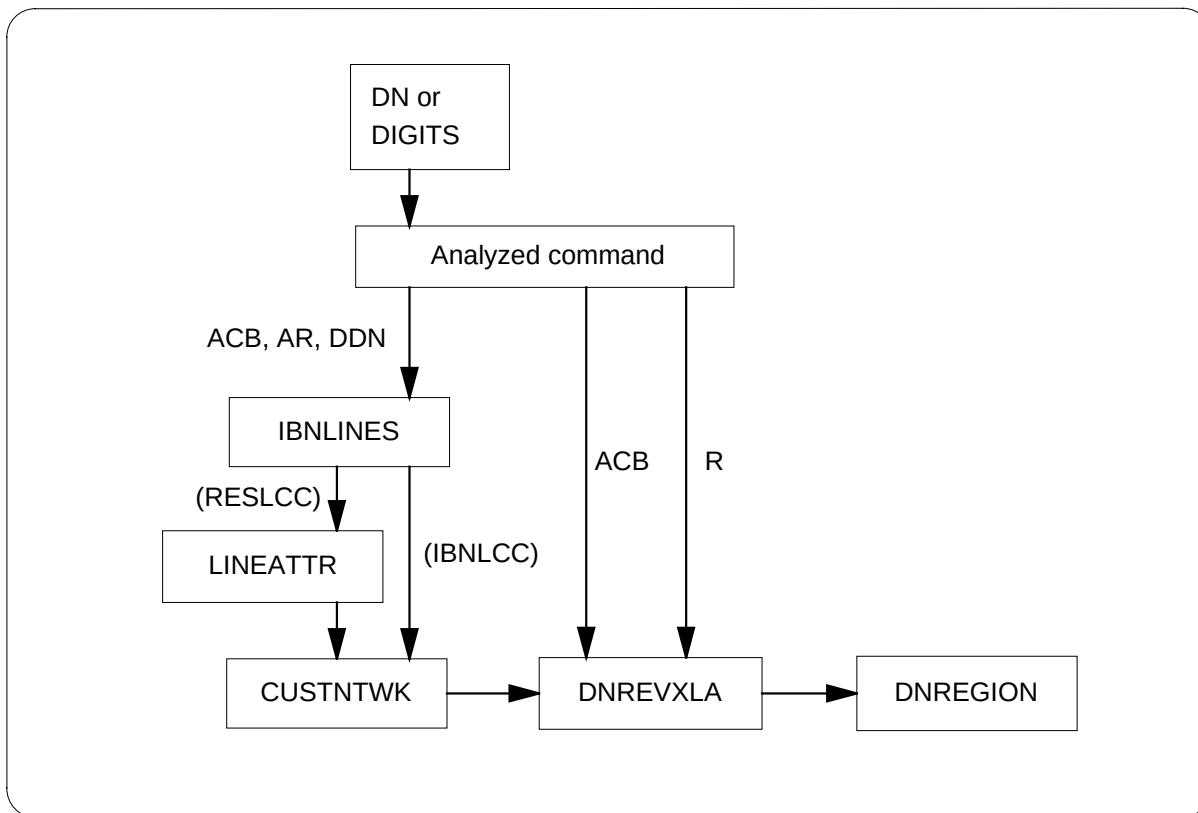
- DDN: allows the user to analyze DDN reverse translations.
- R (Region): allows the user to trace datafill in table DNREGION.

Tables used by REVXLVER subcommands

The following shows how the REVXLVER subcommands (AR, ACB, DDN, and R) access the tables used by reverse translations processing.

Dialable Number Delivery (DDN) (continued)

Tables used by REVXLVER subcommands



REVXLVER DDN subcommand

The following command syntax is used to invoke the REVXLVER tool:

REVXLVER DDN <DN> <DIGITS> <OPTION> <NETNAME>

Where:

- DN is the seven- or ten-digit DN of the line originating the call.
- DIGITS consists of the ten-digit sequence identifying the destination.

Dialable Number Delivery (DDN) (continued)

- OPTION is the type of tracing option, as follows:
 - T (trace) uses parallel software to simulate the reverse translations part of a call and displays sequentially all table entries that are referenced by the call.
 - NT (no trace) displays the reverse translations output digits for the associated DN and digits specified in the command line.
 - B invokes both options T and NT.
- NETNAME is an optional parameter identifying a valid network name. Network names are listed in table NETNAMES. The default value is "PUBLIC."

DDN uses the specified digits as though they were stored in the DDN subscriber's incoming call memory. These digits must be converted to a dialable format; that is, between 1 and 11 digits. DDN uses ten-digit DNs to perform call setup. To do this, DDN has access to the reverse translations datafill.

The reverse translations result for the DDN subcommand is a 1- to 11-digit number.

Reverse translations tables used by DDN subcommand

The DDN subcommand uses the following five tables:

- Table IBNLINES uses the LEN as a key to determine the line attribute index (LNATTIDX) for Subscriber Services RES lines or the customer group for IBN lines.
- Table LINEATTR uses the LNATTIDX as a key to determine the customer group to which the DN belongs (only for RES lines).
- Table CUSTNTWK uses the customer group to select a reverse translator.
- Table DNREGION identifies the groups of DNs belonging to the same region.
- Table DNREVXLA associates the reverse translator to the reverse translations algorithm based on the various regions defined in table DNREGION. However, if there is no match between the specified digits and the regions, a default datafill can be used as the algorithm.

REVXLVER output examples

The following example shows the output from the DDN subcommand using the trace option.

Dialable Number Delivery (DDN) (continued)

REVXLVER output example

```
>REVXLVER DDN 8243000 8197251234 T
TABLE IBNLINES
  HOST 01 0 00 01 DT STN RES 8243000 200 $
  ( ACB) ( AR) ( DDN)$
TABLE LINEATTR
  200 1FR NONE NT FR01 0 613 P621 L613 TSPS 10
  NIL NILLATA 0 NIL NIL 00 Y RESG200 0 0
TABLE CUSTNTWK
  RESG200 PUBLIC 23 (PUBLIC RESRX 10)
Table DNREVXLA
  RESRX 819 819 (LOCAL_A 3 N N)
          (LOCAL_B 3 N N)
          (LOCAL_C 3 N N)
          (TOLL_819 3 1 N)
          (DEFAULT 0 1 N)
TABLE DNREGION
  LOCAL_C 613823 613824
  LOCAL_C 819724 819725

+++ REVXLVER: SUCCESSFUL TRACE +++
```

The following example shows the output from the DDN subcommand using the no trace option.

REVXLVER output example

```
>REVXLVER DDN 8243000 8197251234 NT
DELIVERY DIGITS
  7251234

+++ REVXLVER: SUCCESSFUL TRACE +++
```

The following example shows the output from the DDN subcommand using both trace options.

Dialable Number Delivery (DDN) (continued)**REVXLVER output example**

```

>REVXLVER DDN 8243000 8197251234 B
TABLE IBNLINES
  HOST 01 0 00 01 DT STN RES 8243000 200 $
  ( ACB) ( AR) ( DDN)$
TABLE LINEATTR
200 1FR NONE NT FR01 0 613 P621 L613 TSPS 10
  NIL NILLATA 0 NIL NIL 00 Y RESG200 0 0
TABLE CUSTNTWK
  RESG200 PUBLIC 23 (PUBLIC RESRX 10)
Table DNREVXLA
  RESRX 819 819 (LOCAL_A 3 N N)
          (LOCAL_B 3 N N)
          (LOCAL_C 3 N N)
          (TOLL_819 3 1 N)
          (DEFAULT 0 1 N)
TABLE DNREGION
  LOCAL_C 613823 613824
  LOCAL_C 819724 819725
DELIVERY DIGITS
7251234

+++ REVXLVER: SUCCESSFUL TRACE +++

```

REVXLVER R subcommand

The following command syntax is used to invoke the REVXLVER tool:

REVXLVER R <DN> <RXLANAME>

Where:

DN

is the seven- or ten-digit DN of the line originating the call.

RXLANAME

is the name of a valid reverse translator name.

RXLANAME

is the parameter that is valid only in the R subcommand syntax.

The R subcommand uses the specified reverse translator name and digits to locate the table DNREVXLA logical tuple to which the digits belong. This tuple is then parsed to determine the regions in table DNREGION that are associated with this tuple. Using these regions and the digits, the R subcommand determines whether or not the digits belong to these regions. If

Dialable Number Delivery (DDN) (end)

there is a match, the subcommand R displays the matched table DNREGION logical tuple(s).

To determine a match, both of the following conditions must be met:

- The number of digits in digits must be greater than or equal to the number of digits in fields FROMDIGS and TODIGS in the table DNREGION logical tuple.
- The specified digits must be included in the range defined by FROMDIGS and TODIGS.

There are no reverse translations results for the R subcommand.

Reverse translations tables used by R subcommand

The R subcommand uses the following two tables.

- Table DNREVLXLA associates the reverse translator to the reverse translations results to determine the regions used in table DNREGION.
- Table DNREGION determines whether or not the digits match with these regions.

REVLVER output example

The following example shows the output from the R subcommand scanning table DNREGION.

REVLVER output example

```
>REVLVER R 613824 POTSAR
TABLE DNREGION
LOCAL_C 613823 613824
TOLL_613 613 613

++ REVLVER: SUCCESSFUL TRACE ++
```

SERVORD

Refer to "Service orders" in "Calling Name Delivery (CNAMD)".

Downloadable Softkeys

Ordering codes

Functional group ordering code: RES00003

Release applicability

CSP02, Downloadable Softkeys with Bellcore-compliant ADSI (TR-1273)

Prerequisites

To operate, Downloadable Softkeys requires RES Service Enablers, RES00006.

Network configuration

Common Channel Signaling No. 7 (CCS7) connectivity is required for network (interoffice) configuration of Analog Display Services Interface (ADSI) Services Protocol.

Description

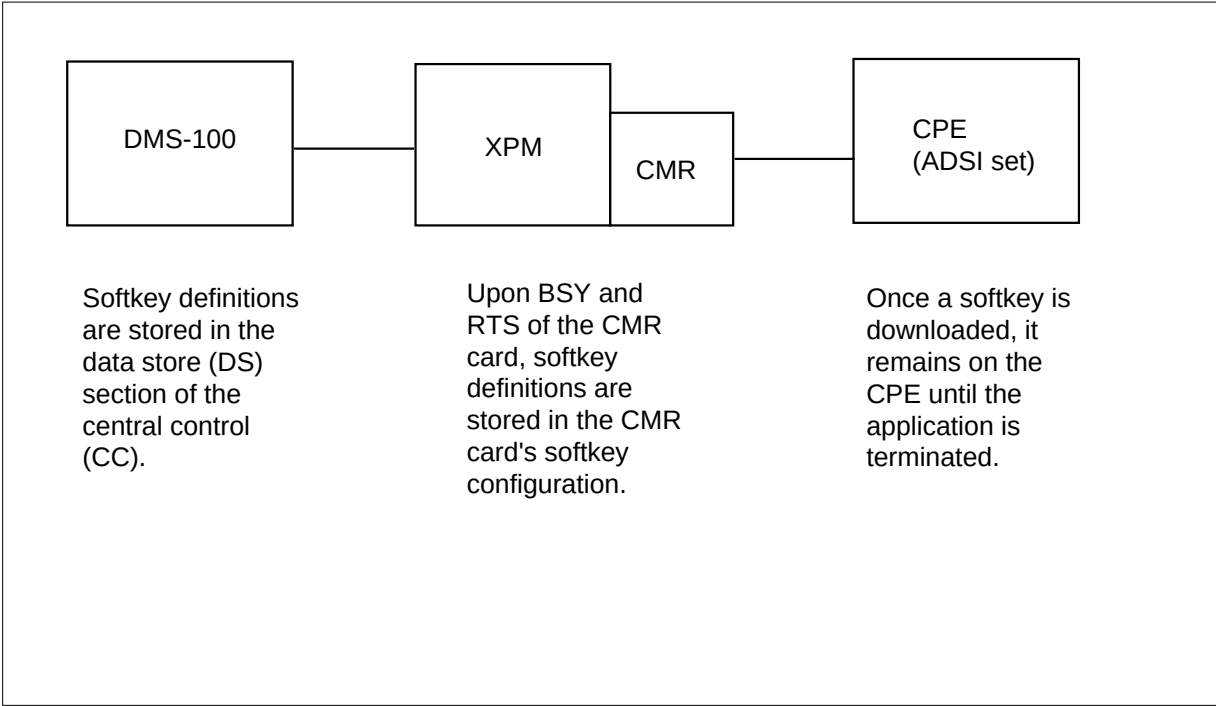
The Downloadable Softkeys feature downloads key definitions to ADSI sets as required by specific applications. ADSI sets communicate with the network using the ADSI protocol, allowing subscribers to perform the following display services: Visual Screen List Editing (VSLE) and Call Logging (CALLOG).

VSLE and CALLOG require ADSI set keys to be configured with functions that pertain to the application. With Downloadable Softkeys, key definitions are downloaded while a subscriber is in an application. A softkey's function can change, depending on which application is active.

Softkey definitions for applications are stored in a table on the DMS-100 switch. They are downloaded from the switch to an XMS-based peripheral module (XPM), then to a CLASS Modem Resource (CMR) card, and finally to the customer premises equipment (CPE), an ADSI set. A summary of this process is shown in the flowchart that follows.

Downloadable Softkeys (continued)

Table flow for Downloadable Softkeys



Operation

Communication from the DMS-100 switch to the CPE is handled by the Bell 202A modulation scheme; communication from the CPE to the DMS-100 switch is handled by dual-tone multifrequency (DTMF) signals. These signaling schemes comply with mode 2A of the ADSI protocol.

Downloadable Softkeys requires a CMR card, NT6X78AB, for transmitting softkey information to the CPE. The card must be provisioned on an XPM.

Since softkey definitions are stored on the DMS-100 switch, they can be updated by changing the datafill in that table. The softkey definition includes an identification number, a long label, a short label, and a string for return to the DMS-100 switch.

Softkey storage

Softkey information is stored in two places: on the DMS-100 switch in table SOFTKEY and on the CMR card in softkey configuration. Data from table SOFTKEY is downloaded to the XPM and CMR card when the peripheral is initialized, or when the CMR card is busied (BSY) and returned to service (RTS).

Downloadable Softkeys (continued)

Table SOFTKEY consists of the following fields:

- SERVID contains the application's service ID.
- DEFNUM contains the definer number.
- LLABEL contains the long label string.
- SLABEL contains the short label string.
- RETURN contains the return string.

Changes to table SOFTKEY do not take effect on the subscriber set until CMR cards are busied and returned to service.

Downloading process

The sections that follow describe the messages used for downloading softkeys.

A subscriber accesses softkeys from an application by dialing the application's access code. If that code passes, the CC sends a message to the XPM requesting that it send the Bellcore-defined ADSI tone to the subscriber.

If the set is an ADSI set (that is, it uses the ADSI protocol), the set returns DTMF tone A to the CC, and the downloading process continues. If, however, the subscriber set returns any other tone or value to the CC, the downloading process is terminated.

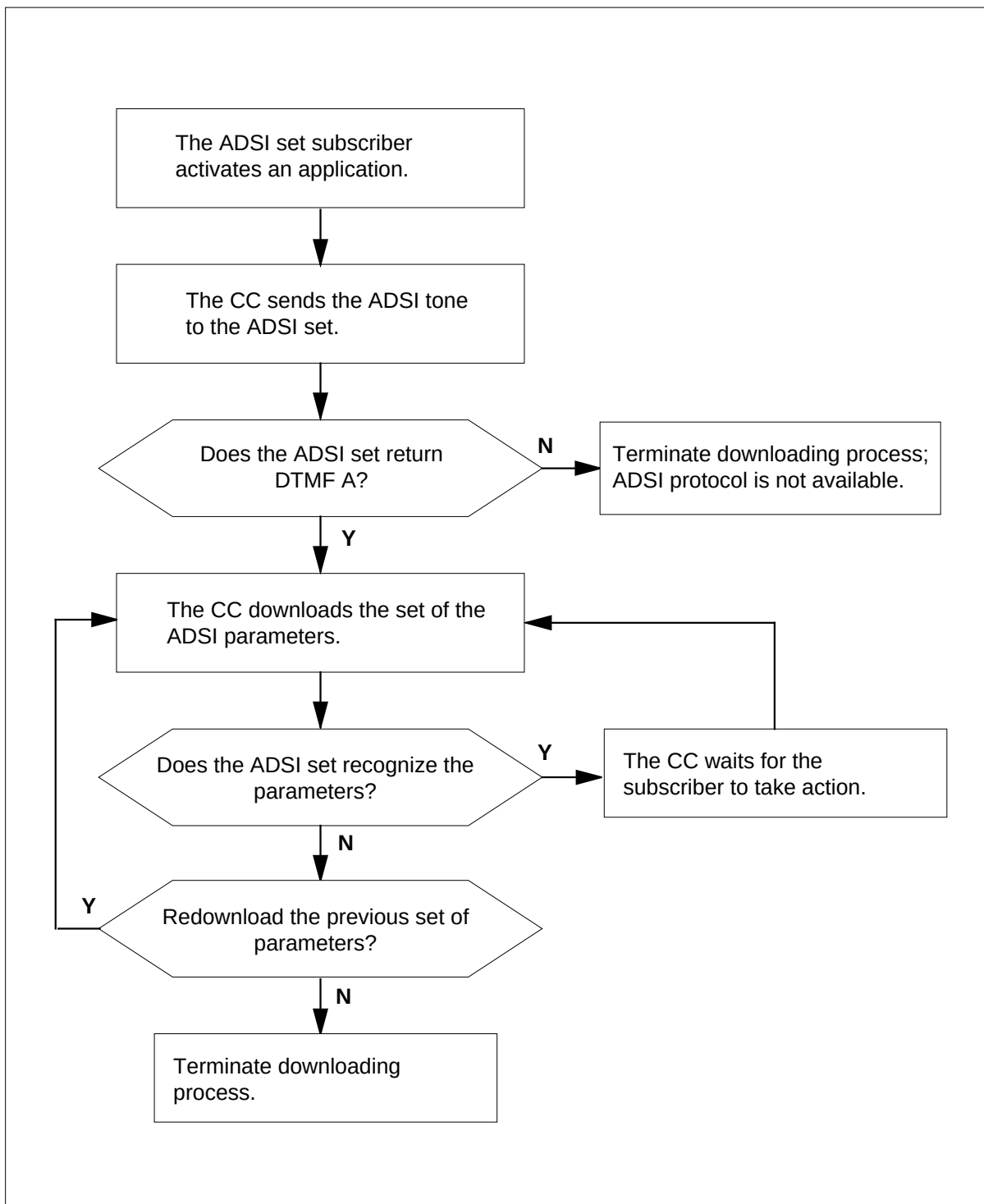
To download softkeys, the CC sends a message to the ADSI set. This message actually consists of three separate messages: one from the CC to the XPM, another from the XPM to the CMR, and a third from the CMR to the ADSI set.

If the set recognizes the downloaded parameters, the CC waits for the user to press a softkey or take some action. Otherwise, the CC either downloads the previous set of ADSI parameters again or terminates the downloading process.

The following figure summarizes the process of downloading softkeys from the central control (CC) of the DMS-100 switch to the ADSI set.

Downloadable Softkeys (continued)

Table flow for downloading process



Downloadable Softkeys (continued)

Translations table flow

The Downloadable Softkeys feature does not affect the translations data flow. Table SOFTKEY is accessed by the CC only for downloading softkey information to an ADSI set.

Limitations and restrictions

The following limitations and restrictions apply to Downloadable Softkeys:

- ADSI calls can be unstable if an XPM warm SwAct (switch of activity) occurs while softkey data is downloaded or transmitted to the ADSI set. Furthermore, the application terminates when the next set of parameters is sent.
- ADSI calls are dropped if an XPM cold SwAct occurs while softkey data is downloaded or transmitted to the ADSI set.
- ADSI calls can be unstable if a CMR card is busied and returned to service during an ADSI session.
- A busied CMR card on the active unit of the XPM prevents any CLASS services that use the CMR card from functioning. A VSLE session will wait approximately six seconds before routing to audio SLE when the CMR card is busy.
- Each time table SOFTKEY is modified, peripherals with CMR cards must be busied and returned to service to download the modifications to the CMR softkey data.
- ADSI is incompatible with Multiline Hunt Groups (MLH) and Distributed Line Hunt Groups (DLH)

Interactions

Downloadable Softkeys has no functionality interactions.

Activation/deactivation by the end user

The Downloadable Softkeys feature is activated automatically when applications are activated. Similarly, this feature is deactivated when applications are terminated.

Billing

Downloadable Softkeys does not affect billing.

Station Message Detail Recording

Downloadable Softkeys does not affect Station Message Detail Recording.

Downloadable Softkeys (continued)

Datafilling office parameters

Downloadable Softkeys does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement Downloadable Softkeys. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Downloadable Softkeys

Table	Purpose of table
SOFTKEY	Softkey. This table contains tuples that define each softkey to ADSI applications and is datafilled automatically when an ADSI application is present.

Datafilling table SOFTKEY

Table SOFTKEY (Softkey) contains definitions of downloadable softkeys. Each tuple contains a definition, including an identification number, short and long label strings, a return string, and a list of definer numbers whose labels are displayed on the ADSI set when the corresponding softkey is pressed.

Each time table SOFTKEY is modified, peripherals with CMR cards must be busied and returned to service to download the modifications to the CMR softkey data.

The following table shows the datafill specific to Downloadable Softkeys for table SOFTKEY. Only those fields that apply directly to Downloadable Softkeys are shown. For a description of the other fields, refer to the data schema section in this document.

Datafilling table SOFTKEY (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
SERVID		VSLE, CALLOG	SERVICE IDENTIFICATION. This field specifies the application service (VSLE, CALLOG). This field and DEFNUM, described next, comprise the key to the table. Enter VSLE or CALLOG.
DEFNUM		2 to 33	DEFINER NUMBER. This field specifies a definer number. DEFNUM can be any integer from 2 to 33. For each SERVID, the definer number must be unique. (The integer 1 is reserved internally for blank labels.)

Downloadable Softkeys (end)**Datafilling table SOFTKEY (Sheet 2 of 2)**

Field	Subfield or refinement	Entry	Explanation and action
LLABEL		up to 18 alphanumeric	LONG LABEL. This field specifies the softkey's long label. Enter up to 18 alphanumeric characters to be displayed on the subscriber set.
SLABEL		up to 7 characters	SHORT LABEL. This field specifies the softkey's short label. Enter up to 7 characters.
RETURN		up to 14 bytes	RETURN. This field contains up to 14 bytes which represent the decimal equivalents of alphanumeric characters or return string control codes as defined by Bellcore TR-1273.

Datafill example for table SOFTKEY

The following example shows sample datafill for table SOFTKEY. Refer to modules Visual Screen List Editing (VSLE) and Call Logging (CALLOG) for the required feature-specific datafill for table SOFTKEY.

MAP display example for table SOFTKEY

TABLE: SOFTKEY				
SERVID	DEFNUM	LLABEL	SLABEL	RETURN
VSLE	2	TURNON	TON	52 \$
VSLE	3	TURNOFF	TOFF	53 \$
CALLOG	8	DIAL	DIAL	56 133 \$
CALLOG	9	NAME	NAME	57 133 \$

Translation verification tools

Downloadable Softkeys does not use translation verification tools.

SERVORD

Downloadable Softkeys does not use SERVORD.

DSCWID TR Compliancy

Ordering codes

Functional group ordering code: RES00003

Functionality ordering code: RES00040

Release applicability

DMSCCM04 and up

Prerequisites

This document contains all the datafill information for this particular functionality. However, complete implementation may require prerequisite software or hardware.

Network configuration

Network (interoffice) configuration of DSCWID TR Compliancy requires Common Channel Signaling 7 (CCS7) connectivity.

Description

Deluxe Spontaneous Call Waiting Identification (DSCWID) is a Stored Program Control System (SPCS) feature. Subscribers can receive calling party information during Call Waiting (CWT) and control the treatment of incoming calls with disposition options. The disposition options are available through softkeys on the customer premises equipment (CPE). These softkeys are context-sensitive and change function according to the service type and the menu levels within the service.

This feature replaces the Enhanced Call Waiting Display feature development of DSCWID (CSP02). DSCWID TR Compliancy provides DSCWID as defined by Bellcore Technical Requirement TR-NWT-0416.

Note: DSCWID and Call Waiting Deluxe are identical and interchangeable terms.

Operation

When you assign DSCWID to a line, incoming calls to that line, while idle, receive normal terminating treatment. When the line is busy, the system provides audible ringing to the calling party and alerts the DSCWID subscriber, the called party, that a call is waiting.

The DSCWID subscriber receives one of two types of alerting sequences: a subscriber alerting signal (SAS) or a SAS followed by a CPE alerting signal (CAS). The SAS is the normal CWT tone that a subscriber hears.

DSCWID TR Compliancey (continued)

The SAS followed by a CAS is necessary to alert the CPE to display the DSCWID options on an Analog Display Services Interface (ADSI)-compliant CPE and to send caller identification to the CPE if a calling information delivery (CID) feature, such as Calling Number Delivery (CND), Dialable Number Delivery (DDN), or Calling Name Delivery (CNAMD), is also assigned to the DSCWID line.

After the CWT tone indicates to the DSCWID subscriber that a call is waiting, the ADSI set displays calling-party information (name, number, or both name and number) and softkey options from which the subscriber can choose a disposition for the waiting call. A CPE-resident service script displays the DSCWID options the ADSI set. The display names of the options may vary depending on the service script.

Note: In a DSCWID session, after the ADSI set displays calling party information on the waiting call and a disposition is selected, the set is updated with calling-party information on the currently active call.

DSCWID is available to subscribers with either ADSI-compatible CPE or non-ADSI CPE (2500 telephone sets) that are able to signal dual-tone multifrequency (DTMF) tones. An ADSI-compliant CPE can display the full range of DSCWID options to the DSCWID subscriber and allows the subscriber to select an option by pressing a single softkey. Subscribers without an ADSI-compliant CPE cannot reliably access the softkey options for calls in a waiting state. See "DSCWID using non-ADSI sets."

DSCWID softkey options

The operating company can allow up to ten DSCWID softkey options for use by each DSCWID type. The DSCWID options are defined using the KEYOPTS parameter in table DSCWDTYP (DSCWID Types). The DSCWID options cannot be overridden on an individual-line basis. The following is the complete list of DSCWID softkey options:

- ALL (all options can be used)
- ANSWER (answer)
- BUSY (busy announcement)
- CONF (conference)
- DROP (drop)
- DROPFRST (drop first)
- DROPLAST (drop last)
- FWD (forward)

DSCWID TR Compliancey (continued)

- HOLD (hold)
- RETRN (return)

Note 1: The equivalent non-ADSI flash-digit sequences for the previously listed dispositions are valid when the NONADSI field is set to Y (yes) for the DSCWID type in table DSCWD TYP. See “DSCWID using non-ADSI sets.”

Note 2: The names and the sequence of softkey options on an ADSI set can vary depending on the script that is downloaded from the advanced call management server (ACMS) to the ADSI set. The softkey functions, however, are the same as described here.

Waiting-call state options

On being alerted of an incoming call, the DSCWID subscriber who has all possible options can choose one of the following for treating the waiting call:

- ANSWER: This option allows the DSCWID subscriber to put the active party on hold and connect to the waiting party. When the ANSWER softkey is used, the ADSI set display is updated with information on the currently active party (formerly the waiting party), and the softkeys are updated with the RETURN, DROP, and CONFERENCE softkeys.

Note: The subscriber should use the ANSWER softkey to perform the answer function. If the subscriber uses the flash-hook to perform the ANSWER function, the script may become inactive on certain CPEs.

- HOLD: This option allows the DSCWID subscriber to put the waiting party on hold and stay connected to the active party. The CPE updates the display to list the RETURN, DROP, and CONFERENCE softkeys.
- FORWARD: This option allows the DSCWID subscriber to forward the waiting party to voice mail or to another party. The forward-to destination is the one specified in the Call Forwarding Don't Answer (CFDA) feature. The DSCWID subscriber must have CFDA assigned with a valid forward-to directory number (DN) for this softkey to work. When the FWD disposition is selected and the forward-to number is idle, the call is forwarded.

Note: If no forward-to DN is specified or if an invalid forward-to DN is specified for CFDA, the FWD softkey is still displayed. When the subscriber selects FWD in this case, the waiting party continues to hear ringing.

- BUSY: This option allows the DSCWID subscriber to connect the waiting party to an announcement, telling the waiting party to try again later. The

DSCWID TR Compliance (continued)

waiting party receives the disconnect treatment and the call is released. After the BUSY option is selected, the ADSI set display is updated with information on the active party. The DSCWID subscriber remains connected to the active party.

- **DROP:** This option allows the DSCWID subscriber to drop the connection with the active party and connect with the waiting party. The DROP option appears as a softkey option at the beginning of a DSCWID session or after a waiting call has been placed on hold using either the ANSWER or HOLD options.
- **CONFERENCE:** This option allows the DSCWID subscriber to join with both the active party and the waiting party in a three-way conference call. The CPE updates the display to list the DROPFIRST and DROPLAST softkeys.

If the DSCWID subscriber does not select a treatment for the incoming call, the subscriber's default treatment is applied after the timing interval (TDEFAULT) specified in table RESOFC (Residential Line CLASS Office Data) has expired. The following is a list of the default treatments:

- **RING:** The waiting party remains in a waiting state and continues to receive audible ringing.
- **ANNOUNCEMENT:** The waiting party is connected to an announcement.
- **FORWARD:** If the DSCWID subscriber has CFDA assigned, the waiting party is forwarded to the subscriber's CFDA destination. If CFDA is assigned but not active, the waiting party receives the RING default treatment.

If the default treatment is set to RING, the CPE service script might remove the softkey options from the display. In this case, the only way to answer the call would be to use the flash-hook.

Held-call state options

Once the DSCWID subscriber who has all possible options has put either the incoming call or the existing call on hold, the following DSCWID options are available:

- **RETURN:** This option allows the DSCWID subscriber to alternate between the held and active parties. Each time the RETRN option is selected, the ADSI display is updated with information on the currently

DSCWID TR Compliancy (continued)

active call. The CPE continues to display the held-call options with the DROP, RETRN, and CONF options.

- **DROP:** This option allows the DSCWID subscriber to drop the connection with the active party and connect with the held party.
- **CONFERENCE:** This option allows the DSCWID subscriber to join with both the active party and the waiting party in a three-way conference call. The CPE updates the display to list the DROPFIRST and DROPLAST softkeys.

If a non-ADSI subscriber flashes without applying a digit, the flash is processed and performs the action equivalent to RETURN. See “DSCWID using non-ADSI sets.”

Conference-call state options

Once the DSCWID subscriber has created a three-way conference call, the following options are available:

- **DROP FIRST:** This option allows the DSCWID subscriber to disconnect the first party (the original called or calling party). The DSCWID subscriber returns to a stable two-party call state.
- **DROP LAST:** This option allows the DSCWID subscriber to disconnect the second party (the original waiting party). The flash-hook can also be used to signal DROP LAST. The DSCWID subscriber returns to a stable two-party call state.

Out-of-sync functionality

When a waiting or held party disconnects from a DSCWID session, the ADSI-compatible CPE is said to be out of sync. The service script remains active if the CPE is ADSI compatible, which means that the CPE is out of sync with the DMS-100 switch. DSCWID TR Compliancy offers two ways of dealing with out-of-sync DSCWID sessions; one is TR-compliant, and the other is proprietary.

TR-compliant

If field SYNC_CPE is set to TR_COMP in table RESOFC, the out-of-sync functionality is compliant with TR-0416 specifications. Softkey attempts from CPEs that are out of sync operate as follows:

- If the DSCWID subscriber has flash capability, the subscriber receives a second dial tone.
- If the DSCWID subscriber does not have flash capability, the softkey attempt is ignored.

DSCWID TR Compliancey (continued)

Proprietary

If field SYNC_CPE is set to UPGRADE in table RESOFC, the out-of-sync functionality is not compliant with TR-0416 specifications. The DMS-100 switch offers optional functionality for out-of-sync DSCWID sessions depending on the current state of the CPE.

For example, if the waiting party exits after the DSCWID subscriber is alerted, but before the DSCWID subscriber answers the waiting call, the following softkeys are available on ADSI-compatible CPEs:

- **ANSWER:** Provides 3 s of dial tone, which terminates the current script running in the set and synchronizes the set with the DMS switch. The subscriber is then reconnected to the far-end party.
- **FORWARD:** Ignores the attempt with no interruption to the existing connection.
- **BUSY:** Ignores the attempt with no interruption to the existing connection.
- **HOLD:** Functions identically to the ANSWER attempt.
- **CONFERENCE:** Functions identically to the ANSWER attempt.
- **DROP:** Drops the current connection and provides dial tone for new originating calls.

If the held party exits during a DSCWID session, the following softkeys are available:

- **RETURN:** Functions identically to the ANSWER attempt from the out-of-sync waiting state.
- **CONFERENCE:** Functions identically to the ANSWER attempt from the out-of-sync waiting state.
- **DROP:** Functions identically to the DROP attempt from the out-of-sync waiting state.

If either of the non-DSCWID parties exits from a DSCWID conference session, the following softkeys are available:

- **DROPFIRST:** If connected to the first party, this connection is dropped and dial tone is provided for new origination. If connected to the second party, there is no interruption to the existing connection.
- **DROPLAST:** If connected to the second or last party, this connection is dropped and dial tone is provided for new origination. If connected to the first party, there is no interruption to the existing connection.

DSCWID TR Compliancey (continued)

While TR-compliant out-of-sync functionality provides a consistent form of interaction between the DMS switch and the out-of-sync CPE, the proprietary functionality provides more usable functionality to the DSCWID subscriber.

DSCWID using non-ADSI sets

A non-ADSI set can access DSCWID options if the NONADSI field in table DSCWDTYP is set to Y (yes). However, DSCWID subscribers who use 2500 sets (non-ADSI-compliant) may not be able to reliably signal dial tone multifrequency (DTMF) tones for DSCWID options within 600 ms of a flash (for calls in the waiting and conference states).

To answer calls in the waiting state or return to calls in the held state, the non-ADSI subscriber can press the flash-hook just like in call waiting. The non-ADSI DSCWID subscriber can also drop or conference calls in the held state by flashing and dialing a DTMF digit. The flash timer field (TFLASH) in table RESOFC allows up to 8 s for non-ADSI subscribers to apply flash-digit sequences to calls in the held state.

Note: If 2500 sets are available that can be hard-coded to perform DTMF signaling, all DSCWID options can be accessed from the 2500 set, provided the operating company has the NONADSI field in table DSCWDTYP set to Y (yes). When the NONADSI field is set to N (no), the DSCWID subscriber using a 2500 set can only use the flash-hook to answer and return to a held call.

Subscriber deactivation

A DSCWID subscriber can temporarily override DSCWID service by using Cancel Call Waiting (CCW) prior to originating a call or during a call by activating a flash and then entering the access code for CCW. Once CCW is activated, the call waiting alerting tone is not provided and the delivery of display information does not take place. The second party calling the DSCWID set then receives busy treatment. The ability to override DSCWID through CCW is on an individual-call basis.

Note: When CCW is active, both DSCWID and CWT are canceled.

The DSCWID subscriber can also suppress display information on an individual-call basis by dialing the Cancel Spontaneous Call Waiting Identification (CSCWID) access code. When CSCWID is active, a call-waiting alerting tone (SAS) is heard but not the CAS. No calling-party information is displayed and no softkey options are provided.

Note: For more information on the operation of SCWID and CSCWID, refer to "Call Waiting Display (SCWID)" in the RES translations section of this document.

DSCWID TR Compliancy (continued)

DSCWID announcements

The DSCWID feature requires five announcements defined in order to work properly. The announcements are provided by a digital recorded announcement machine (DRAM). These announcements are specified in table RESOFC (Residential Line CLASS Office Data).

BUSY announcement

When a DSCWID subscriber selects the BUSY option, a BUSY announcement is given to the waiting party. If the BUSY option is chosen but the busy announcement is not datafilled, the disconnect (DSCN) announcement is applied.

HOLD announcement

When a DSCWID subscriber selects the HOLD option, a HOLD announcement is given to the waiting party before the party is placed on hold.

REMINd announcement

When a DSCWID subscriber selects the HOLD option and the preset HOLD time expires, the REMIND announcement is applied to remind the caller to stay on the line.

DEFAULT announcement

This announcement is applied when the DSCWID subscriber does not select an option and the subscriber's default treatment is set to ANNC. This could be the BUSY announcement.

DISCONNECT announcement

DSCN treatment is applied if the BUSY option is chosen but the BUSY announcement is not datafilled. If the default treatment is ANNC and the default announcement is not datafilled, the DSCN treatment is applied when the timing interval (TDEFAULT) in table RESOFC expires.

Datafill for announcements

To set up an announcement, the following tables must be datafilled and an announcement recorded. Announcements are recorded using the DRAM commands at the MAP terminal.

The sections that follow show sample datafill for tables DRAMS, CLLI, ANNS, ANNMEMS, DRAMTRK, and TMTCNTL. Refer to *Digital Recorded Announcement Machine DRAM and EDRAM Guide* for more information on datafilling and recording announcements.

DSCWID TR Compliancey (continued)

Table DRAMS

Table DRAMS contains the product engineering codes (PEC) of the DSCWID announcement cards in the DRAM. The following example shows sample datafill for the DSCWID announcements in table DRAMS.

Sample datafill for the DSCWID announcements in table DRAMS

DRAMCARD	TMTYPE	TMNO	TMCKT	CARDCODE	CARDINFO
0 1	MTM	0	2	1X79AA	EEPROM 0 1

Table CLLI

Table CLLI (Common Language Location Identifier) contains the CLLI definition specifying the maximum number of announcement members. For a definition of fields in this table, refer to the data schema section of this document.

The following example shows sample datafill for the DSCWID feature in table CLLI. One tuple for each announcement is shown.

Sample datafill for the DSCWID feature in table CLLI

CLLI	ADNUM	TRKGRSIZ	ADMININF
DSCWDBUSY	683	5	DSCWID_BUSY_ANNC
DSCWDDFLT	684	5	DSCWID_DEFAULT_ANNC
DSCWDDSCN	685	5	DSCWID_DSCN_TRMT
DSCWDHOLD	686	5	DSCWID_HOLD_ANNC
DSCWDRMDR	687	5	DSCWID_REMINDER_ANNC

Table ANNS

Table ANNS (Announcements) further refines the announcement specification. The announcement type (ANTYPE) is a standard announcement. The maximum connections (MAXCONN) can be altered in accordance with office requirements. The cycle time (CYTIME) is the approximate time (in seconds) of the announcement and must be adjusted according to the actual announcement. For a definition of fields in this table, refer to the data schema section of this document.

The following example shows sample datafill for the DSCWID feature in table ANNS. One tuple for each announcement is shown.

DSCWID TR Compliancey (continued)**Sample datafill for the DSCWID feature in table ANNS**

CLLI	ANTYPE	TRAFSNO	MAXCONN	CYTIME	MAXCYC
DSCWDBUSY	STND	0	30	8	1
DSCWDDFLT	STND	0	30	8	1
DSCWDDSCN	STND	0	30	9	1
DSCWDHOLD	STND	0	30	7	1
DSCWDRMDR	STND	0	30	8	1

Table ANNMEMS

Table ANNMEMS (Announcement Members) defines the circuits to be assigned to the various members of the announcement group. The content of the announcement is determined in table DRAMTRK. For a definition of fields in this table, refer to the data schema section of this document.

The following example shows sample datafill for the DSCWID feature in table ANNMEMS. One tuple for each announcement is shown.

Sample datafill for the DSCWID feature in table ANNMEMS

ANNMEM	HDWTYPE	CARD	MEMINFO
DSCWDBUSY 0	DRAM	DRA	(0 MTM 9 12) \$
DSCWDDFLT 0	DRAM	DRA	(0 MTM 9 14) \$
DSCWDDSCN 0	DRAM	DRA	(0 MTM 9 16) \$
DSCWDHOLD 0	DRAM	DRA	(0 MTM 9 18) \$
DSCWDRMDR 0	DRAM	DRA	(0 MTM 9 19) \$

Table DRAMTRK

Table DRAMTRK (DRAM Track) defines the phrase content of the announcements. For a definition of fields in this table, refer to the data schema section of this document.

The following example shows sample datafill for the DSCWID feature in table DRAMTRK. One tuple for each announcement is shown.

DSCWID TR Compliancy (continued)

Sample datafill for the DSCWID feature in table DRAMTRK

ANNTRACK	PHSLIST
DSCWDBUSY 0	(BUSYENG DISCENG) \$
DSCWDDFLT 0	(DEFLTENG DISCENG) \$
DSCWDDSCN 0	(DSCNENG DISCENG) \$
DSCWDHOLD 0	(BUSYENG WAITENG) \$
DSCWDRMDR 0	(REMDRENG WAITENG) \$

Table TMTCNTL.TREAT

Table TMTCNTL (Treatment Control) contains the subtable TREAT. The DSCWID DSCN treatment is added to subtable TREAT to enable feature treatment to be mapped to the calling line and supply an announcement or tone. For a definition of fields in this table, refer to this data schema section of this document.

Note: The DSCN treatment can also be datafilled in table TMTMAP for ISDN user part (ISUP) operation. For more information, refer to the data schema section of this document.

The following example shows sample datafill for the DSCWID feature in table TMTCNTL.TREAT.

Sample datafill for the DSCWID feature in table TMTCNTL.TREAT using the S selector

TREATMT	LOG	FSTRTE
DSCN	N	S DSCWDDSCN

Sample datafill for the DSCWID feature in table TMTCNTL.TREAT using the T selector

TREATMT	LOG	FSTRTE
DSCN	Y	T OFRT 950

Note: In table TMTCNTL.TREAT, a tuple can be added with a T selector that points to a route reference index in table OFRT in order to provide a second treatment after the busy announcement (as shown in the following example). For more information, refer to the data schema section of this document.

DSCWID TR Compliance (continued)**Table OFRT**

Table OFRT (Office Route) specifies a route to a treatment referenced from table TMTCNTL.TREAT. When the DSCWID DSCN treatment is added to table TMTCNTL.TREAT with a route reference index in table OFRT, a route to a second treatment should be specified in table OFRT. For more information, refer to the data schema section of this document.

The following example shows sample datafill for the DSCWID feature in table OFRT.

Sample datafill for the DSCWID feature in table OFRT

RTE	RTELIST
950	(S D DSCWDDSCN) (S D T120) \$

Recording phrase names using the DRAMREC utility

The physical phrases can be recorded using the DRAMREC utility. To do this, enter the DRAMREC utility and use the RECORD command to record the phrases on the DRAM. Note that all phrases to be combined into announcements must reside under the same DRAM controller.

The following are examples of phrase names and content for the DSCWID announcements:

- BUSYENG: "The party you have reached is busy with another call."
- DISCENG: "Please try again later."
- HOLDENG: "Please hold."
- REMDRENG: "Please continue to hold."

Translations table flow

The DSCWID TR Compliance translations tables are described in the following list:

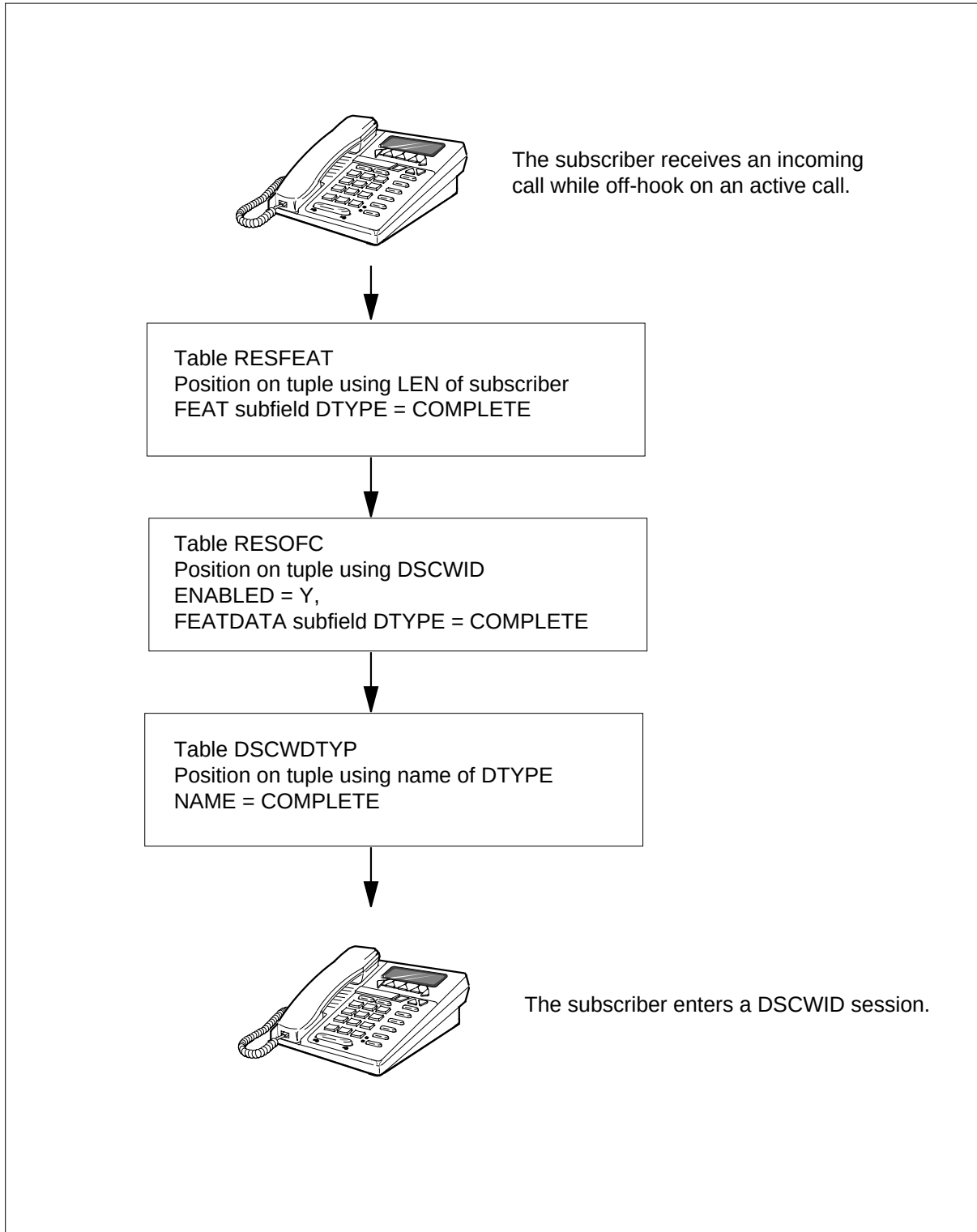
- Table RESFEAT (Residential Line Feature) contains information on the feature assignments for RES lines. When DSCWID is added to a line using the Service Order System (SERVORD), DSCWID appears as a tuple in table RESFEAT for that line equipment number (LEN).
- Table RESOFC specifies whether a CLASS feature is enabled or disabled for an office. The DSCWID tuple in table RESOFC must be enabled before any DSCWID subscriber can engage in a DSCWID session. If the DSCWID tuple is disabled, the subscriber will receive normal call-waiting treatment. Table RESOFC also specifies the announcement CLI defined

DSCWID TR Compliancy (continued)

in table CLLI that must be datafilled for DSCWID announcements, as well as the various DSCWID defaults for the office.

- Table DSCWDTYP contains information on the DSCWID types. Table DSCWDTYP defines up to 20 different DSCWID types, which are defined in the NAME field. Six types are predefined and 14 tuples can be defined by the operating company.

The DSCWID TR Compliancy translation process is shown in the flowchart that follows.

DSCWID TR Compliance (continued)**Table flow for DSCWID TR Compliance**

DSCWID TR Compliance (continued)

The following table lists the datafill content used in the flowchart.

Datafill example for DSCWID TR Compliance

Datafill table	Example data
RESFEAT	0 1 3 15 0 DSCWID DSCWID NOAMA ACT COMPLETE FWD CONF 5
RESOFC	DSCWID Y SUBSCR DSCWID COMPLETE RING NONE NIL N NIL N NIL NO NIL 15 15 6 \$
DSCWDTYP	COMPLETE SASCAS TIMECID N ALL \$ 0

Limitations and restrictions

The following limitations and restrictions apply to DSCWID TR Compliance:

- DSCWID can only be assigned to RES and MDC lines. It is not compatible with Meridian business set (MBS) or ISDN lines.
- The proprietary DSCWID softkey options use different DTMF digits than the TR-compliant DSCWID softkey options. Therefore, the proprietary service script will not work on the TR-compliant DSCWID, and the TR-compliant service script will not work on proprietary DSCWID. Besides this distinct difference, all other changes to DSCWID affect the proprietary DSCWID operation (such as default treatment and other feature interactions).
- An ADSI-compatible CPE is required to receive DSCWID data.
- DSCWID types that have the FWD option (defined by field KEYOPTS in table DSCWDTYP) require the CFDA feature for the FWD softkey to work. If no forward-to DN is specified for CFDA, the softkey is still displayed, but the waiting party hears ringing.
- The DSCWID feature is only supported on an XMS-based peripheral module (XPM) with a unified processor (UP). (A UP-based XPM is an XPM+.)
- The XPM+ must have the 6X78AB CLASS modem resource card (CMR) for the transmission of display information to the CPE. The CMR firmware must be version CMR03A or later for DSCWID.
- The DSCWID feature requires the 6X69AD tone and messaging card, which supports the existing North American toneset and has the Bellcore-compliant ADSI tone.
- The XPM+ must have a universal tone receiver (UTR) for receiving information from the ADSI set such as ACK_TONE and softkey depression.

DSCWID TR Compliancey (continued)

- Because of possible UTR delays during high peripheral traffic, softkey depression can result in the call not being switched even though the ADSI set display is updated.
- During a DSCWID softkey depression, the calling party may hear the DTMF digit sent by the ADSI set.
- DSCWID data cannot be sent on a remote switching center (RCC) or remote line concentrating module (RLCM) intraswitched call or an RCC interswitched call. An intraswitched or interswitched call is not established if either the terminator or originator of the call has SCWID or DSCWID active on the line.
- DSCWID uses small feature data blocks (FDB) for its processing data store. Depending on the office's feature traffic, the number of available small FDBs may need to be increased for DSCWID usage. The number of available small FDBs are allocated in office parameter NO_OF_SMALL_FTR_DATA_BLKs in table OFCENG.
- System resources for table RESFEAT are supplied by store data (SD) pools that are allocated for each DSCWID line. Depending on the number of DSCWID lines in the office, SD pools for the office may need to be increased in table OFCENG by updating office parameter MAX_SDPOOL_NO.
- The periodic audit in table AMAOPTS uses system resources called primary recording units (PRU). The pool of available PRUs may need to be increased for DSCWID usage by updating office parameter CRS_PRU_POOL2_SIZE in table OFCENG.

Interactions

The following paragraphs describe the interactions between DSCWID TR Compliancey and other functionalities.

Anonymous Caller Rejection

If the DSCWID subscriber has Anonymous Caller Rejection (ACRJ) assigned, no CWT tone is heard when the calling party is anonymous. ACRJ takes precedence over all types of CWT, including DSCWID.

Attendant Console

If either the first or second call to a DSCWID phone is from an attendant console, the DSCWID subscriber will receive CWT tones but not receive display data until both the DSCWID line and the attendant console line go on-hook.

DSCWID TR Compliancey (continued)

Automatic Call Distribution

A call to a DSCWID line will cause the DSCWID line to receive CWT without caller identification data when the first call is to the DSCWID line's Automatic Call Distribution (ACD) number and the second call is to the DSCWID line's actual directory number.

Call Forward Busy Line

For lines that have both DSCWID and Call Forward Busy Line (CFBL), DSCWID takes precedence over CFBL for calls received when active on a stable call. However, if the DSCWID subscriber already has a call waiting and another call is received, that call is forwarded using CFBL.

Call Forwarding Don't Answer

The DSCWID default timer takes precedence over CFDA timers when CFDA and DSCWID are assigned to the same line. If a DSCWID subscriber has CFDA active and the default treatment is set to FWD, the waiting party is forwarded according to the CFDA destination when the timer expires. If CFDA is not active when the timer expires, the calling party continues to hear ringing.

Call Forwarding of Call Waiting Calls

DSCWID takes precedence over Call Forwarding of Call Waiting Calls (CFCW) for DSCWID subscribers that are also members of RES or MDC customer groups with CFCW.

Call Hold

DSCWID and Call Hold (CHD) are mutually exclusive. If they are assigned to the same line, they interact in the following manner:

- Softkey or flash attempts during a DSCWID session on a DSCWID line with CHD are interpreted as signals for DSCWID actions to occur.
- When a DSCWID subscriber holds a party with CHD, DSCWID is deactivated; the subscriber is not alerted of incoming calls.

Call Logging

When a waiting call is forwarded using the FWD disposition, the call is logged as though the call had been forwarded using CFDA. Also, if the waiting call is not answered by the DSCWID subscriber, the call is not logged.

Call Waiting, Dial Call Waiting, and Call Waiting Originating

If DSCWID is assigned to a line that already has CWT, DSCWID overrides CWT. CWT remains on the line, because DSCWID is built on top of CWT. If DSCWID is removed from the line, CWT is also removed.

DSCWID TR Compliancy (continued)

DSCWID uses standard CWT tones. DSCWID tones are also heard by the subscriber. If, however, CSCWID is active, basic CWT is operational and only CWT tones are heard.

Calling information delivery features

A CID feature is not required in order to have DSCWID assigned. However, when datafilling field CID in table DSCWDTYP with ALLCID, the line must have CND, CNAMD, or DDN assigned. See Calling Number Delivery, Calling Name Delivery, and Dialable Number Delivery in this section.

Calling Name Delivery

If the DSCWID subscriber has CNAMD, the calling name is displayed on the ADSI set if field CID in table DSCWDTYP is set to ALLCID.

Calling Name/Number Delivery Blocking

Calling Number Blocking (CNB), Calling Number Delivery Blocking (CNDB), Calling Name Blocking (CNAB), and Calling Name Number Blocking (CNNB) are used to restrict calling name or number information. If one of these features is used by the calling party, the privacy indicator is displayed on the ADSI set.

Calling Number Delivery

If the DSCWID subscriber has CND, the calling number is displayed on the ADSI set, provided field CID in table DSCWDTYP is set to ALLCID.

Cancel Call Waiting

Cancel Call Waiting (CCW) cancels all call-waiting functions (including DSCWID tones and calling-party identification) on an individual-call basis. CSCWID cancels only the calling-party identification.

Denied Origination and Denied Termination

Both Denied Origination (DOR) and Denied Termination (DTM) are compatible with DSCWID to allow the operating company a quick temporary way to control a subscriber's phone service.

Dialable Number Delivery

If the DSCWID subscriber has DDN, the display updates in the DDN format, provided field CID in table DSCWDTYP is set to ALLCID.

Distinctive Ringing/Call Waiting, Distinctive Call Waiting Tones

If the DSCWID subscriber has Distinctive Ringing/Call Waiting (DRCW), Teen Service, or Distinctive Call Waiting Tones (DISTCWTN) assigned, the distinctive alerting pattern for the specific feature is substituted for the DSCWID subscriber alerting tone. The feature DISTCWTN is assigned by

DSCWID TR Compliance (continued)

customer group in order to apply to MDC lines. The CPE alerting signal remains unchanged.

Do Not Disturb

Do Not Disturb (DND) is a service of business lines linked with an attendant. DSCWID and DND are not compatible.

Feature Groups

Feature Groups and DSCWID should not be assigned to the same line.

Hunt Groups

DSCWID is not compatible with Multiline Hunt (MLH), Distributed Line Hunt (DLH), or Multiple Position Hunt (MPH) groups. DSCWID is compatible with Directory Number Hunt (DNH) groups.

Long Distance Indicator

If the Long Distance Indicator (LDI) package is present in the office, the call qualifier parameter is part of the off-hook message sent to the DSCWID subscriber.

Long Distance Signaling

DSCWID takes precedence over Long Distance Signaling (LDS) for the application of FWD and ANNC default treatments. The LDS SAS tone is used, but not the LDS default treatment.

Multiple Appearance Directory Number

DSCWID is delivered to Multiple Appearance Directory Number (MADN) groups through standard CWT. In some MADN groups, DSCWID call waiting tones are delivered only to the primary member. Name delivery becomes compatible for MADN groups with the "Calling Name Delivery on MADN" feature.

Network Facility Access

DSCWID is compatible with the Speech Activated Intelligent Dialing (SAID) feature; however, the following interactions apply when a DSCWID subscriber

DSCWID TR Compliancy (continued)

with Network Facility Access (NFA) is connected to an intelligent peripheral (IP):

- If the DSCWID subscriber is connected to the IP explicitly and another call arrives, the subscriber may flash to receive that call; however, the connection to the IP may drop depending on the IP's configuration.
- If the DSCWID subscriber is connected to the IP explicitly and the IP is currently dialing a number for the subscriber, there are no alerting tones.
- A DSCWID subscriber connected to the IP implicitly does not receive alerting tones at any time during the implicit connection.

Selective Call Forwarding and Selective Call Rejection

Selective Call Forwarding (SCF) and Selective Call Rejection (SCRJ) override regular call waiting. These features also override DSCWID.

Series Completion

When a line has both Series Completion (SCMP) and the DSCWID option, SCMP will take precedence over DSCWID.

If several lines have SCMP, DSCWID applies only to the line on which SCMP has determined to terminate the call.

Sourcing of Patch FPA75

The Sourcing of Patch FPA75, AF7524 feature enhances the CCW feature. This feature is useful for ADSI for plain ordinary telephone service (POTS)/residential (RES) terminals.

