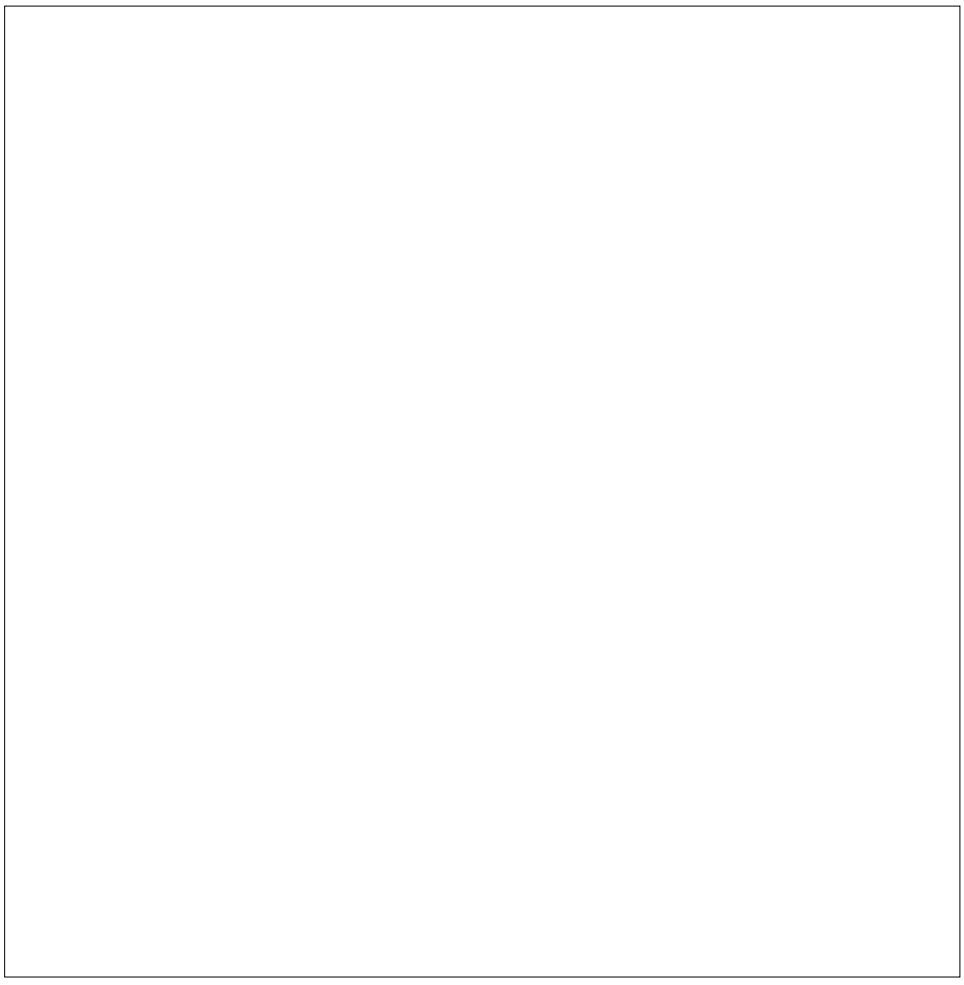
297-1001-801

DMS-100 Family

Feature Description Manual

Reference Manual

BCS36 and up Standard 07.05 April 1995



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DMS-100 Family

Feature Description Manual

Reference Manual

Publication number: 297-1001-801
Product release: BCS36 and up
Document release: Standard 07.05
Date: April 1995

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Printed in Canada and printed in the United States of America.

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Publication history

April 1995

BCS36 Standard 07.05

Reissued to add features.

December 1994

BCS36 Standard 07.04

Reissued to reflect minor editorial changes.

March 1994

BCS36 Standard 07.03

This document has been resissued due to modifications in software.

December 1993

BCS36 Standard 07.02

October 1993

BCS36 Preliminary 07.01

March 1993

BCS35 Standard 06.03

Reissued to add feature AF4826.

BCS35 Standard 06.02

October 1992

BCS35 Preliminary 06.01

July 1992

BCS34 Standard 05.02

February 1992

BCS34 Preliminary 05.01

October 1991

BCS33 Standard 04.02

June 1991

BCS33 Preliminary 04.01

March 1991

BCS32 Standard 03.02

December 1990

BCS32 Preliminary 03.01

September 1990

BCS31 Standard 02.01

September 1991

BCS28-30 Standard 01.02

Reissued to reflect minor editorial changes.

May 1990

BCS28-30 Standard 01.01

Contents

About this document x
When to use this document xi
How to identify the software in your office xii
How this document is organized xii
Hardware requirements xii
Summary table xiii
Feature package descriptions xiii
Feature descriptions xiii
Cross-reference tables xiv
How reference documentation is organized xiv

BCS36 hardware requirements 1-1
Product line 1-1
Provisioning information 1-1

Summary table 2-1

Feature-to-NTP summary table 3-1

NTG320AA -1
TOPS ADAS APU -1
AF3048 -3
AF3050 -5
AF3291 -6
AF3381 -8
AF3382 -10
AF3384 -12

NTG321AA -1
OA & M Position -1
AN0056 -2
AN0182 -4

NTG322AA -1
Voice Processing Unit -1
AF3005 -2
AF3007 -3
AF3031 -4
AF3033 -5
AF3035 -6
AF3394 -7
AN0016 -8
AN0046 -9

NTX001AA -1
Common Basic -1
AF4281 -14
AF4283 -15
AF4286 -16
AF5766 -17
AJ2240 -19
AJ2290 -20
AL2486 -21
AL2667 -22
AL2669 -23
AQ0878 -24
AQ0967 -25
AR0225 -27

NTX022AB -1
Dynamically Controlled Routing (DCR/HPR) -1
AJ2446 -2

NTX022AC -1
Dynamically Controlled Routing (DCR/HPR) -1
AJ2446 -2
AJ2884 -3
AJ2886 -4
NTX041AB -1
CCS7-MTO SCCP -1
AJ2446 -4
NTX042AA -1
Local Automatic Message Accounting -1
AR0238 -2
NTX098AA -1
Bellcore CAMA Format -1
AD4733 -2
AN0319 -3
NTX159AA -1
Bellcore LAMA Format -1
AD4733 -3
AN0319 -5
NTX186AB -1
Equal Access End Office -1
AN0173 -3
NTX270AA -1
New Peripheral Maintenance Package -1
AF5006 -5
AF5007 -7
AF5008 -10
NTX386AB -1
Access Tandem Switch -1
AN0173 -2
NTX387AD -1
SMU-Subscriber Urban -1
AF4252 -4
AF4836 -6
AF4837 -7
AF4861 -8
AF4892 -9
AF4935 -10
NTX398AA -1
SCM-100S -1
AF4936 -2
NTX710AB -1
LATA Equal Access System -1
AN0304 -2
NTX750AC -1
ISDN Basic Access -1
-1
AR0496 -6
NTX750AD -1
ISDN Basic Access -1
AF4841 -6
AF4842 -8
AR0358 -11
AR0496 -12
NTX755AC -1
ISDN Supplementary Services Compliance -1
AF3555 -3
AF4847 -5
AF4848 -6
NTX790AC -1
ISDN-Primary Rate Access Base -1
AE1089 -4
NTX797AB -1
PRI Message Waiting Indication -1
AR0293 -3
NTX833AB -1
Signaling Transfer Point (STP) Operations -1
AL2334 -5
NTX891AA -1
TOPS-Exchange Access Opr Serv Sig -1
AN0325 -2
NTX940AA -1
CM Bilge -1
AR0359 -2
NTX901AA -1
Local Features I -1
AN0114 -8
AR0491 -9
NC0495 -10
NTX940AA -1
Local Features I -1
AR0359 -2
NTXA90AA -1
TOPS-MP terminal Handler High Speed -1
AN0212 -3
NTXE01AA -1
Enhanced Network - Basic -1
AL2260 -3
NTXF04AA -1
File Processor -1
AR0200 -3

NTXF05AA -1
TCP/IP Protocols -1
AR0022 -2
NTXF06AA -1
Application Processor Base -1
AL1974 -3
AL1975 -4
AQ1027 -5
AR0348 -6
NTXF19AA -1
TCP/IP Protocols -1
AR0022 -2
NTXF20AA -1
LPP on DMS-100 SuperNode for CCS7 -1
AL2334 -3
AQ1030 -4
AQ1031 -5
AQ1070 -6
NTXF25AD -1
Frame Relay Basic -1
AJ2877 -3
AJ2946 -4
NTXF46AA -1
Subscriber Carrier Module-100 Access -1
AF2687 -4
AF2864 -5
AF3800 -6
AF3801 -7
AF4438 -8
AF4874 -9
AF4979 -10
AF5330 -11
AN0225 -13
AN0230 -14
AN0351 -15
AN0453 -16
NTXF71AB -1
SuperNode Enhanced Messaging -1
AR0125 -3
NTXF86AA -1
Transaction Record Management -1
AR0317 -3
NTXJ39AA -1
CLASS Visual Message Waiting Indicator -1
NC0499 -2
NTXJ51AA -1
ISDN Digital Test Access -1
AF4839 -2
NTXN07AB -1
SMDI Private CLID Suppression -1
AF3679 -2
NTXN75AA -1
Remote Call Forward without Unique PIN -1
NC0192 -2
NTXN83AA -1
LIS Common-LMS Functionality on MS -1
AR0478 -2
NTXN87AA -1
Integrated Testing Base -1
AF4838 -2
NTXN87AB -1
Integrated Testing Base -1
AF4838 -2
NTXP47AA -1
ISDN Integrated Packet Handler -1
AL2200 -4
AL2440 -6
NTXP47AB -1
ISDN Integrated Packet Handler -1
AQ1008 -4
AQ1010 -5
NTXP55AA -1
Dynamically Controlled Routing (DCR/LDR)-1
AJ2446 -2
NTXP55AB -1
Dynamically Controlled Routing (DCR/LD) -1
AJ2446 -2
AJ2884 -3
AJ2886 -4
NTXP92AB -1
RSC-S Basic -1
AF4903 -3
NTXQ23AA -1
TOPS ADAS -1
AN0327 -2
NTXQ42AA -1
AIN Base -1
AR0219 -3
AR0231 -5

AR0235 -6
AR0238 -7
AR0298 -9

NTXQ43AA -1
AIN R0.1 SSP -1
AR0220 -2
AR0229 -3
AR0449 -5

NTXQ44AA
AIN test Tools -1
AR0239 -2

NTXQ48AA -1
SCP-CBIS SMS Interface -1
AD4443 -2
AR0374 -4

NTXQ50AA -1
AIN Local Base -1
AR0219 -2
AR0228 -4

NTXQ54AA -1
SCP Application Framework -1
AR0327 -2

NTXQ54AB -1
SCP Application Framework -1
AQ1092 -2
AR0326 -3
AR0406 -4
AR0577 -5
AR0704 -6

NTXQ56AA -1
AIN REL. 0.1 TCP/IP -1
AR0422 -2

NTXR21AA -1
EADAS Hardware Inventory Control -1
AF4680 -2

NTXR49AA -1
Dialable Wide Band Service PRI -1
AD4735 -2

NTXR50AA -1
OMS External Management Infromation System Interface -1
AF2964 -1

NTXR62AA -1
Stutter Dialtone Enhancements -1
AN0303 -2

NTXR63AA -1
Large Capacity SRDB -1
AN0102 -2

NTXR66AA -1
DWS Access to Carrier (Access Tandem) -1
AD4732 -2

NTXR72AA -1
CCS7-MTP/SCCP for LPP-based Platforms -1
AL2334 -4

NTXR83AA -1
Per-line Feature Control -1
AR0323 -2

NTXR86AA -1
Network Access Register for DMS-100 -1
AJ2878 -2

NTXR88AA -1
Network Access Registers for DMS-100 -1
AN0322 -2

NTXR95AA -1
Name Display-TCAP -1
AN0232 -2
AN0323 -4

NTXS11AA -1
File Transfer Protocol (DARPA)-1
AR0142-1

NTXS12AA -1
Digital Test Access for PRI -1
AQ1018 -2

NTXS17AA -1
ISN CCS7 Interface -1
AJ2887 -2
AJ2888 -4
AJ2889 -5

NTXS18AA -1
TOPS Interchangeable NPA -1
AN0259 -2

NTXS19AA -1
TOPS DN Call Screening -1
AN0324 -2

NTXS22AA -1
Third Party Agent Control -1
AR0215 -2

NTXS25AA -1
DWS Base -1
AD4750 -3
AD4751 -4
AF4755 -5

AD4756 -6
AD4948 -7
NTXS30AA -1
UAE/UNIX Conversant Software -1
AF2980 -2
AF3379 -4
AF3391 -6
AN0069 -8
NTXS31AA -1
Enhanced Service Resource Management -1
AF3006 -2
AF3049 -4
AF3532 -6
AN0047 -8
AN0178 -9
NTXS32AA -1
APU SOS/UNIX Base -1
AF2684 -2
AF3290 -3
AL2016 -4
AL2479 -5
NTXS37AA -1
AABS Enhanced Services Access -1
AF5009 -2
NTXS51AA -1
Link Sectionalization Capablities -1
AR0540 -2
NTXS64AA -1
RSC-S Enhanced ESA (lines Only) -1
AF4893 -2
AF4894 -3
AF4895 -4
NTXS65AA -1
RSC-S Enhanced ESA (Lines and Trunks) -1
AF4893 -2
AF4894 -3
AF4895 -4
NTXS66AA -1
VPN SSP B (TA VPN) -1
AJ2369 -2
AJ2860 -3
AJ2861 -5
AJ3280 -6
AJ3285 -7
NTXS67AA 3-1
DCR Multiple Network Access (MNA) -1
AJ2885 -2
NTXS70AA -1
VPN SCP Base -1
AR0341 -2
AR0400 -4
AR0401 -5
AR0402 -6
AR0403 -7
AR0485 -8
AR0486 -9
AR0630 -10
NTXS71AA -1
TCAP/TCP Handler -1
AR0521 -2
NTXS72AA -1
CC Software Support for EDRAM Uploading -1
AQ0984 -2
NTXS74AA -1
C7TUINIT -1
AR0628 -2
NTXT10AA -1
Billing Server Poller Access Manager -1
AD6516 -2
NTXT11AA -1
WLC-Line Administration Phase II -1
AR0900 -2
NTXT12AA -1
Spontaneous Call Waiting IS (SCWID) -1
AN0616 -2
AN0631 -4
NTXT13AA -1
Analog Display Service Interface -1
AN0632 -2
AN0633 -4
NTXT14AA -1
Tailored Centrex-Power User Tools -1
AR0307 -2
NTXT15AA -1
SMDR for PVN -1
AN0739 -2
NTXT16AA -1
MX77 for SMS -1
AN0463 -2
NTXT17AA -1
MX77 for SMSR -1

AN0465 -2
NTXT18AA -1
CIC Expansion for Tandem Offices (LEAS) -1
AN0174 -2
NTXT19AA -1
TOPS EA: FGD CIC Expansion -1
AN0834 -2
NTXT20AA -1
NFA AMA -1
AN0435 -2
NTXT22AA -1
CC Support for ISM Part 2 -1
AR0918 -2
NTXT23AA -1
TR-303 Generic Interface -1
AF4879 -2
AF4882 -4
AF4883 -6
AF4887 -7
AF5378 -8
AF5455 -9
AF5533 -10
AF5536 -11
AF5537 -12

Cross-references-feature numbers listed by BCS **4-1**

Cross-references-feature number to feature package and BCS **5-1**

Cross-references-feature package to feature number and BCS **6-1**

Cross-references-feature title to feature number, feature package and BCS **7-1**

About this document

This document provides feature information for the DMS-100 switch. Feature information is intended to help operating company personnel to prepare for insertion of a new BCS load, or to understand elements of the software. Operating company personnel involved in planning and engineering or in maintenance activities will find this document useful.

When to use this document

Northern Telecom (NT) software releases are referred to as batch change supplements (BCS) and are identified by a number, such as BCS35. This document is written for DMS-100 Family offices that have BCS36 and up. Note that the present version of the *Feature Description Manual* adds to the content of previous versions, but does not replace them. This version of the *Feature Description Manual* contains descriptions of both feature packages and features that were introduced in this BCS as well as those changed in this BCS. DO NOT discard previous versions of the *Feature Description Manual*.

More than one version of this document may exist. The version and issue are indicated throughout the document, for example, 01.01. The first two digits increase by one each time the document content is changed to support new BCS-related developments. For example, the first release of a document is 01.01, and the next release of the document in a subsequent BCS is 02.01. The second two digits increase by one each time a document is revised and rereleased for the same BCS. The *Feature Description Manual* is issued twice in each BCS: a Preliminary issue and a Standard issue. The Standard issue corrects and replaces all information in the Preliminary issue for the same BCS, but it does not replace all of the content of Standard versions from previous BCSs. When you receive the Standard issue of the *Feature Description Manual* for BCS36 and up you should discard the Preliminary issue for BCS36 and up, but do not discard other Standard versions from previous BCSs.

To determine which version of this document applies to the BCS in your office, check the release information in *DMS-100 Family Guide to Northern Telecom Publications*, 297-1001-001.

How to identify the software in your office

The *Office Feature Record (D190)* identifies the current BCS level and the NT feature packages in your switch. You can list a specific feature package or patch on the MAP (maintenance and administration position) terminal by typing

>PATCHER;INFORM LIST identifier

and pressing the Enter key.

where
identifier is the number of the feature package or patch ID

You can identify your current BCS level and print a list of all the feature packages and patches in your switch by performing the following steps. First, direct the terminal response to the desired printer by typing

>SEND printer_id

and pressing the Enter key.

where
printer_id is the number of the printer where you want to print the data

Then, print the desired information by typing

>PATCHER;INFORM LIST;LEAVE

and pressing the Enter key.

Finally, redirect the display back to the terminal by typing

>SEND PREVIOUS

and pressing the Enter key.

How this document is organized

This document consists of descriptions of feature packages and features. Several supporting sections are also included.

Hardware requirements

The section “BCS36 and up hardware requirements” on page 1-1 lists the system hardware required for BCS36 and up. Hardware requirements are also provided in the individual feature descriptions where appropriate.

Summary tables

The "Feature impact summary table" that begins on page 2-1 indicates, for each feature, whether information exists under the following headings: Hardware restrictions, Pack diagnostic specifics, Restrictions and limitations, Feature interactions, Datafill, Service orders, Operational measurements, Logs, User interface, and Automatic message accounting. This table provides an overview of the information available in this document for each feature in the current software release and all those documented in previous versions of the *Feature Description Manual.*

The "Feature-to-NTP summary table" that begins on page 3-1 identifies Northern Telecom publications (NTP) that contain further details on each feature in the current software release. The table also shows which functional areas are affected by that feature, such as maintenance, translations, or administration.

Feature package descriptions

Feature package descriptions are arranged in alphanumeric order according to package number. Numbers precede letters in the alphanumeric order; for example, package NTX901AA comes before NTXA00AB. Each feature package originating in BCS28 or later is briefly described. The BCS in which the package was created is given under the heading "BCS history." A table entitled "Feature package contents" lists the current contents of the feature package, which may include features added in various BCSs. A table entitled "Required feature packages" lists the feature packages that are required for the package to function.

Each feature package description is followed by a description of each feature added to the package in BCS36 and up. Note that a feature may occur in more than one package. To relate a feature number to its feature package number(s), see the cross-reference tables at the end of this document.

Feature descriptions

Each feature is briefly described. The BCS in which the feature originated is given under the heading "BCS history." In some cases, this section indicates that a feature originated in a previous BCS has been changed for this BCS.

