DMS-100 Family

SERVORD Digest

All Computing-module Loads

4Q97 – Standard Release 08.01 – November 1997

NØRTEL
NORTHERN TELECOM

DMS-100F
SERVORD
Digest

4Q97 and up

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Introduction

This document is primarily directed to Telephone operating company departments responsible for keeping Operations Support Systems (OSSs) up to date with SERVORD, third-party vendors that have programs using SERVORD, training centers teaching SERVORD and Customer Data Change (CDC) procedures, Bellcore and other OSS developers that need SERVORD to update their systems, and includes new and changed features applicable to these groups. It is a summary of the Service Order affecting items in the Feature Release Document and is intended to reduce the time and effort required for implementing SERVORD changes.

This digest is written in conjunction with a similar document issued covering Traffic related items. The format of this document is the same as used in the DMS-100F Traffic Synopsis Reference Manual. Therefore, it was decided to model this document in the same manner to make cross-referencing between documents as simple as possible.

This digest is divided into three major sections called 'SW' (SWitch Traffic items), 'LN' (LiNe Traffic items), and 'SF' (Service Features). These sections may be separated and given to the appropriate groups for action.

Each major section is further divided into two sub-sections called "NOW" and "LATER".

The "NOW" sub-sections identify changes that affect the Service Order sensitive operations immediately upon insertion of the new software load. This includes changes to SERVORD Commands and Screen changes.

The "LATER" sub-sections identify changes that have an indirect impact on Traffic or that require datafill (translations preparation activity) after the insertion of the new software load.

Within each sub-section, the features are identified by the NTI package number, and NTI activity number and title. An attempt to define the application or office type for each feature has also been included.

Since there are differences in Organization Structure from one operating company to another, no attempt has been made to assign group responsibilities for implementing or acting upon any of the SERVORD components.

The recommended first step in using the digest is to identify and highlight the features that apply to the office to which the new software load will apply.

The next step is to review the feature changes described in the digest that apply to the office that is to receive the new software load insertion. After insertion and testing have been completed try using any of the non-service affecting commands available at the SERVORD MAP terminal. Finally, arrange for the activation of any new SERVORD features by preparing the appropriate translations forms detailing the datafill of any new tables or fields as required and forwarding to the appropriate network maintenance forces for action, (including, of course, those translations required to implement any new or changed maintenance features or elements).

The *SERVORD Digest* is intended to be a summary of Service Order affecting features in the Feature Release Document. The Release Document Volume II Section 1.0 provides detailed Functional Descriptions of the BCS features listed by NTI package. Volume II Section 2.0 provides detailed information on Functional Description changes (FN Updates); Log message changes (LG updates); Data Schema changes (DS updates); Command changes (MM updates); OM changes (OM updates); and Service Order changes (SO updates) listed by NTI activity number.

Depending on the organization of the particular operating company it should be determined who in the organization receives the Feature Release Documents and either make arrangements to obtain copies of the particular sections outlined in the digest or arrange for direct issuance of the Release Documents to the appropriate department or individual.

For ease of reference from the *SERVORD Digest* to the Release Document, the NTI Feature Identification number is given with each feature in the *SERVORD Digest*.

Should any conflicts arise between this document and the Feature Release Document, the release document shall be the final authority.

The content of this document is subject to change without notice. Northern Telecom reserves the right to add, delete or change features and packages.

Executive Summary

This new release introduces a number of new features to the DMS family of switches, as well as several changes and enhancements to existing features.

Many other features are described in this DMS-100F *SERVORD DIGEST* document. Every attempt has been made to create as complete and accurate a SERVORD Digest document as possible. However due to the use of preliminary release information in preparing this document, some differences may occur between this document and the actual new software load. In case of any discrepancies between this digest and the Release Documents, the Release Documents will be taken as correct.

Please direct questions or problems concerning the SERVORD Digest to 919-859-7745.

ISDN/MDC Feature Assignment Requirements Matrix Definitions

This section is used to define the new ISDN/MDC FEATURE ASSIGNMENT REQUIREMENTS matrix, in the SERVICE ORDER section, of the feature descriptions.

Categories within each feature matrix are identified with a check (√) mark, corresponding to the categories listed below. Additional requirements and/or limitations are listed in the NOTES section of each feature description.

Each feature must be defined as ONE of the following FOUR types:

√ SET Features

– These features are associated with all the Directory Number appearances on the set.

√ SUBSET Features

– These features are associated with a subset of the Directory Number appearances on the set. This subset is specified by the DN keylist when the feature is assigned.

√ KEY Features

– These features are unique and should be totally independent of the other keys on the set.

√ Directory Number Features

– These features do not require a separate key on the set and are associated with individual Directory Number appearances. These features are assigned to the key of the DN appearance to which the features are to be used.

The following fields are used to specify if the feature has or requires any of the following characteristics:

√ DEDicated KEY

– Features in this category, like SET features, can be assigned to a vacant key on the ISDN/MDC Sets. The indication of a feature in this category is that the feature can support a dedicated key of its own. Features that cannot support a dedicated key must be assigned to individual Directory Numbers.

√ LAMP

– The LAMP category shows the features that require a lamp when assigned to a key on the Business Set.

√ CODE Access

– Features in this category may be either SET Features or SUBSET Features. These are the features that may be accessed by dialing a special code specified in Table IBNXLA. They must be assigned to key 1 (the Primary DN key) of the MDC Business Set.

√   DISPLAY

– Features in this category require Display Business Sets (P_phone with display, M5312, M5209), or ISDN sets (BRAFS, BRAKS, MFT).

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NTI Feature Contents

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SW-NOW

This section identifies changes and additions to switch Service Order functions that occur immediately upon the new software load insertion. This includes changes or additions to commands and service orders that affect SERVORD activity.

NA008 PRODUCT

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LAYER   **SW-NOW**
NA008 PRODUCT

                                                                APPLICATION
ACTID   **FEATURE TITLE**   ISDN
AF6633   ISDN Parameter Downloading Notification – CM

Description

ISDN Parameter Downloading Notification – CM provides a mechanism by which terminal-related data may be downloaded to ISDN terminals from switch provisioned data tables. ISDN Parameter Downloading Notification – CM sends a Q.931 NOTIFY message from the switch to an ISDN NI-2 initializing terminal, whenever this is a change to any of the downloadable data associated with that terminal.

Command Changes

NONE

Service Order

NOTIFY messages are sent in response to ISDN parameter downloading-related data changes made by the Service Order System (SERVORD), the table editor, or the Data Modification Order Processor (DMOPRO).

Notes

NONE

Interactions

Since DMS-100 switches are required to perform downloading of parameters independently of call processing, the DMS-100 switch downloads data to terminals that request the download but places the terminal in a call processing busy state while doing the download. This precludes interacting with call handling and other feature interactions.

The average processing time for call processing requests occurring while downloading requests are being processed is required not to increase more than 5% over the average processing time when no downloads are being processed. For switch architectures in which all the resources used by call processing and parameter downloading are the same, downloading is required not to use up more than 5% of the resources under conditions where call processing requests may be delayed or rejected. This requirements is required to be met, while at the same time meeting the requirements for response time and volume of requests.

If Call Forwarding is active on an ISDN terminal when a download occurs, the forwarding works as follows:

• Call Forward Busy, if active, will continue to forward calls.

- Call Forward No Answer will not forward calls because the terminal is busy.
- Call Forward Variable will continue to forward calls.
- Message waiting works with either Call Forward Busy or Call Forward No Answer; therefore, it will continue to operate only in busy cases.

This feature provides functionality to the following features:
- AF6632, ISDN Parameter Downloading – FPE & Messaging
- AF6634, ISDN Service Keywords and Descriptions Table
- AF7027, Interface Changes to CNA

Restrictions/Limitations

NONE

LAYER   **SW-NOW**
NA008 PRODUCT

                                                                                         APPLICATION
ACTID   **FEATURE TITLE**   ISDN
AF6641   NI-1/NI-2 Interface Identification

Description

The NI-1/NI-2 Interface Identification feature introduces National ISDN 2 (NI-2) logical terminal identifies (LTID), which can support terminals with NI-2 capabilities. This feature provides the following functionality:

- Provides support for NI-2 LTIDs.
- Distinguishes ISDN interfaces containing National ISDN 1 (NI-1) LTIDs from those containing MI-2 LTIDs

   Note: Due to differing capabilities, LTIDs introduced in NA007 or earlier (referred to as NI-1 LTIDS) cannot coexist with NI-2 LTIDS on the same ISDM interface.

- Provides the ability to restrict the number of non-initializing terminals (NIT) that can be supported by an NI-2 default LTID

The NI-1/NI-2 Interface Identification feature requires SOC option NI000051 to be activated.

Command Changes

The QLT (query logical terminal) command is modified to list NI2 and TERML as possible output values when using the command to query an NI-2 LTID.

The QLEN (query line equipment number) command is modified to list NI2 as a possible output value when using the command to query a LEN associated with an NI-2 LTID.

Service Order

NI-1/NI-2 Interface Identification provides the capability to provision an NI-2 LTID using the SERVORD SLT ADD command. The CS (circuit-switched service) prompt is enhanced to accept a new value of NI2, which defines an NI-2 LTID.

The OPTION prompt for the SLT ADD and SLT CHA commands is enhanced to support the TERML parameter. This parameter specifies the number of NITs supported by an NI-2 default LTID. An error message is displayed if this parameter is defined for an NI-2 fully initializing terminal (FIT).

Notes

NI-2 LTIDS can be provisioned only on remote cluster controller 2 (RCC2), ISDN line trunk controller (LTCI), and ISDN line group controller (LGCI) peripherals.

Interactions

This feature has a dependency on NA008 feature AF6689 Interface Configuration Base and AF6660 B Channel Manager CM. SOC is handled by feature AF6761.

This feature is part of a group of features used by many features including but not limited to:

- AF6642 Associated Groups
- AF6785 2BD Integrated Terminal
- AF6603 Call to Call Transfer CM
- AF6619 ACB/AR Access for ISDN Terminals
- AF6693 Call to Call Transfer XPM
- AF6622 NI2 Call Forwarding
- AF6901 NI2 Call Forwarding Provisioning
- AF6593 Simultaneous Prov of FC3 and FC6

Restrictions/Limitations

The following limitations and restrictions apply to NI-1/NI-2 Interface Identification:

- An NI-1 LTID cannot be changed to an NI-2 LTID using the Service Order System (SERVORD) SLT (set logical terminal) command with the CHA (change) subcommand. The NI-1 LTID must be detached using the SLT command with the DET (detach) subcommand, and redefined and reattached using the SLT command with the ADD (add new logical terminal) and ATT (attach logical terminal) subcommands.
- NI-1 and NI-2 LTIDs cannot coexist on the same interface, with the exception of packet terminals. Packet terminals can coexist with NI-2 LTIDs.
- The TERML option restricts the number of NITs that can be associated with an LTID. In effect, this translates to the number of NITs that the LTID can call process. The TERML option does not restrict the number of terminal endpoint identifiers (TEI) that can exist on the loop in a layer 2 mode.

LAYER   **SW-NOW**
NA008 PRODUCT

                                                            APPLICATION
ACTID   **FEATURE TITLE**   ISDN
AF6642   ISDN Support for Associated Groups for LTID

Description

This feature introduces the concept of Associated Groups (AG). This feature supports two AGs on an interface. This feature does not allow grouping of directory number/call types (DN/CT) across logical terminal identifiers (LTID).

This feature provides the ability to place all the DN/CTs assigned to a 2B channel LTID or to an NI-2 LTID in an AG. It also provides the ability to place all the voice DNs or CMD DNs or a 2B channel LTID or an NI-2 LTID in an associated group.

Command Changes

NONE

Service Order

A 2B channel LTID or an NI-2 LTID can be defined to have the AG capability using SERVORD SLT ADD or SLT CHAnge command.

The OPTION prompt for the 2B channel LTID and the NI-2 LTID is enhanced to support the Associated Group capability (AGA).

Notes

NONE

Interactions

ISDN Support for Associated Groups for LTID depends on:
- AF6641 NI-1 and NI-2 Interface Configurations
- AF6691 ISDN BRI Interface Configurations Phase I XPM AG

Restrictions/Limitations

The following limitations and restrictions apply to ISDN Support for Associated Groups for LTID:
- AGs are supported on an LTID basis.
- AGs across LTIDs are not allowed.
- The maximum number of 2B channel LTIDs allowed on an interface continues to be one.

LAYER   **SW-NOW**

NA008 PRODUCT

                                                  APPLICATION

ACTID   **FEATURE TITLE**   BRI

AF6645   LPIC_ISDN

Description

LPIC_ISDN is an ISDN Basic Rate Interface (BRI) feature that implements primary intra-LATA carrier (LPIC) on a directory number or call type (DN/CT) basis. The LPIC_ISDN permits the routing of intra-LATA calls on a DN/CT basis for 2B channel and NI-2 ISDN terminals.

The LPIC options allow a subscriber to choose a carrier to provide their intra-LATA toll service. This option provides the voice (VI) and circuit mode data (CMD) options on a DN/CT basis for 2B channel terminals for intra-LATA calls.

The precedence for determining the LPIC carrier from highest to lowest is DN/CT, line option, and on a customer group basis.

Command Changes

NONE

Service Order

New options to SERVORD are provided for 2B and NI-2 ISDN BRI terminals to datafill custom carriers against individual 2B channel and NI-2 2B channel terminals on a DN/CT level.

SERVORD is used to assign the following options:
- CMD
- VI

The LPIC_ISDN provides the capability of routing intra-LATA ISDN VI and CMD calls on a DN/CT basis. The assignment of the options is made through SERVORD.

The options CMD_LPIC, CMD_LPIC_CHOICE, VI_LPIC and VI_LPIC_CHOICE provide the routing on a DN/CT basis for intra-LATA calls. These options are datafilled under the CMD and VI options for 2B and NI-2 ISDN terminals.

Notes

The LPIC_ISDN feature for NA008 requires the XPM universal processor card. The XPM universal processor card is located on the SuperNode and BRISC CM processors.

The line group controller (LGC), ISDN line trunk controller (LTCI), and remote switching center synchronous optical network (RSC-S) are supporting the LPIC_ISDN capability for the North American market.

Interactions

This feature needs the following features to function properly:
- AF6441 - Servord for 2B FITS, 2B NITS and 1B NITS (NA07)
- AN1811 - IntraLATA PIC Enhancements -Phase 1 (NA07)
- AF6439 -Table Control for 2B FITS, 2B NITS, and 1B NITS. (NA07)
- AF6641 - NI-1/NI-2 Interface Identification (NA008). This feature is included in the NA008 ISDN BRI Basic Call ISDN access software package.

The following sections describe the interactions between LPIC_ISDN and other functionalities.

Toll Denied Functionality

The CTD option interacts with LPIC on a DN/CT basis in the same way as the LPIC line option. The CTD option restricts carrier from routing calls.

The FCTDNTRA option interacts with LPIC on a DN/CT basis in the same way as the LPIC line option. The FCTDNTRA option restricts carriers from routing intra-LATA calls.

Call Forwarding

The following call scenario involves call forwarding to intra-LATA numbers. Certain call scenarios involve call forwarding to IntraLATA numbers. For example: Caller A makes a call to phone B using PIC. Phone B is Call Forwarded to C in the same LATA. Since the call type from phone B to C is IntraLATA, LPIC is used for this portion of the call. Since phone B has an IntraLATA carrier datafilled on a DN/CT basis, the LPIC from Table DNATTRS is used for this call.

If Caller A makes a call to phone B using LPIC and phone B is Call Forwarded to C in IntraLATA. Since phone B has a IntraLATA carrier datafilled on a DN/CT basis, the LPIC from DNATTRS is used for the second leg of the call.

If choice for LPIC is set to N or if no carrier is specified, the caller is routed to treatment as is provided today. Normally, this is Carrier Toll Denied.

Restrictions/Limitations

The following limitations and restrictions apply to LPIC_ISDN:
- The CMD and VI options are assigned to a DN with line class code (LCC) of ISDNKSET only.
- SERVORD interface using the VI and CMD options is limited to 2B channel or NI-2 ISDN terminals.

- The LPIC option on a DN/CT basis for 1B channel ISDN terminals is made by datafilling table DNATTRS directly.

- The LPIC option on a DN/CT basis for 2B channel ISDN terminals is datafilled in table DNATTRS through the Service Order System (SERVORD).

- CMD is incompatible with MADN groups.

- Inter-LATA full carrier toll denied (FCTDNTER) is not applicable to LPIC_ISDN because FCTDNTER restricts inter-LATA and International calls only.

- LPIC_ISDN is not applicable to ISDN BRI packet calls.

LAYER   **SW-NOW**
NA008 PRODUCT

                                                                APPLICATION
ACTID   **FEATURE TITLE**   MADN
AF6647   MADN/EKTS CACH–Service Order

Description

The Multiple Appearance Directory Number (MADN) Electronic Keyset Telephone System
(EKTS) Call Appearance Call Handling (CACH)–Service Order feature allows an EKTS/
MADN directory number (DN) to be sub-divided into as many as 16 call appearances of the
same DN. Each of these appearances is called a MADN CACH group. The MADN/EKTS
CACH–Service Order feature addresses the service order aspects of the MADN/EKTS
CACH feature, including adding new call appearances and specifying selection order.

Command Changes

NONE

Service Order

The MADN/EKTS CACH–Service Order feature defines and implements MADN CACH
for the SERVORD functionalities. The functionalities include:

- extending the existing MADN SERVORD to support the concept of MADN CACH to
  provision of a MADN CACH group.
- extending the existing MADN SERVORD to validate the MADN CACH-related
  information entered by the SERVORD user.
- creating a new SERVORD command (CAPSORD) to change the terminating call
  appearance selection order.

The Servord MADN/EKTS CACH functionality extends the number of existing Servord
MADN fields to include four additional MADN/EKTS CACH fields:

- NEWCA field creates a new MADN CACH Call Appearance Group.
- CA_NUM field associates a MADN/EKTS CACH member to a Call Appearance.
- CARES_TYPE, the current Call Appearance Reservation (CARES) assignment type
  associated with the CA, displayed by Servord. For further information about the CARES
  feature, please reference feature AF6649 in the **SW-LATER** section of this manual.
- VALID_CA_NUM field is prompted if the Servord user inputs an invalid Call
  Appearance number for the ADO command.

Notes

NONE

Interactions

Additional related functionality sub-components for the ISDN EKTS MADN CACH is provided in NA008 under the following activities:

- AF6638: EKTS MADN CACH Call Processing
- AF6646: EKTS MADN CACH Table Control
- AF6647: EKTS MADN CACH Servord
- AF6648: EKTS MADN CACH Query Commands
- AF6649: EKTS MADN CACH CARES
- AF6715: EKTS MADN CACH CNA

Feature AF6646 is required for this feature to function properly.

The following features are incompatible (or blocked) with MADN/EKTS CACH:

- Anonymous Caller Rejection
- Automatic Call Back
- Automatic Recall
- Calling Name Delivery
- Call park
- Call Pickup
- Call Waiting
- Customer Originated Trace
- Directed Call Park
- Directed Call Pickup with Barge-in (This feature cannot be provisioned on the CACH controller).
- Distinctive Ringing/Call Waiting
- Key Short Hunt
- Message Center on EBS Set Msg Indication Key
- Message Waiting Indication
- Secondary Member CF Programing
- Selective Call Acceptance
- Selective Call Rejection
- Series Completion
- Spontaneous Call Waiting ID

The following features can be provisioned to the MADN CACH controller only:

- Bulk Calling Line Identification
- Call Forward Busy
- Call Forward Don't Answer
- Call Forward Don't Answer Variable Timer
- Call Forward Universal

- Leave Message (only if the primary call appearance CARES type is NULL)
- Message Waiting (only if the primary call appearance CARES type is NULL)

Attendant Camp-on and MBS Camp-on features that provide the end user with the ability to notify a busy station of an incoming call and be notified when the busy station becomes idle. These features are assignable to attendant consoles and Meridian Business sets. If a camp-on agent attempts to transfer to call to a busy station, the agent can activate the camp-on feature to notify the busy station. When the busy station becomes idle, the camp-on agent is notified and can attempt again to transfer the call.

When a MADN CACH DN is busy, all call appearances available for call termination are busy. If a camp-on agent activates the camp-on feature for a busy MADN CACH DN, the camp-on agent is notified when the first call appearance (CA1) of the MADN CACH DN becomes idle.

Restrictions/Limitations

The following limitations and restrictions apply to MADN/EKTS CACH–Service Order:

- To have more than one call appearance to a set, the set must be a basic rate access functional signaling (BRAFS) integrated services digital network (ISDN) EKTS CACH set.
- The following sets support a maximum of one call appearance of MADN CACH DN to a set:
  — IBN 2500
  — MBS
  — ISDN BRAFS EKTS non-CACH (EKTS Basic ISDN Terminal)
- When utilizing the NEW or ADO SERVORD command, SERVORD does not allow the CA_NUM to exceed the total number of call appearances (CA) for the MADN/EKTS CACH group.
- The CA numbering assignment is a sequential order, (1–16). The next available CA number is transparent to the SERVORD user; therefore, the SERVORD user is unable to choose the next available CA number.

If any *holes* exist in the call appearance sequential order because of deleting existing CAs, these holes are filled first before going to a higher number. For example, if call appearances 1–5 have been created and the SERVORD user removes CA 2 by deleting all of its members, call appearances 1, 3, 4 and 5 are remaining assigned CAs. If the SERVORD user then creates a new CA with the NEWCA prompt, call appearance 2 is created to complete the sequential order of 1–5 before assigning 1–16.

- The SERVORD user cannot change a MADN/EKTS CACH CA number.
- The primary CA (CA 1) cannot be removed until all secondary CAs have been removed.
- IN NA008, the ability to change the existing MADN non-CACH Call Arrangement (SCA, MCA, EXB) to CACH is blocked. In addition, the ability to change the CACH Call Arrangement to either SCA, MCA or EXB is blocked. The CHF command CACH call arrangements that are blocked are listed as follows:

— changing from CACH to SCA

— changing from CACH to MCA

— changing from CACH to EXB

— changing from SCA to CACH

— changing from MCA to CACH

— changing from EXB to CACH

For example, if the SERVORD user wants to change the existing MADN SCA group to a MADN CACH group, the SERVORD user must first remove the entire MADN SCA group by deleting all of its members, and rebuilding it as a MADN CACH group.

- CACH control restrictions:
  — Feature provisioning is applicable to CACH Controller.
  — The CACH controller cannot be removed or deleted unless there is another ISDN secondary member which can become the primary member for this CA and the CACH controller.

  Note: *The ISDN secondary member must be in the same CA as the CACH controller.*

  — The CACH controller can be an EKTS basic ISDN terminal or EKTS ISDN terminal.

  Note: *The EKTS basic ISDN terminal cannot support multiple call appearances of the same MADN/EKTS CACH DN because an EKTS basic ISDN terminal identifies its DN assignments by the 10-digit DN. An EKTS ISDN terminal (CACH) uniquely identifies its DN assignments by the key number; therefore, an EKTS basic ISDN terminal cannot uniquely distinguish between multiple CAs.*

  Note: *In NA008, call appearance 1 is the primary CA. The CACH controller is located within the primary CA.*

- The first MADN/EKTS CACH member must be an ISDN terminal type, either National ISDN-1 (NI-1) or National ISDN-2 (NI-2) type.
- SERVORD blocks the provisioning of another CA (within the same MADN/EKTS CACH DN) for each EKTS Basic ISDN terminal.
- Each ISDN logical terminal identifier (LTID) must be provisioned with EKTS before assigning a MADN/EKTS CACH DN to the set.
- Block changing of the LTID CACH bool from Y to N if more than one Call Appearance of the same MADN CACH Group is provisioned.
- The following are Suspend option (SUS) restrictions:
  — When option SUS is assigned to the CACH controller this option is assigned to all members in the MADN CACH group.
  — When option SUS is assigned to any secondary call appearance primary member, then the Suspend option is assigned to all members in the MADN CACH group. However, a message indicating that this option will be provisioned to all MADN CACH members is displayed.

— When option SUS is assigned to any MADN CACH secondary member (non-primary) the option is assignable only to that particular MADN CACH member.

- The SERVORD restore service (RES) command restores all MADN CACH members by removing the SUS line option.

- SERVORD blocks the SERVORD change directory number (CDN) command for MADN CACH DNs only.

- Servord will enforce the primary call appearance (PCA) to have a CARES value of NULL. The PCA's CARES value of NULL cannot be changed. However, the secondary call appearances can have their CARES value changed.

LAYER   **SW-NOW**
NA008 PRODUCT

                                                  APPLICATION

ACTID   **FEATURE TITLE**   LTID
AF6684   Changes to ABS Prompt

Description

This feature is provided to reflect only the bearer services supported on the logical terminal identifier (LTID) instead of reflecting the bearer services not allowed on the LTID.

Command Changes

While querying the LTDEF table with QLT command, querying has been adjusted to display fields exactly as they are entered. The display shows a combination of VOICE, CMD, and VBD instead of NOVOICE, NOCMD, NOPMD and NOVBD. An example follows:

```
>qlt  isdn  6
LTID:  ISDN      6
LT GROUP NO: 0
LTCLASS:  BRAFS    DEFAULT LOGICAL TERMINAL: N
EKTS: N    CACH: N
BEARER SERVICE ALLOWED: VOICE, VBD
CS: Y PS: N    TEI: STATIC
VERSION: FUNCTIONAL  ISSUE: 2
LINE CLASS CODE: ISDNKSET
MAXKEYS: 64
```

Service Order

Changes to ABS Prompt makes SERVORD changes. The following is a summary of those changes:

- For the SLT ADD and SLT CHA commands, the list of existing valid user inputs NOVOICE, NOCMD, NOPMD and NOVBD are changed to VOICE, CMD and VBD. Following is an example of the ABS prompt using SLT CHA:

```
>slt  $
LTID:
> isdn  6
FUNCTION:
>cha
SET_ATTRIBUTE:
>abs
NEW_ABS:
>dd
DD
 ***  ERROR  ***
|
TYPE OF NEW_ABS IS CLASSLT_OPTION
PLEASE ENTER:
NEW_ABS:
>dd
DD
 ***  ERROR  ***
|
TYPE OF NEW_ABS IS CLASSLT_OPTION
TYPE IS CLASSLT_OPTION {NOVOICE, NOVBD, NOCMD, NOPMD}
PLEASE ENTER:
NEW_ABS:
>NOVBD
NEW_ABS:
>$
SET_ATTRIBUTE:
>$
COMMAND AS ENTERED:
SLT NOW 96 11 7 AM ISDN 6 CHA (ABS (NOVBD)$ ) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
```

- The PMD option has been removed from the ABS options allowed list. The PMD option is not applicable to the circuit switched BRAFS set.

- While querying the LTDEF table with QLT command, querying has been adjusted to display fields exactly as they are entered. The display shows a combination of VOICE, CMD, and VBD instead of NOVOICE, NOCMD, NOPMD and NOVBD. An example follows:

```
>qlt  isdn  6
LTID:  ISDN        6
LT GROUP NO: 0
LTCLASS:  BRAFS    DEFAULT LOGICAL TERMINAL: N
EKTS: N    CACH: N
BEARER SERVICE ALLOWED: VOICE, VBD
CS: Y PS: N    TEI: STATIC
VERSION: FUNCTIONAL   ISSUE: 2
LINE CLASS CODE: ISDNKSET
MAXKEYS: 64
```

These changes take place in the SERVORD system only. The user input is then converted to the old format of the services disallowed (in LTDEF table). For example, VOICE as input equals the old (Bearer Services Restricted) format of NOCMD NOVBD, and NOPMD.

```
>table ltdef
MACHINES NOT IN SYNC - DMOS NOT ALLOWED
JOURNAL FILE UNAVAILABLE - DMOS NOT ALLOWED
TABLE: LTDEF
>pos   ISDN   6
   ISDN   6   B
BRAFS (NOPMD ) (NOCMD) (PVC FUNCTIONAL 2) $
```

Notes

NONE

Interactions

Since table control is not affected due to this change, call processing is not affected. All changes are made in Servord *Check* and *Aspect* processes only. Therefore, no potential problems occur at this point.

Restrictions/Limitations

NONE

LAYER   **SW-NOW**

NA008 PRODUCT

                                                  APPLICATION

ACTID   **FEATURE TITLE**   ISDN

AF6733   ISDN Parameter Downloading - CM

Description

This feature contains the CNA changes associated with AF6632, ISDN Parameter Downloading - FPE and Messaging. A description of AF6632 follows.

ISDN parameter downloading (PD), permits the ISDN terminal to send a register message to trigger the DMS-100 switch to program the ISDN terminal for the user. This is done by sending operating information, such as service information and directory number (DN) data, to the terminal in a series of facility messages.

Command Changes

NONE

Service Order

The following describes new Service Order Data Entry for ISDN Parameter Downloading–CCM:

- Number of Directory Number Appearances (NDNAP)
  — The NDNAP is the number of DN appearances requested by an end user.

- Directory Number Appearance Identifier (DNAI)
  — The DNAI identifies the key location of the directory number on the terminal set.

Notes

NONE

Interactions

Since DMS-100 switches are required to perform downloading of parameters independently of call processing, the DMS-100 switch places the terminal in a call processing busy state while doing the download. This precludes interacting with call handling and other feature interactions.

The average processing time for call processing requests occurring during downloading requests is required not to increase more than 5% over the average processing time when no downloads are being processed. The DMS-100 switch shall process and complete 90% of the download request in less than 10 seconds. For switch architectures in which all the resources used by call processing and parameter downloading are the same, downloading is required not use up more than 5% of the resources under conditions where call processing requests

may be delayed or rejected. This requirement must be met, while at the same time meeting the requirements for response time and volume of requests.

If Call Forwarding is active on an ISDN terminal when a download occurs, the forwarding works as follows:

- Call Forward Busy, if active, will continue to forward calls
- Call Forward No Answer will not forward calls because the terminal is busy
- Call Forward Variable will continue to forward calls
- Message waiting works with either Call Forward Busy or Call Forward No Answer; therefore, it will continue to operate only in busy cases

Restrictions/Limitations

The following limitations and restrictions apply to ISDN Parameter Downloading-CCM:

- Call processing is not available during parameter downloading
- Parameter Downloading is implemented only for NI-2 terminals
- Terminal must be a fully initialized terminal (FIT).

LAYER   **SW-NOW**
NA008 PRODUCT

                                                                  APPLICATION
ACTID   **FEATURE TITLE**   ISDN
AF6777   ISDN Packet Shared DN

Description

ISDN Packet shared DN includes the functionality of the following features:
- ISDN Packet SERVORD Commands for Shared DN (AF6778)
- ISDN Packet Query Commands for Shared DN (AF6779)
- ISDN Packet Table Control for Shared DN (AF6780)
- ISDN Packet DNCT CPID Base (AF6781)

Feature AF6782, ISDN BRI Single DN Packet, is dependent on ISDN Packet Shared DN.

ISDN Packet shared DN feature is controlled by Software Optionality Control (SOC) NI000051. If SOC NI00051 is IDLE, then it is not possible to provision a shared DN.

ISDN Packet Shared DN permits the sharing of a directory number (DN) with different call types over multiple terminals on the DMS-100. Prior to BCS 34, Packet Mode Data (PMD) calls were handled by the Data Packet Network (DPN), a system maintained separately from the DMS. Starting in BCS 34, a DMS Packet Handler (DMS-PH) was introduced to enable the DMS-100 to handle PMD calls. PMD capability was implemented on Series 3 peripherals called X25/75 Link Interface Units (XLIU).

When using the DPN it is possible to datafill a single DN with the following three call types:
- Voice interface (VI)
- Circuit Mode Data (CMD)
- Packet Mode Data (PMD)

Previously, with the DMS-PH, two DNs are necessary to support all call types:
- one for the VI and CMD call types
- one for the PMD call type

This feature allows the use of the same DN for both PMD and VI CMD calls on fully initializing terminals (FIT) or non-initializing terminals (NIT) connected to the DMS-PH. Operating companies can migrate all packet lines from the DPN switch to the DMS-PH. ISDN Packet Shared DN saves DNs since it combines services that were offered on separate DNs.

Prior to NA008 release, only ISDN basic rate interface (BRI) D-channel access to packet services from terminals provisioned with static terminal endpoint identifiers (STEI) was allowed. Shared DN functionality overcomes this limitation by allowing the provisioning of D-channel packet service to National ISDN 2 (NI-2) compliant FITs that use dynamic TEIs (DTEI). The ability to identify NI-1 and NI-2 circuit mode interface configurations is

introduced by feature AF6641. All currently supported packet switched (PS) services and circuit switched (CS) services will continue to be supported on the new configuration.

Each FIT, NIT, or D-Packet terminal is visible to the DMS-PH as a single device with the terminal endpoint identifier (TEI). The maximum number of terminals for each ISDN interface is eight. Without the support of B-channel contention, associated groups (AGs) will be used to restrict B-channel access. Each LTID is restricted to one B-channel access by use of AG provisioning.

Command Changes

NONE

Service Order

Supported rules and operations have been changed for the following SERVORD commands: NEW, OUT, EST, ADD, ADO, DEO, CHF, CHG/CDN, SWLT, SUS, RES, and DEL.

Two terminals can be configured for the same DN, using two SERVORD NEW commands, one terminal with PMD call type and one terminal with VI_CMD call type. Following is an example of the modified NEW command for assigning a DN already assigned to a non-ISDN line:

```
>NEW $ 7235001 ISDNKSET IBNTST 0 0 613 1 N NILLATA 0 PKT 2 $
COMMAND AS ENTERED:
NEW NOW 97 1 16 AM 7235001 ISDNKSET IBNTST 0 0 613 1 N NILLATA 0 PKT 2 $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y
Sharing of DN not supported on Non ISDN lines.
***  ERROR - INCONSISTENT DATA  ***
COMMAND AS ENTERED:
NEW NOW 97 1 16 AM 7235001 ISDNKSET IBNTST 0 0 613 1 N NILLATA 0 PKT 2 $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
```

Two distinct hunt groups can be created for the same DN, using two EST commands, one for a PMD terminal and the other for VI_CMD terminal. Also, a hunt group member DN can be shared between two terminals, one terminal with PMD call type and the other with VI_CMD call type. DN sharing can be done using EST and ADD commands. However, the PMD LTID and VI_CMD LTID cannot be assigned to the same hunt group. Following is an example of the modified SERVORD command sequence for the packet hunt group.

```
>SLT $ ISDN 100 ADD BRAFS Y N 64 N DTEI $ N PVC FUNCTIONAL 2 $
>SLT $ PKT 100 ADD BRAFS N D
>SLT $ PKT 200 ADD BRAFS N D
>NEW $ 7235100 ISDNKSET IBNTST 0 0 613 1 Y NILLATA 0 ISDN 100 $
>EST $ MLH 100 7235100 ISDNKSET IBNTST 0 0 613 1 N NILLATA 0 PKT 100 $ $ 5
>NEW $ 7235200 ISDNKSET IBNTST 0 0 613 1 N NILLATA 0 PKT 200 $
>SLT $ ISDN 101 ATT HOST 12 0 0 12 $
>SLT $ PKT 100 ATT HOST 12 0 0 12 TEI 1 $
>SLT $ PKT 200 ATT HOST 12 0 0 12 TEI 2 $
>ADD $ MLH PKT 100 1 PKT 200 1 $ $ $
```

To remove a shared DN from service issue two OUT commands – one OUT command is issued to remove PMD call type terminal, and one OUT command to remove the VI_CMD

call type terminal. When the first OUT command is issued to a shared DN, the DN is detached from the specified terminal. However, a shared DN is not put out of service and it is not routed for treatment until the OUT command is issued for the second time. Similarly, two DEL commands are required if the DN is shared, one for the VI_CMD hunt member and another for the PMD hunt member. Following is an example of the modified OUT command sequence:

```
>SLT $ ISDN 100 DET
>SLT $ PKT 100 DET
>OUT $ 7235000 ISDN 100 BLDN
>OUT $ 7235000 ISDN 101 BLDN
>SLT $ ISDN 100 REM
>SLT $ PKT 100 REM
```

There are also changes in the display of error messages for various commands under different conditions. (See the error message in the example of the NEW command above.) No changes in the user interface prompting are necessary since the current prompting is sufficient to determine the call type of the DN or LTID.

The Shared DN capability is controlled by Software Optionality Control (SOC), SOC Activity for NI000051. If the SOC is IDLE, then it is not possible to provision a shared DN configuration with the NEW and EST command. For example, a second NEW command is blocked if the DN is already provisioned for another call type.

Notes

NONE

Interactions

This feature needs the following features to function properly:
- AF6623, ISDN Layer2 Migration
- AF6641, NI-2 Interface Configurations
- AF6761, SOC Activity For NA008 BRI Functional Group, order code NI000051

This feature is part of a group of features USED BY feature:
- AF6778, ISDN Pkt Shared DN Servord
- AF6779, ISDN Pkt Shared DN Query Commands
- AF6780, ISDN Pkt Shared DN Table Control
- AF6781, ISDN Pkt Shared DN DNCT CPID Base
- AF6783, ISDN Pkt Servord Commands for Single DN
- AF6784, ISDN Pkt Query Commands for Single DN
- AF6785, ISDN Pkt Table Control for Single DN
- AF6786, ISDN Pkt Single DN CallP and MTC

ISDN Packet Shared DN is capable of coexisting with any existing voice (VI), circuit mode data (CMD), or packet mode data (PMD) feature. A hunt group can be provisioned separately for voice DNs and Packet DNs. VI CMD and PMD call types cannot belong to the

same hunt group. ISDN NI-1 terminal types, static TEI D-channel and Nailed-up B-channel packet, is allowed to coexist on the same loop with NI-2 circuit terminals.

Restrictions/Limitations

- The following SERVORD commands are not supported for the packet appearance of the DN:
    — Change DN (CDN)
    — SUSPEND (SUS)
    — RESTORE (RES)
    — ADD OPTION (ADO)
    — DELETE OPTION (DEO)
    — CHANGE FEATURE (CHF)
    — SWAP LTID (SWLT)
- Change (CHG) translation or routing command is blocked for a Shared DN configuration.
- Nailup Provision B-channel (NUPB) packet terminal will be blocked from mapping to a LEN already having two NI-2 2B FIT.
- Packet terminal will not be allowed to share DN with a Multiple Appearance DN (MADN) group with non-ISDN and ISDN members and a hunt group having a non-ISDN terminal as pilot.

LAYER   **SW-NOW**
NA008 PRODUCT

                                                                                    APPLICATION
ACTID   **FEATURE TITLE**   ISDN
AF6782   ISDN Packet Single DN

Description

This feature also provides functionality to the following features:

- AF6783, ISDN Packet SERVORD Commands for Single DN
- AF6784, ISDN Packet QUERY Commands for Single DN
- AF6785, ISDN Packet Table Control for Single DN
- AF6786, ISDN Packet Single DN Call Processing and Maintenance
- AF6959, New Access Privilege for ISDN Integrated Terminal

Feature AF6782 allows the use of the same directory number (DN) for both packet mode (PMD) and voice interface/circuit mode data (VI/CMD) calls for Fully Initializing Terminals (FIT) called integrated terminals (IT). ITs use only one terminal end point identified (TEI) for all call types. With ISDN Packet Single DN, end users are able to establish PMD and VI/CMD calls independently and simultaneously from or to the same DN. On the IT, the call types are represented as different appearances of the DN on separate keys.

Feature AF6782 is dependent on the ISDN Packet Shared DN feature (AF6777) which provides the ability to use the same DN for both PMD and VI/CMD calls on separate terminals.

Presently the DMS-100 supports ISDN basic rate interface (BRI) D-channel access to packet services only from terminals with provisioned static TEIs. Single DN functionality overcomes this limitation by allowing the provisioning of D-channel packet service to National ISDN 2 (NI-2) compliant FITs that use dynamic TEIs (DTEI). The ability to identify NI-1 and NI-2 circuit mode interface configurations is introduced by feature AF6641. All currently supported packet switched (PS) and circuit switched (CS) services continues to be supported on the new configuration.

Provisioning of the ISDN Packet Single DN functionality is incremental to NI-1 SERVORD provisioning. NI-1 provisioning remains unchanged. Feature AF6782 does not affect packet services for non-initializing terminals (NIT) with dynamic terminal assignment.

Command Changes

SERVORD command Query logical terminal (QLT) displays LTID configuration information for the LTID's primary DN. This includes LTGROUP number, LTCLASS, and bearer service restrictions. Following the LTID's primary DN output is a list of all the DNs that appear on the LTID, along with their corresponding key numbers. Additionally, the display indicates whether the DN is a normal DN or a MADN.

The IT supports multiple appearances of the same DN on different keys with different call types. With feature AF6782 the SERVORD QLT command displays not only what it currently does, but also the call type associated with each DN and its corresponding key. This includes DN/key pairs for the packet call type. The customer group information is repeated for packet call types. For changes to commands QDN and QGRP, please refer to AF6777 in the *SW-NOW* section of the *Maintenance Synopsis* manual.

Service Order

ISDN BRI Packet Single DN allows the user to define a new IT terminal with the 2BD access privilege. SERVORD command set up logical terminal (SLT) ADD, with CS = NI-2 and PS = D, adds 2BD service to an IT. Nailed up B-channel packet (NUPB) calls are blocked on NI-2 terminals. SERVORD command SLT ADD with CS = NI-2 and PS = B are rejected. A nailed up B-channel packet terminal can be defined on the same ISDN loop if it is not defined as a NI-2 terminal.