Sourcing of Patch FPA75 provides the following:

- Allows an operating company to assign CCW activation without call waiting (CWT) to POTS/RES lines through the service order (SERVORD) system
- After an operating company assigns CCW, provides confirmation tone after CCW, even if the operating company does not assign CWT
- Allows the No Cancel Call Waiting Without Call Waiting (NCCW) SERVORD to deny this feature on a per-line basis
- A customer subscribing to an internet service provider (ISP) and using scripts where CCW is a prerequisite even if CWT is not present can use this feature

A subscriber to an internet service provider (ISP) and using scripts where CCW is a prerequisite can use this feature. This is true even if CWT is not present

DSCWID TR Compliance (continued)

If POTS/RES lines do not have CWT, the application script for CCW is unusable. Sourcing of Patch FPA75 prevents an end user who does not subscribe to CWT from receiving No ACKnowledgement (NACK). Instead, the call will complete as dialed for POTS/RES lines.

Note: NCCW is incompatible with the integrated business networks (IBN) line class code.

Spontaneous Call Waiting Identification

If DSCWID is assigned to a line that already has SCWID, DSCWID overrides SCWID. Prior to this feature, SCWID and DSCWID were incompatible features. If the line has a CID feature, which was required with SCWID, the CID feature can remain on the line, however field CID in table DSCWDTYP must be set to ALLCID in order to have CID to the DSCWID line.

Feature interactions that apply to SCWID also apply to DSCWID.

Teen Service

The Teen Service (SDN) feature provides distinctive ringing for up to three alternate DNs on a Teen Service line of the subscriber. Teen Service call-waiting tones apply with DSCWID.

Three-Way Calling

If a DSCWID subscriber has Three-Way Calling (3WC) and is the controller in a three-way call, CWT is not permitted and the calling party receives busy treatment.

A DSCWID subscriber involved in a DSCWID session does not restrict an active party of a DSCWID session from using his 3WC feature.

If the DSCWID subscriber is not the 3WC controller and is not on hold, DSCWID data can be delivered. If the DSCWID subscriber is placed on hold by a controller of a three-way call, DSCWID data can be delivered.

Uniform Call Distribution

When the first call to a DSCWID line is its Uniform Call Distribution (UCD) number and the second call is the DSCWID line's actual directory number, the DSCWID subscriber receives call-waiting tone without CID data.

Activation/deactivation by the end user

The subscriber is not responsible for activating or deactivating the DSCWID feature. However, the subscriber is responsible for selecting the options or dispositions used to treat call waiting calls during a DSCWID session.

DSCWID TR Compliance (continued)

A DSCWID session begins when a subscriber receives a call waiting (incoming) call while the subscriber is off-hook on an active call. The DSCWID session ends when no party is incoming or waiting (on hold) and no softkeys are displayed on the ADSI set, or when the subscriber goes on-hook.

The following section describes how the subscriber uses the softkey dispositions available with the DSCWID feature.

DSCWID session

DSCWID softkey options are displayed on the display of the ADSI set of a DSCWID subscriber only during a DSCWID session. The softkey options available in the DSCWID session depend on whether the call is active or waiting, and which options are allowed for that call.

The following description of a DSCWID session allows all possible options, including CID, for the DSCWID line.

When a DSCWID subscriber is active on a call and receives an incoming call, the subscriber has six possible options from which to select: ANSWER, FWD, HOLD, BUSY, DROP, and CONF. These options are selected by pressing one of the softkey buttons on the ADSI set. At the beginning of a DSCWID session, calling party information on the incoming (second party) call is displayed along with the active caller information. After the softkey option is selected for that call, the set is updated with calling party information on the currently active call.

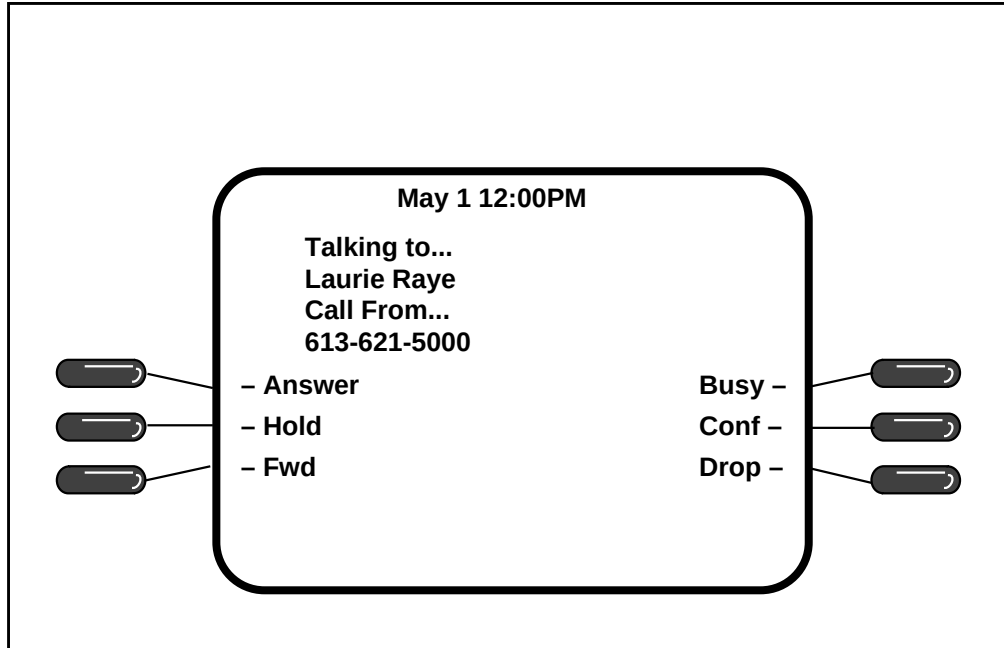
For example, when the DSCWID subscriber chooses the softkey option ANSWER, the display on the ADSI set is updated to show that the DSCWID subscriber is talking to the second caller and the first caller is now on hold. The display is also updated to show the held-state softkey options: RETRN, DROP, or CONF. If the DSCWID subscriber chooses DROP, the second call is disconnected, and the DSCWID subscriber is reconnected to the first caller.

Note: If the DSCWID subscriber uses the flash-hook during a DSCWID session, the caller information on the display disappears. This is because the ADSI set interprets the flash as going on-hook.

The following figure shows an example of a VISTA series ADSI set display at the beginning of a DSCWID session.

DSCWID TR Compliancey (continued)

ADSI set display



Note: The names and the sequence of softkey options on an ADSI set display can vary depending on the CPE-resident script. The number of rows of characters on the ADSI set display can also vary depending on the script.

Billing

For TR compliancy, aggregate counts are kept when the CONFERENCE option is used and the automatic message accounting (AMA) status assigned to the line is set to CONF. This count is stored, along with other information on the line, in table RESFEAT. The conference aggregate count is not pegged more than once for a single DSCWID session.

The aggregation interval for DSCWID is defined in table AMAOPTS. This parameter is the tuple DSCWID_CONF_AUDIT.

Office-level DSCWID conference AMA aggregation is controlled through table RESOFC. However, the office-level DSCWID conference AMA aggregation status can be overridden on an individual-line basis by using the AMA suboption when assigning DSCWID to a line through SERVORD. Once the DSCWID AMA aggregation status is overridden for a line, a change of the conference AMA value in table RESOFC has no effect on that line's conference AMA aggregation status.

DSCWID TR Compliancy (continued)

The DMS-100 switch generates a Bellcore AMA Format (BAF) record with call type 330 (CLASS) and structure code 110 to indicate the use of the CONFERENCE option for a DSCWID subscriber when the following conditions are met:

- The conference AMA status is set to CONF for the DSCWID subscriber (either as the default or via AMA status assigned to the line).
- The aggregate count for the DSCWID subscriber's CONFERENCE option is greater than zero.
- The DSCWID_CONF_AUDIT in table AMAOPTS is set to PERIODIC and the end of the aggregation interval has occurred.

Note: For lines with CONFPEGs greater than zero in which either the line or feature state is changed by a SERVORD command DEO (delete option) or CHF (change feature), thus resetting the CONFPEGs, an AMA record is generated to replace the billing that would have been performed for the given aggregation interval.

The following figure is an example of an AMA record generated for call code 330.

Call code 330

```
HEX ID:AA  STRUCTURE CODE:40110C  CALL CODE:330C
SENSOR TYPE:036C  SENSOR ID:0000000C  REC OFFICE
TYPE:036C  REC OFFICE ID:0000000C  CLASS FEATURE:089C
DATE:50211C  CONNECT TIME:0111360C  TERM-NPA:919C
TERM NUMBER:8472452C  AVAIL COUNT:FFFFFFC  UNAVAIL
COUNT:00001C  MODULE CODE:103C  SIG DIGITS NEXT
FIELD:007C  ACCT CODE:000000007879424C  MODULE CODE:000C
```

The following table provides information for structure code 110. Only the fields pertaining to DSCWID are shown.

Structure code 110 (Sheet 1 of 2)

Information	Field number
Call type	330
Date	Date the DSCWID aggregation interval closed
Time	Time the DSCWID aggregation interval closed

DSCWID TR Compliance (continued)**Structure code 110 (Sheet 2 of 2)**

Information	Field number
NPA	Numbering plan area (NPA) of the DSCWID subscriber's line
Directory number	DN of the DSCWID subscriber's line
CLASS feature code	089 (DSCWID option usage)
Count of unavailable calling information	Number of calls counted during the aggregation interval

Station Message Detail Recording

DSCWID TR Compliance does not affect Station Message Detail Recording.

Datafilling office parameters

DSCWID TR Compliance does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement DSCWID TR Compliance. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for DSCWID TR Compliance

Table	Purpose of table
DSCWDTYP	Deluxe Spontaneous Call Waiting Identification Types. This table defines the different DSCWID types available for the line.
RESOFC	Residential Line CLASS Office Data. This table contains information on CLASS features and enables the CLASS feature for the office.
RESFEAT	Residential Line Feature. This table contains the assignments of CLASS features for residential lines. Note: This table is datafilled through SERVORD; therefore, no datafill procedure or example is provided. Refer to "SERVORD" for an example of using SERVORD to datafill this table.
AMAOPTS	Automatic Message Accounting Options. This table controls the activation and scheduling of the recording options for AMA.

DSCWID TR Compliancy (continued)

Datafilling table DSCWDTYP

Table DSCWDTYP contains data on the different DSCWID types, their parameters, and softkey options.

DSCWID TR Compliancy (continued)

The following table shows the datafill for table DSCWDTYP.

Datafilling table DSCWDTYP (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
NAME		PROPRITY, ADSITIME, ADSICID, NODATA, NOCIDCW, COMPLETE, or others as defined	Name. This field is the key to table DSCWDTYP. Up to 20 tuples can be defined, which can consist of up to 8 characters. Enter the name of the DSCWID type being defined, as follows: • The PROPRITY tuple indicates the proprietary DSCWID type. • The ADSITIME tuple indicates that only time data is transmitted and only standard CWT is available to non-ADSI sets. • The ADSICID tuple indicates that both CID and time data are transmitted, based on the CID features present on the line, and only standard CWT is available to non-ADSI sets. • The NODATA tuple indicates that CID and time data are not transmitted, and both ADSI and non-ADSI sets have all DSCWID options. • The NOCIDCW tuple indicates that only time data is transmitted, and both ADSI and non-ADSI sets have all DSCWID options. • The COMPLETE tuple indicates that both CID call waiting (CIDCW) and time data are transmitted, and both ADSI and non-ADSI sets have all DSCWID options.
ALERT		SASONLY, SASCAS	Alerting type. This field indicates the type of alerting tones to be applied. Enter SASONLY if the ADSI-compliant set is not to be alerted to display DSCWID options. Enter SASCAS if the ADSI-compliant set is to be alerted to display DSCWID options.

DSCWID TR Compliance (continued)

Datafilling table DSCWDTYP (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
CID		NOCID, ALLCID, or TIMECID	Calling information delivery. This field indicates the type of CID during a DSCWID session. NOCID means no data is delivered. ALLCID means data is delivered according to the CID feature on the line, and TIMECID means only the date and time are delivered.
NON ADSI		N or Y	Non-ADSI. This field controls the availability of DSCWID options to non-ADSI sets. Enter N (No) to disallow the DSCWID options to a non-ADSI set. Enter Y (Yes) to allow DSCWID options to a non-ADSI set.
COUNT		0 to 99,999	Count. This field specifies the number of lines assigned to this DSCWID type. The default is 0. Note: A tuple in table DSCWDTYP can only be removed or deleted when the COUNT field is zero. The COUNT field cannot be changed by the operating company.
KEY OPTS		ALL, ANS, RET, FWD, BUSY, HOLD, DROP, CONF, DROPFRST, DROPLAST	Softkey options. This field is a vector of up to 10 softkey options. Enter the specific options available on the DSCWID type. If not specified, the option is not available on the DSCWID type. The default value of ALL indicates that all options are available.

Datafill example for table DSCWDTYP

The following example shows sample datafill for table DSCWDTYP.

DSCWID TR Compliancey (continued)

MAP display example for table DSCWDTYPE

NAME	ALERT	CID	NON	ADSI	COUNT	KEY	OPTS
PROPRITY	SASCAS	ALLCID	N		0		
(ANSWER)	(FWD)	(BUSY)	(HOLD)	(DROP)	(RETRN)	\$	
ADSITIME	SASCAS	TIMECID	N		0		
					(ALL)	\$	
ADSICID	SASCAS	ALLCID	N		0		
					(ALL)	\$	
NODATA	SASONLY	NOCID	Y		0		
					(ALL)	\$	
NOCIDCW	SASCAS	TIMECID	Y		0		
					(ALL)	\$	
COMPLETE	SASCAS	ALLCID	Y		0		
					(ALL)	\$	

Datafilling table RESOFC

Table RESOFC (Residential Line CLASS Office Data) contains data on CLASS features and enables DSCWID for the office. Once DSCWID is enabled in table RESOFC and the feature is assigned to a line through SERVORD, that line is ready to engage in a DSCWID session.

Note 1: When the DSCWID feature is initially set up in the office, subfields BUSYANNC, DFLTANNC, HOLDANNC, and REMINDER in table RESOFC are datafilled with a nil announcement CLLI (NILWAITANNC). The operating company must ensure that valid announcement CLLI codes are datafilled in these subfields for proper operation.

Note 2: If the DSCWID tuple in table RESOFC is disabled, no DSCWID sessions are allowed. The DSCWID subscriber receives normal call-waiting treatment when DSCWID is disabled.

The following table shows the datafill specific to DSCWID TR Compliancey for table RESOFC. Only those fields that apply directly to DSCWID TR

DSCWID TR Compliancy (continued)

Compliancy are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table RESOFC (Sheet 1 of 4)

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfield	Key. This field consists of the subfield FEATNAME.
	FEATNAME	DSCWID	Feature name. This subfield is the key to the table. It specifies the name of the feature. Enter DSCWID.
ENABLED		Y or N	Enabled. This field specifies whether or not the feature is enabled for the office. Enter Y or N.
FEATDATA		see subfields	Feature data. This field consists of the subfields ACCESS, FEATNAME, DTYPE, DEFTRMT, AMA, BUSYANNC, BUSYSUPV, DFLTANNC, DFLTSUPV, HOLDANNC, HOLDSUPV, REMINDER, TFLASH, TDEFAULT, and THOLD.
	ACCESS	SUBSCR	Access. This subfield specifies how the feature is accessed. SUBSCR indicates subscription access and is the only valid value for the DSCWID feature. (UNIVER indicates universal access for all RES lines.) Enter SUBSCR.
	FEATNAME	DSCWID	Feature name. This subfield specifies the feature name. Enter DSCWID.
	DTYPE	PROPRITY, ADSITIME, ADSICID, NODATA, NOCIDCW, COMPLETE, or others as defined	DSCWID type. This subfield indicates the default DSCWID type. The possible values are the NAME tuples defined in table DSCWDTYP, plus up to 14 other tuples that can be defined by the operating company. See the explanation for the entries in field NAME of table DSCWDTYP.
	DEFTRMT	RING, FWD, or ANNC	Default treatment. This subfield indicates the default treatment to be applied when no DSCWID option is chosen. Enter RING for the calling party to hear ringing, FWD to forward the calling party to another number, or ANNC to apply an announcement. The default is RING.

DSCWID TR Compliancey (continued)

Datafilling table RESOFC (Sheet 2 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	AMA	NONE or CONF	Automatic Message Accounting. This subfield indicates the type of AMA recording status for use on the CONFERENCE option. Enter CONF to allow recording and NONE to disallow recording. The default is NONE.
	BUSYANNC	CLLI announcement name or NILWAITANNC	Busy announcement. This subfield indicates the CLLI name for the announcement that is applied to the calling party when the BSY option is chosen. If no BUSYANNC CLLI is datafilled, DSCN treatment is applied. Enter the announcement name defined in table CLLI. The default, NILWAITANNC, indicates that no announcement has been defined.
	BUSYSUPV	Y or N	Busy supervision. This subfield indicates whether to apply answer supervision when first connecting to the busy announcement. Enter Y (yes) to apply supervision and N (no) for no supervision. The default is N.
	DFLTANNC	CLLI announcement name or NILWAITANNC	Default announcement. This subfield indicates the default announcement that is applied to the calling party when no DSCWID option is selected, and the subscriber's default treatment is set to ANNC. Enter the default announcement name defined in table CLLI. The default, NILWAITANNC, indicates that no announcement has been defined.
	DFLTSUPV	Y or N	Default supervision. This subfield indicates whether to apply answer supervision when first connecting to the DEFAULT announcement. Enter Y (yes) to apply supervision and N (no) for no supervision. The default is N.
	HOLDANNC	CLLI announcement name or NILWAITANNC	Hold announcement. This subfield indicates the CLLI name of the announcement that is applied to the calling party when the HOLD option is chosen. Enter the announcement name defined in table CLLI. The default, NILWAITANNC, indicates that no announcement has been defined.

DSCWID TR Compliancey (continued)

Datafilling table RESOFC (Sheet 3 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	HOLDSUPV	SUPV_BEFORE SUPV_AFTER, or NO_SUPV	Hold supervision. This subfield indicates when to apply answer supervision of the HOLD announcement. Enter SUPV_BEFORE or SUPV_AFTER to apply answer supervision before or after connecting to the HOLD announcement. The default is NO_SUPV.
	REMINDER	CLLI announcement name or NILWAITANNC	Reminder. This subfield indicates the CLLI name of the announcement that is applied to the calling party when the T-HOLD timer expires. This announcement is used to remind the caller to stay on the line. Enter the name of the announcement defined in table CLLI. The default, NILWAITANNC, indicates that no announcement has been defined.
	TFLASH	10 to 80 (increments of 5 in units of 0.1 s)	Timer flash. This subfield indicates the number of seconds allowed for the subscriber to conference a waiting call after a flash. TFLASH is used for non-ADSI-compliant CPE and for the held-call state only. When TFLASH expires, the RETURN option is applied. The default is 15 (15 s).
	TDEFAULT	0 to 110 (increments of 1 in units of 1 s)	Timer default. This subfield indicates the number of seconds (after realert) before the default treatment type is applied to the calling party during a DSCWID session. The default is 15 (15 s).
	THOLD	0 to 12 (increments of 1 in units of 10 s)	Timer hold. This subfield indicates the number of seconds between announcements while a call is on hold due to the HOLD option. When THOLD expires, the REMINDER announcement is started and the timer is reinitialized. The default is 6 (60 s).
	SYNC_CPE	TR_COMP, UPGRADE	Synchronize CPE. This subfield specifies the type of out-of-sync functionality. Enter TR_COMP for TR-compliant out-of-sync functionality or UPGRADE for the proprietary out-of-sync functionality.

DSCWID TR Compliancey (continued)

Datafilling table RESOFC (Sheet 4 of 4)

Field	Subfield or refinement	Entry	Explanation and action
	CFDCHECK	Y or N	Call forward don't answer check. This field indicates whether or not to add DSCWID to the line using single or dual USOC method. Enter N to add DSCWID to the line regardless of CFDA/CFD feature assignment. Enter Y to assign CFDA/CFD for all types of DSCWID other than type proprietary, and for FWD default treatment. The default is Y.
FNALANN		FNAL_CLLI	Feature not allowed announcement. This field indicates the treatment that is applied to subscribers who try to activate DSCWID on a line that does not have DSCWID assigned. Enter the CLLI announcement name FNAL_CLLI.

Datafill example for table RESOFC

The following example shows sample datafill for table RESOFC.

MAP display example for table RESOFC

KEY	ENABLED	FEATDATA	FNALANN
DSCWID	Y		
		SUBSCR DSCWID COMPLETE FWD NONE	
		DSCWDBUSY N DSCWDDFLT N DSCWDHOLD	
		SUPV_BEFORE DSCWDREMD 15 15 6 UPGRADE \$	

Datafilling table AMAOPTS

The following table shows the datafill specific to DSCWID TR Compliancey for table AMAOPTS. Only those fields that apply directly to DSCWID TR

DSCWID TR Compliancey (continued)

Compliancey are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table AMAOPTS (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
OPTION		see subfield	Option. This field consists of subfield AMAOPT.
	AMAOPT	alphanumeric	AMA option. Enter the option DSCWID_CONF_AUDIT.
SCHEDULE		see subfield	Schedule. This field consists of subfields AMASEL, ONDATE, ONTIME, SCHED, TV, and TU.
	AMASEL	OFF, DEFAULT, PERIODIC	AMA selector. The valid entries are as follows: • OFF: The audit is not active. • DEFAULT: Use the default schedule for the option. The value DEFAULT never appears in table AMAOPTS, since table control replaces it with the actual default value. The DEFAULT selector can be used at any time and the switch recalculates the default value if the default AMASEL value is PERIODIC. • PERIODIC: Activate the option at the specified date and time and perform the activity periodically at the interval specified. Datafill subfields ONDATE and ONTIME to specify the date and time for activation and datafill SCHED for the time intervals to perform the activity. The default is OFF.
	ONDATE	0 to 9(6 digits)	Activation on date. This subfield indicates the date to activate the option. Enter the year, followed by the month, followed by the day (yymmdd) on which the activation of the option is set to ON. For example, 821105.

DSCWID TR Compliance (continued)

Datafilling table AMAOPTS (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	ONTIME	0 to 9(4 digits)	Activation on time. This subfield indicates the time to activate the option. Enter the hour, followed by the minute (hhmm) on which the activation of the option is set to ON. For example, an ON time of 1:45 p.m. is entered as 1345.
	SCHED	see subfields	Schedule. This field consists of subfields TV and TU.
	TV	0 to 255	Time value. This subfield indicates the time value for periodic scheduling. The entry of 24 activates the option for the period of time units selected in subfield TU.
	TU	HRS, MINS, or SECS	Time unit. This subfield indicates the time unit for the time value selected in subfield TV. Enter HRS.

Datafill example for table AMAOPTS

The following example shows sample datafill for table AMAOPTS.

MAP display example for table AMAOPTS

OPTION	SCHEDULE
DSCWID_CONF_AUDIT	PERIODIC 940915 0000 24 HRS

Translation verification tools

DSCWID TR Compliance does not use translation verification tools.

SERVORD

The SERVORD commands NEW (establish service), ADO (add option), and ADD (add line to a hunt group) can be used to add option DSCWID to a line. The commands DEO (delete option), DEL (delete line from a hunt group), and OUT (remove service) can be used to delete option DSCWID from a line. The operating company can convert lines with the proprietary type of DSCWID to TR-compliant DSCWID using the CHF (change feature) command.

DSCWID TR Compliancey (continued)

If CWT is not assigned to a line when DSCWID is added, CWT is added automatically. The CWT feature is also removed automatically when the DSCWID feature is deleted.

Note: When the value DEF is used for subfields DTYPE, DAMA, and DEFTRMT in table RESFEAT, SERVORD uses the same datafill as the related subfields defined in table RESOFC (DTYPE, AMA, and DEFTRMT).

SERVORD limitations and restrictions

The following SERVORD limitations and restrictions apply to DSCWID TR Compliancey:

- Operating company personnel cannot assign DSCWID to a line using the PROPRITY DSCWID type. The PROPRITY type represents the proprietary version of DSCWID that was used prior to the TR-compliant DSCWID. The PROPRITY type is blocked from being used during the ADO and CHF commands.
- If DSCWID is assigned to a line that already has SCWID, DSCWID replaces SCWID. By allowing the replacement, there are fewer commands required to add DSCWID to a line that already has SCWID.
- If DSCWID is assigned to a line that already has CWT, DSCWID supercedes CWT. CWT still exists on the line, since DSCWID is built on top of CWT. CWT appears as an option when the line is queried with a QDN (query directory number) or a QLEN (query line equipment number) command.
- A line does not require a CID feature in order to have DSCWID assigned. However, in order to assign DSCWID with ALLCID (all calling identification data) as the CID off-hook delivery type in table DSCWD TYP, either CND, DDN, or CNAMD must be assigned to the line. With the values NOCID or TIME for the CID off-hook delivery type, no CID feature is required.
- The CFD feature (IBN line class codes [LCC]) or CFDA feature (for RES LCC) must be assigned to the DSCWID line if the DSCWID type includes the FWD option in its KEY OPTS list (see table DSCWD TYP for an explanation of field KEY OPTS). A valid forward-to DN used by CFD and CFDA must also be present.

Note: Proprietary DSCWID does not check for the existence of CFD or CFDA when the service is being added to an MDC, RES, or POTS line. TR-compliant DSCWID does perform this checking; therefore, any lines with proprietary DSCWID (prior to NA004) that do not have CFD

DSCWID TR Compliancey (continued)

or CFDA, will not have the DSCWID service assigned after an NA004 upgrade containing TR-compliant DSCWID.

- The Call Waiting Intragroup (CWI) feature is added or deleted separately from DSCWID on MDC lines. On a line that contains DSCWID, CWT, and CWI or Call Waiting Ringback (CWR), CWT cannot be deleted without removing CWI or CWR first.
- DSCWID cannot be added to a line with Feature Groups assigned.
- DSCWID cannot be assigned to a line having an LCC of PSET.

SERVORD prompts

The following table shows the SERVORD prompts used to assign DSCWID TR Compliancey to a line.

SERVORD prompts for DSCWID TR Compliancey

Prompt	Valid input	Explanation
SONUMBER	alphanumeric	The unique number of the service order
DN_OR_LEN	numeric	The DSCWID line's DN or LEN
OPTION	DSCWID	The feature to be added, modified, or deleted
DSUBOPT	DTYPE, DAMA, DEFTRMT	The DSCWID suboption to be assigned. This is a vector of up to three suboptions. If no suboptions are entered, the default values are used. The vector is terminated with a \$.
DTYPEOPT	ADSITIME, ADSICID, NODATA, NOCIDCW, COMPLETE	The DSCWID type name that indicates which DSCWID type to assign from table DSCWD TYP. Additional values are possible if tuples are datafilled in table DSCWD TYP.
DEFTRMTOPT	RING, FWD, ANNC	The default treatment to be applied when no DSCWID option is chosen.
DAMAOPT	NONE, CONF	The type of AMA recording status for use with the CONFERENCE option. Enter NONE for no recording or CONF to generate an AMA billing record.

SERVORD example for implementing DSCWID TR Compliancey

The following SERVORD example shows how DSCWID TR Compliancey is added to an existing line using the ADO command. In this example, the CFDA feature is required to allow the FWD option on the line to forward to a specified

DSCWID TR Compliance (continued)

DN. The following parameters were datafilled in table RESOFC prior to each SERVORD command:

- The default DSCWID type is set to ADSITIME.
- The default DSCWID conference AMA status is set to NONE.
- The default DSCWID default treatment is set to FWD.

SERVORD example for DSCWID TR Compliance in prompt mode

```
>SERVORD
S0:
>ADO
SONUMBER:  NOW 89 10 04 AM
>
DN_OR_LEN:
>6215000
OPTION:
>DSCWID
DSUBOPT:
>$
OPTION:
>$
COMMAND AS ENTERED:
ADO NOW 89 10 04 AM 6215000 (DSCWID) $ $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>Y
```

SERVORD example for DSCWID TR Compliance in no-prompt mode

```
>ADO $ 6215000 DSCWID $ $ Y
```

SERVORD example for overriding the default DSCWID type

The following SERVORD example shows how DSCWID is added to an existing DSCWID line with the default type of ADSITIME. The default type is changed to ADSICID, thus overriding the default DSCWID type defined in table RESOFC. A CID feature must also be assigned to the line.

DSCWID TR Compliance (continued)

SERVORD example for overriding the default DSCWID type in prompt mode

```
>SERVORD
S0:
>CHF
SONUMBER:  NOW 89 10 04 AM
>
DN_OR_LEN:
>6215000
OPTION:
>DSCWID
DSUBOPT:
>DTYPE
DTYPEOPT:
>ADSICID
DSUBOPT:
>$
OPTION:
>$
COMMAND AS ENTERED:
CHF NOW 89 10 04 AM 6215000 (DSCWID) (DTYPE ADSICID) $ $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
> Y
```

SERVORD example for overriding the default DSCWID type in no-prompt mode

```
>CHF $ 6215000 DSCWID DTYPE ADSICID $ $ Y
```

SERVORD example for overriding all possible parameters

The following SERVORD example shows how DSCWID is added to an existing DSCWID line with parameters already set in table RESOFC. All parameters have been changed using the CHF command.

DSCWID TR Compliance (end)

SERVORD example for overriding all possible parameters in prompt mode

```
>SERVORD
S0:
>CHF
SONUMBER:  NOW 89 10 04 AM
>
DN_OR_LEN:
> 6215000
OPTION:
>DSCWID
DSUBOPT:
>DTYPE
DTYPEOPT:
>ADSICID
DSUBOPT:
>DAMA
DAMAOPT:
>CONF
DSUBOPT:
>DEFTRMT:
DEFTRMTOPT:
>ANNC
OPTION:
> $
COMMAND AS ENTERED:
CHF NOW 89 10 04 AM 6215000 (DSCWID) (DTYPE ADSICID)
(DAMA NONE) (DEFTRMT ANNC) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
> Y
```

SERVORD example for overriding all possible parameters in no-prompt mode

```
>CHF $ 6215000 DSCWID DTYPE ADSICID DAMA CONF DEFTRMT
ANNC $ Y
```

ISUP Generic Name

Ordering codes

Functional group ordering code: RES00003

Functionality ordering code: RES00096

Release applicability

NA013 and up

NA013 introduced ISUP Generic Name.

Requirements

This document includes all the data table information for the Integrated Services Digital Network User Part (ISUP) Generic Name feature. Complete use of The ISUP Generic Name feature can require software or hardware not described in this document.

Description

The ISUP Generic Name feature enhances feature custom local area signaling services (CLASS) calling-name delivery (CNAMD) feature by making the CLASS CNAMD feature compliant with Bellcore standards. The switch is capable of receiving and sending the calling name in the generic name (GN) parameter of an ISUP international address message (IAM). The calling name in the GN parameter is optional on a trunk group basis.

Operation

The ISUP Generic Name feature enhances the functionality of the CLASS CNAMD feature. The CLASS CNAMD feature provides delivery of the calling party's name to the customer premises equipment (CPE) of the residential subscriber.

The ISUP Generic Name feature removes the interaction restriction of the DMS-100 switch with other vendor switches for CNAMD. The DMS-100 switch uses a proprietary party information parameter (PIP) of the ISUP IAM for CNAMD. On the originating side the DMS-100 switch sends the calling party name in PIP. On the terminating side the DMS-100 switch retrieves the calling party name from PIP. Other vendors use the GN parameter of ISUP IAM for CNAMD, which causes the interaction restriction with the DMS-100 switch and other vendor switches.

The ISUP Generic Name feature adds the capability to the DMS-100 switch to send and receive the calling party's name in the GN parameter of the ISUP IAM across a call control signaling 7 (CCS7) network. The capability to send

ISUP Generic Name (continued)

and receive the calling party's name in the GN parameter is optional for each trunk group, by using the CNAMINGN option in the TRKOPTS table.

The ISUP Generic Name feature modifies the following debugging tools to reflect the calling party name in the GN parameter structure:

- Calltrak
- CCS7 test utility (C7TU)

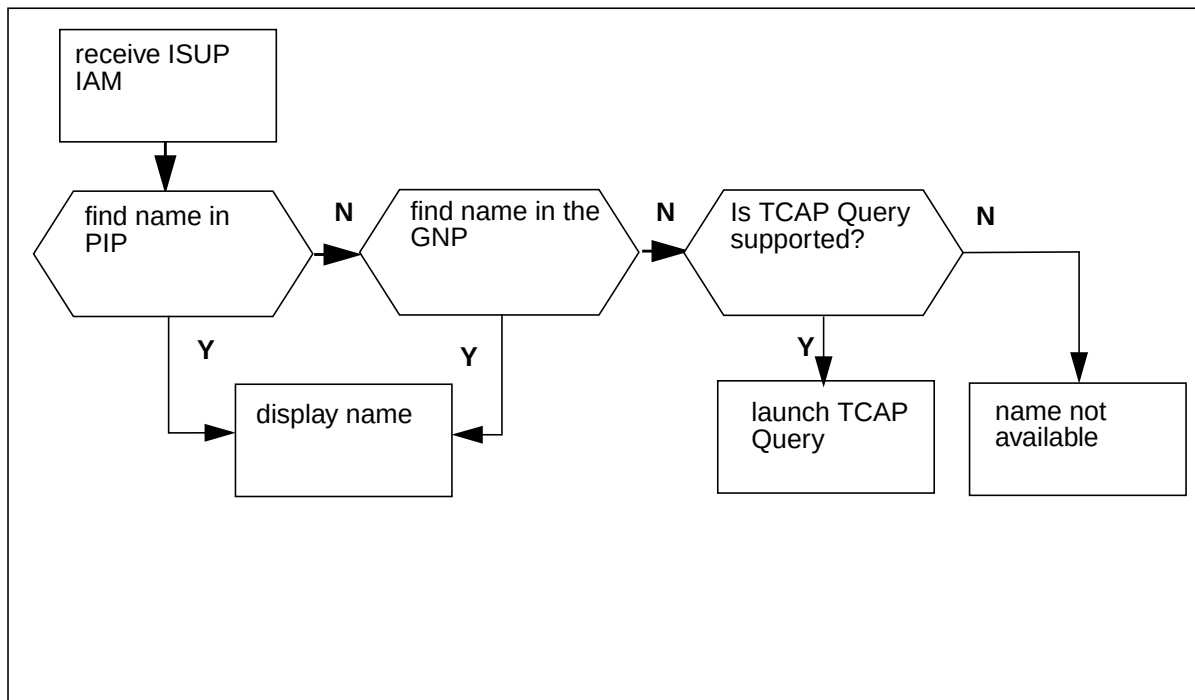
Receive name in GN parameter

The sequence that follows describes how the DMS-100 switch receives the calling name from the ISUP IAM:

- First, the switch tries to get the name from the PIP.
- Second, the switch tries to get the name from the GN parameter.

The figure below shows the switch receiving the name in the GN parameter.

Receiving name in GN parameter



ISUP Generic Name (continued)

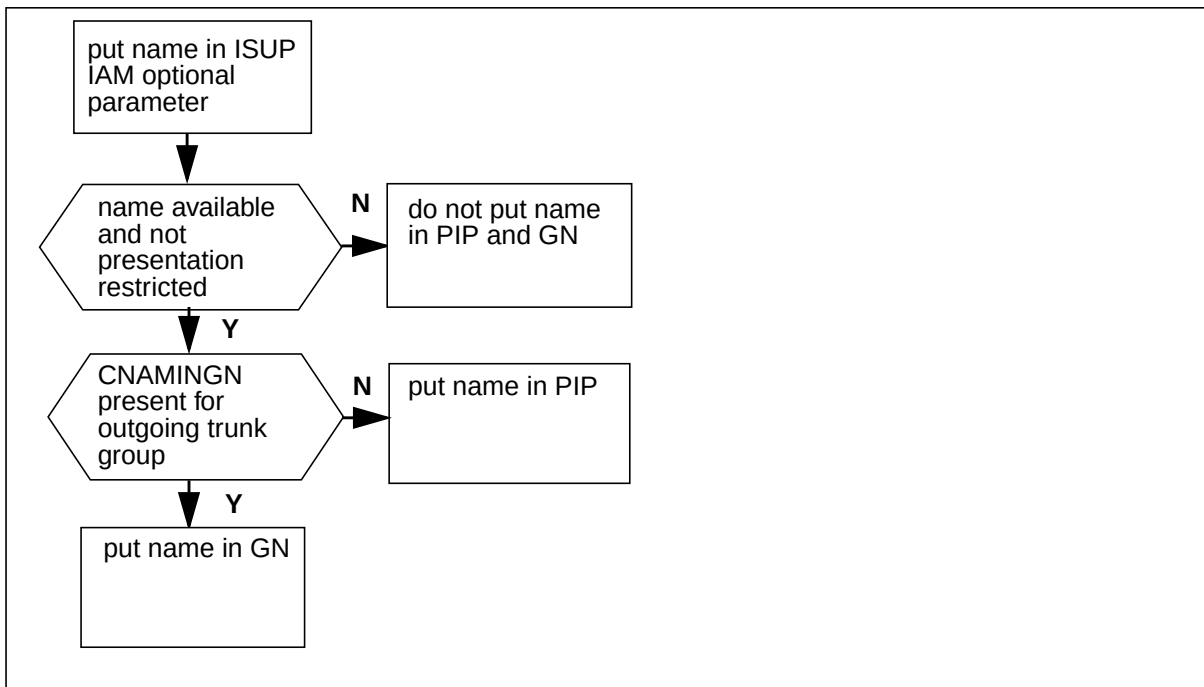
Send name in GN parameter

The ISUP Generic Name feature modifies the ISUP IAM to include:

- The GN parameter when the originator of the call activates the no blocking feature.
- The GN parameter when the originator does not suppress the name display at the network level.

The ISUP IAM must have the CNAMINGN option assigned to the outgoing trunk group to include the GN parameter in the IAM. If the CNAMINGN trunk group option is on the outgoing trunk group, the name is in the GN parameter and not the PIP parameter. If the CNAMINGN trunk group option is not on the outgoing trunk group, the name is in the PIP parameter and not the GN parameter.

The figure below shows the process of sending a name in an ISUP IAM.

Sending name in an ISUP IAM**Translations table flow**

The ISUP Generic Name feature does not affect translations table flow.

ISUP Generic Name (continued)

Limitations and restrictions

The limitations and restrictions that follow apply to the ISUP Generic Name feature.

- The switch can receive or send calling names using the GN parameter of an ISUP IAM only for the SETUP method of CNAMD.
- The GN parameter of ISUP IAM carries the calling party name only for the trunks which have option CNAMINGN in table TRKOPTS for that trunk group.

Interactions

All the existing feature interactions remain the same and the CNAMD feature functions in the same manner.

Activation and deactivation by the user

The ISUP Generic Name feature does not require activation or deactivation by the user.

Billing

The ISUP Generic Name feature does not generate billing records or changes.

Station Message Detail Recording

The ISUP Generic Name feature does not require Station Message Detail Recording.

Office parameters used by ISUP Generic Name

The ISUP Generic Name feature does not generate office parameters.

Datafill sequence

The table that follows lists the table that requires datafill to put the ISUP Generic Name feature into operation. You must enter data into the table in this order.

Datafill requirements for ISUP Generic Name

Table	Purpose of table
TRKOPTS	Trunk Options. This table contains information on options for trunk groups.

ISUP Generic Name (continued)

Datafill related to ISUP Generic Name for table TRKOPTS

The table that follows provides the datafill related to the ISUP Generic Name feature for the TRKOPTS table. This table includes only those fields that apply directly to the ISUP Generic Name feature.

Datafill related to table TRKOPTS

Field	Subfield	Entry	Explanation and action
OPTKEY			Option key. The field consists of subfields CLLI and OPTION.
	CLLI	1 to 16 alphanumeric characters	Common language location identifier. This subfield indicates the CLLI code of the trunk group to which the option is assigned.
	OPTION	CNAMINGN	Option. The ISUP Generic Name feature adds CNAMINGN option to the list of available options.
OPTINFO	OPTION	CNAMINGN	Option information. The ISUP Generic Name feature adds CNAMINGN option to the list of available options.
Note: Assign option CNAMINGN to ISUP outgoing and two-way trunks.			

Datafill example for table TRKOPTS

The figure that follows shows sample datafill for the TRKOPTS table.

MAP example for table TRKOPTS

```
CI:
> Table TRKOPTS
Table: TRKOPTS
> ADD ISUP2W CNAMINGN CNAMINGN
ENTER Y TO CONTINUE PROCESSING OR N TO QUIT
> Y
TUPLE TO BE ADDED: ISUP2W CNAMINGN CNAMINGN
> Y
TUPLE ADDED
> $
```

Translation verification tools

The ISUP Generic Name feature does not use translation verification tools.

ISUP Generic Name (end)

SERVORD

The ISUP Generic Name feature does not use the Service Order System (SERVORD).

Office Wide Activation of CNDB for POTS

Functionality code

RES00003

Release applicability

TL03 and up

Office Wide Activation of CNDB for POTS was introduced in BCS33.

Prerequisites

To operate, Office Wide Activation of CNDB for POTS requires the MDC MDC Minimum functional group.

Description

Previously, Calling Number Delivery Blocking (CNDB) was provided for the Residential Enhanced Services (RES) and Meridian Digital Centrex (MDC) environments only. However, this functionality extends basic CNDB functionality, office by office, to the POTS environment. An office parameter is implemented permitting CNDB dialing for a supported group of POTS line class codes. When active, POTS lines can dial an access code to activate CNDB call by call.

Note: This document provides information for CNDB for POTS only. For a description of CNDB for RES and MDC environments, refer to functional group RES DISP Funct and Prvcy.

CNDB on POTS is provided for the following POTS line class codes:

1FR

OWTzMZPA

1MR

2WWTWX

2FR

INWCDF

Office Wide Activation of CNDB for POTS (continued)

4FR

EOWCCF

PBM

ETWCSP

PBX

ZMDCFD

This functionality is activated office by office only. Therefore, there is no need to implement a CNDB line option for POTS lines. When the functionality is enabled, all supported POTS lines can dial the CNDB access code and change the permanent suppression status of their line call by call.

Office parameter CNDB_ON_POTS is implemented to activate or deactivate the functionality office by office. The office parameter is a boolean initialized to N in table OFCVAR when functional group RES Disp Funct and Prvcy is applied to the office.

When the parameter CNDB_ON_POTS is set to Y, that is, enabled, POTS lines can activate CNDB by dialing the CNDB access code implemented in this functionality. When the parameter is set to N, that is, disabled, POTS lines cannot activate CNDB and receive a dialing error. A restart is not required for this office parameter to take effect.

The CNDB on POTS access code is hard-coded in the software. The access code *67 or 1167 is used for Digitone lines, and 1167 is used for dial pulse (DP) lines. These are the only codes supported for this functionality. If CNDB activation is attempted using 67-timeout or 67#, a dialing error results.

Operation

The operation of this functionality assumes that office-level suppression is disabled in table NETNAMES.

The CNDB on POTS subscriber changes the current call's suppression status from the default status by going off-hook, obtaining dial tone, and dialing the CNDB on POTS access code. This access code is in the form *67 or 1167 for dual-tone multifrequency (DTMF) lines, and 1167 for DP lines.

Note: For CNDB on POTS to function, the basic CNDB functional group must be enabled in the office and the CNDB functionality must be enabled in table RESOFC.

Office Wide Activation of CNDB for POTS (continued)

If the above criteria is met, and the CNDB_ON_POTS office parameter is set to Y, the subscriber receives one of the following treatments:

- an announcement (if it is supplied by the operating company and datafilled in table RESOFC), followed by recall dial tone. The announcement cannot be interrupted and does not indicate the permanent or toggled suppression status of the call.
- recall dial tone only (indicating that no announcement is supplied by the operating company).

The subscriber then dials the destination number. It is also possible at this point to dial the activation code of other services, such as call forwarding (CF) and Cancel Call Waiting (CCW). Refer to "Interactions" discussed later in this description.

If, however, functional group RES Disp Funct and Prvcy is not enabled in the office, and office parameter CNDB_ON_POTS is set to N, then the call is routed to the existing functionality not allowed (FNAL) treatment.

If a system failure occurs, such as an unsuccessful attempt to acquire system resources, the call is routed to the existing no software resources (NOSR) treatment.

If only some digits for the dialed number are received, the call is routed to an existing DMS partial dial (PDIL) treatment.

CNDB on POTS activation affects only the current call. For example, a subscriber whose DN has a default status of suppressed has activated CNDB to unsuppress the DN for the current call. At the completion of this call, the default status suppressed is reinstated for subsequent calls.

Translations table flow

Office Wide Activation of CNDB for POTS does not affect translations tables.

Limitations and restrictions

The following limitations and restrictions apply to Office Wide Activation of CNDB for POTS:

- Subscriber usage-sensitive pricing (SUSP) capability is not available with CNDB on POTS. Individual automatic message accounting (AMA) records for functionality activations are available only to lines in the RES

Office Wide Activation of CNDB for POTS (continued)

or MDC environments. CNDB on POTS provides only flat rate service to POTS lines.

- Lines that do not receive dial tone are not able to activate the CNDB on POTS functionality.

Interactions

The following paragraphs describe the interactions between Office Wide Activation of CNDB for POTS and other functionalities.

Call forwarding

CNDB on POTS activation to a call forwarded line affects the availability of the calling party's DN to the remote station. Forwarded calls display the originating DN, unless the delivery is blocked by CNDB on POTS on the original call.

CNDB on POTS can also be activated prior to call forwarding activation. The CNDB on POTS access code must be dialed first, followed by the call forward activation code and the destination digits.

Cancel Call Waiting

CNDB on POTS and CCW can be activated on the same call. The subscriber dials the CNDB on POTS and CCW access codes (in any order) receiving recall dial tone after each is entered. The destination digits are then dialed.

Speed call (SC1 and SC8)

CNDB on POTS can be activated prior to dialing an SC1 or SC8 speed calling code to toggle the permanent suppression status of the line. CNDB and CNDB on POTS access codes cannot be strung together with a destination DN in the same speed calling cell. Recall dial tone must be received before destination digits or speed calling codes can be entered.

Three-way calling

Subscribers may use CNDB on POTS to control DN availability to the third party in a three-way call. After pressing and releasing the hookswitch to activate 3WC, the subscriber receives recall dial tone. The CNDB on POTS activation code may be dialed to change the availability of the DN to the third party. If the CNDB activation request is successful, the subscriber receives recall dial tone, and may then dial the third party.

Warm Line

CNDB on POTS can be activated prior to the WML time-out, in order to alter the availability of the calling party DN to the WML line DN.

Office Wide Activation of CNDB for POTS (continued)

Activation/deactivation by the end user

The following paragraphs describe the end user activation/deactivation procedures for the three options provided by Office Wide Activation of CNDB for POTS.

Activation/deactivation of Office Wide Activation of CNDB for POTS by the end user

At your telephone

1. To enable CNDB on POTS on a Digitone line, pick up the receiver and dial the activation code *67 or 1167. To dial CNDB on POTS on a dial pulse line, dial 1167.

Response:

If the above criteria is met, and the CNDB_ON_POTS office parameter is set to Y, you will receive one of the following treatments:

- an announcement (if it is supplied by the operating company and datafilled in table RESOFC), followed by recall dial tone. The announcement cannot be interrupted and does not indicate the permanent or toggled suppression status of the call.
- recall dial tone only (indicating that no announcement is supplied by the operating company).

2. Dial the destination number.

Billing

Office Wide Activation of CNDB for POTS does not affect billing.

Datafilling office parameters

The following table shows the office parameters used by Office Wide Activation of CNDB for POTS. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by Office Wide Activation of CNDB for POTS

Table name	Parameter name	Explanation and action
OFCVAR	CNDB_ON_POTS	This parameter is used to activate or deactivate the CNDB functionality office by office. It is set to N when functional group RES Disp Funct and Prvcy is applied to the office. To activate CNDB office by office, set this parameter to Y.

Datafill sequence

Office Wide Activation of CNDB for POTS does not affect translation tables.

Office Wide Activation of CNDB for POTS (end)

Translation verification tools

Office Wide Activation of CNDB for POTS does not use translation verification tools.

SERVORD

Office Wide Activation of CNDB for POTS does not use SERVORD.

Visual Screen List Editing (VSLE)

Ordering codes

Functional group ordering code: RES00003

Functionality ordering code: RES00024

VSLE and Call Logging, RES00024, are described in two feature descriptions. This feature description includes the VSLE feature. Refer to the Call Logging module for a description of the Call Logging feature.

Release applicability

CSP02, VSLE with Bellcore-compliant ADSI (TR-1273)

Prerequisites

To operate, Visual Screen List Editing (VSLE) has the following prerequisites:

- RES Service Enablers, RES00006
- Distinctive Ringing Call Waiting, RES00034

Network configuration

Common channel signaling no. 7 (CCS7) connectivity is required for network (interoffice) configuration of VSLE.

Description

The analog display services interface (ADSI) protocol allows softkey data to be downloaded to an ADSI set that displays feature-specific status, prompting, and list information. With ADSI, the subscriber can perform the VSLE functions.

Note: For details on how softkey data is sent to the ADSI set, refer to the Downloadable Softkeys feature description.

Screening list editing (SLE) allows subscribers to screen specific incoming calls for special treatment. Calls selected for this special treatment are identified by the directory number (DN) of the party originating the call.

The following list describes the four SLE features:

- Selective Call Rejection (SCRJ) routes incoming calls identified for treatment to a rejection announcement.
- Selective Call Acceptance (SCA) allows termination for only those calls identified by the subscriber.

Visual Screen List Editing (VSLE) (continued)

- Selective Call Forwarding (SCF) forwards incoming calls identified for treatment to a party specified by the subscriber.
- Distinctive Ringing/Call Waiting (DRCW) provides special ringing or call waiting tone to the subscriber on incoming calls identified for treatment.

Note: For a complete description of the SLE features, refer to the Screening List Editing (SLE) feature description in this document.

Audio SLE

Audio SLE is based on a multilevel hierarchy of states, such as list addition or list review, which are accessed from a main list editing menu level. At each state, audio announcements provide the subscriber with instructions describing available commands and prompting for input.

Audio SLE is accessed when only the SLE feature is assigned to the subscriber's line.

Note: For complete details of the functionality of audio SLE, refer to the Screening List Editing (SLE) feature description in this document.

VSLE

All the functionality of audio SLE is present in VSLE; however, the general structure of an editing session is different. VSLE retains certain aspects of a multilevel hierarchy, but the main list editing level is eliminated. For the subscriber, the main level is a visual display of feature status information. At this level, the subscriber is presented with scrolling softkeys that move through items in the screening list. Different softkeys allow the subscriber to select from the following actions:

- changing the on/off status of feature activation
- adding an entry to the screening list
- entering a forward-to number (SCF only)
- viewing or deleting individual screening list items
- entering a deletion mode to erase all entries or all private entries on the screening list

The line option ADSI is used to distinguish between the audio and the visual version of access for the SLE compatible application. If the ADSI line option is not assigned to the line, audio SLE is accessed. If the ADSI line option is assigned and the SLE feature accessed, then the VSLE version of service is used.

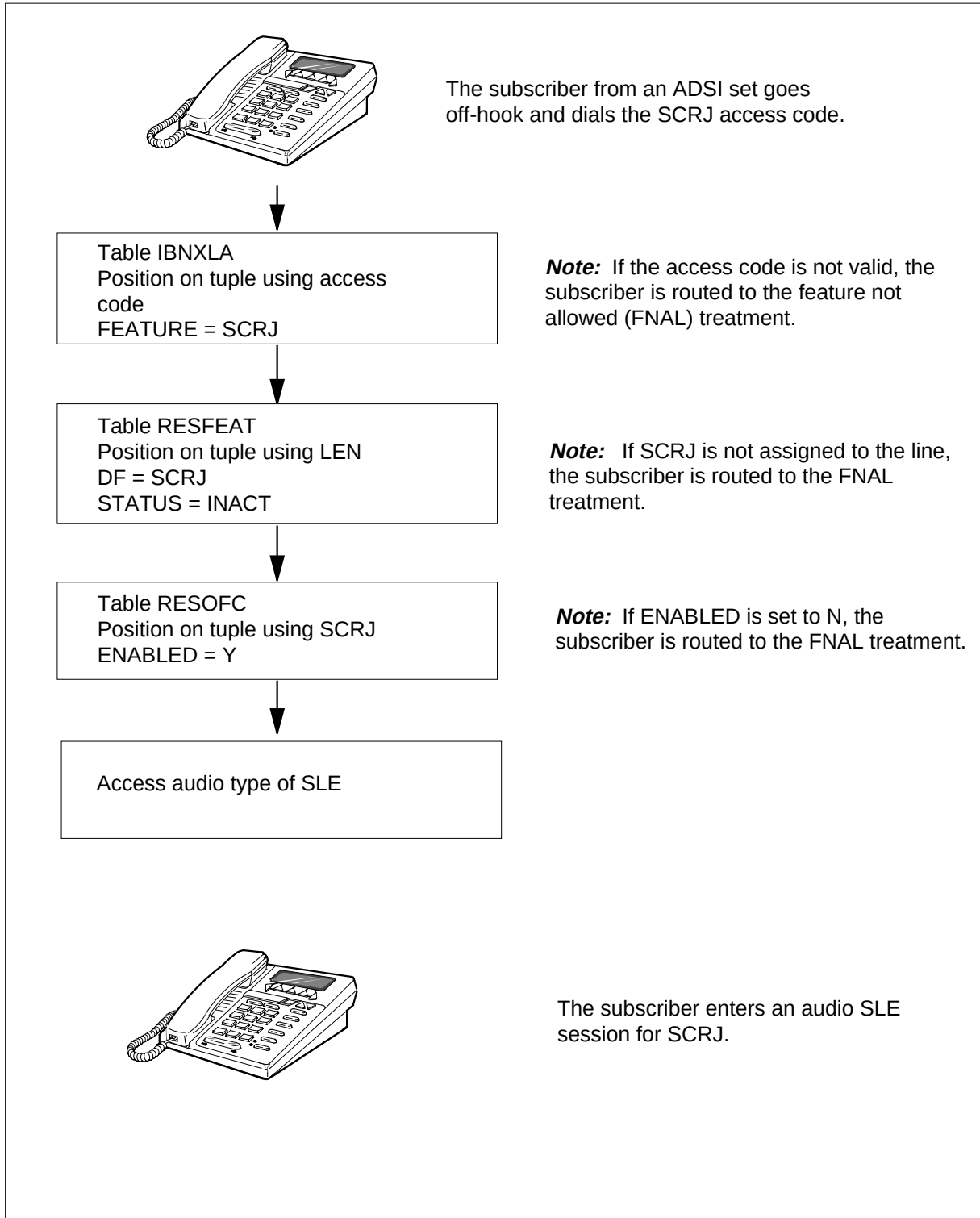
Visual Screen List Editing (VSLE) (continued)

Translations table flow for SCRJ access through audio SLE

The Visual Screen List Editing (VSLE) translations tables for SCRJ access through audio SLE are described in the following list:

- Table IBNXLA provides the name of the feature associated with an access code.
- Table RESFEAT (Residential Line Feature) is used to assign RES or IBN features to a line. For SCRJ, field STATUS is set to ACT when SCRJ is activated, and it is set to INACT when SCRJ is deactivated.
- Table RESOFC (Residential Line CLASS Office Data) controls the availability of individual custom local area signaling service (CLASS) features for an office. For this example, SCRJ is enabled.

The translations process for SCRJ access through audio SLE is shown in the flowchart that follows.

Visual Screen List Editing (VSLE) (continued)**Table flow for audio SLE (SCRJ activation)**

Visual Screen List Editing (VSLE) (continued)

The following table lists the datafill content used in the previous flowchart.