The following sections are included if they apply to the feature described:

- Hardware requirements
- Pack diagnostic specifics
- Restrictions and limitations
- Feature interactions
- Datafill
- Service orders
- Operational measurements

- Logs
- User interface
- Automatic message accounting

If one of the sections listed above is absent from an individual feature description, the section does not apply to that feature.

Cross-reference tables

The following cross-reference tables are located at the end of the document:

- features listed by BCS
- feature number to feature package and BCS
- feature package to feature number and BCS
- feature name to feature number, package, and BCS

How reference documentation is organized

The *Feature Description Manual* is part of reference documentation that supports the Northern Telecom line of DMS-100 Family products. Reference documentation is a subset of the DMS-100 Family library.

Reference documentation consists of the following documents.

Number	Title
297-XXXX-310	*Service Orders Reference Manual*
297-XXXX-451	*Customer Data Schema*
297-1001-119	*Automatic Message Accounting-Northern Telecom Format*
297-1001-128	*Automatic Message Accounting-Bellcore Format*
297-1001-455	*Office Parameters Reference Manual*
297-1001-805	*Hardware Description Manual*
297-1001-814	*Operational Measurements Reference Manual*
297-1001-820	*Nonmenu Commands Reference Manual*
297-1001-821	*Menu Commands Reference Manual*
297-1001-840	*Log Report Manual*

BCS36 hardware requirements

BCS-required hardware is defined as the modification necessary to load BCS software into the DMS-100 switch. All equipment introduced in BCS36 is listed in this chapter in table form.

Product line

BCS36 hardware requirements are for the DMS-100 Family product line.

Any office that is upgrading a BCS must meet the minimum hardware requirements. These minimum requirements are based on additions to the previous BCS hardware requirements. All other hardware requirements for BCS36 are related to specific features. Feature-related hardware requirements are described under the heading "Hardware requirements" in each feature description.

Note: For Canadian applications only, one NT6X47AC pair is provisioned on new modules and replaces NT6X47AB on existing modules. The second NT6X47AB is not provisioned for Canadian jobs.

Provisioning information

The following tables list the hardware introduced in BCS36.

BCS36 requirements for line group controller (LGC), line trunk controller (LTC), and digital trunk controller (DTC)

Module	BCS36
LGC	No change from BCS35
LTC	No change from BCS35
DTC	No change from BCS35
DTC used for CCS7	No change from BCS35

BCS36 requirements for subscriber carrier module-100 rural (SMR), subscriber carrier module-100S (SMS), and subscriber carrier module-100 urban (SMU)

Module	BCS36
SMR	No change from BCS35
SMS	No change from BCS35
SMU	No change from BCS35

BCS36 requirements for remote switching center (RSC), dual RSC, and message switch and buffer 7 (MSB7)

Module	BCS36
RSC	No change from BCS35
Dual RSC	No change from BCS35
MSB7	No change from BCS35

BCS36 requirements for line concentrating module (LCM), remote LCM (RLCM), and outside plant module (OPM)

Module	BCS36
LCM	No change from BCS35
RLCM (with ESA)	No change from BCS35
OPM (with ESA)	No change from BCS35

BCS36 requirements for SuperNode

Module	BCS36
Computing module	No change from BCS35
Message switch	No change from BCS35
System load module	No change from BCS35

BCS36 requirements for TOPS multipurpose	
Module	**BCS36**
TPC shelf	No change from BCS35

BCS36 requirements for ISDN	
Module	**BCS36**
LGCI/DTCI	No change from BCS35
LCMI	No change from BCS35
RCCI	No change from BCS35

BCS36 requirements for international line group controller (ILGC), international line trunk controller (ILTC), and international digital trunk controller (IDTC)	
Module	**BCS36**
ILGC	No change from BCS35
ILTC	No change from BCS35
IDTC	No change from BCS35

The following table lists the minimum packfill levels required for BCS36.

Module	BCS36
LGC	NT6X02LC (new) NT6X02LA NT6X02AT
LTC	NT6X02MC (new) NY6X02MA NT6X02AU
DTC	NT6X02IC (new) NT6X02IA NT6X02AS
DTC (for CCS7)	NT6X02IC (new) NT6X02IA NT6X02AS
SMR	NT6X02CC (new) NT6X02CQ (upgrades)
SMS	NT6X02DH (new) NT6X02DD NT6X02DC
SMU	NT6X02EG (new) NT6X02EB NT6X02AW
RSC remote cluster controller (RCC)	NT6X12AG (new) NT6X12CA NT6X12AD
Dual RSC (RCC)	NT6X12AG (new) NT6X12CA NT6X12AD
MSB7	NT6X32CA NT6X32AB
line concentrating equipment (LCE)	NT6X03RA NT6X03RB NT6X04AA (LCM)
RLCM host interface equipment (HIE)	NT6X11AA
OPM (HIE)	NT6X11AA
SuperNode computing module (CM) message switch (MS) system load module (SLM)	NT9X06AC NT9X04AE NT9X07AB
-continued-	

Module	**BCS36** (continued)
TOPS MP (TPC)	NTNX61AC
ISDN intracalling, ISDN access controller (IAC)	Replace with LGI/LTCI
ISDN LGC/DTC	NT6X02NA
ISDN LCM	NTBX31AC
ISDN RCC	NT6X12DE
Note: New = PECs for an initial office receiving a BCS load. Upgrades = PECs for an existing office that is upgrading a BCS load.	
End	

Summary table

This table provides an overview of the information available for each feature, and how it affects the DMS environment. The table shows all features in the current software release and all those documented in previous versions of the *Feature Description Manual*. The features are listed in the left column in alphanumeric order by feature package, and Ys are placed in the various columns across the page to show what is affected by that feature. For example, a Y in the **L** column indicates that the feature affects Logs, and further details are available in the "Logs" section of the feature description.

Available feature information

Package feature	**HW**	**PDS**	**R&L**	**FI**	**DF**	**SO**	**OM**	**L**	**UI**	**AMA**
NTG230AA										
AF2379				Y			Y			
AF2380			Y	Y			Y			
AF2390			Y	Y				Y	Y	
AF2391			Y					Y	Y	
AF2392			Y	Y				Y	Y	
AF2396			Y	Y				Y	Y	
AF2397			Y	Y			Y	Y		
AF2398										
AF2587			Y	Y						
AF2588	Y		Y	Y				Y	Y	
AF2594	Y		Y	Y				Y	Y	
AF2595	Y		Y						Y	
AF2802			Y	Y				Y	Y	
AF2803				Y	Y		Y	Y	Y	
AF3013			Y	Y						
AF3036			Y	Y	Y					

HR = Hardware restrictions **PDS** = Pack diagnostic specifics **R&L** = Restrictions and limitations **FI** = Feature interactions **D** = Datafill **SO** = Service orders **OM** = Operational measurements **L =** Logs **UI** = User interface **AMA** = Automatic message accounting

-continued-

Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AG1221			Y	Y			Y	Y		
AG1223	Y		Y	Y			Y	Y		
AG1243			Y	Y			Y			
AG1250			Y	Y				Y		
NC0388			Y	Y	Y			Y		
NTG230AB										
NC0387	Y		Y	Y	Y		Y			
NC0388			Y	Y	Y			Y		
NTG320AA										
AF3048	Y		Y	Y				Y		
AF3050	Y		Y	Y						
AF3291	Y		Y	Y	Y			Y		
AF3381	Y		Y				Y	Y	Y	
AF3382	Y			Y				Y		
AF3384	Y			Y						
NTG321AA										
AN0056	Y		Y	Y					Y	
AN0182	Y		Y	Y					Y	
NTG322AA										
AF3005	Y		Y	Y						
AF3007	Y		Y	Y						
AF3031	Y		Y	Y						
AF3033	Y		Y	Y						
AF3035	Y		Y	Y						
AF3394	Y		Y	Y						
AN0016	Y		Y	Y						
AN0046	Y		Y	Y						
NTX000AA										
AG2478			Y							
AL1274			Y							
AL2037				Y	Y					
AL2044			Y		Y					
AL2110				Y	Y					
AQ0761			Y	Y	Y					

HR = Hardware restrictions **PDS** = Pack diagnostic specifics **R&L** = Restrictions and limitations **FI** = Feature interactions **D** = Datafill **SO** = Service orders **OM** = Operational measurements **L =** Logs **UI** = User interface **AMA** = Automatic message accounting

-continued-

Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AQ0826					Y				Y	
AR0109			Y		Y					
AR0116			Y	Y						
AR0122					Y					
NTX001AA										
AD2997			Y	Y	Y			Y	Y	Y
AF1749			Y				Y			
AF1780			Y		Y		Y			Y
AF2013			Y	Y	Y					
AF2531			Y		Y			Y	Y	
AF2532			Y	Y					Y	
AF2705			Y		Y			Y		
AF2815			Y	Y	Y			Y		
AF2816			Y		Y			Y	Y	
AF4281				Y	Y					
AF4283				Y						
AF4286				Y						
AF5766					Y					
AG0724			Y						Y	
AG0919			Y							
AG1082			Y		Y			Y	Y	
AG1474									Y	
AG1818			Y	Y	Y			Y		
AG1824			Y	Y						
AG1868			Y	Y				Y		
AG1869									Y	
AG1922									Y	
AG1924								Y		
AG1925								Y	Y	
AG1927			Y		Y				Y	
AG2108									Y	
AG2149			Y	Y					Y	
AG2150			Y	Y				Y	Y	
AG2255			Y	Y	Y			Y	Y	
AG2276			Y	Y	Y					

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AG2277				Y				Y	Y	
AG2323				Y						
AG2478			Y							
AJ0191				Y	Y			Y		
AJ0194			Y		Y			Y	Y	
AJ0729	Y		Y		Y					
AJ1957			Y	Y					Y	
AJ1959			Y	Y	Y				Y	
AJ2240				Y						
AJ2290									Y	
AL0479			Y		Y					
AL0914			Y							
AL1052					Y			Y		
AL1149			Y	Y	Y				Y	
AL1518			Y	Y	Y				Y	
AL2044			Y		Y					
AL2319										
AL2417				Y	Y					
AL2486								Y		
AL2667			Y	Y				Y		
AL2669			Y							
AN0100	Y		Y	Y					Y	
AQ0841	Y				Y					
AQ0878								Y		
AQ0967	Y		Y		Y				Y	
AR0225			Y	Y	Y					
NC0086					Y					
NC0130			Y							
NC0196					Y					
NTX019AA										
AF1735			Y		Y					
NTX022AB										
AJ2446			Y	Y			Y	Y	Y	
NTX022AC										
AJ2446			Y	Y			Y	Y	Y	

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AJ2884			Y	Y	Y					
AJ2886				Y				Y		
NTX030BA										
AJ0388	Y		Y		Y					
NTX030CC										
AF1527	Y		Y		Y			Y		
AF1784			Y	Y	Y					
AF1785			Y	Y						
AF2372			Y	Y	Y			Y	Y	
AF3191			Y	Y	Y		Y	Y	Y	
NTX041AB										
AC0361			Y		Y					
AL1249			Y					Y		
AL1496				Y	Y		Y			
AL1499					Y					
AL1893								Y	Y	
NTX042AA										
AR0238			Y	Y	Y		Y			Y
NTX048AA										
AQ0777	Y		Y	Y	Y			Y	Y	
NTX054AA										
AL0944	Y		Y	Y	Y			Y	Y	
NTX056AA										
AG1524			Y	Y	Y				Y	
NTX057EA										
AG1923			Y					Y	Y	
AL1618	Y		Y		Y				Y	
NTX060AB										
AF2087	Y		Y	Y	Y				Y	
NTX065AA										
AF2310			Y		Y					
NC0052			Y	Y					Y	

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTX074AA										
AG1004			Y	Y	Y			Y	Y	
AL1885										
AR0127				Y	Y			Y		
NTX089AA										
AF1400	Y		Y		Y		Y			Y
NTX098AA										
AD4733	Y		Y	Y	Y					Y
AE1275			Y	Y	Y					Y
AF1093			Y	Y	Y					Y
AF1981			Y	Y	Y	Y				Y
AF2755							Y			Y
AF3078			Y	Y	Y			Y		Y
AN0101			Y	Y	Y			Y		Y
AN0319			Y							
NTX100AA										
AD2068			Y	Y	Y		Y		Y	
AD2488			Y	Y	Y		Y			
AD2810			Y		Y	Y				
AD2851										
AD3492			Y	Y	Y					
AF1935			Y		Y	Y			Y	
AF1936	Y		Y		Y	Y				
AF2012					Y		Y			
AF2303			Y	Y	Y	Y				
AG1489			Y					Y		
AG1541			Y	Y	Y					
NC0001			Y	Y	Y					
NC0083			Y		Y					
NTX102AA										
AE1124					Y					Y
AN0181				Y	Y					Y
NTX103AA										
AD2085										

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AD2964	Y		Y		Y					
NC0301			Y	Y	Y					Y
NTX106AA										
AG2302	Y		Y		Y	Y			Y	
NTX119AA										
AG1997			Y	Y	Y					
AJ0432			Y	Y	Y	Y				
NTX142AA										
AL1717	Y		Y	Y	Y				Y	
NTX143AA										
AL1565	Y		Y	Y	Y					
NTX149AB										
AD2665			Y		Y				Y	
NTX150AA										
AG1159	Y		Y							
NTX159AA										
AD4733	Y		Y	Y	Y					Y
AE1275			Y	Y	Y					Y
AF1093			Y	Y	Y					Y
AF1462			Y		Y	Y		Y		Y
AF1665			Y		Y					Y
AF1981			Y	Y	Y	Y				Y
AF2755							Y			Y
AF3078			Y	Y	Y			Y		Y
AF3556			Y	Y	Y	Y		Y	Y	Y
AN0101			Y	Y	Y			Y		Y
AN0319			Y							
NTX167AB										
AG1538			Y		Y		Y	Y		Y
AJ1040			Y		Y			Y		
AR0114			Y		Y			Y		

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTX186AA										
AF1778			Y	Y	Y			Y		
NTX186AB										
AN0173			Y	Y	Y			Y	Y	Y
AN0172			Y		Y					
NC0335			Y	Y	Y			Y	Y	Y
NC0428			Y	Y	Y			Y		Y
NTX208AB										
AL0011			Y	Y			Y	Y	Y	Y
NTX209AB										
NC0202			Y		Y					
NTX211AB										
NC0202			Y		Y					
NTX213AC										
AF2341	Y	Y								
AF2342	Y	Y								
AF2343	Y									
AF2344			Y		Y			Y	Y	
AF2345			Y	Y					Y	
AF2347				Y						
AF2348										
NTX244AB										
AF1252										
NTX250AA										
AC0534					Y					
AC0545	Y		Y		Y	Y			Y	
AC0546			Y							
AC0565			Y	Y	Y	Y		Y		
NTX251AA										
AC0509	Y			Y	Y	Y	Y	Y		
NTX270AA										
AF1647	Y		Y							

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AF1747	Y		Y	Y	Y		Y			
AF2583			Y							
AF2987			Y	Y	Y			Y	Y	
AF2988	Y		Y					Y	Y	
AF2989					Y		Y	Y		
AF3053			Y	Y	Y				Y	
AF3200			Y	Y	Y			Y	Y	
AF3684				Y						
AF3271	Y		Y		Y					
AF3685			Y	Y						
AF3747			Y	Y	Y				Y	
AJ0338		Y						Y		
AJ0964			Y						Y	
AJ0965			Y							
AJ1038								Y	Y	
AJ1039			Y					Y	Y	
AL1460	Y		Y	Y	Y					
AL2416	Y		Y	Y	Y					
AR0086	Y		Y	Y					Y	
NC0033					Y		Y			
NC0105			Y	Y	Y					
NC0108	Y		Y		Y		Y		Y	
NC0322			Y					Y		
NTX274AA										
AE1056	Y		Y							
NTX386AB										
AN0173			Y	Y	Y			Y	Y	Y
NC0335			Y	Y	Y			Y	Y	Y
NC0428			Y	Y	Y			Y		
NTX387AB										
AF1734			Y							
AF2251	Y		Y							
AF2254	Y		Y		Y	Y		Y	Y	
AF2255	Y		Y	Y	Y	Y	Y	Y	Y	Y
AF2672			Y		Y				Y	

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AF2983	Y		Y		Y				Y	
NTX387AC										
AF3673	Y		Y	Y	Y					
AF3680			Y	Y	Y			Y	Y	
AF3681			Y	Y						
AF3683	Y		Y	Y	Y					
AF3687	Y		Y	Y	Y			Y	Y	
AF3688	Y		Y	Y	Y				Y	
AF3689				Y						
AF3690	Y		Y	Y	Y					
AF3691	Y		Y	Y	Y			Y	Y	
AF3692	Y		Y	Y	Y				Y	
AF3693				Y	Y					
AF4310	Y		Y	Y	Y		Y		Y	
AF4495	Y		Y	Y	Y		Y		Y	
AF4512	Y		Y	Y	Y					
NTX387AD										
AF4252			Y		Y				Y	
AF4836	Y			Y						
AF4837	Y		Y	Y	Y					
AF4861	Y			Y						
AF4892	Y		Y					Y		
AF4935					Y			Y		
NTX398AA										
AF4309	Y		Y	Y	Y		Y		Y	
AF4936					Y			Y		
NTX398AB										
AF4309	Y		Y	Y	Y		Y		Y	
NTX407AB										
AD2128				Y	Y					
NTX412CA										
AJ0902			Y		Y	Y			Y	

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTX412CB										
NC0120			Y	Y	Y	Y	Y	Y		
NTX415AA										
AD1609			Y		Y	Y				
AD1610			Y							
AD2239			Y		Y	Y				
AD2318			Y	Y	Y	Y				
AG1950										
NTX416AF										
AD1607	Y		Y	Y	Y			Y	Y	
AD1612			Y	Y	Y	Y	Y			
AD2130					Y					
AD2238										
AD2445	Y		Y	Y	Y	Y				
AD2588			Y	Y	Y		Y		Y	
AD2591				Y	Y					
NTX416AG										
AD2895			Y		Y					
NC0014			Y	Y	Y	Y				
NTX416AH										
NC0022			Y	Y	Y			Y	Y	
NC0094			Y		Y					
NC0104			Y		Y			Y	Y	
NTX416AI										
NC0022			Y	Y	Y			Y	Y	
NC0094			Y		Y					
NC0104			Y		Y			Y	Y	
NC0262			Y	Y	Y	Y				
NC0269			Y	Y	Y					
NC0288			Y	Y	Y		Y		Y	
NTX416AJ										
NC0022			Y	Y	Y			Y	Y	
NC0094			Y		Y					

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NC0104			Y		Y			Y	Y	
NC0363			Y	Y	Y	Y				
NTX419AA										
NC0097			Y	Y	Y			Y	Y	
NTX420AA										
AR0148	Y		Y	Y	Y	Y				
NTX447AA										
AF1335					Y		Y	Y		
AF1336					Y					
AF1337			Y				Y	Y		
AF1338			Y		Y			Y		
AF1387			Y		Y		Y	Y	Y	
AF1643								Y		
AF1644			Y		Y	Y				
AF1646			Y		Y			Y		
AF1650									Y	
AF1651										
AF1668										
AF1736							Y	Y	Y	
AF1737								Y	Y	
AF1977								Y	Y	
AF2001										
NTX451AA										
AF1375					Y			Y		
AF1645									Y	
NC0501				Y	Y				Y	
NTX562AA										
AF1235			Y		Y				Y	
NTX563AA										
AJ0509			Y	Y						
AJ0901				Y				Y		
NTX621AB										
AF2256	Y		Y	Y	Y			Y	Y	