An example of adding a new terminal follows:

```
>SLT $ ISDN 1003 ADD BRAFS NI2 D 3 N DTEI N $
COMMAND AS ENTERED:
SLT NOW 97 1 21 AM ISDN 1003 ADD BRAFS NI2 D 3 N DTEI N $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
```

New terminal ISDN 1003 is defined with access privilege 2BD when a new tuple is added to table LTDEF as:

```
>table ltdef
TABLE: LTDEF
>pos ISDN 1003
ISDN 1003 2BD BRAFS (PVC FUNCTIONAL 2) (DTEI) $
```

With feature AF6782, SERVORD allows provisioning of NI-2 compliant ITs to the following configurations:

- Two keys with different call types on the same terminal for the same DN, one key with PMD and the other with VI/CMD.
- Two hunt groups using two EST commands for the same DN on the same terminal but on two different KEYS, one for PMD call type and the other for VI/CMD call type.
- Hunt group member DN can also be shared between two keys on the same terminal, one with a packet call type and the other with a circuit call type.
- To remove a DN from service requires the user to specify a KEY so that the DN appearance on that KEY is removed. If the OUT command is issued the first time, only the DN is detached from KEY, but the DN is not put out of service and it is not routed for treatment. Only when the OUT command is issued for the second time is the DN removed from service and routed for treatment.

SERVORD and table control activation of ISDN BRI Single DN Packet configuration features on ITs display error messages if not compliant with the above list.

Following are some additional examples of the modified SERVORD system using the NEW, EST, and OUT commands.

- To associate DN 8383244 on key 2 of terminal ISDN 309 with calltype PMD:

```
>NEW $ 8383244 ISDNKSET CUSTB 4 10 613 2 Y NILLATA 0
 ISDN 309 $
COMMAND AS ENTERED:
NEW NOW 97 1 21 AM 8383244 ISDNKSET CUSTB 4 10 613 2 N
NILLATA ISDN 309 $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
***  WARNING  ***
CALLTYPE NOT ENTERED FOR DN, DEFAULT VOICE WILL BE USED.
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>y
```

- To associate DN 6211003 on key 1 of terminal PKT 1 with calltype PMD:

```
>new $ 6211003 ISDNKSET BNR 0 0 613 1 N NILLATA 0 PKT 1 1 PMD $
COMMAND AS ENTERED:
NEW NOW 76 1 8 PM 6211003 ISDNKSET BNR 0 0 613 1 N NILLATA 0 PKT 1 ( 1 PMD )  $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>y
```

— Line option PMD cannot be on key 1; an error message is issued.

```
***  ERROR - INCONSISTENT DATA  ***
COMMAND AS ENTERED:
NEW NOW 76 1 8 PM 6211003 ISDNKSET BNR 0 0 613 1 N NILLATA 0 PKT 1 ( 1 PMD ) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
```

- To establish DN 6215907 as DLH hunt group pilot on LTID ISDN 4 on key 18 for PMD call type:

```
>EST $ DLH 6215907 ISDNKSET IBNTST 0 0 613 18 N NILLATA ISDN 4 $ PMD 2
COMMAND AS ENTERED:
EST NOW 97 1 25 PM DLH 6215907 ISDNKSET BNR 0 0 613 18 N NILLATA 0 ISDN 1 $ PMD 2
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>y
```

— The new tuple of KSETLINE and HUNTGRP is created as follows:

```
>table ksetline
>pos isdn 309 2
ISDN 309 2 DN Y 8383244 CUSTB 4 10 613 PMD $
>table huntgrp
>pos hntgrp 12
12 613 6215907 DLH N Y N PILOT N N N N N N 12 PMD $
```

- To make DN 7235020 on ISDN 10 out of service:

```
>OUT 7235020 ISDN 10 BLDN 2
COMMAND AS ENTERED:
OUT 7235020 ISDN 10 BLDN 2
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>y
```

— The OUT command prompts for KEY in this feature. The appropriate tuple for KSETLINE and HUNTGRP table is created and passed to table control to remove packet call type from service.

Notes

ISDN Packet Single DN functions on the DMS-100 packet handler (DMS-PH).

Interactions

This feature needs the following features to function properly:
- AF6777, ISDN Pkt Shared DN HLD
- AF6778, ISDN Pkt Shared DN Servord
- AF6779, ISDN Pkt Shared DN Query Commands
- AF6780, ISDN Pkt Shared DN Table Control
- AF6781, ISDN Pkt Shared DN DNCT CPID Base
- AF6623, ISDN Layer2 Migration
- AF6641, NI-2 Interface Configurations
- AF6761, SOC Activity For NA008 BRI Functional Group, order code NI000051

The Single DN feature is dependent on Shared DN (feature AF6777) and NI-2 Interface Configurations (feature AF6641). Integrated terminals must support both circuit and packet features as before.

The following system interactions apply to ISDN Packet Single DN:
- Table control supports provisioning of ITs with
  — access privilege of two B-channel and one D-channel (2BD) service on one DN.
  — DTEIs and usage of a Default DN (DFDN) key for the primary DN instance of PMD service. The Primary DN (PDN) key of the VI/CMD instance is assigned to the first key.
- Call Processing (CALLP) subsystem enhancements to support DN sharing required changes in processing permanent virtual circuit (PVC) and switched virtual circuit (SVC) ISDN calls when accessing DFDNs.
- SERVORD enhancements support access privilege 2BD, DN options DFDN and PMD. SERVORD Query commands include the addition of the integrated terminal (IT) and associated keys.

Restrictions/Limitations

The following terminal types may coexist on a single ISDN loop by the Single DN development effort:
- Single DN, single dynamic TEI with different CT's on an integrated FIT (2BD access privilege)
- Static TEI, D channel packet terminal (D access privilege)
- Nailed up B channel packet terminal (PB access privilege)
- NI-2 FIT (2B access privilege with NITYPE option set to NI-2)

A maximum of two B channel devices may co-exist on a single ISDN loop. The maximum number of D channel packet NITs is limited to eight minus the number of B channel terminals on the loop.

It is required that the introduction of this new functionality does not impact existing NI-1 services and interface configurations. This functionality is incremental to NI-1. Note, however, that the Single DN Integrated terminal is not allowed to co-exist on the same loop as NI-1 circuit mode terminals (which includes both voice and circuit mode data call types). See AF6641 in the *SW-NOW* section of this manual.

LAYER   **SW-NOW**
NA008 PRODUCT

                                                                APPLICATION
ACTID   FEATURE TITLE   ISDN
AF6785   ISDN Packet Table Control for Single DN

Description

This feature contains the table control changes associated with AF6782, ISDN Packet Single Directory Number (DN). See feature AF6782 for a full description of the interaction with this feature.

Command Changes

SERVORD enhancements support access privilege 2BD, DN options DFDN and PMD. SERVORD Query commands include the addition of the integrated terminal (IT) and associated keys.

Service Order

The following SERVORD functionalities are affected by ISDN Packet Single DN.

ISDN BRI Packet Single DN allows the user to define a new IT terminal with the 2BD access privilege. SERVORD command sets up logical terminal (SLT) ADD, with CS = N12 and PS = D, adds 2BD service to an IT. Nailed up B-channel packet (NUPB) calls are blocked on NI-2 terminals. SERVORD command SLT ADD with CS = N12 and PS = B is rejected. A nailed up B channel packet terminal can be defined on the same ISDN loop if it was not defined as a N12 terminal.

See feature AF6782 in the *SW-NOW* section of this manual for a full description of SERVORD changes and additions.

Notes

ISDN Packet Single DN functions on the DMS-100 packet handler (DMS-PH).

Interactions

The following system interactions apply to ISDN Packet Single DN:
- Table control supports provisioning of ITs with:

— access privilege of two B-channel and one D-channel (2BD) service on one DN.

— DTEIs and usage of a Default DN (DFDN) key for the primary DN instance of PMD service. The Primary DN (PDN) key of the VI/CMD instance is assigned to the first key.

• Call Processing (CALLP) subsystem enhancements to support DN sharing required changes in processing permanent virtual circuit (PVC) and switched virtual circuit (SVC) ISDN calls when accessing DFDNs.

Restrictions/Limitations

NONE

LAYER   **SW-NOW**
NA008 PRODUCT

                                                                            APPLICATION
ACTID   **FEATURE TITLE**   ISDN
AF6786   ISDN Packet Single DN Call Processing and
                   Maintenance

Description

This feature contains the call processing and maintenance associated with AF6782. A complete description of AF6782 follows.

Feature AF6782 allows the use of the same directory number (DN) for both packet mode (PMD) and voice interface/circuit mode data (VI/CMD) calls for Fully Initializing Terminals (FIT) called integrated terminals (IT). ITs use only one terminal end point identified (TEI) for all call types. With ISDN Packet Single DN, end users are able to establish PMD and VI/CMD calls independently and simultaneously from or to the same DN. On the IT, the call types are represented as different appearances of the DN on separate keys.

Feature AF6782 is dependent on ISDN Packet Shared DN feature (AF6777) which provides the ability to use the same DN for both PMD and VI/CMD calls on separate terminals.

Presently the DMS-100 supports ISDN basic rate interface (BRI) D-channel access to packet services only from terminals with provisioned static TEIs. Single DN functionality overcomes this limitation by allowing the provisioning of D-channel packet service to National ISDN 2 (NI-2) compliant FITs that use dynamic TEIs (DTEIs). The ability to identify NI-1 and NI-2 circuit mode interface configurations is introduced by feature AF6641. All currently supported packet switched (PS) and circuit switched (CS) services continue to be supported on the new configuration.

Provisioning of the ISDN Packet Single DN functionality is incremental to NI-1 SERVORD provisioning. NI-1 provisioning remains unchanged. Feature AF6782 does not affect packet services for non-initializing terminals (NIT) with dynamic terminal assignment.

Please see AF6782 in the *SW-NOW* section of this document.

Command Changes

SERVORD command Query Logical Terminal (QLT) displays LTID configuration information for the LTID's primary DN. This includes LTGROUP number, LTCLASS, and bearer service restrictions. Following the LTID's primary DN output is a list of all the DNs that appear on the LTID, along with their corresponding key numbers. Additionally, the display indicates whether the DN is a normal DN or a MADN.

The IT supports multiple appearances of the same DN on a different key with different call types. With feature AF6782, the SERVORD QLT command displays not only what it currently does, but also the call type associated with each DN and its corresponding key. This includes DN/key pairs for the packet call type. The customer group information is repeated

for packet call types. For changes to SERVORD commands QDN and QGRP, refer to feature AF6777, ISDN Packet Shared DN, in the *SW-NOW* section of the *Maintenance Synopsis* manual.

Service Order

The following SERVORD functionalities are affected by ISDN Packet Single DN.

ISDN BRI Packet Single DN allows the user to define a new IT terminal with the 2BD access privilege. SERVORD command set up logical terminal (SLT) ADD, with CS = N12 and PS = D, adds 2BD service to an IT. Nailed up B-channel packet (NUPB) calls are blocked on NI-2 terminals. SERVORD command SLT ADD with CS = N12 and PS = B is rejected. A nailed up B channel packet terminal can be defined on the same ISDN loop if it was not defined as a N12 terminal.

With feature AF6782, SERVORD allows provisioning of NI-2 compliant ITs to the following configurations:

- Two keys with different call types appear on the same terminal for the same DN, one key with PMD and the other with VI/CMD.
- Two hunt groups using two EST commands for the same DN exist on the same terminal but on two different KEYS, one for PMD call type and the other for VI/CMD call type.
- Hunt group member DN are shared between two keys on the same terminal, one with a packet call type and the other with a circuit call type.
- To remove a DN from service requires the user to specify a KEY so that the DN appearance on that KEY is removed. If the OUT command is issued the first time, only the DN is detached from KEY, but the DN is not put out of service and it is not routed for treatment. Only when the OUT command is issued for the second time is the DN removed from service and routed for treatment.

SERVORD and table control activation of ISDN BRI Single DN Packet configuration features on ITs display error messages if not compliant with the above list.

Notes

NONE

Interactions

NONE

Restrictions/Limitations

NONE

LAYER   **SW-NOW**
NA008 PRODUCT

                                                                       APPLICATION
ACTID   **FEATURE TITLE**   MBS
AF6825   Patch Source Inclusion III

Description

Patch Source Inclusion III helps the operating company to record an authorization code of up to 14 digits in the authorization code field of an AMA record. The 14 digits are comprised of 10 authcode digits plus 4 security code digits. This functionality is activated and deactivated by introducing new option AUTHSECT in table CUSTSMDR.

Option AUTHSECT requires option MDRRAO as a prerequisite because authcode digits are recorded in the AMA record only when option MDRRAO is datafilled for a tuple (customer group) in table CUSTSMDR.

Patch Source Inclusion III also implements Fast Call Transfer (FXR) for MBS on top of the existing Three-Way Calling (3WC) feature and Call Transfer (CXR) feature. Both features require third party involvement and optionally transfer the call to the third party. But 3WC and CXR features need more key strokes than FXR and are required to have conference before transferring the call.

Command Changes

NONE

Service Order

Line option FXR is introduced for MBS by datafilling through SERVORD. Prompts OPTKEY, OPTION, FXRRCL, and TIMER are added. An example follows:

```
>ADO
SONUMBER:     NOW  97  1  6 PM
>
DN_OR_LEN:
>0 0 8 10
OPTKEY:
>2
OPTION:
>FXR
FXRRCL:
>Y
TIMER:
>45
OPTKEY:
>$
ADO NOW 97 1 6 PM HOST 00 0 08 10 ( 2 FXR Y 45 ) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y
MACHINES ARE OUT OF SYNC, SERVICE ORDERS NOT ALLOWED
JOURNAL FILE IS INACTIVE, SERVICE ORDERS NOT ALLOWED
SHOULD ORDER BE DONE ANYWAY? (Y OR N)
>Y
>
```

Notes

Engineering features that are required are:

- Recording of security digits with authcode digits in the AMA record
  — This feature needs Authcode For MDR (message detail recording) feature to function properly.

- Implementing Fast Call Transfer feature for MBS
  — This feature needs 3WC/CXR features to function properly.

Interactions

The FXR feature, combined with DSD/BLF and/or Station Camp On features, provides an enhanced functionality to the business set.

All feature interactions that occur with the existing 3WC/CXR feature apply to FXR. When using the DSS/BLF key to set up the second leg of the call, all feature interactions that are presently defined through the terminating party remain unchanged. When FXR interacts with the MBS Camp On feature, all Camp On feature interactions remain unchanged. The Transfer Recall functionality remains unchanged and acts just as it does with the 3WC/CXR feature.

When a call is transferred using the FXR feature, the caller and destination MBS set is updated to show the same reason display as call transfer through the regular 3WC or CXR features.

Restrictions/Limitations

The following limitations and restrictions apply to Patch Source Inclusion III:

- Option MDRRAO must be datafilled in table CUSTSMDR to record security digits with authcode digits in the AMA record. A sample call dump follows:

```
HEX ID:AA
STR
CALL CODE:006C
SENSOR TYPE:036C
SENSOR ID:0250250C
REC OFFICE TYPE:036C
REC OFFICE ID:0250250C
DATE:20416C
TIMING IND:00000C
STUDY IND:0000000C
CLD PTY OFF-HK:0C
SERVICE OBSERVED:0C
SIG DIGITS NEXT FIELD:010C
ORIG OPEN DIGITS 1:00212002000C
ORIG OPEN DIGITS 2:FFFFFFFFFF
ORIGINATING CHARGE INFO:FFFF
DOMESTIC/INTL INDICATOR:1C
SIG DIGITS NEXT FIELD:004C
TERM OPEN DIGITS 1:00000002001C
TERM OPEN DIGITS 2:FFFFFFFFFF
CONNECT TIME:1706143C
ELAPSED TIME:000000019C
MODULE CODE:102C
SIG DIGITS NEXT FIELD:005C
AUTHORIZATION CODE:000000000012345C
MODULE CODE:000C
```

- All feature restrictions and limitations that occur with the existing 3WC/CXR feature apply to FXR. All the restrictions and limitations that apply to the Direct Station Select/ Busy Lamp Field (DSS/BFL), MBS Camp On, and Recall features also apply when they are used in conjunction with FXR to transfer a call.

LAYER   **SW-NOW**
NA008 PRODUCT

                                                                           APPLICATION
ACTID   **FEATURE TITLE**   ISDN
AF6959   New Access Privilege for ISDN Integrated Terminal

Description

This feature contains the new access privilege two B-channel and one D-channel (2BD) for ISDN Integrated Terminals. AF6959 is associated with AF6782, ISDN Packet Single Directory Number (DN), in the *SW-NOW* section of this manual. A description of AF6782 follows:

Feature AF6782 allows the use of the same directory number (DN) for both packet mode data (PMD) and voice interface/circuit mode data (VI/CMD) calls for Fully Initializing Terminals (FITs) called integrated terminals (ITs). ITs use only one terminal end-point identifier (TEI) for all call types. With ISDN Packet Single DN, end users are able to establish PMD and VI/CMD calls independently and simultaneously from or to the same DN. On the IT, the call types are represented as different appearances of the DN on separate keys.

Feature AF6782 is dependent on ISDN Packet Shared DN feature (AF6777) which provides the ability to use the same DN for both PMD and VI/CMD calls on separate terminals.

Presently the DMS-100 supports ISDN basic rate interface (BRI) D-channel access to packet services only from terminals with provisioned static TEIs. Single DN functionality overcomes this limitation by allowing the provisioning of D-channel packet service to National ISDN 2 (NI-2) compliant FITs that use dynamic TEIs (DTEIs). The ability to identify NI-1 and NI-2 circuit mode interface configurations is introduced by feature AF6641. All currently supported packet switched (PS) and circuit switched (CS) services will continue to be supported on the new configuration.

Provisioning of the ISDN Packet Single DN functionality is incremental to NI–1 SERVORD provisioning. NI-1 provisioning remains unchanged. Feature AF6782 does not affect packet services for non-initializing terminals (NITs) with dynamic terminal assignment.

Command Changes

SERVORD command Query logical terminal (QLT) displays Logical Terminal Identifier (LTID) configuration information for the LTID's primary DN. This includes LTGROUP number, LTCLASS, and bearer service restrictions. Following the LTID's primary DN output is a list of all the DNs that appear on the LTID, along with their corresponding key numbers. Additionally, the display indicates whether the DN is a normal DN or a Multiple Appearance Directory Number (MADN).

The IT supports multiple appearances of the same DN on a different key with different call types. With feature AF6782 the SERVORD QLT command displays not only what it currently does, but also the call type associated with each DN and its corresponding key. This

includes DN/key pairs for the packet call type. The customer group information is repeated for packet call types. For changes to SERVORD commands QDN and QGRP refer to the feature ISDN Packet Shared DN feature description (AF6777) in the *SW-NOW* section of the *Maintenance Synopsis* manual.

Service Order

The following SERVORD functionalities are affected by ISDN Packet Single DN.

ISDN BRI Packet Single DN allows the user to define a new IT terminal with the 2BD access privilege. SERVORD command set up logical terminal (SLT) ADD, with CS = NI2 and PS = D, adds 2BD service to an IT. Nailed up B-channel packet (NUPB) calls are blocked on NI-2 terminals. SERVORD command SLT ADD with CS = NI2 and PS = B is rejected. A NUPB terminal can be defined on the same ISDN loop if it was not defined as a NI-2 terminal.

With feature AF6782, SERVORD allows provisioning of NI-2 compliant ITs to the following configurations:

- Two keys with different call types on the same terminal for the same DN, one key with PMD and the other with VI/CMD.
- Two hunt groups using two EST commands for the same DN on the same terminal but on two different KEYS, one for PMD call type and the other for VI/CMD call type.
- Hunt group member DN can also be shared between two keys on the same terminal, one with a packet call type and the other with a circuit call type.
- To remove a DN from service requires the user to specify a KEY so that the DN appearance on that KEY is removed. If the OUT command is issued the first time, only the DN is detached from KEY, but the DN is not put out of service and it is not routed for treatment. Only when the OUT command is issued for the second time is the DN removed from service and routed for treatment.

SERVORD and table control activation of ISDN BRI Single DN Packet configuration features on ITs display error messages if not compliant with the above list.

Notes

ISDN Packet Single DN functions on the DMS-100 packet handler (DMS-PH).

Interactions

The following system interactions apply to ISDN Packet Single DN:
- Table control supports provisioning of ITs with:
  — access privilege of 2BD service on one DN.
  — DTEIs and usage of a Default DN (DFDN) key for the primary DN instance of PMD service. The Primary DN (PDN) key of the VI/CMD instance is assigned to the first key.

- Call Processing (CALLP) subsystem enhancements to support DN sharing required changes in processing permanent virtual circuit (PVC) and switched virtual circuit (SVC) ISDN calls when accessing DFDNs.
- SERVORD enhancements support access privilege 2BD, DN options DFDN and PMD. SERVORD Query commands include the addition of the IT and associated keys.

Restrictions/Limitations

NONE

LAYER   **SW-NOW**
NA008 PRODUCT

                                                                                                    APPLICATION
ACTID   **FEATURE TITLE**   NXX
AR2230   Duplicate NXX Support

Description

This feature allows the same office code (NXX) to exist in a split Numbering Plan Area
(NPA) office, enabling the DMS-100 to provide support for non-unique 7-digit Directory
Number (DN) entries.

Example of the areas affected by duplicate NXX are:
• SERVORD
• Call Processing
• Operations, Administration, and Maintenance (OAM)
• CI Commands

Command Changes

Commands modified by this feature allow the provisioning and querying of non-unique 7-
digit DNs:
• CLTG SERVORD COMMAND: DN_OR_LEN prompt for SERVORD command has
  been modified to allow up to a 15 digit entry

Service Order

The SERVORD command CLTG has been modified. See the *Commands* section of this
feature for details.

Notes

NONE

Interactions

NONE

Restrictions/Limitations

NONE

SW-LATER

This section identifies changes and additions to switch Service Order functions that require activation after the new software load insertion. Some of these changes may require table or office parameter changes to enable SERVORD functions. These changes may be carried out any time after the software application and verification.

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LAYER	SW-LATER
NA008 PRODUCT	

	APPLICATION
ACTID	**FEATURE TITLE**	ISDN
AF6649	MADN/EKTS CACH Call Appearance Reservation	

Description

The purpose of Multiple Appearance Directory Number (MADN) Electronic Telephone Set (EKTS) Call Appearance Call Handling (CACH) Call Appearance Reservation, is to provide the SERVORD, table control (TC), call processing, and query commands functionalities necessary for implementing Call Appearance Reservation (CARES). The CARES feature gives the operating companies the capability to designate MDN CACH groups as non-reserved, originating only, terminating only, or originating and priority incoming only.

Command Changes

NONE

Service Order

MADN/EKTS CACH Call Appearance Reservation impacts SERVORD with two new functional areas:
- the SERVORD functionality necessary for provisioning a MADN with a call arrangement of CACH
- a new SERVORD command (CAPSORD) to change the MADN/EKTS call appearance terminating selection order

See Feature AF6647, CACH Service Orders, in the *SW-NOW* section of this manual for further details.

Notes

NONE

Interactions

MADN/EKTS CACH Call Appearance Reservation has no functionality interactions. Refer to AF6647-MADN/EKTS CACH-Service Order in the *SW-NOW* section of this manual for interactions with the MADN CACH capability features.

This feature needs the following features to function properly:
- AF6646: CACH Table Control
- AF6638: CACH Call Processing
- AF6647: CACH Servord

- AF6648: CACH Query
- AF6633: Parameter Downloading

This feature is part of a group of features used by this feature: AF6638: CACH Call Processing.

Restrictions/Limitations

The following limitations and restrictions apply to MADN/EKTS CACH Call Appearance Reservation:

- To have more than one call appearance (CA) on a telephone set, the set must be a basic rate access functional signaling (BRAFS) ISDN EKTS CACH set.
- The following sets support a maximum of one call appearance of a directory number:
  — IBN 2500
  — MBS (Meridian business set)
  — ISDN BRAFS EKFTS non-CACH (EKTS basic ISDN terminal).
- When utilizing the ADO SERVORD command, SERVORD does not allow the CA_NUM to exceed the total number of CAs for the MADN or EKTS CACH group.
- The CA numbering assignment is in sequential order (1-16). Any holes in the order due to the deletion of an assigned CA are filled by new CA assignments before going higher in the order. For example, if CAs have been assigned to CA numbers 1-5 and CA 2 is deleted, a newly assigned CA fills number 2 before numbers 6-16 are assigned.
- A SERVORD user cannot change a multiple appearance directory number (MADN)EKTS CACH call appearance number.
- The Primary CA (CA 1) cannot be removed until all secondary CAs have been removed by the OUT command.
- In release NA008, the ability to change the existing MADN non-CACH call arrangement: Single Call Appearance (SCA), Multiple Call Arrangement (MCA), Extension Bridging (EXB) to CACH, is blocked. In addition, the ability to change the CACH call arrangement to either SCA, MCA or EXB is blocked. Listed below are the CACH call arrangement changes that are blocked:
  — changing from CACH to SCA
  — changing from CACH to MCA
  — changing from CACH to EXB
  — changing from SCA to CACH
  — change MCA to CACH
  — change from EXG to CACH
  — For example, if the SERVORD user wants to change the existing MADN SCA group to a MADN CACH group, the SERVORD user must first remove the entire MADN SCA group by deleting all of its members, and rebuilding it as a MADN CACH group.
- CACH Control restrictions:

— Feature provisioning is applicable to the CACH controller.
— The CACH controller cannot be deleted unless there is another ISDN member (and controller) for this CA.

   Note: *The ISDN secondary member must be in the same CA as the CACH controller.*

— The CACH controller can be EKTS Basic ISDN Terminal or EKTS CACH ISDN Terminal.

   Note: *The EKTS Basic ISDN Terminal cannot support multiple call appearances of the same MADN/EKTS CACH DN because an EKTS Basic ISDN Terminal identifies its DN assignments by the 1-digit DN. However, an EKTS ISDN Terminal with CACH uniquely identifies its DN assignments by the Key Number. Therefore, an EKTS Basic ISDN Terminal cannot uniquely distinguish between multiple CAs.*

— In NA008, call appearance 1 is the primary CA. The CACH controller is located in the Primary CA.

- The SERVORD user cannot change a MADN/EKTS CACH call appearance's number.
- The primary CA (CA 1) cannot be removed until all secondary CA(s) have been removed (by the OUT command).
- The first MADN/EKTS CACH member must be an ISDN terminal type (either National ISDN-1 (NI-1) or National ISDN-2 (NI-2) type.
- SERVORD blocks the provisioning of another CA (within the same MADN/EKTS CACH DN) for each EKTS Basic ISDN Terminal.
- Each ISDN Logical Terminal Identifier (LTID) must be provisioned with EKTS before assigning a MADN/EKTS CACH DN to the set.

The following features are incompatible with MADN/EKTS CACH:
- Additional Functional Call
- ACOU-Notification Busy Limit
- Auto Answer Back
- Automatic Call Distribution
- ACD-Answer Agent
- Bridged Night Number
- Secondary Member CF Programming
- Call Logging
- Call Pickup
- Directed Call Pickup
- Directed Call Pickup with Barge-in
- Customer Originated Trace
- Denied Malicious Termination
- Do Not Disturb

- Executive Busy Override
- Extended Call Management
- Directory Number Hunt
- Distributed Line Hunting
- Key Short Hunt
- MultiLine Hunting
- Multiple Position Hunting
- Preferential Hunting
- Stop Hunt
- Individual Business Line
- Message Waiting Indicator
- Calling Name Delivery
- Private Business Line
- Random Make Busy
- Automatic Call Back
- Automatic Recall
- Network Ring Again
- Call Back Queueing
- Selective Call Rejection
- Selective Call Forwarding
- Selective Call Acceptance
- Distinctive Ringing/Call Waiting
- Series Completion
- Service Analysis for Meridian Digital Centrex
- Single Line Queuing
- Single Line Variety Pack
- Speed Call Group
- Station Originations Restrictions & Station Originations Restrictions Controller
- Station-Specific Authorization Code Customer Data Change Enhancement
- Station-Specific Authorization Codes
- Teen Services Second ND
- Uniform Call Distribution
- Wake Up Call

LAYER   **SW-LATER**
NA008 PRODUCT

                                                                        APPLICATION
ACTID   **FEATURE TITLE**   ISDN
AF6934   ISDN Essential Service Protection – BRI/LTID

Description

Integrated Services Digital Network (ISDN) Essential Services Protection – Basic Rate
Interface (BRI) / LTID (Logical Terminal IDentifier) provides the capability to originate
calls even during severe overload conditions in the switch. This feature introduces the
concept of essential lines (ELN) for ISDN BRI in NA008.

Command Changes

Enhancement of the QLT tool to Display ELN Parameter

The Query LTID (QLT) tool that currently provides all the information regarding a
Logical Terminal is enhanced to display the ELN for that LTID. A sample output of the
QLT command for a NI-2 LTID is shown below.

```
>qlt isdn 1
-------------------------------
LTID:  ISDN        1
SNPA: 613
DIRECTORY NUMBER:      7235001
LT GROUP NO: 0
LTCLASS:  BRAFS    DEFAULT LOGICAL TERMINAL: N
EKTS: Y   CACH: N
BEARER SERVICE RESTRICTIONS:      NOPMD
CS: Y PS: N
VERSION: FUNCTIONAL ISSUE: 2
ELN: Y
SPID-SUFFIX:        01
LEN: HOST 01 0 00 04    TEI: DYNAMIC
CUSTGRP:             BNR SUBGRP: 0  NCOS: 0  RING: Y
LINE CLASS CODE: ISDNKSET
MAXKEYS: 64
OPTIONS:
SFC VI $ CMD BOTH $
ACOU 2
---------
KEY   DN
      ------------
1     DN 7235001
KEY       FEATURE
-----     -------------
1         ACOU    2
2         AFC
3         AFC
```

Service Order

An LTID can be defined to receive preferential treatment using the service order system
(SERVORD) SLT ADD or CHA command.

The OPTION prompt for the NI-1 and NI-2 LTIDs is enhanced to support the ELN parameter.

An example of defining ELN for a NI-2 LTID using the SERVORD SLT ADD command is given below.

```
SLT $ isdn 1 ADD brafs NI2 N 64 Y ELN Y $
```

The SERVORD SLT CHAnge command is also enhanced to support the following:

* Change the ELN subscription for a NI-2 LTID. An example of this is given below:

```
SLT $ isdn 1 ADD brafs NI2 N 64 Y ELN Y $
SLT $ isdn 1 CHA ELN N $
```

After execution of the CHAnge command, subsequent call originations from the ISDN 1 LTID do not receive preferential treatment.

* Define ELN for an existing NI-2 LTID.

```
SLT $ isdn 1 ADD brafs NI2 N 64 Y $
SLT $ isdn 1 CHA ELN Y $
```

Table Control Support for Essential Service Protection

The table control commands ADD and CHAnge for Table LTDEF are enhanced to support the ELN parameter. The changes that are required to these commands are very similar to the Servord SLT ADD and CHAnge commands.

Software Optionality Control (SOC) considerations

The ELN feature is part of the NI000051 package. This feature is allowed to be used by the NI-1 and NI-2 LTIDs only if the SOC state of the NI000051 package is ON. The SOC checks required for NI-2 LTIDs are addressed as part of feature AF6761 (SOC activity for NI000051).

If a NI-1 LTID is assigned the ELN, this feature ensures that the attachment of that NI-1 LTID to an interface succeeds only if the SOC state of the NI000051 package is ON.

Conversely, attaching a NI-1 LTID with ELN to an interface fails if the SOC state of the NI000051 package is IDLE.

Notes

NONE

Interactions

Prior to NA007, this service was available only to plain old telephone sets (POTS) and Meridian business sets (MBSs). The service is subscribed on a directory number (DN) basis for non-ISDN lines. Subscribing to this service triggers the following events:

- The subscription information is stored against the DN as well as the interface. In the case of POTS, the interface and the DN are synonymous. In the case of Meridian business sets, the interface can have multiple DNs and is treated as an essential line only if at least one of the DNs on that interface has subscribed to ELN.

- The ELN information for an interface is conveyed to the XPM using Tbl_Eln_Option.

Restrictions/Limitations

The following limitations and restrictions apply to ISDN Essential Service Protection -BRI/LTID:

- This feature is used by the NI-1 and NI-2 Logical Terminal Identifiers (LTIDs) only if the SOC state of the NI000051 package is ON. The SOC checks required for NI-2 LTIDs are addressed as part of feature AF6761, SOC Activity for NI000051.

- It is a requirement that ELN can be subscribed on an LTID basis, in the case of IDSN. This capability is provided through a subscription option called ELN and is available to NI-1 and NI-2 LTIDs. NI-2 LTIDs are introduced in NA008 and have capabilities such as Call Reference Busy Limit (CRBL). For a complete description of NI-2 LTIDs, refer to AF6641, NI-1/NI-2 Interface Identification, in the *SW-NOW* section of the *Maintenance Synopsis* or *Traffic Synopsis* manuals.

LAYER   **SW-LATER**

NA008 PRODUCT

                                                                                              APPLICATION

ACTID   **FEATURE TITLE**   AIN

AQ1576   AIN 0.2 O_CPB and O_NOA Triggers

Description

The Advanced Intelligent Networks (AIN) Service Enablers (0.2) O_Called_Party_Busy
(O_CPB) and O_No_Answer (O_NOA) Triggers, allow telephone companies to provide
AIN O_CPB and O_NOA subscribers with the AIN Service Enablers AIN O_CPB and
O_NOA triggers functionality. The AIN originating call model (OCM) architecture is
extended to support the two triggers introduced by this feature.

During call processing, when an O_CPB trigger is detected, call processing is suspended and
a query is launched to the service control point (SCP) requesting further instructions.

Note: *When the O_NOA trigger is detected during call processing, the processing
          continues. When the trigger encountered is an O_CPB trigger, and O_CPB trigger
          detection point-request (TDP-R) query is sent. A busy indication is not provided by
          the service switching point (SSP) to the calling party (it waits for instructions
          provided in the AIN SCP response). When the trigger encountered is an O_NOA
          triggers, an O_NOA TDP–Request query is sent and the called party audible ringing
          tone, already in progress, is not interrupted by the service switching point (SSP).*

To launch an O_CPB TDP–R the called party has to match AIN busy conditions. To launch
an O_NOA TDP–R the T–ONoAnswer timer has to elapse and the called party should not
have answered.

O_CPB and O_NOA triggers are provisioned on a line and trunk subscription basis. The T–
ONoAnswer timer subscription is provisioned on an office wide basis. The T–ONoAnswer
timer is used by each line or trunk that subscribes to the O_NOA trigger. The timer
determines the time (in seconds) between the indication of the called party ringing and the
detection of the O_NOA triggers. When applicable, one timer is started per O_NOA trigger
subscriber. The timer value is the same for each subscriber.

The O_CPB trigger provides the ability to control routing on the AIN busy cause. It is useful
in any service in which the call has to be rerouted busy on the originating side. The O_NOA
trigger can be used to provide any service where the call has to provide alternatives to the
user on originating no answer call conditions.

The AIN services that can use the functionality of these triggers include:
- Personal communication services such as follow me, originator imposed voice mail,
  message notification, service bureau
- Enhanced centrex and private virtual network (PVN) such as guaranteed delivery, ring
  again replacement, network hold, and complete

- Speech-activated intelligent dialing that give specific instructions associated with originator-imposed voice mail, or to add a number to an originating hunt group list.

When the AIN Service Enablers O_CPB or O_NOA trigger is active and one of the following redirection features activates, the O_CPB and O_NOA triggers are not detected:

- Call forwarding features (CFW)
- Virtual facility group (VFG)
- HUNT group overflow routing, line overflow directory number (LOD), line overflow route (LOR), and key-set short-hunt (KSH) group
- Virtual directory number (DN) based features:
  — Direct inward system access (DISA)
  — Network facility remote access (NFRA)
  — Call forward remote access (CFRA)
  — Remote call forwarding (RCF)
- Simplified message desk interface (SMDI)
- AIN Essentials forward call

Command Changes

NONE

Service Order

O_CPB and O_NOA triggers can be subscribed to by assigning these options to a line using SERVORD, or they can be subscribed to by assigning these options to a trunk group using table control commands in table TRKAIN. These triggers cannot be subscribed office-wide.

Notes

NONE

Interactions

This feature needs the following features to function properly:
- AIN 0.1 base software
- AIN 0.2 base software

This feature is part of a group of features used by AIN 0.2 Service Enablers.

The following paragraph describes the interactions between AIN 0.2 O_CPB and O_NOA Triggers and other functionalities. It is assumed that the O_CPB and O_NOA triggers are added to the subscriber's line or specific trunk.

The feature interactions for AIN 0.2 O_CPB and O_NOA Triggers are similar to the interactions for AIN Service Enablers O_CPB and O_NOA events developed in NA007

(feature AJ4103). This feature has to support the interaction between the O_BNA triggers and events. Generally, feature interactions occur in the following cases:

- detecting the busy condition
- detecting the no-answer condition with a timer
- termination of the redirecting feature, conference feature or virtual facility group (VFG)
- feature precedence between events, triggers, or switch-based features

Restrictions/Limitations

The following limitations and restrictions apply to AIN 0.2 O_CPB and O_NOA Triggers:

- These triggers are not detected when terminating to a virtual DN.
- In NA008 these triggers are only assigned on a subscribed basis and then the exclusion list of the calling party DNs is not applicable.
- In the case of fault handling (for example, aT1 timer expires) the processing continues to alert rather than provide final treatment
- In NA008 the timer value is administered on an office-wide basis only (this timer is different from the existing event office-wide timer)
- O_BNA triggers are not supported when the call forwarding (CFW) feature is activated on the terminating agent
- O_BNA triggers are not supported with conference call

The implementation of AIN 0.2 O_CPB and O_NOA Triggers does not allow the special delivery service feature to intervene on the call when the O_NOA trigger receives a continue response from the SCP.

LAYER   **SW-LATER**
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                                                                          APPLICATION
ACTID   **FEATURE TITLE**   900FP
AJ4375   900 Fraud Prevention

Description

The 900 Fraud Prevention (900FP) feature allows the prevention of a type of 1-900 fraud, which is perpetrated by directly dialing a client ten-digit directory number (DN) instead of the 900 number associated with it.

In the Canadian network, the 900 numbers are translated to 800/888 numbers prior to being translated into a real ten-digit DN. Through the related feature AJ4374, the end user is prevented from directly dialing the 800/888 number associated with the 900 number through datafill in the originating office.

This feature enhances the data schema for feature AJ4374 in the *LN-LATER* section of this manual. It adds the new value B900 into range of value for the TREATMT field of subtable TREAT in table TMTCNTL.

Command Changes

NONE

Service Order

The new SERVORD DN CLNT900 option is available to this feature through feature AF4374. It is added to the existing field OPTLIST of table DNFEAT. The AINDN option cannot be assigned in conjunction with the CLNT900 option.

The CLNT900 line option can be added to the following agents:
- 1FR/RES (1FR/POTS line converted to RES)
- 1MR/RES (1MR/POTS line converted to RES)
- ZMD/RES (ZMD/POTS line converted to RES)
- ZMZPA/RES (ZMZPA/POTS line converted to RES)
- IBN (analog business sets)
- PSET (key business sets)
- PBX and PBM lines
- INWATS lines
- Hunt groups
- ISDN lines

Following is an example of the new SERVORD CLNT900 line option:

```
>servord
SO:
>ado
SONUMBER:     NOW  97  2 27 AM
>8304583
OPTION:
>CLNT900
OPTION:
>$
COMMAND AS ENTERED:
ADO NOW 97 2 22 AM 8304583 (CLNT900) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>y
```

Notes

NONE

Alarms

NONE

Interactions

NONE

Restrictions/Limitations

NONE

LN-NOW

This section identifies changes and additions to line functions that are Service Order sensitive or affecting, which occur immediately upon the new software load insertion. This includes changes or additions to commands and service orders that may affect SERVORD activity.

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LAYER   **LN-NOW**
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                                                                                   APPLICATION
ACTID   **FEATURE TITLE**   MADN/EKTS
AF6648   MADN/EKTS Call Appearance Call Handling-Queries

Description

This feature modifies the following query commands to provide the user with call
appearance information for Multiple Appearance Directory Number Call Appearance Call
Handling (MADN CACH).

- QLT – query logical terminal
- QDN – query directory number
- QGRP – query group
- QLEN – query line equipment number
- QMADN – query MADN
- QCUST – query customer data

Command Changes

See the *Description* section of this feature.

Service Order

See feature AF6647, CACH Servord, in the **SW-NOW** section of this manual for service
order changes required by the MADN CACH capability.

Interactions

This feature is one of five features that create the MADN CACH capability. The other four
areas are as follows:

- AF6638-MADN/EKTS CACH-Call Processing
- AF6646-MADN/EKTS CACH-Table Control
- AF6647-MADN/EKTS CACH-SERVORD
- AF6715-MADN/EKTS CACH-CNA Enhancements

Restrictions/Limitations

NONE

LAYER   **LN-NOW**
NA008 PRODUCT

                                                                                                APPLICATION
ACTID   **FEATURE TITLE**   ISDN
AF6658   Busy Determination Parameter Enhancement

Description

This feature also provides functionality to feature AF7027, Interface Configuration Changes for CNA changes.

Busy Determination Parameter Enhancement increases the number of calls that may be concurrent for ISDN sets from 5 for each directory number (DN) to 16 for each directory number call type (DNCT). As part of the enhancement, the option ACOU (additional call offering unrestricted) and its notification busy limit (NBL) parameters are assigned on a DNCT basis. The possible NBL range for NI-2 sets is increased from four to one less than the value assigned to the CRBL (call reference busy limit) option for the same call type (CT), except when the CRBL value is set to 1.

The maximum number of calls that a user can originate and hold is equal to the CRBL value of calls for each DNCT. If option ACOU has been assigned, the total number of active originating and terminating calls is the sum of the CRBL values assigned to the DNCTs.

Command Changes

NONE

Service Order

The following changes in the Service Order system are introduced by Busy Determination Parameter Enhancement:

- Option CRBL is permitted for NI-2 sets only. It is assigned using the NEW command. It is used instead of option AFC or NUMC. The CHF (change feature) command is disallowed for CRBL. In order to change the CRBL values for a DN, the DN must be deleted and re-entered using SERVORD.