Datafill example for

Datafill table	Example data
IBNXLA	RXCFN 63 FEAT N N N SCRJ
RESFEAT	HOST 00 02 0 05 0 SCRJ SCRJ NOAMA ACT 6212000
RESOFC	SCRJ Y SUBSCR SCRJ 12 \$

Translations table flow for SCRJ access through VSLE

The Visual Screen List Editing (VSLE) translations tables for SCRJ access through VSLE are described in the following list:

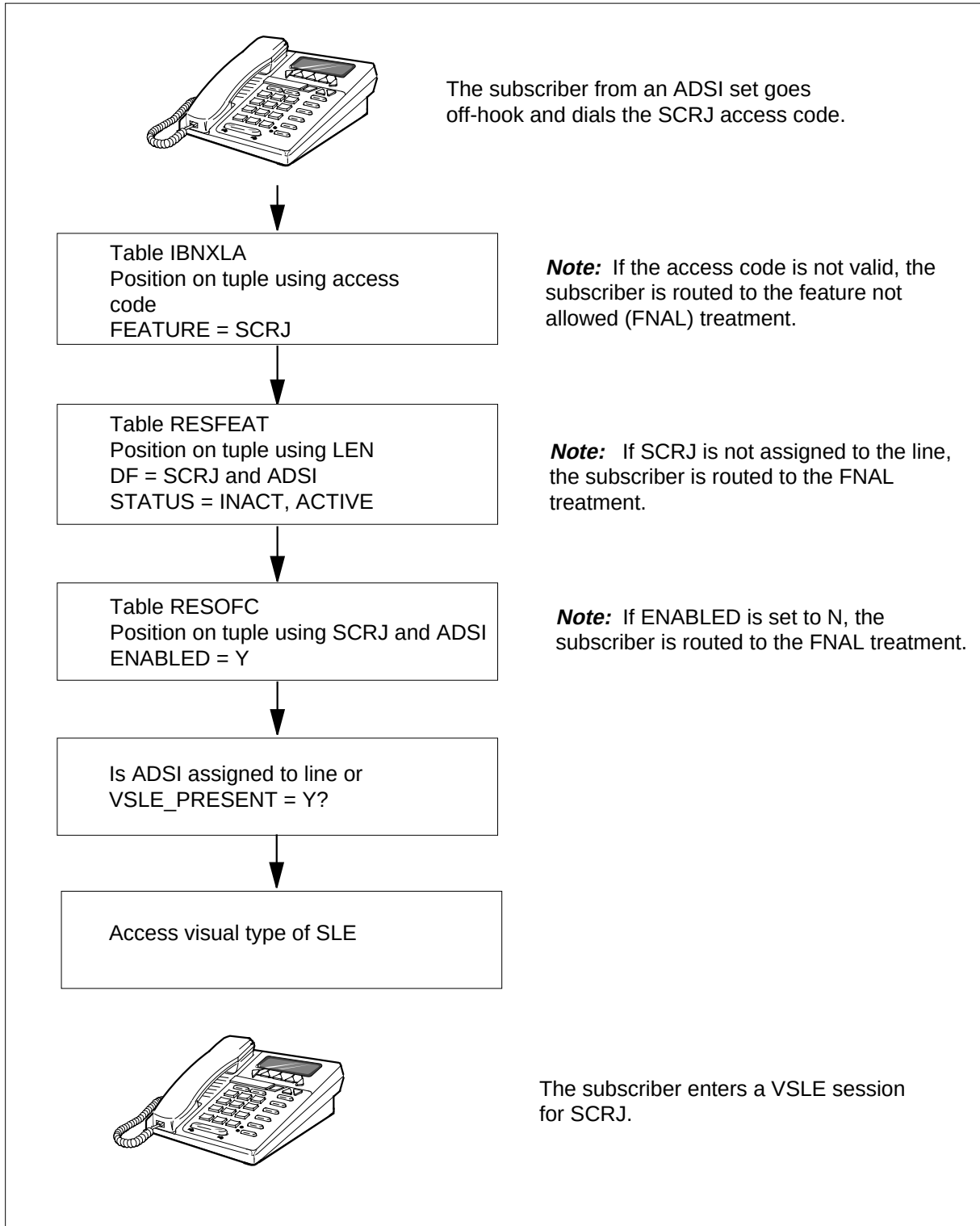
- Table IBNXLA provides the name of the feature associated with an access code.
- Table RESFEAT is used to assign RES or IBN features to a line. For SCRJ, field STATUS is set to ACT when SCRJ is activated, and it is set to INACT when SCRJ is deactivated.

Note: The ADSI line option in addition to the SLE feature is assigned in table RESFEAT for the VSLE version. The line is first assigned in table IBNLINES. If the parameter in table OFCOPT (Office Options), VSLE_PRESENT is set to Y(Yes), VSLE is accessed regardless of the assignment of the ADSI option in table RESFEAT.

- Table RESOFC controls the availability of individual custom local area signaling service (CLASS) features for an office. For this example, SCRJ is enabled.

Note: The ADSI tuple in table RESOFC controls the line option activation for the office. If the ADSI feature is disabled in table RESOFC, all lines with the ADSI line option in table RESFEAT are denied access. The VSLE access is allowed when the ADSI tuple in table RESOFC is enabled.

The VLSE translation process for SCRJ access through VSLE is shown in the flowchart that follows.

Visual Screen List Editing (VSLE) (continued)**Table flow for Visual Screen List Editing (VSLE) (SCRJ activation)**

Visual Screen List Editing (VSLE) (continued)

The following table lists the datafill content used in the previous flowchart.

Datafill example for Visual Screen List Editing (VSLE)

Datafill table	Example data
IBNXLA	RXCFN 63 FEAT N N N SCRJ
RESFEAT	HOST 00 02 0 05 0 SCRJ SCRJ NOAMA ACT 6212000 HOST 00 02 0 05 0 ADSI ADSI NOAMA ACT
RESOFC	SCRJ Y SUBSCR SCRJ 12 \$ ADSI Y SUBSCR ADSI \$

SCRJ access through VSLE includes the following:

- The subscriber receives the feature name and status; for example: "Selective Call Rejection is OFF."
- The subscriber receives information on the number of entries in the SCRJ list; for example, "XX Numbers XX Private." The subscriber also receives the message "Use (up arrow) or (down arrow) to view."

Table TEXTLOG defines the logical phrases which make up the display phrases used to guide the subscriber during a VSLE session. Field DEFNLIST lists the softkey definer numbers to be downloaded to the ADSI set with the display phrases. Refer to the Downloadable Softkeys feature description in this document for more information on the downloading process.

Table TEXTPHRS contains the instructional and prompting text strings that make up individual logical display phrases.

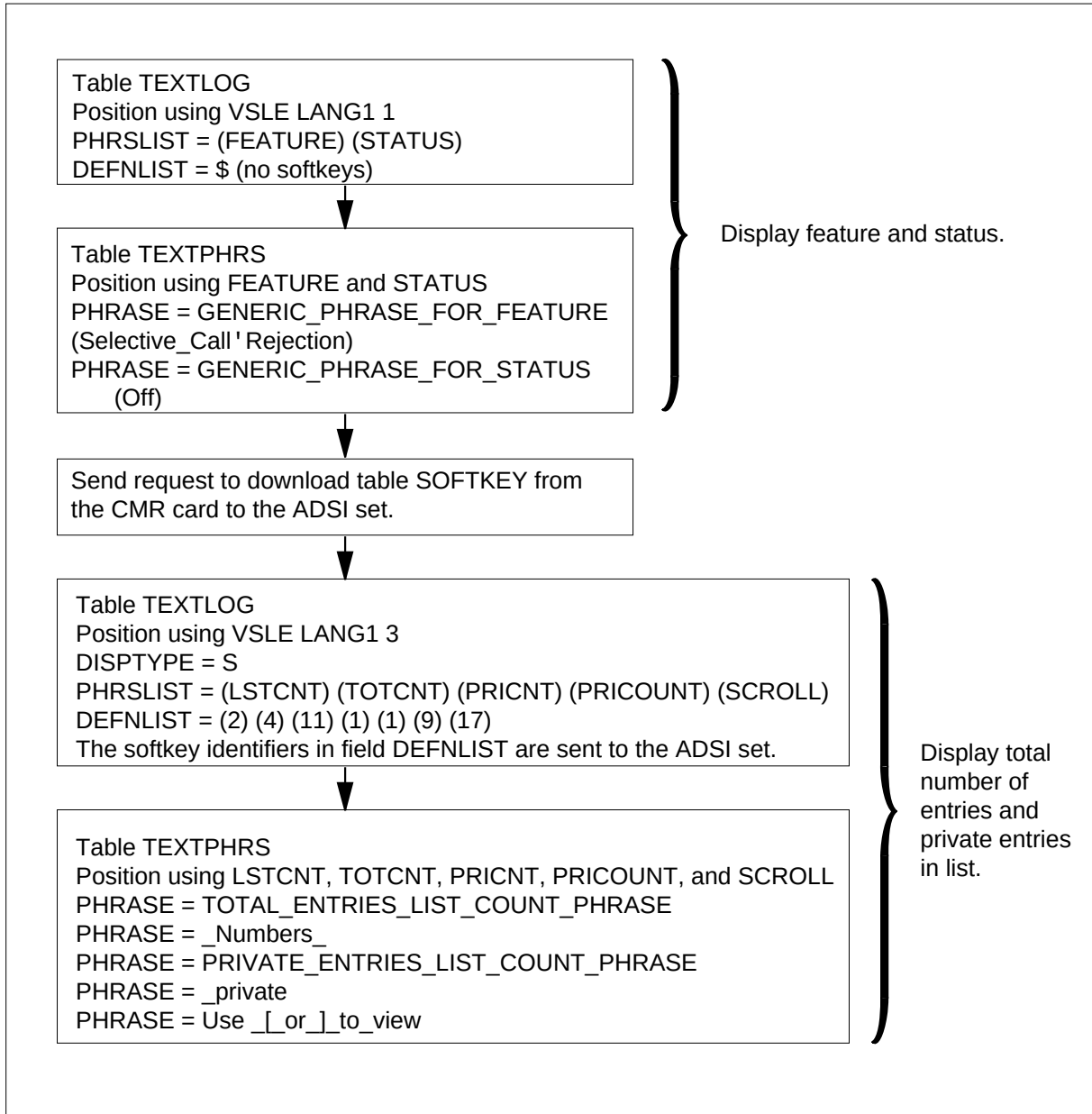
Table SOFTKEY contains tuples that define each ADSI softkey. The presence of the VSLE feature in a switch provides default tuples for VSLE. Table SOFTKEY is downloaded to the CMR card when the card is returned to service (RTS).

Note: Tables TEXTLOG, TEXTPHRS, and SOFTKEY should remain unchanged to ensure switch integrity. For more information, refer to these tables in the "Datafill procedure" section in this feature description.

The following figure shows the tables accessed when the subscriber receives the initial VSLE messages. The flowchart shows the tables used when SCRJ is accessed by a subscriber.

Visual Screen List Editing (VSLE) (continued)

Table flow for Visual Screen List Editing (VSLE) (feature status and information messages)



Visual Screen List Editing (VSLE) (continued)

The following table lists the datafill content used in the flowchart.

Datafill example for Visual Screen List Editing (VSLE)

Datafill table	Example data
SOFTKEY	VSLE 2 TURNON TURNON 52 \$
	VSLE 4 ADD ADD 54 \$
	VSLE 9 LSTRVW LSTRVW 49 51 \$
	VSLE 11 ERASE ERASE 57 \$
	VSLE 17 VIEW_BACK VWBACK 49 55 \$
TEXTPHRS	FEATURE GENERIC_PHRASE_FOR_FEATURE \$
	STATUS GENERIC_PHRASE_FOR_STATUS \$
	OFF OFF \$
	LSTCNT TOTAL_ENTRIES_LIST_COUNT_PHRASE \$
	PRICNT PRIVATE_ENTRIES_LIST_COUNT_PHRASE \$
	SCRJ Selective_Call`Rejection \$
	TOTCNT _Numbers_ \$
	PRICOUNT _private \$
TEXTLOG	SCROLL Use[_or_]to_view \$
	VSLE LANG1 1 T LEFT (FEATURE) (STATUS) \$ \$
	VSLE LANG1 3 S LEFT (LSTCNT) (TOTCNT) (PRICNT) (PRICOUNT) (SCROLL) \$ (2 N SRV) (4 N SRV) (11 N SRV) (1 N SRV) (1 N SRV) \$

Limitations and restrictions

Visual Screen List Editing (VSLE) has no limitations or restrictions. For complete details of the limitations and restrictions common to audio SLE and VSLE, refer to "Feature limitations and restrictions" in the following SLE feature descriptions:

- Screening List Editing (AG1580)
- Distinctive Ringing/Call Waiting (AG1629)
- Selective Call Acceptance (AG1675)
- Selective Call Forwarding (AG1628)
- Selective Call Rejection (AG1605)

Visual Screen List Editing (VSLE) (continued)

Interactions

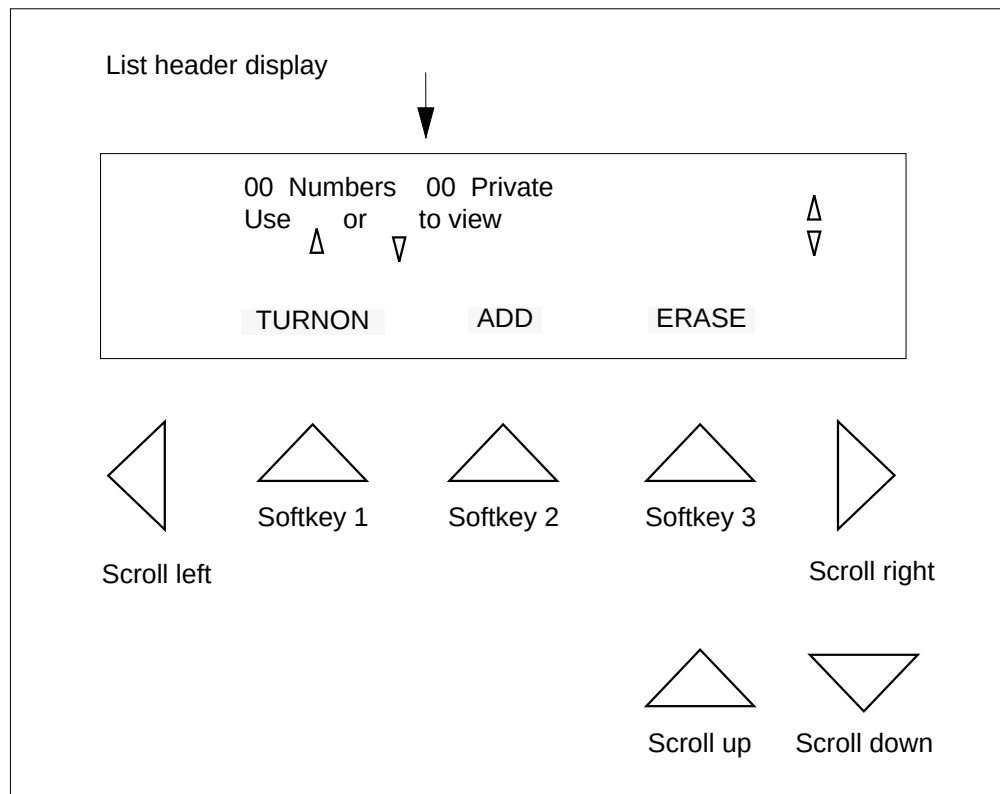
Visual Screen List Editing (VSLE) has no functionality interactions. For complete details of feature interactions common to audio SLE and VSLE, refer to “Feature interactions” in the following SLE feature descriptions:

- Screening List Editing (AG1580)
- Distinctive Ringing/Call Waiting (AG1629)
- Selective Call Acceptance (AG1675)
- Selective Call Forwarding (AG1628)
- Selective Call Rejection (AG1605)

Activation/deactivation by the end user

The subscriber accesses VSLE in the same way as audio SLE; that is, by dialing the existing feature-specific access code, such as the access code for SCRJ. After dialing the access code, the subscriber first sees a visual display of a transient message (for approximately 5 s) showing the feature name and screening function status; then the subscriber sees a visual display of the list header, as shown in the following figure.

VSLE list header display



Visual Screen List Editing (VSLE) (continued)

Note 1: If the set used to request access to a SLE feature is not compatible with ADSI, the audio SLE interface is used instead.

Note 2: Although the size of the display may vary, this example of the VSLE list header display assumes the ADSI set has two lines of text (20 characters long) and one line of softkeys.

The UP and DOWN scroll keys allow the subscriber to scroll backward and forward through the screening list. Softkey commands, instead of dialed digits, are used in VSLE. The softkey commands available with each display are activated by pressing the corresponding softkey. The LEFT and RIGHT scroll keys allow the subscriber to scroll left and right through the softkey commands.

Note: When more than three softkeys are available in a particular feature function (for example, in SCF there are four softkeys: TURNON, ADD, ERASE, and FWDTO), a directional arrow (>) appears at the lower right of the display to prompt the subscriber to press the RIGHT scroll key. To return to the left, the subscriber presses the LEFT scroll key.

The following procedure describes the actions to activate and deactivate the SCRJ feature and to edit a list.

Note: The activation and deactivation of SCF, SCA, and DRCW follow the same actions as listed below for SCRJ, with the exception of the forward-to DN handling for SCF. Refer to the figure "Table flow for Visual Screen List Editing (VSLE) (SCRJ activation)" in this feature description for information on SCF.

Activation/deactivation of the SCRJ feature by the end user

At your telephone:

- 1 Dial the SCRJ feature access code.

Response:

If SCRJ is enabled in the office and assigned to the subscriber, processing continues in order to determine if the ADSI option is present; if it is not present, audio SLE is used.

If ADSI compatibility is present, a transient prompt (5 s) displays the ON/OFF status of the SCRJ feature.

- 2 Assuming the SCRJ feature is not activated, the header display appears on the set. The softkeys available in the header display are TURNON, ADD, and ERASE. Press the TURNON softkey.

Response:

A screening session is activated. As with audio SLE, the screening list must contain one or more items in order for the screening session to be activated.

Visual Screen List Editing (VSLE) (continued)

If the list is empty, the subscriber sees the message "No numbers in list. Press ADD button."

Note 1: Pressing either the DOWN or UP scroll key returns the subscriber to the header display.

Note 2: Pressing the TURNON softkey when the list contains no entries is the same as pressing the ADD softkey at the header display, except that the feature is automatically activated after adding an entry.

- 3 Press the ADD softkey. The softkeys available in the ADD display are SAVE, ADDLAST, and CLEAR.

There are two methods for adding a DN to a screening list: dialing the DN (see Step 4), or pressing the ADDLAST softkey (see step 5).

Response:

On the display, the subscriber sees the message "Dial number and SAVE >."

Note: Pressing either the DOWN or UP scroll key or the SAVE softkey prior to entering any digits cancels the ADD request; the subscriber is returned to the header display.

- 4 Dial the DN to be added to the screening list, then press the SAVE softkey.

Response:

The DN entered by the subscriber can be a public DN or a private dialing plan extension (provided reverse translations is datafilled). A transient prompt displaying the DN informs the subscriber of the success of adding the DN to the list.

If the DN cannot be added to the list, the reason is displayed in the form of a transient prompt with one of the following messages:

- "Cannot add now. Try again later" is displayed for short-term denial.
- "Number not available with this service" is displayed for long-term denial.
- "Digits entered are not a valid number" is displayed for an invalid number.

Note: If the subscriber makes a mistake entering the DN, he or she can press the CLEAR softkey to erase all the digits entered, clear the display, and return to the same display as at the beginning of step 3.

- 5 Press the ADDLAST softkey.

Response:

The DN of the last calling party, if available, in the incoming call memory (ICM), is entered in the list.

A public DN is displayed as in step 4; a DN marked as private is displayed as a transient prompt with the message "Private number added." The subscriber is returned to the header display.

If the DN of the last caller is not available, a transient prompt appears with the message "Last caller cannot be added." The subscriber is returned to the header display.

- 6 To deactivate SCRJ, press the TURNOFF softkey at the header display.

Response:

Visual Screen List Editing (VSLE) (continued)

SCRJ is deactivated. After the transient prompt, "Selective Call Rejection is OFF" appears, the subscriber is returned to the header display with these softkeys available: TURNON, ADD, and ERASE.

- 7 Assuming the subscriber has at least one list entry, he or she can press the ERASE softkey at the list header to enter the ERASE display. The softkeys available are ALL, PRIVATE, and CANCEL. On the display the subscriber sees the message "Erase ALL or PRIVATE." Press the ALL softkey to erase all entries. (See step 8 to erase only private entries.)

Response:

All list entries are erased; the subscriber sees the message "Erased all numbers. No numbers in list." The softkeys available in the ALL display are TURNON, ADD, and UNDO.

Note 1: Pressing the UNDO softkey cancels the erase action; the subscriber is returned to the header display. Pressing either the DOWN or UP scroll key performs the erase action and returns the subscriber to the header display.

Note 2: If the subscriber exits the VSLE session now by going on-hook, the action is treated as implicit confirmation of the ERASE function chosen.

Note 3: When the last list entry is erased, the feature is automatically deactivated. The list header display reflects the feature status as deactivated when it displays TURNON as an available softkey.

- 8 Press the PRIVATE softkey.

Response:

All private entries are erased; the subscriber sees the message "Erased all private." The softkeys available in the PRIVATE display are TURNON, ADD, and UNDO if no list entry (such as a non-private entry) remains in the list, or TURNOFF, ADD, and UNDO if at least one list entry remains in the list.

Note 1: Pressing the UNDO softkey cancels the erase action; the subscriber is returned to the header display. Pressing either the DOWN or UP scroll key performs the erase action and returns the subscriber to the header display.

Note 2: If the subscriber exits the VSLE session now by going on-hook, the action is treated as implicit confirmation of the ERASE function chosen.

Note 3: When the last list entry (including non-private entries) is erased, the feature is automatically deactivated. The list header display reflects the feature status as deactivated when it displays TURNON as an available softkey.

Forward-to DN handling for SCF

The following procedure describes the actions to activate and deactivate the SCF feature with a forward-to DN.

Visual Screen List Editing (VSLE) (continued)

Activation/deactivation of the SCF feature by the end user

At your telephone:

- 1 Dial the SCF feature access code.

Response:

If SCF is enabled in the office and assigned to the subscriber, processing continues in order to determine if the ADSI option is present; if it is not present, audio SLE is used.

If ADSI compatibility is present, a transient prompt (5 s) displays the ON/OFF status of the SCF feature.

- 2 Assuming the SCF feature is not activated, the header display appears on the set. The softkeys available in the header display are TURNON, ADD, ERASE, and FWDTO. Press the TURNON softkey.

Response:

If no forward-to DN is available, the subscriber is prompted to enter a forward-to DN with the message "Dial FWDTO # and press SAVE >."

Note: The forward-to DN is not available when the subscriber enters a screening session for the first time after the feature has been assigned to the line and no initial forward-to DN has been entered in the SERVORD command.

- 3 Dial the forward-to DN, then press the SAVE softkey.

Response:

The DN is displayed. If the DN is invalid for the office, the reason is displayed in the form of a transient prompt with the message: "Invalid Forward To Number."

Note: If the subscriber makes a mistake entering the DN, he or she can press the CLEAR softkey to erase all the digits entered; the subscriber is returned to the same display as at the beginning of step 2.

- 4 Once a valid forward to DN is entered, the subscriber is prompted to CHANGE or CONFIRM the DN. Press the CONFIRM softkey.

Response:

A screening session is activated. As with audio SLE, the screening list must contain one or more items in order for the screening session to be activated. If the list is empty, the subscriber is prompted to ADD an entry to the list with the message "No numbers in list. Press ADD button."

- 5 Press the ADD softkey.

Note: Adding a DN to the SCF screening list follows the same steps as adding a DN to an SCRJ screening list. Refer to Steps 3 through 4a under "Activation/deactivation of SCRJ."

Response:

The DN is added to the list, and the subscriber is returned to the header display. The softkeys available are TURNOFF, ADD, ERASE, and FWDTO.

- 6 To deactivate SCF, press the TURNOFF softkey at the header display.

Response:

SCF is deactivated.

Visual Screen List Editing (VSLE) (continued)

VSLE error processing

The following lists the three types of errors that can occur during a VSLE session, which force the subscriber to exit the session:

- Unavailability of the feature — If the subscriber is not allowed access to the requested feature, he or she receives an audio feature not allowed (FNAL) announcement.
- Lack of hardware or software resources — If VSLE is unable to allocate required hardware or software resources, audio SLE is activated instead. Examples of this error are dual-tone multifrequency (DTMF) or universal tone receiver (UTR) unavailability, CMR card failure, or switch-to-CPE communication failure.
- Exceeding VSLE timing thresholds — If the subscriber exceeds either the maximum time for input or the maximum time allowed for a VSLE session, he or she sees a transient display (5 s) indicating that the accessed feature is terminating.

Billing

Visual Screen List Editing (VSLE) does not affect billing.

Station Message Detail Recording

Visual Screen List Editing (VSLE) does not affect Station Message Detail Recording.

Visual Screen List Editing (VSLE) (continued)

Datafilling office parameters

The following table shows the office parameters used by Visual Screen List Editing (VSLE). For more information about office parameters, refer to *Office Parameters Reference Manual*.

Note: Refer to “Datafilling office parameters” in the Screening List Editing (SLE) feature description for complete information on the office parameters that apply to the SLE features.

Office parameters used by Visual Screen List Editing (VSLE)

Table name	Parameter name	Explanation and action
OFCOPT	VSLE_PRESENT	The VSLE_PRESENT parameter allows access to VSLE when an SLE feature access code is dialed regardless of the setting of the ADSI tuple in table RESOFC or the line option assignment in table RESFEAT. Enter Y. It is necessary to assign the ADSI line option in table RESFEAT and table RESOFC if this parameter is set to N and VSLE is to be accessed when a SLE feature access code is dialed.

Datafill sequence

The following table lists the tables that require datafill to implement Visual Screen List Editing (VSLE). The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Visual Screen List Editing (VSLE)

Table	Purpose of table
CUSTSTN	Customer Group Station Option. This table contains the station options assigned to each of the customer groups.
SOFTKEY	Softkey. This table contains tuples that define each softkey of ADSI applications and is datafilled automatically when the feature is present.
TEXTPHRS	Text Phrase. This table is used by VSLE and other display features.
TEXTLOG	Text Logical Phrase. This table is used by VSLE and other display features.
RESOFC	Residential Line CLASS Office Data. This table contains information on CLASS features and enables the ADSI feature for the office.
RESFEAT	Residential Feature Table. This table is used to assign RES or IBN features to lines.

Visual Screen List Editing (VSLE) (continued)

VSLE translator

The translator used to decode VSLE commands (for example, VSLEXLA2) should be defined in table XLANAME, and then datafilled in Table IBNXLA. It is recommended that separate translators be used for audio SLE and VSLE. The following example shows sample datafill for table IBNXLA.

MAP display example for table IBNXLA

KEY	RESULT
VSLEXLA2 13	SLE C LISTREV
VSLEXLA2 01	SLE C LASTDN
VSLEXLA2 02	SLE C EXTN
VSLEXLA2 03	SLE C CANCEL
VSLEXLA2 4	SLE C ACTIVATE
VSLEXLA2 5	SLE C DEACTIVATE
VSLEXLA2 07	SLE C DELETE
VSLEXLA2 08	SLE C DELALL
VSLEXLA2 09	SLE C DELPRIV
VSLEXLA2 9	SLE C LISTDEL
VSLEXLA2 6	SLE C LISTADD
VSLEXLA2 7	SLE C NEXTDN
VSLEXLA2 8	SLE C PREVDN
VSLEXLA2 17	SLE C VIEWLAST
VSLEXLA2 14	SLE C PROGRDN

The SLE tuples for which VSLE applies should be modified to reflect the VSLE translator.

Datafilling table CUSTSTN

Table CUSTSTN (Customer Group Station Option) contains the station options assigned to each of the customer groups. The VSLE feature adds the following two subfields to field OPTION in table CUSTSTN:

- VSLEXLA
- VSLETIMEOUT

Visual Screen List Editing (VSLE) (continued)

The following table shows the datafill specific to VLSE for table CUSTSTN. Only those fields that apply directly to VLSE are shown. For a description of the other fields, refer to the data schema section in this document.

Datafilling table CUSTSTN

Field	Subfield or refinement	Entry	Explanation and action
CUSTNAME		customer group name	Customer Name. This field specifies the customer group to which VSLE applies. Enter the customer group name.
OPTNAME		SLE	Option Name. This field specifies a customer group name. It must be datafilled before subscribers in the customer group can access SLE-based features. Enter SLE.
OPTION			Option. This field contains the subfields MAXTIME, CONFCODE, RJCTCODE, SLEXLA, VSLEXLA, TIMEOUTS, ENABLED, OCTOCODE, STARCODE, CONFOPT, INVINPUT, CONFIRM, REMOTEDN, COMMAND, DATA, DTREVIEW, DPREVIEW, DTINTERD, DPINTERD, MINSLEDN, MAXSLEDN, NON10ICM, and VSLETIMEOUT. Note: The VSLEXLA and VSLETIMEOUT subfields are added to table CUSTSTN by the VSLE feature. These subfields are described below. Refer to Screening List Editing module for a complete explanation of all the fields in table CUSTSTN.
	VSLEXLA	translator name	VSLE translator. This subfield contains the translator used to decode VSLE softkey commands once a VSLE session is invoked. The translator must be datafilled to correspond to the softkey return string data defined in table SOFTKEY. Enter translator name.
	VSLETIMEOUT	0 to 60	VSLE timeout. This subfield specifies the number of seconds, in 10-s increments, that VSLE waits for input after prompting the subscriber. Enter a value from 0 to 60.

Visual Screen List Editing (VSLE) (continued)

Datafill example for table CUSTSTN

The following example shows sample datafill for table CUSTSTN. In the example, the datafill for VSLEXLA is VSLEXLA2, and the datafill for VSLETIMEOUT is 30.

MAP display example for table CUSTSTN

CUSTNAME		OPTNAME		OPTION											
RESGRP	SLE	SLE	30	1	0	SLEXLA2									
	VSLEXLA2		2	Y		LISTADD		LISTDEL			Y				
3	50	50	50	50	50	50	30	11	7	11	N	30			

Datafilling table SOFTKEY

Table SOFTKEY (Softkey) contains tuples that define each softkey of ADSI applications and is datafilled automatically when the feature is present. The only fields the operating company can change are LLABEL and SLABEL. These fields define the softkey on the ADSI set display.

Note: For more information on softkeys and an explanation of the fields to be datafilled in table SOFTKEY, refer to the Downloadable Softkeys feature description.

Datafill example for table SOFTKEY

The following example shows sample datafill for table SOFTKEY.

Visual Screen List Editing (VSLE) (continued)

MAP display example for table SOFTKEY

SERVID	DEFNUM	LLABEL	SLABEL	RETURN
VSLE	2	TURNON	TURNON	52 \$
VSLE	3	TURNOFF	TURNOFF	53 \$
VSLE	4	ADD	ADD	54 \$
VSLE	5	REMOVE	REMOVE	48 55 \$
VSLE	6	SAVE	SAVE	135 35 150 \$
VSLE	7	CLEAR	CLEAR	136 150 11 \$
VSLE	8	ADDLAST	ADDLAST	48 49 35 150
VSLE	9	REVIEW_LIST	LSTRVW	49 51 \$
VSLE	10	UNDO	UNDO	48 \$
VSLE	11	ERASE	ERASE	57 \$
VSLE	12	ALL	ALL	48 56 35 \$
VSLE	13	PRIVATE	PRIVATE	48 57 35 \$
VSLE	14	CANCEL	CANCEL	48 51 35 150
VSLE	15	NEXT	NEXT	55 \$
VSLE	16	BACK	BACK	56 \$
VSLE	17	VIEW_BACK	VWBACK	49 55 \$
VSLE	18	CONFIRM	CONFIRM	49 \$
VSLE	19	CANCEL	CANCEL	49 51 \$
VSLE	20	FWD_TO_NUM	FWDTO	49 52 \$
VSLE	21	CHANGE	CHANGE	48 \$

Datafilling table TEXTPHRS

Table TEXTPHRS (Text Phrase) is used by VSLE and other display features. It contains the instructional and prompt text strings that, when concatenated as specified in table TEXTLOG, make up individual logical display phrases. Each physical phrase can be up to 40 characters in length.

Table TEXTPHRS must be datafilled first since table TEXTLOG refers to the names of the phrases to create logical displays. The phrase names in TEXTPHRS are used in the datafill for table TEXTLOG and must be datafilled such that they are consistent with table TEXTLOG.

Note: Table TEXTLOG allows for flexibility in the display provided to the subscriber: the actual text can be changed to reflect the desired logical display.

Visual Screen List Editing (VSLE) (continued)

Special characters

Certain special characters used in the display phrases are internally converted by VSLE to provide special ADSI functionality. The special characters are as follows:

- [(left square bracket), which corresponds to the up arrow shown in the list header display
-] (right square bracket), which corresponds to the down arrow shown in the list header display
- _ (underscore), which is converted to a blank in the display
- ` (back quote), which indicates that the characters following it should be positioned in the second 20-character field of the virtual display line

Special phrases

Certain phrases have special meaning to VSLE and are used to process variable portions of logical displays. The following phrases should *not* be deleted or changed in any way:

- DIGIT, used to process a single digit
- DN, used to process DN displays
- FEATURE, used by VSLE to display variable feature name information
- STATUS, used by VSLE to display the current list status (on/off)
- LSTCNT, used to display the total number of entries in a screening list
- PRICNT, used to display the number of private entries in a screening list

Certain phrases allow for flexibility in the variable portions of displays. The names of the following phrases should *not* be changed; however, the physical text can be changed as desired:

- ON, used to indicate in the feature status display that the screening feature is active
- OFF, used to indicate in the feature status display that the screening feature is inactive
- SCRJ, DRCW, SCA, and SCF, used to indicate the actual feature name displayed to the subscriber

Visual Screen List Editing (VSLE) (continued)

The following table shows the datafill specific to VSLE for table TEXTPHRS. Only those fields that apply directly to VSLE are shown. For a description of the other fields, refer to the data schema section in this document.

Datafilling table TEXTPHRS

Field	Subfield or refinement	Entry	Explanation and action
PHRSNAME		2 to 8 characters	PHYSICAL PHRASE. This field specifies the character name of the physical phrase used in table TEXTLOG. Enter 2 to 8 characters.
PHRASE		up to 40 characters	PHRASE. This field specifies the text string displayed to the subscriber as instructional or prompting messages. The characters can be any alphanumeric character except a blank. Interpretation of the characters is application specific. Enter up to 40 characters.
HLMODE	POSITION MODE	1 to 40 NORMALRE VERSEGREY BOLD	HIGHLIGHT MODE. This field contains up to four highlight modes. Each mode consists of a position and a mode. The characters are specified in the POSITION subfield for each mode and continue until the end of the display or the next mode position is specified. The default mode is NORMAL if no HLMODE vectors are entered.

Datafill example for table TEXTPHRS

The following example shows sample datafill for table TEXTPHRS.

Visual Screen List Editing (VSLE) (continued)

MAP display example for table TEXTPHRS

PHRSNAME	PHRASE	HLMODE
DIGIT	GENERIC_PHRASE_FOR_DIGIT	\$
DN	GENERIC_PHRASE_FOR_DN	\$
FEATURE	GENERIC_PHRASE_FOR_FEATURE	\$
STATUS	GENERIC_PHRASE_FOR_STATUS	\$
ON	ON	\$
OFF	OFF	\$
LSTCNT	TOTAL_ENTRIES_LIST_COUNT_PHRASE	\$
PRICNT	PRIVATE_ENTRIES_LIST_COUNT_PHRASE	\$
DRCW	Distinctive_Ringing'Call_Waiting	\$
SCA	Selective_Call'Acceptance	\$
SCF	Selective_Call'Forwarding	\$
SCRJ	Selective_Call'Rejection	\$
PUBDEL	_removed	\$
ALLDEL	Erased_all_numbers'No_numbers_in_list	\$
PRIDEL	Erased_all_private	\$
ADDDN	Dial_number_and_SAVE>	\$
PUBADDED	_added	\$
PRIADDED	Private_number_added	\$
ERASE	Erase_ALL_or_PRIVATE	\$
CANCEL	Command_cancelled	\$
FORCEADD	No_numbers_in_list'Press_ADD_button	\$
LFULL	List_is_full'Remove_number_first	\$
LEMPY	List_is_empty	\$
NOTDN	Digits_entered_are'not_a_valid_number	\$
NOPRI	No_private_entries'on_list	\$
NOPUB	No_public_entries'on_list	\$
NOLAST	Last_caller_cannot'be_added	\$
DNONLIST	_already'on_list	\$
PDNONLST	Already_on_list'as_private_number	\$
SDENY	Cannot_add_now'Try_again_later	\$
LDENY	Number_not_available'with_this_service	\$
FEXIT	Sorry,_exiting'Try_again_later	\$
SINTRUP	Sorry,_exiting'Try_again_later	\$
TOTCNT	Numbers_	\$
PRICOUNT	Private	\$
SCROLL	Use_[_or_]_to_view	\$
ADDRDN	Dial_FWDTO_#_and'press_SAVE>	\$
FWDTO	Calls_Fowarded_To	\$
INVRDN	Invalid_Forward_to'Number	\$

Datafilling table TEXTLOG

Table TEXTLOG (Text Logical Phrase) is used by VSLE and other display features. It contains the names of the physical phrases that make up a logical

Visual Screen List Editing (VSLE) (continued)

display phrase displayed to the subscriber during a VSLE session. The table is accessed using a three-part key made up of the following information:

- the name of the feature application (APPLNAME)
- the language used for the display (LANGUAGE)
- the numeric index to allow selection of the appropriate display (DISPNUM)

The following table shows the datafill specific to VSLE for table TEXTLOG. Only those fields that apply directly to VSLE are shown. For a description of the other fields, refer to the data schema section in this document.

Note: The display numbers (DISPNUM in the LPHRSKEY field) in table TEXTLOG should *not* be changed. The logical display number in the key of each tuple is referred to directly in VSLE software. The gaps in the numbering of the phrases is deliberate so that assigning these numbers logically corresponds to audio SLE announcement numbers.

Datafilling table TEXTLOG (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
LPHRSKEY		VSLE NILANG, LANG1, or LANG2 value from 0 to 127	LOGICAL PHRASE KEY. This field specifies the key to the logical phrase. This field is made up of the following three parts: • APPLNAME is the name of the feature application. Enter VSLE. • LANGUAGE is the language used for the display. Enter NILANG, LANG1, or LANG2. • DISPNUM is the numeric index by which the feature application uniquely identifies the display data contained in the tuple. Enter a value from 0 to 127.
DISPTYPE		S, T, or C	DISPLAY TYPE. This field specifies the type of display. Enter S for standard, T for transient, or C for cursor.
LRCI		LEFT, RIGHT, CENTER, INDENT	LEFT RIGHT CENTER INDENT. This field is the justification indicator field. Enter the type of justification for the display.

Visual Screen List Editing (VSLE) (continued)

Datafilling table TEXTLOG (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
PHRSLIST		16 physical phrase names	PHRASE LIST. This field contains the physical phrase names as defined in table TEXTPHRS, which together make up a single logical display phrase. The value for this field is a vector of up to 16 physical phrase names.
DEFNLIST	SOFTKEY	1 to 33	DEFINER LIST. This field contains a vector of up to 8 softkey definer lists. The SOFTKEY subfield is the softkey definer number from the list of softkey definer numbers defined in table SOFTKEY. The value for the SOFTKEY subfield is 1 to 33. The value of the MODE subfield is N for normal or H for highlight. The Softkey Table (SKT) subfield indicates which softkey table is loaded in the CPE. The values are SRV (server) and CPE.
	MODE	N, H	
	SKT	SRVCPE	

Datafill example for table TEXTLOG

The following example shows sample datafill for table TEXTLOG.

Visual Screen List Editing (VSLE) (continued)**MAP display example for table TEXTLOG**

LPHRSKEY	DISPTYPE	LRCI	PHRSLIST	DEFNLIST
VSLE LANG1 1	T	LEFT	(FEATURE) (STATUS)	\$ \$
VSLE LANG1 2	T	LEFT	(FEATURE) (STATUS)	\$ \$
VSLE LANG1 3	S	LEFT	(LSTCNT) (TOTCNT) (PRICNT)	
			(PRICOUNT) (SCROLL)	\$ (2 N SRV) (4 N SRV) (11 N SRV)
				(9 N SRV) (17 N SRV) (1 N SRV)
				(9 N SRV) (17 N SRV) \$
VSLE LANG1 4	S	LEFT	(DN) \$ (2 N SRV) (4 N SRV)	
			(5 N SRV) (15 N SRV) (16 N SRV) (1 N SRV)	
			(15 N SRV) (16 N SRV)	\$
VSLE LANG1 5	S	LEFT	(DN) \$ (2 N SRV) (4 N SRV)	
			(5 N SRV) (15 N SRV) (16 N SRV) (1 N SRV)	
			(15 N SRV) (16 N SRV)	\$
VSLE LANG1 6	S	LEFT	(DN) \$ (2 N SRV) (4 N SRV)	
			(5 N SRV) (15 N SRV) (16 N SRV) (1 N SRV)	
			(15 N SRV) (16 N SRV)	\$
VSLE LANG1 7	S	LEFT	(DN) \$ (3 N SRV) (4 N SRV)	
			(5 N SRV) (15 N SRV) (16 N SRV) (1 N SRV)	
			(15 N SRV) (16 N SRV)	\$
VSLE LANG1 8	S	LEFT	(DN) (PUBDEL) \$ (10 N SRV)	
			(1 N SRV) (1 N SRV) (15 N SRV)	
			(16 N SRV) (1 N SRV) (15 N SRV) (16 N SRV)	\$
VSLE LANG1 9	S	LEFT	(ALLDEL) \$ (2 N SRV) (4 N SRV)	
			(10 N SRV) (22 N SRV) (1 N SRV) (1 N SRV)	
			(18 N SRV) (18 N SRV)	\$
VSLE LANG1 10	S	LEFT	(ALLDEL) \$(2 N SRV) (4 N SRV)	
			(10 N SRV) (22 N SRV) (1 N SRV) (1 N SRV)	
			(18 N SRV) (18 N SRV)	\$
VSLE LANG1 11	S	LEFT	(PRIDEL) \$ (3 N SRV) (4 N SRV)	
			(10 N SRV) (18 N SRV) (1 N SRV) (1 N SRV)	
			(18 N SRV) (18 N SRV)	\$
VSLE LANG1 12	S	LEFT	(DN) \$ (21 N SRV) (18 N SRV)	
			(1 N SRV)	\$
VSLE LANG1 13	T	LEFT	(FEATURE) (STATUS)	\$ \$
VSLE LANG1 15	S	LEFT	(LSTCNT) (TOTCNT) (PRICNT)	
			(PRICOUNT) (SCROLL)	\$ (3 N SRV)
			(4 N SRV) (11 N SRV) (9 N SRV)	
			(17 N SRV) (1 N SRV) (9 N SRV) (17 N SRV)	\$
VSLE LANG1 16	C	LEFT	(ADDDN) \$ (6 N SRV) (8 N SRV)	
			(7 N SRV) (14 N SRV) (1 N SRV) (1 N SRV)	
			(14 N SRV) (14 N SRV)	\$

Visual Screen List Editing (VSLE) (continued)

MAP display example for table TEXTLOG (continued)

LPHRSKEY	DISPTYPE	LRCI	PHRSLIST	DEFNLIST
VSLE LANG1 17	S	LEFT	(ERASE) \$ (12 N SRV)	
			(13 N SRV) (14 N SRV)	
			(1 N SRV) (1 N SRV) (14 N SRV) (14 N SRV) \$	
VSLE LANG1 18	S	LEFT	(LSTCNT) (TOTCNT) (PRICNT)	
			(PRICOUNT) (SCROLL) \$ (2 N SRV) (4 N SRV) (11 N SRV)	
			(20 N SRV) (1 N SRV) (9 N SRV) (17 N SRV) \$	
VSLE LANG1 19	C	LEFT	(ADDRDN) \$ (6 N SRV) (7 N SRV)	
			(14 N SRV) (1 N SRV) (1 N SRV) (1 N SRV)	
			(14 N SRV) (14 N SRV) \$	
VSLE LANG1 20	S	LEFT	(LSTCNT) (TOTCNT) (PRICNT)	
			(PRICOUNT) (SCROLL) \$ (3 N SRV) (4 N SRV)	
			(11 N SRV) (20 N SRV) (9 N SRV) (17 N SRV)	
			(9 N SRV) (17 N SRV) \$	
VSLE LANG1 21	S	LEFT	(FORCEADD) \$(19 N SRV) (4 N SRV)	
			(1 N SRV) (1 N SRV) (1 N SRV) (19 N SRV) (19 N SRV) \$	
VSLE LANG1 23	T	LEFT	(CANCEL) \$ \$	
VSLE LANG1 25	T	LEFT	(DN) (PUBADDED) \$ \$	
VSLE LANG1 26	S	LEFT	(PRIADDED) \$ \$	
VSLE LANG1 27	S	LEFT	(DN) (PUBDEL) (10 N SRV)	
			(1 N SRV) (1 N SRV) (1 N SRV) (1 N SRV)	
			(15 N SRV) (16 N SRV) \$	
VSLE LANG1 29	S	LEFT	(ALLDEL) \$ (2 N SRV) (4 N SRV)	
			(10 N SRV) (22 N SRV) (1 N SRV) (1 N SRV)	
			(18 N SRV) (18 N SRV) \$	
VSLE LANG1 30	S	LEFT	(PRIDEL) \$ (2 N SRV) (4 N SRV)	
			(10 N SRV) (18 N SRV) (1 N SRV) (1 N SRV)	
			(18 N SRV) (18 N SRV) \$	
VSLE LANG1 33	T	LEFT	(NOTDN) \$ \$	
VSLE LANG1 34	T	LEFT	(NOLAST) \$ \$	
VSLE LANG1 35	T	LEFT	(NOTDN) \$ \$	
VSLE LANG1 37	T	LEFT	(DN) (DNONLIST) \$ \$	
VSLE LANG1 38	T	LEFT	(PDNONLST) \$ \$	
VSLE LANG1 40	T	LEFT	(LDENY) \$ \$	
VSLE LANG1 41	T	LEFT	(LFULL) \$ \$	
VSLE LANG1 42	T	LEFT	(LEMPY) \$ \$	
VSLE LANG1 43	T	LEFT	(NOPRI) \$ \$	
VSLE LANG1 44	T	LEFT	(NOPUB) \$ \$	
VSLE LANG1 46	T	LEFT	(INVRDN) \$ \$	
VSLE LANG1 47	T	LEFT	(FEXIT) \$ \$	
VSLE LANG1 48	T	LEFT	(SINTRUP) \$ \$	
VSLE LANG1 49	T	LEFT	(SDENY) \$ \$	
VSLE LANG1 60	T	LEFT	(FWDTO) \$ \$	

Visual Screen List Editing (VSLE) (continued)

Datafilling table RESOFC

Table RESOFC (Residential Line CLASS Office Data) contains information on CLASS features and enables the ADSI feature for the office. When the NTXP91AA feature package is installed, the ADSI tuple is automatically added to table RESOFC.

The following table shows the datafill specific to VSLE for table RESOFC. Only those fields that apply directly to VSLE are shown. For a description of the other fields, refer to the data schema section in this document.

Datafilling table RESOFC

Field	Subfield or refinement	Entry	Explanation and action
KEY			KEY. This field consists of the subfield FEATNAME. This subfield is described below.
	FEATNAME	ADSI	FEATURE NAME. This subfield is the key to the table. It specifies the name of the feature. Enter ADSI.
ENABLED		Y or N	ENABLE. This field specifies whether or not the feature is enabled in the office. Enter Y.
FEATDATA			FEATURE DATA. This field consists of the subfields ACCESS and FEATNAME. These subfields are described below.
	ACCESS	SUBSCR	FEATURE ACCESS. This subfield specifies how the feature is accessed. SUBSCR indicates subscription access and is the only valid value for the ADSI feature. (UNIVER indicates universal access for all RES lines.) Enter SUBSCR.
	FEATNAME	ADSI	FEATURE NAME. This subfield specifies the name of the feature. Enter ADSI.
FNALANN			FEATURE NOT ALLOWED ANNOUNCEMENT. This field consists of the subfields POTS_ACCESS and FNAL_CLLI. Refer to "Datafill procedure for table RESOFC" for "Feature not allowed announcement" for details on these subfields.

Datafill example for table RESOFC

The following example shows sample datafill for table RESOFC.

Visual Screen List Editing (VSLE) (continued)

MAP display example for table RESOFC

KEY	ENABLED	FNALANN		FEATDATA
ADSI	Y		SUBSCR	ADSI
		\$		

Datafilling table RESFEAT

Table RESFEAT is used to assign RES or IBN features to lines. An entry is required in table IBNLINES for the line assignment before a tuple is added to this table. The ADSI line option in addition to the SLE feature is assigned in table RESFEAT for the VSLE version. The line is first assigned in table IBNLINES. If the parameter in table OFCOPT (Office Option), VSLE_PRESENT is set to Y(Yes), VSLE is accessed regardless of the assignment of the ADSI option in table RESFEAT.

The following table shows the datafill specific to VSLE for table RESFEAT. Only those fields that apply directly to VSLE with ADSI are shown. For a description of the other fields, refer to the data schema section in this document.

Datafilling table RESFEAT

Field	Subfield or refinement	Entry	Explanation and action
KEY		0 to 69	KEY. This field contains the possible physical keys for a DN appearance on a Meridian business set (MBS). A non-MBS set always has a key of 0. All keysets have the range of 1 to 60.
FEAT			CLASS FEATURE NAME. Specify the name of the feature. Enter ADSI to include the ADSI line option.
VAR	DF AMA STATUS	Enter the same value as for field FEAT. AMANOAMA ACT, INACT	RESFEAT VAR AREA. This field consists of the subfields DF, AMA, STATUS. AUTOMATIC MESSAGE ACCOUNTING. Enter AMA if a billing record is generated. Enter NOAMA if no billing is required. STATUS. Enter ACT if the feature is active on the line. Otherwise, enter INACT (inactive).

Visual Screen List Editing (VSLE) (end)

Datafill example for table RESFEAT

The following example shows sample datafill for table RESFEAT.

MAP display example for table RESFEAT

LINE				KEY	FEAT	VAR	
0	0	1	25	0	ADSI	ADSI	NOAMA ACT

Translation verification tools

Visual Screen List Editing (VSLE) does not use translation verification tools.

SERVORD

Visual Screen List Editing (VSLE) does not use SERVORD.

Who's Calling

Ordering codes

Functional group ordering code: RES00094

Functionality ordering code: RES00094

Release applicability

NA013 introduced the Who's Calling feature.

Requirements

This document includes all the data table information for the Who's Calling feature. Complete use of this functionality can require software or hardware not described in this document.

Description

The Who's Calling (WC) feature identifies incoming calls received with the directory number (DN) blocked (private) or not available (unavailable) for delivery. The WC application requests, records, and delivers the caller's name to the WC subscriber.

The WC feature records the caller's name through a service node (SN) connected to the DMS-100 switch over the network. The SN receives the intercepted call, saves a name or message, and gives the saved information to the WC subscriber. The WC subscriber receives multiple options to handle the intercepted call.

Operation

The WC feature screens and intercepts incoming calls identified as private or unavailable. The DMS-100 switch monitors a WC subscriber's line, intercepts appropriate calls, and sends those calls to an SN. The SN receives the call, prompts the caller to record a name or message, and gives that name or message to the WC subscriber. The WC subscriber receives the options that follow:

- accept the call
- send the call to a sales call refusal announcement
- send the call to a general call rejection announcement
- if subscribed to voice mail, send the call to voice mail

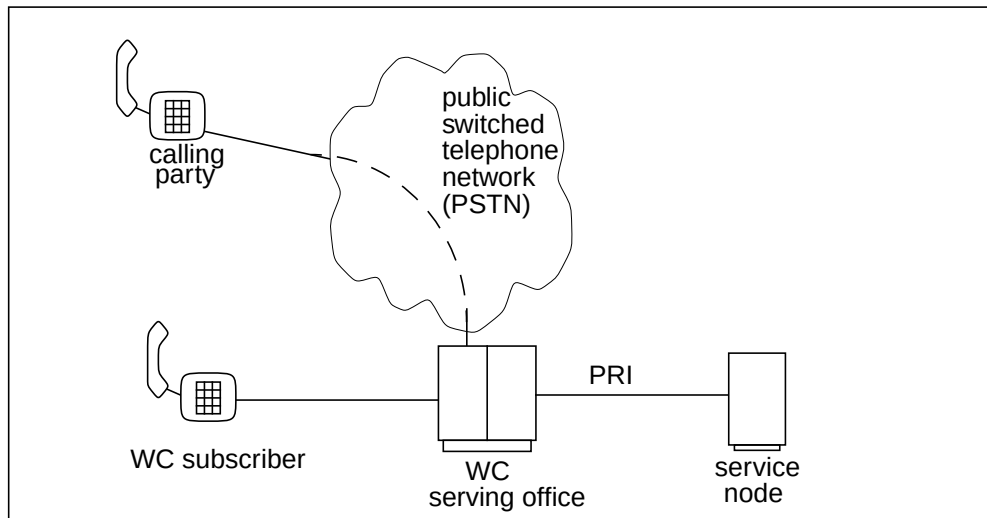
Who's Calling (continued)

SN remote connection overview

The DMS-100 switch commonly connects to the remote SN through one of the links that follow.

- integrated digital services network (ISDN) primary rate interface (PRI) network
- ISDN user part (ISUP) signaling system number 7 (SS7) network

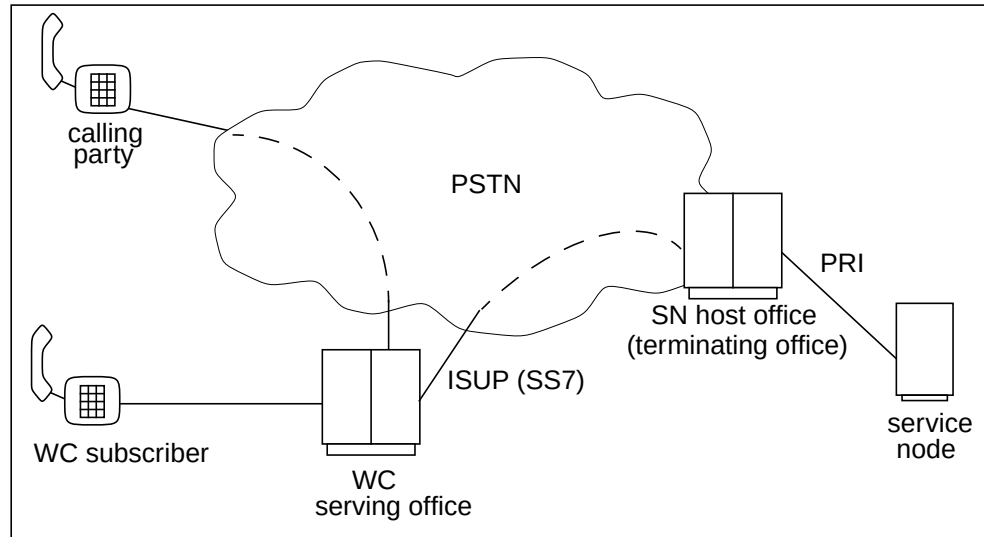
A PRI link connects the DMS-100 serving office directly to the SN. With a PRI link, the call between the SN and the WC subscriber is an intra-office call. The figure that follows shows a PRI remote SN connection.

PRI remote SN connection

An ISDN SS7 link connects the DMS-100 serving office to an SN host office which connects to the SN through a PRI link. The WC feature resides only in the DMS-100 serving office. The figure that follows shows an SS7 remote SN connection.

Who's Calling (continued)

ISUP SS7 remote SN connection



Query commands

The command interpreter (CI) commands that follow display the Who's Calling feature when assigned to a line.

- query directory number (QDN)
- query line equipment number (QLEN)
- query directory number working (QDNWRK)
- query line equipment number working (QLENWRK)
- query customer information (QCUST)

The figure that follows shows an example of the QDN command for a residential enhanced services (RES) line that was assigned the Call Send Again feature.

Who's Calling (continued)**Query command QDN displaying the Who's Calling feature****> QDN 6218008**

```

-----
DN: 6218008
TYPE: SINGLE PARTY LINE
SNPA: 613 SIG: DT LNATTIDX: 262
LINE EQUIPMENT NUMBER: HOST 00 0 04 07
LINE CLASS CODE: 1FR
IBN TYPE: STATION:
CUSTGRP: RESG200 SUBGRP: 0 NCOS: 0
CARDCODE: 6X17AC GND: N PADGRP: STDLN BNV: NL MNO: N
PM NODE NUMBER : 34
PM TERMINAL NUMBER : 136
OPTIONS:
DGT
RES OPTIONS:
ACB NOAMA AR NOAMA WC
OFFICE OPTIONS:
U3WC
-----

```

Operational measurements

The Who's Calling feature adds operational measurements (OM) group WC to measure activity for the WC feature. The list that follows describes the thirteen registers included in the OM group WC.

- The WCABDN register increments when the calling party hangs up after WC activation but before the subscriber screens the call.
- The WCATT register increments when an incoming private or unavailable call terminates on a WC subscriber which causes WC feature activation.
- The WCCON register increments when an incoming private or unavailable call connection establishes at an SN and the SN sends a Recording Start tone.
- The WCDNERR register increments when an incoming private or unavailable call cannot route to the SN.
- The WCOFR register increments when the WC subscriber presses any digit to acknowledge the SN call that contains the calling party's recorded name.
- The WCREC register increments when a calling party completes a name recording through the SN and the SN send a Recording Done tone.
- The WCSCRN register increments when the WC subscriber presses a valid key to screen a call.

Who's Calling (continued)

- The WCPRST register increments when the WC subscriber answers the SN call that contains the call party's recorded name.
- The WCT1 register determines the maximum delay for the SN to accept a call from the switch.
- The WCT2 register determines the maximum delay of recording the calling party's name at the SN.
- The WCT3 register determines the maximum delay for the WC subscriber to answer a WC call.
- The WCT4 register determines the maximum delay for the SN to wait for a WC subscriber acknowledgment.
- The WCT5 register determines the maximum delay for the SN to wait for a WC subscriber to make a valid screening choice.

Logs

The Who's Calling feature adds the WHC600 and WHC601 log reports.

The WHC600 log report generates when one of the following occurs:

- A call fails to route to the SN.
- A call to the SN encounters an unsupported feature or agent.

The WHC601 log report generates when one of the following occurs:

- The Who's Calling (WC) timer T1 expires.
- The WC timer T2 expires.

Feature operation diagram

The paragraphs that follow describe two feature flow diagrams that show the WC feature operation. In the diagrams, "B" represents the calling party and "user A" represents the WC subscriber.

The Who's Calling feature call termination logic flow diagram

Caller B places a call to user A and starts the process. The DMS-100 switch software checks to determine if the WC software optionality control (SOC) is on. The WC feature screens the call to look for a DN received as either blocked or unavailable for delivery. The next decision determines if user A subscribes to the WC option. Subscriber lines have the WC option either through a direct line option assignment, or as a service of the alternate service provider (ASP) line option. The next check determines the WC office parameter status. An enabled status allows the office access to the WC feature. The final check, before call termination, determines the service provider status defined in table

Who's Calling (continued)

SPINFO. An enabled WC service allows office access to the WC feature. A provider name of "primary" defines the office as the service provider.

The Who's Calling feature must have the requirements that follow before call termination to the SN can occur:

- The WC SOC is ON.
- The WC office parameter in table OFCVAR is ENABLED.
- The ENABLED field in table SPINFO is Y.