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AF2670	Y		Y	Y	Y			Y	Y	
AF2671										
NTX710AB										
AN0304					Y				Y	
NTX712AA										
AG1047	Y	Y	Y	Y						
NTX731AA										
AF0744	Y			Y					Y	
AF1426			Y							
AF1563	Y		Y	Y						
AF1909	Y		Y					Y	Y	
AF1974	Y		Y					Y	Y	
AF1998	Y		Y	Y				Y	Y	
AF2085			Y							
AF2374				Y					Y	
NTX732AA										
AD1778	Y		Y		Y					
AF2301	Y		Y	Y	Y	Y	Y	Y	Y	Y
AF3893	Y			Y					Y	
AL0532	Y		Y			Y				
NC0009			Y	Y	Y					
NTX733AE										
AF1564					Y	Y	Y			
AF1565			Y		Y	Y				
AF1663									Y	
NTX738AB										
AG1495					Y				Y	
NTX738AC										
AG1926					Y					
AL1719			Y		Y				Y	
NTX750AB										
AC0368										
AC0475	Y		Y	Y			Y			

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AC0487	Y			Y				Y		
AC0519	Y		Y	Y	Y				Y	
AC0520	Y		Y	Y						
AC0528			Y							
AC0530	Y		Y	Y					Y	
AC0531	Y		Y	Y						
AC0552			Y	Y	Y				Y	
AC0553			Y	Y						
AC0567	Y		Y	Y						
AC0568	Y		Y	Y						
AC0569	Y	Y		Y						
AC0570			Y	Y					Y	
AC0571	Y		Y	Y						
AC0574								Y		
AC0575										
AC0576			Y				Y			
AC0601	Y		Y	Y						
AC0603	Y			Y						
AC0604	Y		Y	Y	Y	Y				
AC0634										
AF2071			Y		Y				Y	
AJ0426			Y							
AJ0431			Y	Y		Y				
AJ0912			Y	Y	Y	Y			Y	
AJ0913				Y						
AJ0942	Y		Y	Y						
AL0955	Y		Y	Y	Y			Y	Y	
AL0956	Y		Y							
AL1040	Y	Y	Y	Y	Y			Y	Y	
AL1294			Y						Y	
AL1296	Y		Y	Y				Y	Y	
AL1314			Y	Y	Y				Y	
AL1316	Y		Y	Y				Y		
AL1322	Y		Y	Y					Y	
AL1388	Y		Y	Y					Y	
AL1389			Y					Y	Y	

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AL1585	Y			Y						
AL1588	Y									
AL1589	Y									
AL1629			Y		Y				Y	
AL1666	Y		Y	Y	Y		Y	Y	Y	
AL1667	Y		Y	Y				Y	Y	
AL1668			Y	Y	Y			Y	Y	
AL1914			Y	Y	Y			Y	Y	
AL2279			Y	Y	Y					
AL2280			Y	Y	Y		Y			
AL2539									Y	
AL2541			Y	Y						
AL2542				Y	Y					
AQ0671			Y							
AQ0672			Y	Y			Y	Y	Y	
AQ0695	Y		Y	Y						
AQ0696	Y		Y	Y						
AQ0788			Y	Y	Y			Y	Y	
AQ0789			Y	Y	Y					
AQ0882			Y	Y	Y					
NTX750AC										
AL1674	Y		Y		Y			Y	Y	
AL2539									Y	
AL2541			Y	Y						
AL2542				Y	Y					
AL2726	Y		Y		Y			Y		
AQ0788			Y	Y	Y			Y	Y	
AQ0789			Y	Y	Y					
AQ0882			Y	Y	Y					
AQ0884			Y		Y					
AR0496			Y					Y		
NTX750AD										
AF4841			Y	Y						
AF4842	Y		Y				Y		Y	
AL1674	Y		Y		Y			Y	Y	

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AL2572			Y		Y			Y	Y	
AL2726	Y		Y		Y			Y		
AQ0884			Y		Y					
AR0358			Y	Y				Y	Y	
NTX751AA										
AL2279			Y	Y	Y					
AL2280			Y	Y	Y		Y			
AL2539									Y	
AL2541			Y	Y						
AL2542				Y	Y					
AQ0788			Y	Y	Y			Y	Y	
AQ0789			Y	Y	Y					
AQ0882			Y	Y	Y					
NTX753AB										
AF3604			Y	Y	Y	Y				
AG2464										
AJ1529				Y	Y					
AR0040			Y	Y						
AR0041			Y	Y	Y					
AR0042			Y	Y	Y					
AR0043			Y	Y						
NTX754AA										
AQ0733			Y	Y	Y	Y				
AQ0734			Y	Y		Y				
AQ0735			Y							
NTX754AB										
AN0084			Y							
AN0183			Y		Y					
AR0038			Y	Y	Y	Y			Y	
NTX755AB										
AF3243			Y	Y	Y					
AF3244	Y		Y	Y						
AF3245			Y		Y					
AQ0736	Y		Y		Y					Y

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AQ0779			Y	Y	Y	Y		Y	Y	Y
NTX755AC										
AF3244	Y		Y	Y						
AF3245			Y		Y					
AF3554			Y							
AF3555			Y	Y						
AF3603										
AF4847			Y	Y						
AF4848			Y	Y						
AQ0736	Y		Y		Y					Y
AQ0737			Y		Y					
AQ0779			Y	Y	Y	Y		Y	Y	Y
NTX756AA										
AR0179			Y	Y	Y					
NTX757AA										
AG2001			Y		Y		Y			
AG2211			Y		Y					
NTX761AA										
AN0189			Y	Y		Y			Y	
NTX767AA										
AG2210			Y	Y	Y				Y	
AJ0811			Y	Y	Y		Y	Y	Y	Y
AR0168				Y						
NTX768AA										
AG2210			Y	Y	Y				Y	
AJ0811			Y	Y	Y		Y	Y	Y	Y
NTX790AB										
AC0277			Y	Y						
AC0474	Y		Y							
AD2097	Y		Y		Y					
AD2228			Y	Y				Y	Y	
AD2231	Y		Y		Y		Y			
AD2606			Y		Y		Y			

HR = Hardware restrictions **PDS** = Pack diagnostic specifics **R&L** = Restrictions and limitations **FI** = Feature interactions **D** = Datafill **SO** = Service orders **OM** = Operational measurements **L =** Logs **UI** = User interface **AMA** = Automatic message accounting

-continued-

Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AJ0170			Y							
AJ0385	Y			Y			Y		Y	
AJ0463	Y									
AJ0465			Y							
AJ0789			Y							
AJ1138			Y							
AJ1539			Y		Y				Y	
NC0032			Y							
NTX790AC										
AE1089			Y		Y					
AR0245			Y							
AR0246			Y		Y					
AR0305			Y	Y				Y	Y	
AR0435			Y	Y	Y					
NTX792AA										
AD2245			Y		Y					
NTX793AA										
AJ1539			Y		Y				Y	
AR0112			Y	Y	Y				Y	
NTX795AA										
AG1547	Y				Y					
AG1708	Y		Y		Y					Y
NTX796AA										
AG1709			Y	Y	Y	Y				Y
NTX797AA										
AJ1538			Y	Y	Y					
NTX797AB										
AR0293			Y	Y	Y					
NTX822AA										
AG1575			Y	Y	Y					
NTX829AA										
AL0290			Y		Y				Y	

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTX833AA										
AC0425	Y	Y	Y	Y	Y					
AI0167	Y		Y					Y	Y	
AI0273					Y			Y		
AL1794			Y	Y			Y			
AL1271			Y		Y		Y	Y	Y	
AL1330			Y		Y			Y	Y	
AL1333				Y					Y	
AL1449	Y		Y		Y			Y		Y
NTX835AA										
AL1071			Y	Y			Y			
AL1126			Y	Y						
AL1334			Y							
NTX836AA										
AC0428		Y	Y	Y	Y				Y	
NTX839AA										
AI0227	Y							Y	Y	
NTX839AB										
AC0422	Y	Y	Y	Y				Y	Y	
NTX853AA										
AD0351	Y		Y	Y	Y					
NTX877AB										
AL0537	Y		Y	Y	Y	Y	Y			Y
AL0612	Y		Y	Y	Y	Y	Y		Y	Y
NTX878AC										
AD2126	Y		Y	Y	Y	Y	Y		Y	
AG1568				Y	Y	Y				
NTX878AD										
AG1566			Y	Y						
NTX878AE										
NC0164			Y		Y	Y			Y	

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTX885AA										
AG1214			Y					Y	Y	
AJ0473			Y	Y					Y	
AL1566			Y	Y				Y	Y	
NTX891AA										
AN0325			Y		Y			Y		Y
NC0340			Y	Y	Y					
NTX901AA										
AD0943			Y			Y			Y	
AF0966			Y		Y	Y				
AF1439			Y	Y	Y					Y
AF1756					Y					
AF2565							Y			Y
AF2599	Y		Y		Y					
AG0649			Y				Y			
AG1318			Y				Y			
AG1854			Y	Y	Y					
AG1973			Y		Y					
AJ1224			Y		Y					
AL1541			Y		Y					
AL1608			Y							
AN0114										
AR0491			Y	Y					Y	
NC0020			Y							
NC0313			Y	Y		Y			Y	
NC0495			Y		Y			Y	Y	
NTX940AA										
AL1109								Y	Y	
AL1718			Y		Y			Y		
AL2042										
AL2236			Y					Y	Y	
AR0160				Y						
AR0359			Y	Y						

HR = Hardware restrictions **PDS** = Pack diagnostic specifics **R&L** = Restrictions and limitations **FI** = Feature interactions **D** = Datafill **SO** = Service orders **OM** = Operational measurements **L =** Logs **UI** = User interface **AMA** = Automatic message accounting

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Available feature information (continued)

Package feature	**HW**	**PDS**	**R&L**	**FI**	**DF**	**SO**	**OM**	**L**	**UI**	**AMA**
NTX941AA										
AG2480										
AI0625				Y					Y	
AI0630				Y	Y			Y	Y	
AL0797	Y				Y				Y	
AL0803	Y		Y	Y	Y		Y	Y	Y	
AL1053			Y					Y	Y	
AL1054			Y					Y	Y	
AL1055								Y	Y	
AL1182								Y	Y	
AL1183					Y					
AL1192								Y	Y	
AL1193	Y							Y	Y	
AL1197								Y	Y	
AL1200			Y	Y	Y				Y	
AL1201									Y	
AL1480			Y	Y	Y				Y	
AL1570				Y						
AL1681			Y					Y		
AL1753				Y				Y	Y	
AL1759	Y		Y	Y	Y			Y	Y	
AL1782	Y		Y		Y				Y	
AL1826			Y	Y	Y				Y	
AL1884	Y		Y		Y					
AL1968			Y	Y	Y			Y		
AL2021			Y						Y	
AL2331										
AL2030			Y	Y	Y			Y	Y	
AQ0721										
AQ0741					Y					
AQ0834			Y							
AQ0854			Y		Y					
AQ0859					Y					
AR0211					Y					

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTX942AA										
AG1385			Y	Y	Y					
AL1060			Y					Y	Y	
AL1166									Y	
AL1298										
NTX942AB										
AL1774										
AL1790			Y	Y						
NTX944AA										
AL1117				Y						
AL1195			Y	Y						
AL1378				Y	Y					
AL2120				Y	Y					
AL2121				Y	Y		Y			
AL2271			Y	Y	Y					
AR0079				Y	Y					
AR0081				Y	Y					
NTX945AA										
AC0644	Y		Y		Y					
AL1476	Y		Y		Y					
AL1477	Y		Y		Y					
AL1478					Y					
AL1779			Y	Y	Y					
AL1780			Y	Y				Y	Y	
AL1781			Y	Y	Y				Y	
AQ0717			Y	Y	Y					
AQ0718					Y					
AQ0840				Y	Y				Y	
AQ0854			Y		Y					
NTX950AA										
AC0638										
AL0787	Y								Y	
AL0790	Y	Y	Y							

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTX951AA										
AC0639	Y		Y		Y			Y	Y	
AL1186	Y	Y							Y	
AL1199										
AL1456	Y		Y		Y			Y	Y	
AQ0835										
AQ0858	Y		Y	Y	Y					
NTX983AA										
AG0925			Y	Y		Y				
NTX983AB										
AR0147			Y	Y	Y					
NTX984AA										
AG1555					Y					
NTX991AD										
AD2125			Y	Y	Y					
AD2129			Y	Y	Y	Y				Y
AD2131			Y	Y	Y		Y		Y	
AG1947			Y	Y	Y					
NTX991AE										
NC0015	Y		Y	Y	Y					
NTX991AF										
AG2004			Y		Y					
NTX991AG										
AG2004			Y		Y					
NTXA00AB										
AG1631	Y									
NC0314			Y							
NTXA00AC										
NC0440			Y	Y	Y					Y
NTXA16AA										
AF1092			Y		Y	Y				Y

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXA17AA										
AF1528			Y	Y	Y		Y			
AF1529			Y	Y	Y			Y		
AF3011			Y		Y		Y			
NTXA18AA										
AF1094	Y		Y		Y	Y	Y	Y	Y	
NTXA22AA										
AF1097			Y	Y	Y					
NTXA30AA										
AF1269			Y	Y	Y					
NTXA42AA										
AG1629	Y		Y	Y	Y	Y	Y			
NTXA45AA										
AG1675			Y		Y	Y	Y			
NTXA64AA										
AF2244			Y	Y	Y	Y			Y	Y
AG1542			Y			Y				
AG1543			Y	Y		Y				
AG1544			Y			Y			Y	Y
NTXA66AA										
AJ0192	Y		Y		Y				Y	
AJ0474			Y		Y			Y		
NTXA73AA										
AF1275			Y	Y	Y					
NTXA74AA										
AF1276			Y		Y	Y			Y	
NTXA80AA										
AG1104			Y	Y	Y				Y	
NTXA82AA										
AG2057	Y		Y	Y						

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXA83AA										
AF1214	Y									
AF1471	Y									
AF1472	Y									
AF1473										
AF1474	Y									
AF1581	Y		Y							
AF1652	Y		Y		Y				Y	
AF1687	Y		Y	Y	Y					
AF1727			Y					Y	Y	
AF1728					Y					
AF1940			Y	Y					Y	
AF1991			Y	Y					Y	
AF1992			Y					Y	Y	
AF1993	Y		Y							
AF2070	Y			Y				Y		
AF2110			Y							
AF2161			Y				Y	Y	Y	
AF2394			Y							
AF2409	Y		Y	Y						
AF2597			Y				Y			
NTXA85AA										
AF0163										
AF0164										
AF1789										
AF1790										
AF1791			Y				Y			
AF1794										
AF2676			Y	Y	Y				Y	
AF2677			Y	Y						
AF2678			Y	Y	Y					
BC2147									Y	
BC2150					Y			Y	Y	
BC2153					Y		Y		Y	

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXA85AB										
AF2490			Y							
AF2527			Y	Y						
AF2528	Y		Y							
AF2956	Y		Y	Y						
AF3622			Y							
AF3624	Y		Y	Y	Y				Y	
AF3663	Y			Y						
NTXA86AA										
AF2469			Y	Y	Y			Y		
NTXA88AA										
AF1455			Y	Y	Y			Y		Y
AF1980			Y	Y	Y		Y			Y
NTXA90AA										
AF0744	Y			Y					Y	
AF1426			Y							
AF1563	Y		Y	Y						
AF1699	Y		Y					Y		
AF1802	Y		Y					Y	Y	
AF1909	Y		Y					Y	Y	
AF1974	Y		Y					Y	Y	
AF1975			Y					Y		
AF1998	Y		Y	Y				Y	Y	
AF2085			Y							
AF2374				Y					Y	
AN0212			Y						Y	
NTXA91AA										
AF2642			Y						Y	
NTXA94AA										
AG0967				Y	Y					Y
NTXA95AA										
AG1628			Y		Y	Y	Y			

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-continued-

Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXA96AA										
AG1605			Y	Y	Y	Y	Y			
NTXE01AA										
AL0573	Y		Y				Y			
AL0857			Y	Y					Y	
AL0957	Y	Y	Y	Y						
AL0958			Y		Y				Y	
AL0959	Y		Y							
AL0960			Y							
AL1230	Y		Y							
AL2038										
AL2107	Y		Y	Y						
AL2162			Y	Y	Y			Y	Y	
AL2260			Y	Y						
AR0005			Y		Y					
AR0141			Y		Y			Y	Y	
AR0186								Y	Y	
NTXE05AA										
AF1266			Y	Y	Y		Y	Y		
NTXE09AA										
AD1857			Y	Y						
AD1858					Y					
AD1862									Y	
AD1863			Y		Y					
AD1929				Y	Y					
AD1950			Y							
NTXE09AB										
NC0185			Y	Y	Y	Y				
NTXE13AB										
AF2105			Y	Y				Y		
AG1639				Y	Y					
NTXE14AB										
AF2105			Y	Y				Y		

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AF2331	Y		Y							Y
AF2361			Y		Y					
AG1576	Y								Y	
NTXE18AA										
AF1715			Y	Y	Y				Y	Y
NTXE20AA										
AF1726			Y	Y	Y					Y
NTXE22AA										
AD2257					Y		Y	Y		
AD2258								Y		
AD2259				Y	Y					
NC0356							Y			
NTXE24AA										
AL1426					Y					
AL1427			Y		Y		Y			
AL1428			Y		Y					
NTXE24AB										
AL1429			Y	Y						
NTXE25AA										
AC0547	Y		Y	Y	Y	Y	Y			
NTXE27AA										
AG1515	Y		Y	Y	Y	Y	Y			Y
NTXE29AA										
AG1506				Y					Y	
AG1511				Y					Y	
AG1513			Y						Y	
AG1560			Y						Y	
AG1563										
AG1570				Y	Y					
NTXE30AA										
AC0442	Y	Y	Y	Y				Y	Y	

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXE32AA										
AC0222			Y		Y					
NTXE34AA										
AF2036			Y	Y	Y			Y		
NTXE35AA										
AF1781	Y		Y	Y	Y	Y	Y			
NTXE36AB										
AF1777	Y		Y	Y	Y		Y		Y	Y
NC0316			Y		Y		Y			
NTXE38AB										
AF1813	Y		Y	Y	Y	Y	Y			
AF2489	Y		Y							
AF2957	Y		Y	Y						
NTXE40AB										
AG1403	Y		Y	Y	Y	Y	Y		Y	
AG1549			Y	Y	Y	Y			Y	
NTXE43AA										
AF1922			Y	Y	Y	Y				Y
NTXE44AA										
AF1923			Y	Y	Y					Y
NTXE46AA										
AG1550			Y	Y	Y			Y		
NTXE47AA										
AG1624			Y	Y						
AG1625			Y	Y	Y	Y	Y			
AG1626			Y	Y	Y		Y			
AG1627			Y		Y					
NTXE52AA										
AG1726	Y		Y	Y	Y	Y	Y			Y
NTXE54AA										
AL1774	Y		Y	Y						

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXE55AA										
AL0991			Y	Y	Y					
NTXE56AA										
AF2384			Y			Y				Y
AG1580	Y		Y	Y	Y			Y	Y	Y
NTXE60AA										
AC0461	Y		Y		Y	Y				
NTXE62AA										
AL0211			Y	Y	Y	Y	Y	Y		Y
NTXE65AA										
AF1767			Y	Y	Y			Y	Y	
AF1768										
AL1769	Y		Y	Y						
AL1770	Y		Y	Y						
NTXE64AA										
AM0162			Y	Y	Y					
NTXE65AA										
AG1531			Y		Y				Y	
AG1532			Y	Y	Y					Y
NTXE67AA										
AF2016			Y							Y
NTXE68AA										
AF2017			Y	Y	Y		Y		Y	Y
AG1447			Y	Y	Y					Y
NTXE70AA										
AF2018			Y	Y	Y				Y	Y
NTXE71AA										
AF2019	Y		Y	Y	Y		Y	Y	Y	
NTXE72AA										
AF2020			Y	Y	Y		Y		Y	Y