— The example below uses the NEW command to assign CRBL.

```
>new
SONUMBER:     NOW  96 10 26 AM
>
DN:
>6214040
LCC_ACC:
>isdnkset
GROUP:
>bnr
SUBGRP:
>0
NCOS:
>0
SNPA:
>613
KEY:
>1
RINGING:
>y
LATANAME:
>nillata
LTG:   0
>
LEN_OR_LTID:
>wits 80
OPTKEY:
>1
OPTION:
>CRBL
VI:
>2
CMD:
>1
OPTKEY:
>1
OPTION:
>DBC
DBC:
>DBC_SP
OPTKEY:
>2
OPTION:
>DBC
DBC:
>DBC_3_1K
OPTKEY:
>3
OPTION:
>DBC
DBC:
>DBC_56K
OPTKEY:
>$
```

- Option DBC is permitted for NI-2 FIT sets. It is automatically assigned to a DN or AFC key during service order activity. The CHF command is used to change the DBC value for a DN or AFC key. The example below uses the CHF command to change the DBC value for key number 2 from 3_1_KHZ to SPEECH.

```
>chf
SONUMBER:     NOW  96 10 26 AM
>
DN:
>6214040
OPTKEY:
>2
OPTION:
>DBC
DBC:
>DBC_SP
OPTKEY:
>$
```

- SERVORD prompts for option ACOU have been modified as follows:
  — For NI-1 sets, SERVORD only prompts for a value for the NBL for voiceband information (VI) call type. The prompt for the NBL value for VI call types is VI_NI1_NBL.
  — For NI-2 sets, SERVORD prompts for the NBL value for Circuit Mode Data (CMD) calls as well as the VI_NI1_NBL value. The prompt for the NBL value for CMD call types is CMD_NBL. The CMD_NBL prompt only applies to NI-2sets.
  — This example uses the ADO command to assign ACOU.

```
>ado
SONUMBER:     NOW  96 10 26 AM
>
DN:
>6214040
OPTKEY:
>1
OPTION
>ACOU
VI_NI1_NBL:
>1
CMD_NBL:
>0
OPTKEY:
>$
```

Notes

NONE

Interactions

This feature needs the following feature to function properly: AF6641, NI-1/NI-2 Interface Identification. This feature is part of a group of features used by feature: AF6632, ISDN Parameter Downloading, FPE and MSGING.

The CRBL and the DBC data is downloaded to the customer premises equipment (CPE) using the functionality created by feature AF6632, ISDN Parameter Downloading.

In NA008, the ISDN idle notification trigger condition is enhanced. The enhancement is based on the notification busy condition for each separate call type. The enhanced trigger occurs when the notification busy condition is cleared, and then notifies the feature involved. This enhancement applies to the following features:

- Automatic Call Back (ACB)
- Automatic Recall (AR)
- Ring Again (RAG)
- Call Forwarding (CFW)
- Call Park (PRK)
- Key Short Hunt (KSH)

Restrictions/Limitations

The following limitations and restrictions apply to Busy Determination Parameter Enhancement:

- The simultaneous alerting of calls presented to the user is limited to the NBL for each DNCT.
- Option CRBL is assignable only to NI-2 sets.
- Logs that include a key number as part of their output (for example LINE138 and AMAB17) might output a report that identifies a key number that is different from the actual key used by the set. This occurs because the DMS switching system is unable to control which key number is used by the NI-2 set. The NI-2 set uses its own intelligence to determine which key to present the call. However, the output report for the key does associate the key with the correct DN.

LAYER   **LN-NOW**

NA008 PRODUCT

                                                                APPLICATION

ACTID   **FEATURE TITLE**   EKTS

AF6752   Non-EKTS to EKTS Changes

Description

This feature addresses the SERVORD design changes to provide the capability to change an integrated services digital network (ISDN) logical terminal identified (LTID) from non-EKTS to EKTS without removing the line from service or rebuilding the service.

Command Changes

NONE

Service Order

The Non-EKTS to EKTS Changes feature modifies the SLT ADD command to prompt EKTS as an option and a parameter. The SLT CHA command is modified to allow users to set EKTS as an option at the attribute setting. This modification enables the user to change the LTID from non-EKTS to EKTS by using the SLT CHA command.

The following options are modified.
- The SLT_ADD_OPTION will be modified to include EKTS as follows:
  — TYPE IS SLT_ADD_OPTION {SPIDSFX,PVC,CACH,EKTS}

- The SLT_CHA_OPTION will be modified to include EKTS as follows:
  — TYPE IS SLT_CHA_OPTION {SPIDSFX,ABS,PVC,EKTS,CACH}

The new prompt for the SLT CHA command is as follows:
- Prompt SET_ATTRIBUTE is modified to include EKTS. The new SLT_CHA_OPTION becomes*{SPIDSFX,ABS,PVC,CACH,**EKTS**}.*

The new prompt for the SLT ADD command is as follows:
- Prompt OPTION is modified to include EKTS. The new SLT_ADD_OPTION becomes {*SPIDSFX,PVC,CACH,**EKTS***}.

Example of service order

Example 1 shows the SLT CHA command as it exists today.

- Example 1 - Functionality of SLT CHA Command:

```
SO:
>SLT
SONUMBER: NOW 88 09 03 PM
>(CR)
LTID:
>ISDN 99
FUNCTION:
>CHA
SET_ATTRIBUTE:
>

 ***  ERROR  ***
|
TYPE OF SET_ATTRIBUTE IS SLT_CHA_OPTION
TYPE IS SLT_CHA_OPTION {SPIDSFX,ABS,PVC,CACH}
PLEASE ENTER:
SET_ATTRIBUTE:
>SPIDSFX 02
SET_ATTRIBUTE:
>PVC functional 2
SET_ATTRIBUTE:
>$
```

The SLT CHA command will be modified as follows :

- Example 2 - New Functionality of SLT CHA Command:

```
SO:
>SLT
SONUMBER: NOW 88 09 03 PM
>(CR)
LTID:
>ISDN 99
FUNCTION:
>CHA
SET_ATTRIBUTE:
>

 ***  ERROR  ***
|
TYPE OF SET_ATTRIBUTE IS SLT_CHA_OPTION
TYPE IS SLT_CHA_OPTION {SPIDSFX,ABS,PVC,CACH,EKTS}
PLEASE ENTER:
SET_ATTRIBUTE:
>EKTS
EKTS:
>Y
SET_ATTRIBUTE:
>$
```

The current servord implementation does not support the ability to add EKTS as an option. Example 3 shows how to create an LTID (with EKTS as a parameter).

- Example 3

```
>servord;slt $ isdn 99 add
SO:
LTCLASS:
>brafs
CS:
>y
PS:
>n
MAXKEYS:
64
DEFLTERM:
>n
TEI_TYPE:
>dtei
ABS:
>$
EKTS:
>y
OPTION:
>

 ***  ERROR  ***
|
TYPE OF OPTION IS SLT_ADD_OPTION
PLEASE ENTER:
OPTION:
 ***  ERROR  ***
|
TYPE OF OPTION IS SLT_ADD_OPTION
TYPE IS SLT_ADD_OPTION {SPIDSFX,PVC,CACH}
PLEASE ENTER:
OPTION:
>pvc functional 2
OPTION:
>SPIDSFX
SPID_SUFFIX:
>02
OPTION:
>$
```

After this feature is implemented, the SLT_ADD_OPTION will be any of SPIDSFX,PVC,CACH,EKTS - options. EKTS can be provisioned via either EKTS as a parameter irrespective of EKTS option.

• Example 4

```
>servord
SO:
>slt $
LTGRP:
>isdn 99
FUNCTION:
>add
LTCLASS:
>brafs
CS:
>y
PS:
>n
MAXKEYS:
>45
TEI_TYPE:
>dtei
ABS:
>$
EKTS:
>y
OPTION:
>

 ***  ERROR  ***
|
TYPE OF OPTION IS SLT_ADD_OPTION
PLEASE ENTER:
OPTION:
|
TYPE OF OPTION IS SLT_ADD_OPTION
TYPE IS SLT_ADD_OPTION {SPIDSFX,PVC,CACH,EKTS}
PLEASE ENTER:
OPTION:
>EKTS
OPTION:
>pvc functional 2
OPTION:
>SPIDSFX
SPID_SUFFIX:
>02
OPTION:
>$
```

The EKTS LTID can be provisioned the way it was possible before changes.

- Example 5

```
>servord
SO:
>slt $
LTGRP:
>isdn 99
FUNCTION:
>add
LTCLASS:
>brafs
CS:
>y
PS:
>n
MAXKEYS:
>45
TEI_TYPE:
>dtei
ABS:
>$
EKTS:
>y
OPTION:
>

 ***  ERROR  ***
|
TYPE OF OPTION IS SLT_ADD_OPTION
PLEASE ENTER:
OPTION:
|
TYPE OF OPTION IS SLT_ADD_OPTION
TYPE IS SLT_ADD_OPTION {SPIDSFX,PVC,CACH,EKTS}
PLEASE ENTER:
OPTION:
>pvc functional 2
OPTION:
>SPIDSFX
SPID_SUFFIX:
>02
OPTION:
>$
```

Note: the SLT_ADD_OPTION now includes EKTS as SLT_ADD_OPTION.

The LTID cannot be provisioned if the EKTS parameter is entered 'N'but the EKTS option is added.

- Example 6

```
>servord
SO:
>slt $
LTGRP:
>isdn 99
FUNCTION:
>add
LTCLASS:
>brafs
CS:
>y
PS:
>n
MAXKEYS:
>45
TEI_TYPE:
>dtei
ABS:
>$
EKTS:
>n
OPTION:
>

 ***  ERROR  ***
|
TYPE OF OPTION IS SLT_ADD_OPTION
PLEASE ENTER:
OPTION:
|
TYPE OF OPTION IS SLT_ADD_OPTION
TYPE IS SLT_ADD_OPTION {SPIDSFX,PVC,CACH,EKTS}
PLEASE ENTER:
OPTION:
>EKTS
OPTION:
>pvc functional 2
OPTION:
>SPIDSFX
SPID_SUFFIX:
>02
OPTION:
>$
```

Notes

NONE

Interactions

Since, the DMS table is not affected by this change, there is no impact on call processing. It affects only the CCM layer.

This feature should be able to interwork with all NA007/NA008 new features and NI-2 agent developments.

Restrictions/Limitations

The change from EKTS ISDN LTID to non-EKTS ISDN LTID will not be supported in the NA008 release.

LAYER   **LN-NOW**
NA008 PRODUCT

                                                                  APPLICATION
ACTID   **FEATURE TITLE**   CLN
AF6754   Change LEN (CLN) Enhancement

Description

This SERVORD CLN command enhancement allows the command to be used on lines that
have either the Call Pickup (CPU) or Speed Calling User (SCU) option, or both.

Command Changes

NONE

Service Order

Change LEN (CLN) Enhancement makes changes to the CLN SERVORD command to
allow the command to be used on lines that have the CPU or SCU options, or both.

Example of service order

Currently if CLN is attempted on a line with CPU option present, the following error
message is received:

```
' CANNOT CLN A LINE THAT HAS CPU FEATURE'
```

If CLN is attempted on a line with SCU option present, the following error message is
received:

```
' CANNOT CLN A LINE THAT HAS SCU FEATURE'
```

The following example shows how the current CLN command behaves when executed on a line with both SCU and CPU option.

```
>qlen 0 0 1 21
---------------------------------------------------------------------------
LEN:     HOST  00 0 01 21
TYPE: SINGLE PARTY LINE
SNPA: 613
DIRECTORY NUMBER:     7222501
LINE CLASS CODE:  IBN
IBN TYPE: STATION
CUSTGRP:        IBNTST     SUBGRP: 0  NCOS: 0
SIGNALLING TYPE:  DIGITONE
CARDCODE:  6X17BA    GND: N  PADGRP: STDLN  BNV: NL MNO: N
PM NODE NUMBER      :    33
PM TERMINAL NUMBER :    54
OPTIONS:
DGT SCU 0 HOST 00 0 00 03 Y CPU 0 HOST 00 0 00 03
---------------------------------------------------------------------------


>cln $
OLD_LEN:
>0 0 1 21
NEW_LEN:
>0 0 0 19
COMMAND AS ENTERED:
CLN NOW 97 1 23 AM HOST 00 0 01 21 HOST 00 0 00 19
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>y
 CANNOT CLN A LINE THAT HAS SCU FEATURE
 CANNOT CLN A LINE THAT HAS CPU FEATURE
COMMAND AS ENTERED:
CLN NOW 97 1 23 AM HOST 00 0 01 21 HOST 00 0 00 19
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>n
```

The above error message will not appear after implementing the enhancement to the CLN command and will also allow the function of CLN to be performed on this line having CPU and SCU option.

Notes

NONE

Interactions

NONE

Restrictions/Limitations

NONE

LAYER   **LN-NOW**
NA008 PRODUCT

                                                 APPLICATION

ACTID   **FEATURE TITLE**   CNA
AF7027   Interface Configuration Changes to CNA

Description

This feature implements the CNA portion of feature AF6658, Busy Determination Parameter Enhancement. Please see AF6658 in the *LN-NOW* section of this manual.

The CNA portion of AF6658 is the implementation of the CRBL option and DBC keylists. The CRBL extends the current AFC functionality for NI-2 sets to be able to have 16 functional calls per call type per DN assigned to a set. The DBC keylists assign data to be used by Parameter Downloading for downloading to NI-2 sets. DBC keylists are not used by call processing whatsoever.

Command Changes

NONE

Service Order

Busy Determination Parameter Enhancement introduces the following changes in SERVORD:

- Option CRBL is permitted for NI-2 sets only. It is assigned using the NEW command. It is used instead of option AFC or NUMC. The CHF (change feature) command is disallowed for CRBL. In order to change the CRBL values for a DN, the DN must be deleted and re-entered using SERVORD.

- Option DBC is permitted for NI-2 fully initializing terminal (FIT) sets. It is automatically assigned to a DN or AFC key during service order activity. The CHF (change feature) command is used to change the DBC value for a DN or AFC key.

- SERVORD prompts for ACOU (additional call offering unrestricted) have been modified as follows:

  — For NI-1 sets, SERVORD only prompts for a value for the notification busy limit (NBL) for voiceband information (VI) call type. The prompt for the NBL value for VI call types is VI_NI1_NBL.

  — For NI-2 sets, SERVORD prompts for the NBL value for Circuit Mode Data (CMD) calls as well as the VI_NI1_NBL value. The prompt for the NBL value for CMD call types is CMD_NBL. The CMD_NBL prompt only applies to NI-2 sets.

Notes

NONE

Interactions

The CRBL and the DBC data is downloaded to the customer premises equipment (CPE) using the functionality created by feature AF6632, ISDN Parameter Downloading.

In NA008, enhancement is made to the notification trigger for the busy condition. The enhancement is based on the notification busy condition for each separate call type. The enhanced trigger occurs when the notification busy condition is cleared. The enhancement to the notification trigger for the busy condition applies to the following features:

- Automatic Call Back (ACB)
- Automatic Recall (AR)
- Call Forwarding (CFW)
- Call Park (PRK)
- Key Short Hunt (KSH)
- Ring Again (RAG)

Restrictions/Limitations

- The simultaneous alerting of calls presented to the user is limited to the NBL for each DNCT.
- Option CRBL is assignable only to NI-2 sets.
- Logs that include a key number as part of their output (for example LINE138 and AMAB17) might output a report that identifies a key number that is different from the actual key used by the set. This occurs because the DMS switching system is unable to control which key number is used by the NI-2 set. The NI-2 set uses its own intelligence to determine which key to present the call. However, the output report for the key does associate the key with the correct DN.

LN-LATER

This section identifies changes and additions to line functions that are Service Order sensitive or affecting that require activation after the new software load insertion. This includes changes or additions to commands and service orders that may affect SERVORD activity.

NA008 PRODUCT

LAYER   **LN-LATER**
NA008 PRODUCT

                                                                                 APPLICATION
ACTID   **FEATURE TITLE**   ISDN
AF6593   Simultaneous Provisioning of FC3 and FC6

Description

Prior to the Simultaneous Provisioning of FC3 and FC6 feature, the FC (Flexible Calling)
option could be provisioned on only one feature key on an ISDN (Integrated Services Digital
Network) terminal; a second assignment of FC was not permitted on a terminal. The
Simultaneous Provisioning of FC3 and FC6 feature enables FC to be provisioned on two
feature keys on an ISDN terminal, as long as each FC instance has a unique maximum
conference size assigned to it.

Command Changes

NONE

Service Order

This feature allows more than one appearance of Flexible Calling provided that the
maximum conference size of each appearance is unique. When a user tries to provision more
than one instance of Flexible Calling on a set, the addition will not be rejected as before,
unless another feature key is already provisioned with the same maximum conference size.
If the user attempts to add another appearance of Flexible Calling with a size that already
exists, an error message will be displayed, and the transaction will be rejected.

Prior to the Simultaneous Provisioning of FC3 and FC6 feature, the Service Order System
(SERVORD) did not allow a second assignment of the FC option on an ISDN terminal. If an
assignment of FC was requested, and an assignment of FC already existed on the terminal,
the request for an assignment was denied and the following error message was displayed:

```
FC already exists on this set. The duplication was found on key <key number>.
```

With the Simultaneous Provisioning of FC3 and FC6 feature, when an assignment of FC is
requested in SERVORD, the new assignment is allowed if the requested conference size
(CONFSIZE) for the new assignment is not the same as the conference size of the existing
FC instance. The preceding error message is no longer displayed. If the requested conference
size is the same as the conference size of the existing FC instance, the new assignment is
denied and the following error message is displayed:

```
There already exists a conference size <conference size> on key <key number>
FC did NOT pass checking.
```

Notes

NONE

Interactions

NONE

Restrictions/Limitations

The FC option can be provisioned on two feature keys on an ISDN terminal, as long as each instance has a unique maximum conference size assigned to it.

LAYER   **LN-LATER**
NA008 PRODUCT

                                                                                               APPLICATION
ACTID   **FEATURE TITLE**   ISDN
AF6603   Transfer of Non-Conference Related Call

Description

To further comply with NI-2 requirements, the Nortel DMS-100 National ISDN Basic Rate
Interface (BRI) product introduces a new Flexible Calling transfer option TRANSFER. This
feature is similar to the existing Flexible Calling transfer option XFER, that supports
transfers involving conference calls. This feature now introduces the additional functionality
to transfer non-conference calls.

TRANSFER and XFER are mutually exclusive and dependent on the terminal type that the
subscriber uses. XFER supports only pre-NI-2 terminals; TRANSFER supports only NI-2
terminals. All other provisioning restrictions applicable to XFER remain applicable to
TRANSFER.

Flexible Calling TRANSFER supports the following types of transfers:

- Conference transfers ("floating the conference"), where remaining conference call
  parties continue to be connected to each other after the controller exists. Conference
  transfers are done by implicit or explicit invocation.

- Call-to-Call transfers, where a party from one call is transferred to a party from another
  call. Neither call requires a conference to be active. Call-to-call transfers are done by
  explicit invocation only.

Command Changes

NONE

Service Order

Transfer of Non-Conference Related Call uses option TRANSFER to provision NI-2 Flex
Call Transfer. The existing XFER option is also available to pre-NI-2 Flex Call subscribers.

Modification to XFER Option

Flow through for assigning XFER to a subscriber line is unaffected. However, a new
restriction has been imposed requiring this option to be provisioned only to pre-NI-2
terminals.

New TRANSFER Option

New option TRANSFER is available to Flexible Call (FC) subscribers. Assignment of
the TRANSFER option is similar to the XFER option with the following differences:

- An additional prompt is required to identify transfer type: Implicit, Explicit, or No Transfer.
- Implicit TRANSFER may be assigned via Servord either to a feature key or a DN key.
  - When Implicit TRANSFER is assigned to a feature key, the subscriber may use TRANSFSER explicitly as well.
  - When Explicit TRANSFSER is provisioned, the subscriber will not receive Implicit TRANSFER.

Example of service order

Following are examples of assigning the options. In all examples, the option FC (Flexible Calling) is assumed to have already been provisioned for the subscriber.

Adding Option XFER (unchanged flow through)

```
>SERVORD
>ADO
SONUMBER: NOW 96 07 15 AM
>(CR)
DN_or_LEN:
>5551234
OPTKEY:
>11
OPTION:
>XFER
CXFERTYP:
>CTALL
OPTKEY:
>$
```

Adding Option TRANSFER

```
>SERVORD
>ADO
SONUMBER: NOW 96 07 15 AM
>(CR)
DN_or_LEN:
>5551234
OPTKEY:
>11
OPTION:
>TRANSFER                          [New Option]
TYPE:                             [New Prompt]
>EXP
CXFERTYP:                         [Existing Prompt]
>CTALL
OPTKEY:
>$
```

Details of service order change

Option XFER

- Restrictions
  - Option TRANSFER is not compatible with XFER.
  - The subscriber terminal's LT Access Privilege (in table LTDEF) must be one of: B, D, PB, BD, or 2B. (LT Class=BRAFS; Circuit Switch Access Privilege = N, Y, 2B).

Option TRANSFER

- Restrictions

  - Option XFER is not compatible with TRANSFER.
  - Option FC (Flexible Calling) must be assigned.
  - The subscriber terminal's LT Access Privilege (in table LTDEF) must be: NI2. (LT Class=BRAFS; Circuit Switch Access Privilege = NI2).
  - If TRANSFER is being assigned to a feature key, the key number must be greater than the feature key number assigned to FC.
  - All other restrictions applicable to XFER also apply to TRANSFER.
  - All other restrictions applicable to XFER also apply to TRANSFER.

Note: *IMPlicit TRANSFER may be either a DN feature or a SET feature. EXPlicit TRANSFER is a SET feature. NOTRANSfer TRANSFER is a DN feature.*

New prompts

- OPTKEY (1 to 64)
  - The Key number to which this option will be assigned.
  - If TYPE (new prompt) is assigned IMP or NCT, the DN key may be used.

- OPTION (TRANSFER)
  - Option name.

- TYPE (NOTRANS, EXP, IMP)
  - NOTRANS = No Call Transfer
  - EXP = Explicit Transfer only
  - IMP = Implicit Transfer. (If a feature key is assigned, Explicit Transfer is also allowed.)

- CXFERTYP CTINC, CTOUT, CTINTRA, CTALL, CUSTOM
  - CTINC = Incoming Intergroup calls may be transferred to an Intragroup member.
  - CTOUT = Intergroup (incoming or outgoing) calls may be transferred to an Intragroup member.
  - CTINTRA = Intergroup or Intragroup (incoming or outgoing) calls may be transferred to an Intragroup member.

— CTALL = Intergroup or Intragroup (incoming or outgoing) calls may be transferred to an Intragroup or Intergroup party.

— CUSTOM = Customer definable restrictions for transferring calls.

Notes

NONE

Interactions

The following paragraphs describe the interactions between Transfer of Non-Conference Related Call and other functionalities.

- Explicit Transfer can transfer to a non–conference call to the Uniform Call Distribution (UCD) agent or UCD Queue. If the UCD Queue is full and an overflow route is given, the transferring user will be given Busy treatment.

- Explicit transfer can transfer a non–conference call to the attendant or into an attendant queue.

- When FC is assigned with Attendant Console Camp-on (ACO), the ISDN user (or controller) can place an existing call on hold to connect to a waiting call (referred to as an ACO call). Once the waiting call is answered, the Transfer option is allowed.

- The switch allows a call established through one of the Call Pickup features to be eligible for transfer.

- An IBN line or ISDN functional terminal is prevented from picking up any unanswered call involved in the FC conference. However, it is permitted to pick up any additional call on the BRI interface before it answers and is transferred. The controller may invoke Call Pickup to establish the conference call or an additional call from another DN/BC pair.

- DN bridging is incompatible with FC.

- When a party is found by Hunt (either Analog Hunt or Key Set Short Hunt), that party can be transferred to another party.

- A 911 call routed over an ES line or trunk cannot be bridged to an FC conference unless office parameter B911_3WC_ALLOWED in table OFCENG is set to true. Existing Flexible Calling and 911 interactions remain unchanged.

- EBO is a feature that allows the calling station to disrupt a call. Conferences and calls marked as Transfer–pending cannot be disrupted.

- A call where either party has option NDC (No Double Connect) is categorized as an FC blocked call. Since FC is a set option and NDC is a DN option, these FC calls are not blocked in service order. Instead, the FC calls are blocked on the invocation of the FC service.

- Feature Malicious Call Hold (MCH) can be invoked either by key or code access. For code access, the business set must have the 3WC or call transfer feature assigned. FC is not compatible with MCH.

Restrictions/Limitations

Transfer of Non-Conference Related Call is restricted to NI-2 terminals.

LAYER	**LN-LATER**
NA008 PRODUCT	
	APPLICATION
ACTID **FEATURE TITLE**	ISDN
AF6627 ISDN Calling Name/Number Privacy – Provisioning	

Description

This feature contains the CCM software changes associated with ISDN Calling Name/ Number Privacy–Provisioning. ISDN Calling Number Delivery/Name and Number Privacy allows Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) lines access to the following Residential Enhanced Services (RES)/Meridian Digital Centrex (MDC) Calling Number Delivery (CND) and blocking features:

- Caller ID Delivery and Suppression (CIDS) originator-side features
    - Caller ID Delivery and Suppression Suppression (CIDSSUP)–Calling Name and Number Blocking (CNNB) in the RES/MDC environment
    - Caller ID Delivery and Suppression Delivery (CIDSDLV)–Calling Name and Number Delivery (CNNB) in the RES/MDC environment
    - CIDSSUP and CIDSDLV Universal Access (UA) with Subscriber Usage-Sensitive Pricing (SUSP)
- Calling Number Identification Services (CNIS) originator-side features
    - Privacy Change Allowed (PCA)

Command Changes

NONE

Service Order

CIDSSUP and CIDSDLV can be added to feature keys on a set using SERVORD. The feature key can be used by all DNs on the set or by a specified subset of DNs. They can also be added as DN key options, assignable to the PDN of the set. The features can be accessed by all DNs on the set, or a specified subset. Option PCACIDS must be assigned to the PDN, but the functionality can apply to a subset of all the DNs.

The CIDSSUP and CIDSDLV options can be assigned either when a new line is being established using the NEW command or afterward using the ADO command. They can be deleted from the PDN or feature key using the DEO or OUT command. PCACIDS can be deleted using the DEO command. If the line is removed using the OUT command, the option is automatically deleted.

The billing option and keylists associated with the CIDSSUP and CIDSDLV options can be changed with CHF command. The value of the ALLOWPI parameter can be changed with the CHF command.

Service order examples

If Subscriber Usage-Sensitive Pricing (SUSP) is set to ON in table AMAOPTS, then the operating company has the option of enabling or disabling billing associated with CIDSSUP and CIDSDLV through the BILLING_OPTION prompt when adding the option to or changing the option on a feature key or DN. If SUSP is set to OFF, billing is disabled, and the BILLING_OPTION prompt will not appear.

The keylist specified for each feature consists of a discrete list of DN keys to which the feature applies, terminated by a dollar sign ($), or a list consisting solely of a dollar sign, indicating the feature applies to all DN keys.

- CIDSSUP/CIDSDLV via NEW command on PDN with AMAOPTS SUSP ON (Example 1):

```
>new
SONUMBER:     NOW  96  7  1 PM
>
DN:
>6755000
LCC:
>isdnkset
GROUP:
>isdngrp
SUBGRP:
>0
NCOS:
>0
SNPA:
>619
KEY:
>1
RINGING:
>y
LATANAME:
>nillata
LTG:   0
>
LEN_OR_LTID:
>isdn 20
OPTKEY:
>1
OPTION:
>CIDSSUP
BILLING_OPTION: NOAMA
>
KEYLIST:
>$
OPTKEY:
>$
```

- CIDSSUP/CIDSDLV via NEW command on PDN with AMAOPTS SUSP ON (Example 2):

```
>new
SONUMBER:      NOW  96  7  1 PM
>
DN:
>6755000
LCC:
>isdnkset
GROUP:
>isdngrp
SUBGRP:
>0
NCOS:
>0
SNPA:
>619
KEY:
>1
RINGING:
>y
LATANAME:
>nillata
LTG:   0
>
LEN_OR_LTID:
>isdn 20
OPTKEY:
>1
OPTION:
>CIDSDLV
BILLING_OPTION: NOAMA
>
KEYLIST:
>$
OPTKEY:
>$
```

- Datafilling CIDSSUP/CIDSDLV via ADO command on PDN with AMAOPTS SUSP ON (Example 1):

```
>ado
SONUMBER:      NOW  96  7  1 PM
>
DN:
>6755000
OPTKEY:
>1
OPTION:
>CIDSSUP
BILLING_OPTION: NOAMA
>AMA
KEYLIST:
>$
OPTKEY:
>$
```

- Datafilling CIDSSUP/CIDSDLV via ADO command on PDN with AMAOPTS SUSP ON (Example 2):

```
>ado
SONUMBER:     NOW  96  7  1 PM
>
DN:
>6755000
OPTKEY:
>1
OPTION:
>CIDSDLV
BILLING_OPTION: NOAMA
>AMA
KEYLIST:
>$
OPTKEY:
>$
```

- Datafilling CIDSSUP/CIDSDLV via ADO on feature key with AMAOPTS SUSP ON (Example 1):

```
>ado
SONUMBER:     NOW  96  7  1 PM
>
DN:
>6755000
OPTKEY:
>4
OPTION:
>CIDSSUP
BILLING_OPTION: NOAMA
>
KEYLIST:
>$
OPTKEY:
>$
```

- Datafilling CIDSSUP/CIDSDLV via ADO on feature key with AMAOPTS SUSP ON (Example 2):

```
>ado
SONUMBER:     NOW  96  7  1 PM
>
DN:
>6755000
OPTKEY:
>4
OPTION:
>CIDSDLV
BILLING_OPTION: NOAMA
>
KEYLIST:
>$
OPTKEY:
>$
```

- Datafilling CIDSSUP/CIDSDLV via ADO command on PDN with AMAOPTS SUSP OFF (Example 1):

```
>ado
SONUMBER:     NOW  96  7  1 PM
>
DN:
>6755000
OPTKEY:
>1
OPTION:
>CIDSSUP
KEYLIST:
>$
OPTKEY:
>$
```

- Datafilling CIDSSUP/CIDSDLV via ADO command on PDN with AMAOPTS SUSP OFF (Example 2):

```
>ado
SONUMBER:     NOW  96  7  1 PM
>
DN:
>6755000
OPTKEY:
>1
OPTION:
>CIDSDLV
KEYLIST:
>$
OPTKEY:
>$
```

- Datafilling CIDSSUP/CIDSDLV via ADO command on Feature Key with AMAOPTS SUSP OFF (Example 1):

```
>ado
SONUMBER:     NOW  96  7  1 PM
>
DN:
>6755000
OPTKEY:
>4
OPTION:
>CIDSSUP
KEYLIST:
>$
OPTKEY:
>$
```

- Datafilling CIDSSUP/CIDSDLV via ADO command on Feature Key with AMAOPTS SUSP OFF (Example 2):

```
>ado
SONUMBER:     NOW  96  7  1 PM
>
DN:
>6755000
OPTKEY:
>5
OPTION:
>CIDSDLV
KEYLIST:
>$
OPTKEY:
>$
```

- Datafilling PCACIDS on PDN (Example 1):

```
>new
SONUMBER:     NOW  96  7  1 PM
>
DN:
>6755000
LCC:
>isdnkset
GROUP:
>isdngrp
SUBGRP:
>0
NCOS:
>0
SNPA:
>619
KEY:
>1
RINGING:
>y
LATANAME:
>nillata
LTG:    0
>
LEN_OR_LTID:
>isdn 20
OPTKEY:
>1
OPTION:
>PCACIDS
ALLOWPI:
>Y
KEYLIST:
>2
KEYLIST:
>$
OPTKEY:
>$
```

- Datafilling PCACIDS on PDN (Example 2):

```
>ado
SONUMBER:     NOW  96  7  1 PM
>
DN:
>6755000
OPTKEY:
>1
OPTION:
>PCACIDS
ALLOWPI:
>Y
KEYLIST:
>$
OPTKEY:
>$
```

Notes

NONE

Interactions

NONE

Restrictions/Limitations

The following limitations and restrictions apply to ISDN Calling Name/Number Privacy–Provisioning:

- The CIDSSUP and CIDSDLV options are explicit, assignable line options for ISDN BRI only.
- Activation of the CIDSSUP and CIDSDLV options affects the current call only.
- The CIDSSUP, CIDSDLV, and PCACIDS options are valid on functional version terminals only.
- The CIDSSUP and CIDSDLV feature keys are assignable on NI-2 terminals only.
- The functionality of the PCA option applies to IDSN only.
- The PCA option only controls the acceptance of the PI in the originating SETUP message.
- The PCA option does not affect activation of the CIDSDLV/CIDSSUP options.

LAYER   **LN-LATER**
NA008 PRODUCT

                                                                                                                                        APPLICATION
ACTID   **FEATURE TITLE**   ISDN
AF6628   ISDN Calling Name/Number Delivery–Provisioning

Description

This feature provides the provisioning of Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) Calling Name Delivery (CNAMD) and Calling Number Delivery (CND).

CNAMD, when active on a terminator's line, displays the calling party's name for the terminating subscriber on a flat-rate or subscriber usage-sensitive pricing (SUSP) basis. The calling party's name is retrieved from a centralized name database using transaction capabilities application part (TCAP). This feature provides the operating company the ability to provision CNAMD on an ISDN BRI terminal. This option is datafilled through SERVORD, and it must be added to a DN key.

CND, when active on a terminator's line, allows delivery of the originator's number information for the terminating subscriber on a flat-rate or SUSP basis. This feature provides the operating company the ability to provision CND on an ISDN BRI terminal. This option is also datafilled through SERVORD, and it must be added to a DN key.

Command Changes

NONE

Service Order

CNAMD and CND are existing options in the MDC environment. This feature makes these options available to an LCC of ISDNKSET.

The CND and CNAMD options can only be added to a PDN or secondary DN key. For each DN assigned CND or CNAMD by SERVORD, a separate tuple in table RESFEAT is automatically updated.

Service order examples

1. Using the NEW command to datafill CNAMD on a PDN with AMAOPTS
   SUSP=ON

```
>NEW
SONUMBER:     NOW  96 10 31 PM
>
DN:
>6755000
LCC:
>ISDNKSET
GROUP:
>ISDNGRP
SUBGRP:
>0
SNPA:
>619
KEY:
>1
RINGING:
>Y
LATANAME:
>LATA1
LTG: 0
>
LEN_OR_LTID:
>ISDN 20
OPTKEY:
>1
OPTION:
>CNAMD
BILLING_OPTION: NOAMA
>AMA
OPTKEY:
>$
COMMAND AS ENTERED:
ADO NOW 96 10 31 PM 6755000 ISDNKSET ISDNGRP 0 0 619 1 Y 0 ISDN 20 ( 1 CNAMD AMA) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y
```

2. Using the ADO command to datafill CNAMD on a secondary DN with AMAOPTS
   SUSP=ON

```
>ADO
SONUMBER:     NOW  96 10 31 PM
>
DN_OR_LEN:
>ISDN 20
OPTKEY:
>2
OPTION:
>CNAMD
BILLING_OPTION: NOAMA
>AMA
OPTKEY:
>$
COMMAND AS ENTERED:
ADO NOW 96 10 31 PM ISDN 20 ( 2 CNAMD AMA) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y
```

3. Using the ADO command to datafill CNAMD on a secondary DN with AMAOPTS SUSP=OFF

```
>ADO
SONUMBER:     NOW  96 10 31 PM
>
DN_OR_LEN:
>ISDN 20
OPTKEY:
>2
OPTION:
>CNAMD
OPTKEY:
>$
COMMAND AS ENTERED:
ADO NOW 96 10 31 PM ISDN 20 ( 2 CNAMD) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y
```

4. Using the DEO command to delete CNAMD

```
>DEO
SONUMBER:     NOW  96 10 31 PM
>
DN_OR_LEN:
>ISDN 20
OPTKEY:
>1
OPTION:
>CNAMD
OPTKEY:
>$
COMMAND AS ENTERED:
DEO NOW 96 10 31 PM ISDN 20 ( 1 CNAMD ) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y
```

5. Using the CHF command to change the billing option for CNAMD

```
>CHF
SONUMBER:     NOW  96 10 31 PM
>
DN_OR_LEN:
>ISDN 20
OPTKEY:
>1
OPTION:
>CNAMD
BILLING_OPTION: NOAMA
>
OPTKEY:
>$
COMMAND AS ENTERED:
CHF NOW 96 10 31 PM ISDN 20 ( 1 CNAMD NOAMA) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y
```

6. Using the NEW command to datafill CND on a PDN with AMAOPTS SUSP=ON

```
>NEW
SONUMBER:     NOW  96 10 31 PM
>
DN:
>6755000
LCC:
>ISDNKSET
GROUP:
>ISDNGRP
SUBGRP:
>0
SNPA:
>619
KEY:
>1
RINGING:
>Y
LATANAME:
>LATA1
LTG: 0
>
LEN_OR_LTID:
>ISDN 20
OPTKEY:
>1
OPTION:
>CND
BILLING_OPTION: NOAMA
>AMA
OPTKEY:
>$
COMMAND AS ENTERED:
ADO NOW 96 10 31 PM 6755000 ISDNKSET ISDNGRP 0 0 619 1 Y 0 ISDN 20 ( 1 CND AMA) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y
```

7. Using the ADO command to datafill CND on a secondary DN with AMAOPTS SUSP=ON

```
>ADO
SONUMBER:     NOW  96 10 31 PM
>
DN_OR_LEN:
>ISDN 20
OPTKEY:
>2
OPTION:
>CND
BILLING_OPTION: NOAMA
>AMA
OPTKEY:
>$
COMMAND AS ENTERED:
ADO NOW 96 10 31 PM ISDN 20 ( 2 CND AMA) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y
```

8. Using the ADO command to datafill CND on a secondary DN with AMAOPTS SUSP=OFF

```
>ADO
SONUMBER:     NOW  96 10 31 PM
>
DN_OR_LEN:
>ISDN 20
OPTKEY:
>2
OPTION:
>CND
OPTKEY:
>$
COMMAND AS ENTERED:
ADO NOW 96 10 31 PM ISDN 20 ( 2 CND) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y
```

9. Using the DEO command to delete CND

```
>DEO
SONUMBER:     NOW  96 10 31 PM
>
DN_OR_LEN:
>ISDN 20
OPTKEY:
>1
OPTION:
>CND
OPTKEY:
>$
COMMAND AS ENTERED:
DEO NOW 96 10 31 PM ISDN 20 ( 1 CND ) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y
```

10. Using the CHF command to change the billing option for CND

```
>CHF
SONUMBER:     NOW  96 10 31 PM
>
DN_OR_LEN:
>ISDN 20
OPTKEY:
>1
OPTION:
>CND
BILLING_OPTION: NOAMA
>
OPTKEY:
>$
COMMAND AS ENTERED:
CHF NOW 96 10 31 PM ISDN 20 ( 1 CND NOAMA) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y
```

Notes

NONE

Interactions

Please see AF6640 in the *LN-LATER* section of this document for ISDN CNAMD interactions. Please see AF6630 in the *LN-LATER* section of the *Maintenance Synopsis* or *Traffic Synopsisis* for ISDN CND interactions.

Restrictions/Limitations

The following limitations and restrictions apply to ISDN Calling Name/Number Delivery – Provisioning:

- ISDN CNAMD TACP is supported on NI Protocol Version Control (PVC) Issue 2 functional terminals only. ISDN CND is supported on NI PVC functional terminals.
- Unlike the CLID option in the ISDN calling number delivery case, the CLID option alone does not provide ISDN calling name delivery TCAP to the terminating party in the CLID's customer group. The CNAMD option must also be assigned to the terminating party DN, and the TCAPNM option must be assigned to the customer group.
- ISDN CNAMD and CND can only be added to a DN key. Therefore, the ISDN CNAMD and CND SUSP option can only be activated and deactivated by access code. Key activation and deactivation is not allowed.
- ISDN CNAMD and CND cannot be added to a Bridged Night Number (BNN).
- ISDN CNAMD and CND with AMA cannot be assigned to lines with Denied Origination (DOR) or Automatic Line (AUL).
- ISDN CNAMD and CND cannot be added through a feature group.
- The line option CNAMD can be assigned without any of the TCAPNM customer group options or TCAP office parameters, but the TCAP calling name will not be delivered.
- The initial state of ISDN CNAMD TCAP and CND with SUSP is inactive. To change the state to active, the user can activate ISDN CNAMD TCAP and CND by activation code CNDA.
- The CND option is incompatible with the existing ISDN BRI option BLOCKCGN.
- ISDN CNG cannot be added to a secondary MDN single call arrangement (SCA)/Call Appearance Call Handling (CACH) member.
- ISDN CNAMD is incompatible with MADN SCA and MADN CACH.

LAYER   **LN-LATER**

NA008 PRODUCT

                                                  APPLICATION

ACTID   **FEATURE TITLE**   ISDN

AF6640   ISDN TCAP Calling Name Delivery

Description

The ISDN transaction capabilities application part (TCAP) Calling Name Delivery (CNAMD) feature extends existing DMS-100 TACP CNAMD to include ISDN basic rate interface (BRI) subscribers. This feature is also referred to as ISDN basic rate interface (BRI) TCAP Calling Name Delivery (I-CNAM).

This feature launches a TCAP query to a centralized name database and displays the calling party's name and name privacy status for the terminating subscriber, based on the calling party's North American numbering plan (NANP) 10-digit directory number (DN).

This feature is datafilled through SERVORD and must be added to a DN key.

Command Changes

NONE

Service Order

The SERVORD changes for assigning ISDN TCAP CNAMD to an ISDN BRI subscriber include assigning CNAMD to an ISDN BRI DN key.

Notes

The standard hardware to implement ISDN BRI, CCS7, signaling switching point (SSP), and service control point (SCP) is required.