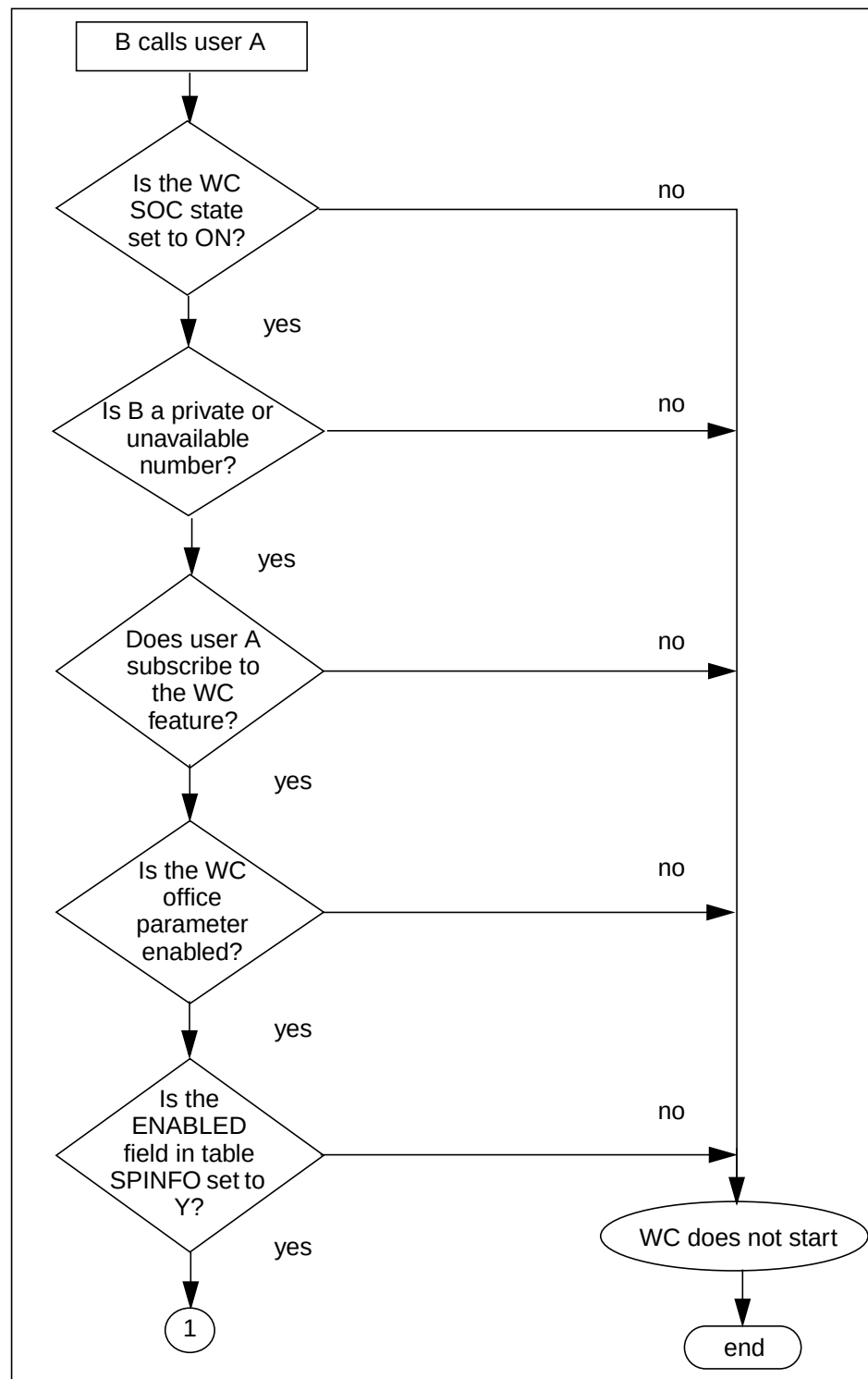
The Who's Calling feature activation logic flow diagram

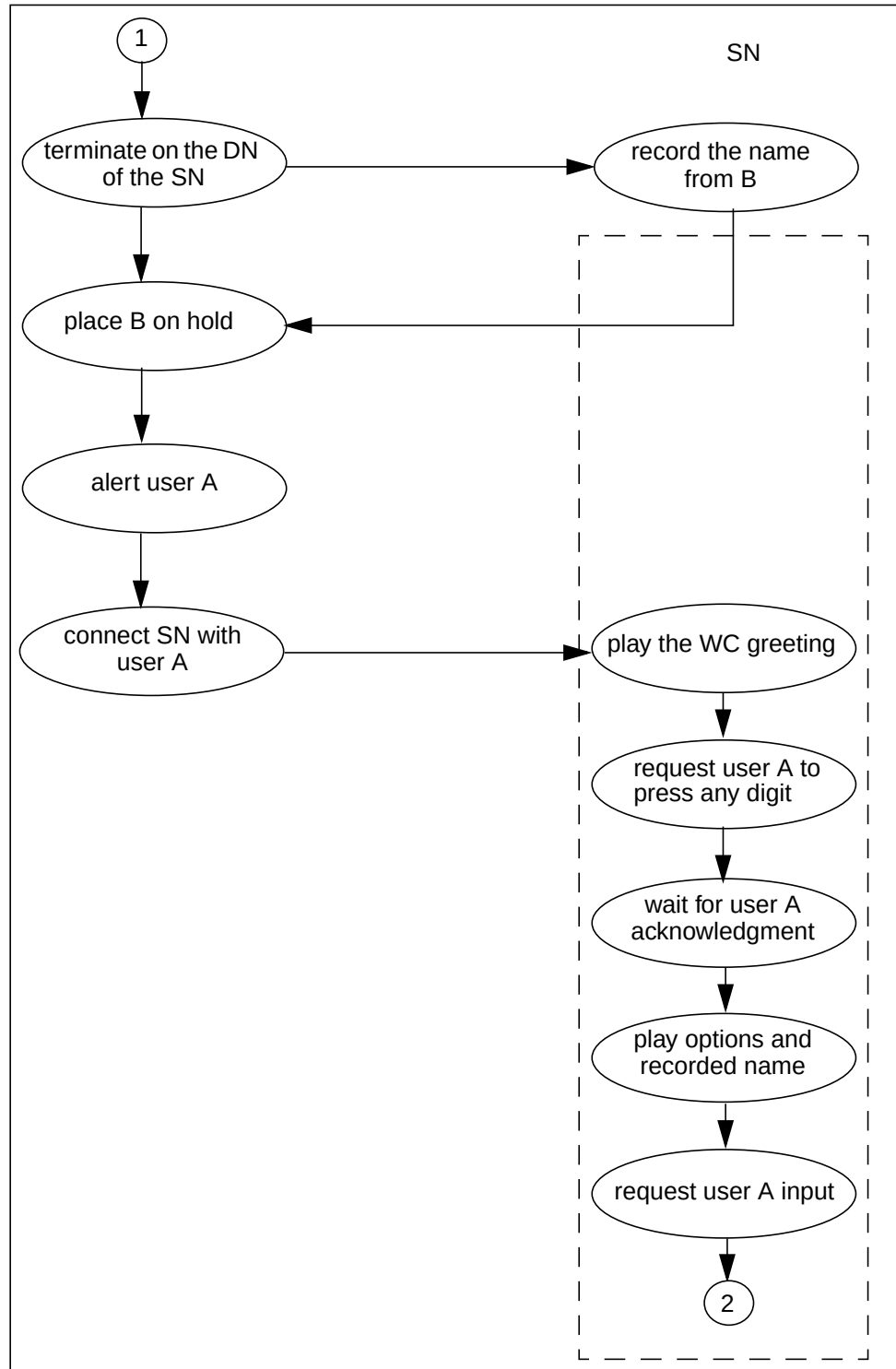
The Who's Calling feature activation begins when the call attempts to terminate to caller A. The SN requests caller B to record an identification and notifies the DMS-100 switch to place caller B on hold. The WC feature notifies user A of an incoming call and connects user A to the SN. The SN plays caller B's recording and waits for an acknowledgment from user A. The SN plays the options that follow and requests user A's input:

- Press the 1 key to accept the call.
- Press the 2 key to send a sales call back to the SN for refusal treatment.
- Press the 3 key to send the call back to the SN for rejection treatment.
- Press the 4 key to send the call to a personal voice mail account, if available.

Who's Calling (continued)

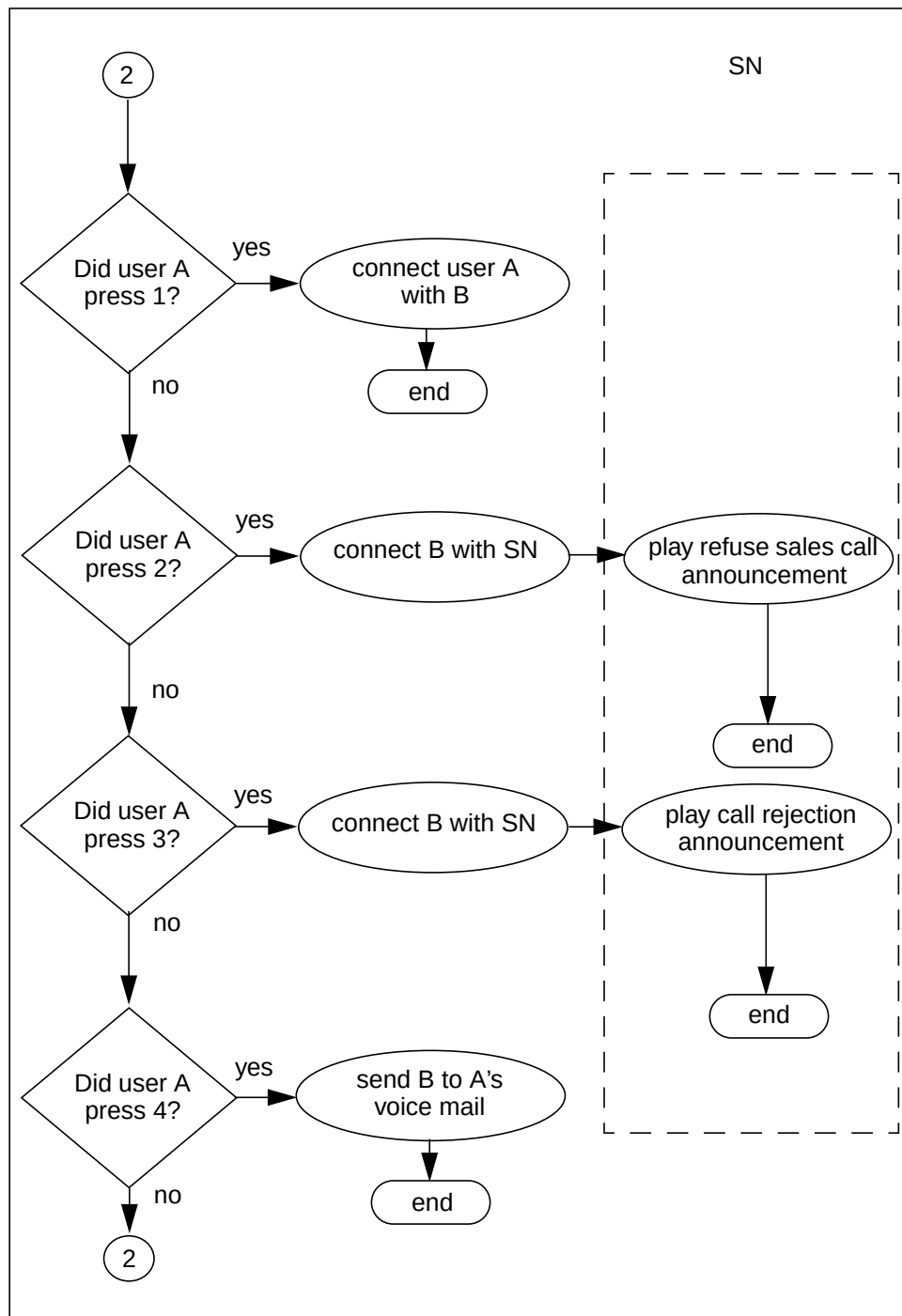
The Who's Calling feature call termination logic flow



Who's Calling (continued)**The Who's Calling feature activation logic flow**

Who's Calling (continued)

The Who's Calling feature activation logic flow



Who's Calling (continued)

Translations table flow

The Who's Calling feature does not affect the translations table flow.

Limitations and restrictions

The limitations and restrictions that follow apply to the Who's Calling feature.

- Only RES line class codes of one party flat rate (1FR) or one party message rate (1MR) support the feature.
- Do not add the WC line option and WC service assigned through the ASP option to the same line. An attempt to add both options to the same line results in an error message.

Interactions

The paragraphs that follow describe how the Who's Calling feature interacts with other functionalities.

automatic recall

Automatic recall (AR) allows a subscriber to recall the last station that called and to queue against a busy station. A WC subscriber cannot recall a private or unavailable station through the AR feature. The DMS-100 switch identifies the last accepted call screened through the WC feature as the SN.

call forward busy / call forward don't answer

The WC feature intercepts an unidentified incoming call before call forward busy (CFB) activation. The CFB feature can activate during the call from the SN to the WC subscriber.

For the call forward don't answer (CFDA) feature, the WC feature must ensure that the CFDA timer expires before the WC timer T3 expires. The CFDA timer must expire first to allow the voice mail system, or the forwarded DN, to pick up the call.

call waiting

Call waiting (CWT) allows a subscriber connected on an existing call to receive another incoming call. The WC feature intercepts a private or unavailable incoming call and sends it to the SN before CWT feature activation. The WC subscriber with CWT receives normal call waiting notification from the SN. The subscriber flashes to accept the call, and the SN plays the recorded message.

call waiting conference

The WC subscriber can activate the call waiting conference (CWTC) feature while listening to the SN message, after selecting the first option.

Who's Calling (continued)

caller ID / calling name delivery

The WC subscriber receives a "PRIVACY MANAGER" visual display when receiving a call from the SN.

spontaneous call waiting identification / deluxe spontaneous call waiting identification

The spontaneous call waiting identification (SCWID) feature allows subscribers to receive calling party information on a telephone display during call waiting. The SCWID feature uses its own protocol to send tone and calling party information to the subscriber. The Deluxe spontaneous call waiting identification (DSCWID) feature also provides subscribers with a set of options to handle incoming calls.

All references to the SCWID feature in this section also include the DSCWID feature. Non-analog display services interface (ADSI) compliant customer premise equipment (CPE) and telephone sets that cannot support caller identification data (CID) off-hook delivery are not SCWID capable.

A normal call waiting tone, referred to as the subscriber alerting signal (SAS), alerts a subscriber of SCWID activation. An ADSI tone, referred to as the CPE alerting signal (CAS), follows to notify the CPE of waiting caller information. The switch waits for an acknowledge tone from the CPE, indicating a SCWID capable set. After receiving an acknowledgment, the switch sends the caller's information to the CPE. The tones used by the DSCWID feature do not interact with the tones used by the WC feature.

talking call waiting

The TCW (TCW) feature provides a subscriber with audible caller identity notification and an alerting tone on the first call waiting alerting cycle.

A WC subscriber with the TCW feature, and in a stable two-party call, receives CWT functionality instead of TCW feature operation.

Activation and deactivation by the user

The Who's Calling feature does not require activation or deactivation by the user.

Billing

The Who's Calling feature does not generate billing records or changes. An operating company can control the billing records for calls made to the SN through table SPINFO.

Who's Calling (continued)

The table SPINFO fields that follow control the billing to an SN:

- The BILLING field determines if a call to an SN generates (Y) or does not generate (N) a billing record.
- The BILLINGDN field indicates the DN to bill toll charges for a call to the SN.
- The CARRIER field indicates a carrier to route the call to the SN. This is the carrier that appears on the billing report for the outgoing call to the SN.

Station Message Detail Recording

The Who's Calling feature does not require Station Message Detail Recording.

Office parameters used by Who's Calling

The table that follows lists the office parameters used by the Who's Calling feature. For additional information about office parameters, refer to the *Office Parameters Reference Manual*.

Office parameters used by Who's Calling

Table name	Parameter name	Explanation and action
OFCVAR	WHOS_CALLING_ENABLED	This parameter controls the availability of WC office wide. The default value is N.
OFCENG	NUM_RC_EXT_BLKs	If datafilled, the end office must allow enough routing characteristic (RC) extension blocks to translate and route calls to the SN. Determine the RC through the following methods: • use the manual calculation used to determine the WC NUM_RC_EXT_BLKs • use automatic provisioning

Who's Calling (continued)

Datafill sequence

The table that follows lists the tables that require datafill to put the Who's Calling feature into operation. You must enter data into the table in this order.

Datafill requirements for Who's Calling

Table	Purpose of table
OPTOPT	Incompatible options contains information about line options that are incompatible with other line options. The WC feature adds WC option incompatibility information to this table. (see Note 1)
LCCOPT	Line class code (LCC) compatible options contains information about line options that are compatible with other line options. The WC feature adds WC option compatibility information to this table. (see Note 1)
SPINFO	Service provider information stores WC service data on a provider basis. The provider can be the operating company or an alternate service provider (ASP).
IBNLINES	IBN line assignment. This table contains line assignments for each 500/2500 set assigned to an IBN, RES, or multiple appearance directory number (MADN) station number. This table also contains line assignments for IBN attendant consoles (AC). The WC feature modifies this table to support the WC option. (see Note 2).
IBNFEAT	IBN line feature lists line features that are assigned to the IBN lines listed in table IBNLINES. (see Note 2)
Note 1: Tables OPTOPT and LCCOPT are read-only tables. The operating company cannot modify these tables. This document does not provide datafill examples for table OPTOPT and LCCOPT. Note 2: Tables IBNLINES and IBNFEAT require datafill through SERVORD. This section does not provide a datafill example for either table. Refer to the SERVORD section for more information.	

Datafill related to the Who's Calling feature for table SPINFO

The table that follows provides the datafill related to the Who's Calling feature for table SPINFO. This table includes only those fields that apply directly to the Who's Calling feature.

Datafill related to table SPINFO (Sheet 1 of 2)

Field	Subfield	Entry	Explanation and action
SPINFKEY	SERVNAME	WC	Service provider information key. This field specifies the name of the service offered by the service provider.
DATA		see subfields	Data. This field consists of subfields SERVSEL, BILLING, SNDN, T1, and T2.

Who's Calling (continued)**Datafill related to table SPINFO (Sheet 2 of 2)**

Field	Subfield	Entry	Explanation and action
	SERVSEL	WC	Service selector. This field specifies the name of the service.
	CARRIER	1–16 alphanumeric characters, or NILC	This field identifies the service provider's preferred carrier for the calls placed to the SN. Valid entries appear in table OCCNAME, or enter NILC for no carrier.
	BILLINGDN	10-digit DN, or NILDN	This field identifies the DN to bill charges for calls placed to the SN. Enter NILDN to bill charges to the WC subscriber.
	BILLING	boolean	Billing. This field controls the billing on the calls placed to the SN.
	SNDN1	4 to 30 digits DN	This field contains the DN to route to the SN when the WC subscriber does not have voice mail on the line.
	SNDN2	4 to 30 digits DN	This field contains the DN to route to the SN when the WC subscriber has voice mail on the line.
	T1	integer from 1 to 10	T1 timer. This field contains the time-out value for the T1 timer in seconds.
	T2	integer from 10 to 50	T2 timer. This field contains the time-out value for the T2 timer in seconds.
	T4	integer from 10 to 50	T4 timer. This field contains the time-out value for the T4 timer in seconds.

Datafill example for table SPINFO

The figure that follows shows sample datafill for table SPINFO.

MAP example for table SPINFO with WC service

SPINFKEY	DATA
PRIMARY WC WC Y NILC NILDN N 91234567 91234568 5 40 40	
SP00001 WC WC Y NILC NILDN N 91236321 91238321 5 40 40	

Who's Calling (continued)

Translation verification tools

The Who's Calling feature does not use the translation verification tools.

SERVORD

The Who's Calling feature introduces the WC line option and modifies the alternate service provider (ASP) line option. Add or remove the WC line option or service through the service order system (SERVORD).

SERVORD limitations and restrictions

The WC line option is not compatible with the WC service assigned through the ASP line option. Do not assign both options to the same line.

SERVORD for the WC line option

The SERVORD prompts and examples that follow describe the WC line option.

SERVORD prompts

The table that follows provides the SERVORD prompts used to add the Who's Calling feature directly to a residential line.

SERVORD prompts for the Who's Calling feature

Prompt	Correct input	Explanation
SONUMBER	Refer to SONUMBER in the "Prompts" table in Chapter 2 for information on valid inputs.	The number of the service order to enter.
DN_OR_LEN	Refer to DN and LEN_OR_LTID in the "Prompts" table in Chapter 2 for information on valid inputs.	Enter the line DN or line equipment number (LEN). For MDN lines or MLH/DLH hunt members, if the user specifies a DN, the system prompts the user for LEN. If the user enters the LEN, the system does not prompt the user for the DN.
OPTION	Refer to the "Line service options" table in Chapter 2 for a list of valid inputs.	Option(s) for a service to establish, modify, or delete. The user can specify a maximum of 20 options in one ADD, ADO, or NEW command.

SERVORD example to add the Who's Calling feature

The SERVORD example that follows shows how to add the Who's Calling feature directly to a line with the ADO command in prompt mode.

Who's Calling (continued)

SERVORD example for the Who's Calling feature in prompt mode

```
> ADO
SONUMBER:                NOW 92 4 7 AM
>
DN_OR_LEN:
> 6211521
OPTION:
> WC
OPTION:
> $
```

The SERVORD example that follows shows how to add the Who's Calling feature directly to a line with the ADO command in no-prompt mode.

SERVORD example for the Who's Calling feature in no-prompt mode

```
>ADO $ 6211521 WC $
```

SERVORD for the ASP line option with WC service

The SERVORD prompts and examples that follow describe how to add the WC service to the ASP line option.

SERVORD prompts

The table that follows provides the SERVORD prompts used to add the ASP feature with Who's Calling service to a residential line.

SERVORD prompts for the ASP feature with Who's Calling service

Prompt	Correct input	Explanation
PROV_SERV_ NAMES	Provider name and service name in field SPINFKEY in table SPINFO	Specifies a service provider name and a service name. A blank space separates the fields.
Note: This prompt appears a maximum of four times for a DN or LEN. A maximum of four provider/service pairs can be assigned to a specified line.		

SERVORD example to add the ASP feature with WC service

The SERVORD example that follows shows how to add the ASP feature with Who's Calling service to a residential line in prompt mode.

Who's Calling (end)

Example of adding ASP with WC service to a RES line in prompt mode

```
> ADO
SONUMBER:      NOW  99  9  15 AM
> $
DN_OR_LEN:
> 6211521
OPTION:
> ASP
PROVNAME:
>ALTPROV1
SERVICE:
>WC
PROVNAME:
> $
OPTION:
> $
```

The SERVORD example that follows shows how to add the ASP feature with Who's Calling service to a residential line in no-prompt mode.

Example of the ASP with WC service to a RES line in no-prompt mode

```
>ADO $ 6211521 ASP  ALTPROV1 WC  $ $
```

2 Datafilling RES Interface Functionality

The following chapter describes the RES Interface Functionality, RES00004, functionality.

BCLID USP Billing & DN Changes in Message Format

Ordering codes

Functional group ordering code: RES00004

Functionality ordering code: RES00028

Release applicability

BCS32 and up

Prerequisites

To operate, BCLID: USP Billing & DN Changes in Message Format has the following prerequisites:

- BAS Generic, BAS00003
- MDC Minimum, MDC00001
- MDC Standard, MDC00003
- RES Service Enablers, RES00006

Description

BCLID: USP Billing & DN Changes in Message Format provides the following enhancements to feature AG1839, Bulk Calling Line Identification:

- provides a usage-sensitive pricing (USP) Automatic Message Accounting (AMA) record of the bulk calling line identification (BCLID) usage of a BCLID group
- adds the CI (command interpreter) command QBCLID (query bulk calling line identification)
- adds the ability to choose whether a BCLID message is sent when a call terminates to a busy line
- adds the ability to send three directory numbers (DN) in the BCLID message
- removes the hunt group limitation of sending a BCLID message regardless of the value of field DNDISP in table BCLIDGRP (Bulk Calling Line Identification Group) when calling in an interhunt group
- adds option BCLID to the following trunk group types:
 - PX two-way digital private branch exchange (PBX)
 - P2 two-way PBX direct inward dialing (DID) or direct outward dialing (DOD)

BCLID USP Billing & DN Changes in Message Format (continued)

- IBNTO outgoing IBN
- IBNT2 two-way IBN
- adds the ability to eliminate information about calls to busy lines and record call forwarding activity for the BCLID group

Operation**USP billing**

With BCLID: USP Billing & DN Changes in Message Format, individual AMA records are generated for each BCLID group for which field USP is set to Y in table BCLIDGRP. AMA provides a record of BCLID usage for billing the end user. Field USP controls the collection of AMA information for each BCLID group. If field USP is set to Y for a BCLID group, AMA peg counts are recorded for the group. This periodic record includes peg counts of DNs delivered and the combined number of private and out-of-area call indications delivered.

Option BCLID_USPAUD controls the generation of AMA records and is datafilled in table AMAOPTS (AMA Options). The time interval between AMA peg dumps (from 1 h to 24 h, in 1-h increments) is also datafilled in table AMAOPTS. Option SUSP in table AMAOPTS must be set to ON to obtain BCLID USP records.

When field USP in table BCLIDGRP is set to Y, a DN must be datafilled against the BCLID group for usage-sensitive BCLID AMA records. The DN is datafilled in table BCLIDGRP and is not required to be associated with an actual line.

If the end user decides to change the billing method from usage sensitive to flat rate, the current billing counts are dumped immediately. If the end user decides to change from a flat rate to usage-sensitive billing, usage counts are recorded at the time of the change. A billing record is generated during the next usage-sensitive audit run or when billing is changed back to a flat rate.

The end user with field USP set to N in table BCLIDGRP is not billed on a usage-sensitive basis; thus, no AMA peg counts are generated.

Dump and restore

During the dump and restore processes, the USP counts are saved and restored. Any additional pegging that occurs after the dump and before the restore is lost. The lost information can only be manually retrieved by changing field USP from Y to N. If field USP is changed, the USP count is inaccurate at the time of the restore. It is recommended that the USP counts that occur between the dump and restore processes not be retrieved. If several days pass between

BCLID USP Billing & DN Changes in Message Format (continued)

the dump and restore processes, the end user starts with a clean count and dumps all data right before switch activation to the new side.

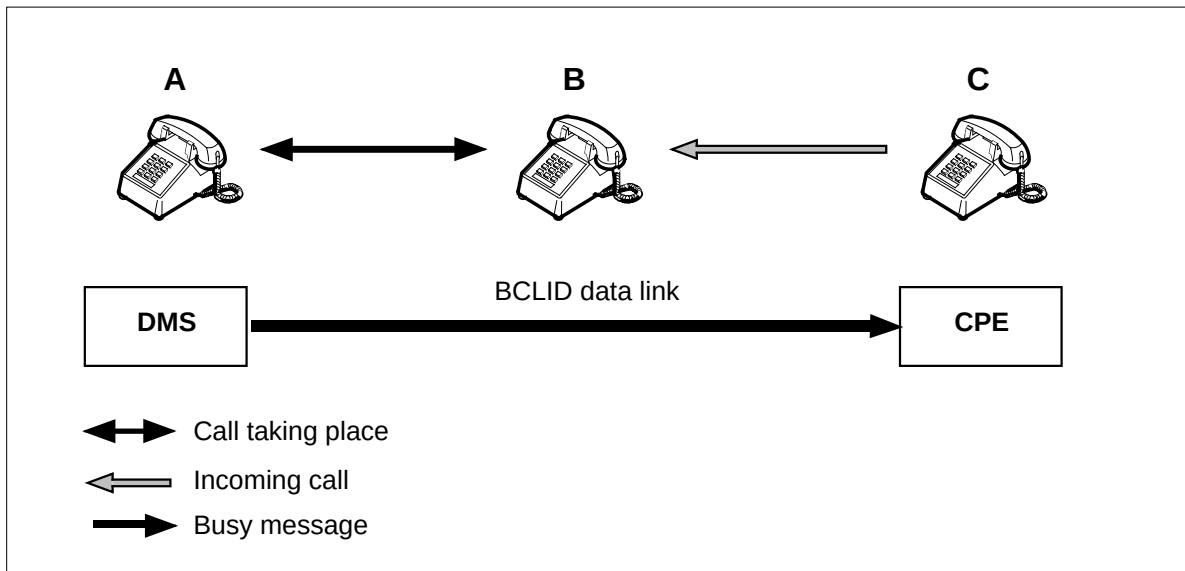
Journal file updates

Journal file updates are provided for changes that affect the status of BCLID data links. When kept after the dump process and then applied after the restore process, these records ensure that the BCLID data links reflect any changes that may have occurred between the two processes.

Busy message sending

BCLID: USP Billing & DN Changes in Message Format adds the capability to choose whether a BCLID message is sent when a call terminates to a busy line. Field BSYSEND in table BCLIDGRP controls this capability. If field BSYSEND is set to Y, a BCLID message is sent when a caller reaches a busy line. The following figure illustrates a BCLID message being sent.

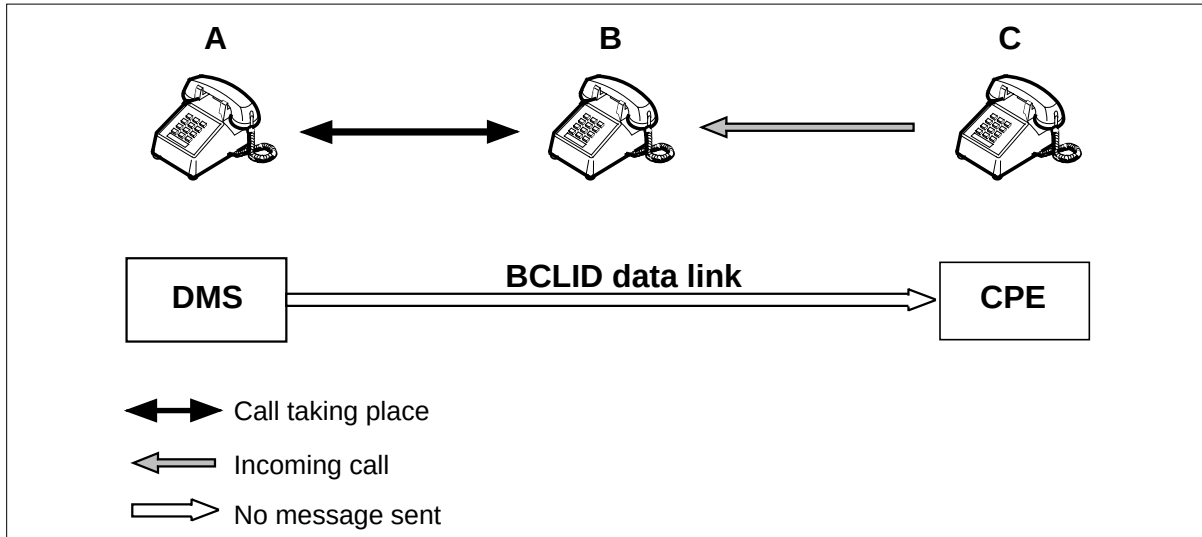
BCLID message sent



If field BSYSEND is set to N, no BCLID message is sent when a caller reaches a busy line. The following figure illustrates no BCLID message being sent.

BCLID USP Billing & DN Changes in Message Format (continued)

No BCLID message sent



Third DN

BCLID: USP Billing & DN Changes in Message Format adds the capability to send three DNs in the BCLID message. Field DNDISP of table BCLIDGRP can be set to FIRST, LAST, or BOTH. If field DNDISP is set to FIRST, the first DN associated with a call forward is sent in the message. If field DNDISP is set to LAST, the last DN associated with a call forward is sent in the message. If field DNDISP is set to BOTH, the first and last DNs associated with a call forward are sent in the message.

Note: If field DNDISP is set to BOTH, the date and time cannot be included in the message due to BCLID message size restrictions. Therefore, fields DATE and TIME must be set to N. If field DNDISP is set to BOTH and fields DATE and TIME are set to Y, the following error message is displayed:

MESSAGE SIZE TOO LARGE.
WITH DNDISP=BOTH, DATE and TIME must be N.

BCLID trunk option

BCLID: USP Billing & DN Changes in Message Format can be added to trunk group types PX, P2, IBNTO, and IBNT2.

When a call terminates on a trunk group assigned option BCLID, a BCLID message is sent along a BCLID data link. The called DN listed in the message contains the digits outpulsed over the trunk. If the number has more than seven digits, only the last seven digits appear. If the number has fewer than seven digits, the called DN field is padded on the left with asterisks (*).

BCLID USP Billing & DN Changes in Message Format (continued)

Since the BCLID message cannot determine if the actual line on a PBX is busy or idle, a line's state is determined by the status of the trunk group. As long as one number is idle, the BCLID message indicates an idle line.

When a signaling failure occurs on a trunk, an idle message is sent. If all other trunk groups are busy when the message is sent, a new message is generated for the alternate route.

Note: For alternate routing to occur, field BSYSEND in table BCLIDGRP must be set to Y.

Table TRKGRP for PX and P2

For trunk group types PX and P2, option BCLID is added by setting subfield BCLID to Y in table TRKGRP (Trunk Group). When subfield BCLID is set to Y, a BCLID group number must be supplied. This BCLID group number is included in subfield BCGRPNUM in table TRKGRP and must correspond to field BCGRPNUM in table BCLIDGRP.

Table TRKGRP for IBNT0 and IBNT2

For trunk group types IBNT0 and IBNT2, option BCLID is added by setting subfield OPTION to BCLID in table TRKGRP. When BCLID is the selected option, a BCLID group number must be supplied. This BCLID group number is included in subfield BCGRPNUM in table TRKGRP and must correspond to field BCGRPNUM datafilled in table BCLIDGRP.

User interface

BCLID: USP Billing & DN Changes in Message Format affects the existing ALMSTAT (alarm status) command and adds the QBCLID command. These commands give the end user lists of line information.

Note: The ALMSTAT command is only valid from the LTP (line test position) level of the MAP (maintenance and administration position).

ALMSTAT command

The ALMSTAT command produces a list of office line failure totals, office line type totals, and office dial tone speed recording (DTSR) information. The ALMSTAT command is updated to account for BCLID data links. The office line totals summary displays the total number of various line types. This list is modified so it displays the total number of data links in an office. A maximum of 2048 BCLID groups, each having a maximum of 16 data links, can be defined in the switch.

ALMSTAT is a menu level command. The end user can enter either 9 or ALMSTAT.

BCLID USP Billing & DN Changes in Message Format (continued)

The following figure shows an example of the ALMSTAT command at the LTP level of the MAP.

Example of the ALMSTAT command at the LTP level of the MAP

```

      CM  MS  IOD Net PM  CCS Lns Trks      Ext
      . .  .  .  PMLOAD .  .  25 GC      1CRIT
      M    M          *C* *C*
      LTP 0    QUIT_ POST          DELQ          BUSYQ
PREFIX
2    POST_
3    LCC PTY RNG    LEN    DN  STA F S LTA TE RSL
4
5    Bsy_
6    RTS_
7    Diag_
8
9    AlmStat
10   CktLoc
11   Hold
12   Next_
13
14
15
16   Prefix_
17   LCO_
18   Level_

Time 08:15>ALMSTAT

```

Once the ALMSTAT command has been entered, a list of the office totals is displayed. (The list is the same for NT40 and DMS SuperNode.) The following figure shows an example of this list.

BCLID USP Billing & DN Changes in Message Format (continued)**Example MAP display of the ALMSTAT command**

```

ALMSTAT
OFFICE TOTALS
      OFFICE LINE FAILURE TOTALS
                                OFFICE  OFFICE  OFFICE  OFFICE
                                CURRENT  MINOR  MAJOR  CRITICAL
Ext Diag Fail   (D)  0      10     20     30
Facility Fault  (F)  0      10     20     30
Short Diag Fail (S)  0      10     20     30
Needs Ext Diag  (N)  0      10     20     30
Set Missing     (MSET) 0      10     20     30
Card Missing    (MCARD) 0     100    150    200
Shower Queue    (QUEUE) 0     100    150    200
Major ICMOLINE  (IMAJ) 0     100    150    200
Minor ICMOLINE  (IMAJ) 0     100    150    200
Loop Sig Set    (LSET) 0     100    150    200
Loop Sig Card   (LCARD) 0     100    150    200
TCM sync loss   (T)  0     100    150    200
Loop Performance (P)  0     100    150    200
Major CPERROR   (CMAJ) 0      5     10     15
Minor CPERROR   (CMIN) 0      5     10     15
Utility Card     (U)  0     100    150    200
State = PLO     (PSPD) 0      10     20     30
      OFFICE LINE TOTALS
Number of working lines (total) in this office is: 168
Number of working DTMF lines in this office is: 163
Number of working dial pulse lines in this office is: 36
Number of working IVD terminals in this office is: 0
Number of working EBSs (total) in this office is: 11
Number of working PSET terminals in this office is: 9
Number of working DISP terminals in this office is: 2
Number of working Data Units in this office is: 1
Number of working ISDN loops in this office is: 2
Number of working BCLID Data Links in this office is: 68
      OFFICE DIAL TONE DELAY (DTSR) INFORMATION
Present time:      Jan9      03:51:00
Active time:       Jan9      03:50:11
Holding time:      Jan9      03:45:39
      Dial Tone Delay Counts And Percentages
      Pulse      Signalling
      Attempted  Delayed  Percentages
Active  0        0      0.0%
Holding 0        0      0.0%
      DTMF Signalling
      Attempted Delayed Percentage

```

BCLID USP Billing & DN Changes in Message Format (continued)

QBCLID command

The QBCLID command is not a MAP menu command; it is a program directory (PROGDIR) command entered at the CI level of the MAP. The command syntax is QBCLID followed by the group number. The following examples show how the end user may enter the QBCLID command:

- QBCLID
- QBCLID group
- *where*
- group is the group number (0-2047)
- HELP QBCLID

The QBCLID command allows the end user to list all BCLID lines and trunks in an office or to list only those lines and trunks belonging to a specific BCLID group. The QBCLID command displays three different lists of line information. The first list displays all standard line types defined in tables LENFEAT (Line Feature), IBNFEAT (IBN Line Feature), and KSETFEAT (Business Set and Data Unit Feature). The second list displays all line groups defined in tables HUNTGRP (Hunt Group) and UCDGRP (Uniform Call Distribution Group) that have option BCLID. The third list displays all PX, P2, IBNTO, and IBNT2 trunk group types that have option BCLID assigned in table TRKGRP. Headers reflect the information found in each table.

Note: Because the QBCLID command scans all data in six different tables (LENFEAT, IBNFEAT, KSETFEAT, HUNTGRP, UCDGRP, and TRKGRP), it takes a very long time to run before the list is displayed.

The definitions of the various fields in the following figure as they apply to each table are as follows:

- Tables LENFEAT, IBNFEAT, and KSETFEAT

LEN

line equipment number

DN

directory number

TABLEDEF

table in which the line is defined

BCGRPNUM

BCLID group number

- Tables HUNTGRP and UCDGRP

BCLID USP Billing & DN Changes in Message Format (continued)

GRPNAME

hunt group number uniform call distribution (UCD) name

DN

directory number

TABLEDEF

table in which the group is defined

BCGRPNUM

BCLID group number

- Table TRKGRP

CLLI

trunk group common language location identifier (CLLI)

TYPE

type of trunk (IBNTO, IBNT2, PX, P2)

TABLEDEF

table in which the group is defined

BCGRPNUM

BCLID group number

If no DN is associated with certain lines, NIL is displayed in the DN field. Since there is no special ordering of the lines in the list, they are printed as they are found in the DMS tables. By default, the QBCLID command lists all lines in every BCLID group.

An optional variable, group, can be used with the QBCLID command to display a particular group of BCLID lines. When a group is specified, the corresponding BCLID group information (as found in table BCLIDGRP) is printed with the line list for the BCLID group. Error messages occur if the end user enters an invalid BCLID group number. If the entered BCLID group number is not in the valid range from 0 to 2047, the following error message is displayed:

```
EITHER incorrect optional parameter(s) OR too many
parameters. GROUP must be {0-2047}.
Type HELP QBCLID for help.
```

If the BCLID group number is in the valid range but does not exist in table BCLIDGRP, the following error message is displayed:

```
GROUP number xxxx does not exist.
Please check Table BCLIDGRP.
```

BCLID USP Billing & DN Changes in Message Format (continued)

When the QBCLID command is entered without any parameters, a list of all the lines belonging to a BCLID group is displayed. When the QBCLID command is entered with a parameter, only the lines for a specified BCLID group are displayed. For easy reference, the tuple information for table BCLIDGRP is displayed at the beginning of the output.

Note: The QBCLID command entered without any parameters may take a very long time to complete. The end user can enter HX to abort if needed.

When the HELP QBCLID command is entered, the QBCLID help screen is displayed. This screen explains the command's purpose and tells the end user how to use the optional variable, group. The following figure shows an example MAP display of the QBCLID command.

BCLID USP Billing & DN Changes in Message Format (continued)

Example MAP display of the QBCLID command

```

CI:
>QBCLID 68

NOTICE:  This command may take a very long time
         to complete.  HX to abort.

```

Table BCLIDGRP Information

```

-----
BCGRPNUM:  68
USP:  Y
BILLDN:  6136212111
DNDISP:  FIRST
DATE:  N
TIME:  N
INTRAGRP:  N
DSP800DN:  N
CFIND:  N
DSP800DN  N
BSYSEND:  Y
BCLNKLEN:  HOST 00 00 0 3
           HOST 00 10 0 2
           HOST 00 10 0 3

```

LIST OF BCLID LINES - STANDARD LINES

LEN	DN	TABLEDEF	BCGRPNUM
HOST 00 0 10 21	8196212101	LENFEAT	68
HOST 02 0 02 20	8196213201	IBNFEAT	68
HOST 01 0 00 01	8197220100	KSETFEAT	68

LIST OF BCLID LINES - GROUPS

GRPNAME	DN	TABLEDEF	BCGRPNUM
1	4166212101	HUNTGRP	68
IBNUCDGRP1	NIL	UCDGRP	68

LIST OF BCLID TRUNKS

CLLI	TYPE	TABLEDEF	BCGRPNUM
CARYPX	PX	TRKGRP	68
2WMF	IBNT2	TRKGRP	68

BCLID USP Billing & DN Changes in Message Format (continued)

Translations table flow

The BCLID: USP Billing & DN Changes in Message Format translations tables are described in the following list:

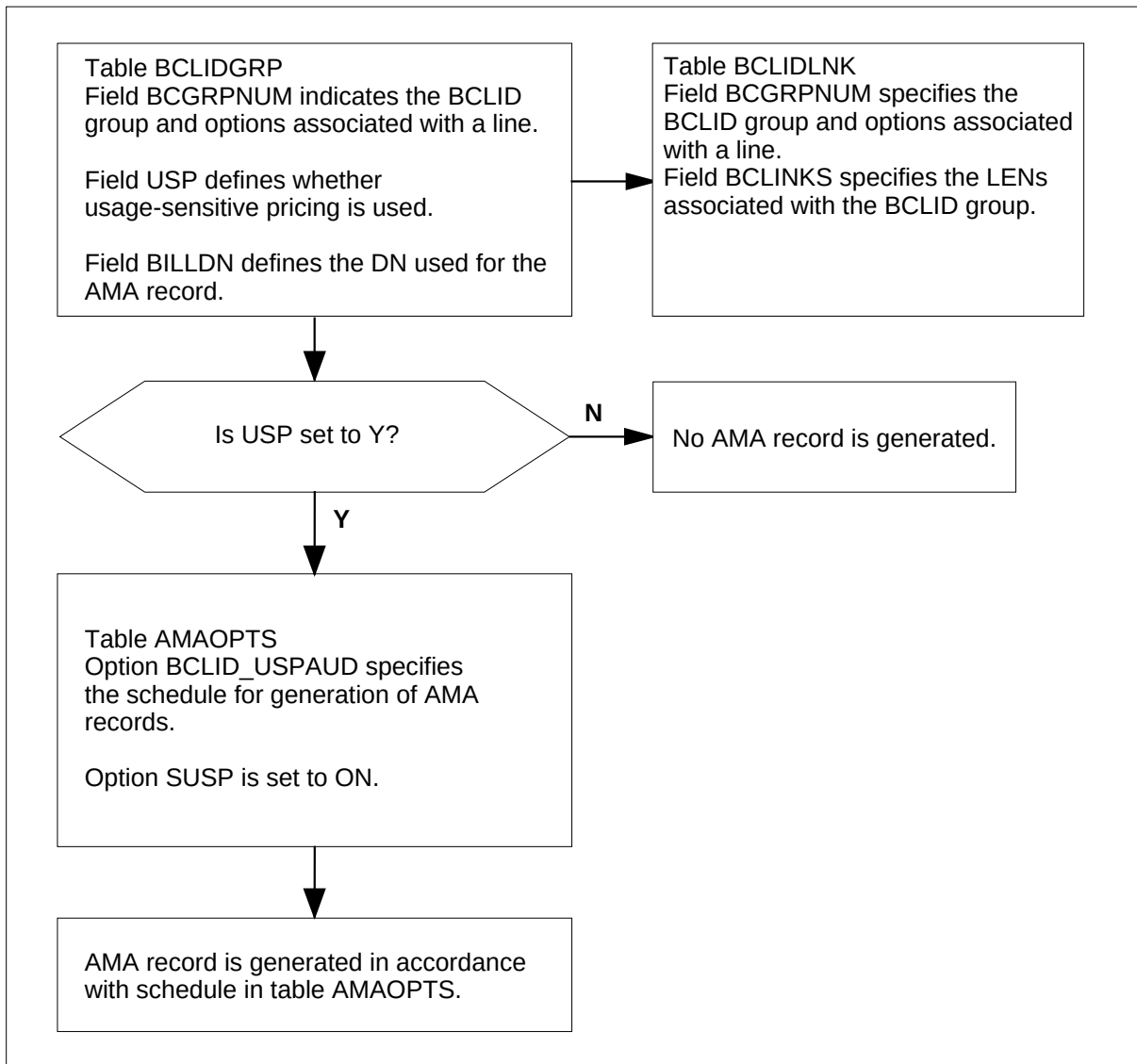
- Table BCLIDGRP associates BCLID group numbers with their respective assigned functionalities and defines the data channel links for each BCLID group number.
- Table BCLIDLNK lists BCLID group numbers with their assigned BCLID links.
- Table TRKGRP contains customer-defined data associated with each trunk group.
- Table AMAOPTS controls the activation and scheduling of various AMA processes and is used to schedule the reporting of USP data for BCLID groups.

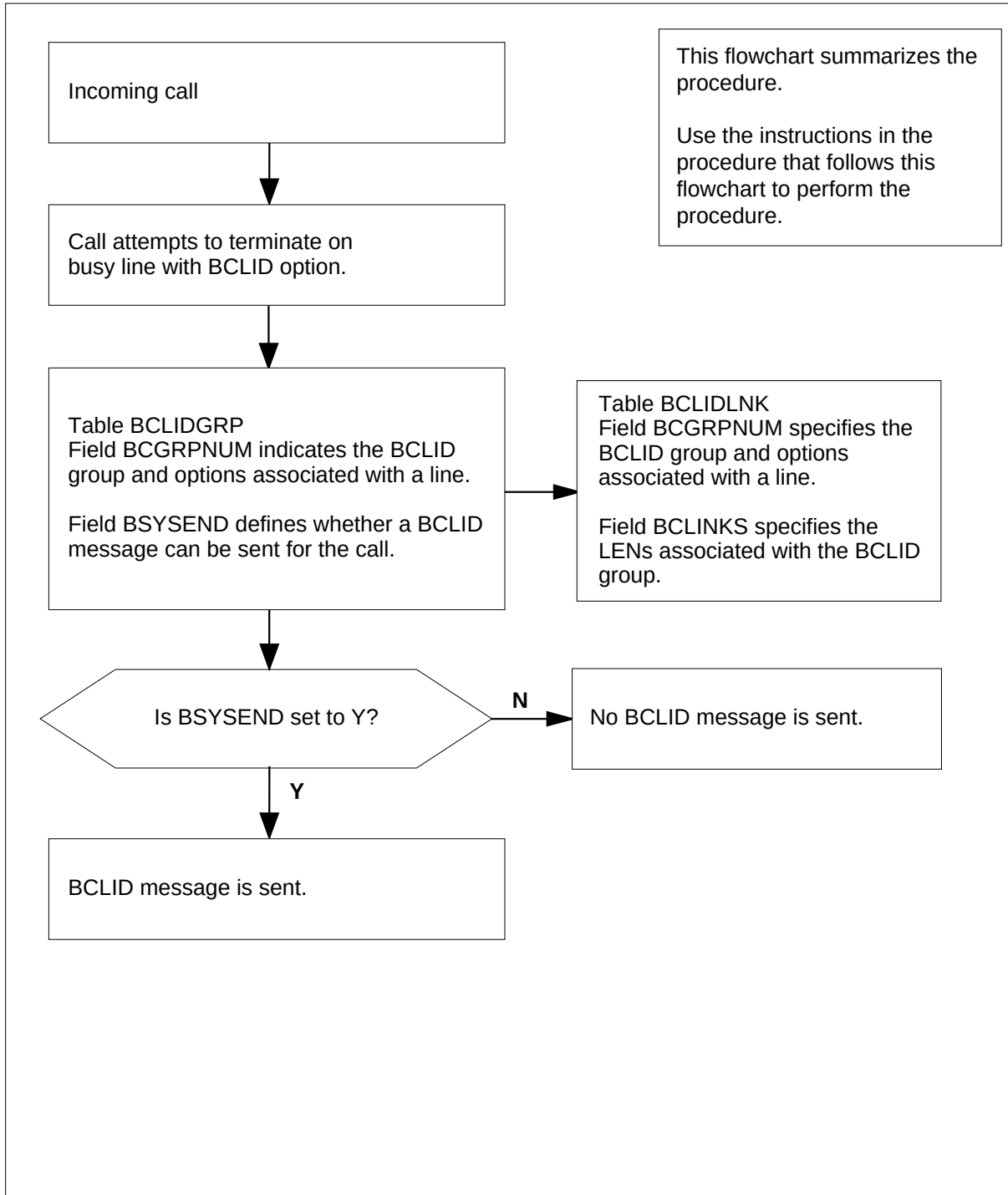
Note: Table BCLIDLNK is a read-only table that is automatically datafilled when table BCLIDGRP is datafilled.

The BCLID: USP Billing & DN Changes in Message Format translation process is shown in the flowchart that follows.

BCLID USP Billing & DN Changes in Message Format (continued)

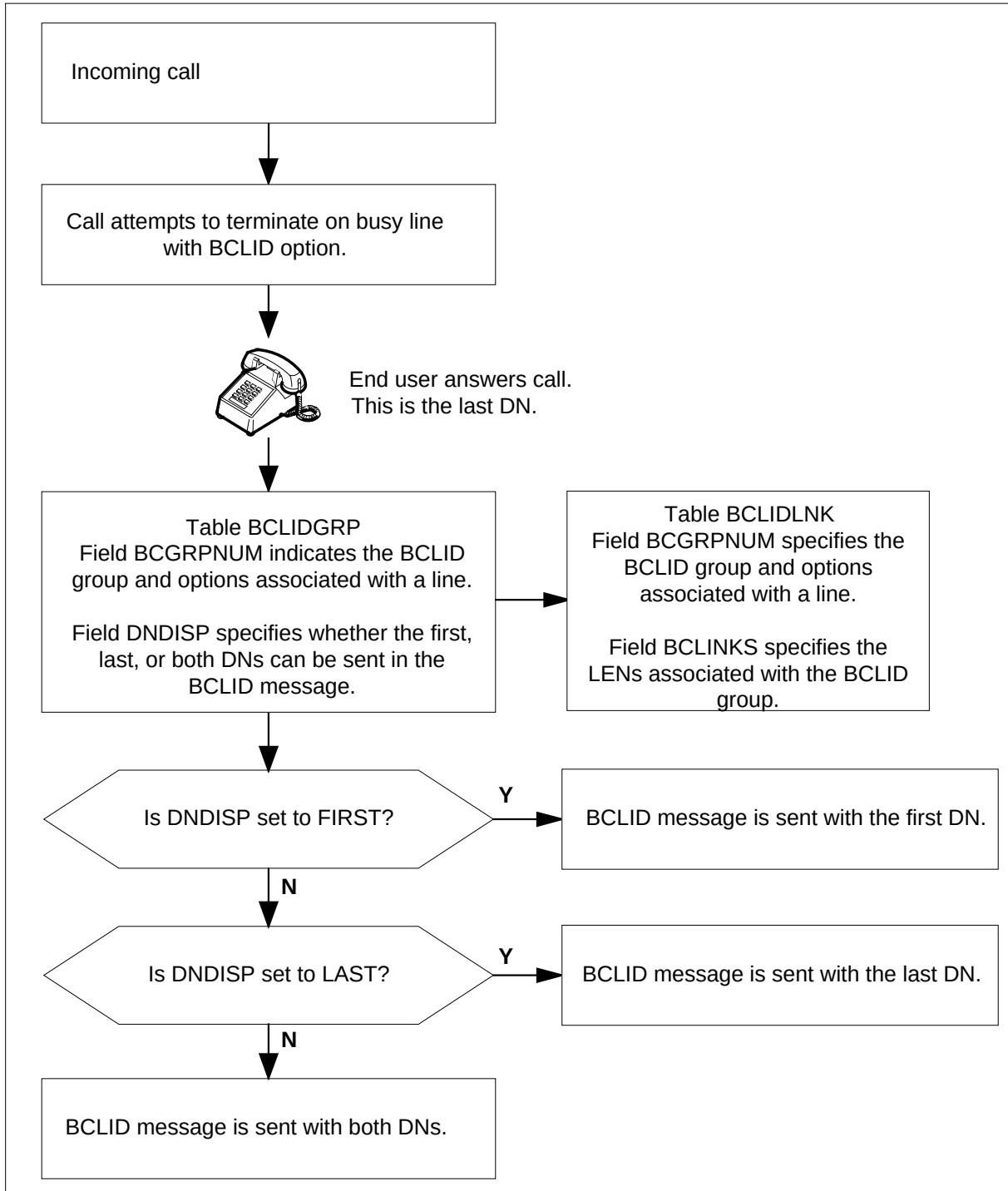
Table flow for BCLID: USP Billing & DN Changes in Message Format



BCLID USP Billing & DN Changes in Message Format (continued)**Translations data flow for activating BCLID USP busy message sending**

BCLID USP Billing & DN Changes in Message Format (continued)

Translations data flow for activating third DN



BCLID USP Billing & DN Changes in Message Format (continued)

The following table lists the datafill content used in the preceding figures.

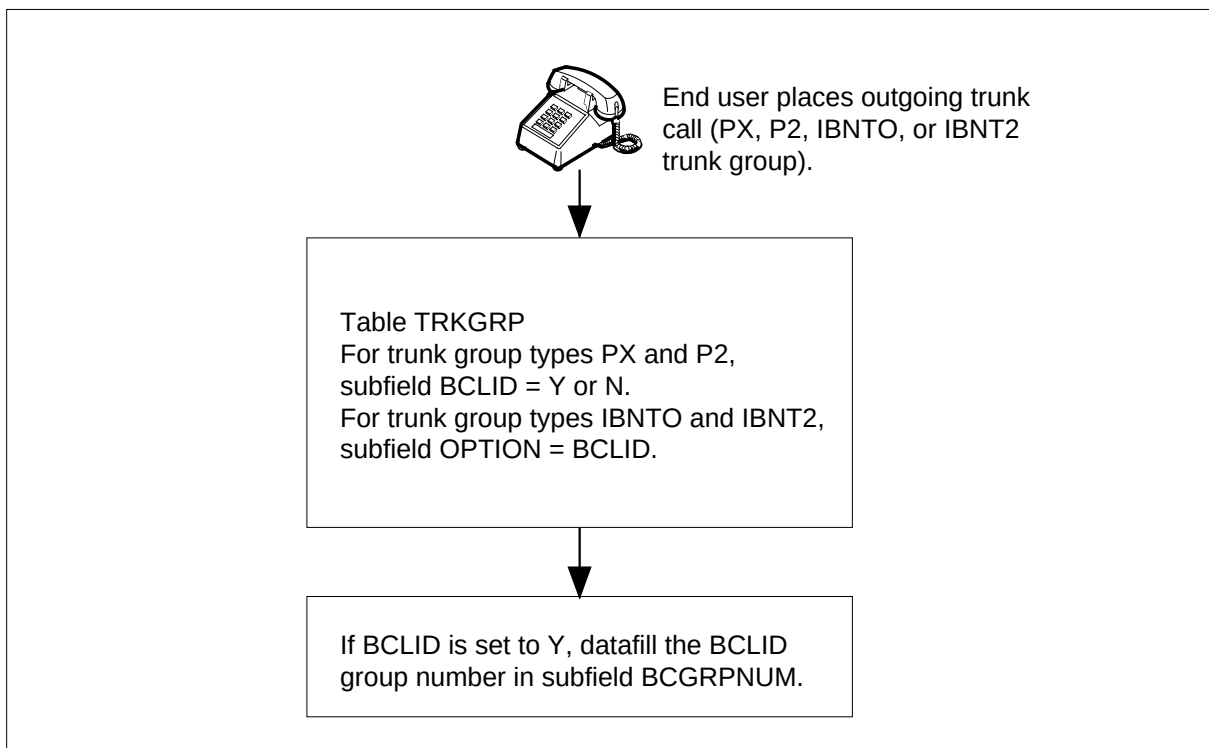
Datafill example for BCLID: USP Billing & DN Changes in Message Format

Datafill table	Example data
BCLIDGRP	2010 N 6136211234 BOTH N N Y Y Y Y (HOST 0 0 0 1) \$
BCLIDLNK	2010 (HOST 0 0 0 1 Y) \$
AMAOPTS	BCLID_USPAUD PERIODIC 920608 0000 24 HRS

Table TRKGRP

The Trunk Group table contains information pertaining to all members of a specific trunk group. For trunk group types PX and P2, option BCLID is added to table TRKGRP in subfield BCLID. For trunk group types IBNTO and IBNT2, option BCLID is added to table TRKGRP in subfield OPTION.