HR = Hardware restrictions **PDS** = Pack diagnostic specifics **R&L** = Restrictions and limitations **FI** = Feature interactions **D** = Datafill **SO** = Service orders **OM** = Operational measurements **L =** Logs **UI** = User interface **AMA** = Automatic message accounting

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXE73AA										
AF2022	Y		Y		Y					
NTXE74AA										
AF2014	Y		Y	Y	Y		Y			
NTXE94AA										
AF2021			Y	Y	Y	Y			Y	Y
AF2860			Y		Y					
NTXE96AA										
AF1664			Y	Y	Y					Y
NTXE98AA										
AF2412	Y		Y		Y			Y	Y	
NTXF04AA										
AL1167	Y		Y	Y	Y			Y	Y	
AL1169	Y			Y	Y					
AL1170	Y			Y	Y					
AL1173	Y			Y	Y		Y	Y		
AL1391	Y			Y						
AL1392	Y			Y						
AL1705	Y			Y						
AR0200										
NTXF05AA										
AD3496	Y			Y						
AJ0447	Y		Y	Y	Y			Y	Y	
AL1208	Y			Y	Y		Y	Y	Y	
AL1402			Y							
AL2276			Y	Y	Y			Y	Y	
NTXF06AA										
AL1113	Y			Y	Y					
AL1114	Y			Y	Y					
AL1115	Y			Y	Y				Y	
AL1121		Y		Y						
AL1375				Y	Y					
AL1376	Y			Y						

HR = Hardware restrictions **PDS** = Pack diagnostic specifics **R&L** = Restrictions and limitations **FI** = Feature interactions **D** = Datafill **SO** = Service orders **OM** = Operational measurements **L =** Logs **UI** = User interface **AMA** = Automatic message accounting

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AL1379	Y			Y	Y			Y		
AL1974	Y			Y				Y	Y	
AL1975				Y					Y	
AL1976	Y		Y		Y			Y	Y	
AL1977	Y			Y			Y			
AQ1027				Y					Y	
AR0348	Y		Y	Y				Y	Y	
NTXF07AA										
AD3363			Y		Y		Y	Y	Y	
AD3579			Y		Y					
AD4720			Y	Y					Y	
AL1297				Y	Y				Y	
AL1396	Y			Y	Y			Y		
AL2158										
NTXF08AA										
AL1917			Y	Y	Y			Y		
NTXF09AA										
AJ0478			Y	Y	Y				Y	
AJ0479			Y	Y	Y					
NTXF10AA										
AF2086			Y	Y	Y		Y	Y		Y
NTXF14AA										
AF1407									Y	
NTXF15AA										
AL0934	Y								Y	
NTXF19AA										
AF2689	Y		Y		Y		Y	Y	Y	
AR0022			Y						Y	
AR0023					Y					
NTXF20AA										
AL1247			Y	Y						
AL1271			Y		Y		Y	Y	Y	
AL1895				Y						

HR = Hardware restrictions **PDS** = Pack diagnostic specifics **R&L** = Restrictions and limitations **FI** = Feature interactions **D** = Datafill **SO** = Service orders **OM** = Operational measurements **L =** Logs **UI** = User interface **AMA** = Automatic message accounting

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AL2334			Y	Y						
AQ1030			Y					Y	Y	
AQ1031				Y						
NTXF25AA										
AI0234	Y			Y						
AI0235	Y		Y	Y	Y				Y	
AL1058	Y									
AL1059			Y		Y			Y		
AL1282	Y			Y					Y	
AL1283				Y			Y	Y		
AL1284	Y		Y	Y	Y				Y	
AL1286	Y			Y			Y			
AL1287	Y		Y	Y	Y		Y	Y	Y	
AL1288	Y			Y						
AL1907	Y		Y	Y	Y			Y	Y	
AL1908	Y		Y	Y	Y					
NTXF25AB										
AJ1847			Y	Y			Y			
AJ1914			Y	Y	Y					
AJ1921			Y	Y	Y					
AJ1969			Y	Y				Y		
AL2119										
NTXF25AC										
AJ1914			Y	Y	Y					
AJ2292			Y	Y	Y					
AJ2294	Y		Y	Y	Y				Y	
NTXF25AD										
AJ2877			Y							
AJ2846			Y		Y		Y		Y	
NTXF26AA										
AL1161	Y				Y					
NTXF27AA										
AL0688	Y				Y					

HR = Hardware restrictions **PDS** = Pack diagnostic specifics **R&L** = Restrictions and limitations **FI** = Feature interactions **D** = Datafill **SO** = Service orders **OM** = Operational measurements **L =** Logs **UI** = User interface **AMA** = Automatic message accounting

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXF46AA										
AF2442			Y	Y	Y					
AF2443			Y	Y	Y			Y	Y	
AF2444	Y		Y	Y	Y			Y	Y	
AF2521			Y	Y	Y					
AF2522				Y	Y					
AF2530			Y	Y	Y	Y				
AF2613	Y			Y	Y					
AF2614			Y	Y	Y			Y		
AF2649			Y	Y	Y					
AF2650	Y		Y	Y	Y					
AF2651				Y	Y			Y	Y	
AF2656				Y	Y					
AF2686				Y	Y		Y			
AF2687				Y						
AF2688				Y	Y					
AF2724			Y	Y	Y					
AF2725			Y							
AF2726	Y		Y	Y	Y					
AF2762			Y	Y	Y					
AF2864	Y	Y	Y							
AF2967				Y	Y				Y	
AF2968			Y	Y						
AF2969			Y	Y	Y					
AF2970				Y	Y					
AF2971	Y			Y						
AF2984				Y				Y		
AF2986			Y							
AF2997	Y			Y	Y					
AF2998	Y		Y	Y	Y			Y	Y	
AF2999			Y	Y	Y			Y	Y	
AF3004				Y						
AF3798			Y	Y				Y		
AF3800			Y	Y						
AF3801				Y				Y		

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AF3805			Y	Y						
AF3807				Y	Y			Y		
AF3832				Y	Y					
AF4332	Y		Y	Y						
AF4438				Y						
AF4979										
AF4439			Y	Y	Y					
AN0225			Y		Y					
AN0230	Y				Y					
NTXF55AA										
AF2810			Y		Y			Y	Y	Y
AG1839	Y		Y	Y	Y	Y	Y		Y	
NTXF58AA										
AF2332			Y	Y		Y			Y	
NTXF56AA										
AG1877			Y	Y	Y			Y		
NTXF60AA										
AG1785	Y		Y	Y	Y	Y				
NTXF61AA										
AF2145			Y	Y	Y	Y				
AF2739			Y		Y					
NTXF69AA										
AF2333			Y	Y	Y	Y	Y		Y	Y
NTXF71AB										
AL1655			Y	Y	Y					
AL1656				Y	Y					
AL1657			Y	Y	Y					
AL1658			Y	Y	Y					
AL1659			Y	Y	Y					
AL1660			Y	Y	Y					
AL1663					Y					
AL1664					Y					
AL1740			Y	Y	Y					

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AL2130				Y						
AR0124			Y	Y						
AR0125			Y	Y						
AR0128				Y	Y					
AR0129					Y				Y	
NTXF72AB										
AF2985			Y		Y	Y				
AG2160			Y	Y	Y	Y			Y	
NTXF82AA										
AF2307			Y	Y	Y	Y	Y			
NTXF85AA										
NC0010			Y	Y	Y	Y	Y			
AL1212	Y			Y	Y					
AL1714	Y			Y						
NTXF86AA										
AL1732	Y		Y	Y	Y				Y	
AL1734			Y	Y	Y		Y			
AL1970				Y	Y					
AR0317				Y	Y		Y		Y	
NTXF87AA										
AG1162			Y	Y	Y	Y			Y	
AG1866					Y					
NTXF88AB										
AC0538					Y					
AJ0443	Y		Y	Y	Y	Y	Y	Y	Y	
AJ0445			Y		Y	Y	Y	Y		
AJ1240			Y		Y				Y	
NTXF92AA										
AJ0301			Y	Y	Y				Y	
AJ0577			Y	Y	Y					
AJ0945			Y	Y	Y			Y		
AJ0956	Y		Y	Y	Y			Y	Y	

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXF93AA										
AJ0303	Y		Y	Y	Y			Y	Y	
AJ0304	Y		Y	Y	Y					
AJ0305			Y		Y	Y			Y	
AJ0942										
NTXF94AA										
AJ0576	Y		Y	Y	Y			Y	Y	
NTXF94AB										
AJ0607			Y	Y	Y			Y		
NTXF95AA										
AJ0302	Y		Y	Y	Y					
AJ0397	Y		Y	Y						
AJ0398			Y	Y						
AJ0399	Y		Y	Y						
AJ0400			Y	Y						
AJ0493			Y	Y						
AJ0943	Y		Y	Y						
AJ0944			Y	Y						
AJ0955	Y		Y	Y	Y					
AJ1018	Y		Y	Y					Y	
AJ1340			Y	Y				Y	Y	
NTXF97AA										
AI0629	Y			Y	Y					
AI0631	Y		Y					Y		
AL1587	Y		Y					Y	Y	
AQ0697	Y		Y	Y					Y	
NTXH70AA										
AI0407	Y			Y	Y				Y	
AL1929	Y		Y	Y	Y			Y	Y	
NTXJ00AA										
AF2118			Y				Y			
AF2267			Y		Y				Y	
AF2270			Y							

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AF2271			Y							
AF2273	Y		Y	Y						
AF2274	Y		Y							
AF2275	Y		Y	Y	Y	Y	Y	Y	Y	Y
AF2276	Y			Y						
AF2450	Y			Y						
AF2452	Y		Y	Y						
AF2454	Y			Y						
AF2476	Y		Y	Y	Y					
AL1043			Y							
AL1046			Y		Y					
NTXJ00AB										
AF4220				Y						
AF4221				Y	Y				Y	
NTXJ10AA										
NC0013			Y	Y	Y		Y		Y	
NTXJ11AA										
AL1816										
AL1818										
NTXJ35AA										
AJ0190			Y		Y			Y	Y	
AJ0472			Y	Y	Y		Y		Y	
NTXJ37AA										
NC0003	Y		Y	Y	Y		Y	Y	Y	
NTXJ38AA										
NC0011			Y	Y	Y	Y		Y	Y	
NTXJ39AA										
AG1954	Y		Y	Y	Y	Y	Y			
NC0499			Y	Y	Y					
NTXJ40AA										
AL1500			Y	Y	Y				Y	
AL1676			Y	Y	Y				Y	

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXJ41AA										
AF2367			Y						Y	
NTXJ42AA										
AD1313			Y		Y			Y		Y
AD2286	Y		Y	Y						
NTXJ43AA										
AD2247			Y	Y	Y					
AM0162			Y	Y	Y					
NTXJ44AA										
AF2316								Y	Y	
NTXJ47AA										
NC0019	Y		Y	Y	Y	Y		Y	Y	Y
NTXJ48AA										
AJ0605	Y		Y	Y	Y			Y	Y	
AJ0957				Y				Y	Y	
NTXJ51AA										
AF4839	Y		Y	Y					Y	
AL1320	Y		Y	Y	Y					
AL1321			Y	Y	Y				Y	
AQ0875	Y		Y	Y	Y				Y	
NTXJ54AA										
AG1913	Y		Y		Y					
NTXJ58AA										
AF1731			Y	Y	Y	Y				
NTXJ59AA										
AG1945			Y	Y	Y		Y	Y		
NTXJ59AB										
AG1945			Y	Y	Y		Y	Y		
AG1946					Y					
AG2336			Y							
AG2337										
AG2338			Y	Y	Y					

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AR0051					Y					
NTXJ59AC										
AG2338			Y	Y	Y					
AR0047			Y	Y	Y					
AR0217				Y			Y	Y		
AR0391			Y		Y					
NTXJ60AA										
AG2005				Y	Y				Y	
AG2195			Y	Y	Y					
AJ0908			Y		Y	Y				
AJ0909			Y	Y	Y					
AR0048			Y		Y					
NTXJ60AB										
AR0311	Y		Y	Y	Y					
NTXJ62AA										
AG2003			Y	Y	Y					
AG2291			Y		Y		Y			
AG2481			Y	Y	Y		Y			
AR0024			Y	Y	Y					
NTXJ63AA										
AG2303			Y	Y	Y		Y			
NTXJ65AA										
AR0004	Y		Y	Y	Y					
NTXJ67AA										
AF2395			Y		Y					
NTXJ68AA										
AD2467			Y	Y	Y					
NTXJ69AA										
NC0028					Y	Y	Y	Y		
NTXJ70AA										
NC0025				Y	Y					

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXJ73AA										
NC0035			Y		Y		Y			Y
NTXJ78AA										
AF1880				Y		Y				
NTXJ82AA										
AF1085			Y	Y					Y	Y
AF2859			Y	Y						
NC0056	Y	Y		Y					Y	Y
NTXJ83AA										
AG1565										
NTXJ84AA										
AL0604				Y						
NC0053			Y	Y	Y	Y				
NC0055			Y	Y	Y	Y				
NC0084			Y	Y	Y	Y				
NC0200			Y			Y				
NTXJ91AA										
AL1640			Y	Y			Y			
AL1677	Y		Y	Y	Y		Y		Y	
NTXJ93AA										
NC0077			Y	Y	Y	Y				
NTXJ94AA										
NC0079				Y	Y			Y	Y	
NTXJ96AA										
AF2529	Y		Y	Y	Y		Y			
NTXJ97AA										
NC0081			Y	Y	Y	Y				
NTXJ98AA										
NC0080			Y	Y	Y	Y				
NTXK02AB										
NC0336			Y	Y	Y			Y		

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXM93AA										
AE1101			Y	Y						
NTXN00AA										
AL1678			Y	Y						
NTXN01AA										
AG1984			Y	Y	Y				Y	Y
NTXN01AB										
AG2554				Y	Y					
NTXN04AA										
AF2601			Y	Y	Y		Y	Y		
NTXN07AA										
AG1980			Y	Y	Y					
AF3679			Y		Y	Y				
NTXN10AA										
AF2471			Y		Y		Y	Y	Y	
AF2473			Y		Y		Y			
AF2474			Y				Y			
AF2475			Y		Y		Y		Y	
NTXN11AA										
AG2035			Y		Y					
NTXN12AA										
AF2370			Y	Y	Y				Y	Y
NTXN13AA										
AD2587	Y		Y		Y					Y
NTXN16AA										
AL1696	Y			Y	Y				Y	
NTXN17AA										
AF2146	Y		Y	Y	Y	Y		Y	Y	
NTXN18AA										
AL1328	Y		Y	Y						
AL1449	Y		Y		Y			Y		Y

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AL1834			Y	Y						
NTXN19AA										
AL1498										
NTXN21AA										
AL1647			Y	Y	Y		Y			
AL1648			Y	Y	Y					
AL1652					Y					
AL1701			Y	Y						
AL1702			Y		Y				Y	
AL2020	Y		Y		Y					
AL2080	Y		Y		Y				Y	
AL2082			Y		Y					
AL2089			Y	Y	Y				Y	
AL2090			Y	Y			Y	Y		
AL2093	Y		Y	Y			Y	Y		
AL2330			Y	Y	Y		Y			
AR0158				Y						
NTXN24AA										
AL2147			Y	Y				Y		
AL2148			Y	Y	Y					
AL2294	Y		Y	Y	Y					
NTXN26AA										
AG2244			Y	Y	Y					
NTXN27AA										
AR0252				Y	Y		Y		Y	
NTXN28AA										
AN0099					Y					Y
NTXN29AA										
AF2261	Y		Y	Y				Y	Y	
AF2262								Y		
NTXN31AA										
AJ1056				Y	Y	Y			Y	
AJ1266			Y						Y	

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXN35AA										
NC0117			Y		Y					
NTXN46AA										
NC0358			Y	Y						
NTXN49AA										
NC0146			Y	Y	Y		Y	Y		Y
NTXN50AA										
AF2145			Y	Y	Y	Y				
NTXN54AA										
NC0152	Y		Y	Y	Y		Y		Y	
NTXN55AA										
AF2592	Y		Y	Y	Y			Y	Y	
NC0030			Y		Y					
NTXN59AA										
NC0030			Y		Y					
NC0294			Y	Y	Y					
NTXN60AA										
NC0162	Y				Y			Y	Y	
NTXN65AA										
NC0112			Y	Y	Y	Y				
NTXN66AA										
AF2759	Y		Y	Y	Y	Y		Y		
NTXN68AA										
AF2582			Y	Y	Y			Y	Y	
NTXN75AA										
NC0192	Y				Y					
NTXN80AA										
AF1725			Y						Y	
NTXN82AA										
AF2659			Y	Y				Y		
AF2699				Y						

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AF2700				Y						
AF2701				Y			Y	Y	Y	
AF2702			Y	Y					Y	
AF2865				Y						
NTXN82AB										
AF2795			Y	Y						
AF2796			Y	Y						
AF2797			Y	Y				Y	Y	
AF2798			Y	Y				Y		
AF3178			Y	Y						
NTXN83AA										
AL1453										
AR0478			Y	Y						
NTXN85AA										
AF2777			Y	Y	Y				Y	
NTXN86AA										
AF2560			Y				Y			
NTXN87AA										
AF4838	Y		Y							
AL2359			Y							
AL2367	Y		Y	Y	Y				Y	
AL2368	Y		Y	Y	Y					
NTXN89AA										
AL2365	Y		Y	Y	Y					
NTXN93AA										
AL2363	Y		Y	Y					Y	
AL2364				Y	Y					
AL2365	Y		Y	Y	Y					
NTXN97AA										
AF2830	Y		Y	Y			Y			
AG2073	Y		Y	Y	Y	Y	Y			

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXN99AA										
AC0615	Y		Y	Y	Y	Y			Y	
NTXP00AA										
NC0109		Y	Y	Y	Y	Y	Y	Y	Y	
NTXP01AA										
AG2243			Y		Y					
NTXP09AA										
NC0256			Y	Y	Y	Y	Y	Y	Y	
NTXP10AA										
AL2055					Y					
AD3502	Y			Y	Y		Y	Y		
NTXP12AA										
AF2879	Y		Y	Y	Y	Y	Y			
NTXP13AA										
AL1912			Y					Y	Y	
AL1978	Y	Y	Y	Y	Y			Y	Y	
NTXP14AA										
AF2704			Y	Y	Y			Y	Y	
NTXP15AA										
AF3022	Y		Y		Y			Y	Y	
NTXP17AA										
AD4337										
NTXP23AA										
AD4339			Y	Y	Y					
AD4340			Y	Y						
AD4341			Y		Y					
NTXP38AA										
AL2040	Y		Y		Y	Y			Y	
NTXP41AA										
AF2875			Y	Y	Y		Y	Y	Y	Y
AF2876			Y	Y	Y		Y		Y	

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AF2877				Y	Y					Y
AF2965	Y		Y	Y	Y				Y	
NTXP42AA										
AF2875			Y	Y	Y		Y	Y	Y	Y
AF2878	Y			Y	Y					
NTXP43AA										
AJ1053	Y		Y	Y	Y			Y		
NTXP44AA										
AL1727										
AL1756										
AQ0857				Y	Y					
NTXP47AA										
AG2273			Y		Y					
AG2322			Y		Y					Y
AG2327			Y		Y					
AG2328			Y	Y						
AG2343			Y	Y	Y					
AJ1833				Y	Y					
AJ1836			Y		Y					
AJ1837			Y	Y						
AJ1838			Y	Y						
AL1615	Y				Y		Y		Y	
AL1616			Y		Y					
AL1906	Y		Y		Y					
AL2025			Y	Y	Y					
AL2056			Y	Y						
AL2057			Y	Y						
AL2058			Y	Y						
AL2059			Y	Y						
AL2061				Y						
AL2065			Y							
AL2066			Y	Y						
AL2067			Y	Y	Y					
AL2068			Y	Y						