Interactions

Additional Call Offering and Additional Functional Calls

The Additional Call Offering (ACOU) and Additional Functional Calls (AFC) features together allow an ISDN set to accept more than one call on a particular DN. Calls can be controlled by extra DN keys, but only one call at a time may be active. Calls terminating to an ISDN AFC key receive the TCAP calling name. NI-2 calls that are offered using ACOU (offered without a B-channel) receive the TCAP calling name.

ADDRESS DNGRPS option

Option DNGRPS allows a calling DN to be mapped to another DN to be used as the originating address. If this feature changes the originating DN, then the TCAP name query is launched using the changed DN.

Advanced intelligent network (AIN 0.1)

Instead of the originating party DN, the CallingPartyID parameter in the Analyze_Route, Forward_Call, or Authorize_Termination message returned from the advanced intelligent network (AIN 0.1) SCP response is used to query the centralized name database. This expedient allows the name associated with the CallingPartyID provided by the AIN 0.1 SCP to be displayed on the terminating CPE of the ISDN subscriber.

When no CallingPartyID is provided in the AIN 0.1 response, the original calling party DN is used to query the centralized name database.

The AIN 0.1 Display Text parameter is currently supported only for RES, 1FR, and 1MR line classes. Therefore, AIN 0.1 Display Text has no impact on delivery of the TCAP calling name to the ISDN BRI subscriber.

Auto Dial

When Auto Dial, which automatically dials a stored number, originates the call, the TCAP calling name is delivered to the ISDN party.

Automatic Line

When Automatic Line, which originates calls to a predefined DN, originates the call, the TCAP calling name is delivered to the ISDN party.

Automatic Call Back (ACB), Automatic Recall (AR)

The ACB feature allows a subscriber to make a call to the last station called by the subscriber. The AR feature allows a user to call the last station that called the subscriber. When the call cannot be completed because of a busy line, the ACB or AR subscriber receives a confirmation tone or announcement. Ringback is given to the ACB or AR subscriber once the called party becomes free. The TCAP calling name information is not delivered during the ringback on ACB or AR activations. However, TCAP calling name information is delivered to the ISDN called party.

Basic Business Group (BBG)

In the case of BBG functionality, the ISDN TCAP CNAMD feature overrides the proprietary name delivery feature when both of these features are assigned to the line or group. In determining which database is used to obtain the calling name, no discrimination exists between intra- or inter-group calls. TCAP CNAMD is used in all cases.

Call Forward Universal, Call Forward Busy, Call Forward Fixed

When the ISDN TCAPNM subscriber has activated the Call Forward Universal (CFU), Call Forward Busy (CFB), or Call Forward Fixed (CFF) feature, no name is transmitted to the call forward base station on call forward since the call is not answered.

When a call is forwarded to an ISDN remote party, TCAP calling name information associated with the originator is delivered to the ISDN remote station.

For all call forwarding scenarios that forward over ISUP, the TCAP calling name is not sent in the IAM. The terminating office is responsible for querying the centralized database for TCAP calling name information based on the 10-digit calling party number in the ISUP IAM.

Note: *Redirecting proprietary name information (NAMEDISP), if provisioned, will continue to show the proprietary redirecting name and redirecting reason on the call forwarded remote station.*

Call Forwarding Don't Answer (CFD)

The TCAP calling name information associated with the originator is delivered to the ISDN call forward base station. When the call is not answered within the specified period of time, the call is forwarded to a remote party. TCAP calling name information associated with the originator is delivered to the call forward remote station.

For scenarios that forward over ISUP, the TCAP calling name is not sent in the IAM. The terminating office is responsible for querying the centralized database for calling name information based on the 10-digit calling party number in the ISUP IAM.

Note: *Redirecting proprietary name information (NAMEDISP), if provisioned, will continue to show the proprietary redirecting name and redirecting reason on the call forwarded remote station.*

Call Hold

If the TCAP calling name is delivered during the initial termination to the ISDN BRI party, then all subsequent retrievals from Call Hold display the TCAP calling name.

Calling Number Delivery (CND)

If an ISDN party subscriber to both CND and CNAMD, then both the TCAP calling number and TCAP calling name are displayed.

Call Park (PRK, DCPK)

During Call Park functions, ISDN sets do not update name display. If ISDN is the original terminator parking the call, the TCAP name would have been delivered at termination time, since it is a purely basic call function. Call Park Recall does not update the ISDN display with either proprietary calling name or TCAP calling name. When ISDN un-parks a call, the TCAP calling name is not displayed.

Call Transfer

When the ISDN TCAP CNAMD subscriber is the conference call add-on party, a TCAP name query is launched based on the conference controller's DN. If the conference controller performs a call transfer before the TCAP response is received by the add-on party, and before the TCAP name timer expires, then the TCAP response is no longer valid and the proprietary connected name is delivered to the MDC or ISDN BRI CPE upon transfer.

Calling Identity Delivery and Suppression (CIDS)

Using features CNND and CNNB for CIDS, an originator may explicitly deliver or block both their name and number. When an ISDN party is called by a party that has activated CNNB, the TCAP calling name is not displayed.

Conference Features

When any conference interacting with ISDN TCAP CNAMD initiates a normal two-party call to an ISDN party, the ISDN party receives the TCAP calling name. If the TCAP response is received by the add-on party after the controller has conferenced, then the response it not considered valid and is not displayed to the add-on party. The following conference features are effected.

- 3WC and FlexCall. These two features require the controller to call each of the add-on parties. ISDN BRI add-on parties receive the TCAP calling name of the controller before conference or transfer.

- Station-Controlled. This feature requires the controller to call each of the add-on parties. ISDN add-on parties receive the TCAP calling name of the controller.

- Meetme. Parties must call a central conference number. Since no ISDN parties are called, TCAP CNAMD does not apply.

- Preset. When the controller calls the conference number, each of the preset conferees is automatically called. Since this not a typical two-party scenario, any ISDN add-ons do not receive the TCAP calling name.

Executive Busy Override (EBO)

The ISDN party who is barged in on by EBO does not receive any display updates during EBO feature function. An ISDN terminator who originally displayed the TCAP calling name does not display the EDOer's name upon barge-in, and therefore will not change when the EDOer exits the call.

Group Intercom Calls (GIC)

The GIC feature allows a user to terminate a call on a member of a designated intercom group using abbreviated dialing. For calls terminating to ISDN BRI GIC, no TCAP calling name information is delivered.

Hunt Groups (DNH, MLH)

Hunting is a call-completion process that increases the likelihood of an incoming call being completed within a subscriber-defined group of lines. When attempting to terminate a call to a busy line that is assigned hunting, the switch scans a group of lines sequentially, searching for an idle line on which to complete the call. This group of lines is called a hunt group. The TCAP calling name information is sent to a line when it is alerted of an incoming call.

Last Number Redial (LNR)

The LNR feature redials the last number dialed by the subscriber. In a call originated by means of LNR to an ISDN party, the ISDN party will receive the TCAP calling name.

Make Set Busy (MSB)

The MSB feature makes the ISDN party appear busy to all incoming calls, and so no TCAP calling name is displayed.

Message Waiting (CAR, CRR, MWT)

Message waiting in conjunction with Call Request Retrieve and Call Request enables a party to log a call against another party, enabling that party to dial an access code to call back the requesting party. Calls originated to an ISDN party by means of CRR will not receive the TCAP calling name.

Multiparty Lines

When an ISDN party is called by a multiparty line, a TCAP calling name is displayed based upon the proper multiparty lines DN.

Note: *4FR lines need special hardware to discriminate individual DNs or an operator assisted call. 8FR lines can not discriminate.*

MADN SCA, EKTS CACH

The Multiple Appearance Directory Number (MADN SCA) and Electronic Key Telephone System (EKTS CACH) features allow a single DN to be associated with a group or a group of groups of subscriber lines. One member of the group can be a residential line and another can be a business line. TCAP calling name information is not provided to any member of the EKTS MADN SCA or EKTS CACH group.

Multiswitch Business Group (MBG) Feature Networking Control

MBG Feature Networking Control implements a per-customer group control mechanism for a subset of the networked features available to calls using a MBG service. The network features that can be controlled are: Network Name Display (NAME) and Network Number/Reason Display (CLID).

Control of the CLID and NAME display features for a customer group is accomplished by the addition of option MBGDENY to table CUSTNTWK. Option MBGDENY has two associated sub-options: option CLID and option NAME.

TCAP calling name information is not delivered to the called party for MBG calls over public ISUP trunks when the terminating switch has either the option MBGDENY NAME or the option MBGDENY CLID NAME for the customer group.

Proprietary CNAMD

If datafill and service orders have been completed to allow TCAP CNAMD to an ISDN BRI subscriber, and that subscriber's customer group is also assigned the proprietary CNAMD option NAMEDISP in table CUSTSTN, then TCAP CNAMD will take precedence over proprietary CNAMD.

Note: *There is no discrimination between inter-BBG calls and intra-BBG calls to determine which CNAMD mechanism to use. This is a known non-compliancy, since discrimination between these kinds of calls is supposed to take place and the option of providing personal names for intra-BBG calls is supposed to be provided.*

Ring Again (RAG)

The Ring Again (RAG) feature allows the subscriber encountering a busy DN to be notified when the busy party becomes idle and the same DN is redialled automatically. Ringing is provided to the RAG subscriber once the busy party is free. The TCAP calling name information is not delivered during the RAG ringback. However, TCAP calling name information is delivered to the RAG called party.

Selective Call Acceptance (SCA)

TCAP calling name information is delivered to the ISDN line if Selective Call Acceptance applies and the call is allowed to terminate. For those calls that are not accepted, termination to the ISDN line does not occur and thus TCAP calling name information will not be delivered.

Selective Call Forwarding (SCF)

For an ISDN line with SCF, the interactions are the same as Call Forwarding if SCF applies to the call and the call is forwarded. When SCF does not apply to the call, the call terminates to the ISDN call forward base station and TCAP calling name information is delivered.

Selective Call Rejection (SCRJ)

TCAP calling name information will be delivered to the ISDN line if Selective Call Rejection does not apply to the call and is allowed to terminate. For those calls that are rejected, termination to the ISDN line does not occur and thus TCAP calling name information will not be delivered.

Speed Call

Speed call enables subscribers to dial an abbreviated access code that corresponds to a pre-programmed DN. Calls to an ISDN party by means of speed call will receive the TCAP calling name.

Option SUPPRESS line

Option SUPPRESS line sets the originator's permanent privacy status for number and name. During termination to the ISDN TCAP CNAMD subscriber, the permanent privacy status of the name is not used to discriminate when a TCAP query should be launched. The permanent privacy status of the calling number, as set by SUPPRESS, is considered when determining whether ISDN TCAP CNAMD applies. This is consistent with the fact that name privacy should follow number privacy.

Option SUPPRESS DNGRPS

Network option SUPPRESS DNGRPS affects the delivery of the TCAP calling name. When this option is set to SUPPRESS NAME in DNGRPS, no TCAP name query is launched.

Restrictions/Limitations

The following limitations and restrictions apply to ISDN TCAP CNAMD:

- The ISDN Display features are supported only on National ISDN Protocol Version Control (PVC) Functional Issue 2 terminals.
- End-to-end ISUP CCS7 connectivity is required on inter-switch calls to transmit the calling DN to the terminating switch.
- ISDN TCAP CNAMD uses the same centralized name database that is used by the Residential Enhanced Services (RES) and MDC TCAP CNAMD features. Therefore, this feature requires all necessary datafill for providing the RES TCAP CNAMD functionality.
- The centralized name database requires a 10-digit DN in the TCAP query. An out-of-area indication is sent to the ISDN BRI customer premises equipment (CPE) if a calling party number is received in the ISUP initial address message (IAM) with other than a 10-digit DN.
- ISDN TCAP CNAMD is not supported for primary rate interface (PRI) trunk-originated calls that terminate to an ISDN BRI subscriber. When the originating trunk type is PRI, an out-of-area indication is delivered.
- ISDN TCAP CNAMD SUSP activation and deactivation is provided by existing RES or IBN Calling Number Delivery Activation (CNDA) and Calling Number Delivery Deactivation (CNDD) codes, respectively. ISDN-specific activation codes (DLVFEATA or DLVFEATD) are not used. Feature key activation and deactivation is not provided.
- TCAP calling name information is not delivered during the ringback on automatic call back (ACB) or automatic recall (AR) activations.

- ISDN TCAP CNAMD is not supported to terminating electronic key telephone service (EKTS) Multiple Appearance Directory Number (MADN) groups.
- ISDN TCAP CNAMD does not support basic business group (BBG) and multi-switch business group (MBG) procedures.
- ISDN TCAP CNAMD does not change existing ISDN BRI display text functionality (provided by proprietary name and reason display).
- ISDN TCAP CNAMD does not support Redirecting Name Delivery (RNAM). The existing proprietary (non-TCAP) redirecting name delivery remains in effect.
- ISDN TCAP CNAMD uses existing CLASS CNAMD and Calling Number Delivery (CND) operational measurements (OM).

LAYER   **LN-LATER**

NA008 PRODUCT

                                                              APPLICATION

ACTID   **FEATURE TITLE**   ESMA

AF6719   ESMA: ICB: CCM – ICB Line Provisioning II

Description

Expanded Subscriber Carrier Module-100 Access (ESMA): Integrated Channel Bank (ICB): CCM – ICB Line Provisioning II enables ICB lines to be provisioned on an ESMA. The following changes are introduced by this feature:

- Add definitions for the new line card type for ICB lines, RDTICB

- Provide LNINV consistency checks for the new line card type. RDTICB is allowed only for lines associated with ICB IDTs

- For the LEN field of LNINV, add a line equipment number (LEN) definition for the ICB variant, and provide consistency checking on the values entered for the ICB LEN

- For the CARDINFO field of LNINV, add a new CARDINFO_TYPE definition to allow foreign exchange subscriber end signaling (FXS) to be specified as the signaling type for ICB lines

- Allow service provisioning using DMS SERVORD for the line class codes supported by the new ICB line card code, RDTICB

Command Changes

NONE

Service Order

Minor modifications to RDT specific error responses are made. AccessNode flow-through provisioning is not supported for ICB lines.

Notes

NONE

Interactions

This feature does not affect existing line provisioning command sequences or strategies. Line calling features which require a reversal are not supported by this feature as it is incompatible with the FXS protocol.

This feature is part of the feature set needed to support line appearances on a D4 channel bank subtending an ESMA. This feature set implements line services using the Foreign Exchange Subscriber End (FXS) signalling protocol for these channel banks. The group of features is listed below:

- AF6716, ESMA: ICB: CNA – ICB NODE PROVISIONING
- AF6717, ESMA: ICB: CNA – ICB LINE PROVISIONING I
- AF6718, ESMA: ICB: CNA – ICB NODE MAINTENANCE
- AF6719, ESMA: ICB: CCM – ICB LINE PROVISIONING II
- AF6721, ESMA: ICB: XPM – ICB NODE PROV
- AF6722, ESMA: ICB: XPM – CALL PROCESSING
- AF6723, ESMA: ICB: XPM – RBS RESOURCE MANAGER
- AF6724, ESMA: ICB: SIGP SCANNER
- AF9754, ESMA: ICB: XPM – ICB MTC

This feature needs the following features to function properly:
- AF6716, ESMA: ICB: CNA – ICB NODE PROVISIONING
- AF6718, ESMA: ICB: CNA – ICB NODE MAINTENANCE
- AF6721, ESMA: ICB: XPM – ICB NODE PROV

This feature is part of a group of features used by feature:
- AF6717, ESMA: ICB: CNA – ICB LINE PROVISIONING I
- AF6718, ESMA: ICB: CNA – ICB NODE MAINTENANCE

This feature group is optional, with the optionality controlled by feature AF6716 using Software Optional Control (SOC). This feature group is part of the CNA08/XPM09 release. Please reference AF6716 in the *SW-LATER* section of this manual for a description of the SOC functionality.

Restrictions/Limitations

The following limitations and restrictions apply to ESMA: ICB: CCM – ICB Line Provisioning II:
- No TR-303 messaging or object provisioning (associated with other IDT variant types) is provided for ICB variants.
- FXS is the only protocol used by ICB nodes and lines for this release. Services supported by this feature must be supported by FXS loop start/FXS ground start or voice path signaling. Since FXS does not support a battery reversal, line service class codes and features that require a reversal are not supported. Integrated services digital network (ISDN) and Meridian Business Set (MBS) are not supported. Since the FXS protocol does not provide for adjustable battery, message waiting lamp is not supported.
- The preferred sequential channel number assignment is used for ICB FXS lines.

LAYER   **LN-LATER**
NA008 PRODUCT

                                                                       APPLICATION
ACTID   **FEATURE TITLE**   ISDN
AF6753   Flow Through Provisioning: Manipulating Line Features

Description

Prior to this feature, certain integrated services digital network (ISDN) line features could not be added, changed, or deleted while the line was call processing busy. Flow Through Provisioning: Manipulating Line Features allows a certain set of ISDN features to be manipulated (added, changed, deleted) using SERVORD commands ADO, CHF, and DEO when the line is call processing busy.

Command Changes

NONE

Service Order

The add option (ADO), change feature (CHF), and delete option (DEO) SERVORD commands are allowed for the features CFU, CBU, CDU, and ACOU when the line is call processing busy. The adding, changing, and deleting of the features CFD and CFB are allowed during processing busy for the normal mode and is prevented for the programmable and fixed modes (ISDN BRAFS terminals only).

The AFC feature can not be manipulated to allow the addition, deletion, and modification of the AFC keys when the line is call processing busy.

The CFU, CBU, and CDU features are modified to allow them to be deleted from a line when the terminal is call processing busy. However, if the terminal is in the process of registering Call Forwarding and the delete command is issued, the deletion is blocked. The feature CFF can not be deleted when call processing is busy. The features CFD and CFB can not be deleted when call processing busy for programmable or fixed mode, but is allowed for normal mode.

Error messages

The Flow Through Provisioning: Manipulating Line Features feature introduces the following SERVORD error messages:

```
"Call Forwarding cannot be deleted when it is being programmed."
```

```
"Call Forwarding Busy Programmable cannot be deleted while set is call processing
busy."
```

```
"Call Forwarding Busy Fixed cannot be deleted while set is call processing busy."
```

"Call Forwarding Don't Answer Programmable cannot be deleted while set is call processing busy."

"Call Forwarding Don't Answer Fixed cannot be deleted while set is call processing busy."

"Call Forwarding cannot be deleted while set is call processing busy."

"Call Forwarding cannot be deleted when the line is a MADN appearance in the ringing state."

"LTID (ltid#): is in improper state" (message indicates the line is in the call processing busy state while attempting to delete CFF)

Notes

NONE

Interactions

NONE

Restrictions/Limitations

NONE

LAYER   **LN-LATER**
NA008 PRODUCT

                                                                                             APPLICATION
ACTID   **FEATURE TITLE**   SACB
AF6946   SACB Zero Minus

Description

The Subscriber Activated Call Blocking (SACB) Zero Minus (ZROM) feature provides the following enhancements to the existing SACB feature:

- Allows for ZROM as a SACB Call Class (SACBCC) for line option SACB in SERVORD
- Allows for Software Optionality Control (SOC) 0-dialing functionality under option order code RES00079
- Allows the SACB feature to block 0-calls on an optional basis

Command Changes

NONE

Service Order

The Service Order System (SERVORD) can be used to assign SACB ZROM to a subscriber services line. SACB ZROM is assigned at the SACBCC prompt.

Example of service order

```
SO:
>ADO $ 6210040
OPTION:
>SACB
STATUS:
>ACT
SACBCC:
>ZROM
SACBPIN:
>123123
OPTION:
>$
COMMAND AS ENTERED:
ADO NOW 97 2 5 PM 6210040 ( SACB ACT ZROM $ 123123 ) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>y
```

SACB requires an SPP entry in Table CUSTSTN. This is an existing requirement of SACB and is listed here for completeness.

Notes

NONE

Interactions

NONE

Restrictions/Limitations

Although no restrictions or limitations are introduced as a result of this feature, the existing SACB restrictions apply to this feature.

LAYER   **LN-LATER**
NA008 PRODUCT

                                                      APPLICATION

ACTID   **FEATURE TITLE**   AIN
AJ4122   Enhanced Busy Call Return (EBCR), RES00076

Description

The functionality of both Enhanced Busy Call Return (EBCR) and Message Service Application (MSA) is repackaged in this feature. It includes the main functions offered by the features Automatic Call Back (ACB), Special Delivery Service (SDS), Selective Call Messaging (SCM), SCM Access to ACB, and MSA Repackaging.

Enhanced Busy Call Return

EBCR service in combination with the ACB feature allows callers to automatically call back the last party called if that party was busy.

Access to Messaging service, RES00077

Access to Messaging service in combination with a voice messaging system (VMS) allows the operating company to provide with voice messaging service when they call lines that are either not answered within a specified length of time or are busy.

Command Changes

NONE

Service Order

The SDS, SDSDENY and ICSDEACT line options can be assigned to and deleted from a line using the service order (SERVORD) utility.

The new ICSDEACT line option, when assigned to a line, prevents the service prompting from being offered on this line. This option can be assigned to the following LCCs: RES, MDC (IBN, EBS, M5XXX and M9XXX) and ISDNKSET.

The subscriber can deactivate the service offering on the line for an undefined period of time and across different calls using the vertical access codes *02. The subscriber can re-activate the service offering by redialing the *02 code.

The ICSDEACT line option is usually added or removed from a line by the end-user who toggles the line status by dialing *02. The addition and removal of the ICSDEACT line option using SERVORD are not required by the operating company. However, they are supported to facilitate the operating company's provisioning and maintenance operations.

Following is an example of a SERVORD session that adds the ICSDEACT to a line:

```
>servord
   SO:
   >ado
   SONUMBER:   NOW 96 8:23 AM
 >
   DN_OR_LEN
   >6211100
   OPTION:
   >ICSDEACT
   OPTION:
   >$
```

The operating company can assign the line option ICSDEACT using SERVORD and thus disable the service offering on a line for an unlimited period of time. The operating company can also remove ICSDEACT from a line to enable the service offering on this line.

Notes

Announcements required for EBCR service can be recorded on the following Digital Recorded Announcement Machine (DRAM) cards:
- NT1X77AA RAM speech memory card
- NT1X79AA EEPROM speech memory card
- NT1X80AA EDRAM speech memory card

EBCR uses the NT6X92AA Universal Tone Receiver (UTR) during digit collection. The subscriber lines must be hosted by Series 2 peripherals (XPM).

The two new treatments ICSD and ICSA required by Sustained deactivation can be mapped to either confirmation tones or announcements by the operating company. New EDRAMs may be required if the treatments are mapped to new announcements.

The MSA Repackaging feature reworks the existing packaging to come up with a service-oriented view which provides:
- Separate Software Optionality Control (SOC) control for the activations of Access to Messaging (also called MSA Access Enabler), Fax-Thru Service and SCM Access to ACB (also known as Enhanced Busy Call Return)
  - MSA00001 maps to MSA Access Enabler
  - MSA00005 maps to MSA Fax-Thru Service
  - MSA00006 maps to MSA SCM Access to ACB.

- New RES00076, RES00077, RES00078 packages which respectively contain the SCM Access to ACB, Access to Messaging and Fax-Thru Service functionality, in parallel with the existing MSA00006, MSA00001 and MSA00005 packages
  - RES00076 maps to RES Enhanced Busy Call Return
  - RES00077 maps to RES Access to Messaging
  - RES00078 maps to RES Fax-Thru Service

As a result of the software repackaging, this feature obsoletes the MSA00003 and MSA00004 packages.

Interactions

EBCR service interacts with the DMS-100 features that are described below. For further feature interactions, consult documentation for the Automatic Callback (ACB) feature.

Advanced intelligent network (AIN 0.1)

On calls that terminate on a busy line and where an AIN 0.1 trigger is hit on the originating switch, EBCR service is offered if the terminating party's DN is the same as the DN the caller dialed. If the call is routed from the dialed DN to another DN because of the AIN response, EBCR service is not offered.

On calls that terminate on a busy line and where an AIN 0.1 trigger is hit on a non-originating switch, EBCR service is offered. However, in the case where the AIN 0.1 trigger is a Termination Attempt Trigger and the SCP response is a FORWARD_CALL response, if the user accepts the service, she/he hears the busy tone and not the ACB confirmation announcement. The user is not provided with the ACB service she/he was offered and accepted. This is a limitation of the Automatic Callback feature.

On calls that terminate on a busy line and where an AIN 0.1 trigger is hit on a non-originating switch, EBCR service is offered if the conditions described above are met. However, if the SCP response is a FORWARD_CALL response, and if the user elects to hang up, go off-hook and then dial *66, thereby accessing standard ACB directly instead of accepting the EBCR offer of service (if it is provided), standard ACB fails. Standard ACB service is not provided and generates a busy treatment instead of the ACB confirmation announcement. EBCR service then detects the busy condition and offers EBCR service. If the caller accepts the offer of EBCR service, she/he receives a busy tone and does not receive the ACB service she/he was offered and accepted. This is a limitation of standard ACB.

Call blocking

EBCR service is not invoked when call blocking occurs.

Call forwarding (IBN and POTS)

Call forwarding features allow stations to forward calls to subscriber-defined locations.

When the operating company sets field CFW in table SDSINFO tuple OFFICE to Y (yes), EBCR service is offered on calls that have one or more call forwarding features. When this field is set to N (no), EBCR service is not offered on calls that have one or more call forwarding features. For this functionality call forwarding feature refers to all types of call forwarding including AIN FORWARD_CALL response. Some exceptions exist and are described below.

On calls to DNs with AIN FORWARD_CALL response, if the AIN trigger is hit on the originating end office, EBCR service is not offered, even if field CFW is set to Y.

Interworking with other equipment can impact call forwarding detection on the originating switch, causing EBCR service to be offered even if field CFW is set to N. When an interoffice call is forwarded, Nortel's implementation of call forwarding sends a forwarding indicator back to the originating switch as part of the ISUP pass-along message (PAM). However, if one or more switches in the call path does not send the call forwarding indicator back to the originating switch, the originating switch is unable to detect the call forwarding interaction and offers EBCR service on the call even if field CFW is set to N.

The values of fields CFW and HNTGRP (see interaction with Hunt groups) only determine whether EBCR service is offered when the called party has either one or more call forwarding features or the Hunt Group feature. Therefore, in a call forwarding scenario, if the forwarded to party has the hunt group feature or call forwarding features, this is irrelevant to fields CFW and HNTGRP. Take the following scenario as an example: A (who has EBCR service) calls B who is busy and has the Call Forwarding Busy (CFB) feature. The call is then forwarded to C who is a member of the hunt group. In this scenario, EBCR service is offered if field CFW is set to yes even if field HNTGRP is set to N, since the Hunt Group feature is on the forwarded to party and not on the called party.

When the called party has both one or more call forwarding features and the Hunt Group feature, EBCR service is not offered if either field CFW or field HNTGRP is set to N or if both fields are set to N.

Automatic Call Back (the service to which EBCR service provides access) cannot be activated, even if field CFW is set to Y unless Automatic Call Back supports the type of call forwarding feature that is present on the called party's line. Consult documentation for the Automatic Callback feature for Automatic Callback's interaction with call forwarding features.

Call forwarding validation

This option validates the DN entered as the forwarding DN. The following validation options are offered on a customer group basis only:
- validation of the DN to which calls are forwarded (default option)
- validation of the DN as a routable number (routing option)
- validation by attempting to complete the call to target station upon feature activation (terminating option)

If the terminating option is selected, an attempt is made to call the forwarding DN. EBCR service is not activated when the validation call attempt encounters a busy condition.

Calling name and number delivery blocking

Calling Name Delivery Blocking (CNAB) and Calling Number Delivery Blocking (CNDB) are outgoing call services that operate on a per-call basis. They allow subscribers to control the delivery of their name and number to a called party by toggling the default name and number suppression of the line. If the information delivery is

suppressed by default, the services allow the subscribers to enable the delivery of their name and number before dialing the called DN. If the information delivery is allowed by default, subscribers can block their name and number delivery.

Calling Number Blocking (CNB) is an outgoing call service. CNB enables subscribers to block the display of their number on the subscriber set of the called party. CNB is used on an individual call basis and is available to subscribers who have the CNAB or CNDB line option.

Calling Name and Number Delivery Blocking (CNNB) is an outgoing call service. CNNB enables a subscriber to block the display of number and name information on the subscriber set of the person being called. CNNB is used on an individual call basis and is available to all subscribers who have the CNAB or CNDB line option.

The Calling Name and Number Delivery (CNND) feature is available to subscribers who have the CNAB or CNDB line option. CNND allows subscribers to deliver both name and number information to the called party, regardless of the permanent name and number suppression status of the line.. CNND works on an individual call basis.

A subscriber to any of these features is provided with EBCR service and EBCR service does not interfere with these features.

Call Pickup (CPU)

The CPU feature enables a station to answer calls incoming to another station within the same pickup group.

EBCR service is not invoked if a CPU request is denied.

Call Waiting (CWT)

The CWT feature notifies a subscriber in a stable call when another call arrives. The subscriber can place the current party on hold and answer the call that is waiting.

On calls to parties that have the Call Waiting feature, EBCR service only offers its service to the caller if there is already one party waiting on the called party's line.

Conferencing

EBCR service allows the operating company to decide whether to offer EBCR service on the consultation leg of Conference calls. Conferencing calls for this functionality refer only to the operation of conferencing features which make use of consultation legs, for example, Three-Way Call (3WC), Station Controlled Conference, Flexible Call, and Call Transfer.

Setting field CONF in table SDSINFO tuple OFFICE to Y (yes) allows EBCR service to be offered on calls using one of these types of conferencing features, while setting this field to N(no) prevents the offering of EBCR service on calls that have this type of Conferencing feature.

Customized dialing

EBCR service is not invoked on calls originated with a customized dial plan (on-net calls). However, EBCR service is invoked on off-net calls that qualify for EBCR service activation. EBCR service ensures that the original translated dialed digits (public DN) is present in the proper ISUP message where applicable.

Distinctive Ringing/Call Waiting (DRCW)

When a line has DRCW, incoming calls from DNs that are on the DRCW list are identified by a distinctive ring, or if the line is busy, a distinctive call waiting tone. The caller receives standard audible ringback tone.

The interaction of EBCR service with DRCW is the same as with CWT.

Enhanced Secondary DN (ESDN)

Note: *This feature is also called Enhanced Teen Service.*

The Teen Service feature allows multiple DNs (up to 6) to be assigned to a single line without the expense of additional equipment. The ESDN feature is an enhancement to the Teen Service feature.

EBCR service is not available on secondary DNs. If the operating company has both the EBCR feature and the Access to Messaging feature active in an end office and has datafilled these features to provide callers with a choice of either service on the busy condition, only Access to Messaging is offered to secondary DNs. Primary DNs are offered a choice of either service.

Hook flash

EBCR service ignores hook flashes while an offer of service announcement for EBCR service is playing and while a help announcement is playing. The user must accept or reject the offer of service before hook flash can be used again (for example to return to the first party on a 3-way call or on the consultation leg of a station-controlled conference call). After the offer of service announcement is over, EBCR service is no longer on the call and the user can use the hook flash.

Hunt groups

A hunt group is an end-user defined group of lines. When attempting to terminate a call to a busy line within the hunt group's group of lines, the switch scans the group of lines sequentially and searches for an idle line on which to terminate the call.

EBCR service allows the operating company to decide whether to offer EBCR service on intraoffice calls that terminate on a hunt group. Setting field HNTGRP in table SDSINFO tuple OFFICE to Y (yes) allows the offering of EBCR service on intraoffice calls that terminate on a hunt group, while setting this field to N (no) prevents the offering EBCR service on intraoffice calls that terminate on a hunt group.

If table RESOFC tuple ACB field HUNTLINE is set to DENY. Automatic Call Back (ACB) (the service to which EBCR service provides access) is not activated on intraoffice calls terminating on a hunt group, even if field HNTGRP is set to Y. Though ACB cannot be activated when field HUNTLINE is set to DENY, an announcement offering EBCR service to the caller is still played when field HNTGRP is set to Y.

Long Distance Alerting (LDA/LDS)

The Long Distance Alerting feature notifies its subscribers that they have an incoming long distance call by means of LDS distinctive call waiting tones. If the subscriber foes not respond to the distinctive call waiting tones within a predefined period of time, the call is routed to the no terminal responding treatment.

On a call to a party with the Long Distance Alerting feature who is currently receiving LDS distinctive waiting tones due to an incoming long distance call, EBCR service is provided to the caller.

Meet-Me Conference

The Meet-Me Conference feature allows conferees to dial a specific DN at a predetermined time to access a bridge and hold the conference.

EBCR service is offered when a caller tries to join a Meet-Me Conference by dialing a specific DN and that DN is busy.

Network Facility Access (NFA)

The Network Facility Access (NFA) feature provides a direct connection between a subscriber line and an intelligent processor (IP) by means of the DMS switch. Through this connection, the subscriber has direct access to services provided by the IP.

The subscriber is provided with access to the IP in two manners: implicit and explicit. With implicit access, the subscriber is directly connected to the IP simply by going off-hook; the subscriber can interact with the IP or revert to regular call processing by dialing as normal. With explicit access, the subscriber dials an NFA explicit access code to connect to the IP; then the subscriber can interact with the IP.

When the IP redirects the caller to a new DN, EBCR service is offered when the new DN is busy.

Spontaneous Call Waiting Identification with Disposition (DSCWID)

The DSCWID feature allows subscribers to receive calling party information during call waiting and provides subscribers with a set of disposition options to treat incoming calls.

On calls to parties that have the DSCWID feature, EBCR service is only offered to the caller if there is already one party waiting on the called party's line.

Toll Diversion (TDV)

The TDV feature diverts originator's toll calls to an attended console, thus preventing the completion of toll calls to a toll operator without the assistance of an attendant.

EBCR service is not invoked after a call attempt is blocked by TDV.

Uniform Call Distribution/Automatic Call Distribution features

Uniform Call Distribution (UCD) allows calls to be evenly distributed to a number of predesignated stations known as UCD stations or UCD positions. This feature is used to queue incoming calls to a message desk.

Automatic Call Distribution (ACD) is a set of MDC features that assigns answering machine priority to incoming calls and then queue and distributes them to a predetermined group of telephone sets designated as answering positions.

EBCR service is not offered on calls to UCD or ACD group unless the call is forwarded to an overflow DN or a Night Service DN that is outside of the UCD/ACD group and the forward-to DN is busy.

If the call is forwarded to an overflow DN or a Night Service DN outside the UCD or ACD group and the forward-to DN is busy, EBCR service detects the busy condition and offer EBCR service. However, when the caller accepts the service, she/he hears a busy tone instead of the ACB confirmation announcement. She/he does not receive the ACB service that was accepted. This is a limitation of EBCR service.

On a call to a UCD or ACD group that is forwarded to an overflow DN or a Night Service DN outside the UCD or ACD group which is busy, EBCR service is offered, as explained above. However, if the user elects to hang up, go off-hook and then dial *66, thereby accessing standard ACB (that is, the Automatic Callback feature) directly, instead of accepting the EBCR offer of service, standard ACB fails. Standard ACB service is not provided and generates a busy treatment instead of the ACB confirmation and offers EBCR service for the second time. If the caller accepts the offer of EBCR service, he/she receives busy tone and does not receive the ACB service she/he was offered and accepted. This is a limitation of standard ACB.

Virtual Facility Group (VFG)

A Virtual Facility Group (VFG) is a software structure that emulates a trunk. For example, a VFG can be used to limit the number of calls originating from a customer group or to simulate a looparound trunk without using physical resources.

If no redirection has occurred before a VFG is encountered, screening for EBCR service is performed after the call has gone through the VFG. When this happens, EBCR service is offered if the screening for EBCR is passed.

Restrictions/Limitations

The following limitations and restrictions apply to EBCR service:

- EBCR service performs screening prior to offering its service to the caller. This screening is performed in order to minimize the chance of Automatic Call Back feature failure after the caller has accepted the EBCR offer of service. Nonetheless, in some cases the Automatic Call Back feature still fails after the caller accepts EBCR service.

- The ACB feature does not support all of the agents that EBCR service supports. When EBCR service is a service candidate for the busy offering, the EBCR screening may reject some agents which have already passed common offering screening. However, it is not within the scope of the ACB feature to expand the range of agents that EBCR supports.

- The '1166' sequence is not supported for in-call EBCR service activation.

- Only one help announcement is available for the busy condition service offer regardless of whether only EBCR service is offered on the busy condition or whether a choice of Access to Messaging or EBCR service is offered.

- Per-call denial and substained deactivation are not available on POTS and PBX lines.

- Call forwarding detection may fail when one or more switches involved in the call path fail to send call forwarding information to the originating switch. When this information is not received by the originating switch, EBCR service is offered on the call even when field CFW in table SDSINFO tuple OFFICE is set to N.

- On inter-switch calls, EBCR service is only available if the inter-switch call is end-to-end ISUP.

- The "#" and "*digits" digits cannot be detected by EBCR service if the originating station is a DP line.

- EBCR service is not available on hotel/motel calls and credit card calls.

- EBCR service is not supported on interoffice busy calls where the busy treatment is not applied by the originating end office.

- Since EBCR service uses UTRs for digit collection, subscriber lines must be hosted by Series 2 peripherals (XPM).

- If a warm or cold restart is performed while an EBCR offer of service announcement is playing, the announcement plays over and over. The caller must hang up and then go off-hook to get dial tone. This announcement behavior is not caused by EBCR service and is not restricted to EBCR service announcements.

- If a call is forwarded more than 5 times, the system provides busy treatment to the caller and EBCR service is offered on the call.

- The acceptance key for EBCR service is not displayed when entered on a KSET line with called number/name display.

- When the R selector in table STDPRTCT.STDPRT or the REPL selector in IBNXLA is used, the dialed digits are replaced by new digits. If these selectors are used on calls where EBCR service is active, EBCR service only performs screening on the new digits. Therefore, in the case of N11 calls, for example, EBCR service may be offered if the N11 digits are replaced by digits that satisfy the screening criteria for EBCR service.

- EBCR service may be offered on a second leg of a 3-way call or on the consultation leg of a station-controlled conference call. While the offer of service announcement or help announcement is playing, the hook flash is ignored. To return to conference mode, the user must first accept the offer of service, reject the offer of service by pressing any key other than the acceptance key, or wait for the offer of service announcement to complete. After service is accepted, rejected, or the offer of service announcement is over, EBCR service is no longer on the call and the user can use the hook flash to return to the first party on the call.

- When a call terminates on a busy line, the user may elect to hag up, go off-hook and then dial *66, thereby activating the Automatic Call Back feature directly. In some cases the Automatic Call Back feature fails and generates a busy treatment. In such cases, EBCR detects the busy condition and offers EBCR service. However, if the user accepts the offer of EBCR service, he/she receives the busy treatment and not the Automatic Call Back service proposed by EBCR. This is a limitation inherited from the Automatic Call Back feature.

LAYER   **LN-LATER**
NA008 PRODUCT

                                                                   APPLICATION
ACTID   **FEATURE TITLE**   CFW
AJ4192   Call Forward Fraud Prevention (CFFP)

Description

Call Forward Fraud Prevention is an NA008 feature developed to help decrease incidents of fraudulent calls, which involve certain types of call forwarding.

The call forwarding types to which CFFP applies are residential programmable call forwarding types, also referred to as RES programmable CFW types, and include:

- Call forward all calls/customer (CFW/C)
- Universal access to call forward (UCFW)
- Call forward busy line (CFBL)
- Call forward don't answer (CFDA)
- Call forward remote access (CFRA)
- Selective call forwarding (SCF)

Call Forward Fraud Prevention Functionality

To help reduce fraud on call forwarding. CFFP functionality allows the operating company to:

- Define dial plans that cannot be assigned as forward-to DNs on an office-wide basis. All or a subset of these dial plans can be overridden on a per-line basis through a new line option called CFFPOVR (Call Forward Fraud Prevention Override).

- Set an upper limit on the number of times a forward-to DN, which has a restricted dial plan that is overridden through line option CFFPOVR, can be changed within a period of time specified by the operating company.

Dial plan restrictions

With the CFFP feature, the operating company can define which dial plans are restricted to end users who want to program forward-to DNs using any one of the RES programmable CFW types. The dial plans that are to be restricted are datafilled in two new tables introduced by the CFFP feature (tables CFFPDPLN and CFFPTYPE), and apply to whole office. Restricted dial plans can be defined for each or for all of the RES programmable CFW types that apply to CFFP.

An override option, CFFPOVR, is available on a per-line basis to allow individual tailoring of the office-wide list of dial plan restrictions. All or some of the restricted dial plans can be overridden through this line option, which is applicable to all of the RES programmable CFW types.

Limit on changing the forward-to directory number

When the CFFPOVR option is assigned to an end user's line, a limit can be set on the number of times a forward-to DN, which has a restricted dial plan specified in the CFFP tables, can be changed. The limit value ranges between 0 and 30 changes within a set period of time, which has a range of 30 through 240 minutes. A limit of 0 indicates that the number of times a forward-to DN can be changed is unlimited.

Existing call forward restrictions

The RES programmable CFW types to which CFFP applies already have some restrictions on the types of DNs that can be programmed as forward-to DNs. There are also existing patches, GLS11, GLS12, and PTF40, that provide the functionality to block programming of international calls for certain types of call forwarding.

When the SOC for CFFP is ON, CFFP takes over the restrictions except for the restrictions that apply when the end user's own number is involved, which are still handled by the different call forwarding types. The CFFP feature also blocks operator-assisted calls that are not currently blocked by the different call forwarding types, such as those not blocked by SCF.

The functionality provided by patches GLS11, GLS12, and PTF40, is included in the CFFP feature, and is available when the SOC for the CFFP feature is ON. Therefore, as of NA008, these patches are no longer available.

The GLS11 patch applies to Plain Ordinary Telephone Service (POTS) agents, while the GLS12 and PTF40 patches apply to RES and Meridian Digital Centrex (MDC) agents, which have an additional type of call forwarding, Call Forward Universal per-Key (CFK). Since there is POTS and MDC agent support, limited support of these agents is also included in the CFFP feature; only IDDD DNs (as with the patches) are automatically blocked for POTS and MDC when the SOC for the CFFP feature is ON.