Translations data flow for activating USP trunk option BCLID



BCLID USP Billing & DN Changes in Message Format (continued)

The following table lists the datafill content used in preceding figure.

Datafill example for BCLID: USP Billing & DN Changes in Message Format

Datafill table	Example data
TRKGRP (PX and P2)	DIU PX 25 ELO NCID 2W MI MIDL Y P241 NSCR 613 LCL NONE TSPS NLCA N N 32 NIL 6211234 DIALTN Y Y REG232 Y NILLATA Y 10 \$
TRKGRP (IBNT0 and IBNT2)	NTLAUR IBNT2 0 ACO NCBN BNRMC 0 MIDL 4 6136211234 ANSDISC 1 Y 7 8 Y N N N 0 5 Y 5 5 4 5 N Y N N N N Y Y IBN Y Y NATL BCLID 10 \$

Limitations and restrictions

The following limitations and restrictions apply to BCLID: USP Billing & DN Changes in Message Format:

- Two AMA records are generated for a DN if the DN is used for a BCLID group billing DN and a custom local area signaling services (CLASS) line with at least one CLASS display feature.
- Option SUSP in table AMAOPTS must be set to ON to obtain BCLID USP records.
- The BCLID message cannot exceed 48 bytes. This limitation must be taken into consideration when datafilling fields DATE, TIME, and DNDISP in table BCLIDGRP. If DATE and TIME are set to Y, DNDISP cannot be set to BOTH.
- The central office cannot determine the status of lines served by a PBX. The line status field in the BCLID message generated for calls on PBX trunks is I, indicating idle. However, if all circuits in the terminating trunk group are busy, the called line status in the BCLID message is B.
- PBX trunk customers without DID do not receive the PBX extension number in the BCLID message. The PBX main DN (for example, the DN dialed) is transmitted in the called DN field.
- A BCLID message is sent for a call when the call is offered to a PBX trunk. If the call is unable to complete due to trunk signaling failure, a second attempt is made to terminate. This second attempt is accompanied by a second BCLID message. If the second attempt fails, no more attempts are made, and the call does not complete. If the second attempt succeeds, the call continues as normal.
- USP peg counts are lost between the dump and restore processes. (That is, the USP counts are restored to the known value at the time of dumping.)
- If the journal file capability is turned off, no record is made of BCLID data link state changes.

BCLID USP Billing & DN Changes in Message Format (continued)

- If a line has the Group Intercom All Call (GIAC) feature, a BCLID message is generated for each terminating GIAC call. The called DN for these calls is O (out of area).
- If a dialed DN is in a hunt group and is forwarded, only the originating and terminating numbers are included in the message.

Note: Field CFIND must be set to Y in table BCLIDGRP. This limitation affects only BCLID messages with field DNDISP datafilled with BOTH in table BCLIDGRP.

- With a hunt group using Call Forwarding Group Don't Answer (CFGD), the Call forwarding (CF) bit is set depending on the number of members hunted and the number of line options. Once the CF bit is set, all BCLID records for that call show a line status of forward (F).
- If no idle UCD agents can take an incoming call, the call is put in a queue. If the call is disconnected before an agent becomes available, the digits dialed to reach the UCD group are placed in the called DN field.
- In hunt groups with the CFGDA feature that have internal hunting set to ON and Line Overflow to a Route (LOR) directed to a trunk, BCLID messages after LOR have a line status of F (forward).
- Calls originating from directory number hunt (DNH) groups have a line status of T. All other hunt groups have a line status of M.
- Calls originating from a UCD line have a line status of M.
- Calls forwarded by the Call Forward Don't Answer (CFD) feature to UCD agents display the terminating DN regardless of the value of field DNDISP in table BCLIDGRP.

Note: This limitation applies to lines with Call Waiting (CWT) and CFD that are forwarded.

- One additional BCLID message is generated for hunt groups with the circular option and CFGDA. This message is produced when the last possible forward to a DN times out. If this happens, the last forward to a DN continues ringing.

Interactions

BCLID: USP Billing & DN Changes in Message Format does not interact with any other features.

Activation/deactivation by the end user

BCLID: USP Billing & DN Changes in Message Format requires no activation or deactivation by the end user.

BCLID USP Billing & DN Changes in Message Format (continued)

Billing

BCLID: USP Billing & DN Changes in Message Format generates AMA records for BCLID. It uses structure code 110 (same structure code as Calling Name Delivery [CNAMD]) and call code 264 for usage-sensitive pricing to provide usage-sensitive pricing for BCLID records. For each BCLID group for which field USP is set to Y in table BCLIDGRP, an AMA record is generated when the BCLID USP audit is run and option SUSP in table AMAOPTS is set to ON.

The AMA record generated contains the number of calling numbers delivered and the combined number of out-of-area and private indications delivered. The format of the record is the same as that for CNAMD with a CLASS feature code of 084. Feature code 084 is for BCLID.

The fields of the billing record are as follows:

- hexadecimal identifier
- structure code
- call code
- sensor type
- sensor identifier
- recording office type
- recording office identifier
- CLASS feature code
- date
- time
- numbering plan area (NPA)
- directory number
- count of available calling information
- count of unavailable calling information

An example of the AMA record produced for BCLID: USP Billing & DN Changes in Message Format is shown in the following figure.

The following figure is an example of an AMA record generated for call code 264c.

BCLID USP Billing & DN Changes in Message Format (continued)

Example AMA record for BCLID: USP Billing & DN Changes in Message Format

```
HEX ID:AA STRUCTURE CODE:00110C CALL CODE:264C SENSOR TYPE:036C
SENSOR ID:0000000C REC OFFICE TYPE:036C REC OFFICE ID:0000000C
CLASS FEATURE:084C DATE:90712C CONNECT TIME:1049386C
NPA:613C DIR NUMBER:6212111C AVAIL COUNT:000026C
UNAVAIL COUNT:000005C
```

Option BCLID_USPAUD in table AMAOPTS controls the scheduling of the report on USP data for BCLID groups. This option can be set to DEFAULT or PERIODIC.

Station Message Detail Recording

BCLID: USP Billing & DN Changes in Message Format does not affect Station Message Detail Recording.

Datafilling office parameters

BCLID: USP Billing & DN Changes in Message Format does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement BCLID: USP Billing & DN Changes in Message Format. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for BCLID: USP Billing & DN Changes in Message Format (Sheet 1 of 2)

Table	Purpose of table
BCLIDGRP	Bulk Calling Line Identification Group Table. This table lists BCLID group numbers with their respective assigned features. The BCLID data channel links are also defined for each BCLID group number.
BCLIDLNK	Bulk Calling Line Identification Link Table. This table lists BCLID group numbers with their respective assigned BCLID links. It is one of the tables involved in implementing the custom local area signaling services bulk calling line identification (CLASS:BCLID) feature. Note: Table BCLIDLNK is a read-only table that is automatically datafilled when table BCLIDGRP is datafilled. Therefore, no datafill procedure for table BCLIDLNK is provided.

BCLID USP Billing & DN Changes in Message Format (continued)

Datafill tables required for BCLID: USP Billing & DN Changes in Message Format (Sheet 2 of 2)

Table	Purpose of table
TRKGRP	Trunk Group Table. Table TRKGRP contains customer-defined data associated with each trunk group that exists in the switching unit.
AMAOPTS	AMA Options Table. Table AMAOPTS lists the Automatic Message Accounting options.

Datafilling table BCLIDGRP

The following table shows the datafill specific to BCLID: USP Billing & DN Changes in Message Format for table BCLIDGRP. Only those fields that apply directly to BCLID: USP Billing & DN Changes in Message Format are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table BCLIDGRP (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
BCGRPNUM		0 to 2047	BCLID Group Number This field is the index to table BCLIDGRP. When option BCLID is assigned to the line, the BCLID group number is included to indicate the BCLID group and options associated with that line. Enter a value from 0 to 2047.
USP		Y or N	Usage Sensitive Pricing This field specifies whether USP is assigned. Enter Y or N. If N is entered, flat rate billing is used. If Y is entered, field BILLDN must contain a billing DN.
BILLDN		numeric (up to 11 digits)	Billing Directory Number This field specifies a billing DN that appears in the AMA record, if generated. Enter a billing DN with up to 11 digits.
DNDISP		FIRST, LAST, or BOTH	Directory Number Display This field specifies whether the first, last, or both DNs are displayed in the BCLID message. Enter FIRST, LAST, or BOTH.
DATE		Y or N	Message Date This field specifies whether the date is displayed in the BCLID message. Enter Y or N.

BCLID USP Billing & DN Changes in Message Format (continued)

Datafilling table BCLIDGRP (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
TIME		Y or N	Message Time This field specifies whether the time is displayed in the BCLID message. Enter Y or N.
INTRAGRP		Y or N	Intragroup Call Message Generation This field specifies whether a call originating from within a BCLID group and terminating to a line in the same group generates a BCLID message. Enter Y or N.
CFIND		Y or N	Call Forward Indication This field specifies whether the call forward indicator information is displayed in the BCLID message. Enter Y or N.
BSYSEND		Y or N	Busy Message Sending This field specifies whether a busy message is sent when a caller reaches a busy line. Enter Y or N.
DSP800DN (see note)		Y or N	Display 800 DN This field specifies whether the BCLID message should include the dialed 800 number for the call. The default value for this field is N. This field can be set to Y if the following conditions are met: • The switch is capable of receiving integrated services digital network user part (ISUP) messages. • Field DATE is set to N. • Field TIME is set to N. If any of these conditions are not met when DSP800DN is set to Y, the following error message is displayed: MESSAGE SIZE TOO LARGE WHEN DSP800DN = Y, DATE AND TIME MUST BE N. Note: Canada only
BCLNKLEN		LEN	Bulk Calling Data Link Line Equipment Number This field specifies the LEN of the lines used as BCLID data links. A minimum of one line and a maximum of 16 lines can be used as data links in one BCLID group. Enter the LEN.

BCLID USP Billing & DN Changes in Message Format (continued)

Datafill example for table BCLIDGRP

The following example shows sample datafill for table BCLIDGRP.

MAP display example for table BCLIDGRP

BCLIDGRP									
BCGRPNUM	USP	BILLDN	DNDISP	DATE	TIME	INTRAGRP			
CFIND						BSYSEND	DSP800DN	BCLNKLEN	
2010	N	6136211234	BOTH	N	N			Y	Y
			Y		Y			(HOST 0 0 0 1)	
\$									

Datafilling table BCLIDLNK

Table BCLIDGRP automatically datafills table BCLIDLNK. Table BCLIDLNK is a read-only table that cannot be changed by an operating company; therefore, no datafill procedure is provided.

Datafill example

The following example shows the datafill in table BCLIDLNK as it would appear after table BCLIDGRP is datafilled. Note that 2 of a maximum of 16 data link LENs have been assigned to this bulk calling line identification group number (BCGRPNUM).

MAP display example for table BCLID: USP Billing & DN Changes in Message Format

BCGRPNUM AVAIL UNAVAIL			BCLINKS						
8	1	0	(HOST 00 0 08 15 Y)\$						
10	0	0	(HOST 00 0 10 5 N)\$						

Datafilling table TRKGRP (PX and P2)

The following table shows the datafill specific to BCLID: USP Billing & DN Changes in Message Format for table TRKGRP (PX and P2). Only those fields that apply directly to BCLID: USP Billing & DN Changes in Message Format

BCLID USP Billing & DN Changes in Message Format (continued)

are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TRKGRP (PX and P2)

Field	Subfield or refinement	Entry	Explanation and action
GRPKEY		See subfield	Group Key This field consists of subfield CLLI.
	CLLI	numeric	Common Language Location Identifier. This subfield specifies the code assigned in table CLLI. Enter the CLLI.
GRPINFO		See subfields	Group Information This field consists of several subfields. Only subfield GRPTYP pertains to this feature.
	GRPTYP	PX or P2	Group Type This subfield specifies the group type. Enter PX or P2. Note: If GRPTYP is set to PX or P2, subfield BCLID requires datafill.
	BCLID	Y	Bulk Calling Line Identification This subfield specifies whether option BCLID is assigned. Enter Y. Note: If BCLID is set to Y, subfield BCGRPNUM requires datafill.
	BCGRPNUM	0 to 2047	BCLID Group Number This subfield specifies the BCLID group to which the line belongs. The BCLID group number must be datafilled in table BCLIDGRP before it can be used in this table. Enter a value from 0 to 2047.

Datafill example for table TRKGRP (PX and P2)

The following example shows sample datafill for table TRKGRP (PX and P2).

BCLID USP Billing & DN Changes in Message Format (continued)**MAP display example for table TRKGRP (PX and P2)**

TRKGRP		GRPKEY									
		GRPINFO									
DIU											
PX	25	ELO	NCID	2W	MI	MIDL	Y	P241	NSCR	613	LCL
NONE	TSPS	NLCA	N	N	32	NIL	6211234	DIALTN	Y	Y	
REG232	Y	NILLATA	Y	10	\$						

Datafilling table TRKGRP (IBNT0 and IBNT2)

The following table shows the datafill specific to BCLID: USP Billing & DN Changes in Message Format for table TRKGRP (IBNT0 and IBNT2). Only those fields that apply directly to BCLID: USP Billing & DN Changes in Message Format are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TRKGRP (IBNT0 and IBNT2)

Field	Subfield or refinement	Entry	Explanation and action
GRPKEY		See subfield	Group Key This field consists of subfield CLLI.
	CLLI	numeric	Common Language Location Identifier This subfield specifies the code assigned in table CLLI. Enter the CLLI.
GRPINFO		See subfield	Group Information This field consists of several subfields. Only subfield OPTIONS pertains to this feature.
	OPTIONS	See subfield	Options This subfield consists of subfield OPTION.
	OPTION	BCLID	Option This subfield specifies the options and associated subfields assigned to the trunk group. Enter BCLID.
	BCGRPNUM	0 to 2047	Note: If OPTION is set to BCLID, subfield BCGRPNUM requires datafill. BCLID Group Number This subfield specifies the BCLID group to which the line belongs. The BCGRPNUM must be datafilled in table BCLIDGRP before it can be datafilled in this table. Enter a value from 0 to 2047.

BCLID USP Billing & DN Changes in Message Format (continued)

Datafill example for table TRKGRP (IBNT0 and IBNT2)

The following example shows sample datafill for table TRKGRP (IBNT0 and IBNT2).

MAP display example for table TRKGRP (IBNT0 and IBNT2)

TRKGRP										
GRPKEY										
										GRPINFO
NTLAUR										
IBNT2	0	ACO	NCBN	BNRMC	0	MIDL	4	6136211234	ANSDISC	1 Y 7
8	Y	N	N	N	0	5	Y	5	5	4 5 N Y N N N N N Y Y IBN Y Y NATL
BCLID	10	\$								

Datafilling table AMAOPTS

The following table shows the datafill specific to BCLID: USP Billing & DN Changes in Message Format for table AMAOPTS. Only those fields that apply directly to BCLID: USP Billing & DN Changes in Message Format are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table AMAOPTS (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
OPTION		BCLID_USPAUD	Option This field defines the AMA recording options. Enter BCLID_USPAUD.
SCHEDULE		See subfield	Schedule This field consists of subfield AMASEL.
AMASEL		DEFAULT or PERIODIC	AMA Selector This subfield specifies the selector for the AMA schedule. Enter DEFAULT or PERIODIC.
			Note: If AMASEL is set to PERIODIC, subfields ONDATE, ONTIME, and SCHED require datafill.
	ONDATE	(date in format) YYMMDD	Activation On Date This subfield specifies the year (YY), month (MM), and day (DD) to start the auditing schedule. The format is YYMMDD. Enter the audit scheduling date.

BCLID USP Billing & DN Changes in Message Format (continued)

Datafilling table AMAOPTS (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	ONTIME	(time in format) HHMM	Activation On Time This subfield specifies the hour (HH) and minutes (MM) to start the audit scheduling. The format is HHMM. Enter the audit scheduling time.
	SCHED	1 to 24	Periodic Schedule This subfield specifies the time value (TV) of the audit and the time unit (TU). A value of 24 h is recommended. Enter a value from 1 to 24 for the interval and HRS for the unit.

Datafill example for table AMAOPTS

The following example shows sample datafill for table AMAOPTS.

MAP display example for table AMAOPTS

AMAOPTS OPTION				SCHEDULE		
BCLID_USPAUD	PERIODIC	920608	0000	24	HRS	

Translation verification tools

BCLID: USP Billing & DN Changes in Message Format does not use translation verification tools.

SERVORD

Option BCLID can be added using the Service Order System (SERVORD) commands NEW (establish service) and ADO (add option), deleted using SERVORD commands OUT (remove service) and DEO (delete option), or changed using SERVORD command CHF (change feature information for preexisting feature) for an MDC line.

SERVORD limitations and restrictions

BCLID: USP Billing & DN Changes in Message Format has no SERVORD limitations and restrictions.

BCLID USP Billing & DN Changes in Message Format (end)

SERVORD prompts

The following table shows the SERVORD prompts used to delete, add, or change BCLID: USP Billing & DN Changes in Message Format on an existing line.

SERVORD prompts for BCLID: USP Billing & DN Changes in Message Format

Prompt	Valid input	Explanation
DN_OR_LEN	7-digit DN or LEN	Indicates the DN or LEN of the line to be changed, added, or deleted. Enter the 7-digit DN or the LEN.
OPTION	BCLID	Indicates the name of the option. Enter BCLID.
BCGRPNUM	0 to 2047	Indicates the BCLID group number datafilled in table BCLIDGRP. Enter a value from 0 to 2047.

SERVORD example for adding BCLID: USP Billing & DN Changes in Message Format

The following SERVORD example shows how BCLID: USP Billing & DN Changes in Message Format is added to an existing MDC line using the SERVORD command ADO.

SERVORD example for BCLID: USP Billing & DN Changes in Message Format in prompt mode

```

> ADO
SONUMBER:      NOW  92  1  15  AM
>
DN_or_LEN:
>7211111
OPTION:
> BCLID
BCGRPNUM:
> 10
OPTION:
> $

```

SERVORD example for BCLID: USP Billing & DN Changes in Message Format in no-prompt mode

```

> ADO $ 7211111 BCLID 10 $

```

Blocking of Restricted Number to SMDI

Ordering codes

Functional group ordering code: RES00004

Functionality ordering code: RES00039

Release applicability

BCS31 and up

Prerequisites

To operate, Blocking of Restricted Number to SMDI has the following prerequisites:

- BAS Generic, BAS00003
- MDC Minimum, MDC00001
- MDC Standard, MDC00003

Description

A restricted directory number (DN) cannot be delivered to a terminating party. Blocking of Restricted Number to SMDI blocks the delivery of restricted numbers to the simplified message desk interface (SMDI). Prior to this feature, both restricted and unrestricted DNs were delivered to the SMDI.

Background information

The SMDI connects a voice messaging system (VMS) or text messaging system (TMS) to an end office. End users forward their phones to the message desk, where callers can leave messages on an answering machine (VMS) or with an operator (TMS). By default, both the calling and forwarding party DNs are delivered to the SMDI.

All calls forwarded to the SMDI are answered by a forwarding party's personal greeting, a generic system greeting, or an attendant. If option LASTFWDN in Table SLLNKDEV (Link Device Table) is datafilled for an SMDI link, the SMDI takes a message for the final forwarding party. Otherwise, the original forwarding party receives the message.

Blocking of Restricted Number to SMDI (continued)

A DN is restricted if either of the following is true:

- The DN is assigned option SUPPRESS in Table NETNAMES (Internal Logical Network Names), table DNGRPS (Directory Number Groups), or Table DNATTRS (Directory Number Attributes).
- The DN is on a custom local area signaling services (CLASS) line that has the calling number delivery blocking (CNDB) option, and the calling party chooses to block the number when placing the call.

Operation

Blocking is specified through option DNSUPPR in Table SLLNKDEV. Option DNSUPPR has two subfields, CALLING and FWDING. Each subfield accepts the following datafill:

- NEVER never blocks the party's DN, even if the DN is restricted
- CONDITNL blocks restricted DNs; does not block unrestricted DNs

In addition, subfield CALLING can be set to

- INDIRECT blocks indirect calls, even if the calls are unrestricted; blocks direct calls conditionally. (An indirect call is one that is forwarded to the SMDI. A direct call is a message retrieval call.)
- NODIRECT delivers the calling DN, regardless of the privacy status of the DN
- COMPCND
 - for a direct call, delivers the calling DN if the calling DN is unrestricted or if the network of the calling DN and the network of the SMDI_LINK is the same
 - for an indirect call, suppresses the calling DN only if the calling DN and the forwarding DN are not in the same customer group
- COMPNODIR
 - for a direct call, always delivers the calling DN
 - for an indirect call, suppresses the calling DN only if the calling DN and the forwarding DN are not in the same customer group

Blocking of Restricted Number to SMDI (continued)

The following table shows the DN delivery to the SMDI for different settings of option DNSUPPR subfields and for all combinations of restricted numbers.

DN delivery to the SMDI (Sheet 1 of 2)

Option DNSUPPR subfield FWDING	Option DNSUPPR subfield CALLING	Restricted DNs	Delivered DNs
NEVER	NEVER	neither	both
		forwarding	both
		calling	both
		both	both
	CONDITNL	neither	both
		forwarding	both
		calling	forwarding
		both	forwarding
	INDIRECT	neither	forwarding
		forwarding	forwarding
		calling	forwarding
		both	forwarding
	NEVER	neither	neither (Note 1)
		forwarding	both
		calling	both
		both	neither (Note 1)
	COMPCND	neither	both
		forwarding	both
		calling	forwarding (Note 2)
		both	forwarding (Note 2)

Note 1: If the forwarding DN cannot be delivered to the SMDI, the SMDI cannot take a message for the forwarding party. Therefore, neither DN is delivered, even though subfield CALLING is set to NEVER or the calling DN is unrestricted.

Note 2: If the Calling DN and the Forwarding DN are in the same customer group, both the Forwarding DN and the Calling DN will be passed.

Blocking of Restricted Number to SMDI (continued)**DN delivery to the SMDI (Sheet 2 of 2)**

Option DNSUPPR subfield FWDING	Option DNSUPPR subfield CALLING	Restricted DNs	Delivered DNs
NEVER	COMPNO DIR	neither	both
		forwarding	both
		calling	forwarding (Note 2)
		both	forwarding (Note 2)
CONDITNL	CONDITNL	neither	both
		calling	both
		both	neither (Note 1)
	INDIRECT	neither	forwarding
		forwarding	neither
		calling	forwarding
		both	neither
	COMPCND	neither	both
		forwarding	neither
		calling	both
		both	neither
	COMPNO DIR	neither	both
		forwarding	neither
		calling	forwarding (Note 2)
		both	neither

Note 1: If the forwarding DN cannot be delivered to the SMDI, the SMDI cannot take a message for the forwarding party. Therefore, neither DN is delivered, even though subfield CALLING is set to NEVER or the calling DN is unrestricted.

Note 2: If the Calling DN and the Forwarding DN are in the same customer group, both the Forwarding DN and the Calling DN will be passed.

Based on datafill and the calling party's initiation of the call, there are three possible scenarios for blocking the DN delivery to the SMDI:

- The DNs of both the calling and forwarding parties are blocked. If the forwarding party's DN is restricted, the SMDI cannot take a message for

Blocking of Restricted Number to SMDI (continued)

that party. Therefore, neither DN is delivered to the SMDI. The SMDI plays a generic system announcement for the caller and does not take a message.

- The calling party's DN is blocked. As long as the forwarding party's DN is available, the SMDI can take a message for that party.
- Neither DN is blocked. The SMDI takes a message for the forwarding party.

Translations table flow

The Blocking of Restricted Number to SMDI translations tables are described in the following list:

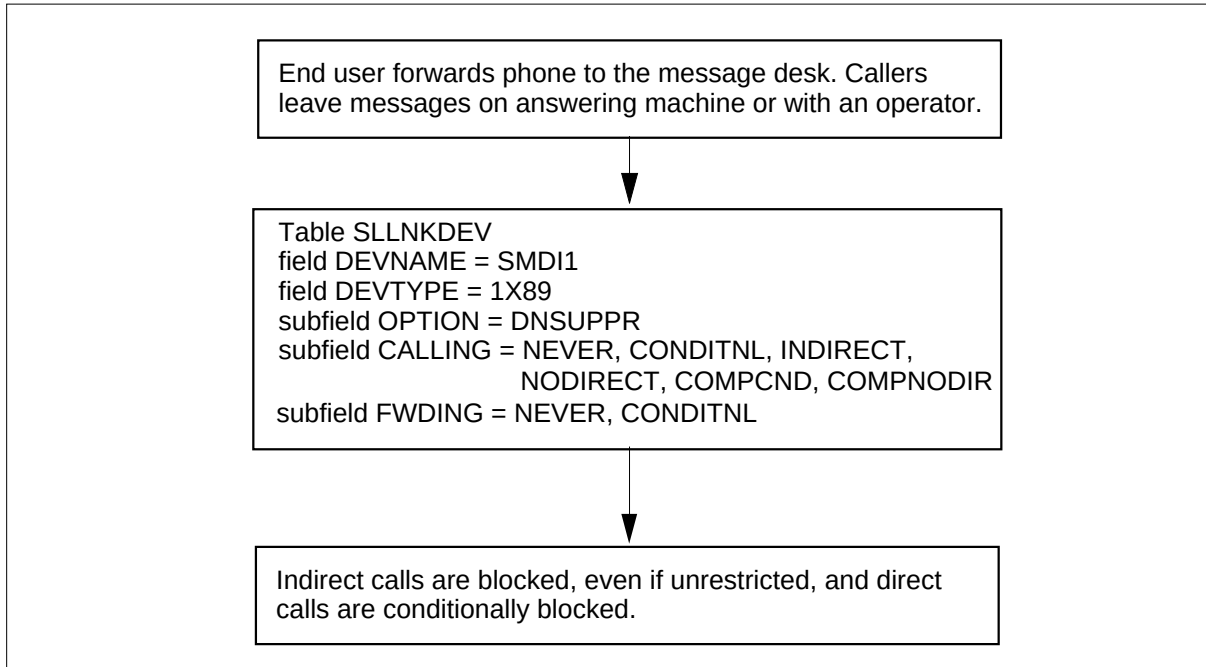
- Table SLLNKDEV (Link Device Table) specifies the characteristics of the data link device used in a particular application. Setting subfield OPTION to DNSUPPR permits an office to suppress the appearance of the DN. Option DNSUPPR has two subfields, CALLING and FWDING, which specify how DN suppression is to be handled.

Note: Table PMLOADS (Peripheral Module Loads), Table MPC (Multiprotocol Controller), and Table TERMDEV (Terminal Device) must be datafilled prior to datafilling Table SLLNKDEV.

The Blocking of Restricted Number to SMDI translation process is shown in the flowchart that follows.

Blocking of Restricted Number to SMDI (continued)

Table flow for Blocking of Restricted Number to SMDI



The following table lists the datafill content used in the flowchart.

Datafill example for Blocking of Restricted Number to SMDI

Datafill table	Example data
SLLNKDEV	SMDI1 1X89 0 2 NONE NONE INOUTLK (SMDIDATA (DNSUPPR INDIRECT CONDITNL) \$) \$

Limitations and restrictions

The following limitations and restrictions apply to Blocking of Restricted Number to SMDI:

- If subfield CALLING is set to CONDITNL and subfield FWDING is set to NEVER, a restricted forwarding DN is never blocked. However, when that DN originates a call to the SMDI to retrieve messages, the DN is blocked, because the calling DN was specified to be conditionally blocked. The end user must then use CNDB to toggle the suppression of the DN when retrieving messages.
- The limitations and restrictions of SMDI and SMDI enhanced features also apply to this feature.

Blocking of Restricted Number to SMDI (continued)

Interactions

Blocking of Restricted Number to SMDI has no functionality interactions.

The following paragraphs describe the interactions between Blocking of Restricted Number to SMDI and other functionalities.

Activation/deactivation by the end user

Blocking of Restricted Number to SMDI requires no activation or deactivation by the end user.

Billing

Blocking of Restricted Number to SMDI does not affect billing.

Station Message Detail Recording

Blocking of Restricted Number to SMDI does not affect Station Message Detail Recording.

Datafilling office parameters

Blocking of Restricted Number to SMDI does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement Blocking of Restricted Number to SMDI. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Blocking of Restricted Number to SMDI

Table	Purpose of table
SLLNKDEV	The characteristics of up to 59 datalinks used by the device connecting procedure, LNKUTIL, increment CI, can be specified by table SLLNKDEV. This table enables the device-connecting procedure to make use of the characteristics.

Datafilling table SLLNKDEV

Table SLLNKDEV (Link Device Table) specifies the characteristics of the data link device used in a particular application. The multiprotocol controller (MPC) is the device used in the Blocking of Restricted Number to SMDI application.

Note: Tables PMLOADS (Peripheral Module Loads), MPC (Multiprotocol Controller), and TERMDEV (Terminal Device) must be datafilled prior to datafilling Table SLLNKDEV.

Blocking of Restricted Number to SMDI (continued)

The following table shows the datafill specific to Blocking of Restricted Number to SMDI for table SLLNKDEV. Only those fields that apply directly to Blocking of Restricted Number to SMDI are shown. For a description of the other fields, refer to the *Customer Data Schema Reference Manual*.

Datafilling table SLLNKDEV (Sheet 1 of 2)

Field	Subfield	Entry	Explanation and action
XFERS		SMDIDATA	Transfers: This field specifies the transfer value. Enter SMDIDATA. Note: If XFER is set to SMDIDATA, subfield OPTION requires datafill.
	OPTION	DNSUPPR	Option: This subfield specifies the DN blocking option. Enter DNSUPPR. Note: If OPTION is set to DNSUPPR, subfields CALLING and FWDING require datafill.

Blocking of Restricted Number to SMDI (continued)

Datafilling table SLLNKDEV (Sheet 2 of 2)

Field	Subfield	Entry	Explanation and action
	CALLING	NEVER, CONDITNL, INDIRECT, NODIRECT, COMPCND, COMPNO DIR	Calling DN Suppression: This subfield specifies under what conditions the calling DN is to be suppressed. • Enter NEVER if calling DNs are never to be blocked. • Enter CONDITNL if restricted calling DNs are to be blocked. • Enter INDIRECT if indirect (forwarded) calls are always to be blocked and direct (message retrieval) calls to the SMDI are to be conditionally blocked. • Enter NODIRECT if calling DNs are delivered, regardless of the privacy status of the DNs • Enter COMPCND — for indirect calls, the calling DN is suppressed only if the calling DN and the forwarding DN are not in the same customer group — for direct calls, the calling DN is delivered if the DN is unrestricted or if the network of the calling DN and the network of the SMDI_LINK is the same • Enter COMPNO DIR — for indirect calls, the calling DN is suppressed only if the calling DN and the forwarding DN are not in the same customer group — for direct calls, the calling DN is always delivered
	FWDING	NEVER, CONDITNL	Forwarding DN Suppression: This subfield specifies under what conditions the forwarding DN is to be suppressed. • Enter NEVER if forwarding DNs are never to be blocked. • Enter CONDITNL if restricted forwarding DNs are to be blocked.

Blocking of Restricted Number to SMDI (end)

Datafill example for table SLLNKDEV

The following example shows sample datafill for table SLLNKDEV.

MAP display example for table SLLNKDEV

SLLNKDEV						
DEVNAME	DEVTYPE	XLATION	PROTOCOL	DIRECTION		
				XFERS		
SMDI1	1X89	0 2	NONE	NONE	INOUTLK	
(SMDIDATA	(DNSUPPR	INDIRECT	CONDITNL	)	\$)	\$

Translation verification tools

Blocking of Restricted Number to SMDI does not use translation verification tools.

SERVORD

Blocking of Restricted Number to SMDI does not use SERVORD.

Bulk Calling Line Identification (BCLID)

Ordering codes

Functional group ordering code: RES00004

Functionality ordering code: RES00028

Release applicability

NA008 and up

Prerequisites

To operate, Bulk Calling Line Identification (BCLID) has the following prerequisites:

- BAS Generic, BAS00003
- MDC Minimum, MDC00001
- MDC Standard, MDC00003
- RES Service Enablers, RES00006

Network configuration

Network (interoffice) configuration of BCLID and 800 Dialed Number Display and BCLID require Common Channel Signaling No. 7 (CCS7) connectivity.

The following prerequisites are required for CCS7 connectivity:

- Base ISUP, ISP70001
- TEL CCS7 Base, TEL00008
- BAS Generic, BAS00003

Description

The BCLID feature collects information on incoming calls received by lines that are members of a BCLID group. The BCLID group is defined through datafill and can have 1 to 16 data links assigned. A maximum of 2048 BCLID groups can exist in a single office. There is no maximum limit defined for the number of lines assigned to a single BCLID group; however, a BCLID subscriber can belong to only one BCLID group. The BCLID group can contain any combination of single-party lines, uniform call distribution (UCD) groups, or hunt groups.

Bulk Calling Line Identification records are always generated for calls originating outside a BCLID group. For calls originating inside a BCLID

Bulk Calling Line Identification (BCLID) (continued)

group, group records are generated only when field INTRAGRP in table BCLIDGRP is set to Y (yes).

Bulk Calling Line Identification is supported for both intraoffice calls (calls originating and terminating in the same switch) and interoffice calls (calls originating and terminating in two different switches); however, CCS7 connectivity is required for interoffice calls.

The BCLID record consists of the following:

- the date the call was received (optional)
- the time the call was received (optional)
- the calling number
- the called number
- the status (busy/idle) of the called line
- the calling line type (unique/nonunique)
- a call forwarding indicator (optional)

The records is collected by the customer premises equipment (CPE). The data is transmitted in the American Standard Code for Information Interchange (ASCII) format through one or more dedicated Bell 202A compatible data channels. The CPE collects the data for either immediate use or archiving.

Bulk Calling Line Identification is enhanced in BCS32 by feature AF2810; refer to "BCLID: USP Billing & DN Changes in Message Format".

Call-related information collected

The information collected for the BCLID record (listed above) is discussed in the following sections.

Date

The date the call was received is given in the year/month/day format. The date field in the BCLID record is optional and is controlled by field DATE in table BCLIDGRP.

Time

The time the call was received is given in a 24-hour format consisting of the hour, the minute, and the second the call was offered to the terminating BCLID line. The time field in the BCLID record is optional and is controlled by field TIME in table BCLIDGRP.

Bulk Calling Line Identification (BCLID) (continued)

Calling number

The calling number is always a ten-digit number regardless of whether the call originated from outside the numbering plan area (NPA) of the terminating BCLID line. If the calling party is outside the signaling connected area, the calling number is not available. In cases where the calling number is not available for the BCLID record, the ASCII character O is printed in the calling number field to indicate an out-of-area number.

If the calling number is marked as private, the calling number is not transmitted to the BCLID line, and P is printed in the calling number field of the BCLID record.

The following restrictions apply to the delivery of the calling number to the terminating line or switch:

- The calling number is not delivered if option SUPPRESS is assigned against a group of directory numbers (DN) that includes the calling party's number in table DNGRPS, or if option SUPPRESS is assigned against the calling party's number in table DNATTRS.
- The Calling Number Delivery Blocking (CNDB) feature is activated by the calling party.
- On calls incoming over ISDN user part (ISUP) trunks, delivery of the calling number may be denied by the presentation indicator field in the calling party number parameter found in the initial address message (IAM) received from the trunk.
- On calls incoming over ISDN primary rate access (PRA) trunks, delivery of the calling number may be denied by the presentation indicator field in the calling number information element found in the SETUP message received from the trunk.

Called number

The called number consists of one of the following:

- a seven-digit number for a single-party line
- an eight-digit number for hunt groups, multiline hunt (MLH) lines, distributed line hunt (DLH) lines, or bridged night number (BNN) lines

The called number printed on the BCLID record is not necessarily the number dialed by the calling party. The called number can be altered by both translations and the call forwarding (CFW) features. Refer to the "Feature interactions" section of this feature for further details.

Bulk Calling Line Identification (BCLID) (continued)

Status (busy or idle) of the called line

The status of the BCLID line at the time the call is offered to that line is indicated on the BCLID record by one of the following ASCII characters:

- I to indicate the line is idle
- B to indicate the line is busy

This information is affected by the Call Waiting (CWT) and CFW features (refer to "Interactions" in this feature description). This function is changed in BCS32; see "BCLID: USP Billing & DN Changes in Message Format".

Calling line type (unique or nonunique)

The calling line type information on the BCLID record indicates the following.

- T to indicate a single-party line
- M to indicate a multiline group line

For intraoffice calls routed over ISUP trunks, the line type field is obtained directly from the nature of address indicator of the calling number parameter of the ISUP IAM. For incoming calls on ISDN PRA trunks, the calling line type is taken from the type of number parameter in the PRA SETUP message.

The character M is printed on the BCLID record in cases where the calling number is private or out-of-area.

Call forwarding indicator

- The call forwarding indicator indicates whether the call was forwarded from another line. The information printed on the BCLID record indicates one of the following.
- F indicates the call was forwarded (it does not indicate how many times it was forwarded).
- D indicates the call was direct (it was not forwarded).

The call forwarding indicator information is optional and is controlled by field CFIND in table BCLIDGRP.

Interoffice and intraoffice calls

Interoffice calls require calling number connectivity for call setup information to be transferred to the terminating node. If a call's connectivity is not present, the out-of-area (O) indicator will be transmitted. The calling number field is retrieved from within the node for intraoffice calls.

Bulk Calling Line Identification (BCLID) (continued)

BCLID data links

Bulk Calling Line Identification data links transmit BCLID messages. The data links are available on a subset of peripherals that support CMR cards.

Bulk Calling Line Identification data links are supported on the following peripherals:

- line group controller (LGC)
- line trunk controller (LTC)
- remote cluster controller (RCC)

Note: BCLID data links are not supported when RCCs are operating in emergency stand-alone (ESA) mode.

- remote cluster controller 2 (RCC2)
- Subscriber Carrier Module-Access (SMA)
- Subscriber Carrier Module-100S (SMS)
- Subscriber Carrier Module-100 Urban (SMU)

The BCLID data link is made up of two resources: a line to customer premises and a modem resource of the CMR card. The two resources provide a Bell 202A data source to the CPE. The CPE should be compatible with the Bell 202A modem standard. To receive a message, the equipment must have a Bell 202A compatible modem operating in the receive mode. The line is used only for the data transport channel, so no calls can be received or originated on the line.

Bulk Calling Line Identification messages transmitted along the data link have the following characteristics:

- ASCII data format
- eight data bits (including parity bit)
- one start bit
- one stop bit
- asynchronous transmission
- even parity
- half duplex transmission mode

A complete BCLID message requires approximately 0.4 s to transmit. If a data link is transmitting a message, messages arriving before the current

Bulk Calling Line Identification (BCLID) (continued)

transmission is complete are lost. Sufficient link capacity should be allocated to help alleviate this problem.

If a customer's BCLID data link is not in service, no BCLID messages can be delivered. Maintenance actions on the data links are performed through the line test position (LTP) level at the MAP (maintenance and administration position).

A BCLID subscriber has between 1 and 16 data links. When operating in a loadsharing mode, each BCLID message is sent on the same link as the previous message. If a link is not capable of transmitting a message, the message is skipped and is sent through a successor. The link order is determined by datafill in table BCLIDGRP. Initially, the BCLID software tries to use the first link datafilled against the group in table BCLIDGRP. If a BCLID subscriber finds message loss exceeds his or her requirements, additional data links should be provisioned.

Data link maintenance for BCLID should be performed when the link is in a busy (BSY) state. Maintenance cannot be performed while the link is in call processing busy (CPB) state.

Maintenance on BCLID data links is performed in the following three steps:

- CMR diagnostics are performed when the peripheral is posted at the peripheral module (PM) level at the MAP. The QUERYPM and TEST commands are issued.
- Normal line diagnostics are performed when the DIAG command is issued at the LTP level of the MAP. Standard results are generated.
- Test pattern generation over the data link is performed when the CMR card generates a test pattern over the data link by establishing a connection on one of its modem resources.

Note: Data links are used to transmit the call-related information to the CPE and are supported only on peripherals with CLASS Modem Resource (CMR) cards.

BCLID 800+ Service

The BCLID 800+ Service feature (NC0420) in feature package NTXR35AA enhances the software used by the end office (EO) to check for the presence of the 800 service indicator in the generic address parameter (GAP) of an incoming ISUP message. If this indicator is present, the dialed 800 number is extracted from the message and stored so that it is available later in the call for use by any feature that constructs and transmits calling party information

Bulk Calling Line Identification (BCLID) (continued)

messages to the CPE. The BCLID 800+ Service feature allows the dialed 800 number to be part of the BCLID message transmitted for the call.

Field DSP800DN

Field DSP800DN appears in table BCLIDGRP. When this field is set to Y, all messages generated for the group incorporate the dialed 800 number, if available, into the contents of the BCLID message (this field can only be set to Y if both fields DATE and TIME are set to N). If this field is set to N (no) or if the dialed 800 number is unavailable, BCLID messages are constructed without the 800 number.

If the group is assigned DISP800DN, the dialed 800 number is incorporated into all BCLID messages for the group when it is available. The dialed 800 number is retrieved from the GAP of the incoming ISUP IAM message for the call. Retrieval occurs if the operating company has updated the service control point (SCP) through the SMS to specify that the dialed 800 number should be sent through the network by the originating service switching point (SSP) for every line, hunt group pilot, and UCD primary DN in the BCLID group. If this is not done, the dialed 800 number is not sent to the EO and, in turn, is not available for inclusion in BCLID messages.

The BCLID 800+ Service feature is designed only to read information from the GAP of an ISUP IAM message and not to write information to this parameter. As such, the feature does not implement any interaction between the delivery of the dialed 800 number and call forwarding. If the called line that is set to receive the dialed 800 number is forwarded to another office, this feature does not write the dialed 800 information in the GAP of the outgoing ISUP IAM message sent to the next or any succeeding offices.

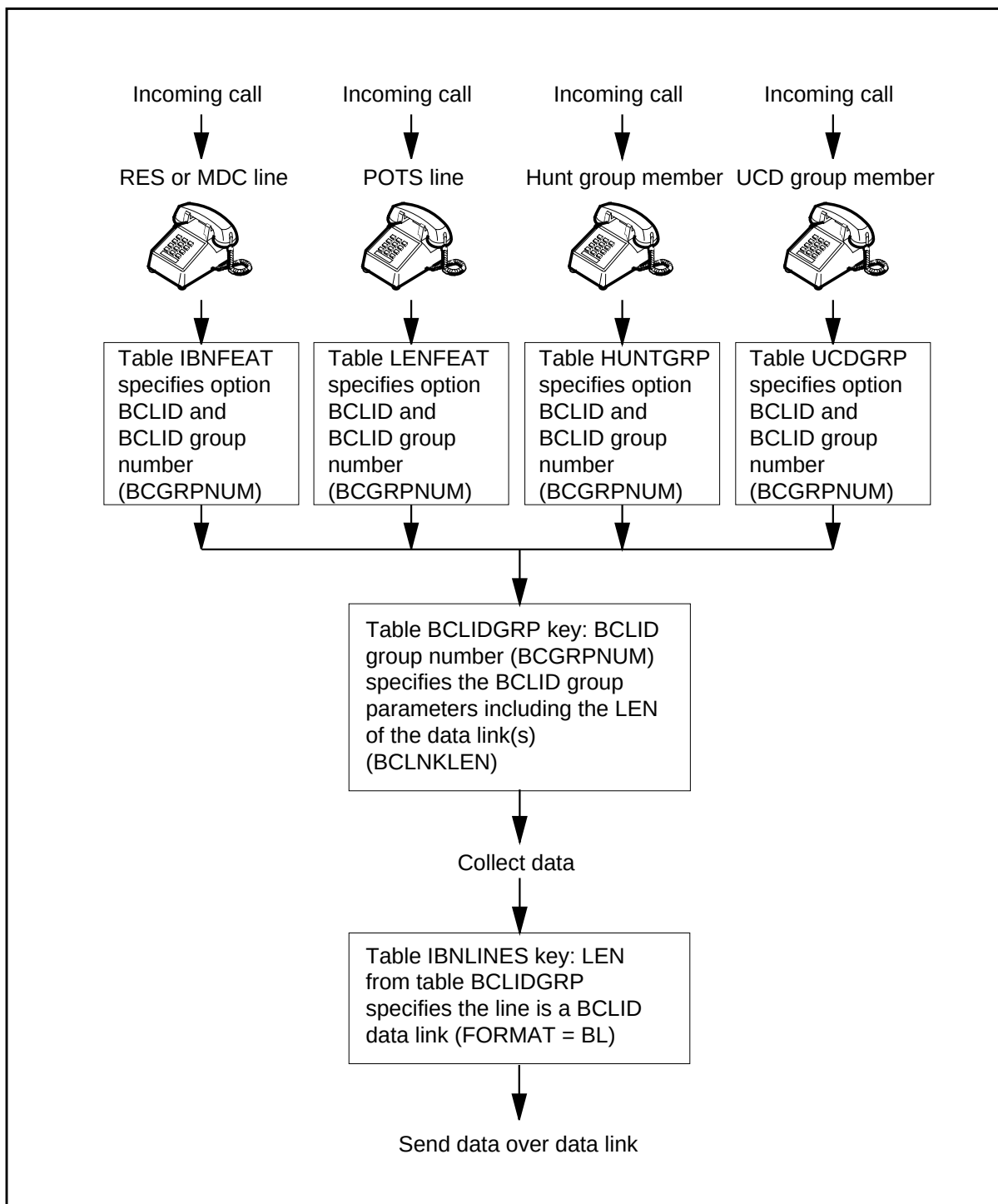
800 dialed DN delivery and BCLID interactions

Field THIRD DN provides a way to include both the originating DN and the terminating DN in a BCLID message when a call terminates on a forwarded line. The BCLID 800+ Service feature utilizes field THIRD DN to contain the dialed 800 number when it is available and field DISP800DN in the table BCLIDGRP tuple is set to Y. In this instance, the dialed 800 number takes precedence over the called number in the BCLID message if the dialed 800 number is received in the incoming ISUP message. If the dialed 800 number is not received in the ISUP message, the BCLID message is constructed without the 800 number. The dialed 800 number is the first DN present in the message and immediately precedes the terminating DN and the originating DN. In order to accommodate this extra information, the date and time fields must be omitted from the BCLID message whenever the third DN or dialed 800 number is present.

Bulk Calling Line Identification (BCLID) (continued)

Translations table flow

The Bulk Calling Line Identification (BCLID) translation process is shown in the flowchart that follows.

Bulk Calling Line Identification (BCLID) (continued)**Table flow for Bulk Calling Line Identification (BCLID)**

Bulk Calling Line Identification (BCLID) (continued)

Limitations and restrictions

The following limitations and restrictions apply to Bulk Calling Line Identification (BCLID):

- A BCLID subscriber, either single-line or hunt group member, cannot belong to more than one BCLID group.
- Calls that are routed through an operator position always show an out-of-area (O) indicator in the calling number field of the BCLID record.
- A BCLID group cannot have more than 16 data links.
- A maximum of 4096 BCLID data links can be defined for an office.
- A maximum of 2048 BCLID groups can exist in a single office.
- Bulk Calling Line Identification requires a CMR card to function properly; therefore, BCLID is only supported on peripherals equipped with a CMR card.
- Bulk Calling Line Identification cannot be assigned as part of a feature group.
- Bulk Calling Line Identification is only supported on Bell 202A compatible modems. Bell 212A modems are not supported.
- The BCLID and Simplified Message Desk Interface (SMDI) features cannot share a common data link.
- Bulk Calling Line Identification is not supported on peripherals in an ESA state.
- Option BCLID can only be added to primary multiple appearance directory number (MADN) group members. As a result of this restriction, a call from a secondary member of a MADN group (whose primary member has option BCLID) to an agent in the same BCLID group generates a BCLID record, even though field INTRAGRP in table BCLIDGRP might be datafilled as N. This function is changed in BCS32; see "BCLID: USP Billing & DN Changes in Message Format".
- A BCLID record is not generated if there are no idle members in a MADN group, and the primary MADN member is in a state other than idle, call processing busy, or permanent signal/partial dial lockout.
- The BCLID and Denied Termination (DTM) features are incompatible and cannot be assigned to the same line.
- A BCLID record is generated only for calls made to a BNN line if it is a member of a BNN hunt group that has option BCLID. BCLID records are not generated for BNN lines that are added through the service order facility using the ABNN command. The reason for this restriction is that service orders do not allow options (such as BCLID) to be added to BNN

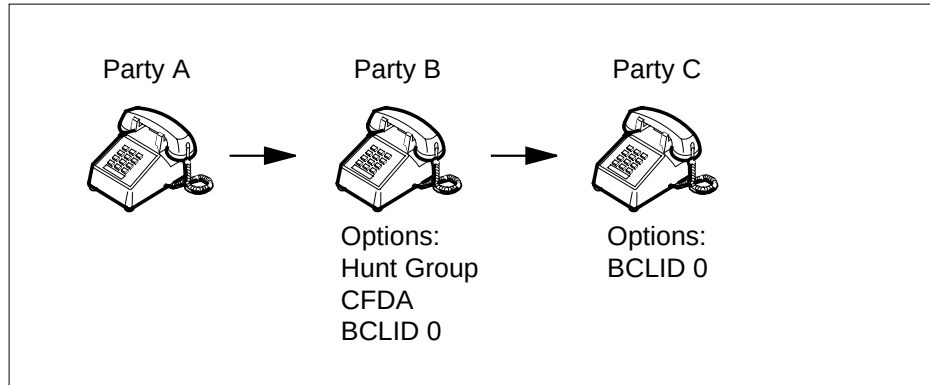
Bulk Calling Line Identification (BCLID) (continued)

lines. This restriction does not apply to BNN lines that are added to a BNN hunt group with option BCLID. This function is changed in BCS32; see "BCLID: USP Billing & DN Changes in Message Format".

- For calls from a direct attendant, a BCLID subscriber always receives the out-of-area (O) indicator in the calling line type field of the BCLID record.
- A calling DN is available if there is calling number connectivity between the originating and terminating switches. Otherwise, the calling number field contains the ASCII character O, indicating out-of-area.
- If the calling party's DN is private, the DN is not delivered to the terminating party and the calling number field contains the ASCII character P, indicating private.
- Only the following peripheral types support BCLID data links: LGC, LTC, RCC, RCC2, SMA, SMS, and SMU, all equipped with a CMR card.
- Diagnostics are not performed on BCLID data links that are in the CPB state. Test messages are attempted on links in the manual busy (manB) state.
- Calls originating from directory number hunt (DNH) groups have a line status of T. All other hunt group types have a line status of M.
- Call forwarding features that perform look-aheads to see if the remote station (a BCLID agent) can accept the call do not produce BCLID records since no call is actually offered to the agent. The CFW, Call Forwarding Don't Answer (CFDA), Call Forwarding Busy Line (CFBL), and CFD features perform look-aheads.
- For the call illustrated in the following figure, two BCLID messages are generated. The first message is generated when the call is offered to party B; the second message is generated when the call is forwarded to party C. For the second message, the DN for party C is always used, regardless of the datafill in field DNDISP in table BCLIDGRP. This is because the hunt group data is not available to determine if the base and terminating stations belong to the same BCLID group.

Bulk Calling Line Identification (BCLID) (continued)

Table flow for two BCLID message generation



- Only the following line class codes (LCC) are supported by BCLID:
 - plain old telephone service (POTS) lines with the following options:
 - one-party flat rate (1FR)
 - one-party message rate (1MR)
 - inward WATS (INW)
 - outward WATS (OWT)
 - two-way WATS (TWW)
 - enhanced outward WATS (EOW)
 - enhanced two-way WATS (ETW)
 - zero minus denied (ZMD)
 - zero minus/zero plus allowed (ZMZPA)
 - RES lines
 - IBN lines
 - Meridian business sets (MBS)
 - PSET
 - M2000 Series (existing LCCs)

Bulk Calling Line Identification (BCLID) (continued)

- Integrated Services Digital Network (ISDN) sets
 - M5000 Series (existing LCCs)
- private branch exchange (PBX) lines
 - PBX Message Register (PBM)
- hunt groups
 - MLH
 - DNH
 - DLH
 - BNN
- UCD groups
- Only the following line card codes are supported for BCLID data links:
 - 6X17
 - 6X18
 - 3A06
 - SCD203

Interactions

The following paragraphs describe the interactions between Bulk Calling Line Identification (BCLID) and other functionalities.

Attendant consoles

Calls that are routed through attendant positions are supported by BCLID. Attendant consoles are not normally accessed by DNs, and the attendant's DN is not usually released. In the event of a direct attendant console-to- BCLID subscriber call, the calling DN field in the BCLID record contains the out-of-area (O) indicator.

Automatic Call Back

Since the application of ringback is not signaling an incoming call, no BCLID record is generated for the Automatic Call Back (ACB) subscriber on ringback. If the ACB subscriber chooses to terminate on the called party, the called party receives a BCLID record if the call is defined as incoming.

Automatic Recall

No BCLID record is generated for the ringback. A BCLID record is generated for the called party's group if the call from the Automatic Recall (AR) subscriber to the called party is an incoming call to the called party.

Bulk Calling Line Identification (BCLID) (continued)

Call Forwarding

If the BCLID subscriber has Call Forwarding (CFW) Call Forwarding Intragroup (CFI), Call Forwarding Universal (CFU), Call Forwarding Fixed (CFF), Call Forwarding Busy (CFB), CFBL, or Selective Call Forwarding (SCF) active on his or her line, a BCLID record is not generated for the base station since the call is not offered to that line. However, if the remote station is also a BCLID subscriber, a record is generated for the call that attempts to terminate to the remote station.

If a BCLID subscriber has either POTS CFDA or MDC CFD, a BCLID record is generated when a call is offered to the forwarding line. If the call is forwarded to a BCLID subscriber, a second BCLID record is generated. If the call is forwarded to a non-BCLID subscriber, a second record is not generated.

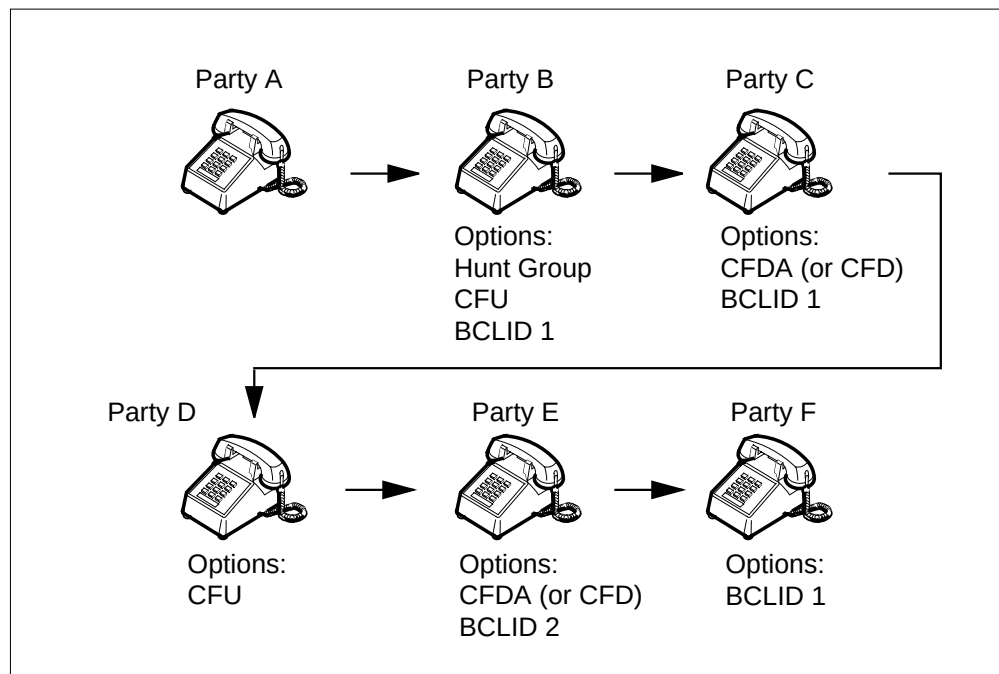
The maximum number of call forwarding information blocks stored in the DMS for a call is five. When a call is forwarded more than five times in the same switch, the call is routed to treatment. Calls that are call forwarded to the DMS from another switch over ISUP or PRA trunks contain additional call forwarding information. However, the originally called number is never recorded in the BCLID record. Since call forwarding information is available in the ISUP and PRA setup messages, the call forwarding indicator in the BCLID record is set to F. This indicator is included in the BCLID record only if field CFIND in table BCLIDGRP is set to Y.

The called number field of a BCLID record can differ depending on the call forwarding options and whether the forwarding and terminating parties belong to the same BCLID group. Specifically, if field DNDISP in table BCLIDGRP is set to LAST, the terminating party's DN is always reported in the called number field. If DNDISP is set to FIRST, the DN of the first forwarding party in the same BCLID group as the terminating party is reported in the called number field.

The following illustration shows which DN is reported for different call forwarding scenarios. Parties C, E, and F can be terminating parties. Since all calls to parties B and D are forwarded (because they have CFU), calls cannot terminate on their lines.

Bulk Calling Line Identification (BCLID) (continued)

Table flow for DN call forwarding scenarios



In the table that follows, the first column shows the terminating party. The second column shows the value of field DNDISP in table BCLIDGRP. (DNDISP determines which DN in a call forwarding chain is in the called number field of a BCLID record.) If DNDISP is set to **FIRST**, the first forwarding party's DN is used. If DNDISP is set to **LAST**, the terminating party's DN is used. The third column shows the party whose DN is listed in the called number field of the BCLID report.