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AL2069			Y	Y						
AL2125			Y	Y						
AL2126					Y					
AL2127			Y		Y					
AL2128			Y		Y					
AL2195			Y	Y	Y				Y	
AL2198			Y	Y	Y				Y	
AL2200			Y	Y	Y				Y	
AL2290			Y	Y	Y					
AL2291			Y		Y					
AL2326			Y		Y					
AL2438				Y	Y					
AL2440	Y		Y	Y					Y	
AL2441	Y		Y	Y				Y		
AQ0845			Y	Y						
AQ0847			Y	Y	Y					
AQ0849			Y	Y			Y			
AQ0852			Y							
AQ0862	Y		Y		Y					
AQ0887			Y		Y					
AQ0894										
NTXP47AB										
AQ1008			Y	Y	Y					
AQ1010	Y		Y	Y	Y					Y
NTXP48AA										
AJ1485			Y		Y					
AJ1486	Y			Y	Y					
NTXP49AA										
AF2861			Y		Y			Y		
AF2862	Y		Y	Y	Y			Y		
AF2863	Y	Y	Y	Y	Y		Y	Y		
AF3536			Y	Y	Y		Y			
NTXP53AA										
AG1978			Y	Y	Y	Y			Y	

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXP53AB										
AG1978			Y	Y	Y	Y			Y	
AL2070										
NTXP55AA										
AJ2446			Y	Y			Y	Y	Y	
NTXP55AB										
AL2446			Y	Y			Y	Y	Y	
AJ2884			Y	Y	Y					
AJ2886				Y				Y		
NTXP57AA										
NC0343			Y	Y	Y	Y	Y	Y	Y	
NTXP58AA										
NC0295			Y	Y	Y			Y		
NTXP72AA										
AR0105			Y	Y						
AR0106	Y		Y	Y	Y			Y	Y	
NTXP75AA										
AL2289			Y	Y	Y	Y				
NTXP78AA										
NC0293			Y	Y	Y		Y		Y	
NTXP80AA										
NC0299	Y		Y	Y	Y	Y				
NTXP81AA										
AF1750			Y	Y			Y	Y	Y	
NTXP86AA										
NC0303			Y		Y					
NTXP89AA										
AJ1162	Y		Y		Y			Y	Y	
NTXP92AA										
AF2784	Y		Y	Y	Y		Y		Y	
AF2785	Y		Y	Y	Y			Y		

HR = Hardware restrictions **PDS** = Pack diagnostic specifics **R&L** = Restrictions and limitations **FI** = Feature interactions **D** = Datafill **SO** = Service orders **OM** = Operational measurements **L =** Logs **UI** = User interface **AMA** = Automatic message accounting

-continued-

Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AF2786										
AF2787				Y						
AF2788			Y	Y	Y					
AF2790				Y						
AF2791	Y		Y	Y						
AF2792		Y	Y		Y					
AF2793	Y		Y	Y	Y				Y	
AF2867			Y	Y	Y				Y	
AF4319			Y							
AF4326			Y	Y						
AF4327			Y	Y						
AF4328			Y	Y						
AN0191			Y	Y						
NTXP92AB										
AF4903	Y		Y					Y	Y	
NTXP95AA										
AF2993	Y		Y		Y					
AF3573	Y			Y	Y					
NTXP96AA										
AF3019			Y	Y		Y	Y		Y	
AN0082	Y		Y	Y	Y	Y	Y		Y	
NTXP97AA										
AL1729			Y	Y				Y		
NTXP99AA										
NC0317	Y		Y		Y			Y	Y	
NTXP99AB										
AN0081				Y	Y			Y	Y	
NTXQ12AA										
AF2795			Y	Y						
AF2796			Y	Y						
AF2797			Y	Y				Y	Y	
AF2798			Y	Y				Y		
AF3178			Y	Y						

HR = Hardware restrictions **PDS** = Pack diagnostic specifics **R&L** = Restrictions and limitations **FI** = Feature interactions **D** = Datafill **SO** = Service orders **OM** = Operational measurements **L =** Logs **UI** = User interface **AMA** = Automatic message accounting

-continued-

Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXQ18AA										
NC0337			Y	Y				Y	Y	
NTXQ23AA										
AN0327			Y	Y	Y			Y	Y	
NTXQ27AA										
AJ0591			Y	Y	Y	Y			Y	
NTXQ27AB										
AR0170			Y	Y	Y					
NTXQ29AA										
AF3020	Y		Y	Y	Y	Y	Y			
NTXQ31AA										
AG2479			Y		Y				Y	
NTXQ34AA										
AJ1480			Y	Y	Y			Y		Y
AL2182			Y	Y	Y			Y		
NTXQ35AA										
AR0102			Y	Y	Y			Y		Y
NTXQ42AA										
AR0219			Y		Y	Y			Y	
AR0231			Y	Y	Y		Y			
AR0235			Y		Y					
AR0238			Y	Y	Y		Y			Y
AR0298			Y							
NTXQ43AA										
AR0220										
AR0229			Y	Y	Y		Y			
AR0449			Y						Y	
NTXQ44AA										
AR0239			Y	Y				Y	Y	
NTXQ48AA										
AD4443			Y	Y	Y					

HR = Hardware restrictions **PDS** = Pack diagnostic specifics **R&L** = Restrictions and limitations **FI** = Feature interactions **D** = Datafill **SO** = Service orders **OM** = Operational measurements **L =** Logs **UI** = User interface **AMA** = Automatic message accounting

-continued-

Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AR0374			Y	Y						
NTXQ50AA										
AR0219			Y		Y	Y			Y	
AR0228			Y	Y						
NTXQ51AA										
AR0209			Y		Y					
NTXQ52AA										
AL1455			Y	Y	Y			Y		
NTXQ54AA										
AR0327				Y						
NTXQ54AB										
AQ1092				Y						
AR0326				Y					Y	
AR0406				Y						
AR0326				Y					Y	
AR0704				Y						
NTXQ56AA										
AR0422			Y	Y	Y					
NTXQ64AA										
AG1865			Y	Y	Y					
NTXQ65AA										
AG2329			Y		Y	Y	Y	Y		Y
NTXQ70AA										
AN0196			Y	Y	Y	Y	Y			
NC0368			Y						Y	
NTXQ73AA										
AG2553			Y							
NTXQ81AA										
AF2858	Y		Y	Y		Y				
NTXQ89AA										
AR0145										

HR = Hardware restrictions **PDS** = Pack diagnostic specifics **R&L** = Restrictions and limitations **FI** = Feature interactions **D** = Datafill **SO** = Service orders **OM** = Operational measurements **L =** Logs **UI** = User interface **AMA** = Automatic message accounting

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXQ90AB										
NC0485			Y	Y	Y	Y			Y	
NTXQ91AA										
NC0377										
NC0480										
NTXQ95AA										
AL2024			Y	Y	Y		Y	Y		
NTXR21AA										
AF4680			Y		Y		Y	Y	Y	
NC0390			Y	Y	Y		Y		Y	
NTXR25AA										
NC0418			Y	Y	Y	Y				Y
NC0497	Y		Y	Y	Y					
NTXR26AA										
AR0183			Y	Y	Y		Y			
NTXR27AA										
AR0429			Y	Y	Y					
NTXR28AA										
AJ1846	Y		Y	Y	Y				Y	
NTXR31AA										
AF2980	Y		Y	Y	Y			Y		
AF3379			Y	Y	Y		Y	Y		
AF3391			Y	Y	Y			Y		
NTXR34AA										
AF3732	Y		Y	Y						
AF3733	Y		Y	Y					Y	
AL2540	Y		Y	Y						
NTXR37AA										
NC0429	Y		Y	Y	Y					
NTXR42AA										
AF3658	Y		Y	Y	Y			Y	Y	

HR = Hardware restrictions **PDS** = Pack diagnostic specifics **R&L** = Restrictions and limitations **FI** = Feature interactions **D** = Datafill **SO** = Service orders **OM** = Operational measurements **L =** Logs **UI** = User interface **AMA** = Automatic message accounting

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Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXR43AA										
AG2555			Y		Y			Y	Y	Y
AG2556			Y	Y	Y					
NTXR44AA										
AJ0446				Y	Y			Y		
NTXR46AA										
AL2236			Y					Y	Y	
NTXR48AA										
AF2783					Y		Y	Y		
NTXR49AA										
AD3936	Y		Y	Y						
AD3937	Y		Y	Y	Y		Y			Y
AD3938	Y				Y			Y		
AD4433	Y		Y	Y						
AD4449	Y		Y	Y	Y					
AD4735	Y			Y						
NTXR50AA										
AF2964	Y		Y	Y	Y		Y	Y	Y	
NTXR52AA										
AF3003	Y		Y	Y	Y			Y		
NTXR59AA										
NC0483			Y	Y	Y					
NTXR62AA										
AN0303			Y	Y	Y					
NTXR63AA										
AN0102			Y	Y	Y				Y	
NTXR65AA										
AD3879	Y			Y						
AD4574			Y		Y					
NTXR66AA										
AD4732	Y		Y	Y	Y		Y			Y

HR = Hardware restrictions **PDS** = Pack diagnostic specifics **R&L** = Restrictions and limitations **FI** = Feature interactions **D** = Datafill **SO** = Service orders **OM** = Operational measurements **L =** Logs **UI** = User interface **AMA** = Automatic message accounting

-continued-

Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXR68AA										
AR0295					Y					
NTXR72AA										
AR0010			Y	Y				Y	Y	
AR0117				Y						
AR0118			Y		Y					
NTXR74AA										
AR0361			Y	Y						
NTXR83AA										
AR0323					Y					
NTXR84AA										
AR0322			Y							
NTXR85AA										
AR0213			Y	Y						
AJ2878			Y		Y		Y		Y	Y
NTXR87AA										
AN0146			Y	Y	Y			Y		
AN0150	Y		Y	Y	Y		Y	Y	Y	
AN0151	Y		Y	Y	Y			Y	Y	
AN0152			Y	Y	Y		Y			
AN0153			Y	Y	Y					
AN0162			Y	Y	Y			Y		
AN0216	Y		Y	Y	Y					
AD4574			Y		Y					
NTXR88AA										
AN0322			Y	Y	Y		Y			
NTXR91AA										
AE1088										
NTXR92AA										
AD4550			Y		Y					
NTXR95AA										
AN0232			Y	Y	Y			Y	Y	

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-continued-

Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AN0323	Y		Y	Y	Y		Y			Y
NTXS01AA										
AQ0947	Y		Y	Y	Y			Y	Y	
AQ0948	Y		Y	Y						
NTXS04AA										
AR0011			Y		Y		Y	Y		
NTXS05AA										
AF4218				Y	Y				Y	
AF4219				Y						
AD4574			Y		Y					
NTXS09AA										
AD3938	Y				Y			Y		
AD4421	Y		Y	Y	Y		Y			Y
AD4438	Y		Y	Y						
NTXS11AA										
AL1693	Y		Y	Y	Y					
AR0142			Y							
NTXS12AA										
AQ1018	Y		Y	Y					Y	
NTXS17AA										
AJ2887	Y		Y	Y	Y		Y	Y		Y
AJ2888			Y	Y					Y	
AJ2889	Y		Y	Y	Y					
NTXS18AA										
AN0259	Y		Y		Y					
NTXS19AA										
AN0324	Y			Y	Y			Y		
NTXS22AA										
AR0215			Y	Y	Y		Y			
NTXS25AA										
AD3317			Y	Y						
AD3318			Y		Y				Y	

HR = Hardware restrictions **PDS** = Pack diagnostic specifics **R&L** = Restrictions and limitations **FI** = Feature interactions **D** = Datafill **SO** = Service orders **OM** = Operational measurements **L =** Logs **UI** = User interface **AMA** = Automatic message accounting

-continued-

Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AD3318				Y						
AD3320	Y		Y	Y	Y					
AD3321			Y	Y						
AD3322			Y	Y						
AD3443			Y	Y						
AD4421	Y		Y	Y	Y		Y			Y
AD4750			Y	Y						
AD4751								Y		
AD4755	Y		Y							
AD4756	Y		Y							
AD4948	Y		Y				Y			
NTXS26AA										
AD4464	Y		Y	Y	Y					
NTXS27AA										
AD4439	Y		Y		Y				Y	
NTXS28AA										
AD3936	Y		Y	Y						
AD3937	Y		Y	Y	Y		Y			Y
NTXS30AA										
AF2980	Y		Y	Y				Y		
AF3379	Y		Y	Y	Y			Y		
AF3391	Y		Y	Y				Y		
AN0069	Y		Y	Y	Y					
NTXS31AA										
AF3006			Y	Y			Y			
AF3049			Y	Y			Y			
AF3532	Y		Y	Y	Y		Y		Y	
AN0047			Y	Y	Y					
AN0178	Y			Y						
NTXS32AA										
AF2684										
AF3290			Y							
AL2016			Y						Y	
AL2479	Y		Y					Y		

HR = Hardware restrictions **PDS** = Pack diagnostic specifics **R&L** = Restrictions and limitations **FI** = Feature interactions **D** = Datafill **SO** = Service orders **OM** = Operational measurements **L =** Logs **UI** = User interface **AMA** = Automatic message accounting

-continued-

Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXS51AA										
AR0540	Y		Y	Y						
NTXS64AA										
AF4893			Y	Y						
AF4894	Y		Y	Y						
AF4895	Y		Y	Y						
NTXS65AA										
AF4893			Y	Y						
AF4894	Y		Y	Y						
AF4895	Y		Y	Y						
NTXS66AA										
AJ2369			Y	Y	Y					
AJ2860			Y		Y		Y			Y
AJ2861			Y	Y	Y					
AJ3280			Y	Y	Y					Y
AJ3285			Y		Y					
NTXS67AA										
AJ2885			Y	Y	Y					
NTXS70AA										
AR0341			Y	Y			Y			
AR0400										
AR0401			Y	Y						
AR0402			Y	Y			Y			
AR0403			Y	Y					Y	
AR0485			Y	Y						
AR0486			Y	Y						
AR0630				Y						
NTXS71AA										
AR0521			Y							
NTXS72AA										
AQ0984	Y		Y	Y						

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-continued-

Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXT10AA										
AD6516	Y		Y						Y	
NTXT11AA										
AR0900	Y		Y	Y	Y		Y	Y	Y	
NTXT12AA										
AN0616	Y		Y	Y	Y	Y				
AN0631	Y		Y	Y						
NTXT13AA										
AN0632	Y		Y	Y	Y	Y				
AN0633	Y		Y	Y						
NTXT14AA										
AR0307			Y	Y	Y					
NTXT15AA										
AN0739			Y	Y	Y					Y
NTXT16AA										
AN0463	Y			Y						
NTXT17AA										
AN0465	Y			Y	Y					
NTXT18AA										
AN0174			Y	Y	Y					
NTXT19AA										
AN0834			Y	Y	Y		Y		Y	Y
NTXT20AA										
AN0435					Y					Y
NTXT22AA										
AR0918	Y			Y					Y	
NTXT23AA										
AF4879			Y	Y						
AF4882			Y	Y						
AF4883			Y	Y						
AF4887				Y						

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-continued-

Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
AF5378			Y		Y					
AF5455				Y	Y					
AF5533			Y	Y						
AF5536				Y						
NTXV18AA										
AL2694				Y	Y					
AL2696			Y	Y	Y		Y	Y	Y	
NTXV22AA										
AR0269			Y	Y	Y					
AR0270			Y	Y			Y	Y	Y	
AR0273	Y		Y	Y			Y	Y	Y	
NTXV23AA										
AR0035			Y	Y						
NTXV24AA										
AR0212			Y	Y	Y		Y	Y		
NTXV25AA										
AR0271			Y	Y	Y			Y	Y	
NTXW00AA										
AE0896			Y	Y						
NTXW01AA										
AE0946			Y	Y	Y			Y	Y	
AE1099			Y	Y						
NTXW02AA										
AE0956				Y						
NTXW03AA										
AE1013			Y							
NTXW20AA										
AE0958			Y	Y						

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-continued-

Available feature information (continued)

Package feature	HW	PDS	R&L	FI	DF	SO	OM	L	UI	AMA
NTXW21AA										
AE1106	Y		Y	Y	Y					

Notes:
Note:

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End

Feature-to-NTP summary table

This table identifies Northern Telecom publications (NTP) that contain further details on each feature in the current software release. The features are listed in the left column in alphanumeric order by feature package, and Ys are placed in the various columns across the page to show the functional area affected by that feature. For example, feature AR0238 in package NTX042AA has a Y in the Maint column, and further maintenance details are available in the *AIN Release 0.1 SSP Complete Maintenance Guide*, 297-5161-510.