When the SOC for the CFFP feature is idle, restrictions on IDDD do not apply. For POTS agents, when the call forward programming attempt is blocked, the CFPADENY OM register is pegged in order to comply with the existing POTS call forwarding behavior.

Call Forward Fraud Prevention operation

Call Forward Fraud Prevention is activated through the software optionality control (SOC) utility. Once CFFP is activated, any forward-to DNs programmed by the end user are validated by CFFP following the translation stage in call processing. That is, the translated digits are used to validate the forward-to DN. The request to program the forward-to DN is accepted or rejected as described below.

- If the dial plan of the programmed forward-to DN is restricted, as specified in the CFFP tables, the request to program the forward-to DN is rejected.

- If the dial plan of the programmed forward-to DN is restricted, as specified in the CFFP tables, but is overridden through line option CFFPOVR, the request to program the forward-to DN is accepted.

- If the dial plan is not restricted, that is, not specified in the CFFP tables, the request to program the forward-to DN is accepted.

Each time an attempt to program a forward-to DN is denied because either the dial plan of the DN is restricted, as specified in the CFFP tables, or the limit for changing the forward-to DN is exceeded, the call is routed to the NACK (negative acknowledgment) treatment when the RES programmable CFW type used to program the forward-to DN is CFW/C, UCFW, CFBL, or CFDA. When the RES programmable CFW type used to program the forward-to DN is CFRA or SCF, the call is routed to an announcement.

Note: *The CFFP feature preserves the existing treatment provided by each call forwarding type. Therefore, depending on the type of call forwarding feature used by the end user to program the forward-to DN, either a NACK treatment or announcement is provided to the end user.*

A log report (CFFP600) can be generated when an attempt to program a forward-to DN is denied because the dial plan is restricted, and another log report (CFFP601) can be generated when the limit for changing the forward-to DN is exceeded.

Command Changes

The CFFP feature modifies the following service order commands.

Modified Service Order Commands

The CFFP feature does not introduce any new service order commands; however, it enhances the ADO, CHR, NEW, DEO, and OUT commands to support the CFFPOVR line option.

If universal access is turned off, that is, field RES_AS_POTS for office parameter RES_SO_SIMPLIFICATION is set to Y (yes), a Plain Ordinary Telephone Service (POTS) line becomes a RES line when adding the CFFPOVR option to a line, and reverts to POTS when removing the CFFPOVR option from a line, if it is the last RES option being removed.

Service Order

New Option: CFFPOVR

The CFFP feature introduces the new line option CFFPOVR (Call Forward Fraud Prevention Override). This new line option enables the operating company to override all or a subset of the restricted dial plans specified in the CFFP tables, for all of the RES programmable CFW types on a per-line basis.

The following example shows the CFFPOVR option being added to a line using the SERVORD utility:

```
> servord
SO:
> ado $ 6246112
OPTION:
> cffpovr
DIAL_PLAN_CODE:
> iddd intertol $
LIMIT:OFFICE_DEFAULT
> 15
OPTION:
> $

COMMAND AS ENTERED:
ADO NOW 97 10 1 AM 6246112 (CFFPOVR IDDD INTERTOL $ 15) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
> y
```

New Prompts

New prompts associated with the CFFPOVR line option are: DIAL_PLAN_CODE and LIMIT:OFFICE_DEFAULTS. Every time the operating company modifies the value of LIMIT or DIAL_PLAN_CODE for a particular line, the counter for the number of attempts and the timestamp are reset to 0 for that line. If for any reason the counter needs to be reset for a line, the operating company can either remove the CFFPOVR option from the line and then add it again, or can execute the CHA (change) command on the line without actually changing any of the current datafill for the line.

Error Message

The following CFFP-specific error message for line option CFFPOVR may be generated when attempting to add the CFFPOVR option to a line.

```
SET OF {IDDD, FGB, INTERTOL, INTRATOL, COIN, I500, I700, I800,I900, N11, NPANXX} OR ALL
CFFPOVR can be assigned to hunt lines using only the ADO command
CFFPOVR can only be assigned to single party, MADN, or hunt lines
CFFPOVR can only be assigned to the primary member of a MADN group
CFFPOVR can only be assigned to the pilot DN of an MLH/DLH group
```

Notes

The programmable call forward features (CFW, UCFW, SCF, CFRA, CFDA, CFBL) are engineering requirements since CFFP is invoked when a programmable CFW feature is invoked.

Interactions

Advanced Intelligent Network (AIN)

The Advanced Intelligent Network (AIN) functionality enables end-office call processing to use centralized service logic programs located at the Service Control Point (SCP). These programs determine how AIN calls proceed for further call processing. Queries and responses are exchanged between the DMS SuperNode end office equipped with AIN functionality and the SCP using Common Channel Signaling No 7 (CCS7).

AIN 0.0

Once a call hits an AIN trigger, a query is sent to an off-board processor. The call is suspended until a response is sent back from the off-board processor. The off-board processor can respond with an order to redirect the call to another destination.

The CFFP feature can only screen the digits programmed by the end user. If call redirection occurs, a new call leg is created and the CFFP feature cannot block the new destination digits supplied by the off-board processor. Therefore, if the end user programs a forward-to DN that is defined in the switch as being an AIN 0.0 trigger, subsequent redirections of the call to a restricted DN resulting from this trigger being hit when an actual call is in progress, cannot be blocked by the CFFP feature.

AIN 0.1

The interaction between CFFP and AIN 0.1 is the same as the interaction between CFFP and AIN 0.0.

Call forwarding

The basic functionality of call forwarding is to redirect the calling party to another line.

The CFFP feature is only invoked when an attempt to program a forward-to DN is made using one of the RES programmable CFW types supported by CFFP. That is, CFW/C, UCFW, CFBL, CFDA, CFRA, and SCF.

Call Forwarding Remote Access (CFRA)

The CFRA call forwarding option allows end users to program and activate or deactivate Call Forward Universal (CFU), Call Forward Intragroup (CFI), Call Forwarding Fixed (CFF), or Call Forward All Calls/Customer (CFW/C) from a line other than their own.

When CFFP is active on the switch where the end user is connected, and the end user's line is assigned both CFW/C and CFRA, any programming attempts made remotely through CFRA are validated by CFFP.

Carrier Toll Denied (CTD)

The CTD features enables the operating company to specify a maximum of 21 carriers from which an end user is denied access for direct dialed (DD) and 1+NPA+555 calls.

When the end user is assigned the CTD feature, the forward-to DN cannot be a toll number using a carrier specified in the list, regardless of the overrides defined by the CFFP feature through line option CFFPOVR. Therefore, the restrictions defined by the CTD option take over any restriction overrides defined by the CFFP feature through line option CFFPOVR. If the DN is blocked by CTD, it cannot be overridden by CFFP. However, if the DN is not blocked by CTD, it is subject to CFFP screening.

Equal Access

The Equal Access (EA) software blocks calls where the NXX code, which is treated as a service access code (SAC), is datafilled in field SAC of table EASAC.

This existing restriction takes over any restriction overrides defined by the CFFP feature through line option CFFPOVR, but only when casual dialing (10XXX) is used.

Enhanced Secondary Directory Number (ESDN)

The ESDN option enables the operating company to add a separate set of options to each secondary directory number (SDN) associated with a primary directory number (PDN). This option also allows the end user to originate calls from an SDN.

Programmed forward-to DNs are subject to CFFP screening since CFW/C, CFBL, and CFDA can be assigned to an SDN. The CFFPOVR line option can also be assigned to an SDN, therefore, allows the operating company to override any restricted dial plans defined in the CFFP tables.

Full Carrier Toll Denied (FCTD)

The FCTD option enables the operating company to specify a maximum of 21 carriers from which an end user is allowed access for direct dialed (DD) and 1+NPA+555 calls.

When the end user is assigned the FCTD option, the forward-to DN cannot be a toll number using a carrier that is not specified in the list, regardless of the overrides defined by the CFFP feature through line option CFFPOVR. Therefore, the restrictions defined by the FCTD option take over any restriction overrides defined by the CFFP feature through line option CFFPOVR. If the DN is blocked by FCTD, it cannot be overridden by CFFP. However, if the DN is not blocked by FCTD, it is subject to CFFP screening at which point it can be blocked by CFFP.

Hunt Groups

A hunt group consists of several lines or members in an end user group. When a call terminates on a hunt group, the call passes from one member to another until one member in the group is free to answer the call. The number to access the hunt group is called the pilot DN. Several types of hunt groups exist, including the following:

- Directory Number Hunt (DNH)
- Preferential Hunt (PRH)
- Multiline Hunt (MLH)
- Distributed Line Hunt (DLH)

The CFFPOVR line option can be assigned to any member of a DNH or PRH type of hunt group, however, can only be assigned to the pilot DN of an MLH or DLH type of hunt group.

Multiple Appearance Directory Number (MADN)

The MADN feature allows a single directory number (DN) to be associated with multiple lines. The lines that are assigned this DN are referred to as the MADN group, and the line that corresponds to the DN, is called the primary member. MADN groups can be configured with either a single call arrangement (SCA), a multiple call arrangement (MCA), or an extension bridging (EXB) arrangement.

The CFFPOVR line option can only be assigned to the primary member of a MADN group configured with an EXB arrangement.

Account Code Required (ACR) and Override Call Forward on Account code restrictions (OCFA)

The ACR feature requires that a user enter an access code and account code when originating calls. When an originator programs a DN that requires an account code using a call forwarding type, the programming attempt is blocked.

The OCFA option is a RES line option that overrides the need for account/ authorization codes when forwarding to a number that would otherwise require an account/authorization code.

When the line is not assigned the OCFA option, the DN cannot be programmed. When the line is assigned the OCFA and ACR options, the DN can be programmed, but is subject to CFFP screening.

Speed Calling (SC1, SC2, and SC3)

Speed calling enables the end user to define a speed call code (usually one digit) for a DN. The end user then dials the speed call code rather than the whole DN.

The translated dialed digits resulting from the translation of speed call codes are subject to CFFP screening.

Subscriber Activated Call Blocking (SACB)

The SACB option provides end users with the capability to activate and deactivate call blocking, thereby, restricting or allowing certain types of calls.

A DN can be blocked by SACB, but only after it has been screened by CFFP. If the DN is restricted by both CFFP and SACB, it is blocked by CFFP. A DN that is restricted by SACB cannot be overridden by CFFP through line option CFFPOVR.

Toll Denied (TDN)

The TDN option prevents an end user from originating toll calls.

When the end user's line is assigned the TDN option, the forward-to DN cannot be a toll number regardless of any restriction overrides defined by the CFFP feature through line option CFFPOVR. Therefore, the restrictions defined by the TDN feature take over any restriction overrides defined by CFFP. If the DN is blocked by TDN, it cannot be overridden by CFFP. However, if the DN is not blocked by TDN, it is subject to CFFP screening.

Virtual Facility Group (VFG)

A VFG is a software structure that emulates a trunk. The translation for calls that route through VFGs in first done from the originating line or trunk to the incoming side of the VFG, and then from the outgoing side of the VFG to the terminating line or trunk.

If an end user programs a forward-to DN that subsequently results in the call being routed over a VFG, CFFP cannot screen the new set of digits that arise when the call passes through VFG routing.

Restrictions/Limitations

The following limitations and restrictions apply to CFFP:
- The CFFP feature is limited to the following line class codes (LCC):
    — RES
    — RES/1FR
    — RES/1MR
    — RES/ZMD
    — RES/ZMZPA

- The CFFP feature provides limited support for Plain Ordinary Telephone Service (POTS) agents, therefore, when the last RES option is removed from a RES line, and the line is converted to POTS, CFFP functionality is limited.

- CFFP screening is only performed on DNS that are programmed once the feature has been activated through the Software Optionality Control (SOC) utility. Any forward-to DNs programmed prior to CFFP being activated through SOC, are not subject to CFFP screening.

- The CFFP feature requires that lines terminating to a COIN station, be within the same switch in order to perform screening.

- The number of times the forward-to DN can be changed can reach at most two times the limit specified by the operating company less one, for a particular line.

LAYER   **LN-LATER**
NA008 PRODUCT

                                                                           APPLICATION
ACTID   **FEATURE TITLE**   900FP
AJ4374   900 Fraud Prevention

Description

The 900 Fraud Prevention (900FP) feature prevents local Directory Number (DN) fraud on 900 numbers. This feature allows the prevention of a type of 1-900 fraud, which is perpetrated by directly dialing a client ten-digit DN instead of the 900 number associated with it.

In the Canadian network, the 900 numbers are translated to 800/888 numbers prior to being translated into a real ten-digit DN. Through this feature, the end user is prevented from directly dialing the 800/888 number associated with the 900 number through datafill in the originating office.

Command Changes

NONE

Service Order

The 900FP feature introduces CLNT900 option, a new line option under the existing field OPTLIST in table DNFEAT. When this feature is active, the new SERVORD DN CLNT900 option becomes available. The following customer commands are impacted to support this new line option:

- ADO - Add Option
- CHF - Change Feature
- DEO - Delete Option
- NEW - New Directory Number

The SERVORD utility is modified to support the CLNT900 line option. The AINDN option cannot be assigned in conjunction with the CLNT900 option.

The new CLNT900 option can be assigned against a 900 client DN for the following types of agents:

- 1FR/POTS line converted to RES (RES/1FR)
- 1MR/POTS line converted to RES (RES/1MR), ZMD/POTS line converted to RES (ZMD/RES)
- ZMZPA/POTS line converted to RES (ZMZPA/RES)
- RES
- Analog Business Sets (IBN)
- Key Business Sets (PSET)

- PBX and PBM lines
- INWATS lines
- Hunt groups
- ISDN lines

The CLNT900 option cannot be assigned to virtual DNs such as ACD/UCD virtual DNs and special translation DN used for trunk routing. ACD/UCD must be datafilled in table DNROUTE prior to being assigned the CLNT900 option in table DNFEAT.

The following sample service order shows the steps required to assign the CLNT900 line option to a DN through SERVORD.

```
>servord
SO:
>ado
SONUMBER:     NOW  97  2 27 AM
>8304583
OPTION:
>CLNT900
OPTION:
>$
COMMAND AS ENTERED:
ADO NOW 97 2 22 AM 8304583 (CLNT900) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>y
```

Notes

Although this feature has no specific hardware requirements, it does have software dependencies. The 900FP feature requires full CCS7 network connectivity between SSP and terminating switch; therefore, it is dependent on the following package:

- PEC code: NTX167AB
- NTX Name: SS7 Trunk Signaling Base
- Order Code: SS700001
- Functional Group: TEL00008
- PCL release NA002 and above

Interactions

This feature interacts with the following:

- Advanced Intelligent Network (AIN)
- Anonymous Caller Rejection (ACRJ)
- ACD/UCD
- Coin line originating calls
- Call forwarding
- Denied Termination (DTM)
- Hunt groups

- Screen List Editing (SLE) features
- Series Completion (SCMP)

AIN 0.0, AIN 0.1, AIN 0.2

AIN enhances switch call processing by enabling call processing capabilities to use service logic programs provided by the operating company, placed at the Service Control Point (SCP). The service logic determines how AIN calls proceed for further call processing.

All AIN terminating triggers applicable on the call before the Authorize_Termination Point in Call (PIC #2) have precedence over the 900FP feature.

ACRJ

ACRJ allows subscribers to reject calls from callers who suppress the display of their names or DNs. Instead of reaching the subscriber, anonymous calls are routed to an announcement.

The 900FP feature is activated regardless of the ACRJ option assigned to the terminating party. If a call is not blocked out by 900FP and the ACRJ option is assigned to the 900 client DN station, calls on which callers have blocked the display of their DNs are routed to the ACRJ announcement.

ACD/UCD

The ACD/UCD feature allows calls to be evenly distributed to a number of preassigned stations known as ACD/UCD stations. These features queue incoming calls to a message desk. When calling an ACD or UCD group, the caller hears the treatment provided by the ACD/UCD group, such as audible ringing, music, or an announcement.

The 900FP feature supports ACD/UCD groups. Only the calls which are not blocked by 900FP can terminate on the ACD/UCD DN.

Coin Line Originating Calls

The 900FP feature blocks fraudulent 900 calls that originate from coin lines as long as a full CCS7 connectivity exists between the DMS-200 office and the DMS-100 terminating end office. If the operating company has the appropriate billing system in place for pay-phones and allows origination of 900 calls from coin lines, the 900FP feature performs fraud detection as expected and allows the call to go though, or routes the call to the B900 treatment.

Call Forwarding (CFW, CFF, CFU, CFD, CFDA, CFB, CFBL, CFGD, CFGDA)

The 900FP feature screens all calls terminating on a 900 client DN as a result of a call forward. Furthermore, the 900FP feature screens all calls terminating on a 900 client DN that has call forwarding (CFW) active before the forwarding takes place if granted by the fraud detection. A caller can forward a call a maximum of five times.

For example, call forwarding options may be assigned to a 900 client DN to overflow to another 900 client DN for reasons such as no-answer condition, busy condition, or forward unconditional. A call terminating on a 900 client DN1 that has CFW activated to forward to 900 client DN2 is screened for fraud detection by the 900FP feature before it terminates on the 900 client DN1 and again before it terminates on the 900 client DN2.

If a non-900 client DN has either CFDA or CFBL and is forwarded directly to a 900 client DN, the functionality differs depending on whether the forwarding is intra-switch or inter-switch. For inter-switch forwarding, the call is forwarded, but blocked before terminating at the 900 client DN. For intra-switch forwarding, the call is not forwarded, but continues to ring at the DN that was originally dialed. In either case, a fraudulent call does not terminate.

DTM

The DTM option prevents a line from receiving any calls. Calls attempting to terminate to a line with the DTM option receive denied terminating (DNTR) treatment.

The 900FP feature has precedence over the DTM option. A call screened out by the 900FP feature is routed to the B900 treatment even if the DTM option is assigned to the terminating party.

Hunt Groups (DNH, MLH, DLH, CIR, KSH)

A hunt group allows a terminating call to be offered subsequently to all members of the group for several rings until it is answered.

All hunt group configurations are supported by the 900FP feature. Only the calls which are not blocked by 900FP can terminate on the DN associated with the hunt group.

For a DNH hunt group, each member of the group is assigned a DN and, therefore, can be reached independently from the pilot DN. Consequently, to protect the entire DNH hunt group, the operating company must provision every single member DN with the CLNT900 DN option for proper 900 fraud detection.

SLE features (SCA, SCRJ, SCF, DRCW)

The SLE features provide call screening lists. A set of SLE audio announcements is used for all instructions and prompts. The subscriber selects actions to be performed by entering a one- or two-digit command sequence. Screening lists are made up of validated DNs.

The 900FP feature has precedence over SLE-based features. Only the calls that are not blocked by 900FP can activate the SLE-based features assigned to the 900 client DN.

SCMP

The SCMP feature allows calls to be redirected from a busy DN to another specified DN that is served by the same office. If the DN to which busy calls are redirected is a 900 client DN, the call is not blocked by the 900FP feature. It is the responsibility of the

operating companies to ensure that they do not provision SCMP to forward to 900 client DNs.

Restrictions/Limitations

- Only calls using the 800+ software package are supported by 900FP. E800 calls are not supported.
- The feature cannot distinguish the difference between a 900 call and a call placed directly to the 800/888 number to which the 900 number is translated. The operating company must ensure that these 800/888 numbers cannot be dialed directly.
- It is assumed that the network has full CCS7 connectivity between the SSP and the terminating office.
- The operating company is responsible for datafilling table DNFEAT with the 900 client DNs.
- The CLNT900 option can only be assigned against a 900 client DN for the LCC 1FR/1MR through SERVORD.
- Special translation DNs associated with trunks must be datafilled in table DNROUTE to be supported by the 900FP.
- It is assumed that a separate 900 database provides the OCN in the IAM if the 800 Service Indicator is not set in the type of address field in the GAP parameter.
- Unlike other hunt group types, the DNH hunt group type requires that the CLNT900 DN option is assigned to each DN member to ensure that the entire group is protected from fraudulent calls.
- SERVORD does not support the provisioning of the CLNT900 option to virtual DNs such as UCD/ACD virtual DNs and special translation DNs used for trunk office routing. For these agents, the CLNT900 option must be datafilled in table DNFEAT.
- The ACD/UCD group type requires that CLNT900 option is assigned to the prime DN and each DN member to ensure that the entire group is protected from fraudulent call.

LAYER   **LN-LATER**
NA008 PRODUCT

                                                                         APPLICATION
ACTID   **FEATURE TITLE**   VMS
AQ1596   Remote Message Indicator (RMI)

Description

The RMI feature enhances current residential voice messaging services by offering some of the advantages of Telephone Answering Devices (TAD). RMI allows subscribers to check for the existence of new messages in their Voice Messaging System (VMS) from a remote station. Subscribers call their home stations and receive an indication of whether or not there are any messages in their voice mailboxes based on the number of audible ringback cycles before the call is forwarded to their VMS. Subscribers can thus verify the existence of messages without connecting to the VMS and without incurring long distance charges when applicable.

Command Changes

The Query Directory Number (QDN), Query Line Equipment Number (QLEN), Query Logical Terminal (QLT) and Query Customary Line Information (QCUST) commands are updated to display the new RMI line option through SERVORD.

Service Order

The SERVORD system is enhanced to recognize the new RMI line option. Line option RMI can be assigned to lines with a Line Class Code (LCC) of RES, RES/1FR, RES/1MR, RES/ZMD, RES/ZMZPA, and ISDNKSET.

Notes

Engineering Hardware

The activation/deactivation of RMI can be done by subscribers 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)
- Line Module (LM)
- Remote Line Module (RLM) which operates in conjunction with the Digital Carrier Module - Remote (DCM-R)

Lines terminating on the following remotes (also called Remote Terminals-RT or Remote Carriers-RC) and their associated Subscriber Carrier Module (also called Control Terminal-CT) are also supported:

- DMS-1 Rural RT (RCT) connected to a SCM-100R (also called Subscriber Module Remote - SMR)

- DMS-1 Urban RT (RCU) connected to a SCM-100U (also called Subscriber Module Urban - SMU)

- Remote Fiber Terminal (RFT) connected to a Fiber Central Office Terminal (FCOT), also called a S/DMS Access Node

The RMI feature cannot be activated/deactivated when a Remote Switching Center (RSC), which serves RCCs, or an RLM is in Emergency Stand-Alone (ESA) operation. ESA provides the capability for subscribers terminating off the same peripheral to complete calls when the peripheral loses communication with the host DMS.

Software Package Dependencies

The RMI feature is an enhancement to the Message Waiting Indicator feature and requires CFD/CFDA/CFGDA option assigned to the line in order to function. Therefore, the RMI feature requires the following packages to be present on the End Office:

- NTX806AA, CFDA on RES, BAS00003

- NTX106AA, CFD on Business Set, MDC00007

- NTX119AA, Message Waiting Indicator (MWI),MDC00003

The NTX106AA functionality is optional but required to offer the RMI feature to ISDN line subscribers.

Interactions

Advanced Intelligent Network (AIN0.0, AIN0.1, AIN0.2)

AIN enhances the switch call processing capabilities to use centralized operating company provided service logic programs placed at Service Control Points (SCP). The service logic determines how AIN calls should proceed for further call processing.

All AIN terminating triggers applicable on the call before T_Alertng Point in Call (PIC # 15) have precedence over the RMI feature. This requirements affects the current trigger implementation of AIN as follows:

- AIN 0.0

  — DN Trigger (DNTRIG) trigger has precedence over the RMI feature.

- AIN 0.1

  — Termination Attempt trigger has precedence over the RMI feature.

- AIN 0.2

  — Termination Attempt trigger has precedence over the RMI feature.

Call Forward (CFW)

The Call Forward (CFW) feature enables subscribers to forward calls to defined locations inside and outside the customer group.

Call Forward has precedence over RMI. When CFW is active on a RMI subscriber's line it conflicts with the message indication provided by the feature. RMI subscribers will not receive message indication when they leave the house with CFW activated on their line.

Call Forward Don't Answer (CFDA/CFD)/Call Forward Group Don't Answer (CFGDA)

The Call Forward Don't Answer (CFDA/CFD) feature allows an end user to specify a directory number (DN) to which calls are to be forwarded when the base station (dialed DN) does not answer within a specified time-out period.

The behavior of CFDA/CFD is modified when RMI is active. RMI affects CFDA/CFD as follows:

- When RMI and CFDA/CFD are active, RMI timers have precedence over the CFDA/ /CFD timer. When messages are queued against the subscriber's line, the RMI message timer is used. When there are no messages queued against the subscriber's line, the RMI no-message timer is used.
- When CFDA/CFD is active but RMI is inactive, the CFDA/CFD timer is in effect.
- The activation and deactivation of RMI affects the operation of the CFDA/CFD feature. Activation of RMI sets the state of CFDA/CFD to active if the CFDACNTL field is set to "F" (fixed activation). Deactivation of RMI does not affect CFDA/CFD. The state remains active if it was previously activated or CFDA/CFD becomes inactive if that was the case.
- Activation of CFDA/CFD has no effect on RMI.
- Deactivation of CFDA/CFD does not affect the state of RMI, but the RMI feature is no longer in effect.

Call Forward Busy Line (CFBL/CFB)

The Call Forwarding Busy Line (CFBL/CFB) feature allows subscribers to forward incoming calls from a base station to another station when the base station is busy.

CFBL/CFB has precedence over RMI and conflicts with RMI functionality. When RMI is active and the subscriber's station is busy, CFBL/CFB immediately forwards any incoming calls to the VMS. No indication is provided to the caller about the status of the mailbox.

CFBL/CFB applies to a RMI subscriber who also has CWT only under the following conditions:

- The subscriber has a call on hold due to CWT
- The subscriber is dialing an outgoing call
- The subscriber is the originator of a 3-way call

- The subscriber is involved in a 3-way call where the call's originator is in the same end office as the subscriber

Call Forward of CWT (CFCW)

RMI and CWT are compatible for subscribers who belong to a customer group with the CFCW option. CTW altering tones are allowed and a message waiting indication is provided to the caller when the call is not answered.

Call Waiting (CWT)

The Call Waiting (CWT) feature makes a busy line appear "idle" to the caller's perspective.

CWT has precedence over the RMI feature if the subscriber is not subscribed to a customer group with the Call Forward of Call Waiting (CFCW) option.

Denied Termination (DTM)

A line with Denied Termination (DTM) can originate calls, but it cannot receive any calls. Calls which attempt to terminate to a line with the DTM option receive denied terminating (DNTR) treatment.

The DTM feature has precedence over the RMI feature.

In-Session Activation (ISA)

The In-Session Activation (ISA) feature allows operating companies to offer callers a menu of call completion services when a call encounters a busy or no-answer condition. ISA enables in-session callers to activate a call completion service from DTMF or dial-pulse sets without the need to hang up and remember an activation code.

If a call is intra-office and the RMI subscriber is assigned either CFBL/CFB, CFDA/CFD, or both features, then there is no feature interaction with ISA feature. In this situation the ISA feature does not start.

If a call to a RMI subscriber is inter-office, the ISA feature's activation is dependent on the network conditions obtained – i.e. busy or ring-no-answer (RNA). When the RMI subscriber's line is busy, RMI is not offered and there is no feature interaction between RMI and ISA.

When a RNA network condition is detected, ISA starts after the RNA timer expires. The RNA timer should therefore be set to a time greater than the RMI no message timer in order to prevent ISA from being offered when RMI is activated on the terminating subscriber line.

Note: The ISA RNA timer can be set from 12 to 72 seconds

Long Distance Signal (LDS)/Distinctive Ringing Call Waiting (DRCW)

Long Distance Signal (LDS) and Distinctive Ringing Call Waiting (DRCW) behave in the same fashion as Call Waiting (CWT). These features allow a subscriber with a busy line to accept an incoming call. The main difference between LDS/DRCW and CWT is the tones they provide to the subscriber when there is a call waiting. LDS and DRCW provide distinctive tone instead of a regular CWT tone.

LDS and DRCW have the same interaction with RMI as the CWT feature, thus refer to the sections on RMI interaction with CWT.

Local Number Portability (LNP)

Local Number Portability allows subscribers to change location, service provider, or service while maintaining their directory numbers and access to advanced calling features.

There is no feature interaction between RMI and LNP as long as the set of features on the original line also exists on the line ported to the DN. A ported DN is a DN that is no longer served by the original switch and so requires an AIN SCP database query for routing information.

When the RMI subscriber is part of a hunt group and the hunt group members are subject to line portability processing a limitation does exist. Some hunt specific information is lost due to portability and this loss will cause RMI to start in scenarios in which it was not intended to start. The following call scenarios illustrate instances where RMI starts due to LNP processing performed on hunt groups:

- The pilot member of a DNH hunt group does not have the RMI option, but member A has both the RMI and the CFDA options assigned. Member A is also a ported DN. There is an incoming call to the pilot DN of this DNH hunt group. Because the pilot member is busy, hunting begins, and the call routes to idle member A. RMI should start only when member A is reached directly, but after LNP processing the call terminates on the ported-to DN and it triggers RMI through CFDA.

  — In this scenario, RMI should not have started because member A's DN was not dialed directly.

- The pilot member of a hunt group has the RMI option and is a ported DN. The last member of this hunt group does not have RMI assigned. An incoming call to the last member's DN finds this member busy and circular hunting brings the call to the pilot member. RMI should only start when the pilot DN has been reached directly, but after LNP processing the call terminates on the ported-to DN and triggers RMI through CFGDA.

  — In this scenario, RMI should not have started because the call was not placed by directly dialing the pilot DN.

- The pilot member of a DNH hunt group does not have the RMI option. The last member of this group is assigned RMI and also has a ported DN. An incoming call to the pilot member finds the pilot busy and hunting brings the call to the last member of this DNH group. RMI should only be triggered when the last member's DN is dialed directly, but after LNP processing, the call terminates on the ported-to DN and triggers RMI through CFGDA.
  - In this scenario, RMI should not have started because the call was not placed by directly dialing the last member's DN.

Hunt Groups (DNH, DLH, and MLH)

Hunt Groups involve the association of several stations in a Meridian Digital Centrex (MDC) subscriber group. An incoming call to a busy station in a hunt group searches for an idle line within the group.

There are several different types of Hunt Groups, each with a characteristic hunting pattern:

- Distributed Number Hunt (DNH)
  - DNH determines how a call to a busy line is routed to other lines within the hunt group until an idle line is found. Lines within the hunt group are searched in numeric order of their station numbers, beginning with the dialed directory number (DN), known as the pilot. The hunt pattern is either sequential (stopping at the highest number) or circular (returning to the lowest number after the highest one is reached).

- Distributed Line Hunt (DLH)
  - DLH is a hunting arrangement that consists of lines divided into groups. The hunt is sequential over all groups until a line in an available group is selected.

- Multiline Hunt (MLH)
  - MLH routes each call to a line in a hunt group by trying each line in numerical sequence until the call is answered. All calls start at a single directory number (DN), known as the pilot. No other lines in the hunt group have DNs.

RMI supports DNH, DLH and MLH hunt group types. If a caller reaches the hunt group pilot DN to which RMI, MWT and CFGDA are assigned and active, the RMI feature forwards the call to the CFGDA forward-to-DN after Tmsg seconds when messages are waiting or after Tnomsg when no messages are waiting.

Only the pilot member can activate or deactivate the RMI functionality provided to the hunt group. RMI is available to DNH hunt groups on a per member basis, as long as the member is subscribed to MWT, RMI and CFDA/CFD line options. In this case, the member must be reached directly by dialing the member DN and not reached by hunting mechanism via the pilot DN. In such a configuration, only the individual member can activate/deactivate the RMI feature for the individual's line only.

Only CFD is supported when ISDN line is part of a hunt group.

Multiple Appearance Directory Number (MADN)

The MADN feature allows a single directory number to be associated with a group of subscriber lines. A call that terminates to a MADN group is presented to all members simultaneously.

The RMI option can be assigned to the primary DN of a MADN group that has the type "EXB" (extension bridging). The RMI feature starts as usual.

Screening List Editing (SLE) features (SCA, SCRJ, ACRJ, SCF, DRCW)

The Screening List Editing (SLE) features provide screening lists to subscribers. A set of SLE audio announcements is used for all instructions and prompts. The subscriber enters a one- or two-digit command sequence in order to select actions to be performed. The screening lists are made up of valid directory numbers (DN).

All SLE features (SCA, SCRJ, ACRJ, SCR and DRCW) have precedence over the RMI feature. When a remote caller places a call to a RMI station where a selective feature option is active on the caller's DN, then message waiting indication is no longer provided because the number of audible ringback cycles is no longer controlled by the RMI feature.

Spontaneous Call Waiting Identification (SCWID/Deluxe Spontaneous Call Waiting Identification (DSCWID)

Spontaneous Call Waiting Identification (SCWID) behaves in the same fashion as CWT. Both features allow a subscriber with a busy line to accept an incoming call. SCWID differs from CWT because it delivers calling party information (name or number) and a call waiting tone to the subscriber's set when there is an incoming call.

SCWID interacts with RMI in the same manner as CWT, thus refer to sections on the interaction between RMI and CWT.

DSCID differs from SCWID because it allows the subscriber to dispose an incoming call while busy with another call. For example, the disposition function can force the incoming call to be immediately forwarded to VMS. This disposition would confuse the caller as to the meaning of the indication normally provided by the RMI feature.

Secondary Directory Numbers (SDN, ESDN)

Secondary Directory Number (SDN) and Enhanced Secondary Directory Number provide the subscriber with an additional directory number that can function independently of options assigned to the primary directory number (PDN).

RMI does not interact with SDN since an SDN number cannot subscribe to a messaging service other than the one already provided by to the PDN. In such a case, the SDN must be of type P: follow PDN forwarding options.

Subscriber Programmable CFDA/CFD (SPRNG)

Subscriber Programmable CFDA/CFD (SPRING) allows subscribers to modify the time before an unanswered incoming call is forwarded to the Voice Message System (VMS).

RMI interacts with SPRING as follows:
- SPRING modifies the CFDA/CFD timers.
- RMI timers are not modified by SPRING.
- When RMI is deactivated, the time value previously set by SPRING becomes in effect.
- When RMI is active, SPRING can be used to change the CFDA/CFD timer.
- RMI is deactivated when SPRING is used.

Restrictions/Limitations

The following limitations and restrictions apply to RMI:
- The RMI feature provides only an indication of the Message Waiting Indicator (MWI) message queue against the terminating line called. If the MWI message queue status in the Voice Messaging System (VMS) is out of synchronization with the DMS MWI message queue, then the RMI feature is not informed.
- The total number of audible ringbacks provided to the caller while calling an RMI subscribed stations is equal to the number of audible ringbakcs controlled by the RMI feature plus the number of audible ringbacks provided by the VMS before it answers the call. It is assumed that a guaranteed single audible ringback cycle is provided by the VMS before it answers. Should the VMS take more than one audible ringback cycle to answer, the call will bias the indication provided by the RMI feature.
- The target DMS platform for RMI is DMS-100 or DMS-100/200 BRISC.
- RMI supports only RES lines and ISDNKSET lines
- 1FR, 1MR, ZMD and ZMZPA POTS lines are converted to RES when RMI is assigned.

LAYER   **LN-LATER**

NA008 PRODUCT

APPLICATION

ACTID   **FEATURE TITLE**   CompuCALL

AR2255   CompuCALL Enhancements–Screen-Assisted
Telephone

Description

This feature enhances existing CompuCALL services for CompuCall telephone applications that provide call management functions to Meridian Digital Centrex (MDC) and Residential Enhanced Services (RES) subscribers.

This features delivers
- actual caller name and number in CompuCALL messages in all party-call scenarios
- actual caller name and number if the line subscribes to option ECM and, if necessary, options CND and CNAMD
- calling name for interswitch calls when name delivery is in QUERY mode (QUERY mode occurs when Calling Name is not included in the Call Setup message).

Command Changes

NONE

Service Order

CompuCALL Enhancements–Screen-Assisted Telephony adds option CHKLOPT to the ECM line feature. Option CHKLOPT enables a CompuCALL host application session to receive the calling name and number.

Notes

NONE

Interactions

Teen Service feature

The Teen Service feature allows members of the same household to have separate phone numbers. A primary directory number (DN) and up to six secondary DNs (SDN) can be assigned to a single line. Different ringing patterns identify the number called.

If a call terminates on a Teen Service SDN, then the Call Offered message contains the SDN. Additionally, if the SDN answers the call, the Call Answered message contains the SDN. Also, if the SDN releases the call, the Call Release message contains the SDN.

In three-party call scenarios, the SDN is not delivered.

Three-Way Call Interaction with Teen Service

If a call terminates on a Teen Service SDN that has the Three-Way Calling (3WC) service and then the 3WC controller adds a second leg to the call, the name and number of the primary DN is delivered to that call.

Similarly, the primary DN is delivered to the controller in the Call Answered message.

Call Forward Don't Answer with Teen Service

The name and number of the primary DN is delivered if the following occurs:
- A call terminates on a type P, Teen Service SDN whose primary DN has option CFDA or option CFBL.
- Then, the call is forwarded to another DN that is also ECM associated.

Private Number or Caller

This feature adheres to the Calling Name Delivery Blocking (CNAB) and Calling Number Delivery Blocking (CNDB) standards. For instance, if the originating line has CNAB, then the Call Offered message does not deliver the name. However, the host computer can retain the name.

Call Screen

The Selective Call Rejection (SCRJ) feature allows a subscriber to reject calls arriving from a list of previously identified DNs. If a caller terminates on an associated RES line that is in the caller's SCRJ list, no call event messages are sent to the host concerning the associated RES line.

The Selective Call Acceptance (SCA) feature allows a subscriber to accept calls arriving from a list of previously defined DNs. If a caller terminates on an associated RES line that is not in the caller's SCA list, then no call event messages are sent to the host concerning the associated RES line.

MDC feature interactions

Because this feature does not enhance the ACD call event messages to include the dialable and name fields, the ACD name is not available to send.

For example, if an ACD call terminates to an MDC or RES line, then the name or number of the call is not available. However, if the call is forwarded to or conferences another associated MDC or RES line (party C), then party C receives the name and number of party B.

Three-Way Call chaining scenario

If party A calls party B, and party B conferences party C, who then conferences party D, the following calling name and number delivery occurs:
- Party B receives party A's name and number.

- Party C receives party B's name and number.
- Party D receives party C's name and number.

Suspended Service

Option SUS (Suspended Service) on single line and multiline telephone sets allows all service to be denied on those sets. The subscriber is blocked from originating or receiving any calls. If an MDC or RES line has option SUS, then the host does not receive any call event messages concerning the suspended line.

Interswitch Call Forwarding interactions with CompuCALL messages

The call history information in the Call Offered and Call Answered messages is lost for calls that are forwarded to a different switch, for example, over an SS7/PRI network. These messages will contain only the information pertaining to the call after the forwarding occurred.

Call Forwarding without the call presenting to the forwarding party

Option CFD or CFDA (Call Forward Don't Answer) is the only call forward capability for which CompuCALL call event messages are sent. For all other call forwarding capabilities, the call is forwarded without being offered to the forwarding party so no CompuCALL call event messages are sent to or received by the forwarding party. The CompuCALL call event messages for the forwarded party treat the call as if it came directly from the forwarding party. (No call forwarded information is provided).

Restrictions/Limitations

The following limitations and restrictions apply to CompuCALL Enhancements–Screen-Assisted Telephony:

- All incoming and outgoing call-event messages with their parameters must be subscribed to in table SCAISSRV.
- The dv-Call-Callingname-U message is sent for an incoming call if the Caller Name data is available in the dv-Call-Offered-U message.
- The incoming event messages for functions Call Offered, Call Answered, and CAll Released are not delivered if functions Call Forwarded Intragroup (CFI), Call Forward Universal (CFU), or Call Forward Busy (CFB) are activated on an associated busy line. Conversely, if Call Forward Don't Answer (CFD) is activated on an associated line and a call comes to the line, a Call Offered message is sent and, therefore, the Calling Name message is sent. If the line is not answered and the call is forwarded, a Call Released message is sent.
- Because this feature does not enhance the ACD call event messages to include the dialable number and name fields, the ACD name is not available to send in the MDC or RES call history.

SF-NOW

This section identifies changes and/or additions to Service Features that affect switch Service Order functions and occur immediately upon the new software load insertion. This includes changes or additions to commands and service orders that affect SERVORD activities.

NA008 PRODUCT

LAYER   **SF-NOW**
NA008 PRODUCT

                                                                 APPLICATION
ACTID   **FEATURE TITLE**   SOC
AF6761   SOC Activity for NI000051

Description

The software optionality control (SOC) is the mechanism Nortel (Northern Telecom)
provides to govern the operating company's usage of functionality. Generic configurations
are sent to the operating companies. The setting of the SOC state introduces the
customization of the features.

The ISDN BRI features in the NA008 release are defined in the functional group called
NI000051. SOC Activity for NI000051 controls a large subset of the features in the BRI
Phase II release. The remaining BRI features are addressed on an individual feature basis.
The SOC Activity for NI000051 features include ISDN packet, default service, and the
features for NI-2 terminals.

SOC Activity for NI000051 uses the state controlled variant. The operating company turns
the state ON to activate or turns the state to IDLE to deactivate the features. The NI000051
SOC state is initially IDLE except if SOC is already on a load and there is an office upgrade.
A password is issued by Nortel to the operating company to activate the feature funtionality
from a MAP (maintenance and administration position) terminal. The right to use (RTU)
password is not automatically set if the SOC state is changed to ON during an office upgrade.

Command Changes

NONE

Service Order

The SOC Activity for NI000051 affects an error message which appears when using the SLT
ATT Service Order System (SERVORD) command.