DN call forwarding scenarios (Sheet 1 of 2)

Terminating party	DNDISP	Called DN	Explanation
Party C	FIRST	Party B	B is the first subscriber in the CFW chain and is in the same BCLID group as C.
	LAST	Party C	C is the terminating party.

Bulk Calling Line Identification (BCLID) (continued)

DN call forwarding scenarios (Sheet 2 of 2)

Terminating party	DNDISP	Called DN	Explanation
Party E	FIRST	Party E	DNDISP has no effect since E is in a different BCLID group.
	LAST	Party E	DNDISP has no effect since E is in a different BCLID group.
Party F	FIRST	Party B	B is the first subscriber in the CFW chain and is in the same BCLID group as F.
	LAST	Party F	F is the terminating party.

Call Pickup

Since BCLID records are generated within 5 s of terminating on party B's line, a BCLID record is already generated to party B's line before party A's line can activate call pickup. The called number field in the BCLID record contains the DN of subscriber B's line. No BCLID record is generated as a result of the Call Pickup (CPU) feature activation.

Call Transfer

As with Three-Way Calling, a BCLID record is generated as soon as the feature activator for Call Transfer (CXR) connects to the third party. The value in the calling number field is that of the feature activator.

Call Waiting

When a call terminates on a BCLID line that is active with a call and has option CWT, a BCLID record is generated. The called line status field contains the B indicator to indicate that the line was busy when the call attempted to terminate on that line.

Calling Number Delivery Blocking

With the Calling Number Delivery Blocking (CNDB) feature, if the subscriber's DN is marked as private, either by default or by feature activation,

Bulk Calling Line Identification (BCLID) (continued)

it is not transmitted to the BCLID subscriber. In place of the DN, the ASCII character P is transmitted and printed on the BCLID record.

If the call is accepted by the BCLID subscriber, additional attempts to terminate on the BCLID subscriber's line also show the line status as busy. Therefore, the line status field does not imply any ability to answer the call if the called party has CWT.

Customer Originated Trace

The BCLID feature and the Customer Originated Trace (COT) feature operate independently.

Denied Termination

Denied Termination (DTM) is not compatible with BCLID.

Hunt Groups

With the Hunting feature, a hunt group of lines is designated. When a call is made to any of these lines and is not answered, the call is automatically forwarded to another line in the group. An incoming call to a DNH or PRH group generates a BCLID record with the seven-digit DN of the member that was terminated on displayed in the called number field. If there are no idle members in the group, the seven-digit DN of the member that was dialed appears in the called number field.

Incoming calls to a DLH, MLH, or BNN hunt group generate a BCLID record with the eight-digit number of the member that was terminated on in the called number field. If no idle members are found in the group, the called number field of the BCLID record contains the group and member number of the pilot for the DLH, or MLH hunt group. For BNN hunt groups, the called number field contains the group and member number of the member that was dialed if there are no other idle members in the group.

In each of the cases where all lines are busy, the called line status field contains the B indicator.

Line Overflow to Directory Number

If the line is forwarded to a BCLID subscriber, when using option LOD, a BCLID record is generated.

Line Overflow to Route

If the route to which calls are forwarded is a BCLID subscriber, when using option LOR, a BCLID record is generated.

Bulk Calling Line Identification (BCLID) (continued)

Multiple Appearance Directory Number

The called number field of the BCLID records generated for Multiple Appearance Directory Number (MADN) lines contains the pilot DN of the MADN group; therefore, the identity of the person who answers the call cannot be determined. No additional BCLID records are generated if other members of the MADN group join the call.

Plug Up

Since BCLID is a terminating feature, no BCLID records are generated for the line. When the Plug Up (PLP) feature is deactivated, and termination is allowed to the line, BCLID records are generated.

Ring Again

When a Ring Again (RAG) subscriber attempts to terminate on a BCLID line that is busy, a BCLID record is generated as normal. If the RAG subscriber activates the RAG feature, he or she is notified when the BCLID subscriber is idle. If the RAG subscriber chooses to terminate on the BCLID line, signaled by going off-hook, a second attempt is made to terminate. This second attempt generates a second BCLID record.

Simplified Message Desk Interface

There are no interactions between Simplified Message Desk Interface (SMDI) and BCLID. SMDI and BCLID cannot share a common data link to the CPE.

Suspended Service

No BCLID records are generated for lines that have the Suspended Service (SUS) feature activated.

Teen Service

With the Teen Service (SDN) feature, the called number field of the BCLID record contains either the primary DN or one of the alternate DNs, depending on which DN was dialed.

Assume that the primary DN is forwarded to another BCLID member in the same BCLID group. If a call is made to the primary DN or any one of the alternate DNs, the called number field of the resulting BCLID record will contain the primary DN, if field DNDISP in table BCLIDGRP is set to FIRST.

Three-Way Calling

Assume party A and party B are connected, and party A initiates a three-way calling to party C. Assuming party C is a BCLID subscriber, a BCLID record is generated for party C because the Three-Way Calling (3WC) activation by party A is seen as an incoming call to party C. The calling number field of the BCLID record generated for party C contains the DN of party A.

Bulk Calling Line Identification (BCLID) (continued)

Traffic operator position system

Calls routed through a traffic operator position system (TOPS) position contain the O (out-of-area) indicator in the calling number field.

Uniform Call Distribution

There are five different scenarios that can affect the called number field of the BCLID record when a call arrives to a Uniform Call Distribution (UCD) group that has option BCLID assigned. The five scenarios are as follows:

- A call arrives and there are idle agents to receive the call. In this case, the called number field contains the DN of the agent that answered the call. The called line status field contains the character I.
- A call arrives and there are no idle agents to receive the call. The incoming call is placed in queue, and the call is attached when an agent becomes free. The DN of the agent answering the call is placed in the called number field, and the called line status is I.
- A call arrives and there are no idle agents to receive the call. The incoming call is placed in queue, but the caller disconnects before an agent becomes free. In this case, the seven-digit number that is dialed to reach the UCD group is placed in the called number field, and the called line status is B.
- A call arrives and there are no idle agents to receive the call. If the maximum queue size is zero, the maximum time a caller should wait is zero, or both are zero, the seven-digit number that is dialed to reach the UCD group appears in the called number field, and the called line status is B.
- A call arrives and there are no idle agents to receive the call. If the queue size or the time a caller has already waited is greater than that datafilled in table UCDGRP, the seven-digit number that is dialed to reach the UCD group appears in the called number field, and the called line status is B.

Activation/deactivation by the end user

Bulk Calling Line Identification (BCLID) requires no activation or deactivation by the end user.

Billing

Refer to “USP billing” in “BCLID: USP Billing & DN Changes in Message Format” for information on billing and usage sensitive pricing (USP) for BCLID.

Station Message Detail Recording

Bulk Calling Line Identification (BCLID) does not affect Station Message Detail Recording.

Bulk Calling Line Identification (BCLID) (continued)

Datafilling office parameters

Office parameter MAX_BCLID_DATA_LINKS in table OFCOPT must be datafilled to specify the maximum number of BCLID data links available in the office. When the number of lines exceeds the value of this parameter, the message MAXIMUM NUMBER OF BCLID DATA LINKS HAS BEEN REACHED is displayed at the MAP terminal, and the new tuple is not added. The default value for the MAX_BCLID_DATA_LINKS office parameter is 10.

The operating company can verify whether office parameter MAX_BCLID_DATA_LINKS is operating correctly by adding BCLID data links to table IBNLINES (FORMAT set to BL) until the maximum value has been reached.

Note: Table OFCOPT is a write-restricted table.

The following table shows the office parameters used by Bulk Calling Line Identification (BCLID). For more information about office parameters, refer to *Office Parameters Reference Manual*

Office parameters used by Bulk Calling Line Identification (BCLID)

Table name	Parameter name	Explanation and action
OFCOPT	MAX_BCLID_DATA_LINKS	OFCOPT This parameter specifies the maximum number of BCLID data links assigned in table IBNLINES. To deactivate the BCLID feature for the office, set the MAX_BCLID_DATA_LINKS office parameter to 0. If BCLID data links already exist in table IBNLINES when the parameter is set to 0, they are not removed or restricted. Setting the parameter to 0 prevents the addition of BCLID data links.

Bulk Calling Line Identification (BCLID) (continued)

Datafill sequence

The following table lists the tables that require datafill to implement Bulk Calling Line Identification (BCLID). The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Bulk Calling Line Identification (BCLID)

Table	Purpose of table
OFCOPT	Office Option. This table contains data on engineering options for the office. Refer to <i>Office Parameters Reference Manual</i> for how Bulk Calling Line Identification (BCLID) affects office parameters.
IBNLINES (note)	IBN Line Assignment. This table contains information that defines the BCLID data link line equipment numbers (LEN) used in table BCLIDGRP.
BCLIDGRP	BCLID Group. This table contains information that defines the BCLID groups in the office and identifies the lines to be used as data links for each BCLID group in the office.
BCLIDLNK	BCLID Link. This table contains information to ensure the proper transfer of data during dump and restore. The index to this table is the BCLID group number. Note: Table BCLIDLINK is automatically datafilled when table BCLIDGRP is datafilled.
IBNFEAT (note)	IBN Line Feature. This table contains information that defines the features assigned to each RES line.
LENFEAT (note)	Line Equipment Number Feature. This table contains information that defines the features assigned to each line.
HUNTGRP (note)	Hunt Group. This table contains information that defines the data for each hunt group.
UCDGRP	Uniform Call Distribution Group. This table contains information that defines the data for each UCD group.
Note: This table is datafilled through SERVORD; therefore, no datafill procedure or example is provided. Refer to "SERVORD" for an example of using SERVORD to datafill this table.	

Datafilling table BCLIDGRP

Table BCLIDGRP (BCLID Group) contains information that defines the BCLID groups in the office and identifies the lines to be used as data links for each BCLID group in the office.

Bulk Calling Line Identification (BCLID) (continued)

Field BCGRPNUM defines a value specifying the BCLID group number. A maximum of 2048 BCLID groups can be defined and should be assigned sequentially.

The following table shows the datafill specific to Bulk Calling Line Identification (BCLID) for table BCLIDGRP. Only those fields that apply directly to Bulk Calling Line Identification (BCLID) are shown. Refer to the data schema section of this document for a description of the other fields.

Datafilling table BCLIDGRP (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
BCGRPNUM		0 to 2047	Bulk calling group number. This field is the index to table BCLIDGRP. When option BCLID is assigned to the line, the BCLID group number is included to indicate the BCLID group and options associated with that line. Enter a value from 0 to 2047.
USP		Y or N	Usage sensitive pricing. This field specifies whether or not USP is assigned. If set to N, flat rate billing is used. If set to Y, field BILLDN must contain a billing DN. Enter Y or N.
BILLDN		billing number	Billing directory number. This field specifies a billing DN that will appear in the AMA record, if generated. Enter the billing number (1 to 11 digits).
DNDISP		FIRST, LAST, or BOTH	Directory number display. This function is changed in BCS32. This field specifies the DN to be displayed in the called number field of the BCLID record in call forwarding situations. Enter FIRST, LAST, or BOTH. See "Feature interactions" in this feature description for more information on how CFW features interact with BCLID.
DATE		Y or N	DATE. This field specifies whether or not the date is displayed in field DATE of the BCLID record. Enter Y or N.
TIME		Y or N	TIME. This field specifies whether or not the time is displayed in field TIME of the BCLID record. Enter Y or N.

Bulk Calling Line Identification (BCLID) (continued)

Datafilling table BCLIDGRP (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
INTRAGRP		Y or N	Intragroup call message generation. This field specifies whether or not a call originating from within a BCLID group and terminating to a line within the same group generates a BCLID record. Enter Y or N.
CFIND		Y or N	Call forward indication. This field specifies whether or not the call forwarding indicator information is displayed in the call forwarding indicator field of the BCLID record. Enter Y or N.
BSYSEND		Y or N	Busy message sending. This field specifies whether or not a busy message is sent when a caller reaches a busy line. Enter Y or N.
DSP800DN		Y or N	Display 800 DN. This field specifies whether or not the BCLID message should include the dialed 800 number for the call. The default value for this field is N and can be changed to Y if the following conditions are met: - the switch is capable of receiving ISUP messages - field DATE is set to N - field TIME is set to N If any of these three conditions are not met when DSP800DN is set to Y, the following error message is generated: MESSAGE SIZE TOO LARGE WHEN DSP800DN = Y, DATE AND TIME MUST BE N.
BCLNKLEN		LEN	Bulk calling data link line equipment number. This field specifies the LEN of the lines to be used as BCLID data links. A maximum of 16 lines can be used as data links within one BCLID group. Enter the LEN.

Datafill example for table BCLIDGRP

The following example shows sample datafill for table BCLIDGRP.

Bulk Calling Line Identification (BCLID) (continued)

MAP display example for table BCLIDGRP

BCGRPNUM	USP	BILLDN	DNDISP	DATE	TIME	INTRAGRP	
CFIND		BSYSEND	DSP800DN			BCLNKLEN	
15	N	6136212111	FIRST	Y	Y	N	
	N	N	N		(HOST	0 0 0 3)	\$

The following example shows sample datafill for the BCLID 800+ Service feature in table BCLIDGRP.

MAP display example for for the BCLID 800+ Service feature in table BCLIDGRP

BCGRPNUM	USP	BILLDN	DNDISP	DATE	TIME	INTRAGRP	
CFIND		BSYSEND	DSP800DN			BCLNKLEN	
15	Y	6136212111	FIRST	N	N	Y	
	Y	Y	Y		(HOST	0 0 0 3)	\$

Datafilling table BCLIDLNK

Table BCLIDLNK (BCLID Link) contains information to ensure the proper transfer of data during dump and restore. The index to this table is the BCLID group number.

Note: Table BCLIDLNK is read-only. It cannot be modified by an operating company. Its contents depend entirely on the contents of table BCLIDGRP. Table BCLIDGRP automatically datafills table BCLIDLNK.

Datafill example for table BCLIDLNK

The following example shows sample datafill for table BCLIDLNK.

MAP display example for table BCLIDLNK

BCGRPNUM	AVAIL	UNAVAIL	BCLINKS	BCLIDCPB
15	1	0	HOST 0 0 0 3	Y \$

Bulk Calling Line Identification (BCLID) (continued)

Datafilling table UCDGRP

Table UCDGRP (Uniform Call Distribution Group) contains information that defines the data for each UCD group. Option BCLID is added to field OPTION of table UCDGRP. If field OPTION specifies BCLID, subfield BCGRPNUM must be datafilled. Subfield BCGRPNUM corresponds to the value of field BCGRPNUM in table BCLIDGRP.

The following table shows the datafill specific to Bulk Calling Line Identification (BCLID) for table UCDGRP. Only those fields that apply directly to Bulk Calling Line Identification (BCLID) are shown. Refer to the data schema section of this document for a description of the other fields.

Datafilling table UCDGRP

Field	Subfield or refinement	Entry	Explanation and action
OPTIONS		see subfields	OPTIONS. This field consists of the subfields OPTION and BCGRPNUM. These fields are described below.
	OPTION	BCLID	OPTION. This subfield specifies the option. Enter BCLID.
	BCGRPNUM	0 to 2047	Bulk calling group number. This subfield specifies the BCLID group to which the line belongs. The BCLID group number must be defined in field BCGRPNUM in table BCLIDGRP before it can be used in this table. Enter a value from 0 to 2047.

Datafill example for table UCDGRP

The following example shows sample datafill for table UCDGRP.

MAP display example for table UCDGRP

UCDNAME	ACD	CUSTGRP	UCDRNGTH	THROUTE	NSROUTE
PROPRIO	MAXPOS	DBG	DEFPRI0	RLSCNT	
MAXWAIT		MAXCQSIZ		OPTIONS	
DAGUCD	N	IBNTST	0	OFRT 30	FRT 30
0	16	N	1	0	0
(BCLID 15)	\$				16

Bulk Calling Line Identification (BCLID) (continued)

Translation verification tools

Bulk Calling Line Identification (BCLID) does not use translation verification tools.

SERVORD

Tables IBNLINES, IBNFEAT, LENFEAT, and HUNTGRP are datafilled by SERVORD.

Table IBNLINES (IBN Line Assignment) contains information that defines the BCLID data link line equipment numbers (LEN) used in table BCLIDGRP. LENs must first be defined in table IBNLINES before they can be defined in table BCLIDGRP. Any one BCLID group can be assigned a maximum of 16 data links in field BCLNKLEN in table BCLIDGRP. A maximum of 4096 data links can be defined.

Table IBNFEAT (IBN Line Feature) contains information that defines the features assigned to each RES line. Option BCLID is added to fields DF and FEATURE of table IBNFEAT. Field BCGRPNUM is added as a subfield to field DATA. Subfield BCGRPNUM must be datafilled if BCLID is assigned in fields DF and FEATURE. Subfield BCGRPNUM corresponds to the value of field BCGRPNUM in table BCLIDGRP.

Table LENFEAT (Line Equipment Number Feature) contains information that defines the features assigned to each line. Option BCLID is added to fields DF and DATA of table LENFEAT. Field BCGRPNUM is added as a subfield to field DATA. Subfield BCGRPNUM must be datafilled if BCLID is assigned in fields DF and DATA. Subfield BCGRPNUM corresponds to the value of field BCGRPNUM in table BCLIDGRP.

Table HUNTGRP (Hunt Group) contains information that defines the data for each hunt group. Option BCLID is added to field OPTION of table HUNTGRP. If field OPTION specifies BCLID, subfield BCGRPNUM must also be datafilled. Subfield BCGRPNUM corresponds to the value of field BCGRPNUM in table BCLIDGRP.

Option BCLID can be added, deleted, or changed from a RES line by using the standard SERVORD commands such as NEW, ADO, OUT, DEO, or CHF. When option BCLID is added, the user is prompted for field BCGRPNUM. BCLID can only be assigned to a UCD group through table UCDGRP. BCLID data links can only be changed through table IBNLINES.

SERVORD limitations and restrictions

SERVORD has no limitations or restrictions.

Bulk Calling Line Identification (BCLID) (continued)

SERVORD prompts

The following table shows the SERVORD prompts used to add Bulk Calling Line Identification (BCLID).

SERVORD prompts for Bulk Calling Line Identification (BCLID)

Prompt	Valid input	Explanation
OPTION	BCLID	Assigns, updates, and removes the BCLID feature
BCGRPNUM	0 to 2047	Specifies the BCLID group to which the line belongs

SERVORD example for adding Bulk Calling Line Identification (BCLID)

The following SERVORD example shows how Bulk Calling Line Identification (BCLID) is added to an existing line using the ADO command.

SERVORD example for Bulk Calling Line Identification (BCLID) in prompt mode

```
> SERVORD
S0:
>ADO
SONUMBER:  NOW 88 12 3 AM
>
DN_OR_LEN:
> 6215000
OPTION:
> BCLID
BCGRPNUM:
>15
OPTION:
> $
COMMAND AS ENTERED:
ADO NOW 88 12 3 AM 6215000 (BCLID 15) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>Y
```

SERVORD example for Bulk Calling Line Identification (BCLID) in no-prompt mode

```
>ADO $ 6215000 BCLID 15 $ Y
```

Bulk Calling Line Identification (BCLID) (end)

SERVORD example for deleting Bulk Calling Line Identification (BCLID)

The following SERVORD example shows how Bulk Calling Line Identification (BCLID) is deleted from an existing line using the DEO command.

SERVORD example for Bulk Calling Line Identification (BCLID) in prompt mode

```
> SERVORD
S0:
>DEO
SONUMBER:  NOW 88 12 3 AM
>
DN_OR_LEN:
> 6215000
OPTION:
> BCLID
BCGRPNUM:
>$
OPTION:
> $
COMMAND AS ENTERED:
DEO NOW 88 12 3 AM 6215000 (BCLID) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>Y
```

SERVORD example for Bulk Calling Line Identification (BCLID) in no-prompt mode

```
>DEO $ 6215000 BCLID $ Y
```

Simplified Message Desk Interface (SMDI)

Ordering codes

Functional group ordering code: RES00004

Functionality ordering code: not applicable

Release applicability

BCS23 and up

In BCS28, Table SLLNKDEV (Link Device) is expanded to support up to 59 data links for SMDI. Table TERMDEV (Terminal Device) is likewise expanded. Prior to BCS28, Table SLLNKDEV supports a maximum of 16 data links for SMDI. The BCS28 enhancement is provided by feature H0031 in feature package NTX732AA.

Prerequisites

To operate, Simplified Message Desk Interface (SMDI) has the following prerequisites:

- BAS Generic, BAS00003
- MDC Minimum, MDC00001
- MDC Standard, MDC00003
- RES Service Enablers, RES00006

Description

Simplified Message Desk Interface (SMDI) provides an interface using a data link and the DMS switch to either of two types of message desks: a voice messaging system (VMS) or a text messaging system (TMS). SMDI allows the end user to monitor and retrieve incoming messages, interpreting these messages to alter the message waiting indication (MWI) state appropriately.

Simplified Message Desk Interface (SMDI) (continued)

Operation

The implementation of SMDI integrates the functions of the message desk into the DMS-100 switch so that the SMDI appears to the end user as a single communications system. This feature provides the following:

- message waiting for SMDI—the identification of called and calling party numbers to the message desk by the DMS-100 switch so that the caller connects with the proper mailbox
- SMDI data link interface—the means for the message desk to activate and deactivate MWI through the DMS-100 switch
- call forwarding for SMDI—an indication from the DMS-100 switch of the call forward condition the caller encountered so that the appropriate message is played to the calling party

Transmission of the input and output messages across the data link is handled by the data link interface.

The data link interface of the SMDI provides a CI (command interpreter) MAP (maintenance and administration position) level that contains the commands for starting, stopping, and querying SMDI communication. It provides a means of sending the called and calling party numbers from the DMS-100 switch to the appropriate message desk equipment. This message can contain the following:

- message desk number
- message desk terminal number
- forwarding from station number
- calling station number (not available if the call is a direct call)

Translations table flow

Simplified Message Desk Interface (SMDI) does not affect translations table flow.

Simplified Message Desk Interface (SMDI) (continued)

Limitations and restrictions

The following limitations and restrictions apply to Simplified Message Desk Interface (SMDI):

- The activation of Message Waiting (MWT) for SMDI is performed by the DMS-100 switch as instructed only by the input data link message. The following exceptions affect activation:
 - If the data link is down, the message is not transmitted, and MWT is not activated. Appropriate log reports relating to the data link status are generated to inform the user of hardware or software failure.
 - If the DMS-100 switch is momentarily unable to execute the message desk request or the input data link message contains invalid data, the message is not transmitted, and the DMS-100 switch sends a negative acknowledgment (NACK) message to the message desk. In either case, the message desk rechecks the data and tries the transmission again.
- The deactivation of MWT for SMDI is performed by the DMS-100 switch as instructed only by the input data link message. The following exceptions affect deactivation:
 - If the data link is down, the message is not transmitted, and the DMS-100 switch does not deactivate MWT even when the message is already retrieved. The DMS-100 switch depends on the message desk to determine when all messages are retrieved and the MWI needs to be turned off.
 - If the DMS-100 switch is momentarily unable to execute the message desk request or the input data link message contains invalid data, the message is not transmitted, and the DMS-100 switch sends a NACK message to the message desk. In either case, the message desk rechecks the data and tries the transmission again.
- The DMS switch needs 108 words of memory for SMDI Uniform Call Distribution (UCD) information. Each SMDI UCD group needs a data link circuit on the input/output controller (IOC) card. At BCS23, only one message desk is supported on the data link (that is, I/O part), and there is only one data link. At BCS24, a maximum of 16 data links can be assigned, and there is a maximum of 63 message desks on each data link. At BCS28, a maximum of 59 SMDI data links can be assigned.
- The requestor must have any type of Call Forwarding (CFW) option datafilled to forward calls to the message desk.
- The requestee must have the MWT option datafilled to enable the MWI on the station to be turned on or off. If the station does not have MWT datafilled, other means of MWI can be used. However, if MWT

Simplified Message Desk Interface (SMDI) (continued)

activation/deactivation is requested by the message desk through the data link and the requestee's station does not have the MWT option datafilled, an error occurs, and the appropriate log is generated. The Call Request (CAR) and Call Transfer (CRX) options apply only to station MWT, and SMDI is not affected. As long as the requestee's station has the MWT option, the SMDI message is queued and dequeued against the DN, and MWI is toggled on and off.

- The following scenarios hold true for warm and cold restarts, but not for a reload restart:
 - MWT messages and MWI on the requestee's station are preserved for warm restarts only.
 - Only MWI on the requestee's station is preserved after cold restarts where the MWT audits adjust the MWI states soon afterward. All MWT messages queued against the requestees are lost.
 - The agents in an active UCD group are automatically logged into that group again.
 - Active data links in a transferring state are automatically brought up and ready for use.
- SMDI input/output communication functions exclusive of all other types of data transfer on an individual pool basis. No device can transfer SMDI input/output communication and any other presently existing report type. SMDI restrictions have no effect on the multilink ASCII device driver unless the SMDI data link interface is present in the software load.
- SMDI input/output communication requires a new type of data link that cannot meet the needs of any of the presently existing report types. Therefore, it must have exclusive use of any data link it uses in the multilink ASCII device driver.
- No end-to-end protocol or integrity is provided, but some errors are detectable. Erroneous data that is received is not retransmitted.
- If the originator is a trunk or attendant console, the calling DN presented to the SMDI message center is blank.

Interactions

The following paragraphs describe the interactions between Simplified Message Desk Interface (SMDI) and other functionalities.

Attendant consoles

In an attendant-extended call to an SMDI, the source of the call is considered the calling party presented to the message desk.

Simplified Message Desk Interface (SMDI) (continued)

Call Forwarding

A CFW validation termination call is considered a direct call to an SMDI.

For Call Forward Universal (CFU)/CFI and Call Forward Busy (CFB), the controlling station that initiated the three-way call/call transfer is considered the calling station.

For Call Forward Don't Answer (CFD), if the controller goes on-hook before CFD times out, the other station on the first leg is considered the calling station. Otherwise, the controller is considered the calling station.

Station-controlled conference

In a station-controlled conference call (for example, a six-port conference call), the calling station presented to the message desk is a blank DN.

Three-way Calling

As of NA007, when a subscriber involved in a two-way call flashes to initiate 3WC and dials the voice mail DN, the delivery of the controller's DN is controlled by the table OFCOPT office parameter DELIVER_NUMBER__TO_SMDI_ON_3WC. If this parameter is set to Y, the controller's DN is delivered to the SMDI. Otherwise, the DN is not delivered.

Activation/deactivation by the end user

The following flow of control describes from the user's point of view how each interface works with the other. The letters C, M, and D indicate that call forwarding (C), message waiting (M), and data link (D) functions for SMDI occur.

- A station can forward calls to the message desk, if one of the CFW types is assigned to the line. The message desk is identified with a UCD DN. The agents in a UCD group must have the UCD line option on their lines plus the SMDI option to indicate that their UCD lines have SMDI (C).
- At the message desk instruction (D), a message can be queued against the station, and the MWI is turned on if the MWT feature (M) is assigned to the line. (The user can define some other means of MWT indication than the standard MWT lamp or stuttered dial tone. In this case, it is not required that the station be datafilled with the MWT option. However, if the message desk attempts to activate or deactivate MWT through the data link without the MWT option, an error results, and an SMDI log is generated.)
- The station can retrieve calls by dialing the message desk UCD DN or the CAR retrieval access code, provided that the CAR feature is assigned to the

Simplified Message Desk Interface (SMDI) (continued)

line. Using the CAR retrieval access code is recommended to maximize the effectiveness of the MWT capability.

- At the message desk instruction (D), a message is taken out of the queue for the station, and the MWI or MWT indication is turned off.

Message waiting for SMDI uses the current functions of the MWT and CAR features. It differs only in which message instructions for the DMS-100 switch activate and deactivate the MWI tone over a 1200-baud dedicated, full-duplex data line.

To distinguish the activation/deactivation of the normal MWT feature, the SMDI feature is associated with a datafilled DN of a UCD group as the message desk UCD DN. If the requestee's call is not forwarded to the message desk UCD DN, the requestor activates and deactivates the call requests against the requestee in the normal way.

The requestee is not able to tell whether the station MWI has been activated or deactivated by the MWT feature or the SMDI MWT feature. The MWI method remains the same for the requestee—stuttered dial tone or MWT lamp is applied depending on the station's option. Furthermore, the process of activating and deactivating MWT by the requestor or requestee through SMDI is maintained. In the event of CFW chaining to a message desk, called station information presented to the message desk is the first call forward base station in the chain. A station with messages queued using the SMDI desk can retrieve the message by dialing either the CAR retrieval code or the message desk DN directly. The CAR retrieval code is the preferred method.

When the NA007 and up office parameter DELIVER_NUMBER_TO_SMDI_ON_3WC is set to N and a subscriber flashes to invoke 3WC and dials the voice mail DN, the subscriber's DN is *not* delivered to the SMDI. The controller must explicitly dial their extension followed by the octothorpe (#) key to deliver the DN to the VMS.

When DELIVER_NUMBER_TO_SMDI_ON_3WC is set to Y and a subscriber flashes to invoke 3WC and dials the voice mail DN, the subscriber's DN is delivered to the SMDI. The controller presses the octothorpe (#) key to inform the VMS to use the delivered DN.

Billing

Simplified Message Desk Interface (SMDI) does not affect billing.

Station Message Detail Recording

Simplified Message Desk Interface (SMDI) does not affect Station Message Detail Recording.

Simplified Message Desk Interface (SMDI) (continued)

Datafilling office parameters

The following table shows the office parameters used by Simplified Message Desk Interface (SMDI). For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by Simplified Message Desk Interface (SMDI)

Table name	Parameter name	Explanation and action
OFCOPT	DELIVER_NUMBER_TO_SMDI_O N_3WC	This parameter controls the delivery of the 3WC controller's DN to the SMDI (on direct calls only). When set to Y, the controller's DN is delivered. When set to N, the DN is not delivered. The default value is N.

Datafill sequence

The following table lists the tables that require datafill to implement Simplified Message Desk Interface (SMDI). The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Simplified Message Desk Interface (SMDI) (Sheet 1 of 2)

Table	Purpose of table
TERMDEV	Terminal device. This table contains the assignments for terminal devices.
SLLNKDEV	Link Device table. This table specifies the characteristics of the data link device used in a particular application. These devices must be datafilled in table TERMDEV before they can be datafilled in table SLLNKDEV.
UCDGRP	Uniform call distribution group. This table contains a primary UCD DN and up to four supplementary DNs. This table can be datafilled only after table SDGRP has been datafilled for the location of the signal distributor card.
DNROUTE	Directory number route. This table defines both the INWATS and DISA DNs.
IBNXLA	IBN translation. This table stores the data for the digit translation of calls from an Integrated Business Network (IBN) station, an attendant console, an incoming, or an incoming side of a two-way IBN trunk group.
Note: This table is datafilled through SERVORD; therefore, no datafill procedure is provided.	

Simplified Message Desk Interface (SMDI) (continued)

Datafill tables required for Simplified Message Desk Interface (SMDI) (Sheet 2 of 2)

Table	Purpose of table
IBNLINES (Note)	IBN line assignment. This table contains the line assignments for each 500/2500 set assigned to an IBN Residential (RES) and Multiple Appearance Directory (MADN) station number. This table also contains the line assignments for IBN attendant consoles.
IBNFEAT (Note)	IBN line feature. This table lists the line features that are assigned to the IBN lines listed in table IBNLINES.
Note: This table is datafilled through SERVORD; therefore, no datafill procedure is provided.	

Datafilling table TERMDEV

The following table shows the datafill specific to Simplified Message Desk Interface (SMDI) for table TERMDEV. Only those fields that apply directly to Simplified Message Desk Interface (SMDI) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TERMDEV

Field	Subfield or refinement	Entry	Explanation and action
TERMDDES		alphanumeric	Terminal designation. This field specifies the name defined by the operating company for each terminal device. Enter the terminal designation (up to 8 characters except when using the 1X67FA card, which requires 7 characters).
TERMTYPE		SMDI	Terminal type. This field specifies the terminal type. Enter SMDI.
BAUDRT		alphanumeric	Baud rate. This field specifies the baud rate of the terminal device. Enter B1200.

Datafill example for table TERMDEV

The following example shows sample datafill for table TERMDEV.

Simplified Message Desk Interface (SMDI) (continued)

MAP display example for table TERMDEV

TERMD	ES	IOCNO	CKTNO	TERMTYPE	BAUDRT	INTYP	EQPEC	PRTY	GUAR
						MODEM	COMCLASS		
IBNPRT		0	28	SMDI	B1200	CL	1X67BC	NONE	N
						NONE	ALL		

Datafilling table SLLNKDEV

The following table shows the datafill specific to Simplified Message Desk Interface (SMDI) for table SLLNKDEV. Only those fields that apply directly to Simplified Message Desk Interface (SMDI) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table SLLNKDEV (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
DEVNAME		alphanumeric	Device name. This field specifies the 1- to 16-character alphanumeric device name used in the link utility (LNKUTIL). Enter the device name.
DEVTYPE		see subfield	Device type. This field consists of subfield DEVICE.
	DEVICE	alphanumeric	Device. This subfield specifies the device type. Enter 1X67, 1X89, or HS1X67. Note: If DEVICE is set to 1X89, subfields MPCNO and LINKNO require datafill.
	MPCNO	0 to 255	MPC number. This subfield specifies the number of the MPC card (card 1X89). Enter a value from 0 to 255.
	LINKNO	0 to 3	MPC link. This subfield specifies the MPC card link number. Enter a value from 0 to 3.
XFERS		SMDIDATA	Transfers. This field specifies the report types that are allowed on this data link. Enter SMDIDATA.

Simplified Message Desk Interface (SMDI) (continued)

Datafilling table SLLNKDEV (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	OPTION	character	Note: If XFERS is set to SMDIDATA, subfield OPTION requires datafill. Option. This subfield specifies the option. Enter NUMOFDIGS for number of digits, DNSUPPR for DN suppression, LASTFWDN for last forwarding DN, or NONMS for no network message service.

Datafill example for table SLLNKDEV

The following example shows sample datafill for table SLLNKDEV.

MAP display example for table SLLNKDEV

DEVNAME	DEVTYPE	XLATION	PROTOCOL	DIRECTION XFERS
TRAFLK4 (SNDIDATA \$) \$	1X89 12 3	NONE	NONE	INOUTLK

Datafilling table UCDGRP

The following table shows the datafill specific to Simplified Message Desk Interface (SMDI) for table UCDGRP. Only those fields that apply directly to Simplified Message Desk Interface (SMDI) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table UCDGRP (Sheet 1 of 6)

Field	Subfield or refinement	Entry	Explanation and action
UCDNAME		alphanumeric	Uniform call distribution name. This field specifies the 1- to 16-character alphanumeric name assigned to the UCD group. Enter the uniform call distribution group name.
ACD		N	Automatic call distribution. This field specifies whether automatic call distribution is activated. Until informed otherwise, enter N.

Simplified Message Desk Interface (SMDI) (continued)

Datafilling table UCDGRP (Sheet 2 of 6)

Field	Subfield or refinement	Entry	Explanation and action
CUSTGRP		alphanumeric	Customer group name. This field specifies the 1- to 16-character alphanumeric name assigned to the customer group to which the UCD group belongs. Enter the customer group name.
UCDRNGTH		0 to 63	UCD ringing threshold. This field specifies the ringing threshold, in 1-s intervals, after which an unanswered call that is ringing an agent's phone is forwarded to the route specified in field THROUTE. Enter a value from 0 to 63. Note: A value of 0 means infinite time.
THROUTE		see subfields	Threshold route. This field consists of subfields TABNAME and INDEX.
	TABNAME	character	Table name. This subfield specifies the table to which translations is to route. Enter IBNRTE or OFRT.
	INDEX	1 to 1023	Index. This subfield specifies the number assigned to the route list in table IBNRTE or table OFRT to which translations is to route. Enter a value from 1 to 1023.
NSROUTE		see subfields	Night service route. This field consists of subfields TABNAME and INDEX.
	TABNAME	character	Table name. This subfield specifies the table to which translations is to route. Enter IBNRTE or OFRT.
	INDEX	1 to 1023	Index. This subfield specifies the number assigned to the route list in table IBNRTE or table OFRT to which translations is to route. Enter a value from 1 to 1023.
PRIOPRO		0 to 255	Priority promotion timeout. This field specifies the maximum time, in seconds, that a call can wait in any one queue. Once this time has expired, the call is put into a queue of higher priority. Enter a value from 0 to 255.

Simplified Message Desk Interface (SMDI) (continued)

Datafilling table UCDGRP (Sheet 3 of 6)

Field	Subfield or refinement	Entry	Explanation and action
MAXPOS		0 to 255	Maximum number of positions. This field specifies the maximum number of agent positions that can be activated in this group at any one time. Enter a value from 0 to 1023. Note: A value of 0 disallows agents from activating into the UCD group.
DBG		Y or N	Delayed billing. This field specifies when billing starts. Enter Y where billing starts when the call is answered by a UCD agent or N where billing starts when the caller receives a recorded announcement. This field is active only if the parameter TOLL_OFFICE_DELAYED_BILLING in table OFCENG=Y.
DEFPRIO		0 to 3	Default priority. This field specifies the default priority number that is applicable to local calls terminating on the primary UCD DN. Enter a value from 0 to 3.
RLSCNT		0 to 31	Release count. This field specifies the maximum number of calls that terminate on a UCD station but are not answered, either because UCDRNGTH has expired or because the caller has abandoned. After this number is reached, the agent is automatically deactivated from the UCD group. Enter a value from 0 to 31. Note: A value of 0 means infinite time.

Simplified Message Desk Interface (SMDI) (continued)

Datafilling table UCDGRP (Sheet 4 of 6)

Field	Subfield or refinement	Entry	Explanation and action
MAXWAIT		0 to 1800	Maximum wait time. This field specifies the maximum time, in seconds, that a call should wait in the incoming call queue before being answered. Enter a value from 0 to 1800. Note: A value of 0 means all calls that cannot immediately terminate on an available agent position are rerouted to the overflow route specified in field THROUTE. If the first call in the incoming call queue has waited longer than MAXWAIT, until the wait time of the call at the head of the incoming call queue for that UCD group is less than the maximum allowed wait time, all new calls are rerouted to the route specified in field THROUTE.
MAXCQSIZ		0 to 511	Maximum call queue size. This field specifies the maximum number of calls that can be queued in the group's incoming call queue at one time. Enter a value from 0 to 511. Note: A value of 0 means all calls that cannot immediately terminate on an available agent position are rerouted to the overflow route specified in field THROUTE.
OPTIONS		character	Options. This field specifies the options that are assigned to the UCD group. Enter AUDIO and QSL. Note 1: Each option and its subfield must be separated by a blank space. Use as many records as required to datafill the list of options and associated subfields. Note 2: If OPTIONS is set to AUDIO, subfields OPTIONS, RANTH, ANNMUSIC, and AUDIOGRP require datafill.
	OPTIONS	AUDIO	Options. This subfield specifies the audio option. Enter AUDIO.

Simplified Message Desk Interface (SMDI) (continued)

Datafilling table UCDGRP (Sheet 5 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	RANTH	numeric	Recorded announcement threshold. This subfield specifies the time, in seconds, that an incoming call waits before a recorded announcement is given. Enter a value of 0 or a value from 6 to 60.
	ANNMUSIC	Y or N	Announcement/Music. This subfield specifies whether announcement or music, or both, is given to calls that cannot be answered immediately. Enter Y or N. Note: If ANNMUSIC is set to Y, subfield AUDIOGRP requires datafill.
	AUDIOGRP	alphanumeric	Audio group. This subfield specifies the audio group datafilled in table AUDIO whose option UCDQ specifies the announcement/music that is applied to calls that cannot be answered immediately. Enter a value from AUDIO1 to AUDIO15.
	OPTIONS	QSL	Options. This subfield specifies the queue status lamp option. Enter QSL. Note: If OPTIONS is set to QSL, subfields OPTIONS, SDGRPNO1, SDPOINT1, SDGRPNO2, SDPOINT2, SDGRPNO3, and SDPOINT3 require datafill.
	SDGRPNO1	0 to 511	Signal distribution group 1. This subfield specifies the number of the SD group identifying the tuple in table SDGRP that defines the hardware location of the SD card. Enter a value from 0 to 511.
	SDPOINT1	numeric	Signal distribution point 1. This subfield specifies the SD point number on the SD card. This point is assigned to the currently named UCD group for the QSL option.

Simplified Message Desk Interface (SMDI) (continued)

Datafilling table UCDGRP (Sheet 6 of 6)

Field	Subfield or refinement	Entry	Explanation and action
	SDGRPNO2	0 to 511	Signal distribution group 2. This subfield specifies the number of the SD group identifying the tuple in table SDGRP that defines the hardware location of the SD card. Enter a value from 0 to 511.
	SDPOINT2	numeric	Signal distribution point 2. This subfield specifies the SD point number on the SD card. This point is assigned to the currently named UCD group for the QSL option.
	SDGRPNO3	0 to 511	Signal distribution group 3. This subfield specifies the number of the SD group identifying the tuple in table SDGRP that defines the hardware location of the SD card. Enter a value from 0 to 511.
	SDPOINT3	numeric	Signal distribution point 3. This subfield specifies the SD point number on the SD card. This point is assigned to the currently named UCD group for the QSL option.

Datafill example for table UCDGRP

The following example shows sample datafill for table UCDGRP.

MAP display example for table UCDGRP

UCDNAME	ACD	CUSTGRP	UCDRNGTH	THROUTE
NSROUTE	PRIOPRO	MAXPOS	DBG	DEFPRIO
RLSCNT	MAXWAIT	MAXCQSZ		
OPTIONS				
UCD625	N	MDC625	28	IBNRTE 2
IBNRTE	2	15	4	N 0 2 1800 511
				\$

Datafilling table DNROUTE

The following table shows the datafill specific to Simplified Message Desk Interface (SMDI) for table DNROUTE. Only those fields that apply directly to

Simplified Message Desk Interface (SMDI) (continued)

Simplified Message Desk Interface (SMDI) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table DNROUTE

Field	Subfield or refinement	Entry	Explanation and action
AREACODE		numeric	Serving numbering plan area. This field specifies a valid area code served by the switch. Enter the area code.
OFCODE		numeric	Office code digit register. This field specifies a subregion of the area code. This field can contain 0 to 7 digits. Enter the office code.
STNCODE		numeric	Station code. This field specifies a unique station within the terminating office. This field contains a vector of up to 8 digits. Enter the station code.
DNRESULT			Directory number result. This field consists of subfields DNSEL and TUPLID.
	DN_SEL		Directory number. This subfield specifies the directory number selector. Enter T.
	TUPLID		Tuple identifier. This subfield consists of subfields TABID and KEY.
	TABID		Table name. This subfield specifies the office route to which the call is to be routed. Enter the route name.
	KEY		Key. This subfield specifies the index to the office route. Enter the office route key.

Datafill example for table DNROUTE

The following example shows sample datafill for table DNROUTE.

MAP display example for table DNROUTE

AREACODE	OFCODE	STNCODE	DNRESULT
919	848	1790	T OFRT 222

Datafilling table IBNXLA

The following table shows the datafill specific to Simplified Message Desk Interface (SMDI) for table IBNXLA. Only those fields that apply directly to

Simplified Message Desk Interface (SMDI) (continued)

Simplified Message Desk Interface (SMDI) are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table IBNXLA

Field	Subfield or refinement	Entry	Explanation and action
KEY			Key. This field consists of subfields XLANAME and DGLIDX.
	XLANAME	1- to 8-characters	Translator name. This subfield specifies the name that is assigned to the translator. Enter the 1- to 8-character name.
	DGLIDX	1- to 18-digit number	Digilator index. This subfield specifies the access code. Enter the 1- to 18-digit number assigned as the access code.
RESULT			Result. This field consists of subfield TRSEL.
	TRSEL	FEAT	Translations selector. This subfield specifies the translations selector to be used. Enter FEAT.
	ACR	Y or N	Account code entry. This subfield specifies whether an account code is required. Enter Y or N.
	SMDR	Y or N	Station Message Detail Recording. This subfield specifies whether SMDR is required. Enter Y or N.
	FEATURE	UCDA	Feature. This subfield specifies the feature assigned to a line. Enter UCDA.

Datafill example for table IBNXLA

The following example shows sample datafill for table IBNXLA.

MAP display example for table IBNXLA

KEY		RESULT			
NTIXLA	123	FEAT	N	Y	N UCDA

Simplified Message Desk Interface (SMDI) (continued)

Translation verification tools

Simplified Message Desk Interface (SMDI) does not use translation verification tools.

SERVORD

Option SMDI is assigned using the Service Order System (SERVORD) command ADO (add option). The DEO (delete option) command is used to remove option SMDI. Option SMDI provides communication between the message desk and the DMS-100 switch through a data link.

SERVORD limitations and restrictions

Simplified Message Desk Interface (SMDI) has no SERVORD limitations and restrictions.

SERVORD prompts

The following table shows the SERVORD prompts used to assign Simplified Message Desk Interface (SMDI) to an existing line.

SERVORD prompts for Simplified Message Desk Interface (SMDI)

Prompt	Valid input	Explanation
DN_OR_LEN	7-digit DN or LEN	Specifies the 7-digit DN or LEN of the line to be changed. Enter the DN or LEN.
OPTION	SMDI	Indicates the name of the option. Enter SMDI.
SMDI_DESK	1 to 63	Specifies the message desk number to which a hunt group number belongs. Enter a value from 1 to 63.
SMDI_LINK	see explanation	Specifies the SMDI link name associated with the specified message desk. Enter the name from table SLLNKDEV.
GROUPSIZE	0 to 1024	Specifies the expected maximum size of the hunt group. Enter a value from 0 to 1024.

Note: Tables IBNLINES and IBNFEAT are automatically datafilled when SMDI is assigned using SERVORD.

SERVORD example for adding SMDI

The following SERVORD example shows how Simplified Message Desk Interface (SMDI) is added to an existing line using the ADO command.

Simplified Message Desk Interface (SMDI) (end)

SERVORD example for Simplified Message Desk Interface (SMDI) in prompt mode

```
S0:  
> ADO  
SONUMBER:    NOW 92  10  01  PM  
> $  
DN_OR_LEN:  
> 0 0 1 5  
OPTION:  
> SMDI  
LINENO:  
> 1  
UCDGRP:  
> UCD625  
AUTO_LOG:  
> N  
SMDI_DESK:  
> 63  
SMDI_LINK:  
> SMDI64  
GROUPSIZE:  
> 10  
OPTION:  
> $
```

SERVORD example for Simplified Message Desk Interface (SMDI) in no-prompt mode

```
>ADO $ 0 0 1 5 SMDI 1 UCD625 N 63 SMDI64 10 $
```

SMDI Call Retrieval Billing

Ordering codes

Functional group ordering code: RES00004

Functionality ordering code: not applicable

Release applicability

BCS24 and up

Prerequisites

To operate, SMDI Call Retrieval Billing has the following prerequisites:

- BAS Generic, BAS00003
- MDC Minimum, MDC00001
- RES Service Enablers, RES00006

Description

SMDI Call Retrieval Billing allows end users to access up to 63 different desk numbers serving as the message desk across a single data link. Call retrievals, therefore, also involve the process of end users frequently retrieving messages from various desk numbers. In order for the desk numbers within this message desk to store and/or deliver messages more effectively, one desk number must be dedicated to handle call retrievals when more than one desk number exists on the data link. However, direct-dial access to this desk number is restricted.

The SMDI Call Retrieval Billing feature provides the telephone operating company with a means of billing a customer for the use of the CRR feature. The SMDI Call Retrieval Billing feature generates log report AMAB150 to inform the end user that a call request retrieval (CRR) code has been activated to retrieve a call and creates the new feature code 10 for field TERM_FC of the report. Only the AMAB150 for SMDR_CALL_DATA is affected. Refer to *Log Report Reference Manual* for a description of AMAB150.

Operation

Since each uniform call distribution (UCD) group is identified as a desk number on a data link, table control requires that the second UCD group on the same data link be datafilled as desk number 63. The end user is informed by text messages if any number other than 63 is entered and what the proper datafill should be. Any UCD groups thereafter associated with the same data link are able to choose any other unused desk number. Likewise, the end user is unable to delete the UCD group with desk number 63 on a data link that still has more than one UCD group left. This method ensures that the UCD group

SMDI Call Retrieval Billing (continued)

desk number 63 handles all call retrievals, leaving the other 62 desk numbers available for answering direct inquiries and storing messages.

Translations table flow

SMDI Call Retrieval Billing does not affect translations table flow.

Limitations and restrictions

The following limitations and restrictions apply to SMDI Call Retrieval Billing:

- If more than one UCD group is added to a data link, the second UCD group desk number must be 63. The same check is made in deleting.
- If more than one UCD group exists on a data link, all call retrievals are handled by the UCD group with desk number 63.
- Up to 16 data links are available for transferring messages between the DMS switch and the message desk for each office, with up to 63 desk numbers for each data link.
- SMDI Call Retrieval Billing generates log report AMAB150 for call retrievals where UCD or UCD SMDI is the requestor. Only these features and the features that previously generated log report AMAB150 upon call retrieval denote the new SMDR feature code, 10, in field TERM_FC of log report AMAB150.
- Only calls retrieved by dialing the CRR code have the new SMDR feature code, 10, in field TERM_FC of log report AMAB150. Whenever feature codes of the terminator do not apply, this field has the default value of 0.
- If the SMDR option is disabled, SMDR report generation is suppressed. For information about parameters within an office configuration that affect SMDR, refer to “SMDR table parameters”.

Interactions

SMDI Call Retrieval Billing has no functionality interactions.

Activation/deactivation by the end user

SMDI Call Retrieval Billing requires no activation or deactivation by the end user.

Billing

SMDI Call Retrieval Billing does not affect billing.

Station Message Detail Recording

SMDI Call Retrieval Billing does not affect Station Message Detail Recording.

SMDI Call Retrieval Billing (continued)

Datafilling office parameters

SMDI Call Retrieval Billing does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement SMDI Call Retrieval Billing. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for SMDI Call Retrieval Billing

Table	Purpose of table
UCDGRP	Table UCDGRP (Uniform Call Distribution Group) contains the options, associated terminal designation, and SMDI desk number for the UCD group.

Datafilling table UCDGRP

Table UCDGRP (Uniform Call Distribution Group) contains the options, associated terminal designation, and SMDI desk number for the UCD group.

The following table shows the datafill specific to SMDI Call Retrieval Billing for table UCDGRP. Only those fields that apply directly to SMDI Call Retrieval Billing are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table UCDGRP (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
OPTIONS		UCD_SMDI	Options. This field specifies the options and associated subfields that are assigned to the UCD group. Enter UCD_SMDI.
If OPTIONS is set to UCD_SMDI, subfields SMDI_LINK, SMDI_DESK_NO, and MCOS_LIST require datafill.			
	SMDI_LINK	alphanumeric	Terminal Designation. This subfield specifies the terminal designation defined in Table TERMDEV (Terminal Device). Enter the alphanumeric terminal designation.

SMDI Call Retrieval Billing (end)

Datafilling table UCDGRP (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	SMDI_DESK _NO	1 to 63	SMDI Desk Number. This subfield specifies the SMDI desk number. Enter a value from 1 to 63. Note: When no agents are assigned to the UCD group, entering the maximum value of 63 blocks the retrieval of voice mail messages.
	MCOS_LIST	assigned MCOSs	Message Class of Service. This subfield specifies the MCOS assigned to the UCD group. Enter up to four MCOSs from ClassA to ClassP.

Datafill example for table UCDGRP

The following example shows sample datafill for table UCDGRP.

MAP display example for table UCDGRP

```

UCDNAME   ACD  CUSTGRP  UCDRNGTH  THROUTE      NSROUTE
PRIOPRO   MAXPOS  DBG  DEFPRIO  RLSCNT  MAXWAIT  MAXCQSIZ
OPTIONS
-----
UCDGRP1   N    MDCGRP1   10      OFRT 1000   OFRT 1000
  1        5      N      2        5      10      5
(UCD_SMDI SMD11 63 (CLASSA) (CLASSB) (CLASSC) (CLASSP) $) $

```

Translation verification tools

SMDI Call Retrieval Billing does not use translation verification tools.

SERVORD

SMDI Call Retrieval Billing does not use SERVORD.

SMDI Called DN Option and KSH Support

Ordering codes

Functional group ordering code: RES00004

Functionality ordering code: not applicable

Release applicability

BCS31 and up

Prerequisites

To operate, SMDI: Called DN Option and KSH Support requires BAS Generic, BAS00003.

Description

SMDI: Called DN Option and KSH Support improves the Simplified Message Desk Interface (SMDI) product in two ways. First, for each SMDI data link, customer groups can select whether the first or last forwarding party in a call forward chain will be the recipient of the message. Second, Key Short Hunt (KSH) overflow calls are handled the same as Call Forward Busy calls, and are therefore sent to the SMDI with the directory number (DN) of the originally called party or the last forwarding party.

Background information

The SMDI connects a voice messaging system (VMS) or text messaging system (TMS) to an end office. End users forward their phones to the message desk, where callers can leave messages on an answering machine (VMS) or with an operator (TMS). End users retrieve VMS messages by dialing the SMDI directly and entering a password. End users retrieve TMS messages by logging onto the SMDI system and reading the messages posted by the attendant. For more information on the SMDI, see Meridian Digital Centrex Simplified Message Desk Interface Set-up and Operation, 297-2051-104.

End users set one of three levels of call forwarding to the SMDI:

- Call Forward Universal (CFU)
- Call Forward Busy (CFB)
- Call Forward Don't Answer (CFD)

With KSH, calls coming into a keyset can be routed to any DN assigned to that keyset. The primary directory number (PDN) is tried first. If that number is busy, other numbers assigned to the keyset are tried until an idle DN is found or all DNs assigned to the keyset are unsuccessfully tried.

SMDI Called DN Option and KSH Support (continued)

Operation

All calls forwarded to the SMDI are answered by a forwarding party's personal greeting, a generic system greeting, or an attendant. If subfield OPTION is set to LASTFWDN in table SLLNKDEV (Link Device Table), the SMDI takes a message for the final forwarding party. Otherwise, the original forwarding party receives the message.

If the called party's line is busy and feature KSH is available for the office, a key short hunt is initiated. When all DN's assigned to the keyset are busy, the call is forwarded to the SMDI. If option LASTFWDN is not present, the originally called DN is passed to the SMDI. If option LASTFWDN is present, the last DN hunted is passed to the SMDI.

User interface

SMDI: Called DN Option and KSH Support does not affect user interface.

Translations table flow

SMDI: Called DN Option and KSH Support does not affect translations table flow.

Limitations and restrictions

The following limitations and restrictions apply to SMDI: Called DN Option and KSH Support:

- SMDI: Called DN Option and KSH Support with option LASTFWDN requires both the original and final terminating parties to reside on the same switch. Network call forwarding calls always report the original forwarding DN to the SMDI, regardless of the presence of option LASTFWDN in table SLLNKDEV.
- With option LASTFWDN, the final forwarding party's DN is presented to the SMDI, and a message is taken for that end user. KSH to SMDI follows the conventions of option LASTFWDN if it is datafilled in table SLLNKDEV.

Without option LASTFWDN, the original forwarding party's DN is presented to the SMDI. If a KSH overflow initiates a call forwarding chain, the originally called number assigned to the keyset is presented to the SMDI.

- Network KSH overflow calls are treated as direct calls. The caller receives a generic system announcement and cannot leave a message.
- The restrictions imposed by the Key Short Hunt and Call Forwarding features also apply to this SMDI enhancement.

SMDI Called DN Option and KSH Support (continued)

Interactions

The following paragraphs describe the interactions between SMDI: Called DN Option and KSH Support and other functionalities.

- Key Short Hunt (KSH). KSH overflow calls are sent to the SMDI as CFB calls. Therefore, a message is taken for the original or final forwarding party's DN, depending on the setting of option LASTFWDN.

Without the SMDI: Called DN Option and KSH Support feature, KSH overflow calls are sent to the SMDI as direct calls.

- Three-Way Calling (3WC). The SMDI: Called DN Option and KSH Support feature does not apply to DNs involved in a three-way call. When the party who initiates a three-way call dials a number that is forwarded to the SMDI, the call is sent as a direct call, and the caller receives a generic system announcement. The same is true for KSH overflow calls routed to the SMDI.

Activation/deactivation by the end user

SMDI: Called DN Option and KSH Support requires no activation or deactivation by the end user.

Billing

SMDI: Called DN Option and KSH Support does not affect billing.

Station Message Detail Recording

SMDI: Called DN Option and KSH Support does not affect Station Message Detail Recording.

Datafilling office parameters

Office parameter KSHUNT_EXT_BLOCKS of table OFCENG (Engineered Office) is affected by the SMDI: Called DN Option and KSH Support feature. This office parameter specifies the number of allocated KSH extension blocks. Legal values for KSHUNT_EXT_BLOCKS range from 0 to 32,767; 1000 blocks is the default. The SMDI: Called DN Option and KSH Support feature does not change this office parameter's definition, range of values, or default value. Data store allocated for each block is increased from 6 words to 8 words.

A change to this parameter requires a cold restart or reload restart before the new value is effective.

SMDI Called DN Option and KSH Support (continued)

The following table shows the office parameters used by SMDI: Called DN Option and KSH Support. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by SMDI: Called DN Option and KSH Support

Table name	Parameter name	Explanation and action
OFCENG	KSHUNT_EXT_BLOCKS	Specifies the number of KSH extension blocks allocated in data store. Enter a value from 0 to 32,767. The default value is 1000.