Feature information available

Package feature	**PG**	**P&E**	**Admin**	**Trans**	**Maint**	**NTP**
NTX042AA						
AR0238					Y	297-5161-510
AR0238				Y		297-5161-351
AR0238			Y			297-1001-341
AR0238			Y			297-5161-011
AR0238		Y				297-1001-182
AR0238	Y					297-1001-012
NTX098AA						
AD4733				Y		297-1001-365
AD4733			Y			297-1001-341
AD4733		Y				297-1001-182
AD4733	Y					297-1001-012
AD4733	Y					297-2461-010
AD4733	Y					297-2461-021
AN0319				Y		297-1001-365
AN0319			Y			297-1001-119
AN0319			Y			297-1001-341
AN0319		Y				297-1001-182

PG = Product Guide **P&E** = Planning and Engineering **Admin** = Administration **Trans** = Translations **Maint** = Maintenance

-continued-

Feature information available (continued)

Package feature	PG	P&E	Admin	Trans	Maint	NTP
AN0319	Y					297-1001-012
NTX159AA						
AD4733				Y		297-1001-365
AD4733			Y			297-1001-341
AD4733		Y				297-1001-182
AD4733	Y					297-1001-012
AD4733	Y					297-2461-010
AD4733	Y					297-2461-021
AN0319				Y		297-1001-365
AN0319			Y			297-1001-119
AN0319			Y			297-1001-341
AN0319		Y				297-1001-182
AN0319	Y					297-1001-012
NTX387AD						
AF4252					Y	297-2731-520
AF4252				Y		297-2731-350
AF4252	Y					297-2731-010
AF4836					Y	297-2731-520
AF4836					Y	297-2731-521
AF4836					Y	297-2731-525
AF4836				Y		297-2731-350
AF4836		Y				297-2731-155
AF4836	Y					297-2731-010
AF4837					Y	297-2731-520
AF4837					Y	297-2731-521
AF4837					Y	297-2731-525
AF4837				Y		297-2731-350
AF4837		Y				297-2731-155
AF4837	Y					297-2731-010
AF4861					Y	297-2731-520
AF4861					Y	297-2731-521
AF4861					Y	297-2731-525
AF4861				Y		297-2731-350
AF4861		Y				297-2731-155
AF4861	Y					297-2731-010
AF4892					Y	297-2731-520

PG = Product Guide **P&E** = Planning and Engineering **Admin** = Administration **Trans** = Translations
Maint = Maintenance

-continued-

Feature information available (continued)

Package feature	PG	P&E	Admin	Trans	Maint	NTP
AF4892					Y	297-2731-521
AF4892					Y	297-2731-525
AF4892				Y		297-2731-350
AF4892		Y				297-2731-155
AF4892	Y					297-2731-010
AF4935					Y	297-2731-520
AF4935				Y		297-2731-350
AF4935	Y					297-2731-010
NTX398AA						
AF4936					Y	297-2721-520
AF4936				Y		297-2721-350
NTX750AD						
AF4841	Y					297-2761-010
AF4842					Y	297-2761-520
AF4842			Y			297-2761-320
NTX790AC						
AE1089				Y		297-2401-360
AR0435				Y		297-2401-360
NTX797AB						
AR0293				Y		297-2401-360
NTXF20AA						
AQ1030					Y	297-1001-587
AQ1030					Y	297-5121-545
AQ1030					Y	297-5321-545
NTXJ39AA						
NC0499	Y					297-1421-010
NC0499			Y			297-1421-110
NC0499		Y				297-1421-503
NTXJ51AA						
AF4839					Y	297-2761-520
NTXN07AB						
AF3679					Y	297-2051-104

PG = Product Guide **P&E** = Planning and Engineering **Admin** = Administration **Trans** = Translations
Maint = Maintenance

-continued-

Feature information available (continued)

Package feature	PG	P&E	Admin	Trans	Maint	NTP
NTXN83AA						
AR0478					Y	297-5121-545
AR0478					Y	297-5321-545
NTXN87AA						
AF4838					Y	297-2761-520
NTXP92AB						
AF4903					Y	297-2761-520
NTXQ42AA						
AR0219				Y		297-5161-351
AR0219			Y			297-5161-011
AR0231				Y		297-5161-351
AR0231			Y			297-5161-011
AR0235				Y		297-5161-351
AR0235			Y			297-5161-011
AR0238					Y	297-5161-510
AR0238				Y		297-5161-351
AR0238			Y			297-1001-341
AR0238			Y			297-5161-011
AR0238		Y				297-1001-182
AR0238	Y					297-1001-012
NTXQ43AA						
AR0220						297-5161-351
AR0229					Y	297-5161-510
AR0229				Y		297-5161-351
AR0229			Y			297-5161-011
AR0449					Y	297-5161-510
AR0449				Y		297-5161-351
NTXQ44AA						
AR0239					Y	297-5161-510
AR0239			Y			297-5161-011
NTXQ48AA						
AD4443				Y		297-5161-351
AD4443			Y			297-5161-011
AR0374			Y			297-5161-011

PG = Product Guide **P&E** = Planning and Engineering **Admin** = Administration **Trans** = Translations **Maint** = Maintenance

-continued-

Feature information available (continued)

Package feature	PG	P&E	Admin	Trans	Maint	NTP
NTXQ50AA						
AR0219				Y		297-5161-351
AR0219			Y			297-5161-011
AR0228				Y		297-5161-351
AR0228			Y			297-5161-011
NTXQ54AA						
AR0327		Y				297-5151-100
NTXQ56AA						
AR0422			Y			297-5161-011
AR0422					Y	297-5161-510
AR0422				Y		297-5161-351
NTXR62AA						
AN0303				Y		297-2001-351
NTXR63AA						
AN0102				Y		297-1411-350
AN0102		Y				297-1411-101
AN0102	Y					297-1411-010
NTXR66AA						
AD4732	Y					297-2461-010
AD4732	Y					297-2461-021
NTXR88AA						
AN0322				Y		297-2001-351
NTXR90AA						
AN0145					Y	297-5401-520
AN0145				Y		297-5401-350
NTXR90AB						
AN0145					Y	297-5401-520
AN0145				Y		297-5401-350
NTXR95AA						
AN0232					Y	297-5121-547
AN0232				Y		297-1421-350
AN0232				Y		297-5151-350
AN0232		Y				297-1421-110

PG = Product Guide **P&E** = Planning and Engineering **Admin** = Administration **Trans** = Translations **Maint** = Maintenance

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Feature information available (continued)						
Package feature	**PG**	**P&E**	**Admin**	**Trans**	**Maint**	**NTP**
AN0232		Y				297-1421-503
AN0232	Y					297-1421-010
AN0323				Y		297-1421-350
AN0323			Y			297-1421-300
AN0323		Y				297-1421-110
AN0323		Y				297-1421-503
AN0323	Y					297-1421-010
NTXS12AA						
AQ1018					Y	297-2401-502
NTXS14AA						
AN0309					Y	297-5401-520
AN0309				Y		297-5401-350
NTXS15AA						
AN0308					Y	297-5401-520
AN0308				Y		297-5401-350
NTXS25AA						
AD4750	Y					297-2461-010
AD4750	Y					297-2461-021
AD4751	Y					297-2461-010
AD4751	Y					297-2461-021
NTXS30AA						
AF2980				Y		297-5401-350
AF3379				Y		297-5401-350
AF3391				Y		297-5401-350
AN0069				Y		297-5401-350
NTXS64AA						
AF4893				Y		297-2761-350
AF4893	Y					297-2761-010
AF4894				Y		297-2761-350
AF4894	Y					297-2761-010
AF4895				Y		297-2761-350
AF4895	Y					297-2761-010
NTXS65AA						
AF4893				Y		297-2761-350

PG = Product Guide **P&E** = Planning and Engineering **Admin** = Administration **Trans** = Translations **Maint** = Maintenance

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Feature information available (continued)

Package feature	PG	P&E	Admin	Trans	Maint	NTP
AF4893	Y					297-2761-010
AF4894				Y		297-2761-350
AF4894	Y					297-2761-010
AF4895				Y		297-2761-350
AF4895	Y					297-2761-010
NTXS66AA						
AJ2369		Y				297-5151-100
NTXS70AA						
AR0341		Y				297-5151-100
AR0400		Y				297-5151-100
AR0401		Y				297-5151-100
AR0402		Y				297-5151-100
AR0403		Y				297-5151-100
AR0485		Y				297-5151-100
AR0486		Y				297-5151-100
NTXS72AA						
AQ0984		Y	Y			297-1001-527
NTXT12AA						
AN0616				Y		297-1421-350
NTXT13AA						
AN0633					Y	297-2701-520
AN0633					Y	297-2711-520
AN0633					Y	297-2721-520
AN0633				Y		297-1421-350
AN0633				Y		297-2711-350
AN0633				Y		297-2721-350
AN0633		Y				297-2711-155
AN0633		Y				297-2731-155
AN0633	Y					297-2711-010
NTXT15AA						
AN0739				Y		297-5161-350
NTXT16AA						
AN0463					Y	297-2721-520
AN0463					Y	297-2721-525

PG = Product Guide **P&E** = Planning and Engineering **Admin** = Administration **Trans** = Translations **Maint** = Maintenance

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Feature information available (continued)

Package feature	PG	P&E	Admin	Trans	Maint	NTP
AN0463				Y		297-2721-350
NTXT17AA						
AN0465					Y	297-2771-520
AN0465				Y		297-2771-350
NTXT20AA						
AN0435				Y		297-5161-351
NTXS71AA						
AR0521			Y			297-5161-011
AR0521					Y	297-5161-510
AR0521				Y		297-5161-351
NTXS72AA						
AQ0984		Y	Y			297-1001-527
NTXT23AA						
AF4879	Y					297-2711-010
AF4879		Y				297-2711-155
AF4882	Y					297-2711-010
AF4882		Y				297-2711-155
AF4883	Y					297-2711-010
AF4883		Y				297-2711-155
AF5378	Y					297-2711-010
AF5378		Y				297-2711-155
AF5533	Y					297-2711-010
AF5533		Y				297-2711-155
AF5536	Y					297-2711-010
AF5536		Y				297-2711-155
AF5537	Y					297-2711-010
AF5537		Y				297-2711-155

PG = Product Guide **P&E** = Planning and Engineering **Admin** = Administration **Trans** = Translations **Maint** = Maintenance

End

This feature package create a base software load to enable Traffic Operator Position System (TOPS) Automated Directory Assistance Service (ADAS) application processor units (APU) to run on UNIX-based systems.

The feature package provides the following services:

- communication utilities for the various components, interfaces to enable messaging, and support for an application level timer
- support for simultaneous call processing, maintenance and communications interfaces, data updates, and generation of logs and operational measurements
- management of distributed application processes on APUs, and monitoring of these processes by the ADAS APU resource manager
- ADAS call processing
- background processing including service data updates
- utilities to encode or decode voice processing unit and computing module messages

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTG320AA contents

Feature number	Description
AF3048	ADAS Communications Interface
AF3050	ADAS CPE Internals
AF3291	APUX Process Management
AF3381	ADAS APUX Call Processing Application
AF3382	ADAS Data Manager
AF3384	ADAS Voice/CM Libraries

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTG321AA	OA&M Position
NTG322AA	Voice Processing Unit
NTXQ23AA	TOPS ADAS (for BCS35 release)

Feature name

ADAS Communications Interface

Description

This is one of a group of features that sets up an environment for call processing applications running on UNIX-based systems. This feature provides a set of communication utilities that perform the following functions:

- establish and maintain communication between the call processing engine (CPE) and other components, such as the computing modules (CM), voice processing units (VPU), and the application processor unit with UNIX (APUX) process management agent
- provide interface capabilities to allow the CPE to receive messages from the CM, the APUX process management agent and multiple VPUs
- provide interface capabilities to allow the CPE to send messages to the CM, the APUX process management agent and multiple VPUs
- provide interface capabilities to support an application level timer

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the provision of two cards: NTEX22BA (integrated processor and F-bus interface card) and NT9X14DB (24-Mbyte memory card). These cards together make up the APUX, and occupy two slots of a link peripheral processor (LPP) cabinet.

Restrictions and limitations

The timer provided by this feature is insufficient for applications that have time-extensive VPU commands.

Feature interactions

In order to function properly, this feature interacts with the following new and existing features:

- AF2801 MMI Enhancements to Bilingual AABS
- AF3050 CPE Internals
- AF3290 Logs and Alarms Transfer - UNIX-SOS
- AF3291 APUX Process Management Agent
- AF3381 ADAS APUX Call Processing Applications
- AF3384 ADAS CM/Voice Utilities
- AF3385 ADAS CM/VPU Simulator
- AJ0317 IWS Interprocess Communications (IPC)

- AJ1209 IPC Enhancements to Support Message Queues
- AL1982 MTS Messaging Access for UNIX Applications on SNIX Nodes

Logs

This feature creates one new log, UCOM001. The log is generated when a communication connection is lost, or cannot be established.

AF3050

Feature name

ADAS CPE Internals

Description

This is one of a set of features that together create a call processing engine (CPE). This feature provides a framework that allows a CPE to manage the processing of a number of calls simultaneously. The framework also provides a maintenance interface, communications interfaces, and support for dynamic data updates, as well as generating the required logs and operational measurements.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the provision of two cards: NTEX22BA (integrated processor and F-bus interface card) and NT9X14DB (24-Mbyte memory card). These cards together make up the APUX, and occupy two slots of a link peripheral processor (LPP) cabinet.

Restrictions and limitations

The maximum number of calls which can be handled by a CPE is dependent upon real-time and memory constraints. A CPE with a simple subscriber operator interaction can handle more calls than a CPE with a high message volume and numerous call actions to perform.

Feature interactions

This feature provides call management facilities for the following features:

- AF3048 ADAS Communications Interface
- AF3049 ADAS APUX Resource Manager
- AF3381 APUX Call Processing Application

AF3291

Feature name

APUX Process Management

Description

This feature starts, stops, and monitors distributed UNIX application processes on the application processor units (APU) in a voice processing platform (CVPP). It also allows computing module (CM)-resident Automated Directory Assistance Service (ADAS) APU resource manager (AARM) to monitor the health of these processes. By changing the datafill, this feature can be used to manage any kind of UNIX application process on an APU.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the provision of two cards: NTEX22BA (integrated processor and F-bus interface card) and NT9X14DB (24-Mbyte memory card). These cards together make up the APUX, and occupy two slots of a link peripheral processor (LPP) cabinet.

Restrictions and limitations

The service description file cannot be updated by operating company personnel.

Feature interactions

In order to function properly, this feature interacts with the following new and existing features:

- AF3049 ADAS APU Resource Management
- AF3379 File System Access to SLM/SLMII/IOC
- AF3381 ADAS APUX Call Processing Applications
- AF3382 ADAS Data Manager
- AJ0317 UAE Interprocess Communication
- AJ0326 UAE OAM Data Collector
- AL1982 MTS Messaging Access for UNIX Applications on SNIX Nodes
- AN0047 Enhanced Services Resource Manager
- AN0162 ADAS UNIX Loadbuild and Software Installation

Datafill

Since ADAS is presently the only UNIX-based application process that runs on an APU, the only valid entry in the appropriate field of table SNIXAPPL is ADAS.

Logs

The following three logs are created as a part of this feature:

- UAPM300 An unrecoverable application error has occurred
- UAPM301 A critical process has failed
- UAPM302 A non-critical managed process has failed

AF3381

Feature name

ADAS APUX Call Processing Application

Description

This feature forms part of a set of features that together provide Automated Directory Assistance Service (ADAS). This feature provides a call processing application that runs on an application processor unit (APU) in the UNIX environment. The application interacts with the computing module (CM) and the voice processing unit (VPU) to provide automated interaction with the caller during the initial phase of a directory assistance call.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the provision of two cards: NTEX22BA (integrated processor and F-bus interface card) and NT9X14DB (24-Mbyte memory card). These cards together make up the APUX, and occupy two slots of a link peripheral processor (LPP) cabinet.

Restrictions and limitations

This feature provides 40 call processing channels for each APU.

Operational measurements

This feature creates a new operational measurements (OM) group, with the group name ADASAPU. This group contains 14 registers, and records various call processing statistics for the ADAS application running on the APU.

Logs

This feature creates seven new logs. The logs, and the conditions under which they are generated, are as follows:

- UADA300 The ADAS call processing application received a message that appeared to be invalid
- UADA301 The call timer has expired
- UADA302 The ADAS application was unable to register with the local OM collector
- UADA303 The ADAS application failed in an attempt to send a message to the CM or VPU
- UADA304 The APU has detected an error in the APU/VPU protocol
- UADA305 The APU has detected a critical fault on the VPU
- UADA306 A command in a message to the VPU has failed

User interface

This feature, in conjunction with the CM and VPU, provides the automated greeting and requests for information that are presented to callers when they initially access the ADAS. In addition, it controls the transfer of the callers' responses to the operator.

AF3382

Feature name

ADAS Data Manager

Description

This feature provides a background process running on an application processor unit (APU). The process receives updated service data from the operation, administration and maintenance (OAM) position Automated Directory Assistance Service (ADAS) Data Manager, by way of the computing module (CM), and applies it to the next arriving call. Calls in progress when the updated data is received are not affected.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the provision of two cards: NTEX22BB (integrated processor and F-bus interface card) and NT9X14DB (24-Mbyte memory card). These cards together make up the APU, and occupy two slots of a link peripheral processor (LPP) cabinet. One data manager resides in each ADAS APU.

Feature interactions

In order to function properly, this feature interacts with the following new and existing features:

- AF3049 ADAS APUX Resource Management
- AF3050 ADAS CPE Internals
- AF3291 APUX Process Management
- AF3381 ADAS APUX Process Management
- AJ0326 UAE OAM Data Collector
- AN0056 ADAS Service Data MMI

Logs

This feature creates 15 new logs. The logs, and the conditions under which they are generated, are as follows:

- UCDM301 Current calls are accessing old and new service data
- UCDM302 Service data shared memory is created by the data manager and is required by the call processing engine (CPE) for operation
- UCDM303 Data manager is unable to extract a message from the message transport system (MTS) buffer
- UCDM304 A message is corrupted in transit from the ADAS-APUX resource manager (AARM) to the data manager

- UCDM305 The data manager has received a message type known to the AARM, but not to the data manager
- UCDM306 A new service data update is received by the data manager while it is still processing a previous update
- UCDM307 Data manager has received a service data update notification with incorrect data, or no data
- UCDM308 Data manager is unable to detach from the service data shared memory when the data manager is going down
- UCDM309 Data manager is going down
- UCDM310 Service data is missing from the MTS message sent by the AARM. Service data is not updated on a specific APU
- UCDM311 Data manager is unable to define the message transport address (MTA) on an APU
- UCDM312 Data manager is unable to initialize the interprocess communication (IPC) on a specific APU
- UCDM313 Data manager is unable to register with the MTS
- UCDM314 Data manager is unable to register with the APUX process manager (APM)
- UCDM315 Data manager is unable to send out an MTS message when responding to the AARM

AF3384

Feature name

ADAS Voice/CM Utilities

Description

This feature forms part of a group of features that collectively support the provision of the Automated Directory Assistance Service (ADAS). This feature provides a library of routines for encoding and decoding voice processing unit (VPU) and computing module (CM) messages. VPU messages are sent between a call processing engine (CPE) and a VPU. CM messages are sent between a CPE and a CM.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the provision of two cards: NTEX22BB (integrated processor and F-bus interface card) and NT9X14DB (24-Mbyte memory card). These cards together make up the application processor unit (APU), and occupy two slots of a link peripheral processor (LPP) cabinet.

Feature interactions

This feature interacts with the following features to provide the required functions:

- AF3050 CPE Call Manager
- AF3194 ADAS TOPS CC APU Protocol
- AF3381 ADAS APUX Call Processing Application
- AN0031 VPU Service Circuit Protocol

This feature package enables operating company personnel to set up and modify Automated Directory Assistance Service (ADAS) prompts, set timeouts, responses, and operator interface.

It also provides a tool to convert audio files to conform to the ADAS service data interface.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTG321AA contents

Feature number	Description
AN0056	ADAS Service Data MMI
AN0182	BDS to VREC Conversion Tool

BCS history

This feature package was created in BCS36.

AN0056

Feature name

ADAS Service Data MMI

Description

The ADAS Service Data MMI (SDM) feature is provided to allow service personnel to set up and modify the Automated Directory Assistance Service (ADAS). It provides a window into the service that permits personnel to change prompts, set timeouts, define responses to a caller's input signals, or customize the operator interface. SDM also allows new information to be uploaded to the service. Scenarios can be saved locally on the workstation for later retrieval

BCS history

This feature was created in BCS36.

Hardware requirements

This feature is installed on the operations, administration, maintenance, and provisioning (OAM&P) workstation. This is an HP 9000-series workstation, running UN*X and UAE base software. A local area network (LAN) connection is required to allow the workstation to communicate with the computing module (CM) over an Ethernet link.

Restrictions and limitations

ADAS SDM software assumes that there is only one OAM&P workstation for the service.

Once an upload command has been entered, the upload process must be allowed to complete before another upload is attempted. The SDM disables the upload command input while an upload is in progress.

Feature interactions

This feature uses feature AN0178 (ADAS MMI Data File Transfer) to move the updated service data from the workstation to the appropriate places in the ADAS system. The feature also notifies the system of the update and informs the SDM of the progress of the upload.

This feature also uses feature AN0182 (VDS to VREC Conversion Tool) to convert Vocabulary Development System (VDS) messages into a format suitable for downloading into the voice processing unit (VPU).

User interface

Service personnel can customize the caller/ADAS and ADAS/operator interaction by changing service data. This data includes the following parts of the interaction scenario:

- prompt information
- recording timeouts
- caller input masks
- playback parameters

Service personnel can reconfigure ADAS to the specific requirements of the operating company using a graphical interface at the workstation. From the same workstation, the information is then uploaded into the ADAS system.

AN0182

Feature name

VDS to VREC Conversion Tool

Description

This feature provides a tool to convert an audio file produced by the Vocabulary Development System (VDS) into the appropriate format for use by the Automated Directory Assistance Service (ADAS) service data manager (SDM).

BCS history

This feature was created in BCS36.

Hardware requirements

This feature is installed on the operations, administration, maintenance, and provisioning (OAM&P) workstation. This is an HP 9000-series workstation, running UN*X and UAE base software. A local area network (LAN) connection is required to allow the workstation to communicate with the computing module (CM) over an ethernet link.