The SLT ATT SERVORD command functions as normal when the NI000051 SOC state is
ON. The command for attaching the terminal to the logical terminal identified (LTID) is
blocked if the NI00051 SOC state is in the IDLE state.The following error message is sent
indicating to turn the state of NI000051 to ON:

```
Terminal cannot be assigned to an ISDN interface.
Option NI000051 must be turned ON.
```

Examples of SLT ATTach service orders

- Example 1: Attaching a NI-2 terminal to an ISDN interface via the SLT ATT command. NI000051_SOC_state = ON

```
>qlt isdn 7
--------------------------------------------------------------
LTID:  ISDN       7
SNPA: 619
DIRECTORY NUMBER:     6755000
LT GROUP NO: 0
LTCLASS:  BRAFS    DEFAULT LOGICAL TERMINAL: N
EKTS: N    CACH: N
CS: NI2 PS: N    TEI: DYNAMIC
VERSION: FUNCTIONAL   ISSUE: 2
CUSTGRP: IBNTST  SUBGRP: 0  NCOS: 0  RING: Y
LINE CLASS CODE: ISDNKSET
MAXKEYS: 64
OPTIONS:
--------------------------------------------------------------

>slt
SONUMBER:     NOW  96 10  2 PM
>
LTID:
>isdn 7
FUNCTION:
>att
LEN:
>srcm 04 1 15 25
OPTION:
>$
COMMAND AS ENTERED:
SLT NOW 96 10 2 PM ISDN 7 ATT SRCM 04 1 15 25 $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>y
```

- Example 2: Attaching a NI-2 terminal to an ISDN interface via the SLT ATT command. NI000051_SOC_state = IDLE

```
>qlt isdn 7
---------------------------------------------------------------
LTID:  ISDN       7
SNPA: 619
DIRECTORY NUMBER:     6755000
LT GROUP NO: 0
LTCLASS:  BRAFS    DEFAULT LOGICAL TERMINAL: N
EKTS: N    CACH: N
CS: NI-2 PS: N    TEI: DYNAMIC
VERSION: FUNCTIONAL   ISSUE: 2
CUSTGRP: IBNTST   SUBGRP: 0   NCOS: 0   RING: Y
LINE CLASS CODE: ISDNKSET
MAXKEYS: 64
OPTIONS:
---------------------------------------------------------------

>slt
SONUMBER:     NOW   96 10   2 PM
>
LTID:
>isdn 7
FUNCTION:
>att
LEN:
>srcm 04 1 15 25
OPTION:
>$
COMMAND AS ENTERED:
SLT NOW 96 10 2 PM ISDN 7 ATT SRCM 04 1 15 25 $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>y
Error: NI-2 terminals cannot be assigned to an ISDN interface.
Option NI000050 must be turned ON.
```

Notes

NONE

Interactions

NONE

Restrictions/Limitations

SOC Activity for NI000051 is dependent on the following SOC options:
- NI000050: NI2 BRI Functional Group
- NI000007: NI0 ISDN BASE
- NI000008: NI0 NI-1 BRI
- NI000010: NI0 NI-1 Packet

LAYER   **SF-NOW**
NA008 PRODUCT

                                                                          APPLICATION
ACTID   FEATURE TITLE   AIN
AF6852   AIN 0.2 SFC Trigger for Service Enablers

Description

A specific feature code (SFC) is an individually subscribed trigger that allows users to dial specific feature codes that are unique for their lines. On dialing the feature code, the new SFC trigger queries the switching control point (SCP) or Adjunct to obtain further routing instructions related to the specific feature. In many respects, the SFC trigger is similar to the public office dialing plan feature (PODPFEAT) code trigger presently offered.

The SFC trigger is an individually subscribed trigger and can be assigned to residential services (RES) and basic rate interface (BRI) agents. To encounter the SFC trigger, the user dials a feature access code (FAC) or vertical service code (VSC) which is datafilled in translations table IBNXLA. On finding the match, the VSC digits and caller's subscription are further screened to ensure all AIN pre-query checks are met. Once all checks are validated, the info_analyzed message is sent to the SCP to determine the service actions for the feature.

The service switching point (SSP) can receive any of four responses from the SCP after sending an SFC-generated info_analyzed message. The responses supported are Analyze_Route, Disconnect, Continue, and Send_To_Resource. SFC creates no specific changes for these responses and their functionality remains the same.

Command Changes

NONE

Service Order

The SERVORD utility is used to assign the AIN options to RES and BRI lines. To add the AIN option, the craftsperson assigns AIN to the line by using the ADO command. When it is a POTS line, it is automatically converted to a RES line when assigning the option. To assign the AIN option to BRI lines, the craftsperson uses the same ADO command. The SERVORD system automatically prompts the user to add the option to the primary and all secondary DNs.

Notes

This feature relies on AIN 0.1 and AIN 0.2 base functionality, SOC control, and provisioning. It is part of the NA008 Service Enablers program and controlled by SOC activity AIN00220.

Interactions

This feature is part of the following group of features:

- AF6852 - AIN 0.2 SFC Trigger for Service Enablers (SHARED)
- AF6762 - AIN 0.2 SFC Trigger for Service Enablers (CNA)
- AF6850 - AIN 0.2 SFC Trigger for Service Enablers (CCM)

Interactions between AIN 0.2 SFC Trigger for Service Enablers and other functionalities are as follows:

- The add option (ADO) and NEW commands in SERVORD convert plain ordinary telephone service (POTS) lines to RES lines.
- The SFC trigger is supported on calls originated by additional functional call (AFC) directory numbers (DN).
- SFC is subscribed on a line basis and customized dialing plan (CDP) is subscribed to on a group basis (the SFC is encountered first in the call). When a CDP trigger that is assigned to a customer group uses the same feature code as the SFC trigger, the SFC trigger takes precedence.
- Normally, the off-hook delay (OHD) trigger cannot be encountered on dialed feature access codes; however, when both the OHD and SFC triggers are subscribed, the OHD trigger has precedence.
- The offer of precedence assumes that the SFC trigger occurs before other triggers such as PODPFEAT. SFC trigger precedence, when applicable to other triggers on the same line subscription level, is determined by the datafill order in table TRIGGRP. When SFC is the first trigger assigned in the table, then it is the first trigger encountered.
- Authorization code features involve the collection of codes prior to completing a call. The codes can be collected before or after having dialed the desired DN.
- Some call forwarding features allows certain feature access code to be programmed as the forwarded-to party, e.g., those datafilled in table IBNXLA with the FTR selector, such as AIN. The features affected are:
  — call forwarding validation (CFWVAL)
    – The validation of the forwarded-to DN can encounter triggers at the Info_Collected, Information_Analyzed, Network_Busy, and Termination_Attempt TDPs. The SFC trigger is encountered on call forwarding validation.
  — call forward programmable (CFWP)
    – When the forwarded-to party is an SFC feature code, the SFC trigger is encountered upon forwarding the call.

- Automatic callback (ACB) allows the subscribers to redial the last station they called and be queued against the station when it is busy. When both stations become idle, the calling station is given special ringing, and upon answering, a call is made to the called station. ACB can be invoked on calls that initially encounter the SFC trigger. The blocking of ACB originated calls depends on other factors: the SCP response message received (for example, Analyze_Route), the contents of the response message (for example, CalledPartyID), and the state of the SOC option advanced intelligent networks (AIN) ACB/AR Premium (order code AIN00018).

- Automatic recall (AR) allows subscribers to recall the last station that called and to be queued against the station when it is busy. When both stations become idle, the calling station is given special ringing and upon answering, a call is made to the called station. AR can be invoked on calls that initially encounter the SFC trigger. The blocking of ACB originated calls depends on other factors: the SCP response message received (for example, Analyze_Route), the contents of the response message (for example CallerPartyID), and the state of the SOC option AIN ACB/AR Premium (order code AIN00018).

- Hotline features are features which originate calls without the caller dialing any digits. The digits are datafilled upon feature subscription. The following features can have an SFC feature access code datafilled as the number to dial (the SFC trigger can be encountered upon feature activation):
  — automatic dialing (AUD) (BRI agents only)
  — automatic line (AUL)
  — warm line (WML)

- Network facility access (NFA) provides a direct connection from a subscriber to an intelligent peripheral (IP) using NFA trunks. The connection can either be through implicit (auto) access or explicit (dialed) access. NFA is used by Speech activated intelligent dialing (SAID) features.

- Speed calling can be separated into two aspects:
  — speed call programming
  — speed call invocation

    Validation is not performed on the destination digits for POTS agents; therefore, a speed call cell can be programmed with an SFC vertical service code (VSC) or feature access code. When a POTS line with a speed call cell programmed to an SFC VSC or feature access code is later converted to RES, invoking that speed call cell results in the feature access code being translated. However, due to a limitation with speed call, the AIN feature is not activated nor is the SFC trigger encountered.

- Three-way calling (3WC) features allow the user (controller) to hookflash during a stable call to establish a new leg of a call, independent of the other legs. 3WC features include:
  — 3WC
  — consultation hold (CH)
  — usage sensitive three-way calling (U3WC)

Establishing a new call leg proceeds just like a new call. The trigger detection points are encountered in both the AIN originating call model (OCM) and terminating call model (TCM), including the InfoAnalyzed TDP. When the SFC trigger is subscribed to, it is encountered once the second leg of a 3WC is established.

Restrictions/Limitations

AIN 0.2 SFC Trigger for Service Enablers supports only RES and BRI line agents.

LAYER   **SF-NOW**
NA008 PRODUCT

                                                                              APPLICATION
ACTID   **FEATURE TITLE**   BRI ISDN
AF6936   SERVORD ISDN Terminal Type Based Feature
                Screening

Description

This feature provides basic rate interface (BRI) integrated digital service network (ISDN)
service order (SERVORD) with call processing (CALLP) feature compatibility screening.
Its purpose is to ensure that a feature and the terminal type to which it is being assigned
during a NEW or ADO SERVORD are compatible.

The ISDN terminal types screened for are national ISDN 1 (NI1), 2B non-initializing (2B-
NIT), 2B fully initializing (2B-FIT), NI2-NIT, NI2-FIT, and ISDN primary rate interface
(PRI).

The compatibility screening provided by this feature prevents:
*   unsupported pre-NA008 features from being assigned to NI2 type terminals
*   NA008 features from being assigned to NI1, 2B-FIT and 2B-NIT type terminals

This feature is executed when a NEW or an ADO SERVORD command is issued for BRI
ISDN line provisioning.

If the compatibility screening fails, the service order is rejected and an error message is
displayed to the user stating that the terminal type and the line option are not compatible.

Command Changes

NONE

Service Order

SERVORD ISDN Terminal Type Based Feature Screening feature affects SERVORD
commands NEW and ADO. Each time a service order is performed using one of these
commands a compatibility check is made between the option or feature entered in the
command and the terminal to which it is being applied. If the screening process detects an
incompatibility between the option or feature entered in the command and the terminal to
which it is being applied, the service order is rejected and an error message is displayed. The
error message states that the feature and the terminal are not compatible.

SERVORD Error Messages

Only one type of expected error message is outputted by this feature. The message includes the feature and the terminal-type. Its syntax is as follows:

```
************************************************************
This Line Option/Terminal-Type combination is NOT supported :
"line option" is the Line Option.
"terminal type" is the Terminal Type.
************************************************************
```

The "line option" is the blocked/rejected feature and is of the format: ex. TRANSFER, AR, ACB, GIC, ... The "terminal type" is one of the following:

- BRA Stimulus Terminal
- BRA MFT Terminal
- NI1 Initializing Terminal
- 2B Initializing Terminal
- 2B Non-Initializing Terminal
- NI2 Initializing Terminal
- NI2 Non-Initializing Terminal

Other "terminal type" types which NEVER should be seen but may occur in the future for some reason are:

- PRA Functional Terminal
- SS7 Functional Terminal

An exact example of a rejected terminal type/line option combinations is :

```
************************************************************
This Feature/Terminal-Type combination is NOT supported :
TRANSFER is the Line Option.
NI1 Initializing Terminal is the Terminal Type.
************************************************************
```

Notes

NONE

Interactions

SERVORD ISDN Terminal Type Based Feature Screening does not have any direct interactions with other features. However, it does have a dependency on feature AF6641 which adds new NI2 terminals.

Restrictions/Limitations

The following limitations and restrictions apply to SERVORD ISDN Terminal Type Based Feature Screening:

- applies only to NA100 software loads

- applies only to BRI ISDN
- applies only to software release NA008 or greater

DMS-100F SERVORD Digest
Release 08.01, November 1997

SF-LATER

This section identifies changes and/or additions to Service Features that affect Service Order functions or results and require activation after the new software load insertion. Some of these changes may require table or office parameter changes to enable SERVORD functions. These changes may be carried out any time after the software application and verification.

NA008 PRODUCT

LAYER   **SF-LATER**
NA008 PRODUCT

                                                        APPLICATION

ACTID   **FEATURE TITLE**   ISDN BRI

AF6619   ISDN BRI Access to CLASS ACB/AR

Description

ISDN BRI Access to CLASS ACB/AR provides ISDN Basic Rate Interface (BRI) subscribers using National ISDN 2 (NI-2) terminals access to the Custom Area Local Signaling Services (CLASS) Automatic Call Back (ACB) and Automatic Recall (AR) features.

The ISDN ACB feature enables a subscriber to place a call to the last station called by the subscriber. The ISDN AR feature enables a subscriber to place a call to the last station that called the subscriber. With ISDN ACB, the last station called by the subscriber can be busy or idle, answered on unanswered. With ISND AR, the last call received by the subscriber can be answered or unanswered. The subscriber need only complete the ISDN ACB or AR activation procedure, and both he busy or idle status and the class of service of the destination line are checked. If the terminating line is idle and the class of service permits, call setup is attempted. If the call cannot be completed immediately because of a busy line, the call is queued, and the call completion is attempted when both stations are idle. As part of the completion attempt, the calling station is given special ringing. When the subscriber answers, the call is set up, and the called station is given regular ringing.

ISDN ACB and AR provide the same functionality as CLASS ACB and AR to subscribers using ISDN terminals. ISDN ACB and AR apply to both voice and data calls, and are supported for the following bearer capabilities datafilled in table BCDEF (Bearer Capability Definition): SPEECH, 3_IKHZ, 64KDATA, and 56KDATA.

Command Changes

See *Service Order* section, Examples 7-10.

Service Order

ISDN BRI Access to CLASS ACB/AR enables the ACB and AR options to be provisioned on ISDN BRI terminals using SERVORD via tables LCCOPT and OPTCTL.

Service order examples

1. Adding ACB toggle feature key to an ISDN terminal using the NEW command.

```
>NEW (CR)
SONUMBER:     NOW  96  7  1 PM
>(CR)
DN:
>6755000 (CR)
LCC:
>ISDNKSET
GROUP:
>IBNTST (CR)
SUBGRP:
>0 (CR)
NCOS:
>0 (CR)
SNPA:
>619 (CR)
KEY:
>1 (CR)
RINGING:
>Y (CR)
LTG:   0
> (CR)
LEN_OR_LTID:
>ISDN 950 (CR)
OPTKEY:
>4 (CR)
OPTION:
> ACB (CR)
BILLING_OPTION: NOAMA
> AMA(CR)
KEYLIST:
>$ (CR)
OPTKEY:
>$ (CR)
COMMAND AS ENTERED:
NEW NOW 96 7 1 PM 6755000  ISDNKSET IBNTST 0 0 619 1 Y NILLATA 0   ISDN 950 ( 4
ACB AMA $)
```

2. Adding ACB option to the DN of an ISDN terminal using the NEW command.

```
>NEW (CR)
SONUMBER:     NOW  96  7  1 PM
>(CR)
DN:
>6755000 (CR)
LCC:
>ISDNKSET
GROUP:
>IBNTST (CR)
SUBGRP:
>0 (CR)
NCOS:
>0 (CR)
SNPA:
>619 (CR)
KEY:
>1 (CR)
RINGING:
>Y (CR)
LTG:   0
> (CR)
LEN_OR_LTID:
>ISDN 950 (CR)
OPTKEY:
>1 (CR)
OPTION:
> ACB (CR)
BILLING_OPTION: NOAMA
> AMA(CR)
KEYLIST:
>$ (CR)
OPTKEY:
>$ (CR)
COMMAND AS ENTERED:
NEW NOW 96 7 1 PM 6755000  ISDNKSET IBNTST 0 0 619 1 Y NILLATA 0   ISDN 950  ( 1
ACB AMA $)
```

3. Adding AR option to the DN of an ISDN terminal using the NEW command.

```
>NEW (CR)
SONUMBER:    NOW  96  7  1 PM
>(CR)
DN:
>6755000 (CR)
LCC:
>ISDNKSET
GROUP:
>IBNTST (CR)
SUBGRP:
>0 (CR)
NCOS:
>0 (CR)
SNPA:
>619 (CR)
KEY:
>1 (CR)
RINGING:
>Y (CR)
LTG:    0
> (CR)
LEN_OR_LTID:
>ISDN 950 (CR)
OPTKEY:
>1 (CR)
OPTION:
> AR (CR)
BILLING_OPTION: NOAMA
> AMA(CR)
KEYLIST:
>$ (CR)
OPTKEY:
>$ (CR)
COMMAND AS ENTERED:
NEW NOW 96 7 1 PM 6755000   ISDNKSET IBNTST 0 0 619 1 Y NILLATA 0   ISDN 950  ( 1
AR AMA $)
```

4. Adding ACB toggle feature key to an ISDN terminal using the ADO command.

```
>ADO (CR)
SONUMBER:    NOW  96  7  1 PM
>(CR)
DN_OR_LEN:
>6755000 (CR)
OPTKEY:
>4 (CR)
OPTION:
> ACB (CR)
BILLING_OPTION: NOAMA
> AMA(CR)
KEYLIST:
>$ (CR)
OPTKEY:
>$ (CR)
COMMAND AS ENTERED:
ADO NOW 96 7 1 PM 6755000 ( 4 ACB AMA $ ) $
```

5. Adding ACB option to the DN of an ISDN terminal using the ADO command.

```
>ADO (CR)
SONUMBER:    NOW  96  7  1 PM
>(CR)
DN_OR_LEN:
>6755000 (CR)
OPTKEY:
>1 (CR)
OPTION:
> ACB (CR)
BILLING_OPTION: NOAMA
> AMA(CR)
KEYLIST:
>$ (CR)
OPTKEY:
>$ (CR)
COMMAND AS ENTERED:
ADO NOW 96 7 1 PM 6755000 ( 1 ACB AMA $ ) $
```

6. Adding AR option to the DN of an ISDN terminal using the ADO command.

```
>ADO (CR)
SONUMBER:    NOW  96  7  1 PM
>(CR)
DN_OR_LEN:
>6755000 (CR)
OPTKEY:
>1 (CR)
OPTION:
> AR (CR)
BILLING_OPTION: NOAMA
> AMA(CR)
KEYLIST:
>$ (CR)
OPTKEY:
>$ (CR)
COMMAND AS ENTERED:
ADO NOW 96 7 1 PM 6755000 ( 1 AR AMA $ ) $
```

7. Querying a LTID with the ACB option provisioned on a feature key

```
>qlt isdn 950
--------------------------------------------------------
LTID:  ISDN     950
SNPA: 613
DIRECTORY NUMBER:    6755000
LT GROUP NO: 0
LTCLASS:  BRAFS    DEFAULT LOGICAL TERMINAL: N
EKTS: N    CACH: N
CS: 2B PS: N    TEI: DYNAMIC
VERSION: FUNCTIONAL   ISSUE: 2
CUSTGRP:          IBNTST  SUBGRP: 0  NCOS: 0  RING: Y
LINE CLASS CODE: ISDNKSET
MAXKEYS: 64
OPTIONS:
SFC
ACB AMA $ VI MCI  CMD BOTH SPRINT

   KEY   DN
   ---      --
    1      DN            6755000
    2      DN            6755001

   KEY     FEATURE
   ---       -------
    4         ACB     AMA $
--------------------------------------------------------
```

8. Querying a LTID with the ACB/AR option provisioned on a DN key

```
>qlt isdn 950
--------------------------------------------------------
LTID:  ISDN     950
SNPA: 613
DIRECTORY NUMBER:    6755000
LT GROUP NO: 0
LTCLASS:  BRAFS     DEFAULT LOGICAL TERMINAL: N
EKTS: N    CACH: N
CS: 2B PS: N    TEI: DYNAMIC
VERSION: FUNCTIONAL   ISSUE: 2
CUSTGRP:          IBNTST  SUBGRP: 0  NCOS: 0  RING: Y
LINE CLASS CODE: ISDNKSET
MAXKEYS: 64
OPTIONS:
SFC
ACB AMA $ AR AMA $ VI MCI  CMD BOTH SPRINT

   KEY   DN
   ---      --
    1      DN            6755000
    2      DN            6755001

   KEY     FEATURE
   ---       -------
    1         ACB     AMA $
    1         AR      AMA $
--------------------------------------------------------
```

9. Querying a DN with the ACB/AR option provisioned.

```
>qdn 6755000
--------------------------------------------------------------------------------
DN:     6755000
TYPE: SINGLE PARTY LINE
SNPA: 613   SIG:  N/A     LNATTIDX: N/A
LTID: ISDN     950
LTCLASS:  BRAFS
LINE CLASS CODE:   ISDNKSET
KEY:  1
CUSTGRP:              IBNTST  SUBGRP: 0  NCOS: 0  RING: Y
OPTIONS:
ACB AMA $ AR AMA $
--------------------------------------------------------------------
```

Notes

NONE

Interactions

ISDN BRI Access to CLASS ACB/AR interacts with the following other functionalities:

- Additional Call Offering
- Anonymous Caller Rejection
- Attendant console
- Automatic Call Distribution
- Caller Identity Delivery on Call Waiting
- Call Forwarding
- Call Forwarding Busy
- Call Forwarding Don't Answer
- Call Forwarding Remote Access
- Calling Identity Delivery and Suppression
- Calling Number Delivery and Calling Number Delivery Blocking
- Call Pickup and Directed Call Pickup
- Call Waiting
- Coin lines
- Customized Code Restriction
- Denied Termination
- Distinctive Ringing/Call Waiting
- Flexible Calling
- Hunt groups
- ISDN Hold
- Make Set Busy and Do Not Disturb
- Multiparty lines

- Multiple Appearance Directory Number
- Private Branch Exchange
- Selective Call Acceptance
- Selective Call Forwarding
- Selective Call Rejection
- Speed Calling
- Teen Service
- Uniform Call Distribution

Restrictions/Limitations

This feature only applies to BELLCORE AMA format records.

The following limitations and restrictions apply to ISDN BRI Access to CLASS ACB/AR:

- ISDN ACB and AR are supported only on NI-2 ISDN terminals.
- ISDN ACB and AR do not support Universal Access.
- ISDN ACB and AR are incompatible with packet-switched data.
- ISDN ACB and AR are incompatible with the following Multiple Appearance Directory Number (MADN) variants: CACH (call appearance call handling), EXB (extension bridging), and MCA (multiple call arrangement). ISDN ACB and AR are compatible with MADN SCA (single call arrangement).
- ISDN ACB and AR cannot be provisioned on the same line with the following options:

  — Automatic Line (AUL)
  — Denied Origination (DOR
  — Denied Termination (DTM)
  — Ring Again (RAG)

- For the following call types, the call memory (ICM or OCM) is not updated with the DN; therefore, ISDN ACB and AR do not apply to these DNs:

  — operator-assisted calls
  — calls directed to an emergency number
  — directory assistance calls
  — 800, 888, or 900 calls

- ISDN ACB and AR do not support Calling Name Delivery (CNAMD). That is, the calling name is not stored in call memory and is not included in the ACB or AR notification. When call setup occurs following a successful ACB or AR request, basic call delivers the name.
- The originating line must be assigned one or both of the ISDN ACB and AR features.
- Both the originating and terminating switches must support the ISDN ACB and AR features.
- A subscriber is allowed up to 30 combined ISDN ACB or AR requests concurrently (not 30 ISDN ACB requests and 30 ISDN AR requests).

- A subscriber cannot query the status of ISDN ACB or AR requests outstanding for individual lines or block the use of a set of CLASS features.
- For interoffice ISDN ACB and AR, CCS7 links must be in operation between the originating and terminating switches:
    - ISUP (CCS7 call setup used to forward the calling number to ISDN AR subscribers)
    - CLASS TCAP (CCS7 application used to scan the status of busy lines)
    - SCCP (CCS7 message routing capability used to route TCAP messages)
- The following restriction applies to the use of ISDN ACB and AR with Automatic Call Distribution (ACD) and Uniform Call Distribution (UCD) groups: in the case where ACB blocking is applied to interoffice calls, the terminating end office (EO) must have ACB blocking enabled.

The following additional limitations and restrictions apply to the ACB/AR Scans Entire Hunt Group feature:

- The entire multiposition hunt (MPH) group for idle members is not scanned.
- Interactions between preferential hunt (PRH) group members and the stop hunt (SHU) option have no significant effect on ISDN ACB or AR scanning to determine an idle DN.
- The LOD (line overflow to DN) and LOR (line overflow to route) options are not considered when determining whether a line is available for termination. If, for example, a hunt group has option LOD and a line with ISDN ACB tries to call back the hunt group when all members are busy, the presence of the LOD option is ignored. If, after the ISDN ACB line has received and answered distinctive ringing, all members of the hunt group go busy, the LOD option is used. It is as if the ISDN ACB line phoned the hunt group directly; therefore, the ISDN ACB line is routed to the DN specified by the LOD option.
- When ISDN ACB or AR involves scanning of hunt groups that contain members with the Anonymous Caller Rejection (ACRJ) feature, ACRJ is not considered in determining an idle DN. Upon call setup to the ISDN ACB or AR DN, incompatibility checks are performed, and the call is denied if the DN is in the ACRJ list.

LAYER   **SF-LATER**
NA008 PRODUCT

                                                                        APPLICATION
ACTID   **FEATURE TITLE**   ISDN
AF6655   ISDN Music on Hold

Description

The ISDN Music on Hold feature provides that when a user subscribed to this feature places a call on hold, the party on hold is connected to an audio (music) source. When the ISDN user retrieves the call, the party on hold is disconnected from the audio source and reconnected to the ISDN user. The customer group must have option KSMOH in table CUSTSTN. The ISDN LTID must have option KSMOH in table KSETINV.

Command Changes

NONE

Service Order

The KSMOH option is assigned to each LTID that has this feature. This option must be added using SERVORD commands to update the tuple in the table KSETINV.

Notes

Although no special engineering hardware is required, each system needs to be engineered to provide a sufficient number of audio sources to support the number of holdees expected to receive KSMOH without impacting system performance.

Alarms

NONE

Interactions

This feature needs the following feature to function properly:
- AF6692, ISDN BRI XPM Software Enhancements.

The following paragraphs describe the interaction between ISDN Music on Hold and other functionalities.
- Music is not connected to conference calls. If an ISDN user has the KSMOH option assigned and is a member of a conference call, going on hold does not broadcast music to the conference bridge. This interaction applies to Flexible Calling, Meet Me, and Preset conferences.

- When an ISDN user who is part of a 2-way connection on a line that has the Additional Call Offering (ACO) feature puts the other party on hold to answer an incoming call, the party on hold is connected to music. If the ISDN user then puts the third party on hold and goes back to the original connection, the third party is connected to music. If the ISDN user then puts both parties on hold to access another DN, both parties on hold are connected to music.
- ISDN Music on Hold does not supply music to group intercom (GIC) or intercom (ICM) calls that are placed on hold.
- ISDN Music on Hold is not applied to calls that are actively connected to 911.

Restrictions/Limitations

The following limitations and restrictions apply to ISDN Music on Hold:
- The ISDN user must have voiceband call type.
- A valid music or announcement source must be available.
- Feature Call Forward Don't Answer (CFD) does not offer music if hold is activated before the call is transferred.
- Music is not offered to terminals using a protocol version control (PVC) value prior to PVC 2.

LAYER   **SF-LATER**
NA008 PRODUCT

                                                                                   APPLICATION
ACTID   **FEATURE TITLE**   ISDN
AF6783   ISDN Packet SERVORD Commands for Single DN

Description

This feature contains the SERVORD changes associated with AF6782, ISDN Packet Single
DN. A description of AF6782 follows.

Feature AF6782 allows the use of the same directory number (DN) for both packet mode
(PMD) and voice interface / circuit mode data (VI/CMD) calls for Fully Initializing
Terminals (FITs) called integrated terminals (ITs).

Feature AF6782 is dependent on ISDN Packet Shared DN feature (AF6777) which provides
the ability to use the same DN for both PMD and VI/CMD calls on separate terminals.

Presently the DMS-100 supports ISDN basic rate interface (BRI) D-channel access to packet
services only from terminals with provisioned static TEIs. Single DN functionality
overcomes this limitation by allowing the provisioning of D-channel packet service to
National ISDN 2 (NI-2) compliant FITs that use dynamic TEIs (DTEIs). The ability to
identify NI-1 and NI-2 circuit mode interface configurations is introduced by feature
AF6641. All currently supported packet switched (PS) and circuit switched (CS) services
continue to be supported on the new configuration.

Provisioning of the ISDN Packet Single DN functionality is incremental to NI-1 SERVORD
provisioning. NI-1 provisioning remains unchanged. Feature AF6782 does not affect packet
services for non-initializing terminals (NITs) with dynamic terminal assignment.

Command Changes

SERVORD command Query logical terminal (QLT) displays logical terminal identifier
(LTID) configuration information for the LTID's primary DN. This includes LTGROUP
number, LTCLASS, and bearer service restrictions. Following the LTID's primary DN
output is a list of all the DNs that appear on the LTID, along with their corresponding key
numbers. Additionally, the display indicates whether the DN is a normal DN or a multiple
appearance directory number (MADN).

The IT supports multiple appearances of the same DN on a different key with different call
types. With feature AF6782 the SERVORD QLT command displays the call type associated
with each DN and its corresponding key. This includes DN/key pairs for the packet call type.
The customer group information is repeated for packet call types. For changes to SERVORD
commands QDN and QGRP, please refer to feature AF6777, ISDN Packet Shared DN in the
SW-NOW section of the *Maintenance Synopsis*.

Service orders

The following SERVORD functionalities are affected by ISDN Packet Single DN:

ISDN BRI Packet Single DN allows the user to define a new IT terminal with the 2BD access privilege. SERVORD command set up logical terminal (SLT) ADD, with CS = NI2 and PS = D, adds 2BD service to an IT. Nailed up B-channel packet (NUPB) calls are blocked on NI-2 terminals; SERVORD command SLT ADD with CS = NI2 and PS = B is rejected. A NUPB terminal can be defined on the same ISDN loop if it was not defined as a NI2 terminal.

With feature AF6782, SERVORD allows provisioning of NI-2 compliant ITs to the following configurations:

- Two keys with different call types appear on the same terminal for the same DN, one key with PMD and the other with VI/CMD.
- Two hunt groups using two EST commands for the same DN appear on the same terminal but on two different KEYS, one for PMD call type and the other for VI/CMD call type.
- Hunt group member DN can also be shared between two keys on the same terminal, one with a packet call type and the other with a circuit call type.
- To remove a DN from service requires the user to specify a KEY so that the DN appearance on that KEY is removed. If the OUT command is issued the first time, only the DN is detached from KEY, but the DN is not put out of service and it is not routed for treatment. Only when the OUT command is issued for the second time is the DN removed from service and routed for treatment.

SERVORD and table control activation of ISDN BRI Single DN Packet configuration features on ITs display error messages if not compliant with the above list.

Notes

ISDN Packet Single DN functions on the DMS-100 packet handler (DMS-PH).

Alarms

NONE

Interactions

The following systems interactions apply to ISDN Packet Single DN:

- Table control supports provisioning of ITs with

  — Access privilege of two B-channel and one D-channel (2BD) service on one DN.

  — DTEIs and usage of a Default DN (DFDN) key for the primary DN instance of PMD service. The Primary DN (PDN) key of the VI/CMD instance is assigned to the first key.

- Call Processing (CALLP) subsystem enhancements to support DN sharing required changes in processing permanent virtual circuit (PVC) and switched virtual circuit (SVC) ISDN calls when accessing DFDNs.
- SERVORD enhancements support access privilege 2BD, DN options DFDN and PMD. SERVORD Query commands include the addition of the integrated terminal (IT) and associated keys.

Restrictions/Limitations

NONE

LAYER   **SF-LATER**
NA008 PRODUCT

                                                                                                             APPLICATION
ACTID   FEATURE TITLE   ISDN
AF6784   ISDN Packet QUERY Commands for Single DN

Description

This feature contains the QUERY command changes associated with AF6782, ISDN Packet Single DN. A description of AF6782 follows.

Feature AF6782 allows the use of the same directory number (DN) for both packet mode (PMD) and voice interface/circuit mode data (VI/CMD) calls for Fully Initializing Terminals (FIT) called integrated terminals (IT). ITs use only one terminal end point identifier (TEI) for all call types. With ISDN Packet Single DN, end users are able to establish PMD and VI/CMD calls independently and simultaneously from or to the same DN. On the IT, the call types are represented as different appearances of the DN on separate keys.

Feature AF6782 is dependent on ISDN Packet Shared DN feature (AF6777) which provides the ability to use the same DN for both PMD and VI/CMD calls on separate terminals.

Presently the DMS-100 supports ISDN basic rate interface (BRI) D-channel access to packet services only from terminals with provisioned static TEIs. Single DN functionality overcomes this limitation by allowing the provisioning of D-channel packet service to National ISDN 2 (NI-2) compliant FITs that use dynamic TEIs (DTEIs). The ability to identify NI-1 and NI-2 circuit mode interface configurations is introduced by feature AF6641. All currently supported packet switched (PS) and circuit switched (CS) services continue to be supported on the new configuration.

Provisioning of the ISDN Packet Single DN functionality is incremental to NI-1 SERVORD provisioning. NI-1 provisioning remains unchanged. Feature AF6782 does not affect packet services for non-initializing terminals (NIT) with dynamic terminal assignment.

Command Changes

SERVORD command Query logical terminal (QLT) displays LTID configuration information for the LTID's primary DN. This includes LTGROUP number, LTCLASS, and bearer service restrictions. Following the LTID's primary DN output is a list of all the DNs that appear on the LTID, along with their corresponding key numbers. Additionally, the display indicates whether the DN is a normal DN or a MADN.

The IT supports multiple appearances of the same DN on a different key with different call types. With feature AF6782 the SERVORD QLT command displays not only what it currently does, but also the call type associated with each DN and its corresponding key. This includes DN/key pairs for the packet call type. The customer group information is repeated for packet call types. For changes to SERVORD commands QDN and QGRP, please refer to feature AF6777 in the *SW-NOW* section of the *Maintenance Synopsis*.

Service Order

The following SERVORD functionalities are affected by ISDN Packet Single DN.

ISDN BRI Packet Single DN allows the user to define a new IT terminal with the 2BD access privilege. SERVORD command set up logical terminal (SLT) ADD, with CS = N12 and PS = D, adds 2BD service to an IT. Nailed up B-channel packet (NUPB) calls are blocked on NI-2 terminals. SERVORD command SLT ADD with CS = N12 and PS = B are rejected. A nailed up B channel packet terminal can be defined on the same ISDN loop if it was not defined as a N12 terminal.

With feature AF6782, SERVORD allows provisioning of NI-2 compliant ITs to the following configurations:

- Two keys with different call types appear on the same terminal for the same DN, one key with PMD and the other with VI/CMD.
- Two hunt groups using two EST commands for the same DN appear on the same terminal but on two different KEYS, one for PMD call type and the other for VI/CMD call type.
- Hunt group member DN is shared between two keys on the same terminal, one with a packet call type and the other with a circuit call type.
- To remove a DN from service requires the user to specify a KEY so that the DN appearance on that KEY is removed. If the OUT command is issued the first time, only the DN is detached from KEY, but the DN is not put out of service and it is not routed for treatment. Only when the OUT command is issued for the second time is the DN removed from service and routed for treatment.

SERVORD and table control activation of ISDN BRI Single DN Packet configuration features on ITs display error messages if not compliant with the above list.

Notes

NONE

Interactions

NONE

Restrictions/Limitations

NONE

LAYER   **SF-LATER**

NA008 PRODUCT

                                                                            APPLICATION

ACTID   **FEATURE TITLE**   CCM

AF6901   ISDN Redirection CFW Service Order/Table Control

Description

This feature contains the CCM software changes associated with feature AF6901, Integrated Services Digital Network (ISDN) Redirection Call Forwarding (CFW) Service Order/Table Control. See AF6622, ISDN Redirection Services CFW, for information on programming, validation, termination, operation, administration, and maintenance.

ISDN Redirection provisions CFW on NI-2 ISDN terminals for Basic Rate Interface (BRI) lines on a per directory number (DN) per call type (CT) basis. This feature creates two options, options CFXDNCT and CFXVAL, which provision CFW on NI-2 terminals through SERVORD. NI-2 ISDN CFW is not compatible with pre-NI-2 CFW for the same terminal.

Command Changes

NONE

Service Order

The following is a sample configuration of option CFXDNCT on an NI-2 ISDN set.
- DN1 includes VIs 1 and 2, PMD 3, and CMD 4.
- DN2 includes VIs 5 and 6, and CMD 7.
- DN3 includes VIs 8 and 9, and PMD 10.
- DN4 includes VIs 11, 12, and 13, and CFU 14 and 15.

FA 14 can be provisioned to offer CFW for CT VI on DNs 1 and 2, with a list of DNs (or DN appearances) that contain all or some of the VI call type DN appearances. If DNs 1 and 2 are selected during provisioning, the keylist stored in table KSETFEAT is Call Reference Busy Limit (CRBL) master keys 1 and 5.

FAs 15 and 16 can be provisioned for either CMD or VI in the same manner. Multiple FAs can be assigned by option CFXDNCT, up to one appearance for each DN/CT pair. FA 15 can be provisioned to offer CFW for CT CMD for DNs 1, 2, 3, and 4. FA 16 can be provisioned to offer CFW for CT VI for DNs 3 and 4.

For NI-2 ISDN CFW functionality, options CFXDNCT and CFXVAL are provisioned by SERVORD. These options operate independently of one another, and do not require one another to function.

Option CFXDNCT

CFW subfeatures are added by option CFXDNCT for NI-2 terminals. SERVORD ensures that supported CFW features are added by option CFXDNCT if at least one appearance of CFXDNCT has been provisioned. For example, if CFU has been provisioned on an NI-2 device by option CFXDNCT, then an ADO of CFB is disallowed. CFB must also be added using CFXDNCT.

The DNs entered as the forwarding DNs are converted to a keylist by SERVORD. The check procedures for the SERVORD transaction look for all the appearances of a DN call type pair on an NI-2 device and create a keylist.

The following CFW subfeatures can be added to a DN/CT appearance by option CFXDNCT:
- Call Forwarding Universal (CFU)
- Call Forwarding Intragroup (CFI)
- Call Forwarding Fixed (CFF)
- Call Forwarding Busy (CFB)
- Call Forwarding Don't Answer (CFD)
- CFB Universal (CBU)
- CFB Internal (CBI)
- CFB External (CBE)
- CFD Universal (CDU)
- CFD Internal (CDI)
- CFD External (CDE)
- Internal/External for CFB (IECFB)
- Internal/External for CFD (IECFD)

These CFW subfeatures are supported if they are provisioned by option CFXDNCT through SERVORD. However, if these features are added to a terminal as options before option CFXDNCT is provisioned, option CFXDNCT cannot be added to the same terminal. These features cannot be added to a terminal as options if option CFXDNCT has already been provisioned. Option CFXDNCT must be used again to add the supported CFW subfeatures.

The following new SERVORD prompts are created with this feature:
- NOTIFY
- CALLTYPE
- CFXTYPE
- DN_OR_KEYLIST

Option CFXVAL

The functionality of terminal option CFXVAL is identical to the pre-NI-2 customer group option CFWVAL provisioned in table CUSTSTN. These options permit routing

and terminating validation of the forwarding DN when the user activates CFW. CFXVAL validates the remote DN as well as the call type. CFXVAL allows validation for each LTID rather than for an entire customer group. New prompt TERMOPTN is created with this feature.

The options are provisioned differently. CFXVAL is a terminal option provisioned in table KSETFEAT by SERVORD. CFWVAL is a customer group option provisioned by SERVORD. CFWVAL is a customer group option provisioned by SERVORD in table CUSTSTN. CFXVAL is added once for each LTID that requires validation.

Option CFXVAL takes precedence over pre-NI-2 customer group option CFWVAL.

SO commands used with CFXVAL

Option CFXVAL is added by the ADO or NEW command. At the OPTKEY prompt, a DN appearance of key 1 (not an FA) must be specified. When a QLT command is done, CFXVAL appears to be assigned as a terminal option. CFXVAL is deleted by the DEO command. This does not delete or negate the pre-NI-2 customer group option CFXVAL, if provisioned. The OPTKEY is always the DN appearance 1. The CHF command can be used to change the feature.