Datafill sequence

The following table lists the tables that require datafill to implement SMDI: Called DN Option and KSH Support. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for SMDI: Called DN Option and KSH Support

Table	Purpose of table
OFCENG	Office Engineering. This table contains data on engineering parameters for the office. Refer to "Datafilling office parameters" for how ACRJ affects office parameters.
SLLNKDEV	Link Device Table

Datafilling table SLLNKDEV

Table SLLNKDEV (Link Device Table) specifies the characteristics of the data link device used in a particular application.

The following table shows the datafill specific to SMDI: Called DN Option and KSH Support for table SLLNKDEV. Only those fields that apply directly to SMDI: Called DN Option and KSH Support are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table SLLNKDEV (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
DEVNAME		1- to 16-alphanumeric	Device Name. This field specifies the device that is to be used. Enter a 1- to 16-character alphanumeric device name.
DEVTYPE		see subfields	Device Type. This field consists of subfield DEVICE.

SMDI Called DN Option and KSH Support (continued)

Datafilling table SLLNKDEV (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	DEVICE	1X89	Device. This subfield specifies the type of device to be used. Enter 1X89.
If DEVICE is set to 1X89, subfields MPCNO and LINKNO require datafill.			
	MPCNO	0 to 255	MPC Number. This subfield specifies the number of the MPC card (NT1X89AA) or EMPC cards (NT1X89BA/BB). Enter a value from 0 to 255.
	LINKNO	2 or 3	MPC Link. This subfield specifies the MPC card link number. Only link 2 or 3 can be used. Enter 2 or 3.
XLATION		NONE	Translation. This field specifies the Meridian SL-100 link translation to be used for outgoing and incoming data links. Enter NONE.
PROTOCOL		NONE	Protocol. This field specifies the protocol expected by the data link and the Meridian SL-100 connection messages, starting messages, and leading byte information. Enter NONE.
DIRECTION		INOUTLK	Direction. This field specifies the direction in which data travels through the data link. Enter INOUTLK.
XFERS		SMDIDATA	Transfers. This field specifies the report types that are allowed on the data link. Enter SMDIDATA.
If XFERS is set to SMDIDATA, subfield OPTION requires datafill.			
	OPTION	LASTFWDN	Option. This subfield specifies the DN that is forwarded to the SMDI. Enter LASTFWDN for last forwarding DN.

Datafill example for table SLLNKDEV

The following example shows sample datafill for table SLLNKDEV.

SMDI Called DN Option and KSH Support (end)

MAP display example for table SLLNKDEV

DEVNAME	DEVTYPE			XLATION	PROTOCOL	DIRECTION
	XFERS					
VMSLINK	1X89	0	2	NONE	NONE	INOUTLK
(SMDIDATA	(LASTFWDN	\$)			\$	

Translation verification tools

SMDI: Called DN Option and KSH Support does not use translation verification tools.

SERVORD

SMDI: Called DN Option and KSH Support does not use SERVORD.

SMDI on Hunt Groups

Ordering codes

Functional group ordering code: RES00004

Functionality ordering code: not applicable

Release applicability

BCS31 and up

Prerequisites

To operate, SMDI on Hunt Groups has the following prerequisites:

- BAS Generic, BAS00003
- MDC Minimum, MDC00001
- MDC Standard, MDC00003
- RES Service Enablers, RES00006

Description

SMDI on Hunt Groups allows the operating company to configure a Simplified Message Desk Interface (SMDI) environment as a hunt group, thus allowing the DMS-100 switch to support a wider range of customer premises equipment (CPE), including non-data link consoles, voice messaging systems (VMS), and text messaging systems (TMS).

Prior to this feature, an SMDI environment had to be configured as a uniform call distribution (UCD) group. UCD groups only use one algorithm to distribute calls to agents, whereas hunt groups use a variety of algorithms to distribute calls.

Hunt groups support the following call distribution algorithms:

- Directory number hunt (DNH)—Each line in the hunt group has its own directory number (DN). Hunting starts with the DN the caller dialed and moves through the group until the last number is reached.
- Distributed line hunt (DLH)—Each line has a unique line equipment number (LEN), but only the pilot line in the group has a unique DN. To access the group, the pilot DN is dialed. Hunting starts with the line following the line last selected, and calls are distributed evenly throughout the group.
- Multiline hunt (MLH)—Each line has a unique LEN, but only the pilot line in the group has a unique DN. To access the group, the pilot DN is dialed.

SMDI on Hunt Groups (continued)

Searching always starts from the pilot line and hunts sequentially through the group until an idle line is found.

- Multiple position hunt (MPH)—Calls are distributed to non-data link consoles in the order in which they are received.

SMDI on Hunt Groups applies to MDC and Subscriber Services (SS) hunt groups.

Operation

The SMDI environment uses a full duplex data link to connect the DMS-100 switch to an answering service at the end user's site (also known as a message desk). The SMDI on Hunt Groups feature allows the message desk to be configured as a hunt group.

Because a hunt group can have a maximum of 1024 lines, a message desk configured as a hunt group is limited to 1024 lines.

The SMDI environment provides the CPE with the following information for each call to the message desk:

- message desk number (001-063)
- message desk terminal number (001-1024)
- DN of the forwarding station, if available
- DN of the calling station, if available
- reason for call forwarding (for example, call forward busy, call forward all calls)

This call information is sent over the SMDI data link to the CPE for each call that is directly dialed or forwarded to the hunt group. The way in which this information is used depends on the CPE.

When an end user retrieves a message waiting request sent by an SMDI link associated with a hunt group, the DN of the hunt group is displayed.

User interface

The following enhancements are made to the SMDI user interface:

- The SMDIDISP (SMDI display) command is enhanced to provide hunt group-specific information for those SMDI links associated with hunt groups.
- The MWQCI (message waiting query command interpreter) command is enhanced to display the number of message waiting requests initiated by SMDI links associated with hunt groups.

SMDI on Hunt Groups (continued)

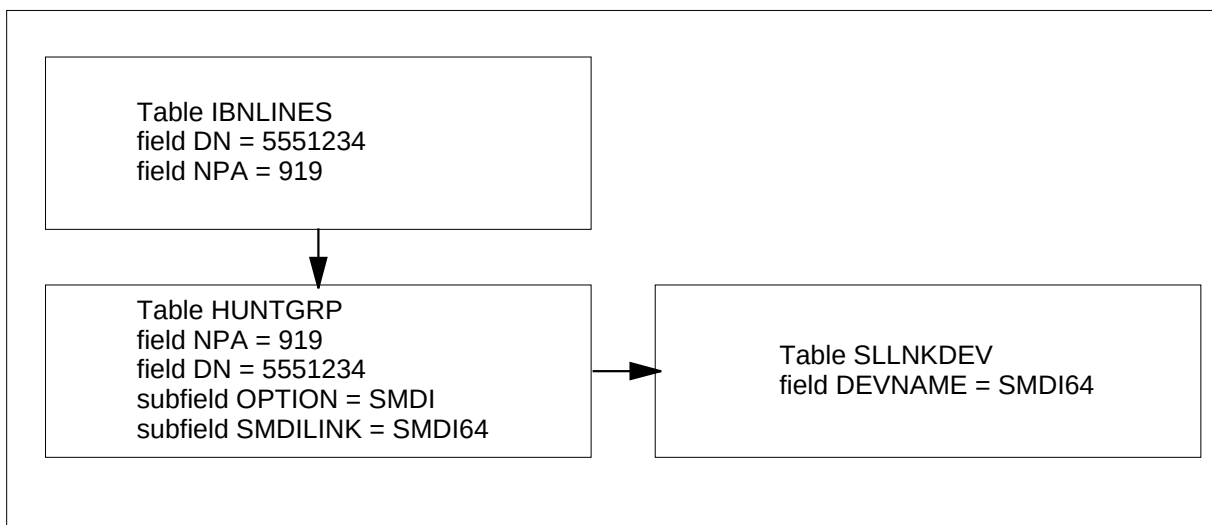
Translations table flow

The SMDI on Hunt Groups translations tables are described in the following list:

- Table IBNLINES (IBN Line Assignment) defines the MDC station numbers, attendant consoles, and multiple appearance directory numbers (MADN) supported by the switch and the hardware options assigned to each. This table is automatically datafilled when the line is assigned in the Service Order System (SERVORD).
- Table HUNTGRP (Hunt Group) contains the data for each hunt group.
- Table SLLNKDEV (Link Device Table) specifies the characteristics of data link devices.

Note: Tables PMLOADS (Peripheral Module Loads), MPC (Multiprotocol Controller), and TERMDEV (Terminal Device) must be datafilled, or consulted if already datafilled, prior to datafilling Table SLLNKDEV.

The SMDI on Hunt Groups translation process is shown in the flowchart that follows.

Table flow for SMDI on Hunt Groups

SMDI on Hunt Groups (continued)

The following table lists the datafill content used in the flowchart.

Datafill example for SMDI on Hunt Groups

Datafill table	Example data
IBN LINES	HOST 00 0 00 01 0 DT STN IBN 5551234 MDCGRP1 0 0 919 \$
HUNT GRP	0 919 5551234 MPH SMDI 63 SMDI64
SLLNKDEV	SMDI64 1X89 NONE NONE INOUTLK (SMDIDATA \$) \$

Limitations and restrictions

The following limitations and restrictions apply to SMDI on Hunt Groups:

- The DMS-100 switch can support a maximum of
 - 64 SMDI data links
 - 63 message desks for each SMDI data link
 - 1024 lines for each hunt group
 - 4032 hunt groups with option SMDI
 - 8192 total hunt groups
 - 1024 ports for each message desk
- A single SMDI link can be associated with either hunt groups or UCD groups, but not both simultaneously.
- The following rules are enforced for the datafill of SMDI on Hunt Groups:
 - A desk cannot be added to a link if that specific desk is already in use.
 - The first desk added to a link must be desk 63.
 - Desk 63 must be the last desk deleted from an SMDI link.
 - Desk 63 cannot be changed to another desk on the same SMDI link.
 - The SMDI link associated with desk 63 cannot be changed if there are any other desks on the existing link.
- When creating a DNH group in SERVORD, it is important to enter option DNH before entering option SMDI. This will ensure that the remaining prompts are DNH specific. If option SMDI is entered first, the remaining prompts apply to UCD instead of hunt groups.

For restrictions that apply to SERVORD, refer to “Service orders” in this feature description.

SMDI on Hunt Groups (continued)

Interactions

SMDI on Hunt Groups has no functionality interactions.

Activation/deactivation by the end user

SMDI on Hunt Groups requires no activation or deactivation by the end user.

Billing

SMDI on Hunt Groups does not affect billing.

Station Message Detail Recording

SMDI on Hunt Groups does not affect Station Message Detail Recording.

Datafilling office parameters

SMDI on Hunt Groups does not affect office parameters.

Datafill sequence

The following table lists the tables that require datafill to implement SMDI on Hunt Groups. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for SMDI on Hunt Groups

Table	Purpose of table
SLLNKDEV	Link Device Table. This table specifies the characteristics of data link devices.
HUNTGRP (Note)	Hunt Group This table contains the data for each hunt group.
Note: This table is datafilled through SERVORD; therefore, no datafill procedure is provided.	

Datafilling table SLLNKDEV

Table SLLNKDEV (Link Device Table) specifies the characteristics of data link devices. Table SLLNKDEV does not require any special datafill for SMDI on Hunt Groups. However, if SMDI is to be associated with hunt groups, Table SLLNKDEV must be datafilled before Table HUNTGRP in order to define the device name for the SMDI data link.

The following table shows the datafill specific to SMDI on Hunt Groups for table SLLNKDEV. Only those fields that apply directly to SMDI on Hunt

SMDI on Hunt Groups (continued)

Groups are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table SLLNKDEV

Field	Subfield or refinement	Entry	Explanation and action
DEVNAME		device name	Device Name. This field specifies the name of the device that is to be used in link utility (LNKUTIL). This data link name is entered at the SERVORD prompt SMDI_LINK. Enter the device name.

Datafill example for table SLLNKDEV

The following example shows sample datafill for table SLLNKDEV.

MAP display example for table SLLNKDEV

DEVNAME	DEVTYPE	XLATION	PROTOCOL	DIRECTION XFERS
SMDI64 (SMDIDATA \$) \$	1X89	NONE	NONE	INOUTLK

Translation verification tools

SMDI on Hunt Groups does not use translation verification tools.

SERVORD

SERVORD is used to datafill table HUNTGRP.

Table HUNTGRP contains the data for each hunt group.

SMDI on Hunt Groups allows option SMDI to be assigned to hunt groups. The following SERVORD commands are used to create, modify, and delete SMDI hunt groups:

- EST (establish a hunt or call pickup group)
- ADD (add line to hunt group)
- ADO (add option)
- CHF (change feature information for preexisting feature)
- DEO (delete option)
- OUT (remove service)

SMDI on Hunt Groups (continued)

Option SMDI allows a desk number and a data link name to be assigned to a hunt group.

SERVORD limitations and restrictions

The following SERVORD limitations and restrictions apply to SMDI on Hunt Groups:

- The first desk assigned to a particular link must be desk 63.
- A desk number cannot be added if it is already in use.
- Hunt group desks cannot share links with UCD groups.
- Desk 63 cannot be changed to another desk on the same link.
- Desk 63 cannot be changed to another link unless it is the only desk on the original link.
- The data link associated with a desk (other than desk 63) can be changed if the following conditions are met:
 - The destination link already has desk 63 datafilled.
 - The desk being changed is not already datafilled on the destination link.
- Desk 63 cannot be deleted unless it is the last remaining desk associated with a data link.
- When creating a DNH group, it is important to enter option DNH before entering option SMDI. This will ensure that the remaining prompts are DNH specific. If option SMDI is entered first, the remaining prompts apply to UCD instead of hunt groups.

Options MWT and CFW must be assigned to the lines in the customer group that forward calls to a VMS and have message waiting capability. Option CFW must be assigned to lines that forward calls to non-data link consoles.

SERVORD prompts

The following table shows the SERVORD prompts used to create, modify, and delete SMDI on Hunt Groups.

SERVORD prompts for SMDI on Hunt Groups (Sheet 1 of 2)

Prompt	Valid input	Explanation
OPTION	SMDI	Specifies the option to be added, deleted, or changed. Enter SMDI.

SMDI on Hunt Groups (continued)

SERVORD prompts for SMDI on Hunt Groups (Sheet 2 of 2)

Prompt	Valid input	Explanation
SMDI_ DESK	1 to 63	Specifies the message desk number to which the hunt group belongs. Enter a value from 1 to 63.
SMDI_ LINK	SMDI link name	Specifies the SMDI link name associated with the message desk. The link name must be a valid device name in Table SLLNKDEV. Enter the SMDI link name.

Note: Table HUNTGRP is automatically datafilled when SMDI on Hunt Groups is assigned using SERVORD.

SERVORD example for creating, modifying and deleting SMDI on Hunt Groups

The following service order examples are provided to illustrate how to create, modify, and delete SMDI hunt groups:

- establishing a new SMDI hunt group
- adding option SMDI to an existing hunt group
- adding a new SMDI member to an existing hunt group
- changing option SMDI on a hunt group
- deleting option SMDI from a hunt group
- removing an SMDI hunt group

Establishing a new SMDI hunt group

The following service order example shows how a new hunt group with SMDI on Hunt Groups is established using the EST command.

SMDI on Hunt Groups (continued)

SERVORD example for SMDI on Hunt Groups in prompt mode

```
S0:  
> EST  
SONUMBER:    NOW 90  1  2  AM  
>  
GROUPTYPE:  
> MPH  
PILOT_DN:  
> 5552000  
LCC:  
> IBN  
GROUP:  
> 50BCON  
SUBGRP:  
> 0  
NCOS:  
> 0  
SNPA:  
> 919  
LTG:  
> 0  
LATANAME:  
> NILLATA  
PILOT_LEN:  
> HOST 0 0 0 0  
MPHGRP:  
> 0  
CALLTYPE:  
> 0  
MPHCON:  
> 0  
CONLINE:  
> 1  
MPH_MEM_LEN:  
> HOST 0 0 0 1  
MPHCON:  
> 1  
CONLINE:  
> 2  
MPH_MEM_LEN:  
> 0 0 0 2  
MPHCON:  
> 2
```

SMDI on Hunt Groups (continued)

SERVORD example for SMDI on Hunt Groups in prompt mode (continued)

```
CONLINE:
> 2
MPH_MEM_LEN:
> $
OPTION:
> SMDI
SMDI_DESK:
> 63
SMDI_LINK:
> SMDI64
GROUPSIZE:
> 10
```

SERVORD example for SMDI on Hunt Groups in no-prompt mode

```
>EST $ MPH 5552000 IBN 50BCON 0 0 919 0 NILLATA 0 0 0 0 0 0 1 0 0
0 1 1 2 0 0 0 2 2 2 $ SMDI 63 SMDI64 10
```

Adding option SMDI to an existing hunt group

The following service order example shows how SMDI on Hunt Groups is added to an existing hunt group using the ADO command.

SERVORD example for SMDI on Hunt Groups in prompt mode

```
SO:
> ADO
SONUMBER:    NOW 90  1  2  AM
>
DN_OR_LEN:
> 5553000
OPTION:
> SMDI
SMDI_DESK:
> 4
SMDI_LINK:
> SMDI01
OPTION:
> $
```


SMDI on Hunt Groups (continued)

SERVORD example for SMDI on Hunt Groups in no-prompt mode

```
>ADO $ 5553000 SMDI 4 SMDI01 $
```

Adding a new SMDI member to an existing hunt group

The following service order example shows how a new member with SMDI on Hunt Groups is added to an existing hunt group using the ADD command.

SERVORD example for SMDI on Hunt Groups in prompt mode

```
SO:
> ADD
SONUMBER:    NOW 90  1  2  AM
>
GROUPTYPE:
> MPH
LINK_LEN:
> 0 0 0 0
MPH_MEM_LEN:
> 0 0 0 5
MPHCON:
> 5
CONLINE:
> 2
MPH_MEM_LEN:
> $
OPTION:
> SMDI
SMDI_DESK:
> 63
SMDI_LINK:
> SMDI64
GROUPSIZE:
> 10
```

SERVORD example for SMDI on Hunt Groups in no-prompt mode

```
>ADD $ MPH 0 0 0 0 0 0 5 5 2 $ SMDI 63 SMDI64 10
```

Changing option SMDI on a hunt group

The following service order example shows how SMDI on Hunt Groups attributes are changed using the CHF command.

SMDI on Hunt Groups (continued)

SERVORD example for SMDI on Hunt Groups in prompt mode

```
S0:  
> CHF  
SONUMBER:    NOW 90  1    2    AM  
>  
DN_OR_LEN:  
> 5552000  
OPTION:  
> SMDI  
LINENO:  
> 1  
UCDGRP:  
> ARUCDA  
AUTO_LOG:  
> N  
OPTION:  
> $
```

SERVORD example for SMDI on Hunt Groups in no-prompt mode

```
>CHF $ 5552000 SMDI 1 ARUCDA N $
```

Deleting option SMDI from a hunt group

The following service order example shows how SMDI on Hunt Groups is deleted from a hunt group using the DEO command.

SERVORD example for SMDI on Hunt Groups in prompt mode

```
S0:  
> DEO  
SONUMBER:    NOW 90  1    2    AM  
>  
DN_OR_LEN:  
> 5552000  
OPTION:  
> SMDI  
OPTION:  
> $
```

SMDI on Hunt Groups (end)

SERVORD example for SMDI on Hunt Groups in no-prompt mode

```
>DEO $ 5552000 SMDI $
```

Removing an SMDI hunt group

The following service order example shows how a hunt group with SMDI on Hunt Groups is removed using the OUT command.

SERVORD example for SMDI on Hunt Groups in prompt mode

```
S0:  
> OUT  
SONUMBER:    NOW 90  1  2  AM  
>  
DN:  
> 5552000  
LEN:  
> 0 0 0 0  
INTERCEPT_NAME:  
> BLDN
```

SERVORD example for SMDI on Hunt Groups in no-prompt mode

```
>OUT $ 5552000 0 0 0 0 BLDN
```

Universal Voice Messaging

Ordering codes

Functional group ordering code: RES00004

Functionality ordering code: not applicable

Release applicability

Universal Voice Messaging was introduced in CDNB004.

Prerequisites

All the datafill information for this particular functionality is included in this document. However, prerequisite software or hardware may be required for complete implementation.

Description

The Universal Voice Messaging (UVM) feature consists of two parts, Universal Voice Messaging Deposit (UVMD) and Universal Voice Messaging Retrieve (UVMR). The UVMD feature allows a caller to leave a message for the party of a previously dialed number. The UVMR feature allows the party for whom the message is intended to retrieve the message. Neither party needs to be an end user of a voice messaging service (VMS).

Operation

The UVM feature allows for multiple messaging service providers by providing different activation codes for each service provider.

The UVM feature supports the following line class codes:

- Residential (RES)
- RES/One party flat rate (1FR)
- RES/One party message rate (1MR)
- RES/Coin first (CCF)
- RES/Coin dial-tone first (CDF)
- RES/Coin semi-postpay (CSP)
- RES/Zero minus denied (ZMD)
- RES/Zero minus zero plus allowed (ZMZPA)
- Meridian Digital Centrex (MDC)
- Business set without liquid crystal display (PSET)
- Business set with display (DISP)

Universal Voice Messaging (continued)

- Meridian Business Set (MBS) with nine programmable feature keys and associated lamp indicators (M5009)
- MBS with 12 keys and integrated handsfree capability (M5112)
- MBS with 12 keys, associated lamp indicators, and built-in display (M5209)
- MBS with 11 programmable feature or directory number keys, associated lamp indicators, and built-in display (M5212)
- MBS with 12 keys, associated lamp indicators, and built-in display (M5312)
- Primary rate interface (PRI) trunks - IBNT1, IBNT2, PRA, IBNP2, IBNPRA

If the UVM feature is invoked from a line or trunk that is not supported, the standard feature not allowed (FNAL) treatment is applied.

UVM Deposit

The UVMD feature allows a caller to leave a message for the party of the last number that was dialed, whether or not that call completed successfully. The caller must go on-hook and then off-hook (not hook flash) and then dial the UVMD activation code. The UVM feature connects the caller to a VMS and the caller leaves a message.

The caller activates UVMD by going off-hook and dialing the activation code for the desired service provider. The UVM feature uses the contents of the caller's outgoing call memory (OCM) to determine the recipient of the message and route the call to the appropriate VMS. For lines that do not have an OCM, the UVM feature passes on an indication to the VMS that no recipient directory number (DN) is available. It is then up to the VMS to prompt the caller for a recipient DN.

A typical UVMD call proceeds as follows:

- 1 The caller dials the DN of the called party.
- 2 The called line is busy or does not answer, or the called party answers the call.
- 3 The caller hangs up, goes off-hook and dials a UVMD activation code (for example, *99).
- 4 The UVMD feature routes the call to the appropriate VMS along with the DN of the last called party (or recipient DN) and the DN of the caller (calling DN).
- 5 The caller leaves a message in the called party's message box (the recipient DN determines the message box).

Universal Voice Messaging (continued)

- 6 The caller is billed a fixed amount by the VMS for the deposit of the message. Any toll charges incurred by the call are billed to the messaging service provider (against the VMS).
- 7 The VMS activates the message waiting indicator on the called party's line.
- Note 1:** The message waiting indicator can be represented by the Stuttered Dial Tone or the Message Waiting Lamp.
- Note 2:** Only steps 3 and 4 are performed by the UVMD feature in the originating end office (EO).

OCM screening

OCM screening consists of:

1. Verifying the presence of an OCM on the line
2. Screening the OCM's contents for:
 - a. if the content of the OCM is empty
 - b. if field DN UNUSABLE is set to TRUE, which occurs in the following cases:
 - the OCM content is not the terminating DN (which happens when the terminating DN is determined by an advanced intelligent network [AIN] 0.1 query)
 - the OCM content is a blank DN
 - the OCM content is a cut-through DN (e.g. 10XXX# or 950YXXX)
 - c. if the OCM content is a switched-based group intercom (GIC) member number, the GIC number is converted to a DN (the UVM feature does not support AIN-based GIC numbers)
 - d. if the DN in the OCM is marked as private, the treatment defined in office parameter UVM_DEPOSIT_PRIV_DN_TMT is applied to the caller's line.

If the caller's line does not have an OCM, the OCM is empty, or field DN UNUSABLE is set to TRUE, the voice message service directory number (VMSDN) replaces the recipient DN when the call is routed to the VMS. This tells the VMS to prompt the caller for the recipient DN.

Universal Voice Messaging (continued)

Basic Number screening

If the OCM content is one of the following numbers or formats, it is treated as an OCM screening failure and the VMSDN is used to tell the VMS to prompt the end user for a recipient DN.

- N11, 10XXX + N11, 101XXXX + N11 (for example, 411, 611, 911, ...)
- Directory / Operator Assistance: 0-, 00- (10XXX + 0-/00-/1 + NPA), 555-1212 (1 + NPA + 555-1212), 555-1313 (1 + NPA + 555-1313)
- Feature Group A and Feature Group B Equal Access calls: 950-0/1XX
- a DN of less than seven digits (excluding the prefix digits). This DN screens out most or all private dialing plan numbers.

DN format screening

Table "Valid recipient DN formats for UVMD" provides the valid DN formats for the recipient's number when the caller is using UVMD.

If the recipient DN obtained from the OCM contains a prefix as shown in the following table, the prefix is converted into a 10-digit DN and used in UVMD service screening.

If the recipient DN in the OCM is an international DN (01/011 prefix), the DN is converted into a 10-digit DN by keeping the first ten digits (including the 01/011 prefix).

Valid recipient DN formats for UVMD (Sheet 1 of 2)

Number of digits	Prefix Present?	Digit(s)	Meaning
7	N		Local recipient is in the same or different numbering plan area (NPA).
10	N		Local recipient is in the same or different NPA.
11	Y	1	Long-distance recipient is in the same or different NPA.
13	Y	10CCC	Casual access dialing to a recipient in the same NPA. Central control complex (CCC) represents the interexchange carrier's (IEC) 3-digit carrier identification code (CIC).
16	Y	10CCC	Casual access dialing to a recipient in a different NPA.

Universal Voice Messaging (continued)

Valid recipient DN formats for UVMD (Sheet 2 of 2)

Number of digits	Prefix Present?	Digit(s)	Meaning
18	Y	101XCCC	Casual access dialing to a recipient in a different NPA during the transitional period of the CIC code expansion. X can be 0, 5, or 6.
18	Y	101CCCC	Casual access dialing to a recipient in a different NPA after the CIC code expansion is completed. CCCC represents the IEC's 4-digit CIC.

If the recipient DN is a local seven-digit DN, Automatic Call Back-type reverse translation is performed to determine the recipient's NPA in order to convert the DN into a 10-digit DN. If the DN is already a 10-digit DN, nothing needs to be done.

If the recipient DN contains a carrier access code (CAC) prefix, the transformation to a 10-digit DN is performed according to the following table.

Converting a recipient DN with a CAC prefix to a 10-digit DN

Number of digits	Format	Conversion to 10-digit Called Number
16	10CCC-1-NPA-NXX-XXXX	Delete the leftmost digits (10CCC-1).
18	1010CCC-1-NPA-NXX-XXXX 1015CCC-1-NPA-NXX-XXXX 1016CCC-1-NPA-NXX-XXXX 101CCCC-1-NPA-NXX-XXXX	Delete the leftmost digits (101XCCC-1).

If the recipient DN does not contain a CAC prefix, the recipient DN is transformed into a 10-digit DN according to the following table.

Converting a non-equal access (EA) recipient DN to a 10-digit DN

Number of digits	Format	Conversion to 10-digit Called Number
11	1-NPA-NXX-XXXX	Delete the leftmost digit (1).

Note: Even if the previous call successfully routes (the recipient's DN is in the OCM), there is no guarantee that the DN actually exists in the EO. The UVMD feature does not verify whether the recipient DN is valid. In this

Universal Voice Messaging (continued)

case, the recipient DN is routed to the VMS and the VMS verifies that the recipient DN is a valid end user or recipient of a message in the operating company's network before allowing the calling party to deposit the message.

Service screening

The UVM activation code that the caller dials and the 10-digit format of the recipient DN are used in table UVMSCR to determine the service that a call is to be given. The possible services are UVM, Call Messenger, or treatment.

UVM Retrieve

The end user activates UVMR by going off-hook and dialing a UVMR activation code. The UVMR feature then connects the caller to a VMS where the caller can retrieve messages or use any other feature offered by the service provider.

A typical UVMR call proceeds as follows:

- 1 The end user goes off-hook and dials a UVMR activation code (for example, *98).
 - The end user might have received an indication of a message waiting on his/her line. This is independent of whether the end user can access the serving VMS.
- 2 The call is routed, free of charge, to the serving VMS along with the DN of the end user. Any toll charges incurred by the call are billed to the VMS's messaging service provider.

Note: When using the UVMR feature from a coin phone, the end user must pay the coin charge of a local call.
- 3 The end user retrieves the message(s) from his/her message box.
- 4 The VMS removes the indication of a message waiting from the end user's line if there were pending Message Waiting Indication (MWI) requests previously issued by the VMS. The VMS removes the message waiting indication.

Note: The first two steps are performed by the UVMR feature in the originating EO.

MWT option and MWI queue

The UVMR feature fully supports RES and MDC lines that have the message waiting (MWT) option. MWT enables an MWI queue to be created for the line. This allows the VMS to activate the message waiting indicator on the message recipient's line by sending an MWI request to the MWI queue. The information taken from the MWI requests is used by the UVMR feature to establish a route to the VMS.

Universal Voice Messaging (continued)

When there are no MWI messages queued against the end user's line, it is assumed that the end user is activating UVMR in order to access the serving VMS for purposes such as re-reading a message or changing the greeting.

For lines where it is not applicable to provision the MWT option, such as private branch exchange (PBX) or coin lines, the call is still routed to the serving VMS in the same way.

The MWI queue may contain requests from a number of different message waiting requestors. The UVMR feature considers only MWI requests from message waiting types MWT_SMDI and MWT_NMS when the MWI queue is traversed.

UVMR Routing

The UVM feature routes the call based on the activation code, the MWI queue contents of the line, and screening entries in table UVMSCR. If an MWI request is used to route the call to a VMS, that request is marked as having been accessed by the UVM feature. The service provider associated with the activation code dialed is known as the preferred service provider. All other registered service providers are then known as alternate service providers. The following rules govern which MWI request to use to route the call:

1. If an MWI request from the preferred service provider exists in the MWI queue (whether or not it has been accessed), the call is routed to the VMS of the preferred service provider.
2. If there are no MWI requests queued from the preferred service provider, the first MWI from an alternate service provider in the queue that has not been accessed routes the call.
3. Only MWI requests from registered UVM service providers are considered as valid UVM MWI requests. (A service provider is considered registered if the UVMR activation code associated with the service provider is datafilled in tables IBNXLA and UVMSCR.) If there are no valid UVM MWI requests queued for the line, the call is routed to the preferred service provider.
4. If there are no requests from valid UVM service providers and there are MWI requests from unregistered service providers, the call is routed to the preferred service provider.

If the end user wants to access the VMS of an alternate service provider already accessed in a previous UVMR activation, the end user cannot be connected to this VMS unless the feature activation code associated with that alternate service provider is used in the next UVMR activation (in this case, the alternate service provider becomes the preferred service provider).

Universal Voice Messaging (continued)

MWI request access indication

When the call is routed to a VMS and the MWI request associated with the VMS exists in the MWI queue, the MWI request is marked as “been accessed” by UVMR. Conversely, when a new MWI request arrives from a service provider, the UVMR feature resets the MWI request as “not been accessed” whether or not the request from that service provider already exists or not in the queue associated with an end user's line. The UVMR feature updates the MWI request access indication only if the MWI requestor is a registered VMS.

MWI request deactivation

The UVMR feature does not remove MWI requests used to route to VMS service providers. The VMS sends the appropriate MWI deletion request to remove the MWI request from the queue.

Reverse DN translation

A reverse DN translation is performed on the 10-digit VMSDN datafilled in table UVMRTE. This enables the process of routing based on standard translations to function as though the end user dialed the digits.

Inter-Exchange Carrier (IEC)

If the dialable version of the digits resulting from the reverse DN translation is determined to be a toll call by the line concentrating array (LCA) screening (or through the 1 prefix), the VMS service provider is billed for the network access. The IEC used for this toll connection is the one datafilled in table UVMRTE (field CARRNAME).

The access type for the selected carrier must be EAP, OTC, or TRANS (as datafilled in field ACCESS of table OCCINFO). Otherwise, the toll call to the VMS is blocked and is routed to the EA treatment CACE (Carrier Access Code in Error).

Note: Table control does not allow a carrier with a carrier access type other than EAP, OTC, or TRANS to be specified in a new or changed UVMRTE tuple. However, table control does not prevent the carrier access type of a carrier datafilled in table UVMRTE to be changed later to something other than EAP, OTC, or TRANS in table OCCINFO.

Before the DN is translated, the toll prefix is replaced by the casual dialing prefix where the CAC associated with the specified carrier (from field CARRNAME) is included. Because of this functionality, the UVM feature works only if the originating EO is an equal access end office (EAEO).

Universal Voice Messaging (continued)

Translations table flow

The Universal Voice Messaging translations tables are described in the following list:

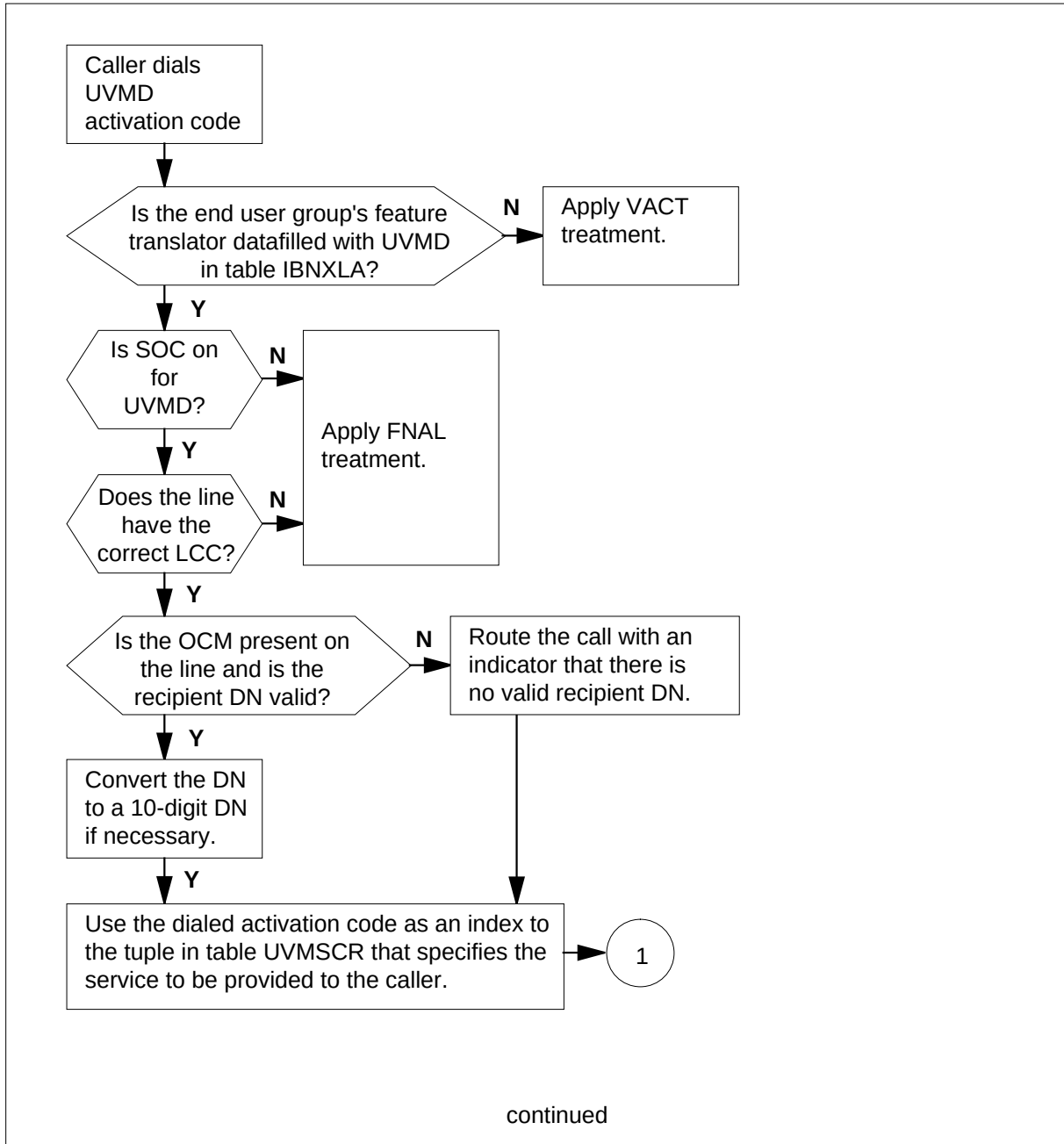
- Table IBNXLA specifies the activation codes for UVMD and UVMR.
- Table UVMSCR contains screening information for VMS service providers for UVM.
- Table UVMRTE contains route information to access messaging systems for the UVM service.

The Universal Voice Messaging translation process is shown in the flowcharts that follow.

The UVMD translation process is shown in the following flowchart.

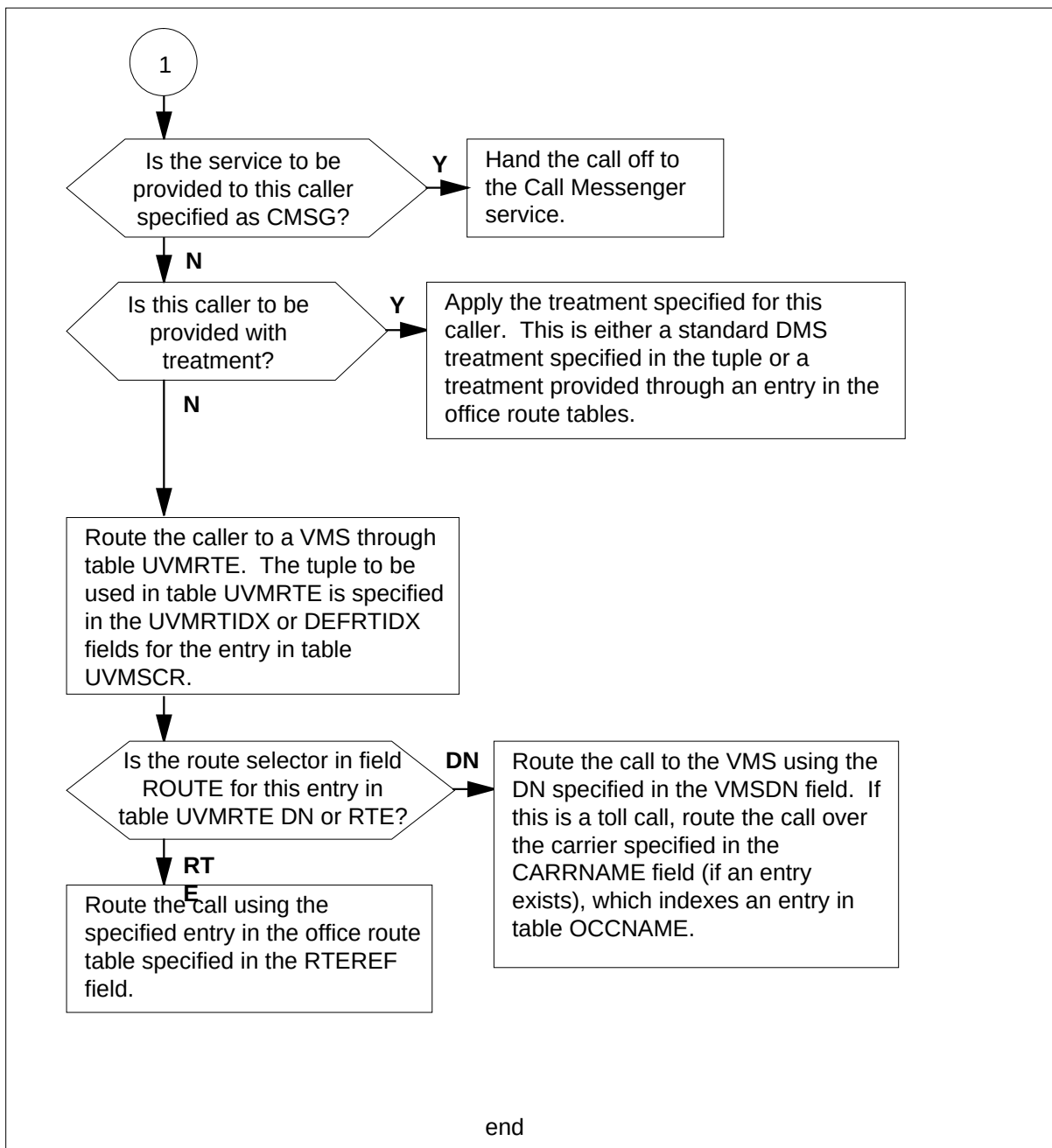
Universal Voice Messaging (continued)

Table flow for Universal Voice Messaging (continued)



Universal Voice Messaging (continued)

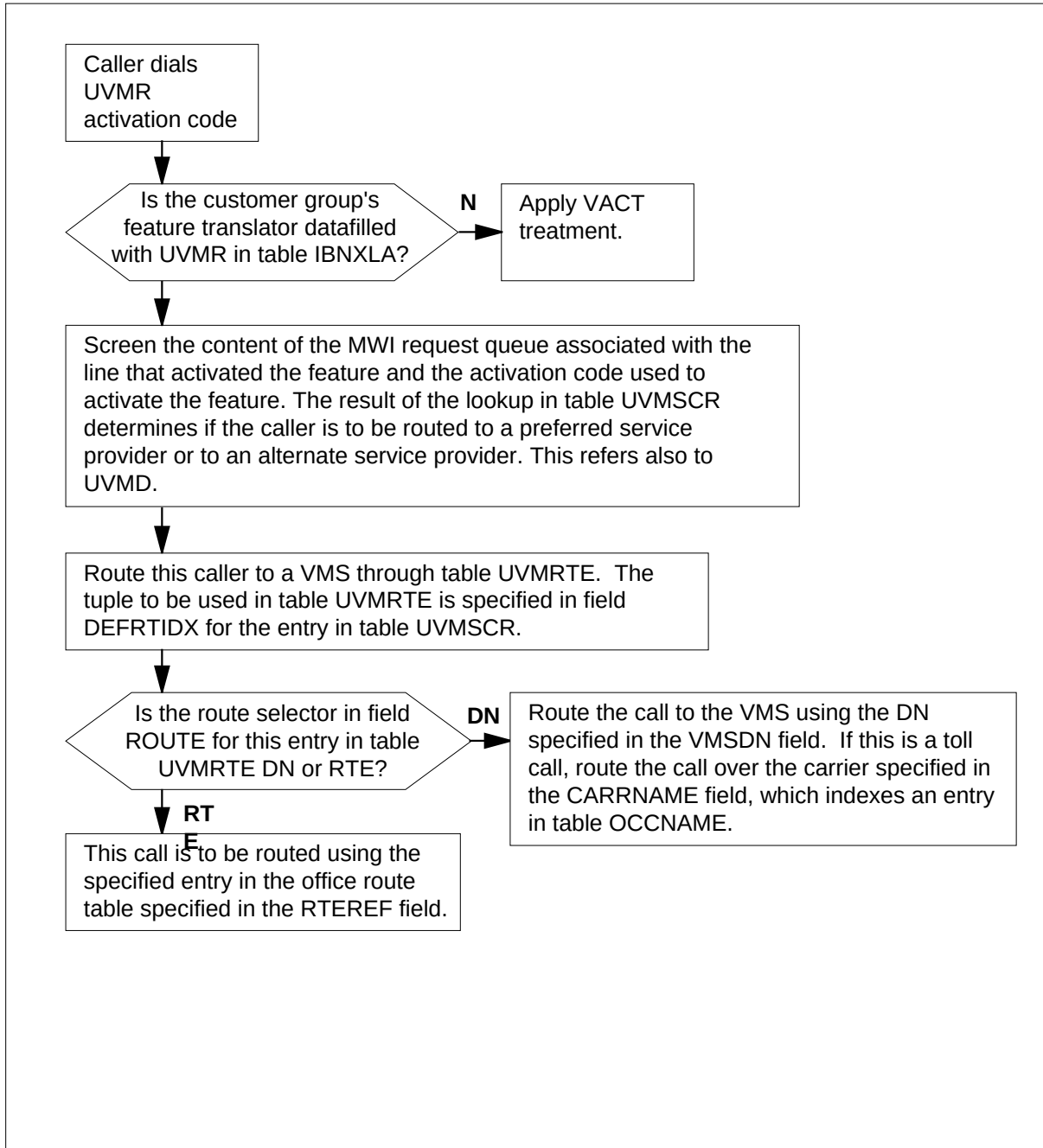
Table flow for Universal Voice Messaging



The UVMR translation process is shown in the flowchart that follows.

Universal Voice Messaging (continued)

Table flow for Universal Voice Messaging



Universal Voice Messaging (continued)

The following table lists the datafill content used in the flowchart.

Datafill example for Universal Voice Messaging (Sheet 1 of 2)

Datafill table	Example data
UVMSCR	98 UVMR 8199876543 33
UVMSCR	99 UVMD (0 2 TRMT R OFRT 40) (5143334444 5143334444 UVM IDX 99) (40342 40345 UVM NIL) (416 416 TRMT T RODR) \$ 67
UVMSCR	888 UVMR 6138889999 0
UVMSCR	889 UVMD (1403 1403 CMSG) (0919 0919 UVM IDX 99) (7224 733 TRMT R OFRT 90) \$ 99
UVMRTE	0 6135556666 6138889999 DN AAA (HOST 6132223333) (REM1 6133335555) (NAMO 6137779999) (LEGL 613 9990088) MRVL 6132123030) (PGAL 8198987878) \$
UVMRTE	33 8198765454 8199876543 RTE OFRT 40 \$
UVMRTE	67 8196668888 8192324545 DN YCY \$
UVMRTE	99 6136224444 6136227777 RTE OFRT 90 (HOST 6132223333) (REM1 6133335555) (NAMO 6137779999) (LEGL 6139990088) (MRVL 6132123030) (PGAL 8198987878) \$
OFRT	40 (N D ISUPTOG 0 N N)\$
OFRT	90 (RT 613 NP LCL 6211095 Y 0 \$)\$
SITE	HOST 00 2 CLLI1 \$
SITE	NAMO 02 0 CLLI3 (MN TM8 0 0 0)\$ \$
OCCNAME	AAA
OCCNAME	YCY
CLLI	UVMT 321 10 UVMDEPOSIT_PRIVON_TRMT
ANNS	UVMT STND 26 30 10 2
ANNMEMS	UVMT 1 DRAM DRA (0 MTM 10 3)\$
TMTCNTL	OFFTREAT (111)

Universal Voice Messaging (continued)

Datafill example for Universal Voice Messaging (Sheet 2 of 2)

Datafill table	Example data
OFFTREAT	RODR N S T120
OFCVAR	UVM_DEPOSIT_PRIV_DN_TMT ANNCLLI UVMT
OFCVAR	UVM_DEPOSIT_PRIV_DN_TMT DMSTREAT RODR

Limitations and restrictions

The following limitations and restrictions apply to Universal Voice Messaging :

- The targets for this feature are the DMS-100 switch and DMS 100/200 offices supported by SuperNode and BRISC platforms. The UVM features are not supported by the NT40.
- The UVM feature is applicable only in equal access end offices.
- The visual message waiting indicator (flashing lamp) is supported only on peripherals that support the CLASS Modem Resource (CMR) card. Therefore, the line module (LM) and the remote line module (RLM) provide an indication only of a message waiting to called parties using the stuttered dial tone.
- The UVM features (deposit and retrieve) are not flashable features; the end user must go off-hook to dial the activation codes.
- It is assumed that the charge for the deposit or retrieve of a message from a coin line is equal to the charge for a local call (from the coin station). The UVM features outlined in this document do not provide for any variation in this charge.
- Plain ordinary telephone service (POTS) is not supported.
- On a cellular network interface, the last called number cannot be associated with a specific cellular terminal. Therefore, specific cellular terminals are not supported.
- Feature group B trunks are not supported.
- The UVMD feature does not verify whether the recipient's DN specified by the end user represents a valid telephone number in the network.
- The UVM features do not support private dialing plan numbers from MDC (the recipient DN in the OCM can be a private dialing plan number).

Universal Voice Messaging (continued)

- The UVM features do not verify whether the reverse translation is properly datafilled. The operating company verifies this datafill.
- The route selector in table UVMRTE cannot be used to establish toll connections. If the connection from the originating EO to the termination point is toll, the DN selector must be used. If the connection is local, either the DN or the RTE selector can be used.

Interactions

The following paragraphs describe the interactions between Universal Voice Messaging and other functionalities.

Outgoing Call Memory (OCM)

Activation of a UVM feature does not cause the OCM to be updated with either the VMSDN routed to or the feature activation code dialed.

Call Messenger (CMMSG)

The Call Messenger feature provides a message call delivery service for a caller to a called party after the caller reaches a busy or no answer condition at the called party's line. As described in section "UVM Deposit Service screening," the CMMSG feature can be accessed through a UVMD activation by datafilling field SERVSEL of the appropriate OCNSCRN range in table UVMSCR with the value CMMSG.

Although CMMSG can be accessed from UVMD, the UVMD feature does not include the CMMSG feature. If the table lookup to table UVMSCR indicates that CMMSG should be provided, the UVMD feature routes only to the CMMSG feature regardless of whether CMMSG is enabled in the EO. Furthermore, CMMSG does not support as many originating agents as UVM. Only the RES 1FR and RES 1MR agents are supported by CMMSG. Calls to CMMSG from other agents are handled as described in the CMMSG feature documentation.

Advanced Intelligent Network (AIN)

There is no query sent to the AIN services by the UVM features to check the identity of the calling number, the message recipient's number, or for any other information queries (for example, GIC number translation).

The UVM feature reverts to call processing to route calls to the VMS. Three AIN 0.1 triggers are supported within a UVM call: 3/6/10 digits public office dialing plan (PODP), termination attempt (TERMATT), and automatic flexible

Universal Voice Messaging (continued)

routing (AFR). The only AIN 0.0 supported trigger is the DN trigger. The following table shows the behavior of all supported triggers.

UVM supported AIN triggers

Triggers	AIN version	TDP	Subscription	Conditions encountered
DN trigger	0.0	-	DN	The VMSDN is datafilled in table DNROUTE with option DNTRIG.
PODP	0.1	Information analysis	Office	The VMSDN matches the digit criteria datafilled in table TRIGDIG.
TERMATT	0.1	Termination attempt	DN	The VMSDN is datafilled in table DNFEAT with option AINDN.
AFR	0.1	Network busy	line, trunk, group, or office	All routes to VMSDN are busy.

For each activation of any of the above triggers, a query is sent to the service control point (SCP) and a reply is received.

The UVM feature modifies the value of parameter RedirectingpartyID and impacts the message sent to the SCP. This parameter can be populated with one of the following values:

- The previously dialed party number in the OCM if it exists and is valid (UVMD)
- The VMSDN if the OCM is not provisioned, the OCM is empty, or the DN in the OCM is invalid (UVMD)
- The UVM special billing DN (UVMR)

The message received from the SCP can contain a new list of routes, a list of carriers through which the call can be routed, a new charge number, or a new called DN. Thus, AIN may alter the calling DN (billing DN), the called DN, or the carrier determined to UVM. The SCP can also return the RedirectingPartyDN without affecting UVM.

If the previous call is an AIN 0.1 query and receives a new CallingPartyID or ChargePartyStationType, these parameters are not recognized by UVMD or UVMR. Therefore, the calling number relayed to the messaging service does not reflect a calling number supplied by the AIN 0.1 messages.

Universal Voice Messaging (continued)

In the case of the field "DN Unusable" in the OCM (AIN 0.1 only), the bit is set to TRUE if the terminating DN determined by the AIN 0.1 service is not the same as the previous dialed DN. In this instance, the VMSDN replaces the recipient DN when the call is routed to the VMS. This tells the VMS to prompt the calling party for a recipient DN.

Call Answer

The UVMD feature does not determine if the called party is an end user to a local call answer service.

If an MWI request is associated with a call answer service provider that is not a valid UVMR service provider and the end user uses the UVMR feature to attempt to access the waiting message, the UVMR feature routes to the preferred service provider (associated with the access code dialed) instead.

Call Waiting (CWT) / Long Distance Signal (LDS) / Distinctive Ringing Call Waiting (DRCW)

These features are not affected by UVM. When a caller interacts with a VMS, the caller can receive call waiting tones from CWT, LDS, or DRCW. The caller can then invoke the waiting feature with the normal hook flash. The connection with the VMS is then on hold.

Calling Number Blocked

The messaging system service providers transmit to the message recipient that the message depositor's DN is restricted if the DN is normally communicated as part of message transmittal.

Alternately, the calling party may be forewarned that the blocking of the calling number is ineffective when invoking the UVMD feature to messaging service providers. For example, Uniform Call Distribution (UCD)/Simplified Message Desk Interface (SMDI) is not capable of transmitting the presentation status of the calling line identification (CLID).

Call Management Services (CMS) Auto Recall Blocking of Private Calls (CABOP)

The CABOP feature blocks Auto Recall (AR) activations for private calls (if the last call received had a restricted calling number). Therefore, the OCM never contains a restricted number. However, if CABOP is missing or is not active, the OCM may contain a restricted number. In this case, UVMD activation would contain a restricted number as the recipient of the message from the caller. VMS or downstream billing ensures that the restricted number does not appear on the messaging bill of the calling party.

Universal Voice Messaging (continued)

Because the OCM is not updated on an AR activation attempt blocked by CABOP, if an end user activates the UVMD feature following such an attempt, the message recipient DN sent to the VMS is the last DN that was called by the end user before the AR attempt.

Call Request Activation (CRA) / Call Request Retrieval (CRR)

If CRR is used to retrieve a call associated with an MWT request deposited by a UVM service provider, any applicable network access charges are billed to the end user.

Group InterCom (GIC)

The UVMD feature supports recipients reached on a previous call with the GIC feature. The GIC access code in the OCM is converted to the actual number of the recipient's station before routing.

Inter-Exchange Carriers (IEC)

If the dialable digits resulting from the reverse DN translation are determined as a toll call by LCA screening (or through the 1 prefix), the VMS service provider is billed for the network access. The IEC used for this toll connection is the one datafilled in table UVMRTE (field CARRNAME).

The access type for the selected carrier (IEC) must be EAP, OTC, or TRANS (as datafilled in field ACCESS of table OCCINFO). Otherwise, the toll call to the VMS is blocked and is routed to the EA treatment CACE (Carrier Access Code in Error).

Note: Table control does not allow a carrier with a carrier access type different than EAP, OTC, or TRANS to be specified in a new or changed UVMRTE tuple. However, table control does not prevent the carrier access type of a carrier datafilled in table UVMRTE to be changed later to something other than EAP, OTC, or TRANS in table OCCINFO.

Before the DN is translated, the toll prefix is replaced by the dialing prefix where the CAC associated with the specified carrier (from field CARRNAME) is included. Because of this functionality, the UVM feature works only if the originating EO is an EAEO.

Multiple Appearance Directory Number (MADN), Hunt, Automatic Call Distribution (ACD) , and Uniform Call Distribution (UCD) groups

The UVMR feature is supported for the primary DN of distributed line (DLH) and multiple line (MLH) hunt groups as well as for single (SCA) and multiple (MCA) call arrangement MADN groups. This is because the MWT option can be assigned only to the primary member of these groups. If the UVMR feature is activated from a member of one of the above groups, the primary DN of the

Universal Voice Messaging (continued)

group retrieves any message deposited against the primary DN. It is assumed that the message(s) are deposited to the whole group and not to a particular member of the group.

The UVMR feature is supported for all members of the directory number hunt (DNH), UCD, and ACD groups because all members in these groups can have the MWT option assigned.

The UVMD feature is supported for each member of the DLH and MLH groups because each member of these groups has an OCM assigned to its DN.

The UVMD feature is supported for each member of EXB MADN, DNH, UCD, and ACD groups because each member of these groups has an OCM assigned to its DN. Thus, the original called number forwarded to the VMS is the last number dialed by the member that activates the feature.

Only the primary member of an SCA MADN group can have an OCM; all secondary members cannot. Therefore, when a secondary member activates UVMD, the original called number forwarded to the VMS is the VMSDN. The SCA MADN option applies only to MDC lines. An IBN line has a OCM only if it is assigned the AR or option LNR (last number redial).

MCA MADN group members (including the primary member) cannot be assigned an OCM. Thus, on UVMD activation attempts, the original called number forwarded to the VMS is the VMSDN.

Reverse DN translation

A reverse DN translation is performed on the 10-digit VMSDN datafilled in table UVMRTE. This enables the process of routing based on standard translations to function as though the end user dialed the digits.

The UVM features do not verify whether the reverse translation is properly datafilled. The operating company ensures the datafill.

Set up DN Attributes (SDNA)

The SDNA service order (SERVORD) command allows an operating company to specify that a station can provide a substitute DN to be sent in place of all or part of the standard calling DN. If a station that activates UVMR substitutes the CLID for an alternate one, the appropriate messaging box cannot be accessed.

Speed Calling features

The UVM feature access code cannot be programmed as the speed calling code.

Universal Voice Messaging (continued)

Station Ringer/the end user dials his/her own number

The Station Ringer feature updates the OCM with the caller's 10-digit DN. The OCM is also updated with the caller's DN if the end user dials his/her own number. If the UVMD feature is activated after the OCM is updated with the caller's DN, the UVMD feature allows the end user to be routed to the VMS as it is assumed that the end user wants to leave a message for himself/herself.