Restrictions and limitations

Recorded audio files must be in Computer Consoles Inc. VDS format.

Once a digital audio reference tag (DART) is assigned, it is never reissued. The first reference number applied is 32767, and subsequent messages are numbered in decreasing order. The maximum number of messages that can be created is, therefore, 32 767.

The integrity of the data stored on the OAM&P workstation is assumed. The integrity of the custom_dartlist file, which tracks the allocation of DARTs to custom audio messages, is required in order to maintain the valid allocation of DARTs to custom messages.

The category definitions are dependent upon implementation of the SDM. Any changes in SDM require appropriate updates to the category definitions.

Feature interactions

This feature requires the file structure provided by feature AN0056 (ADAS Service Data MMI) to store audio information in the SDM.

User interface

This feature requires the user to input the following information:

- VDS audio file names
- purpose of each message
- context for each message
- category selections for each message
- a unique name for each message

This feature package provides the required software for voice processing, including the following functions:

- maintenance tasks associated with the voice processing unit (VPU)
- service circuit processing
- messaging interface and protocol, message routing and flow control
- diagnostic support for the recording-announcement processor (RAP) and channel-bus interface (CBI)
- speech memory downloading and management utilities for local resource management
- detection and verification of dual-tone multifrequency signals
- recording inputs from callers and playback of prompts and recordings
- coordination of the record, play and diagnostic functions

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTG322AA contents	
Feature number	**Description**
AF3005	VPU Local Maintenance
AF3007	VPU Service Circuit Processing
AF3031	VPU RAP and CBI Low Level I/O
AF3033	VPU RAP and BCI Diagnostic Support
AF3035	VPU Local Resource Management
AF3394	RAP DTMF Support
AN0016	RAP Play and Record Processing
AN0046	RAP Application State Machine

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXS31AA	Enhanced Service Resource Management

AF3005

Feature name

VPU Local Maintenance

Description

This is one of a group of features that together provide a flexible voice processing package (VPP). This feature creates the software to carry out maintenance tasks associated with the voice processing unit (VPU).

BCS history

This feature was created in BCS36.

Hardware requirements

The software created by this feature resides on the VPU. The VPU occupies two adjacent slots on a link peripheral processor (LPP) shelf.

The following three cards make up the VPU:

- NTEX22BB Integrated processor and F-bus interface card
- NTMX97AA Recording-announcement processor card
- NTMX99AA C-bus interface, 512 channel paddle board

Restrictions and limitations

There is no partial functionality for the VPU. If any part fails, the whole VPU reverts to the system busy state.

Feature interactions

This feature interacts with the following features on the VPU:

- AF3007 VPU Service Circuit Processing
- AF3031 VPU RAP/CBI Low Level Interface
- AF3033 VPU RAP Diagnostic Support
- AF3035 VPU Local Resource Management
- AF3392 RAP Firmware
- AF3432 VPU MAP and Table Control

Feature name

VPU Service Circuit Processing

Description

This feature provides service circuit processing software for the voice processing unit (VPU). This software allows the VPU to implement the service circuit interface protocol and associated processing. These are used to drive the service circuits.

BCS history

This feature was created in BCS36.

Hardware requirements

The software created by this feature resides on the VPU. The VPU occupies two adjacent slots on a link peripheral processor (LPP) shelf.

The following three cards make up the VPU:

- NTEX22BB Integrated processor and F-bus interface card
- NTMX97AA Recording-announcement processor card
- NTMX99AA C-bus interface, 512 channel paddle board

Restrictions and limitations

The service circuit processing software is activated only while the VPU is in service.

The network interface unit (NIU) must be in service before the VPU is returned to service.

Feature interactions

This feature interacts with the following features on the VPU:

- AF3005 VPU Local Maintenance
- AF3031 VPU RAP/CBI Low Level Interface
- AF3033 VPU RAP Diagnostic Support
- AF3035 VPU Local Resource Management
- AF3392 RAP Firmware
- AF3432 VPU MAP and Table Control

AF3031

Feature name

VPU RAP and CBI Low Level I/O

Description

This is one of a group of features that together provide a flexible voice processing package (VPP). This feature provides the messaging interface and protocol between the integrated processor and F-bus interface (IPF) software and the speech processing software running on the four digital signal processor cells (DSPC) residing on the recording-announcement processor (RAP). It also provides driver software for a channel bus interface with 512 channels (CBI-512). This driver software controls and monitors network channel access by the RAP.

BCS history

This feature was created in BCS36.

Hardware requirements

The software created by this feature resides on the IPF processor part of the VPU. The VPU occupies two adjacent slots on a link peripheral processor (LPP) shelf.

The following three cards make up the VPU:

- NTEX22BA Integrated processor and F-bus interface card
- NTMX97AA Recording-announcement processor card
- NTMX99AA C-bus interface, 512-channel paddle board

Restrictions and limitations

The software created by this feature should only be run on the IPF within the VPU hardware.

The maximum allowed message length is 1024 bytes.

Feature interactions

This feature interacts with the following features to provide the VPP:

- AF3005 VPU Local Maintenance
- AF3007 VPU Service Circuit Processing
- AF3033 VPU RAP Diagnostic Support
- AF3035 VPU Local Resource Management
- AF3392 RAP Firmware
- AN0046 RAP Application and Diagnostics

AF3033

Feature name

VPU RAP and CBI Diagnostic Support

Description

This feature resides in the integrated processor and F-bus interface (IPF) and provides diagnostic support for the recording-announcement processor (RAP) and the channel bus interface - 512 channel (CBI-512). It also invokes the digital signal processing cell (DSPC) diagnostic software through the IPF-DSPC message interface for RAP onboard diagnostics.

BCS history

This feature was created in BCS36.

Hardware requirements

The software created by this feature resides on the IPF part of the VPU. The VPU occupies two adjacent slots on a link peripheral processor (LPP) shelf.

The following three cards make up the VPU:

- NTEX22BA Integrated processor and F-bus interface card
- NTMX97AA Recording-announcement processor card
- NTMX99AA C-bus interface, 512 channel paddle board

Restrictions and limitations

The software created by this feature should only be run on the IPF within the VPU hardware.

Basic out-of-service diagnostics depend upon the DSPC ROM software. The DSPC RAM software must be downloaded for the extended out-of-service and in-service diagnostics.

DSPC RAM software should be downloaded after basic out-of-service diagnostics are completed. The speech audio load should be loaded after extended out-of-service diagnostics are completed.

If the network interface unit (NIU) is not enabled, the PCM loopback and miscellaneous interrupt tests should be omitted.

Feature interactions

This feature interacts with the following features to provide the VPP:

- AF3005 VPU Local Maintenance
- AF3031 VPU RAP and CBI Low Level I/O
- AF3035 VPU Local Resource Management
- AF3392 RAP Firmware
- AN0046 RAP Application and Diagnostics

AF3035

Feature name

VPU Local Resource Management

Description

This is one of a group of features that together provide the voice processing package (VPP). This feature provides local resource management for the voice processing unit (VPU). This includes speech memory downloading and management utilities and resource management facilities.

BCS history

This feature was created in BCS36.

Hardware requirements

The software created by this feature resides on the VPU. The VPU occupies two adjacent slots on a link peripheral processor (LPP) shelf.

The following three cards make up the VPU:

- NTEX22BB Integrated processor and F-bus interface card
- NTMX97AA Recording-announcement processor card
- NTMX99AA C-bus interface, 512 channel paddle board

Restrictions and limitations

The VPU supports a maximum of 512 digital audio reference tags (DART). 256 DARTs are reserved for prerecorded prompts, announcements, and tones; the remaining 256 are for caller inputs.

The VPU has provision for 34.45 minutes of audio. This is the maximum and, because speech memory (SMEM) is assigned in blocks, the actual amount of speech time that can be stored is somewhat less that this. For planning purposes a practical maximum of 30 minute should be assumed.

Feature interactions

This feature interacts directly with the following features:

- AF3005 VPU Local Maintenance
- AF3007 VPU Service Circuit Processing

Feature name

RAP DTMF Support

Description

This feature provides the low-level signal processing operations required for the detection and verification of dual-tone multifrequency (DTMF) digit signals received at the recording-announcement processor (RAP). The feature also includes the interrupt handler for the pulse code modulation (PCM) interface part of the RAP.

BCS history

This feature was created in BCS36.

Hardware requirements

The software created by this feature resides on the RAP part of the voice processing unit (VPU). The VPU occupies two adjacent slots on a link peripheral processor (LPP) shelf.

The following three cards make up the VPU:

- NTEX22BA Integrated processor and F-bus interface card
- NTMX97AA Recording-announcement processor card
- NTMX99AA C-bus interface, 512 channel paddle board

Restrictions and limitations

The software contained in this feature is designed specifically to operate within an environment defined as the digital signal processing cell (DSPC). The DSPC is a processing resource located on the RAP.

Resolution of all timeout conditions (such as a jammed DTMF key) is restricted to multiples of 28-ms units by the DTMF detection algorithm.

DTMF digits must meet the specifications defined in Bellcore technical reference TR-TSY-000181, *DTMF Receiver Generic Requirements for End-to-end Signaling over Tandem-switched Voice Links*.

Feature interactions

This feature interacts with the following features to provide the full RAP software package:

- AN0016 RAP Play and Record Processing
- AN0046 RAP Application and Diagnostics

AN0016

Feature name

RAP Play and Record Processing

Description

This feature provides the recording-announcement processor (RAP) with the ability to record input from a caller, and to play back announcements and recorded speech.

BCS history

This feature was created in BCS36.

Hardware requirements

The software created by this feature resides on the RAP part of the voice processing unit (VPU). The VPU occupies two adjacent slots on a link peripheral processor (LPP) shelf.

The following three cards make up the VPU:

- NTEX22BA Integrated processor and F-bus interface card
- NTMX97AA Recording-announcement processor card
- NTMX99AA C-bus interface, 512 channel paddle board

Restrictions and limitations

The software contained in this feature is designed specifically to operate within an environment defined as the digital signal processing cell (DSPC). The DSPC is a processing resource located on the RAP.

Resolution of all timeout conditions (such as a jammed DTMF key) is restricted to multiples of 28-ms units.

Feature interactions

This feature interacts with the following features to provide the full RAP software package:

- AF3394 RAP DTMF Support
- AN0046 RAP Application and Diagnostics

Feature name

RAP Application State Machine

Description

This feature provides the recording-announcement processor (RAP) state machine that coordinates the record, play, and diagnostic functions. The feature also includes diagnostics.

BCS history

This feature was created in BCS36.

Hardware requirements

The software created by this feature resides on the RAP part of the voice processing unit (VPU). The VPU occupies two adjacent slots on a link peripheral processor (LPP) shelf.

The following three cards make up the VPU:

- NTEX22BB Integrated processor and F-bus interface card
- NTMX97AA Recording-announcement processor card
- NTMX99AA C-bus interface, 512 channel paddle board

Restrictions and limitations

Due to realtime constraints, the number of active channels is limited to 5 for the interactive mode and 20 for the non-interactive mode.

Only one diagnostic test at a time may be run on a digital signal processor cell (DSPC).

Feature interactions

This feature interacts with the following features to provide the VPU:

- AF3005 VPU Local Maintenance
- AF3007 VPU Service Circuit Processing
- AF3031 VPU RAP/CBI Low Level Interface
- AF3033 VPU RAP Diagnostic Support
- AF3392 RAP Firmware
- AF3394 RAP DTMF Support
- AN0016 RAP Play and Record

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX001AA contents	
Feature number	**Description**
AC0285	Dialed Loopbacks on Trunks
AC0308	Fixed Trunk Group Numbering-SMDR
AD2997	Trunk Group Expansion to 8K
AF0149	DIRP CI Robustness
AF0209	Device Independent Support for Application Data Transmission
AF0916	Enhanced AMA Dump Capability
AF1237	Conference Circuit (3/6 Port) Diagnostic Enhancements
AF1452	Memory Administration-New OM
AF1461	DIRP Recording Space Usage Enhancements
AF1749	Real-time Input OM
AF1780	DIRP Space Rotation
AF2013	Office Routes Capacity Increase
AF2470	Special Application Patching
AF2531	Forced Sequence Application
AF2532	Obsolete Packaging
AF2705	DIRP DDP Reload and Swact Recovery
AF2815	Patcher Integration
AF2816	Auto-apply Enhancements
AF4281	Auto-Apply for all ISN Nodes
AF4283	Patchset Simplication
AF4286	ISDV File Format Prep
AF5766	Parm E1 Outage Robustness Plan
AG0239	Format OM DIRP Output
AG0274	CC Support for DTU Busy, RTS and Test
AG0275	CC Support for DTU Downloading

-continued-

Feature package NTX001AA contents (continued)	
Feature number	**Description**
AG0329	Real-time Study of Current DMSNOS I/F for LBR (Part I)
AG0336	Image Test Enhancements
AG0355	OM Output Robustness
AG0361	High Water Mark OMs for CP, EXT, FTRQ
AG0568	Fixed Trunk Group Numbering for the OM System
AG0637	LMD OM Group Optimizations
AG0695	Trapinfo Enhancement
AG0696	Dynamic PC Reconfiguration
AG0724	ParmCalc-Verify Office Parameters (Phase 2)
AG0821	ParmCalc-Verification of Office Parms
AG0855	XPM Outgoing Message Flow Control
AG0919	Decouple CC Hardware and Software System Initialization I
AG1006	Scheduled XPM Patch Application
AG1007	Scheduled CC/CM Patch Application/Image
AG1262	O/G Message Flow Control-Follow-up
AG1296	MTC Base Performance Tools
AG1818	CP Long Messaging Implementation I
AG1824	Matching Line Drawer Status over CC Warm SwAct
AG1868	Provide CC Warm SwAct Residency in All Loads
AG1869	CC Warm SwAct Man Machine Interface Enhancements
AG1922	Improve Memory Parity Detection
AG1924	NT40 Mismatch Handler Refinements
AG1925	NT40 CMC RTS Improvements (Diagnostics)
AG1927	BCSMON-Enhanced Monitoring Capabilities
AG2108	One Night Process Enhancements
AG2149	Core SwAct Restart Outage Reduction-Phase I
AG2150	Core SwAct Exec Optimization-Phase I
AG2255	CC Warm SwAct Module Check Program
AG2276	CC Warm SwAct Restart Outage Reduction-Phase II

-continued-

Feature package NTX001AA contents (continued)	
Feature number	**Description**
AG2277	CC Warm SwAct MMI Enhancements-Phase II
AG2323	Logical Reformating for OTC
AJ0191	H/W-S/W Initialization Coordination-II
AJ0192	RCC/LCM Loading Enhancements I
AJ0194	CC Warm SwAct Enhancements
AJ0474	XPM P-side Data Distribution Enhancements
AJ0729	Trunks RTS Enhancements II
AJ1957	Table Integrity Checker
AJ1959	Table Version System
AJ2240	Removing Requirement of Reformats for Hidden Fields
AJ2290	BCS Update Enhancements
AL0044	Outage Footprint-Phase II
AL0045	Match Command Improvement
AL0046	Outage Footprint Facility
AL0047	Babbling Idiot Enhancements
AL0049	Enhanced LCM Overload Controls
AL0131	PM Autoloading-Phase II
AL0152	Close Logs to SCCS after Restarts
AL0195	ECCB Improvements
AL0205	OMPRT Output Buffering
AL0479	Trunk RTS Enhancements
AL0480	PM Map Enhancements
AL0481	XPM IPML Data Distribution
AL0482	XPM P-side Data Distribution
AL0914	Remote File System Improvements
AL0972	HX Immunity Regions for CI Processes
AL1052	Lost Messages-Reporting Enhancements
AL1149	User Passwords Survivability over BCS Application
AL1518	User Programmable LTP Levels
-continued-	

Feature package NTX001AA contents (continued)	
Feature number	**Description**
AL2417	Convert Series I PMs to Recovery Controller
AL2486	TPS Application Resource Usage Control
AL2667	MICBASE Robustness and Performance Enhancements
AL2669	Restart Performance Enhancements
AN0100	CMR Enhancements for ADSI
AQ0841	DMS-Bus Message Flow Control III
AQ0878	Call Clean Up Robustness
AQ0967	CC Support for Compact Conference Peripheral (CCP) (Part 1)
BC0046	T101 Agency Rework to Comtrunk
BC0047	T103 Agency Rework to TTLSUPV
BC0049	TTL2 Agency Rework to TTLMWBL
BC0050	T1 Maintenance Level
BC0083	Polling AMA Data-via Datapac-Manual
BC0084	System Monitor Display
BC0113	Polling AMA Data-via Datapac-Manual
BC0124	Interface to Co-located NE/AE Switchboard O/G
BC0125	Interface to Co-located NE/AE Switchboard I/C
BC0127	Interface to Co-located NE/AE Switchboard I/C
BC0156	2-Way (Local) EAS Trunk
BC0248	Identification of Intercept-Outpulse ANI Digit 9
BC0316	Allow Changes to Office Configuration Table
BC0325	Digital Recorded Announcement
BC0385	TSMS Peg Count Source and Disposition up to 16
BC0386	TSMS Peg Count Source and Disposition up to 16
BC0387	TSMS Peg Count Source and Disposition up to 16
BC0388	TSMS Peg Count Source and Disposition up to 16
BC0390	TSMS Peg Count Source and Disposition up to 16
BC0391	TSMS Peg Count Source and Disposition up to 16

-continued-

Feature package NTX001AA contents (continued)	
Feature number	**Description**
BC0392	TSMS Peg Count Source and Disposition up to 16
BC0393	Traf SEP Destination Data
BC0398	TSMS Peg Count Source and Disposition up to 16
BC0401	TSMS Peg Count Source and Disposition up to 16
BC0458	(NSG) Route List Chaining
BC0485	NPE-Rework of PM MAP Displays
BC0506	OM Call Processing Restart Pegs (XRef 0382)
BC0628	MTCE Updates for CR TM
BC0637	Robustify TM MTCE
BC0667	Priority MAP Terminal
BC0668	MAP Software Enhancement
BC0672	Enhanced Real Time Indicator
BC0724	Alarming on DMS/RLM Links
BC0806	PM Autoloading-Phase I
BC0820	New Outgoing Idle Supervision for Trunks
BC0821	Trunk Signal Timing Changes
BC0937	OM Tape-Suppression of Zero Data
BC0938	OM Print-Suppression of Zero Data
BC0942	(NSG) Fast Routine to Get Time of Day in Clock
BC0980	Support for EEPROM Cards in DRA
BC0981	Loop Monitor Elimination on 2X83
BC0982	CONF6PR as 2 CONF3PR
BC0985	AMA Real-time Enhancements (AT&T Format)
BC0991	Terminating NPA in AMA Records
BC1017	Machine-independent SOS-Phase 1
BC1036	Default Data
BC1051	Minor POF Enhancement
BC1052	Licensee Foldback
BC1064	Modify TM Tone Diagnostics for NT2X59BA