Examples

Using option CFXDNCT to add CFU and CFB to an LTID
- CFU Provisioning

```
>ado
SONUMBER:     NOW  96 10 22 PM
>
DN_OR_LEN
>isdn 2
OPTKEY:
>14
OPTION:
>CFXDNCT
CALLTYPE:
>vi
CFXTYPE:
>CFU
OVRDACR:
>N
NOTIFY
> Y
DN_OR_KEYLIST
>dn
DN
>zzznxxyyyy
DN
>zzznxxyyyy
DN
>$
OPTKEY:
>$
COMMAND AS ENTERED:
ADO NOW 96 10 22 PM HOST 01 0 00 04 ( 14 CFXDNCT VI CFU N Y (zzznxxyyyy) (zzznxxyyyy)
$ ) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>yy
```

- CFB Provisioning

```
>ado
SONUMBER:     NOW  96 10 22 PM
>
DN_OR_LEN
>isdn 2
OPTKEY:
>14
OPTION:
>CFXDNCT
CALLTYPE
>vi
CFXTYPE:
>CFB
CFBCNTL:
>P
DN_OR_KEYLIST
>dn
DN
>zzznxxyyyy
DN
>zzznxxyyyy
DN
>$
OPTKEY:
>$
COMMAND AS ENTERED:
ADO NOW 96 10 22 PM HOST 01 0 00 04 ( 14 CFXDNCT VI CFB P  (zzznxxyyyy) (zzznxxyyyy)
$ ) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>YY
```

Removing Call Forward from an NI-2 ISDN Device

```
>deo
SONUMBER:     NOW  96 12 18 PM
>
DN_OR_LEN:
>isdn 2
OPTKEY:
>14
OPTION:
>cfxdnct
CFXTYPE:
>cfb
OPTKEY:
>$
COMMAND AS ENTERED:
DEO NOW 96 12 18 PM ISDN 2 ( 14 CFB ) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>y
```

Adding the NI-2 CFXVAL Option

- Courtesy Call set to 'Y

```
>ado
SONUMBER:     NOW  96 10 22 PM
>
DN_OR_LEN
>func 1
OPTKEY:
>1
OPTION:
>CFXVAL
TERMOPT
>y
OPTKEY:
>$
COMMAND AS ENTERED:
ADO NOW 96 10 22 PM HOST 01 0 00 04 ( 1 CFXVAL Y  ) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
>yy
```

- Courtesy Call set to 'N'

```
>ado
SONUMBER:     NOW  96 10 22 PM
>
DN_OR_LEN
>func 1
OPTKEY:
>1
OPTION:
>CFXVAL
TERMOPT
>n
OPTKEY:
>$
COMMAND AS ENTERED:
ADO NOW 96 10 22 PM HOST 01 0 00 04 ( 1 CFXVAL N) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>yy
```

Removing CFXVAL from an NI-2 ISDN Device

```
>deo
SONUMBER:     NOW  96 12 18 PM
>
DN_OR_LEN:
>isdn 2
OPTKEY:
>1
OPTION:
>cfxval
OPTKEY:
>$
COMMAND AS ENTERED:
DEO NOW 96 12 18 PM ISDN 2 ( 1 CFXVAL ) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>y
```

Notes

NONE

Interactions

ISDN Redirection (CFW) Service Order/Table Control (option CFXDNCT) is incompatible with the following functionalities:

- Attendant Console (AC) Call Forward Station (CFS)
- Bridged Night Number (BNN)
- Call Forwarding Remote Access (CFRA)
- Call Forward Per Key (CFK)
- Call Forward Busy/Call Forward Don't Answer Per Key Destination
- Call Management of Call Forwarding (CMCF)
- Call Forward for Secondary MADN Member (CFMDN)
- Call Forward Timed for CFB (CFTB)
- Call Forward Timed for CFD (CFTD)
- Circuit Switched Digital Data Service (CSDO/CSDDS)
- Directory Number Hunting (DNH)
- Distributed Line Hunting (DLH)
- Free Number Terminating (FNT)
- Hotel/Motel (HOT)
- Inhibit Ring Reminder (IRR)
- Line Appearance on a Digital Trunk Public Safety Answering Point (LDTPSAP)
- Multiline Hunting (MLH)
- Network Resource Selector (NRS)
- Operator Number Identification (ONI)
- Packet Mode Data (PMD)
- Preferential Hunt (PRH)
- Pre-NI-2 Call Forwarding
- Terminating Billing Option (TBO)
- Terminating Billing Option on Hunt Group (TRMBOPT)

Restrictions/Limitations

The following limitations and restrictions apply to ISDN Redirection CFW Service Order/ Table Control:

- Options CFXDNCT and CFXVAL are exclusive to NI-2 ISDN terminals.
- NI-2 ISDN CFW is not compatible with pre-NI-2 CFW for the same terminal.

- The CFW subfeatures CFU, CFI, CFF, CFB, CFD, CBI, CBU, CDE, CDI, CDU, EICFB, and IECFD are supported only if they are provisioned through option CFXDNCT. If these features are added to a terminal as options before CFXDNCT is provisioned, CFXDNCT cannot be added to the same terminal. These features cannot be added to a terminal as options if CFXDNCT has already been provisioned. CFXDNCT must be used again to add CFW subfeatures.

- CFF is assignable to a DN/CT appearance. CFF cannot be assigned by way of an FA. CFF is activated by dial access only.

- CFK is not supported by option CFXDNCT.

- CFB and CFD control type K are not supported with option CFXDNCT.

- The following terminal options prohibit termination to a CFW remote terminal and case the CFWVAL option to disallow CFW activation: Denied Termination (DTM), Suspend Service (SUS), Plug UP (PLP), Requested Suspension (RSUS), Denied Incoming (DIN), and Denied Call Forwarding (DCF).

- If call type packet-mode data (PMD) shares the same DN as a voice information (VI) or circuit-mode data (CMD) call type, a dollar sign ($) cannot be used to indicate that all DNs of a device are selected in a SERVORD transaction. Each DN appearance must be entered manually for assignment of CFXDNCT on the VI and CMD appearances.

- Option CFXDNCT provisioning for VI and CMD cannot share the same feature activator (FA) key or DN appearance. Each CFW for the VI CT and reside on a separate virtual key. For example, CFW for the VI CT and CFW for the CMD CT cannot both be provisioned on the primary DN (PDN). Only one can be provisioned on the PDN, and the other can be provisioned on an FA that has a keylist containing the PDN. Both can be provisioned on separate FAs that have keylists containing the PDN.

- The number of digits in a DN appearance on a base station is limited to 10 digits, and the number of DNs in a DN list is limited to 4.

- Option CFXVAL is allowed to be provisioned even if a pre-NI-2 CFW feature is provisioned on an NI-2 terminal.

LAYER   **SF-LATER**
NA008 PRODUCT

                                                                     APPLICATION
ACTID   **FEATURE TITLE**   MADN
AF6921   Service Order Simplification for Extension Bridging

Description

Multiple Appearance Directory Number (MADN) Extension Bridging (EXB) is a RES
feature that allows operating company personnel to assign the same directory number and
features to two or more different line equipment numbers (LENs) using only software
commands.

One common use for this feature is broadband loop bridging. As the utilization of integrated
digital loop carriers and broadband facilities has increased, the need and frequency of use for
this feature has also increased significantly.

This feature allows simplification of the Service Order System (SERVORD) capability
associated with the administration of MADN EXB.

Command Changes

NONE

Service Order

This feature simplifies SERVORD provisioning by adding seven SERVORD commands.
These commands change the ability of MADN EXB provisioning from single members to
the group as a whole. The seven commands described in the following paragraphs are:
EXBADD SERVORD, EXBADO, EXBCHG, EXBDELG, EXBDELM, EXBDEO, and
EXBEST.

EXBADD SERVORD command

The EXBADD command performs the following functions:
* This command allows the primary LEN to be changed to an existing secondary LEN
  of the group.
* This command also changes an existing feature for all members of the group.

Following is an example of the EXBADD command:

• Add a secondary LEN to an existing EXB group.

```
>EXBADD(CR)
SONUMBER: NOW 96 1 1 AM
>(CR)
GROUP_DN:
>6218001(CR)

GROUP MEMBER LIST:
                    PRIMARY LEN – HOST 0 1 8 21
                    SECONDARY LENS:
                            HOST 0 1 9 1,

SECONDARY_LEN:
>0 1 9 0(CR)
RING:
>Y(CR)
SECONDARY_LEN:
>$(CR)
COPY_OPTIONS:
>Y(CR)
COMMAND AS ENTERED:
EXBADD NOW 96 1 1 AM 6218001 (HOST 0 1 9 0 Y) $ Y
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
> Y(CR)
MACHINES ARE OUT OF SYNC, SERVICE ORDERS NOT ALLOWED
JOURNAL FILE IS INACTIVE, SERVICE ORDERS NOT ALLOWED
SHOULD ORDER BE DONE ANYWAY? (Y OR N)
> Y(CR)
```

EXBADO command

The EXBADO command adds features and options to the primary and all secondary LENs.

Following is an example of the EXBADO command:

- Add features to the group (primary and all secondaries).

```
>EXBADO(CR)
SONUMBER: NOW  96 1 1 AM
>(CR)
GROUP_DN:
>6218001(CR)

ADD OPTIONS TO :
                  PRIMARY LEN - HOST 0 1 8 21
                  SECONDARY LENS:
                        HOST 0 1 9 0 , HOST 0 1 9 1

OPTION:
>CWT(CR)
OPTION:
>CWR(CR)
OPTION:
>$(CR)
COMMAND AS ENTERED:
EXBADO NOW 96 1 1 AM 6218001 (CWT ) ( CWR ) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y(CR)
MACHINES ARE OUT OF SYNC, SERVICE ORDERS NOT ALLOWED
JOURNAL FILE IS INACTIVE, SERVICE ORDERS NOT ALLOWED
SHOULD ORDER BE DONE ANYWAY? (Y OR N)
>Y(CR)
```

EXBCHG command

The EXBCHG command performs the following functions:

- This command allows the primary LEN to be changed to an existing secondary LEN of the group.
- This command also changes an existing feature for all members of the group.

Following are examples of the EXBCHG command:

- Change a secondary member into a primary member

```
>EXBCHG (CR)
SONUMBER: NOW 96 1 1 AM
>(CR)
GROUP_DN:
>6218001(CR)

GROUP MEMBER LIST:
                    PRIMARY LEN – HOST 0 1 8 21
                    SECONDARY LENS:
                            HOST 0 1 9 0 , HOST 0 1 9 1

CHANGE_TYPE:
>PRIMARY (CR)
NEW_PRIMARY_LEN:
>0 1 9 0 (CR)
CHANGE PRIMARY FROM: HOST 0 1 8 21 TO: HOST 0 1 9 0
COMMAND AS ENTERED:
EXBCHG NOW 96 1 1 AM 6218001 PRIMARY HOST 0 1 9 0
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
> Y(CR)
MACHINES ARE OUT OF SYNC, SERVICE ORDERS NOT ALLOWED
JOURNAL FILE IS INACTIVE, SERVICE ORDERS NOT ALLOWED
SHOULD ORDER BE DONE ANYWAY? (Y OR N)
> Y(CR)
```

- Change an existing feature for all members of the group.

```
>EXBCHG (CR)
SONUMBER: NOW 96 1 1 AM
>(CR)
GROUP_DN:
>6218001(CR)

GROUP MEMBER LIST:
                    PRIMARY LEN – HOST 0 1 8 21
                    SECONDARY LENS:
                            HOST 0 1 9 0 , HOST 0 1 9 1

CHANGE_TYPE:
>OPTION (CR)
OPTION:
>DENY(CR)
DENYOPT:
>DENYCNNB(CR)
DENYOPT:
>$(CR)
OPTION:
>$(CR)
COMMAND AS ENTERED:
EXBCHG NOW 96 1 1 AM 6218001 (DENY ( DENYCNNB ) $ ) $
ENTER Y TO CONFIRM, N TO REJECT OR E TO EDIT
> Y(CR)
MACHINES ARE OUT OF SYNC, SERVICE ORDERS NOT ALLOWED
JOURNAL FILE IS INACTIVE, SERVICE ORDERS NOT ALLOWED
SHOULD ORDER BE DONE ANYWAY? (Y OR N)
> Y(CR)
```

EXBDELG command

The EXBDELG command performs the following functions:

- Allows the user to delete all secondary LENs from the EXB group.
- The OUT_PRIMARY prompt allows the primary LEN to be unassigned and the user to assign the intercept name.

Following are examples of the EXBDELG command:

- Delete all secondary LENs and remove EXB from primary LEN.

```
>EXBDELG(CR)
SONUMBER: NOW 96 1 1 AM
>(CR)
GROUP_DN:
>6218001(CR)

GROUP MEMBER LIST:
                PRIMARY LEN - HOST 0 1 8 21
                SECONDARY LENS:
                        HOST 0 1 9 0 , HOST 0 1 9 1

OUT_PRIMARY:
>N(CR)
COMMAND AS ENTERED:
EXBDELG NOW 96 1 1 AM 6218001 N
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y(CR)
MACHINES ARE OUT OF SYNC, SERVICE ORDERS NOT ALLOWED
JOURNAL FILE IS INACTIVE, SERVICE ORDERS NOT ALLOWED
SHOULD ORDER BE DONE ANYWAY? (Y OR N)
> Y(CR)
```

- Delete the whole group. (All members are deleted; the DN is changed to the intercept specified.

```
>EXBDELG(CR)
SONUMBER: NOW 96 1 1 AM
>(CR)
GROUP_DN:
>6218001(CR)

GROUP MEMBER LIST:
                PRIMARY LEN - HOST 0 1 8 21
                SECONDARY LENS:
                        HOST 0 1 9 0 , HOST 0 1 9 1

OUT_PRIMARY:
>Y(CR)
INTERCEPT_NAME:
BLDN(CR)
COMMAND AS ENTERED:
EXBDELG NOW 96 1 1 AM 6218001 Y BLDN
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y(CR)
MACHINES ARE OUT OF SYNC, SERVICE ORDERS NOT ALLOWED
JOURNAL FILE IS INACTIVE, SERVICE ORDERS NOT ALLOWED
SHOULD ORDER BE DONE ANYWAY? (Y OR N)
> Y(CR)
```

EXBDELM command

The EXBDELM command allows the deletion of one or multiple secondary LENS from the MADN EXB group. The primary LEN cannot be mistakenly deleted with this command.

Following is an example of the EXBDELM command:

- Delete secondary LENs only.

```
EXBDELM(CR)
SONUMBER: NOW 96 1 1 AM
>(CR)
GROUP_DN:
>6218001(CR)

GROUP MEMBER LIST:
                  PRIMARY LEN - HOST 0 1 8 21
                  SECONDARY LENS:
                        HOST 0 1 9 0 , HOST 0 1 9 1

SECONDARY_LEN:
>0 1 9 0 (CR)
SECONDARY_LEN:
>$(CR)
COMMAND AS ENTERED:
EXBDELM NOW 96 1 1 AM 6218001 ( HOST 0 1 9 0) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y(CR)
MACHINES ARE OUT OF SYNC, SERVICE ORDERS NOT ALLOWED
JOURNAL FILE IS INACTIVE, SERVICE ORDERS NOT ALLOWED
SHOULD ORDER BE DONE ANYWAY? (Y OR N)
> Y(CR)
```

EXBDEO command

The EXBDEO command deletes features from the primary and all secondary LENs of the MADN EXB group.

Following is an example of the EXBDEO command:

- Delete features from the group (primary and all secondaries).

```
>EXBDEO(CR)
SONUMBER: NOW  96 1 1 AM
>(CR)
GROUP_DN:
>6218001(CR)

DELETE OPTIONS FROM :
                PRIMARY LEN – HOST 0 1 8 21
                SECONDARY LENS:
                        HOST 0 1 9 0 , HOST 0 1 9 1

OPTION:
>CWR(CR)
OPTION:
>$(CR)
COMMAND AS ENTERED:
EXBDEO NOW 96 1 1 AM 6218001 (CWR ) $
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y(CR)
MACHINES ARE OUT OF SYNC, SERVICE ORDERS NOT ALLOWED
JOURNAL FILE IS INACTIVE, SERVICE ORDERS NOT ALLOWED
SHOULD ORDER BE DONE ANYWAY? (Y OR N)
>Y(CR)
```

EXBEST command

The EXBEST command performs the following functions:

- This command creates a MADN EXB group from an existing POTS DN or LERN.
- This command allows the addition of a maximum of 31 secondary LENs.
- Optionally, this command allows features to be copied from the primary member to all of the secondary members.

Following are examples of the EXBEST command:

- Create a new MADN EXB group using an existing POTS DN and LEN, add secondary members, and copy/add primary LENs features to all secondary LENs.

```
>EXBEST(CR)
SONUMBER: NOW  96 1 1 AM
>(CR)
GROUP_DN:
>6218001(CR)
Primary LEN is HOST  00 1 8 21
SECONDARY_LEN:
>0 1 9 0(CR)
RING:
>Y(CR)
SECONDARY_LEN:
>0 1 9 1(CR)
RING:
>N(CR)
SECONDARY_LEN:
>$(CR)
COPY_OPTIONS:
>Y(CR)
COMMAND AS ENTERED:
EXBEST NOW 96 1 1 AM 6218001 (HOST 0 1 9 0 Y) (HOST 0 1 9 1 N) $ Y
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y(CR)
MACHINES ARE OUT OF SYNC, SERVICE ORDERS NOT ALLOWED
JOURNAL FILE IS INACTIVE, SERVICE ORDERS NOT ALLOWED
SHOULD ORDER BE DONE ANYWAY? (Y OR N)
>Y(CR)
```

- Create the same group as above with a different DN. In this example, the DN given for GROUP_DN is free; therefore, the prompt PRIMARY_LEN is used to specify the existing POT's LEN, which is the group's primary. (The POT's original DN is sent to the treatment specified by the INTERCEPT_NAME prompt.)

```
>EXBEST(CR)
SONUMBER: NOW  96 1 1 AM
>(CR)
GROUP_DN:
>6218001(CR)
PRIMARY_LEN:
>HOST  00 1 8 21
SECONDARY_LEN:
>0 1 9 0(CR)
RING:
>Y(CR)
SECONDARY_LEN:
>0 1 9 1(CR)
RING:
>N(CR)
SECONDARY_LEN:
>$(CR)
COPY_OPTIONS:
>Y(CR)
INTERCEPT_NAME
>BLDN(CR)
COMMAND AS ENTERED:
EXBEST NOW 96 1 1 AM 6218001 HOST 0 1 8 21 (HOST 0 1 9 0 Y) (HOST 0 1 9 1 N) $ Y BLDN
ENTER Y TO CONFIRM,N TO REJECT OR E TO EDIT
>Y(CR)
MACHINES ARE OUT OF SYNC, SERVICE ORDERS NOT ALLOWED
JOURNAL FILE IS INACTIVE, SERVICE ORDERS NOT ALLOWED
SHOULD ORDER BE DONE ANYWAY? (Y OR N)
>Y(CR)
```

Notes

NONE

Interactions

NONE

Restrictions/Limitations

The following limitations and restrictions apply to Service Order Simplification for MADN Extension Bridging:

- This feature datafills lines in the same way as if they were added through existing SERVORD commands. Therefore, any restrictions/limitations imposed by SERVORD are imposed by all of these commands.
- Only POTS (such as 1FR, 1MR, and others) or RES LCCs that are compatible with MADN EXB are allowed.
- For commands EXBEST and EXBADD, the customer group and other line information for the new member, such as the LCC, subgroup, NCOS, SNPA, LATA name, and LTG, are the same as the Primary member.

- Secondary LENs added through commands EXBEST or EXBADD must be Hardware Assigned Software Unassigned (HASU).

- Commands EXBADO, EXBDEO, and EXBCHG do not allow the MDN option to be manipulated and an error message is displayed.

- MADN EXB group size is limited to the maximum MADN group size, currently 32 members.

LAYER   **SF-LATER**

NA008 PRODUCT

                                                                              APPLICATION

ACTID   **FEATURE TITLE**   SDS

AG5139   FAX-Thru Service

Description

The DMS-100 FAX-Thru Service (FTS) feature is a Special Delivery Service (SDS) enhancement. The FTS feature routes an outgoing FAX message to a FAX Messaging Platform (FMP) if the destination FAX machine is busy or does not answer. The FMP generates calls with the stored FAX to the original destination.

FTS is made up of two components:

- End Office (EO) feature that provides busy and no-answer detection and rerouting of the FAX message to the FMP
- FMP that provides the FAX delivery service for the FAX originator

This document describes the DMS-100 FTS feature, and covers the requirements of the DMS originating EO that supports the FTS feature. It does not cover the requirements of the FMP, or the description of the SDS feature.

Command Changes

NONE

Service Order

The service order system (SERVORD) is enhanced to add FTS to subscribing lines. Assigning the FTS option to a POTS line will convert that line to a RES line if the RES_AS_POTS field of office parameter RES_SO_SIMPLIFICATION in table OFCVAR is set to Y.

Example of service order

The following gives an example of a SERVORD session that adds the FTS option to a line.

```
>servord
SO:
>ado
SONUMBER:     NOW  94  7 25 AM
>
DN_OR_LEN:
>6211088
OPTION:
>FTS
OPTION:
>$
```

Notes

8Kbytes of Program and Data store are required for FTS.

Alarms

NONE

Interactions

FTS has the same feature interactions as SDS with the following exceptions:

- The SDS Enhancements feature provides compatibility between the SDS option and the Conference (CNF) feature and the Three-Way Call (3WC) feature. FTS is not compatible with CNF and 3WC even when the SDS Enhancements feature or Selective Call Messaging is active. SDS is allowed on the second leg of a three-way call. FTS is not allowed on the second leg of a three-way call.
- There is no dependency between the SDS and FTS supports line class codes.

Restrictions/Limitations

When SDS is offered to a customer group (using SDS Enhancements), or office-wide (using Selective Call Messaging), and FTS is assigned to a line, FTS takes precedence over SDS.

FTS is not compatible with the following line options:
- Automatic Recall Dialable Directory Number (ARDDN)
- Automatic Line (AUL)
- Automatic Call Back (ACB)
- Automatic Recall (AR)
- Call Hold (CHD)
- Calling Line Identification On Flash (CLF)
- Conference (CNF)
- Call Park (PRK)
- Call Pick-Up (CPU)
- Call Screening Monitoring and Interception (CSMI)
- Call Transfer (CXR)
- Call Waiting Ringback (CWR)
- Call Waiting (CWT)
- Call Waiting Originator (CWO)
- Directed Call Pick-Up with Barge-In (DCBI)
- Directed Call Park (DCPK)
- Distinctive Ringing (DRING)
- Deluxe Spontaneous Call Waiting Identification (DSCWID)
- Distinctive Ringing/Call Waiting (DRCW)

- Executive Busy Override (EBO)
- Essential Line (ELN)
- Executive Message Waiting (EMW)
- Feature Group (FTRGRP)
- Hold (HLD)
- In-Service Activation (ISA)
- Last Number Redial (LNR)
- Message Waiting (MWT)
- Network Facility Access (NFA)
- Residential Call Hold (RCHD)
- Ring Again (RAG)
- Special Delivery Service (SDS)
- Teen Service (Secondary DN (SDN))
- Service Group (SVCGRP)
- Three-Way Call (3WC)

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SERVORD Commands, Changed

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SERVORD Options, Changed

SERVORD Options, New

SERVORD Prompts, Changed

SERVORD Prompts, New

DMS-100F SERVORD Digest
Release 08.01, November 1997

Acronyms

2B1Q. . . . . Two-Binary One-Quaternary
3WC . . . . Three Way Calling

A

AABS . . . . Automatic Alternate Billing System
ABCD . . . . ABCD Bits
ABS. . . . . Authorized Bearer Service
AC. . . . . Attendant Console
ACB . . . . Automatic Call Back
AC15 . . . . Alternating Current NO 15
ACD . . . . Automatic Call Distribution
ACEES . . . . Attendant Console End-to-End Signalling
ACG . . . . Automatic Code Gap
ACO . . . . Additional Call Offering
ACO . . . . Attendant Console Camp-On
ACOU . . . . Additional Call Offering Unrestricted
ACR . . . . Account Code Required
ACRJ. . . . . Anonymous Caller Rejection
ACTS . . . . Automated Coin Toll Service
ADACC. . . . . Automatic Directory Assistance Call Completion
ADD . . . . Add Member to Hunt or CPU Group
ADO . . . . Add Options
AFC. . . . . Additional Functional Call
AIN . . . . Advanced Intelligent Network
AISUP. . . . . Australian ISUP
ALT. . . . . Automatic Line Test
AM . . . . Access Module
AMA. . . . . Automatic Message Accounting
AMADNS . . . . AMA Data Networking System
AN. . . . . Access Node
AND . . . . Abbreviated Number Directory
ANI . . . . Automatic Number Identification
ANM . . . . Answer Message
ANSI. . . . . American National Standards Institute
AOC . . . . Advice of Charge
AQ. . . . . Autoquote
AR. . . . . Analyze Route
AR. . . . . Automatic Recall

ARAN . . . . Automated Room and Authorization Number
ARU . . . . Automated Response Unit
ASDI . . . . Advanced Services Display Interface
ASU . . . . Application Specific Unit
AT . . . . Access Tandem
ATC . . . . Access to Carrier
ATUP . . . . Australian Telephone User Part
AUD . . . . Automatic Dialing
AUL . . . . Automatic Line

B

BAF . . . . BellCore AMA Format
BBG . . . . Basic Business Group
BC . . . . BellCore
BC . . . . Bearer Capability
BCD . . . . Binary Coded Decimal
BCS . . . . Bulk Change Supplement
BCSMON . . . . BCS Monitor
BELLCORE . . . . Bell Communications Research Inc.
BERP . . . . Bit Error Rate Performance
BERT . . . . Bit Error Ratio Test
BI . . . . Blocking Indicator
BITS . . . . Building Integrated Timing Supply
BLV . . . . Busy Line Verify (synonymous for Busy Verify)
BOC . . . . Bell Operating Company
BRA . . . . Basic Rate Access
BRI . . . . Basic Rate Interface
BTUP . . . . British Telephony User Part

C

C7TU . . . . CCS7 Test Utilities
C-SIDE . . . . Side of DMS100 Closer To The Network
CAC . . . . Carrier Access Code
CACH . . . . Call Appearance Call Handling
CAMA . . . . Centralized Automatic Message Accounting
CAR . . . . Call Request
CAS . . . . Channel Associated Signalling
CBSY . . . . C-Side Busy
CC . . . . Central Control Complex
CCDR D&A . . . . Calling Card Denial Reasons Displays and Announcements
CCF . . . . Call Control Function

CCM . . . . 100 Common
CCI . . . . Computer Consoles Inc. (Now Northern Telecom NAS)
CCIS . . . . Common Channel Interoffice Signalling
CCITT . . . . International Telegraph And Telephone Consultive Committee
CCS7 . . . . Common Channel Signalling Number 7
CDM . . . . Configuration Data Management
CDN . . . . Change Directory Number
CDP . . . . Customized Dialing Plan
CDPA . . . . CalleD Party Address
CDPD . . . . Cellular Digital Data Packet
CDR . . . . Call Detail Record(ing)
CENTREX . . . . Central Exchange
CFB . . . . Call Forward Busy
CFBL . . . . Call Forward Busy Line
CFD . . . . Call Forward Don't Answer
CFDA . . . . Call Forward Don't Answer
CFF . . . . Call Forward Fixed
CFFP . . . . Call Forward Fraud Prevention
CFGDA . . . . Call Forward Group Don't Answer
CFRA . . . . Call Forward Remote Access
CFU . . . . Call Forward Universal
CFW . . . . Call Forwarding
CFWP . . . . Call Forward Progrmmable
CFWVAL . . . . Call Forwarding Validation
CGNIE . . . . CallinG Number Information Element
CHF . . . . Change Feature Information
CH . . . . Consultation Hold
CI . . . . Command Interpreter
CIC . . . . Carrier Identification Code
CID . . . . Calling Number Identification
CIDS . . . . Calling Identity Delivery and Suppression
CIF . . . . Controlled Interflow
CIFROUTE . . . . Controlled Interflow Route
CLASS . . . . Custom Local Area Signalling Services
CLF . . . . Calling Line Identity With Flash
CLI . . . . Calling Line Identity
CLIP . . . . Connected Line Identification Presentation
CLLI . . . . Common Language Local Identifier
CLN . . . . Change LEN (Line Equipment Number)
CM . . . . Computing Module
CMC . . . . Central Message Controller

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CMD . . . . Circuit Mode Data
CMS . . . . Call Management Services
CNA . . . . Connection Not Admitted
CNAMD . . . . Calling Name Display
CND . . . . Calling Number Delivery
CND . . . . Calling Number Display
CNIS . . . . Calling Number Identification Services
CNNB . . . . Calling Name and Number Blocking
CNND . . . . Calling Name and Number Delivery
CO . . . . Cut Off Relay on a Line Card
COD . . . . Cut Off on Disconnect
COMPID . . . . Component Identifier
CONG . . . . Congestion
CPE . . . . Customer Premises Equipment
CPM . . . . Common Peripheral Module
CPU . . . . Central Processor Unit
CRR . . . . Call Request Retrieve
CS . . . . Capability Set
CSDI . . . . Calling Card Account Number Service Denial Indicator
C-SIDE . . . . Control Side
CSP06 . . . . Communication Service Platform, Release 06
CT4Q . . . . Call Type for Queuing
CTD . . . . Carrier Toll Denied
CUIF . . . . Control Unit Interface
CW . . . . Call Waiting
CXR . . . . Call Transfer

D

DA . . . . Directory Assistance
DACC . . . . Directory Assistance Call Completion
DAS . . . . Directory Assistance System
DASS2 . . . . Digital Access Signaling System Number 2
DBIC . . . . Data Enhanced Bus Interface Card
DBNN . . . . Delete Bridged Night Number
DC 5 . . . . Direct Current No. 5
DCH . . . . D-Channel Handler
DCME . . . . Digital Circuit Multiplication Equipment
DCPK . . . . Directed Call Park
DDI . . . . Direct Dial Incoming
DDM . . . . Distributed Data Manager
DDN . . . . Dialable Directory Number

DEL. . . . . Delete Member From Hunt or CPU Group
DEO . . . . Delete Options
DFT. . . . . DPNSS Feature Transparency
DID . . . . Data Identifier
DIRP . . . . Device Independent Recording Package
DISA . . . . Direct Inward Systems Access
DLC. . . . . Digital Loop Carrier
DLH . . . . Distributed Line Hunt
DMA . . . . Direct Memory Access
DMO . . . . Data Modification Order
DMS . . . . Digital Multiplex System
DN. . . . . Directory Number
DNH . . . . Directory Number Hunt
DNID. . . . . Dialed Number Identification
DP . . . . Dial Pulse
DPNSS . . . . Digital Private Network Signalling System
DRU . . . . Development Release Unit
DS . . . . Downstream Data Transmission From The Dms
DS1 . . . . Digital Signal Level 1
DS30 . . . . DMS Signaling 30
DTA. . . . . Digital Test Access
DTC. . . . . Digital Trunk Controller
DTC7. . . . . CCS7 DTC
DTMF . . . . Dual Tone Multi-Frequency
DTU . . . . Digital Test Unit
DUAQ . . . . Dial-Up Autoquote

E

E800 . . . . Enhanced 800 Service
E911 . . . . Enhanced 911 Emergency Service
EA . . . . Equal Access
EAEO . . . . Equal Access End Office
EAIT . . . . Equal Access Intermediate Tandem
EAOSS . . . . Exchange Access Operator Services Signalling
EASP. . . . . Equal Access Switching Point
EBAF . . . . Enhanced BellCore AMA Format
EBS . . . . Electronic Business Set
EBCR . . . . Enhanced Busy Call Return
EBO. . . . . Executive Busy Override
ECL. . . . . Effective Code Length
ECR. . . . . Enhanced Cluster Routing

EDCH . . . . Enhanced D-Channel Handler
EDDS . . . . Enhanced Dynamic Data Sync
EDTK . . . . Event Driven Trunk Call Processing
EDTU . . . . Enhanced Digital Test Unit
EIN . . . . European Intelligent Networks
EISP . . . . Enhanced ISDN Signal Pre-Processor
EKTS. . . . . Electronic Key Telephone Service
ENET . . . . Enhanced Network
EO . . . . End Office
EOC. . . . . Embedded Operations Channel
EPS . . . . Enhanced Permanent Signal
ESB . . . . Emergency Service Bureau
ESCO . . . . Emergency Service Central Office
ESDN . . . . Enhanced Secondary Directory Number
ESMA . . . . Expanded Subscriber Carrier Module-100 Access
ESMU . . . . Enhanced Subscriber Carrier Module Urban
ESN. . . . . Emergency Service Number
ESP . . . . Enhanced Service Provider
ESZ . . . . Emergency Service Zone
ET . . . . Exchange Termination
ETAS. . . . . Emergency Technical Assistance Service
ETS . . . . Enhanced Time Switch
ETSI . . . . European Telecommunications Standards Institute

F

FAC . . . . Feature Access Code
FAM . . . . Final Address Message
FC . . . . Flexible Calling
FCI . . . . Furnish Charging Information
FCTD . . . . Full Carrier Toll Denied
FDN. . . . . Forward DN
FGB. . . . . Feature Group B
FGD. . . . . Feature Group D; a type of signalling for trunks
FIE. . . . . Facility Information Element
FNCTS . . . . Functions
FP . . . . Fraud Prevention
FPE . . . . Feature Processing Environment
FS . . . . Functional Signalling Terminal
FSD . . . . Feature Specification Document
FXO. . . . . Foreign Exchange Office
FXS . . . . Foreign Exchange Subscriber

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G

GETS. . . . . Government Emergency Telecommunications Service
GIC . . . . Group Intercom Calls
GOS. . . . . Grade Of Service
GTT. . . . . Global Title Translations

H

HADS . . . . Hotel Administration Data System
HMI. . . . . Human Machine Interface
HOBIC . . . . Hotel Billing Information Center
HOC . . . . Host Operator Centralization
HPC. . . . . High Probability of Completion
HSDA . . . . High Speed Data Access

I

IAC . . . . ISDN Access Controller
IAI. . . . . ISN Auto Imaging
IAM. . . . . Initial Address Message
IBERT . . . . Integrated BERT
IBM. . . . . International Business Machines
IBN . . . . Integrated Business Network
IBN7 . . . . Nortel's Proprietary Version of ANSI ISUP
IBN7-ISUP . . . . ANSI ISUP signalling trunks with proprietary parameters. ANSI ISUP +.
IBNT2 . . . . Integrated Business Network Two-Way
IBNTO . . . . Integrated Business Network Outgoing
IC. . . . . Interlata Carrier
ICB . . . . Integrated Channel Bank
ICI . . . . Incoming Call Identifier
ICTS . . . . Integrity Check Traffic Simulator
IDDD. . . . . International Direct Distance Dialing
IDID . . . . Integrated Direct Inward Dialing
IDLC . . . . Integrated Digital Loop Carrier
IDPL . . . . Identifier Pool
IDT . . . . Integrated Digital Terminal
IEC . . . . Interexchange Carrier
IEM . . . . Integrated Event Manager
IFAM. . . . . Initial and Final Address Message
ILD . . . . ISDN Line Drawer
ILM . . . . Integrated Link Maintenance
IMON . . . . Instrumentation Monitor
IN . . . . Intelligent Networks

INAP . . . . Intelligent Networks Application Part
INM. . . . . Integrated Node Maintenance
INODE . . . . Integrated Node
INSV . . . . In Service
IP . . . . Intelligent Peripheral
IPC . . . . Inter Process Communication Buffer
IPF. . . . . Integrated Processorlf-Bus
IPL. . . . . Initial Program Load
IPML. . . . . Inter-Peripheral Message
ISDD . . . . Incoming Start-to-Dial Delay
ISDN . . . . Integrated Services Digital Network
ISG . . . . ISDN Signalling Group
ISL. . . . . ISUP Signaling Loopback
ISLC . . . . ISDN SRI Line Card
ISLC . . . . Standard lSDN Line Card
ISM . . . . Integrated Service Module
ISN . . . . Intelligent Switch Network
ISP. . . . . ISDN Signalling Preprocessor
ISP. . . . . ISDN Signal Pre-Processor
ISTB . . . . In Service Trouble
ISUP . . . . ISDN User Part
IT. . . . . Integrated Terminal
IT. . . . . Intertoll
ITU . . . . International Telecommunications Union (formerly CCITT)
IVD . . . . Integrated Voice and Data
IXC . . . . Inter-Exchange Carrier

J

JF. . . . . Journal File

K

KSH. . . . . Key Short Hunt

L

LA . . . . Local Agent
LAPB . . . . Link Access Procedure Balanced, X.25 Layer 2
LAPD . . . . Link Access Procedure D Channel, X.25 Layer 2 for ISDN
LATA. . . . . Local Access And Transport Area
LCC. . . . . Line Class Code
LCD. . . . . Line Concentrating Device
LCDCUT. . . . . LCD Cut-over Command Interpreter Program

LCM . . . . Line Concentrating Module
LCME . . . . Enhanced ISDN Line Concentrating Module
LCMI. . . . . ISDN Line Concentrating Module
LDC. . . . . Line Drawer Controller
LDT. . . . . Line Appearance on a Digital Trunk
LEAS. . . . . LATA Equal Access System
LEN. . . . . Line Equipment Number
LGC. . . . . Line Group Controller
LGCI . . . . ISDN Line-Group Controller
LGCO . . . . Offshore Line Group Controller
LGP. . . . . Link General Processor
LIDB . . . . Line Information Database
LIM . . . . Link Interface Module
LIU7 . . . . Link Interface Unit for CCS7
LLM . . . . Logical Link Manager
LMB . . . . Line Maintenance Busy
LMCUT. . . . . Line Maintenance Cut-over Command Interpreter Program
LMS . . . . Local Message Switch
LMSP . . . . LMS Processor
LNINV . . . . Line Inventory Table
LNR. . . . . Last Number Redial
LOD . . . . Line Overflow DN
LOGUTIL . . . . Log Utility
LPIC . . . . Primary Intra-LATA Carrier
LPP . . . . Link Peripheral Processor
LRB. . . . . Loop Reverse Battery
LSG. . . . . Line Subgroup
LTC . . . . Line Trunk Controller
LTCI . . . . ISDN Line-Trunk Controller
LTG . . . . Line Treatment Group
LTID . . . . Logical Terminal Identifier
LTP . . . . Line Test Position

M

MADN . . . . Multiple Appearance Directory Number
MAP . . . . Maintenance and Administration Position
MAPCI . . . . Maintenance and Administration Position Command Interpreter
MBG . . . . Multi-Switch Business Group
MBS . . . . Meridian Business Set
MCA . . . . Multiple Call Arrangement
MCCS . . . . Mechanized Calling Card Service

MCH . . . . Malicious Call Hold
MDC . . . . Meridian Digital Centrex
MDS . . . . Message Delivery System
MEC . . . . Meridian Digital Centrex
MEL . . . . Match Enable Latch
MDR . . . . Message Detail Recording
MDR7 . . . . CCS7 MDR
MF. . . . . Multi-Frequency
MFC . . . . Multi-Frequency Compelled
MLH . . . . Multiline Hunt
MMI . . . . Man Machine Interface
MNA7 . . . . Multiple CCS7 Network Address
MP. . . . . Multi Purpose
MPC . . . . Multi Protocol Converter
MPDT . . . . Message Protocol and Downloadable Tones
MPH . . . . Multiposition Hunt
MPX . . . . Type of Operator Position
MRU . . . . Module Recording Unit
MS. . . . . Message Switch
MSB . . . . Make Set Busy
MSB7 . . . . Message Switch And Buffer for CCS7
MSN . . . . Multiple Subscriber Number
MSU . . . . Message Signal Units
MTA . . . . Metallic Test Access
MTCARB . . . . Maintenance Arbitrator
MTM. . . . . Maintenance Trunk Module
MTM. . . . . Matcher Transient Mismatch
MTP . . . . Message Transfer Part
MTS . . . . Message Telecommunications Service
MVI. . . . . Multi-Vendor Interface

N

NACD . . . . Networked ACD
NANP . . . . North American Numbering Plan
NAS. . . . . Network Administration Services
NBEC . . . . Non-BOC Exchange Carrier
NDC . . . . No Double Connect
NE . . . . Network Element
NFA. . . . . Network Facility Access
NI-1 . . . . National ISDN - 1
NI-2. . . . . National ISDN - 2

NIS . . . . Nortel Interface Specification
NIU . . . . Network Interface Unit
NOTIS. . . . . Notification Information System TTY
NPA. . . . . Numbering Plan Area
NPD. . . . . Numbering Plan Digit
NSN. . . . . National Significant Number
NT . . . . Northern Telecom
NXX . . . . Central Office Code

O

OAM . . . . Operations, Administration, And Maintenance
OAMP. . . . . Operations, Administration, And Maintenance Processor
OC. . . . . Operator Centralization
OCFA . . . . Override Call Forward on Account
OCM . . . . Outgoing Call Memory
OCM . . . . Originating Call Model
OGT . . . . Out Going Trunk
OHBT . . . . Off-Hook Bal-Net (Balanced Network) Test
OHD . . . . Off-Hook Delay
OLI . . . . Originating Line Identity
OLNS . . . . Originating Line Number Screening
OM . . . . Operational Measurements
OMP . . . . Outbound Modem Pooling
OMRS . . . . Operational Measurement Reporting System
ONA . . . . Open Network Architecture
ONP. . . . . One Night Process
OOS . . . . Out Of Service
OPP . . . . Open Position Protocol
OSI . . . . Open System Interconnection
OSS . . . . Operator Services System

P

PARS. . . . . Personal Audio Response System
PB . . . . Provisioned B Channel
PBUS. . . . . Process Bus Terminator Card
PBX. . . . . Private Branch Exchange
PC . . . . Phase Comparator
PCM . . . . Pulse Code Modulation
PD . . . . Problem Data
PDTC . . . . PCM30 Digital Trunk Controller
PE . . . . Processing Element

PEC . . . . Product Engineering Code
PH . . . . Packet Handler
PI. . . . . Peripheral Interface
PI. . . . . Presentation Indicator
PICS . . . . Protocol Implementation Conformance Statement
PIN . . . . Personal Identification Number
PKT. . . . . Packet
PLL . . . . Phase Loop Lock
PM. . . . . Peripheral Module
PMD . . . . Packet Mode Data
PMOVLD . . . . Peripheral Module Overload OM Group
PODP . . . . Public Office Dialing Plan
PODPFEAT. . . . . Public Office Dialing Plan Feature
PORGDENY. . . . . . . Peripheral Origination Deny OM Field
POTS. . . . . Plain Old Telephone Service
PPXL. . . . . Pre-Patched XPM Loads
PRA. . . . . Primary Rate Access
PRH. . . . . Preferential Hunt
PRI . . . . Primary Rate Interface
PRK. . . . . Call Park
PRL . . . . Peripheral Remote Loader
PRSM . . . . Post Release Software Manager
PRU. . . . . Primary Recording Unit
PS . . . . Program Store
PSAP. . . . . Public Service Answering Point
PSDI . . . . Personal Identification Number Service Denial Indicator
PSTN . . . . Public Service Telephone Network
PSTN. . . . . Public Switched Telephone Network
PTS . . . . Per Trunk Signalling Task
PVC. . . . . Protocol Version Control
PVC. . . . . Permanent Virtual Circuit
PVN. . . . . Private Virtual Network