Teen Service

The teen service feature allows the operating company to assign multiple DNs (secondary DNs) to a single line equipment number (LEN). The secondary DNs can terminate as well as originate calls (using an activation code). Only the primary DN can be allocated as an OCM (as required by UVMD) or have the MWT option (as required by UVMR).

Furthermore, the secondary DNs do not access to the OCM and the MWT queue of the primary DN. If the UVMD feature is activated from a secondary DN, the VMS prompts for a recipient DN. If the UVMR feature is activated from a secondary DN, the call is always routed to the VMS of the preferred service provider and the MWT queue of the primary DN is not affected.

Three-Way Calling (3WC)

The 3WC feature can be invoked while a caller is active on a UVM call. To do this, place the connection with the VMS on hold while the caller is setting up the second leg of the three-way call. The ensuing hook flash used to connect the three parties has the effect of including the second leg into the VMS access.

Neither the UVMD nor the UVMR feature can be invoked as part of the second leg of a three-way call.

Toll Restrictions

Because all VMS toll access charges are billed to the messaging service provider, a toll restriction on the caller's line or end user group does not restrain the use of UVM. The possible toll restriction features are:

- Toll Denied (TDN)
- Carrier Toll Denied (CTD)
- Toll Diversion (TDV)

None of the restriction features can prevent a UVM call from being routed.

SMDI link options - LASTFWDN and DNSUPPR

The SMDI options LASTFWDN and DNSUPPR prevent information required by the UVM feature from being sent from the host EO to the VMS through an

Universal Voice Messaging (continued)

SMDI link as follows. These options are set through datafill in table SLLNKDEV.

- When option LASTFWDN is set, the last forwarded DN is sent in the Forwarded_From field of the SMDI message. In the case where access to the VMS is provided by forwarding the VMSDN to a UCD group (corresponding to the SMDI link), the information put by the UVM feature in the Forwarded_From DN is replaced by this last forwarded DN. To be certain that the appropriate UVM information is sent to the VMS, do not set option LASTFWDN on an SMDI link used by UVM.
- Option DNSUPPR blocks the calling or forwarding-from DN from being sent in the SMDI initial message. If option DNSUPPR is specified for the calling DN on the SMDI link, the option should be set to NEVER. Otherwise, the UVM feature cannot guarantee the delivery of the calling party's DN to the VMS. Similarly, if option DNSUPPR is specified for the forwarding-from DN on the SMDI link, the option should be set to NEVER. Otherwise, the UVM feature cannot guarantee the delivery of the message recipient's DN to the VMS.

Personal Communication System (PCS)

The PCS service updates the OCM with the 10-digit virtual DN. If the UVMD feature is invoked after PCS activation, the VMS feature verifies the validity of the recipient DN before allowing the end user to deposit a message against the DN.

Local Coin overtime (LCO)

The local coin overtime (LCO) feature allows an operating company to limit the time that a local call from a coin phone can last and provides an overtime charge on the local call. The UVM feature supports LCO and, therefore, a UVM call made from a coin phone can be time-limited by LCO if the connection between the caller and the VMS is local. The overtime charge can be collected as well.

Called DN display

Certain telephone sets display the called DN. In the case of UVM, the VMSDN is not displayed to the caller.

Special Billing DN

An end user's line may have a special billing DN to which all charges to the line are normally billed. In the case of UVMD, the caller is charged a fixed amount for the deposit of a message. The recording of this charge is done by the VMS (not the DMS switch) and, therefore, is not part of this feature. However, the host DMS does not send the special billing DN to the VMS. It

Universal Voice Messaging (continued)

is assumed that, based on the calling DN, the VMS can determine to which DN the charges should be billed.

Virtual Facility Group (VFG)

A virtual facility group (VFG) provides a mechanism to eliminate loop-around trunks. A call that is routed to a VFG may be attributed to a new billing DN or carrier. UVM feature calls may route to a VFG. However, the carrier and billing number used by UVM for toll connections to the VMS are always the ones specified in table UVMRTE and are not overwritten by the VFG. Furthermore, any toll restriction (for example, toll denied) specified for the VFG does not apply to UVM calls.

Last Number Redial (LNRA)

The LNRA feature allows the end user of an MDC set to have the last dialed number automatically redialed by pressing a key. The last called number information and data is not updated on UVM calls. Therefore, when activated after a UVM call, LNRA automatically calls the number that was dialed on the call preceding the UVM call.

Activation/deactivation by the end user

The following section describes the process for activating or deactivating UVM.

Activation/deactivation of Universal Voice Messaging Direct by the end user

At your telephone:

- 1 Go off-hook.
Response:
Receive a dial tone.
- 2 Dial the DN of the called party.
Response:
The called line is busy or does not answer.
- 3 Hang up and go off-hook again.
Response:
Receive a dial tone.
- 4 Enter the UVM activation code of a messaging service provider (for example, *99 or 1199).
Response:
The call is routed to the appropriate VMS along with the calling and recipient DNs.
- 5 Leave a message in the called party's message box.

Universal Voice Messaging (continued)

Response:

The VMS bills the call for depositing the message. Any toll charges incurred by the call are billed to the messaging service provider (against the VMS). The VMS activates the message waiting indicator on the called party's line (either a stuttered dial tone or a message waiting lamp).

Activation/deactivation of Universal Voice Messaging Retrieve by the end user

At your telephone:

- 1 Go off-hook.

Response:

Receive a dial tone.

- 2 Enter the UVMR activation code of the messaging service provider (for example, *98 or 1198).

Response:

The call is routed, free of charge, to the serving VMS. Any toll charges incurred by the call are billed to the VMS's messaging service provider.

- 3 Retrieve the message(s) left in the message box.

Response:

The VMS removes the message waiting indication once all messages are retrieved.

Billing

Automatic message accounting (AMA)

The VMS feature bills the end user for depositing a message (UVMD only). However, any toll charges incurred for the use of the network access for both UVMD and UVMR are billed to the UVM service provider. This network access billing is provided as a result of standard routing.

The DN to which the network access toll charges are billed is datafilled in table UVMRTE. If a special billing DN is specified in field SITEBDN for the site from which the end user's station is connected, the associated billing DN is used. Otherwise, the DN datafilled in field VMSSPBDN is used.

Universal Voice Messaging (continued)

Depending on whether the carrier is the OTC, different AMA records are generated for a toll network connection.

- If the carrier is the OTC, an AMA record with a call code of 006 is generated at the originating EO.
- If the carrier is not the OTC, one of the following AMA records is generated.
 - An AMA record with a call code of 110 is generated at the originating EO.
 - An AMA record with a call code of 119 is generated at the terminating EO or at the access tandem switch.

The toll AMA record contains the billing DN as the originating number and the VMSDN as the terminating number. The following example illustrates the contents of the AMA record (call code 6) if an end user activates the UVMD/UVMR successfully and the call is routed to (403)288-1000 (VMSDN) but billed to (403)344-2000 (special billing DN). In the following example, if the end user dials the VMS directly, it is a toll call.

The following figure is an example of an AMA record generated for call code 6.

Call code 6

```
HEX ID:AA  STRUCTURE CODE:00001C CALL CODE:006C SENSOR
TYPE:036C SENSOR ID:0200200C REC OFFICE TYPE:036C REC OFC
ID:0200200C DATE:50131C TIMING IND:01000C STUDY
IND:0000000C ANSWER: 0C SERVICE OBSERVED:0C OPER
ACTION:0C SERVICE FEAT:000C ORIG NPA:403C ORIG
NO:3442000C OVERSEAS IND:0C TERM NPA:403C TERM
NO:2881000C CONNECT TIME:0932061C ELAPSED TIME:000150000C
MODULE CODE:000C
```

Determining toll status

When the reverse DN translation completes, local call area (LCA) screening determines if the call connecting the end user's station to the VMS (from the end user's CLID to the VMSDN) is a local or toll call. The LCA screening is performed only if option LCABILL is datafilled as a line attribute option to the end user's line in table LINEATTR.

If option LCABILL is present for the end user's line, field LCANAME in table LINEATTR and table LCASCRN are used to determine if the call is toll or local.

Universal Voice Messaging (continued)

If option LCABILL is not present for the end user's line in table LINEATTR, the resulting DN of the reverse translation is checked for the 1 prefix. If the 1 prefix exists, the call is a toll call; otherwise, the call is a local call.

Station Message Detail Recording

Universal Voice Messaging does not affect Station Message Detail Recording.

Datafilling office parameters

The following table shows the office parameter used by Universal Voice Messaging. For more information about office parameters, refer to *Office Parameters Reference Manual*.

Office parameters used by Universal Voice Messaging

Table name	Parameter name	Explanation and action
OFCVAR	UVM_DEPOSIT_PRIV_DN_TMT	Specifies an announcement CLLI for a DMS standard treatment to which a UVMD call is routed when an attempt is made to deposit a message to a DN marked as private in the OCM.

Datafill sequence

The following table lists the tables that require datafill to implement Universal Voice Messaging. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for Universal Voice Messaging (Sheet 1 of 2)

Table	Purpose of table
OFRT, OFR2, OFR3, OFR4	Office route. These tables and subtables contain information on outgoing translated calls with a preceding stage identifying a route reference table.
OCCNAME	Equal access list of other common carrier names. This table contains a list of connected carriers and establishes the spelling standard for carrier names.
OCCINFO	Equal access other common carrier information. This table contains the attribute definitions for carriers serving the DMS switch and screens calls for carrier compatibility.
SITE	Site. This table contains data for the switching unit and for all remote locations.
IBNXLA	IBN translation. This table contains the data for the digit translation of calls from an MDC station, an attendant console, an incoming or an outgoing side of a two-way MDC trunk group.

Universal Voice Messaging (continued)

Datafill tables required for Universal Voice Messaging (Sheet 2 of 2)

Table	Purpose of table
UVMRTE	UVM route. This table contains route information to access messaging systems for the UVM service.
UVMSCR	UVM screening. This table contains screening information for VMS service providers for UVM.
TMTCNTL	Treatment Control. This table and subtables contain information regarding treatments that are returned to the call originator if a specified treatment code is encountered during call translation.

Datafilling table OFRT

The following table shows the datafill specific to Universal Voice Messaging for table OFRT. Only those fields that apply directly to Universal Voice Messaging are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table OFRT

Field	Subfield or refinement	Entry	Explanation and action
RTE		1 to 1023	Route reference index. This field contains the route reference number assigned to the route list.
RTELIST		see subfield	Route list. This field consists of subfields RTESEL and CLLI.
	RTESEL	N	Route selector. This subfield contains the route selector. Enter N.
	CLLI	alphanumeric (1 to 16 characters)	Common language location identifier. This refinement contains the CLLI code to which the translation is routed.

Datafill example for table OFRT

The following example shows sample datafill for table OFRT.

MAP display example for table OFRT

RTE	RTELIST
40	(N D ISUPITOG 0 N N)\$
90	(RT 613 NP LCL 6211095 Y 0 \$)\$

Universal Voice Messaging (continued)

Datafilling table OCCNAME

The following table shows the datafill specific to Universal Voice Messaging for table OCCNAME. Only the field that applies directly to Universal Voice Messaging is shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table OCCNAME

Field	Subfield or refinement	Entry	Explanation and action
OCCNAME		alphanumeric (1 to 16 characters)	Other common carrier name. This field contains the carrier name or the reserved carrier name USE_PREVIOUS if the generic recursive pretranslator is to be used.

Datafill example for table OCCNAME

The following example shows sample datafill for table OCCNAME.

MAP display example for table OCCNAME

OCCNAME

MCI

NONAME

Datafilling table OCCINFO

If the UVM Route is a DN, the CARRIER name specified must exist. Furthermore, the carrier access type must be TRANS, EAP, or OTC as datafilled in field ACCESS of table OCCINFO.

The following table shows the datafill specific to Universal Voice Messaging for table OCCINFO. Only those fields that apply directly to Universal Voice

Universal Voice Messaging (continued)

Messaging are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table OCCINFO

Field	Subfield or refinement	Entry	Explanation and action
CARRNAME		alphanumeric (1 to 16 characters)	Carrier name. This field specifies the carrier name as it appears in table OCCNAME or is empty if the generic recursive pretranslator associated with the reserved carrier name USE_PREVIOUS is to be used.
CARRNUM		numeric (0000 to 9999)	Carrier number. This field specifies the carrier access code (CAC). The CAC is equal to the XXXX digits in the equal access (EA) prefixes (10XXXX or 950YXXXX).
ACCESS		EAP, OTC, or TRANS	Access arrangement. This field specifies the carrier access type. Note: Table control does not allow a carrier with a carrier access type other than EAP, OTC, or TRANS to be specified in a new or changed UVMRTE tuple. However, table control does not prevent the carrier access type of a carrier datafilled in table UVMRTE to be changed later to something other than EAP, OTC, or TRANS.

Datafill example for table OCCINFO

The following example shows sample datafill for table OCCINFO.

MAP display example for table OCCINFO

CARRNAME	CARRNUM	ACCESS
NBC	320	EAP

Datafilling table SITE

The following table shows the datafill specific to Universal Voice Messaging for table SITE. Only the field that applies directly to Universal Voice

Universal Voice Messaging (continued)

Messaging is shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table SITE

Field	Subfield or refinement	Entry	Explanation and action
NAME		alphanumeric (1 to 4 characters)	Site name. This field specifies the site name assigned to the host or remote switching unit. The first character must be alphabetic. Site names may be a vector of up to four characters in length. PM type names cannot be used for site names. An exception is RLCM. The name ALL cannot be used as a site name.

Datafill example for table SITE

The following example shows sample datafill for table SITE.

MAP display example for table SITE

NAME			
LTDSN	MODCOUNT	OPVRCLLI	ALMDATA
NAME			
02	0	CLLI3	(MN TM8 0 0 0)\$

Datafilling table IBNXLA

The following table shows the datafill specific to Universal Voice Messaging for table IBNXLA. Only those fields that apply directly to Universal Voice

Universal Voice Messaging (continued)

Messaging are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table IBNXLA (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	Key. This field consists of subfields XLANAME and DGLIDX.
	XLANAME	alphanumeric (1 to 8 characters)	Translator name. This subfield specifies the name that is assigned to the translator.
	DGLIDX	vector of up to 18 digits	Digilator index. This subfield specifies the digit(s) assigned as an ambiguous code. The range of this field depends on field MAXDIG in table XLANAME. The DGLIDX can accept overdecadic digits. The allowable values for the digilator portion of DGLIDX of table IBNXLA are as follows: <i>MAXDIG value IBNXLA digilator values</i> 9 Digits 0 to 9 C Digits 0 to 9 and B to C F Digits 0 to 9 and B to F The allowable digit range for table IBNXLA digilator values is determined for each translator.
RESULT		see subfields	Result. This field consists of subfields TRSEL, ACR, SMDR, VCDR, and FEATURE.
	TRSEL	FEAT	Translation selector. This subfield specifies the translation selector. Enter FEAT.
	ACR	Y or N	Account code entry. This subfield specifies if an account code entry is required. Enter Y (yes) if an account code entry is required for all calls to the special feature access code. Otherwise, enter N (no). Enter N when the feature is equal to SCPL or SCPS (see field FEATURE).

Universal Voice Messaging (continued)

Datafilling table IBNXLA (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	SMDR	Y or N	Station message detail recording. This subfield specifies if SMDR is required. Enter Y if all calls from an end user group station or attendant console to any station in the block of station numbers are recorded. Enter N if no recording is required. Note: If field SMDR is set to Y, only the feature that originates a call is SMDR recorded. For features that do not originate calls this field has no effect and no SMDR record is produced. For dump and restore purposes, an N must be datafilled after the SMDR field if field TRSEL is datafilled NET, ROUTE, TTTR, AMBI, EXTN, CUTTD, or FEAT. This N is the datafill for field VCDR. The Station Message Detail Recording fields [SMDR and SMDRB (field TRKSEL set to NET)] can only be set to Y if the switching unit has the option SMDR_OFFICE set to Y in table OFCOPT. SMDR bills each leg of the call. The option must be turned on in table IBNXLA to generate SMDR billing. Turning on the option for one leg of the call does not carry over to another leg of the call. For example, when using virtual facility groups (VFG) for routing, SMDR must be turned on for the leg of the call that requires billing and must be routed through table IBNXLA. Neither SMDR nor SMDRB can be turned on for calls originating from POTS VFGs.
	VCDR	Y or N	Variable call detail recording. This subfield specifies if variable call detail recording is required. Enter N. N is the only valid entry for translation selector FEAT.
	FEATURE	UVMD or UVMR	Feature. This subfield specifies the feature required. Enter UVMD for Universal Voice Messaging Deposit or UVMR for Universal Voice Messaging Retrieve.

Universal Voice Messaging (continued)

Datafill example for table IBNXLA

The following example shows sample datafill for table IBNXLA.

MAP display example for table IBNXLA

KEY	RESULT
RESXLA	99 FEAT N Y N UVMD
RESXLA	98 FEAT N Y N UVMR

Datafilling table UVMRTE

The following table shows the datafill specific to Universal Voice Messaging for table UVMRTE. Only those fields that apply directly to Universal Voice Messaging are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table UVMRTE (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
UVMRTIDX		0 to 999	UVM route index. This field specifies the route index.
VMSSPBDN		10 digits	VMS special billing DN. This field specifies the DN to which network access charges are billed if the UVM call is a toll call. The DN is used for calls originating at the host site or any site not specified in the SITEBDN list.
VMSDN		10 digits	VMS DN This field specifies the routing DN of the VMS that is to replace the originally dialed digits.
ROUTE		see subfields	This field consists of subfields RTESEL, RETREF, and CARRNAME.
	RTESEL	DN or RTE	Route selector. This field specifies how the call is to be routed. Enter DN if the call is to be routed using the VMSDN. Enter RTE if the call is to be route using the office route tables.
	RTEREF	OFRT, OFRT2, OFRT3, or OFRT4 and 0 to 1023	Route reference. This field consists of a reference to an entry in one of the office route tables used to route the call. This subfield is used if RTE is entered.

Universal Voice Messaging (continued)

Datafilling table UVMRTE (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	CARRNAME	1 to 16 chars	Carrier name. This field specifies of the name of the Inter-Exchange Carrier that the VMS service provided prefers to use when a UVM call is a toll call. This must be a name that is datafilled in table OCCNAME. This subfield is used if DN is entered.
SITEBDN		a list of 4 characters and 10 digits, \$	Site billing DN. This field specifies a list of site special billing DNs. Enter a four-character name for each site coupled with a 10-digit DN. A maximum of 52 site/billing DN pairings is allowed.

Datafill example for table UVMRTE

The following example shows sample datafill for table UVMRTE.

MAP display example for table UVMRTE

UVMRTIDX	VMSSPBDN	VMSDN	ROUTE	SITEBDN
1	4033442000	4032881000	DN CARR_A	\$
2	4034886000	4032881000	RTE OFRT 104 (REM1	
	4034886001)	REM2 4034886002)	\$	
3	NIL	4032881000	RTE OFRT 64	\$

Error messages for table UVMRTE

The following error messages apply to table UVMRTE.

Error messages for table UVMRTE (Sheet 1 of 2)

Error message	Explanation and action
The site(s) are not datafilled in table SITE	The site(s) specified in field SITEBDN must be datafilled in table SITE.
Unable to read the table OFRT/2/3/4.	The system is unable to access the office route tables.
The route index is not datafilled in the specified OFRT/2/3/4.	The specified route is not datafilled in the office route tables.

Universal Voice Messaging (continued)

Error messages for table UVMRTE (Sheet 2 of 2)

Error message	Explanation and action
Store is not allocated for the table UVMRTE or unable to allocate store.	Either no store is allocated for table UVMRTE or no more store can be allocated.
Duplicated site name.	A site name is duplicated in the list of sites.
Invalid office route table name.	The office route table name does not exist.
The NIL carrier is not a valid entry.	The NIL carrier name is not a valid entry.
The access type must be OTC, EAP, or TRANS.	The system is unable to allocate store for a new tuple.

Datafilling table UVMSCR

The following table shows the datafill specific to Universal Voice Messaging for table UVMSCR. Only those fields that apply directly to Universal Voice Messaging are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table UVMSCR (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
UVMCODE		000 to 999	UVM code. This field specifies the UVM feature access code as datafilled in table IBNXLA.
FEAT		UVMR or UVMD	Feature. This field specifies whether the information in the tuple pertains to UVMD or UVMR.
SCRNDATA		see subfields	Screen data. This field consists of subfields VMSDN and UVMDSERN. If FEAT = UVMR, the next subfield is VMSDN. If FEAT = UVMD only, the next subfield is UVMDSERN.
	VMSDN	10-digit DN	VMS DN. This subfield consists of the MWI requestor DN for UVMR. Enter the 10-digit DN of the MWI requestor DN of the VMS service provider.

Universal Voice Messaging (continued)

Datafilling table UVMSCR (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	UVMDSRN	see subfields	This subfield consists of refinements OCNSCRNG, SERVSEL, UVMRTIDX, and TRMT.
	OCNSCRNG	0 to 9999999999	Original called number digit range. This refinement specifies the range(s) of originally called number digits for which this tuple applies. The maximum number of ranges allowed is 30.
	SERVSEL	CMSG, UVM, or TRMT	UVM service selector. This refinement specifies the UVM service selector. Enter CMSG to route the call to the Call Messenger service, enter UVM to route the call according to table UVMRTE, or enter TRMT to route the call to treatment.
	UVMRTIDX	0 to 999 or NIL	UVM route index. This refinement specifies the index in table UVMRTE and identifies the entry to use to route the call. A value of NIL in this field indicates that the index in field DEFRTIDX is to be used. This subfield applies to SERVSEL = UVM only.
	TRMT	T and 4 chars, or R and one of OFRT, OFR2, OFR3, OFR4; and 0 to 1023	Treatment. This refinement species the treatment provided to the calling party when the value of SERVSEL is TRMT. Enter T and a valid four-character DMS treatment as found in table TMTCNTL, or R and an office route table and index where the treatment is provided.
DEFRTIDX		0 to 999	Default route index. This field specifies the index in table UVMRTE and is the default route when UVMRTIDX is NIL and when the original called number does not match any of the ranges in refinement OCNSCRNG.

Datafill example for table UVMSCR

The following example shows sample datafill for table UVMSCR.

Universal Voice Messaging (continued)

MAP display example for table UVMSCR

UVMCODE	SCRNDATA	DEFRTIDX
98	UVMR 4032881000	1
99	UVMD (1 199 TRMT T FNAL) (403000	
	403975 UVM 1) (403976 403976 TRMT T FNAL) (403977 403999	
	UVM NIL) (404 799 CMSG) (800 800 TRMT T FNAL) \$	1
108	UVMR 4032134000	3
109	UVMD (404 999 TRMT R OFRT 4) \$	3

Error messages for table UVMSCR

The following error messages apply to table UVMSCR.

Error messages for table UVMSCR

Error message	Explanation and action
Cannot allocate digilator or digilator not allocated.	A digilator cannot be allocated or is not allocated.
Cannot write to a digilator.	A digilator cannot be written into.
UVMR digilator could not be cleaned up.	The UVMR digilator could not be updated following a tuple change or a tuple delete. The UVMR digilator is corrupt.
Store is not allocated for the table UVMSCR or unable to allocate store.	Either no store is allocated for table UVMSCR or no more store can be allocated.
No digilator pool allocated.	The digilator pool used by table UVMSCR is not allocated.
The UVMSCR table is full.	Table UVMSCR contains the maximum number of tuples (60). No more can be added.

Datafilling table TMTCNTL

The following table shows the datafill specific to Universal Voice Messaging for table TMTCNTL. Only those fields that apply directly to Universal Voice

Universal Voice Messaging (continued)

Messaging are shown. For a description of the other fields, refer to the data schema section of this document.

Datafilling table TMTCNTL

Field	Subfield or refinement	Entry	Explanation and action
TREATMT		alphanumeric (1 to 4 characters)	Treatment. This field specifies the treatment name.
LOG		Y or N	Log. This field specifies whether a trunk or line message 138 prints out. Enter Y (Yes) for a trunk or line message 138 printout each time translation is routed to a treatment. Otherwise, enter N (No).
FSTRTE		see subfields	First route. This field consists of subfields FSTRTSEL, TABID, and KEY.
	FSTRTSEL	T	First route selector. This subfield specifies the first route selector. Enter the first route selector T.
	TABID	OFRT, OFR2, OFR3, or OFR4	Table name. This subfield specifies the office route table name. Enter the office route table name.
	KEY	1 to 1023	Key. This subfield specifies the index into the office route table. Enter the index into the office route table which defines the route list for the treatment. The entry zero (0) cannot be datafilled by the operating company.

Datafill example for table TMTCNTL

The following example shows sample datafill for table TMTCNTL

MAP display example for table TMTCNTL

TREATMT	LOG	FSTRTE
-----	-----	-----
UNDT	N S	T120

Translation verification tools

Universal Voice Messaging does not use translation verification tools.

Universal Voice Messaging (end)

SERVORD

Universal Voice Messaging does not use SERVORD.

Voice Mail Easy Access (VMEA)

Ordering codes

Functional group ordering code: CSTC0002

Functionality ordering code: CSTC0002

Release applicability

Voice Mail Easy Access (VMEA) was introduced in NA007.

Prerequisites

VMEA requires one of the following functional groups or codes:

- RES Interface Functionality RES00004
- TEL CCS7 Base TEL00001 functionality code TEL00008
- TEL Telecom Layer Function TEL00001

Description

VMEA is a service offered to residential subscribers that provides an integrated access to a voice messaging service from an End Office (EO) by dialing an access code. Customers who have subscribed to a voice messaging service like Call Answer have the ability to directly access their voice mailboxes by dialing the access code from their home telephone set.

Operation

The VMEA feature is activated when a subscriber enters a star code (for example, *XX where X is a digit between 0 and 9). The access code is not provisioned by the VMEA feature but can be custom datafilled in table IBNXLA by the operating company.

When a subscriber enters the access code, they are routed to the DN stored in one of the following features.

- CFDA - one of the features for regular voice mail subscribers
- CFB, CFD - one of the features for ISDN regular voice mail subscribers
- CFGDA - one of the features for multi-party voice mail subscribers
- VMEADN - a new line option for community voice mail subscribers

Voice Mail Easy Access (VMEA) (continued)

The subscriber must go off-hook to activate the feature. The VMEA feature is flashable and dialing the VMEA access code after a switch-hook flash is permitted.

Note: The VMEA access code can be entered from any of the DN keys of an ISDN keyset.

The VMEA feature affects the following areas:

- Table Control
- SERVORD
- Call Processing

Call Processing

The VMEA feature is activated by an access code translated using the datafill in table IBNXLA. After access code translation, screening functions are then performed.

The screening functions performed are POTS line screening, customer group screening, calling party screening, and LCC screening.

POTS line screening All VMEA calls originated by POTS lines are routed to office treatment.

Customer group screening All VMEA calls originated by subscribers whose customer group is not registered for VMEA are routed to office treatment.

Calling Party screening All VMEA calls from subscribers with line option VMEADENY are routed to Feature Not Allowed (FNAL) treatment.

LCC screening All VMEA calls from lines without a Line Class Code (LCC) of RES or ISDNKSET are routed to Feature Not Allowed (FNAL) treatment.

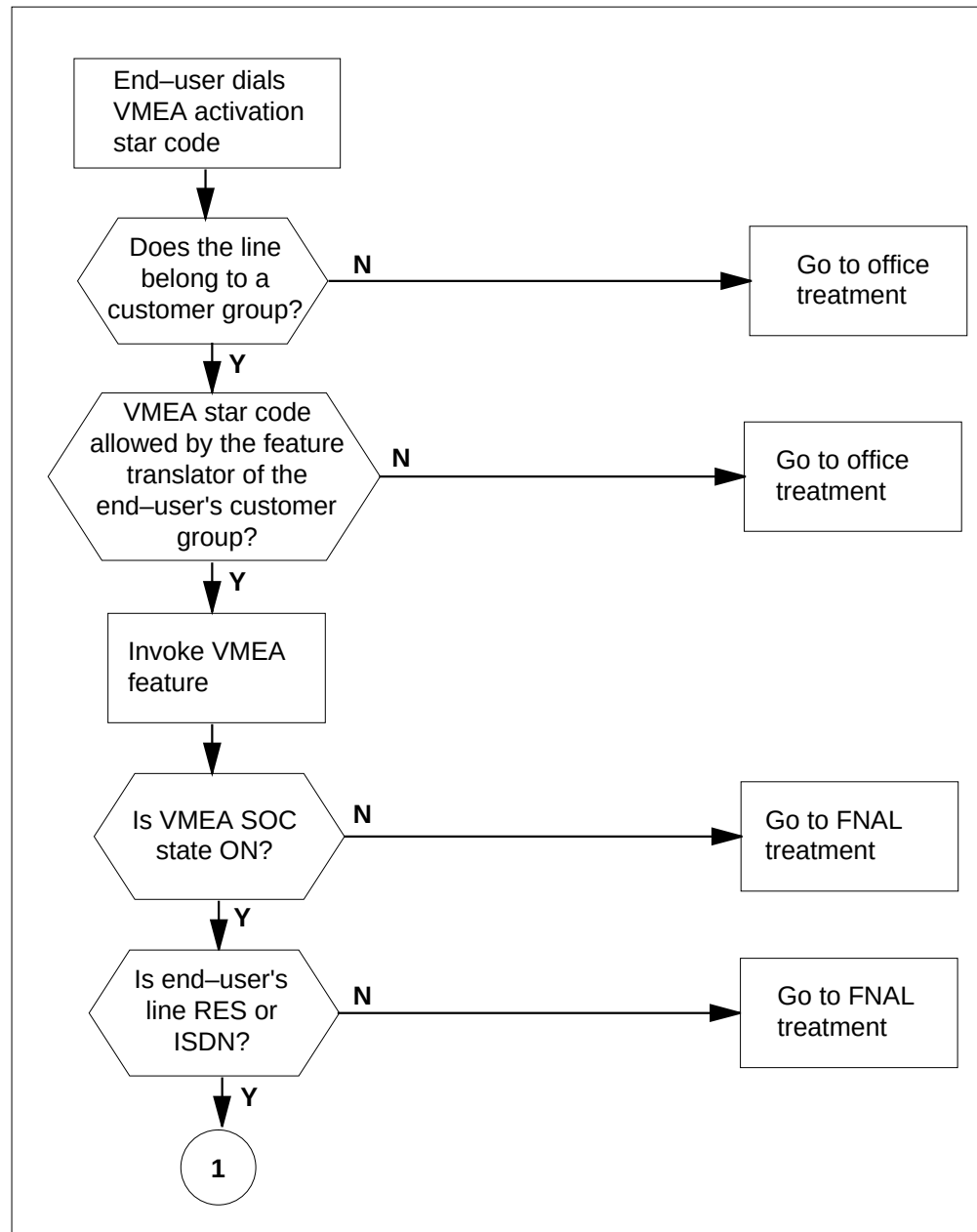
LCCs ISDN (Integrated Services Digital Network), RES (Residential Enhanced Service), RES/1FR (POTS converted to RES), and RES/1MR (POTS converted to RES) are supported by VMEA.

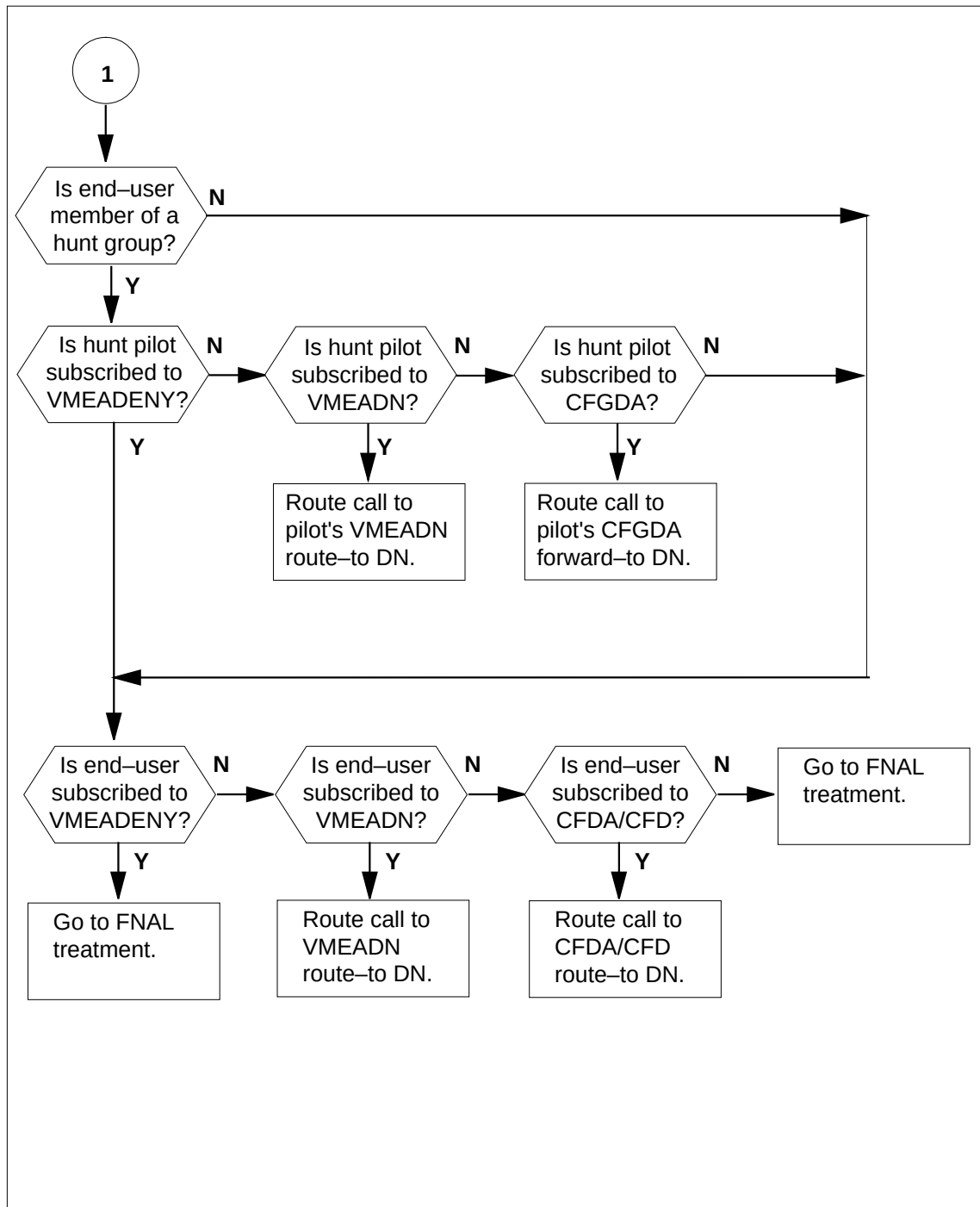
After screening, VMEA calls use standard translations for call completion. The routing DN is retrieved from the VMEA DN or the CFD, CFDA, or CFGDA line option. Calls from subscribers without these line options are routed to Feature Not Allowed (FNAL) treatment.

The following figure contains a call processing flow chart for the VMEA feature.

Voice Mail Easy Access (VMEA) (continued)

VMEA feature call processing flowchart



Voice Mail Easy Access (VMEA) (continued)**VMEA feature call processing flowchart (continued)****Translations table flow**

VMEA does not does not affect translations table flow.

Voice Mail Easy Access (VMEA) (continued)

Limitations and restrictions

The following limitations and restrictions apply to VMEA:

- VMEA is available only on DMS SuperNode and BRISC switches. The VMEA feature is not supported by the NT40 processor.
- The VMEA feature cannot be invoked when a Remote Switching Center (RSC) (which serves RCCs) or an RLCM is in Emergency Stand-Alone (ESA) operation. ESA provides the capability for line subscribers terminating off the same RSC or RLCM to complete calls when the remote peripheral loses communication with the host DMS.
- The VMEA feature can be provided to callers with lines terminating on any of the following Peripheral Modules (PM):
 - Line Concentrating Module (LCM) or Remote Line Concentrating Module (RLCM) connected to a Line Group Controller (LGC)
 - LCM or RLCM connected to a Line Trunk Controller (LTC)
 - LCM or RLCM connected to a Remote Cluster Controller (RCC)
 - Remote Carrier Urban (RCU) module connected to a Subscriber Module Urban (SMU)
 - Line Module (LM)
 - Remote Line Module (RLM) which operates in conjunction with the Digital Carrier Module - Remote (DCM-R)
- The VMEA datafill survives all restarts and One Night Process (ONP) upgrades
- VMEA does not survive a reload restart. A VMEA call to the VMS in talking state survives warm and cold restarts.

Interactions

The following paragraphs describe the interactions between VMEA and other functionalities.

Advanced Intelligent Network (AIN)

While a call is being established with the VMS using VMEA star access code, any AIN terminating triggers encountered are also supported. Interactions with the different AIN versions are as follows:

AIN 0.0

No interactions identified.

Voice Mail Easy Access (VMEA) (continued)

Describe the interactions between this feature and existing features. Describe the impact of these changes, where applicable. For example, describe the effect a conference call has on call waiting, call forwarding, etc.

AIN 0.1

The following triggers are supported before VMEA is activated:

Origination_Attempt Trigger

Information_Collected Trigger

Describe the interactions between this feature and existing features. Describe the impact of these changes, where applicable. For example, describe the effect a conference call has on call waiting, call forwarding, etc.

AIN 0.2

The following triggers are supported before VMEA is activated:

Origination_Attempt Trigger

Origination_Attempt_Authorized Trigger

Information_Collected Trigger

Automatic Line (AUL)

The AUL option allows a DN to be datafilled against a line and as soon as the phone goes off-hook, this DN is used to originate a call.

This option makes the manual dialing of the star access code impossible but the VMEA access code can be stored in the AUL option and VMEA would work normally.

Call Waiting (CWT) / Distinctive Ringing Call Waiting (DRCW)/Long Distance Signal (LDS)

The CWT feature notifies the connected off-hook subscriber when another call arrives. The subscriber can place the current party on hold and answer the call that is waiting. The LDS feature applies a distinctive ringing pattern to the caller when the incoming call is a toll call. If the caller is busy, a distinctive call waiting tone is applied.

These features are not affected by the VMEA feature. When interacting with a VMS, a caller can still receive the call waiting tones from CWT, LDS or DRCW. The caller can then invoke the "waiting" feature by the usual hook-flash. The connection with the VMS would then be on hold.

Voice Mail Easy Access (VMEA) (continued)

Call Request Activation (CRA) / Call Request Retrieval (CRR)

CRR is activated with an access code and is used to call back the sender of a message waiting indicator (MWI). This MWI can be left by another end-user through the Call Request Activation (CRA), in which case invoking CRR will originate a call to the CRA requestor. The MWI can also be left by a message desk (SMDI group), in which case CRR will originate a call to the UCD DN (connect to VMS) of the message desk. This way CRR access code can be used to connect directly to the VMS system in order to retrieve only waiting messages. Unlike VMEA star access code, CRR could not route to the VMS system if there were no messages waiting (no MWI).

The VMEA feature does not impact CRA/CRR feature.

Call Screening, Monitoring and Intercept (CSMI)

CSMI enhances voice messaging services by improving incoming call management and message handling for residential and small business end-users. CSMI allows the monitoring and interception of messages that are being handled by a Network-Based Answering Service (NBAS).

If a CSMI end-user is in a screening phase, the VMEA feature cannot be invoked from an off-hook state. At this point when the end-user goes off-hook the CSMI feature has precedence over the call. This applies only for subscription-based CSMI end-users.

Enhanced Teen Service (ESDN)

If the end-user is subscribed to ESDN and if, also, the CFDA or VMEADN line option is assigned to the end-user's ESDN number, the VMEA feature will route to the CFDA or VMEADN route-to DN, given that the end-user has invoked the Secondary Directory Number Identification (SDNID) feature prior to VMEA feature. The SDNID feature allows to identify the end-user's ESDN number (4 digit identifier) before placing a call.

Hunt Groups (DNH, DLH and MLH)

Hunt group allows a terminating call to be offered subsequently to all members of the group (for several rings) until it is answered.

VMEA feature is fully supported on Distributed Number Hunt, Distributed Line Hunt and Multiple Line Hunt groups (DNH, DLH and MLH). All members of the hunt group have access to the VMEA star access code feature. The pilot DN is used for obtaining the VMS routing DN.

In-Session Activation (ISA)

In-Session Activation (ISA) is a feature that gives operating company the ability to offer callers a menu of call completion services when a call

Voice Mail Easy Access (VMEA) (continued)

encounters a busy or no-answer condition. It provides in-session activation capability from DTMF and dial-pulse sets, enabling callers to activate a call completion service without having to hang up and remember an activation code.

If an inter-office call is established to the VMS system with VMEA feature and a no-answer condition is encountered, then the ISA feature will be triggered. If the established VMEA call with the VMS is intra-office, then ISA will not trigger. This is due to the ISA interaction with the UCD/ACD feature that is used to queue the calls on the VMS.

Outgoing Call Memory (OCM)

The OCM holds information on the most recent call originated by an end-user. The OCM is updated for each outgoing call when the call is successfully routed by the VMEA feature. It is not updated when the following occurs before routing the call:

- VACT (Vacant) treatment is applied. This happens when the dialed number cannot be translated (the translation tables have no entries for the dialed number).
- PDIL (Partial DIal) treatment is applied.
- An error treatment is applied as a result of a feature which forbids certain types of dialed numbers (e.g. Toll Denied-TDN option).
- Local Calling Area/Class Of Service screening fails. For example, a local call dialed for a toll destination produces the MSLC (Misdirected Local Call) treatment.

When VMEA routes the call to the VMS, the OCM is updated with the route-to DN obtained rather than the dialed VMEA star code itself.

Set up DN Attributes (SDNA)

This SERVORD command allows an operating company to specify that a station can provide a substitute DN to be sent in place of all or part of the standard Calling DN. If a station that activates VMEA feature has substituted the CLID for an alternate one, it is the substituted DN that will be sent to the VMS when VMEA route the call.

Three-Way Calling (3WC)/ Usage Sensitive 3WC(U3WC)

3WC can be invoked while a caller is active on a VMEA call. The connection with the VMS is placed on hold while the caller is setting up the second leg of the three-way call. The ensuing hook-flash used to connect the three parties will have the effect of including the second leg into the VMS access.

Voice Mail Easy Access (VMEA) (continued)

The above also applies to U3WC feature interacting with VMEA feature. Here's a dialing sequence example for establishing a U3WC with a VMEA call:

1. A dials VMEA star code access and establishes a call with the VMS
2. A hook-flashes, obtains special dial tone and dials U3WC access code
3. A re-obtains special dial tone and dials B's DN number
4. A hook-flashes again to complete the 3WC scenario between the VMS, B and him/herself.

VMEA can also be invoked on the second leg of a three way call as shown in this dialing sequence:

1. A dials B's Directory Number
2. A hook-flashes, obtains special dial tone and dials U3WC access code
3. A re-obtains special dial tone and dials VMEA's access code
4. A hook-flashes again to complete the 3WC scenario between the B, VMS and him/herself.

Toll Deny (TDN), Carrier Toll Deny (CTD), Full Carrier Toll Denied(FCTD), Toll Diversion (TDV)

The Toll Denial and Diversion features restricts toll access from a given line.

The VMEA feature allows access to the messaging system for lines with toll restriction even when the route to the VMS is normally a toll call. The toll charges are billed to the end-user invoking the VMEA feature.

Billing

The use of VMEA by subscribers does not generate a billing record. When the route to the VMS is normally a toll call, the toll charges are billed to the subscriber invoking the VMEA feature.

Office parameters

VMEA does not introduce or modify any office parameters.

Voice Mail Easy Access (VMEA) (continued)

Datafill sequence

The following table lists the tables that require datafill to provide VMEA functionality. The tables are listed in the order in which they are to be datafilled.

Datafill tables required for VMEA

Table	Purpose of table
IBNFEAT feature VMEADN	Allows a directory number to be assigned to an IBN line for routing to a Voice Messaging System.
IBNXLA selector FEAT	Used when dialed digits are the access code for features.
IBNXLA selector STAR	Used for digits on a dial phone that equate to a star (*) button on a touchtone phone.
IBNLINES option STN and option VMEADENY	Used for line assignments to RES and IBN stations. Used to deny access to option VMEA.
KSETFEAT option VMEADN	Allows a directory number to be assigned to an ISDN line for routing to a Voice Messaging System.
KSETFEAT option VMEADENY	Used to deny ISDN line access to the VMEA feature.

Datafilling table IBNFEAT feature VMEADN

The following table shows the datafill specific to VMEA for table IBNFEAT feature VMEADN.

Datafilling table IBNFEAT feature VMEADN

Field	Subfield or refinement	Entry	Explanation and action
DF		VMEADN	Data feature. Enter VMEADN for the Voice Mail Easy Access Directory Number feature.
FEATURE		VMEADN	Data feature. Enter VMEADN.
DATA		see subfields	Data. This field consists of subfield DN.
	DN	vector of up to 30 digits	Directory number. Enter the DN of the customer's Voice Mail System (VMS).

Datafill example for table IBNFEAT feature VMEADN

The following example shows sample datafill for table IBNFEAT feature VMEADN.

Voice Mail Easy Access (VMEA) (continued)**MAP display example for table IBNFEAT feature VMEADN**

LEN	DNNO	DF	FEATURE	DATA

HOST 00 0 01 04 0		VMEADN	VMEADN	6210000

Datafilling table IBNXLA selector FEAT

The following table shows the datafill specific to VMEA for table IBNXLA selector FEAT.

Datafilling table IBNXLA selector FEAT (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	Key. This field consists of subfields XLANAME and DGLIDX.
	XLANAME	alphanumeric (1 to 8 characters)	Translator name. Enter the name that is assigned to the translator.
	DGLIDX	vector of up to 18 digits	Digilator index. Enter the digit or digits assigned as an ambiguous code. The range of this field depends on field MAXDIG in table XLANAME. The DGLIDX can accept overdecadic digits. The allowable values for the digilator portion of DGLIDX of table IBNXLA are as follows: MAXDIG value IBNXLA digilator values 9 digits 0 to 9 C digits 0 to 9 and B to C F digits 0 to 9 and B to F The allowable digit range for table IBNXLA digilator values is determined for each translator.
RESULT		See subfields	Result. This field consists of subfields TRSEL, ACR, SMDR, and FEATURE.
	TRSEL	FEAT	Translation selector. Enter the translation selector FEAT.

Voice Mail Easy Access (VMEA) (continued)

Datafilling table IBNXLA selector FEAT (Sheet 2 of 2)

Field	Subfield or refinement	Entry	Explanation and action
	ACR	Y or N	Account code entry. Enter Y (yes) if an account code entry is required for all calls to the special feature access code. Otherwise, enter N (no). Enter N when the feature is equal to SCPL or SCPS (see field FEATURE).
	SMDR	Y or N	Station message detail recording. Enter Y if all calls from a customer group station or attendant console to any station in the block of station numbers are recorded. Enter N if no recording is required. Note: If field SMDR is set to Y, only the feature that originates a call is SMDR recorded. For features that do not originate calls, this field has no effect and no SMDR record is produced. For dump and restore purposes, an N must be datafilled after the SMDR field if field TRSEL is datafilled with NET, ROUTE, TTTR, AMBI, EXTN, CUTTD, or FEAT. The Station Message Detail Recording fields (SMDR and SMDRB [TRKSEL=NET]) can only be set to Y if the switching unit has the option SMDR_OFFICE set to Y in table OFCOPT. SMDR bills each leg of the call. The option must be turned on in IBN translations to generate SMDR billing. Turning on the option for one leg of the call does not carry over to another leg of the call. For example, when using virtual facility groups (VFG) for routing, SMDR must be turned on for the leg of the call that requires billing and must be routed through IBN translations. Neither SMDR nor SMDRB can be turned on for calls from plain ordinary telephone service (POTS) VFGs.
	FEATURE	VMEA	Feature. Enter VMEA.

Datafill example for table IBNXLA selector FEAT

The following example shows sample datafill for table IBNXLA selector FEAT.

Voice Mail Easy Access (VMEA) (continued)**MAP display example for table IBNXLA selector FEAT**

KEY		RESULT
RESXLA	98	FEAT N N N VMEA

Datafilling table IBNXLA selector STAR

The following table shows the datafill specific to VMEA for table IBNXLA selector STAR.

Datafilling table IBNXLA selector STAR

Field	Subfield or refinement	Entry	Explanation and action
KEY		see subfields	Key. This field consists of subfields XLANAME and DGLIDX.
	XLANAME	alphanumeric (1 to 8 characters)	Translator name. Enter the name that is assigned to the translator.
	DGLIDX	vector of up to 18 digits	Digilator index. Enter the digit or digits assigned as an ambiguous code. The range of this field depends on field MAXDIG in table XLANAME. The DGLIDX can accept overdecadic digits. The allowable values for the digilator portion of DGLIDX of table IBNXLA are as follows: MAXDIG value IBNXLA digilator values 9 digits 0 to 9 C digits 0 to 9 and B to C F digits 0 to 9 and B to F The allowable digit range for table IBNXLA digilator values is determined for each translator.
RESULT		See subfields	Result. This field consists of subfield TRSEL.
	TRSEL	STAR	Translation selector. Enter the translation selector STAR.

Voice Mail Easy Access (VMEA) (continued)

Datafill example for table IBNXLA selector STAR

The following example shows sample datafill for table IBNXLA selector STAR.

MAP display example for table IBNXLA selector STAR

KEY		RESULT
RESXLA	11	STAR

Datafilling table IBNLINES option STN

The following table shows the datafill specific to VMEA for table IBNLINES option STN.

Datafilling table IBNLINES option STN (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
LEN		see explanation	Line equipment number. This field defines the physical location of the equipment that is connected to a specific telephone line. Because field LEN is common to more than 60 tables, it is documented in a single section to avoid unnecessary duplication. Refer to section "Common entry field LEN" in this document for a complete description of field LEN and associated subfields. Field LEN consists of subfields SITE, FRAME, UNIT, DRAWER or LSG, SHELF, SLOT, and CIRCUIT.
DNNO		0 to 6	Directory number number. This field specifies the number assigned to the DN that is being referenced on the LEN.
RESULT		see subfields	Result. This field consists of subfields SIGTYPE, FORMAT, IBNVAR, and OPTLIST.

Voice Mail Easy Access (VMEA) (continued)**Datafilling tableIBNLINES option STN (Sheet 2 of 2)**

Field	Subfield or refinement	Entry	Explanation and action
		DP or DT	Signal type. This field specifies the type of pulsing expected: DP for dial pulse or DT for Digitone.
	FORMAT	STN	Format. This field specifies the format name STN (station) for an IBN or RES station.
	IBNVAR	see subfields	Integrated business network variable. This field consists of subfields LCC and DN.
	LCC	IBN or RES	Line class code. If the line is an IBN line, enter IBN and datafill refinements CUSTGRP, SUBGRP, NCOS, and SNPA. For a residential line or a coin line with residential features, enter RES and datafill refinement LNATTIDX.
	DN	numeric (vector of up to 15 digits)	Directory number. Enter the DN assigned to the IBN or RES station.
	CUSTGRP	alphanumeric	Customer group. Enter the code assigned to the customer group to which the IBN line is assigned.
	SUBGRP	0 to 7	Subgroup. Enter the subgroup within the customer group to which the IBN line is assigned.
	NCOS	0 to 255	Network class of service. Enter the NCOS number assigned to the IBN line.
	SNPA	numeric	Serving numbering plan area. Enter the serving NPA to which the IBN line is assigned.
	LNATTIDX	0 to 1023	Line attribute index. Enter the line attribute index number defined in table LINEATTR to which the RES line is assigned. The index must have field LCC equal to 1FR, 1MR, ETW, OWT, INW, 2WW, EOW, CCF, CDF, CFD, CSP, ZMD, or ZMZPA, and field RESINFO equal to Y (yes). Fields CUSTGRP, SUBGRP, and NCOS must contain valid data.
	OPTLIST	VMEADENY	Option list. Enter VMEADENY.

Voice Mail Easy Access (VMEA) (continued)

Datafill example for table IBNLINES option STN

The following example shows sample datafill for table IBNLINES option STN.

MAP display example for table IBNLINES option STN

LEN	DNNO	RESULT
00 1 02 03	0 DT STN RES 2265244 GRP2 0 0 613 (VMEADENY) \$	

Datafilling table KSETFEAT feature VMEADN

The following table shows the datafill specific to VMEA for table KSETFEAT feature VMEADN

Datafilling table KSETFEAT feature VMEADN (Sheet 1 of 2)

Field	Subfield or refinement	Entry	Explanation and action
FEATKEY		see subfields	KSET feature key. This field consists of subfields LEN, KEY, and FEAT.
	LEN	see subfields	Line equipment number. This field defines the physical location of the equipment that is connected to a specific telephone line. Because field LEN is common to more than 60 tables, it is documented in a single section to avoid unnecessary duplication. Refer to section "Common entry field LEN" for a complete description of field LEN and associated subfields. For ISDN lines, field LEN consists of subfield LTID. For non-ISDN lines, field LEN consists of subfields SITE, FRAME, UNIT, DRAWER or LSG, SHELF, SLOT, and CIRCUIT.
	KEY	1 to 69	Physical key. Enter the number associated with the physical key to which the feature is being assigned.
	FEAT	VMEADN	Feature. Enter VMEADN for the VMEA directory number feature.

Voice Mail Easy Access (VMEA) (continued)**Datafilling table KSETFEAT feature VMEADN (Sheet 2 of 2)**

Field	Subfield or refinement	Entry	Explanation and action
	FEATURE	VMEADN	Feature. Enter VMEADN for the VMEA directory number feature.
	DN	vector of up to 30 digits	Directory number. Enter the DN of the customer's Voice Mail System (VMS).

Datafill example for table KSETFEAT feature VMEADN

The following example shows sample datafill for table KSETFEAT feature VMEADN.

MAP display example for table KSETFEAT feature VMEADN

		FEATKEY	FEATURE	KVAR

ISDN 209	1	VMEADN	VMEADN	6210000

Voice Mail Easy Access (VMEA) (continued)

Datafilling table KSETFEAT feature VMEADENY

The following table shows the datafill specific to VMEA for table KSETFEAT feature VMEADENY.

Datafilling table KSETFEAT feature VMEADENY

Field	Subfield or refinement	Entry	Explanation and action
FEATKEY		see subfields	KSET feature key. This field consists of subfields LEN, KEY, and FEAT.
	LEN	see subfields	Line equipment number. This field defines the physical location of the equipment that is connected to a specific telephone line. Because field LEN is common to more than 60 tables, it is documented in a single section to avoid unnecessary duplication. Refer to section "Common entry field LEN" for a complete description of field LEN and associated subfields. For ISDN lines, field LEN consists of subfield LTID. For non-ISDN lines, field LEN consists of subfields SITE, FRAME, UNIT, DRAWER or LSG, SHELF, SLOT, and CIRCUIT.
	KEY	1 to 69	Physical key. Enter the number associated with the physical key to which the feature is being assigned.
	FEAT	VMEADENY	Feature. Enter VMEADENY to deny access to the VMEA feature.
	FEATURE	VMEADENY	Feature. Enter VMEADENY to deny access to the VMEA feature.

Datafill example for table KSETFEAT feature VMEADENY

The following example shows sample datafill for table KSETFEAT feature VMEADENY.

Voice Mail Easy Access (VMEA) (continued)

MAP display example for table KSETFEAT feature VMEADENY

	FEATKEY	FEATURE	KVAR
ISDN 209	1	VMEADENY	VMEADENY

Translation verification tools

Voice Mail Easy Access (VMEA) does not use translation verification tools.

SERVORD

The line options VMEADN or VMEADENY can be added to RES and ISDN lines using the service order (SERVORD) utility, and displayed using QLEN, QDN, and QLT.

VMEADENY This line option prevents VMEA from being invoked by a non-voice mail end-user that may have the CFDA or CFGDA for RES lines or CFD for ISDN lines or the VMEADN line option.

VMEADN This line option is for community voice mail subscribers that are assigned the MWT line option. It is used to store the VMS routing DN. This DN is a dialable DN.

SERVORD limitations and restrictions

There are no SERVORD limitations and restrictions.

SERVORD prompts

The following table shows the SERVORD prompts used to add the VMEADN option to a RES or ISDN line.

SERVORD prompts for Voice Mail Easy Access (VMEA)

Prompt	Valid input	Explanation
VMEADN	0 to 30 digit number (0 is entered by using \$)	Enter the directory number assigned to access the Voice Messaging System.
OPTION	VMEADNVM EADENY	Indicates the name of the option.

Voice Mail Easy Access (VMEA) (continued)

SERVORD example for adding the VMEADN option to a line

The following SERVORD example shows how the VMEADN option is added to a RES line using the ADO command.

SERVORD example for VMEADN in prompt mode

```
>SERVORD
S0:
> ADO $ 6211090
OPTION:
> VMEADN
VMEADN:
> 7221111
OPTION:
$
COMMAND AS ENTERED:
ADO NOW 96 06 19 PM 6211090 (VMEADN 7221111) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
> y
```

SERVORD example for VMEADN in no-prompt mode

```
> ADO $ 6211090 VMEADN 7221111 $
```

SERVORD example for adding the VMEADENY option to a line

The following SERVORD example shows how the VMEADENY option is added to a RES line using the ADO command.

Voice Mail Easy Access (VMEA) (end)

SERVORD example for VMEADENY in prompt mode

```
>SERVORD
S0:
> ADO $ 6211090
OPTION:
> VMEADENY
OPTION:
$
COMMAND AS ENTERED:
ADO NOW 96 06 19 PM 6211090 (VMEADENY) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
> y
```

SERVORD example for VMEADENY in no-prompt mode

```
> ADO $ 6211090 VMEADENY $
```

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North American DMS-100

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Residential Enhanced Services (RES) Part 2 of 3

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