Q

Q.92I . . . . Layer 2 Data Link Protocol
QCM . . . . Query Call Memory
QDN . . . . Query Directory Number

R

R2 . . . . International Trunks Signalling Method
RAG . . . . Ring Again

RAM . . . . Random Access Memory
RAO . . . . Revenue Accounting Office
RBS. . . . . Robbed Bit Signaling
RCC . . . . Remote Cluster Controller
RCF. . . . . Remote Call Forwarding
RCFEA . . . . Remote Call Forwarding Equal Access
RCO2 . . . . Offshore Remote Cluster Controller
RCS. . . . . Remote Carrier SLC-96
RCU . . . . Remote Carrier Urban
RDT. . . . . Remote Digital Terminal
REL. . . . . Release
RES . . . . Residential Enhanced Service (Custom Options)
RES . . . . Restore
REX. . . . . Routine Exercise
RMI. . . . . Remote Message Indicator
RMM. . . . . Resource Maintenance Manager
RN . . . . Redirecting Number
RNAM. . . . . Redirecting Name Delivery
RND . . . . Redirecting Number Delivery
RNIE . . . . RN Information Element
ROC . . . . Remote Operator Centralization
ROH . . . . Receiver Off Hook
RONI. . . . . Remote Operator Number Identification
RSA. . . . . Registered Site Access
RT . . . . Remote Terminal
RTRS. . . . . Real-Time Rating System
RTS . . . . Return To Service
RWOK. . . . . Read/Write OK

S

SA . . . . Stand Alone
SAC. . . . . Service Access Code
SACB . . . . Subscriber Activated Call Blocking
SAID . . . . Speech Activated Intelligent Dialing
SAPI . . . . Service Access Point Identifier
SC . . . . Speed Call
SCA. . . . . Single Call Arrangement
SCAI . . . . Switch-to-Computer Application Interface
SCCP. . . . . Signalling Connection Control Part
SCF . . . . Selective Call Forwarding
SCM . . . . Selective Call Messaging

SCM . . . . Subscriber Carrier Module
SCP . . . . Service Control Point
SDM . . . . Service Data Manager
SDN. . . . . Secondary Directory Number
SEAC . . . . Signalling Engineering And Administration Center
SEAS. . . . . Signalling Engineering And Administration System
SEN. . . . . Subscriber Engaged
SERVORD . . . . Service Order System
SFC . . . . Specific Feature Code
SHI . . . . Secondary HSDA Interface
SHR. . . . . Shared
SHU. . . . . Stop Hunt
SIGP . . . . Signalling Processor
SLC . . . . Subscriber Loop Carrier
SLE . . . . Selective Listing Editing
SLM . . . . System Load Module
SLS . . . . Signaling Link Selection
SLT . . . . Setup Logical Terminal
SMA . . . . Subscriber Carrier Module Access
SMDI. . . . . Simplified Message Desk Interface
SMDR . . . . Station Message Detail Recording
SMS . . . . Subscriber Carrier Module SLC-96
SMSR . . . . SMS Remote
SMU . . . . Subscriber Carrier Module - Urban
SNPA. . . . . Serving Numbering Plan Area
SOC. . . . . Software Optionality Control
SOOO . . . . Subscriber Out Of Order
SOR. . . . . Station Origination Restrictions
SORC . . . . Station Origination Restrictions Controller
SOS . . . . Software Operating System
SP . . . . Single-Purpose (TOPS Position)
SP . . . . Signalling Processor
SPC . . . . Service Profile Configuration
SPMS . . . . Switch Performance Monitoring System
SPOAMI . . . . Single Point OA&M for ISDN Node
SRDB . . . . Selective Routing Database
SRF . . . . Specialized Resource Function
SRT . . . . Station Ringer Test
SRU. . . . . Shared Resource Unit
SS7 . . . . Signalling System #7
SSF . . . . Service Switching Function

SSMAN. . . . . Silent Switchman Test
SSN . . . . Subsystem Number
SSP . . . . Service Switching Point
STP . . . . Signal Transfer Point
STR . . . . Subscriber Transferred
SUS . . . . Suspend Service
SUSP. . . . . Subscriber Usage Sensitive Pricing
SVC. . . . . Switched Virtual Circuit
SWACT . . . . Switch Of Activity
SWERR. . . . . Software Error

T

TA . . . . Toll and Assistance
TABS. . . . . Talking Alternate Billing System
TAMI. . . . . TPC Administration And Maintenance Interface
TBAC . . . . Transaction Bus Access Card
TBCT . . . . Two B-Channel Transfer
TBI . . . . Toll Break-In
TCAP . . . . Transaction Capabilities Application Part
TCAPAPPL. . . . . . . TCAP Application
TCAPTRID. . . . . TCAP Transaction ID Manager
TCM . . . . Terminating Call Model
TCON . . . . Terminal Congestion
TDM . . . . Time Division Multiplex
TDN . . . . Toll Denied
TDP3 . . . . Trigger Detection Point 3
TEl. . . . . Terminal Endpoint Identifier
TELCO . . . . Telephone Company
TFC . . . . Transfer Controlled Message
TFP . . . . Transfer Prohibited Message
THL. . . . . Trans Hybrid Loss
TICS . . . . TOPS InterLATA Carrier Service
TID . . . . Terminal Identifier
TIF. . . . . Terminal Interface
Time T. . . . . The time at which expanded international numbers will begin to be used
                          in the network (defined in ITU recommendation E.165 to be
                          December 31, 1996, at 23:59 Coordinated Universal Time).
TL . . . . Telecom Layer
TLI . . . . Terminating Line Identity
TMC . . . . Timeslot Management Channel
TMS . . . . TOPS Message Switch

TOE. . . . . Trunk Offer End
TOPS. . . . . Traffic Operator Position System
TOS . . . . Trunk Offer Start
TPC . . . . TOPS Position Controller
TPT . . . . Terminal Processing Task
TRAVER . . . . Translation and Routing Verification
TRID . . . . Transaction ID
TVSN . . . . TOPS Voice Service Node
TTT . . . . Trunk Transmission Test
TTU . . . . Trunk Test Unit
TTY . . . . Teletype Device
TWC . . . . Three Way Calling

U

U3WC . . . . Usage-sensitive Three Way Calling
UA . . . . Universal Access
UART . . . . Universal Asynchronous Receiver Transmitter
UCD . . . . Uniform Call Distribution
UCFW . . . . Universal Access to Call Forward
UDLC . . . . Universal Digital Loop Carrier
UDT . . . . Unidata
UDTS . . . . Unidata Service
UP . . . . Unified Processor
UP . . . . User Part
UPU . . . . User Part Unavailable
US . . . . Upstream Data Transmission From The Subscriber Toward The DMS

V

VCXO . . . . Voltage Controlled Oscillator
VFG . . . . Virtual Facility Group
VI . . . . Voice Interface
VLL . . . . Virtual Leased Line
VMS . . . . Voice Messaging System
VPN . . . . Virtual Private Network
VQ . . . . Voicequote TTY
VSC . . . . Vertical Service Code
VSN . . . . Voice Service Node

W

WATS . . . . Wide Area Telecommunications Service
WCM . . . . Write Call Memory

WLC . . . . World Line Card
WML. . . . . Warm Line

X

X.25. . . . . CCITT Defined Network Layer protocol that is used in packet switching
to establish, maintain, and terminate virtual circuit connections
between a terminal and a destination in the network.
X0510 . . . . AMA Base Structure Used in the UK Market
XBAR . . . . Crossbar Switch
XPM . . . . Extended Multiprocessor System Peripheral Module
XPM PLUS . . . . Extended Peripheral Module Product Life Upgrade Strategy
XPMOVLD. . . . . XPM Overload OM Group
XRATE . . . . External Rate Tool

Z

ZROM . . . . Zero Minus

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QDN & QLEN Display Reference

This section contains examples of QDN and QLEN display examples for all line types available in the DMS.

Example of **QDN** display for **1FR..POTS** station

```
DN:        7323001
TYPE:   SINGLE PARTY LINE
SNPA:  305    SIG: DT    LNATTIDX:  250
LINE EQUIPMENT NUMBER:      RSC0 00 0 02 31
LINE CLASS CODE:       1FR
LINE TREATMENT GROUP:      0
CARDCODE:  6X17AC    GND:  N   PADGRP: STDLN   BNV: NL   MNO: N
PM NODE NUMBER     :     516
PM TERMINAL NUMBER :     96
OPTIONS:
3WC DGT
```

Example of **QLEN** display for **1FR..POTS** station

```
LEN:       RSC0 00 0 02 31
TYPE:   SINGLE PARTY LINE
SNPA:  305
DIRECTORY NUMBER:        7323001
LINE CLASS CODE:         1FR
SIGNALLING TYPE:    DIGITONE
LINE TREATMENT GROUP:       0
LINE ATTRIBUTE INDEX:       250
CARDCODE:  6X17AC    GND: N   PADGRP: STDLN   BNV: NL   MNO: N
PM NODE NUMBER     :     516
PM TERMINAL NUMBER :     96
OPTIONS:
3WC DGT
```

Example of **QDN** display for **4FR..POTS** station

```
DN:       7322642    (NON-UNIQUE)
TYPE:   MULTIPLE PARTY LINE
SNPA:  305    SIG: DT    LNATTIDX:  252
LINE EQUIPMENT NUMBER:      OPM0 00 0 12 23
LINE CLASS CODE:      4FR R1 1
LINE TREATMENT GROUP:       0
CARDCODE:  6X18AB    GND:  N   PADGRP: STDLN   BNV: NL   MNO: N
PM NODE NUMBER      :     520
PM TERMINAL NUMBER :     408
OPTIONS:
ONI DGT PIC NETEAP Y
```

Example of **QLEN** display for the first **4FR..POTS** station

```
LEN:      OPM0 00 0 12 23
TYPE:   MULTIPLE PARTY LINE
SNPA:   305
DIRECTORY NUMBER:       7322642   (NON-UNIQUE)
LINE CLASS CODE:        4FR R1 1
SIGNALLING TYPE:    DIGITONE
LINE TREATMENT GROUP:       0
LINE ATTRIBUTE INDEX:       252
CARDCODE:  6X18AB     GND: N   PADGRP: STDLN   BNV: NL   MNO: N
PM NODE NUMBER      :      520
PM TERMINAL NUMBER :      408
OPTIONS:
ONI DGT PIC NETEAP Y
```

Example of **QLEN** display for the last **4FR..POTS** station

```
LEN:      OPM0 00 0 12 23
TYPE:   MULTIPLE PARTY LINE
SNPA:   305
DIRECTORY NUMBER:       7322645   (NON-UNIQUE)
LINE CLASS CODE:        4FR T2 4
SIGNALLING TYPE:    DIGITONE
LINE TREATMENT GROUP:       0
LINE ATTRIBUTE INDEX:       252
CARDCODE:  6X18AB     GND: N   PADGRP: STDLN   BNV: NL   MNO: N
PM NODE NUMBER      :      520
PM TERMINAL NUMBER :      408
OPTIONS:
ONI DGT
```

Example of **QDN** display for **10FR..POTS** station

```
DN:       7322669   (NON-UNIQUE)
TYPE:   MULTIPLE PARTY LINE
SNPA:   305   SIG: DT    LNATTIDX:  254
LINE EQUIPMENT NUMBER:      HOST 16 0 12 26
LINE CLASS CODE:      10FR R1 0
LINE TREATMENT GROUP:       0
CARDCODE:  6X18AB    GND:  N   PADGRP: STDLN   BNV: NL   MNO: N
PM NODE NUMBER      :      166
PM TERMINAL NUMBER :      411
OPTIONS:
DGT
```

Example of **QLEN** display for the first **10FR..POTS** station

```
LEN:      HOST 16 0 12 26
TYPE:   MULTIPLE PARTY LINE
SNPA:   305
DIRECTORY NUMBER:        7322669   (NON-UNIQUE)
LINE CLASS CODE:         10FR R1 0
SIGNALLING TYPE:    DIGITONE
LINE TREATMENT GROUP:       0
LINE ATTRIBUTE INDEX:       254
CARDCODE:  6X18AB    GND: N   PADGRP: STDLN   BNV: NL   MNO: N
PM NODE NUMBER      :      166
PM TERMINAL NUMBER :      411
OPTIONS:
DGT
```

Example of **QLEN** display for the last **10FR..POTS** station

```
LEN:      HOST 16 0 12 26
TYPE:   MULTIPLE PARTY LINE
SNPA:   305
DIRECTORY NUMBER:        7322670   (NON-UNIQUE)
LINE CLASS CODE:         10FR T5 4
SIGNALLING TYPE:    DIGITONE
LINE TREATMENT GROUP:       0
LINE ATTRIBUTE INDEX:       254
CARDCODE:  6X18AB    GND: N   PADGRP: STDLN   BNV: NL   MNO: N
PM NODE NUMBER      :      166
PM TERMINAL NUMBER :      411
OPTIONS:
DGT
```

Example of **QDN** display for **POTS DNH Hunt Group**

```
DN:      7322931
TYPE:   PILOT OF DNH HUNT GROUP
SNPA:   305   SIG: DT    LNATTIDX:  263
HUNT GROUP:    67        HUNT MEMBER:    0
LINE EQUIPMENT NUMBER:      RSC0 00 0 07 07
LINE CLASS CODE:       INW
LINE TREATMENT GROUP:       0
CARDCODE:  6X17AB    GND:  N   PADGRP: STDLN   BNV: NL   MNO: N
PM NODE NUMBER      :      516
PM TERMINAL NUMBER :      232
OPTIONS:
DGT
GROUP OPTIONS:
CIR OFS RCVD
MEMBER INFO:
   1 7322943
   2 7322949
```

Example of **QLEN** display for **POTS DNH Hunt Group**

```
LEN:      RSC0 00 0 07 07
TYPE:  PILOT OF DNH HUNT GROUP
SNPA:  305
HUNT GROUP:   67      HUNT MEMBER:   0
DIRECTORY NUMBER:      7322931
LINE CLASS CODE:      INW
SIGNALLING TYPE:   DIGITONE
LINE TREATMENT GROUP:     0
LINE ATTRIBUTE INDEX:      263
CARDCODE:  6X17AB    GND: N  PADGRP: STDLN   BNV: NL   MNO: N
PM NODE NUMBER      :     516
PM TERMINAL NUMBER :     232
OPTIONS:
DGT
GROUP OPTIONS:
CIR OFS RCVD
MEMBER INFO:
   1 7322943
   2 7322949
```

Example of **QDN** display for **POTS MLH Hunt Group**

```
DN:      7322932   (NON-UNIQUE)
TYPE:  PILOT OF MLH HUNT GROUP
SNPA: 305   SIG: DT    LNATTIDX:  267
HUNT GROUP:    404      HUNT MEMBER:    0
LINE EQUIPMENT NUMBER:      RSC0 00 0 08 00
LINE CLASS CODE:      PBX
LINE TREATMENT GROUP:     0
CARDCODE:  6X17AB    GND:  N  PADGRP: STDLN   BNV: NL   MNO: N
PM NODE NUMBER      :     516
PM TERMINAL NUMBER :     257
OPTIONS:
DGT
GROUP OPTIONS:
LOD 7322908 OFS RCVD
MEMBER INFO:
   1 OPM0 00 0 12 22 GROUP BNN   7322943
   2 RSC0 00 1 03 02 GROUP BNN   7322949
```

Example of **QLEN** display for **POTS MLH Hunt Group**

```
LEN:      RSC0 00 0 08 00
TYPE:  PILOT OF MLH HUNT GROUP
SNPA:  305
HUNT GROUP:   404     HUNT MEMBER:   0
DIRECTORY NUMBER:      7322932   (NON-UNIQUE)
LINE CLASS CODE:       INW
SIGNALLING TYPE:   DIGITONE
LINE TREATMENT GROUP:     0
LINE ATTRIBUTE INDEX:      267
CARDCODE:  6X17AB    GND: N  PADGRP: STDLN  BNV: NL   MNO: N
PM NODE NUMBER      :     516
PM TERMINAL NUMBER :     257
OPTIONS:
DGT
GROUP OPTIONS:
LOD 7322908 OFS RCVD
MEMBER INFO:
   1 OPM0 00 0 12 22 GROUP BNN  7322943
   2 RSC0 00 1 03 02 GROUP BNN  7322949
```

Example of **QDN** display for **POTS DLH Hunt Group**

```
DN:      7322933   (NON-UNIQUE)
TYPE:  PILOT OF DLH HUNT GROUP
SNPA: 305   SIG: DT    LNATTIDX:  250
HUNT GROUP:    573     HUNT MEMBER:    0
LINE EQUIPMENT NUMBER:     RSC0 00 0 09 00
LINE CLASS CODE:       1FR
LINE TREATMENT GROUP:     0
CARDCODE:  6X17AB    GND:  N  PADGRP: STDLN   BNV: NL   MNO: N
PM NODE NUMBER     :     516
PM TERMINAL NUMBER :     289
OPTIONS:
DGT
GROUP OPTIONS:
TFO RCVD
MEMBER INFO:
   2 RSC0 00 1 03 03
```

Example of **QLEN** display for **POTS DLH Hunt Group**

```
LEN:       RSC0 00 0 09 00
TYPE:  PILOT OF DLH HUNT GROUP
SNPA:  305
HUNT GROUP:    573      HUNT MEMBER:    0
DIRECTORY NUMBER:      7322933   (NON-UNIQUE)
LINE CLASS CODE:       1FR
SIGNALLING TYPE:   DIGITONE
LINE TREATMENT GROUP:     0
LINE ATTRIBUTE INDEX:      250
CARDCODE:  6X17AB    GND: N  PADGRP: STDLN  BNV: NL   MNO: N
PM NODE NUMBER     :      516
PM TERMINAL NUMBER :      289
OPTIONS:
DGT
GROUP OPTIONS:
TFO RCVD
MEMBER INFO:
   2 RSC0 00 1 03 03
```

Example of **QDN** display for **RES** station

```
DN:       7322831
TYPE:  SINGLE PARTY LINE
SNPA:  305    SIG: DT    LNATTIDX:  2
LINE EQUIPMENT NUMBER:      RSC0 00 0 15 00
LINE CLASS CODE:       1FR
IBN TYPE: STATION
CUSTGRP:        STEVESGRP      SUBGRP: 0  NCOS: 0
CARDCODE:  6X17AB    GND:  N  PADGRP: STDLN  BNV: NL   MNO: N
PM NODE NUMBER     :   516
PM TERMINAL NUMBER :   481
OPTIONS:
DGT
RES OPTIONS:
COT NOAMA
```

Example of **QLEN** display for **RES** station

```
LEN:       RSC0 00 0 15 00
TYPE:  SINGLE PARTY LINE
SNPA:  305
DIRECTORY NUMBER:       7322831
LINE CLASS CODE:        1FR
IBN TYPE: STATION
CUSTGRP:        STEVESGRP      SUBGRP: 0  NCOS: 0
SIGNALLING TYPE:  DIGITONE
CARDCODE:  6X17AB     GND: N  PADGRP: STDLN  BNV: NL   MNO: N
PM NODE NUMBER     :   516
PM TERMINAL NUMBER :   481
OPTIONS:
DGT
RES OPTIONS:
COT NOAMA
```

Example of **QDN** display for **IBN** station

```
DN:       7323003
TYPE:   SINGLE PARTY LINE
SNPA:  305   SIG: DT    LNATTIDX:  N/A
LINE EQUIPMENT NUMBER:      RSC0 01 0 01 20
LINE CLASS CODE:       IBN
IBN TYPE: STATION
CUSTGRP:        COREREGA       SUBGRP: 0  NCOS: 0
CARDCODE:  6X17AC    GND:  N  PADGRP: STDLN  BNV: NL   MNO: N
PM NODE NUMBER      :     518
PM TERMINAL NUMBER :      53
OPTIONS:
3WC DGT
```

Example of **QLEN** display for **IBN** station

```
LEN:      RSC0 01 0 01 20
TYPE:   SINGLE PARTY LINE
SNPA:  305
DIRECTORY NUMBER:        7323003
LINE CLASS CODE:       IBN
IBN TYPE: STATION
CUSTGRP:        COREREGA       SUBGRP: 0  NCOS: 0
SIGNALLING TYPE:  DIGITONE
CARDCODE:  6X17AC    GND: N  PADGRP: STDLN  BNV: NL   MNO: N
PM NODE NUMBER      :     518
PM TERMINAL NUMBER :      53
OPTIONS:
3WC DGT
```

Example of **QDN** display for **IBN DNH Hunt Group**

```
DN:       7322817
TYPE:   PILOT OF DNH HUNT GROUP
SNPA:  305   SIG: DT    LNATTIDX:  N/A
HUNT GROUP:   69       HUNT MEMBER:   0
LINE EQUIPMENT NUMBER:      RLM0 00 1 02 00
LINE CLASS CODE:       IBN
IBN TYPE: STATION
CUSTGRP:        COREREGA       SUBGRP: 0  NCOS: 0
CARDCODE:  2X17AB    GND:  N  PADGRP: STDLN  BNV: NL   MNO: N
PM NODE NUMBER      :     272
PM TERMINAL NUMBER :      65
OPTIONS:
DGT
GROUP OPTIONS:
RCVD
MEMBER INFO:
   1 7322825
   2 7322822
```

Example of **QLEN** display for **IBN DNH Hunt Group**

```
LEN:       RLM0 00 1 02 00
TYPE:  PILOT OF DNH HUNT GROUP
SNPA:  305
HUNT GROUP:   67      HUNT MEMBER:   0
DIRECTORY NUMBER:        7322817
LINE CLASS CODE:        IBN
IBN TYPE: STATION
CUSTGRP:       COREREGA      SUBGRP: 0  NCOS: 0
SIGNALLING TYPE:   DIGITONE
CARDCODE:  2X17AB     GND: N  PADGRP: STDLN  BNV: NL   MNO: N
PM NODE NUMBER     :    272
PM TERMINAL NUMBER :    65
OPTIONS:
DGT
GROUP OPTIONS:
RCVD
MEMBER INFO:
   1 7322825
   2 7322822
```

Example of **QDN** display for **IBN MLH Hunt Group**

```
DN:       7322818   (NON-UNIQUE)
TYPE:  PILOT OF MLH HUNT GROUP
SNPA:  305   SIG: DT    LNATTIDX:  N/A
HUNT GROUP:    516      HUNT MEMBER:    0
LINE EQUIPMENT NUMBER:     RLM1 00 0 02 00
LINE CLASS CODE:        IBN
IBN TYPE: STATION
CUSTGRP:       COREREGA      SUBGRP: 0  NCOS: 0
CARDCODE:  2X17AB     GND:  N  PADGRP: STDLN  BNV: NL   MNO: N
PM NODE NUMBER     :    273
PM TERMINAL NUMBER :    65
OPTIONS:
DGT DIN 7 $
GROUP OPTIONS:
RCVD
MEMBER INFO:
   1 RCM0 00 0 07 00
   2 RCM0 00 0 11 22
```

Example of **QLEN** display for **IBN MLH Hunt Group**

```
LEN:       RLM1 00 0 02 00
TYPE:   PILOT OF MLH HUNT GROUP
SNPA:   305
HUNT GROUP:    516      HUNT MEMBER:    0
DIRECTORY NUMBER:       7322818   (NON-UNIQUE)
LINE CLASS CODE:      IBN
IBN TYPE: STATION
CUSTGRP:      COREREGA      SUBGRP: 0  NCOS: 0
SIGNALLING TYPE:    DIGITONE
CARDCODE:  2X17AB     GND: N  PADGRP: STDLN  BNV: NL   MNO: N
PM NODE NUMBER      :     273
PM TERMINAL NUMBER :     65
OPTIONS:
DGT DIN 7 $
GROUP OPTIONS:
RCVD
MEMBER INFO:
   1 RCM0 00 0 07 00
   2 RCM0 00 0 11 22
```

Example of **QDN** display for **IBN DLH Hunt Group**

```
DN:       7322819   (NON-UNIQUE)
TYPE:   PILOT OF DLH HUNT GROUP
SNPA: 305   SIG: DT    LNATTIDX:  N/A
HUNT GROUP:    517      HUNT MEMBER:    0
LINE EQUIPMENT NUMBER:      RSC1 00 1 02 00
LINE CLASS CODE:      IBN
IBN TYPE: STATION
CUSTGRP:      COREREGA      SUBGRP: 0  NCOS: 0
CARDCODE:  2X17AB     GND:  N  PADGRP: STDLN  BNV: NL   MNO: N
PM NODE NUMBER      :     274
PM TERMINAL NUMBER :     65
OPTIONS:
DGT
GROUP OPTIONS:
TFO RCVD
MEMBER INFO:
   1 RCM1 00 0 09 00
   2 RCM1 00 0 04 21
```

Example of **QLEN** display for **IBN DLH Hunt Group**

```
LEN:      RCM1 00 1 02 00
TYPE:  PILOT OF DLH HUNT GROUP
SNPA:  305
HUNT GROUP:   517     HUNT MEMBER:   0
DIRECTORY NUMBER:      7322819    (NON-UNIQUE)
LINE CLASS CODE:       IBN
IBN TYPE: STATION
CUSTGRP:       COREREGA     SUBGRP: 0  NCOS: 0
SIGNALLING TYPE:   DIGITONE
CARDCODE:  2X17AB    GND: N  PADGRP: STDLN  BNV: NL   MNO: N
PM NODE NUMBER      :    274
PM TERMINAL NUMBER :    65
OPTIONS:
DGT
GROUP OPTIONS:
TFO RCVD
MEMBER INFO:
   1 RCM1 00 0 09 00
   2 RCM1 00 0 04 21
```

Example of **QDN** display for **IBN PSET** station

```
DN:      7323010
TYPE:  SINGLE PARTY LINE
SNPA:  305    SIG: N/A    LNATTIDX:  N/A
LINE EQUIPMENT NUMBER:      RSC0 00 1 06 03
LINE CLASS CODE:  P_PHONE
KEY:  1
CUSTGRP:       COREREGA    SUBGRP: 0  NCOS: 0  RING: Y
CARDCODE:  6X21AB    GND:  N  PADGRP: STDLN  BNV: NL   MNO: Y
PM NODE NUMBER      :    517
PM TERMINAL NUMBER :    196
OPTIONS:
 NONE
```

Example of **QLEN** display for **IBN PSET** station

```
LEN:      RSC0 00 1 06 03
TYPE:   SINGLE PARTY LINE
SNPA:   305
DIRECTORY NUMBER:       7323010
LINE CLASS CODE:   P_PHONE
CUSTGRP:       COREREGA   SUBGRP: 0   NCOS: 0   RING: Y
ADDONS: NONE   EXTENSION:  N
CARDCODE:  6X21AB    GND: N  PADGRP: STDLN  BNV: NL   MNO: Y
PM NODE NUMBER      :      517
PM TERMINAL NUMBER :      196
OPTIONS:
 NONE


   KEY    DN
   ---    --
     1   DN       7323010


   KEY FEATURE
   --- -------
      NONE
```

Example of **QDN** display for **IBN PSET WITH DISPLAY** station

```
DN:      7323025
TYPE:   SINGLE PARTY LINE
SNPA:   305    SIG: N/A    LNATTIDX:  N/A
LINE EQUIPMENT NUMBER:      RSC1 00 1 19 13
LINE CLASS CODE:  P_PHONE
KEY:  1
CUSTGRP:       COREREGA   SUBGRP: 0  NCOS: 0  RING: Y
CARDCODE:  6X21AC    GND:  N  PADGRP: STDLN  BNV: NL   MNO: Y
PM NODE NUMBER       :    372
PM TERMINAL NUMBER :    622
OPTIONS:
3WC
```

Example of **QLEN** display for **IBN PSET WITH DISPLAY** station

```
LEN:       RSC1 00 1 19 13
TYPE:   SINGLE PARTY LINE
SNPA:   305
DIRECTORY NUMBER:       7323025
LINE CLASS CODE:    P_PHONE
CUSTGRP:        COREREGA   SUBGRP: 0  NCOS: 0  RING: Y
ADDONS: NONE    EXTENSION:  N
CARDCODE:  6X21AC     GND: N  PADGRP: STDLN  BNV: NL  MNO: Y
PM NODE NUMBER     :      372
PM TERMINAL NUMBER :      622
OPTIONS:
3WC


   KEY    DN
   ---    --
     1


   KEY FEATURE
   --- -------
     3      3WC
```

Example of **QDN** display for **ACD** station

```
DN:      7322915      (NON-UNIQUE)
TYPE:   SINGLE PARTY LINE
SNPA:   305    SIG: N/A    LNATTIDX:   N/A
LINE EQUIPMENT NUMBER:       HOST 15 1 00 27
LINE CLASS CODE:  PSET (WITH DISPLAY)
KEY:  1
CUSTGRP:        COREREGB  SUBGRP: 0  NCOS: 0  RING: Y
ACDKEY: INCALLS     CRACD10B     0      FORCING    Y 2915
CARDCODE:  6X21AC     GND: N  PADGRP: PPHON  BNV: NL  MNO: Y
PM NODE NUMBER     :    502
PM TERMINAL NUMBER :     28
OPTIONS:
MSB
ACDNR
AUD
```

Example of **QLEN** display for **ACD** station

```
LEN:      HOST 15 1 00 27
TYPE:   SINGLE PARTY LINE
SNPA:   305
DIRECTORY NUMBER:       7322915     (NON-UNIQUE)
LINE CLASS CODE:   PSET (WITH DISPLAY)
CUSTGRP:      COREREGB   SUBGRP: 0  NCOS: 0  RING: Y
ADDONS:                       (S1)$  EXTENSION: Y  RING: Y
ACDKEY: INCALLS    CRACD10B    0    FORCING   Y 2915
CARDCODE:  6X21AC     GND: N  PADGRP: PPHON  BNV: NL  MNO: Y
PM NODE NUMBER      :     502
PM TERMINAL NUMBER :      28
OPTIONS:
MSB
ACDNR
AUD
   KEY   DN
   ---   --
    1     ACD  7322915 INCALLS   CRACD10B  0  FORCING Y 2915
    2     ACD  7322215 AEMK  CRACD10B  1
    3     ACD  7322315 AAK  CRACD10B  1
    4     ACD  7322415 CAG

   KEY FEATURE
   --- -------
    7       MSB $
    8     ACDNR
   11       AUD
```

Example of **QDN** display for **MADN EXB Group**

```
DN:      7322801   (NON-UNIQUE)
TYPE:   MULTIPLE APPEARANCE DIRECTORY NUMBER
SNPA:  305   SIG: DT    LNATTIDX:  N/A
LINE EQUIPMENT NUMBER:      HOST 00 0 05 11
PRIMARY LEN:  HOST 00 0 05 11
LINE CLASS CODE:      IBN
IBN TYPE: MADN
MADN INFO - TYPE: EXB   PRIMARY: Y   RING: ALWAYS
CUSTGRP:      COREREGA       SUBGRP: 0  NCOS: 0
CARDCODE: 2X17AB   GND:  N  PADGRP: STDLN  BNV: NL  MNO: N
PM NODE NUMBER     :   66
PM TERMINAL NUMBER :   172
OPTIONS:
MDN EXB Y Y DGT
MADN MEMBER LENS INFO:
  HOST 00 0 05 11             EXB  PRIMARY: Y  RING: ALWAYS
  RLM0 00 1 02 31             EXB  PRIMARY: N  RING: ALWAYS
  HOST 11 1 00 03             EXB  PRIMARY: N  RING: ALWAYS
```

Example of **QLEN** display for **MADN EXB Group**

```
LEN:      HOST 00 0 05 11
TYPE:   MULTIPLE APPEARANCE DIRECTORY NUMBER
SNPA:   305
DIRECTORY NUMBER:        7322819    (NON-UNIQUE)
LINE CLASS CODE:         IBN
IBN TYPE: MADN
MADN INFO - TYPE: EXB   PRIMARY: Y   RING: ALWAYS
CUSTGRP:       COREREGA       SUBGRP: 0  NCOS: 0
SIGNALLING TYPE:   DIGITONE
CARDCODE:  2X17AB    GND: N  PADGRP: STDLN  BNV: NL   MNO: N
PM NODE NUMBER       :      66
PM TERMINAL NUMBER :      172
OPTIONS:
MDN EXB Y Y DGT
```

Example of **QDN** display for **MADN SCA Group**

```
DN:       7322813   (NON-UNIQUE)
TYPE:   MULTIPLE APPEARANCE DIRECTORY NUMBER
SNPA:  305   SIG: N/A     LNATTIDX:  N/A
LINE EQUIPMENT NUMBER:      HOST 10 0 08 27
PRIMARY LEN:  HOST 10 0 08 27
LINE CLASS CODE:  PSET (WITH DISPLAY)
KEY:  1
CUSTGRP:        COREREGA   SUBGRP: 0    NCOS: 0    RING: Y
MADN INFO - TYPE: SCA    PRIMARY: Y
MADN SCA INFO - DENIAL TRMT:SILENCE      BRIDGING:Y
          CONF SIZE:30 BRIDGE TONE:N INIT STAT:PRIVATE
          PRL MODE:MANUAL
CARDCODE:  6X21AC    GND:  N  PADGRP: PPHON  BNV: NL   MNO: Y
PM NODE NUMBER        :     491
PM TERMINAL NUMBER :     284
OPTIONS:
RMR
MADN MEMBER LENS INFO:
  HOST 10 0 08 27   KEY: 1     SCA   PRIMARY: Y     RING: ALWAYS
  RSC0 00 0 19 03   KEY: 1     SCA   PRIMARY: N     RING: ALWAYS
```

Example of **QLEN** display for **MADN SCA Group**

```
LEN:      HOST 10 0 08 27
TYPE:   MULTIPLE APPEARANCE DIRECTORY NUMBER
SNPA:   305
DIRECTORY NUMBER:      7322813   (NON-UNIQUE)
LINE CLASS CODE:  PSET (WITH DISPLAY)
CUSTGRP:      COREREGA   SUBGRP: 0   NCOS: 0   RING: Y
ADDONS: NONE   EXTENSION: N
MADN INFO - TYPE: SCA   PRIMARY: Y
MADN SCA INFO - DENIAL TRMT:SILENCE     BRIDGING:Y
        CONF SIZE:30   BRIDGE TONE:N   INIT STAT:PRIVATE
        PRL MODE:MANUAL
CARDCODE:  6X21AC     GND: N  PADGRP: PPHON  BNV: NL  MNO: Y
PM NODE NUMBER     :      491
PM TERMINAL NUMBER :      284
OPTIONS:
RMR
   KEY DN
   --- --
    1  MDN   7322813    SCA     PRIMARY: Y      RING: ALWAYS

   KEY FEATURE
   ----------
      NONE
```

Example of **QDN** display for **MADN MCA Group**

```
DN:      7322814   (NON-UNIQUE)
TYPE:   MULTIPLE APPEARANCE DIRECTORY NUMBER
SNPA: 305   SIG: N/A     LNATTIDX:  N/A
LINE EQUIPMENT NUMBER:      HOST 10 1 08 27
PRIMARY LEN:  HOST 10 1 08 27
LINE CLASS CODE:  PSET (WITH DISPLAY)
KEY:  1
CUSTGRP:      COREREGA   SUBGRP: 0   NCOS: 0   RING: Y
MADN INFO - TYPE: MCA   PRIMARY: Y
CARDCODE:  6X21AC     GND:  N  PADGRP: PPHON  BNV: NL  MNO: Y
PM NODE NUMBER     :      492
PM TERMINAL NUMBER :      284
OPTIONS:
RMR
MADN MEMBER LENS INFO:
  HOST 10 1 08 27  KEY: 1  MCA   PRIMARY: Y    RING: ALWAYS
  RLM1 00 0 04 31           MCA   PRIMARY: N    RING: ALWAYS
  RSC0 00 1 04 03  KEY: 1  MCA   PRIMARY: N    RING: ALWAYS
```

Example of **QLEN** display for **MADN MCA Group**

```
LEN:      HOST 10 1 08 27
TYPE:   MULTIPLE APPEARANCE DIRECTORY NUMBER
SNPA:   305
DIRECTORY NUMBER:      7322814   (NON-UNIQUE)
LINE CLASS CODE:  PSET (WITH DISPLAY)
CUSTGRP:      COREREGA   SUBGRP: 0   NCOS: 0   RING: Y
ADDONS: NONE   EXTENSION: N
MADN INFO - TYPE: MCA   PRIMARY: Y
CARDCODE:  6X21AC     GND: N  PADGRP: PPHON   BNV: NL   MNO: Y
PM NODE NUMBER     :      492
PM TERMINAL NUMBER :      284
OPTIONS:
RMR

   KEY DN
   --- --
    1 MDN  7322814  MCA    PRIMARY: Y   RING: ALWAYS

   KEY FEATURE
   --- -------
      NONE
```

Example of **QDN** display for **ISDN FUNCTIONAL SET (BRAFS)**

```
DN:      3382735
TYPE:   SINGLE PARTY LINE
SNPA:   305   SIG:  N/A    LNATTIDX:  N/A
LTID:  CRISDN    35
LTCLASS:   BRAFS
LINE CLASS CODE:    ISDNKSET
KEY:  1
CUSTGRP:        ISDNMDC3   SUBGRP: 0   NCOS: 0   RING: Y
OPTIONS:
SFC NAME ISDNC7NET PVT2735 PUBLIC PUB2735
FC 3 HLD XFER CTALL DROP PRV
```

Example of **QLT** display for **ISDN FUNCTIONAL SET (BRAFS)**

```
LTID:   CRISDN    35
SNPA:   305
DIRECTORY NUMBER:       3382735
DPN GROUP NO: 1
LTCLASS:  BRAFS    EKTS: Y    CACH: Y    SCAI: N
BEARER SERVICE RESTRICTIONS:   NOCMD    NOPMD
CS: Y PS: N
VERSION: FUNCTIONAL ISSUE: 1
SPID-SUFFIX:        00
LEN: HOST 19 0 11 02     TEI: DYNAMIC
CUSTGRP:        ISDNMDC3  SUBGRP: 0  NCOS: 0  RING: Y
LINE CLASS CODE: ISDNKSET
MAXKEYS: 64
OPTIONS:
SFC NAME ISDNC7NET PVT2735 PUBLIC PUB2735
FC 3 HLD XFER CTALL DROP PRV

   KEY   DN
   ---   --
    1      DN     3382735
    2      MDN    3382770        SCA
    3      DN     3382782
    4      MDN    3382771        SCA

   KEY FEATURE
   --- -------
    17          FC   3
    24          RLS
    25          HLD
    26          XFER   CTALL
    27          DROP
    28          PRV
```

Example of **QDN** display for **ISDN STIMULUS SET (BRAKS)**

```
DN:      3382731
TYPE:   SINGLE PARTY LINE
SNPA:  305   SIG:  N/A     LNATTIDX:  N/A
LTID:  CRISDN    31
LTCLASS:  BRAKS
LINE CLASS CODE:    ISDNKSET
KEY:  1
CUSTGRP:        ISDNMDC3   SUBGRP: 0   NCOS: 0   RING: Y
OPTIONS:
RAG PRK EBO NAME ISDNC7NET PVT2731 PUBLIC PUB2731
AAB CFU Y $ I 1 CFB P $ I 1 CFD P $ I 1 HLD
```

Example of **QLT** display for **ISDN STIMULUS SET (BRAKS)**

```
LTID:   CRISDN    31
SNPA:  305
DIRECTORY NUMBER:       3382731
DPN GROUP NO: 1
LTCLASS:  BRAKS
CS: Y PS: N
LEN: HOST 19 0 07 04    TEI: 1
CUSTGRP:         ISDNMDC3  SUBGRP: 0  NCOS: 0  RING: Y
LINE CLASS CODE: ISDNKSET
MAXKEYS: 64
OPTIONS:
RAG PRK EBO MSB $ NAME ISDNC7NET PVT2731 PUBLIC PUB2731
AAB CFU Y $ I 1 CFB P $ I 1 CFD P $ I 1 HLD

    KEY    DN
    ---    --
      1       DN     3382731
      2       MDN    3382770      SCA
      3       DN     3382781
      4       MDN    3382771      SCA

    KEY FEATURE
    --- -------
     10        AAB
     16        CFU Y                         $ I   1
     16        CFB P                         $          I  1
     16        CFD P                         $          I  1
     18        PRK
     21        RAG
     22        MSB $
     23        EBO
     24        RLS
     25        HLD
```

QDN display for **ISDN MERIDIAN FEATURE TRANSPARANCY SET (BRAMFT)**

```
DN:      3382755
TYPE:   SINGLE PARTY LINE
SNPA:  305    SIG:  N/A    LNATTIDX:  N/A
LTID:  CRISDN    55
LTCLASS:   BRAMFT
LINE CLASS CODE:     ISDNKSET
KEY:  1
CUSTGRP:         ISDNMDC3  SUBGRP: 0   NCOS: 0   RING: Y
OPTIONS:
 NONE
```

QLT display for **ISDN MERIDIAN FEATURE TRANSPARANCY SET (BRAMFT)**

```
LTID:   CRISDN   55
SNPA:  305
DIRECTORY NUMBER:      3382755
DPN GROUP NO: 1
LTCLASS:  BRAMFT
CS: Y PS: N
SPID-SUFFIX:      1
LEN: HOST 00 0 01 06    TEI: DYNAMIC
CUSTGRP:       ISDNMDC3  SUBGRP: 0  NCOS: 0  RING: Y
LINE CLASS CODE: ISDNKSET
MAXKEYS: 64
OPTIONS:
 NONE

   KEY   DN
   ---   --
     1   DN 3382755

   KEY    FEATURE
   ---    -------
       NONE
```

DMS-100F SERVORD Digest
Release 08.01, November 1997

DMS-100 Family

SERVORD Digest

NØRTEL
NORTHERN TELECOM