-continued-

Feature package NTX001AA contents (continued)	
Feature number	**Description**
BC1075	Carrier Enhancements
BC1078	Variable Timing-Analogue DP Trunk Reception & Outpulsing
BC1090	Provide Optionality Hooks on DCMS
BC1108	Call Timing Office Parameter Cleanup
BC1163	LM Takeover/Takeback Diagnostic
BC1219	System Speedup
BC1241	OM-Outside Plant Measurements-Phase I
BC1273	Enhanced Priority Terminal
BC1295	DTMF Outpulsing on DTCS Without Senders
BC1357	Retention Test of Allocated Memory
BC1384	Enhanced DIRP File Cleanup
BC1392	MAP Support Tools
BC1403	Improved AMA Timing Compensation
BC1422	PM to Facility Maintenance Improvements
BC1433	PM Maintenance Enhancements
BC1490	CLLI Enhancements-BCSA APPL Speedup
BC1501	Peripheral Status Check Report before SwAct
BC1517	Call Processing Robustness
BC1717	AMA Preservation over Peripheral Warm SwAct
BC1729	Enable Gain on CLSI Network
BC1735	OM Xfer Speedup
BC1925	Query Command Enhancements
BC2015	Robustification of LM/RLM Maintenance
BC2016	Carrier Maintenance on MTCMAIN
BC2246	No-Call-Processing Alarm
BC2312	Log System Internal Control Cleanup
BC2330	Trunk Supervision over DTC SwAct-Preparatory
BF0170	DTC-DP Digit Reception/Outpulsing

-continued-

Feature package NTX001AA contents (continued)	
Feature number	**Description**
BF0201	DTC Revertive Pulsing Firmware
BF0210	Revertive Pulsing Facility Maintenance
BF0218	LTC-Speech Path Diagnostic
BF0227	DTC MF Outpulsing Primitives
BF0285	LTC-BCS CC Application Support (C0863, C0864)
BF0363	LTC SwAct-Uncontrolled
BF0364	LTC-SwAct Peripheral Enhancement
BF0366	LGC 500/2500 CP
BF0369	LGC 500/2500 Enhanced CP
BF0374	LGC Backward BCS Compatibility
BF0380	102 Test Line Termination Level (See H0271)
BF0383	DS-1 Card Maintenance Enhancement
BF0389	LGC MP RT Improvements-Phase 2
BF0487	LTC Digit Collection Enhancement
BF0505	MPC ROM Maintenance and CC Loader
BF0568	CC Boot Loader Firmware Enhancement
BF0611	XPM Overload Control-1
BF0612	XPM Real-time Enhancements-BCS16
BF0642	1X67 Terminal Controller Improvements
BF0792	RLM SP Store Saving
BF0938	Trunk RTS Speed-up-Phase I
BF0939	Trunk RTS Speed-up-Phase II
BF0957	LCM Drawer Maintenance
BR0005	ONI to North Electric TSD
BR0010	Interface to Stromberg-Carlson Turret for ONI
BR0045	Outgoing Trunk to 3CL Switchboard (2X85)
BR0046	Incoming Trunk from 3CL Switchboard (2X86)
BR0061	AE LTD Interface
BR0066	Identification of Alarms-Outpulse ANI Digit 8

-continued-

Feature package NTX001AA contents (continued)	
Feature number	**Description**
BR0070	Automatic Intercept Service (Outpulsed Called Number)
BR0084	7- or 10-digit Toll Calls without Prefix 1
BR0085	Remote Make Busy for 2X86
BR0092	115 Repair Service Regenerated to 7 Digits
BR0097	1200-Baud Dial-up Data Set
BR0113	Interface to SC XY for ANI/CAMA
BR0120	VDU & Printer Link Terminal Capability
BR0124	I/F to S-C TSC SCAMA ...ONI/ANIF...
BR0125	I/F to S-C ONI Turret Visual Indicators
BR0126	Dial-up Service Analysis
BR0135	Trunk I/F to AE No. 31 Switchboard
BR0141	Polling for OM Data (UDC Interface)
BR0146	Interface to Co-located NE/AE Switchboard O/G
BR0147	Interface to Co-located NE/AE Switchboard I/C
BR0162	MAP Support for BT100 Terminals
BR0165	Input Command Screening-I/O Port Restrictions
BR0202	Map Support for Cybernex Terminal
BR0221	Trunk Data Base Queries
BR0265	Digital Carrier Module for Small Remotes (DCM-RR)
BR0303	Digital Recorded Announcement
BR0314	Hard-coded OM Names
BR0365	Office ID in TTY Output Header Label
BR0377	Trunk 00S for Data Change
BR0394	Revertive Calls-Selective Announcements
BR0449	1+ Permissive and Non-permissive Dialing
BR0457	Bermuda Special Service Codes
BR0536	Critical Message Prioritization
BR0566	Bell (U.S.) Standard Announcements via PROM
BR0588	Automatic Busy-out of Trunks upon Integrity Check Failure

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Feature package NTX001AA contents (continued)	
Feature number	**Description**
BR0599	KP & ST Acceptance on an ONI Call
BR0632	Password Command (SHOWPW)
BR0660	Treatment OMS-Separate Categories
BR0666	OM-Act. Call Disp OFZ
BR0667	OM-SBU & MBU on Per-Line PM Basis
BR0692	Local Audible Alarm Retirement
BR0699	Low-voltage Alarm Log Message
BR0710	Enhanced Reorder Treatment
BR0715	Freeze on Re-init Procedure
BT0005	File System
BT0029	Tones
BT0030	Translation and Screening
BT0032	Toll Connecting Trunk (DP/MF) (A/D)
BT0037	Recording Completing Trunk (Digital)
BT0038	Announcements
BT0040	Test Access Network
BT0043	Alarms
BT0066	Line & DN Inventory
BT0075	Table DMO
BT0091	LTSTL-102 (LOC) (O/G)
BT0092	LTSTL-103 (LOC) (O/G)
BT0095	LTP and Associated Level
BT0140	Inc. TTSTL 100
BT0141	Inc. TTSTL 101
BT0142	Inc. TTSTL 102
BT0143	Inc. TTSTL 103
BT0145	O/G TTSTL 100
BT0146	O/G TTSTL 101
BT0147	O/G TTSTL 102

-continued-

Feature package NTX001AA contents (continued)	
Feature number	**Description**
BT0148	O/G TTSTL 103
BT0152	Inc. Trunk Signaling-RB
BT0153	Inc. Trunk Signaling-EM
BT0154	Inc. Trunk Signaling-SF
BT0156	Inc. Trunk Pulsing Control-Immediate Dial
BT0157	Inc. Trunk Pulsing Control-Wink Start
BT0158	Inc. Trunk Pulsing Control-Delay Dial
BT0160	Inc. Trunk Supervision-Hit
BT0161	Inc. Trunk Supervision-INC. Disconnect
BT0162	Inc. Trunk Supervision-Ring Forward
BT0163	Inc. Trunk Supervision-Reverse Make Busy
BT0166	O/G Trunk Signaling-RB
BT0167	O/G Trunk Signaling-EM
BT0168	O/G Trunk Signaling-SF
BT0170	O/G Trunk Pulsing Control-Immediate Dial
BT0171	O/G Trunk Pulsing Control-Wink Start
BT0172	O/G Trunk Pulsing Control-Delay Dial
BT0174	O/G Trunk Pulsing Control Stop-Go Operation
BT0175	O/G Trunk Pulsing Control Var. Interdigital Time
BT0178	O/G Trunk Supervision-Reverse MB
BT0179	O/G Trunk Supervision-Ring Forward
BT0181	2-Way Trunk Glare Resolution
BT0182	2-Way Trunk Guard Timing
BT0183	Toll Translation and Screening
BT0225	MTCE-Core
BT0228	MTCE-Trunk Diagnostics
BT0229	MTCE-TTP
BT0242	Per-Call Testing (Toll)
BT0243	OM-Management

-continued-

Feature package NTX001AA contents (continued)	
Feature number	**Description**
BT0246	ALM-Internal
BT0247	ALM-External
BT0249	ALM-Dead Office (Host)
BT0251	Network Management (PHI)
BT0300	Incoming CAMA
BT0304	Pulsing MF
BT0305	Pulsing DP
BT0306	Pulsing Control IM
BT0307	Pulsing Control WK
BT0308	Pulsing Control DD
BT0311	Pulsing Control Stop Go (SG)
BT0313	Pulsing Control VIDT
BT0315	Supervision Disconnect
BT0316	Supervision Answer
BT0317	Supervision Ring Forward
BT0318	Supervision Ring Back
BT0319	Supervision Hit
BT0320	Supervision RMB
BT0321	Supervision Guard Timing
BT0323	Supervision Glare
BT0324	Outgoing Trunk Selection
BT0326	Tones and Announcements
BT0327	2-Way E/M
BT0328	Inc/Out RB/SF MF/DP
BT0329	Inc/Out SF/RB MF/DP
BT0330	Inc/Out RB/RB MF/DP
BT0331	Inc/Out EM/RM MF/DP
BT0334	Trunk Irregularities
BT0336	Inc/Out TTSTL 100

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Feature package NTX001AA contents (continued)	
Feature number	**Description**
BT0337	Inc/Out TTSTL 101
BT0338	Inc/Out TTSTL 102
BT0339	Inc/Out TTSTL 103
BT0342	Inc/Out TTSTL Loop Around
BT0346	OM-Common (Pegs & Usage)
BT0348	Operational Measurements (Basic Toll)
BT0350	Inc. SWBD Trunk (V6)
BV0001	Output Routing and Reporting
BV0006	Dead System Alarm Version 2
BV0018	DMO Command Screening
BV0022	Thresholding of Critical Resources
BV0023	Alarms-(LM + Lines)
BR0325	Provision of 1024 Route Ref-Indices in Route Ref. T able
BV0038	Trunk Data Inventory Queries
BV0040	Input Command Screening
BV0073	DMO Command Editing
BV0409	Input Command Screening-Automatic Log On
BV1139	Per-Call Capacity Enhancement
NC0086	Standard Pretranslation Expansion
NC0130	Load Route Selection Enhancements
NC0196	Standard Pretranslation Expansion-Phase II
End	

BCS history

This feature package was created in BCS00.

BCS35-AF4282, AF4283, AF4286, AF5766, AJ2240, AJ2290, AL2486, AL2667, AL2669, AQ0878, AQ0967 and AR0225 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge

AF4281

Feature name

Auto-Apply for all ISN Nodes

Description

The main purpose of this feature is to add Autopatcher capabilities to all Intelligent Service Nodes (ISNs). This feature introduces a new option in which Autopatcher can select a Nodeset for which to process its patch actions.

BCS history

This feature was created in BCS35.

Feature interactions

This feature cannot be released without feature AF4283 (Patchset Simplification).

Datafill

Table	Description
PATNS	New table
PATCTRL	New field
PATSET	New field

The table PATNS is added. Table PATNS is a table of default nodesets that may be used by Autopatcher for patching nodesets or autosets.

The field NSNAME is added to table PATCTRL. The user updates this field with the name of the desired nodeset. Each patch in table PATCTRL has its own Nodeset Option.

The field AUTOSET is added to table PATSET. This is a BOOLEAN (y/n) field, which determines whether the UTOSET option is turned on 'Y' or turned off 'N'.

Feature name

Patchset Simplification

Description

This feature does the following:

- Reduces the program storage used to manipulate patchsets
- Decreases the amount of data storage allocated for patchsets
- Facilitates the patchset implementation concept
- Unifies duplicate patchset routines

BCS history

This feature was created in BCS35.

Feature interactions

BCS35 features AF4281 and AF4286 were released in association with this patchset simplification feature. The unification of procedures and changes made to the patchset types impact feature AF4281.

AF4286

Feature name

ISDV File Format Prep

Description

This feature is used to lay the groundwork for the Incremental Software Delivery Vehicle (ISDV) file format changes. This activity makes changes in the “patch” file format. The capability of adding new records in the patch file is part of the migration requirements from the existing patch platform to the ISDV platform.

This feature is introduced in BCS35 on NT40, SuperNode and BRISC-based products.

BCS history

This feature was created in BCS35..

Feature interactions

This feature is released in conjunction with other ISDV program features AF4281 (Auto-Apply for ISN) and AF4283 (Patchset Simplification).

AF5766

Feature name

Parm E1 Outage Robustness Plan

Description

This feature has been created as a means of recording changes in restart requirements that have been made to a number of office parameters and to a data schema table. This is part of a strategy to reduce, and ultimately eliminate, outages caused by the restart requirements that exist for many office parameters and tables when their values are changed. The actual changes to the table and office parameters were made under other feature numbers, or as a result of problem resolutions.

BCS history

This feature was created in BCS36.

Datafill

The following office parameters have been discontinued:

- NUMOUTBUFFS% (NT40 only)
- OOC_CALLS_WAITING_Q_SIZE
- OOC_NUM_STUDY_REG
- OOC_NUM_TRAFFIC_OFFICES
- GATEWAY_CDR_RECORD_ID

For the following office parameters the code has been amended to remove the instruction to effect a restart:

- MAX_BRA_LINES
- MAX_IBN_LINES
- MAX_DATA_LINES
- EOPS_PREFIX_SNPA_FOR_7_DIGIT
- MCCS_VERIFY_TYPE
- SPANISH_OUTGOING_RINGING_TIMEOUT
- MAX_ROUTE_QUEUED_PER_TRKGRP
- TFAN_ENHANCED_FEATURE
- MAX_SUBSCRIBERS_IN_VLR
- MTX_HO_RETRY_TIMER
- NATIONAL_COUNTRY_CODE
- VALIDATE_ACCT_AT_DMS250

For the following office parameter, the maximum value is now inserted at loadbuild:

- PPMBUFFS

Restart requirements have been removed from the following office parameters:

- MTCBASE_EXTRAMSG
- DB_MAX_SIZE
- SO_DID
- TERM_DIGIT_ALLOW
- RESET_DIGIT_ALLOW
- SO_RCF
- NUM_REGISTERED_ROAMERS
- NO_TFAN_OM_REGISTERS
- NO_OCCTS_OM_REGISTERS
- MTCBASE_SCPD
- CONSOLO_SILO_RECORDS
- CONSOLO_SILO_CHARS
- DNPIC_MAX_NUM_DN_TUPLES
- EADAS30M_BUFFER_SIZE
- EADAS24H_BUFFER_SIZE
- EADAS60M_BUFFER_SIZE
- EADAS_SHORT_XFER_ALLOWED
- CCW_ACTIVE
- CCW_AS_LINE_OPTION
- LINE_WITH_CWT_CAN_FLASH
- MTA_MB_COUNT
- INTERCOM
- LCDR_SEC_ANI_TEST
- DATA_COS

Restart requirements for the following office parameter have been removed when the value is increased:

- US_CUG_ENABLED

Restart requirements have been removed from the following table:

- DATASIZE, tuple TONES

AJ2240

Feature name

Removing Requirement of Reformats for Hidden Fields

Description

This feature makes it unnecessary for designers to handle table reformatting for tables with CUSTFLDS/CUSTAREA entries as special cases in order for MOVEBCS to restore the tables successfully.

BCS history

This feature was created in BCS35.

Feature interactions

This feature interacts directly with the MOVEBCS process and with the utilities associated with data transfer: RESTAB, RFMT TAB, JFDUMP, and JFDUMPF.

Implementation of this feature results in the following changes:

- RESTAB will no longer use the information from CUSTFLDS/CUSTAREA when processing a tuple. Instead, the data dictionary's logical tuple definition for the table being tested will be used. Because of this, any fields of a tuple that were reordered by CUSTFLDS/CUSTAREA must be supplied in the correct logical tuple order, and any hidden fields must have data supplied for them in the RESTAB file.
- A table's read and write aspects are now required to read and write valid data for its hidden fields.
- Because the LOGICAL DATAMOVE does not use the information in CUSTFLDS/CUSTAREA, only the EXTERNAL DATAMOVE is affected by this feature. All tuples will be dumped and restored using the default type definitions in the data dictionary rather than CUSTFLDS/CUSTAREA. This will result in the transfer of information from hidden fields.
- The RFMT TAB utility no longer uses CUSTFLDS/CUSTAREA when dumping a table's tuple. There is no apparent change to the applicator because this utility is used in conjunction with RESTAB.
- The JFDUMP utility no longer uses CUSTFLDS/CUSTAREA when processing journal files created in BCS35 and above. There is no apparent change to the applicator because this utility is used in conjunction with RESTAB. Investigation will be required to determine if any journal file records contain invalid data for hidden fields. These cases will be corrected.

AJ2290

Feature name

BCS Update Enhancements

Description

This feature provides enhancements to the BCSUPDATE driver. It also adds internal enhancements to the application process.

BCS history

This feature was created in BCS35.

User interface

- Two commands have been added to the BCSUPDATE level: ABORT_PRESWACT and LIMITED_PRESWACT. These commands will not require additional parameters.
- Two new steps, MATE_RESTART_WARM and MATE_RESTART_COLD, were added to PRESWACT.
- Step STEM_DATE_XFR was deleted from PRESWACT.
- Step MATE_RESTART has been renamed to MATE_RESTART_RELOAD. If users are logged on to the inactive side, this step will stop executing and will prompt the operator to confirm continuation. If the operator chooses to continue, the restart will be performed. If the operator chooses not to continue, the step will fail and PRESWACT will be aborted.
- The RESET command in the BCSUPDATE level is now a privileged command and all usage of the command will be recorded.
- POSTSWACT steps can now be executed by the RUNSTEP command in the BCSUPDATE level.
- The STATUS command has been changed to display the status of the LIMITED_PRESWACT command's steps if LIMITED_PRESWACT has been previously run.
- The HELP BCSUPDATE command has been changed to include help information about ABORT_PRESWACT and LIMITED_PRESWACT. It also includes information about the change to the STATUS command.

AL2486

Feature name

TPS Application Resource Usage Control Enhancement

Description

This feature provides resource usage control for the Transaction Processing System (TPS) on a per application instance basis. The activity will allow users to specify upper limits on their consumption of the following TPS resources: message buffers, TPS timers and invoker real-time. This will provide the required fire wall protection mechanism and fault isolation among instances of the same TPS application and consequently increase the system's survivability.

PCL history

This feature was created in BCS35.

Logs

The TPS 100 log has been modified so that it has a new possible trouble indicator.

AL2667

Feature name

MTCBASE Robustness and Performance Enhancements

Description

The purpose of this feature is to implement Maintenance Base (MTCBASE) enhancements to the MTCBASE debugging tool. The feature also updates internal design documents.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The feature is targeted to SuperNode DMS switches only.

Feature interactions

This feature allows XPM to have more parallel maintenance actions and consequently faster DMS recovery actions.

Logs

Implementation of this feature results in deletion of logs MTCB105 and MTCB108.

The log MTCB108 has been modified so that the following fields were added:

- UserType, which indicates which application has been affected when the extramsg buffer is not available.
- Reason text, which indicates the exact reason why the extramsg buffer is not available.

AL2669

Feature name

Restart Performance Enhancements

Description

This feature reduces core restart times by removing the wait performed by the Message Switch (MS) central initialization process. This feature enables the MS to come up during a restart before allowing other modules in the system to initialize. This activity shortens the duration of restart reloads in SuperNode offices by about 20 seconds.

This feature causes the results from feature AQ8826 and the System Recovery Controller Dependency Manager to reduce core restart times.

BCS history

This feature was created in BCS35.

Restrictions and limitations

This feature impacts SuperNode offices only only.

AQ0878

Feature name

Call Cleanup Robustness

Description

The purpose of this feature is to reexamine and rationalize the output of log information in the event of a call death. This activity will organize the information so as to increase the chances of having related logs appear together. Prior to this activity, there was a greater chance of logs being output at different times because different processes generated them.

BCS history

This feature was created in BCS35.

Logs

The log AUDT103 was formerly output on every call death. This log was modified so that the case in which a call commits suicide (call_error) will no longer generate such a log. The “REASON” field was formerly used for the call_error reason as well as the trap number. CP Obits are no longer generated on call_errors (suicides).

AQ0967

Feature name

CC Support for Compact Conference Peripheral (CCP) (Part 1)

Description

This feature introduces the new CCP (NT1X81), which contains the equivalent of one Maintenance Trunk Module (MTM) controller and five existing 6-port Conference Circuits (NT3X67). The CCP is a single circuit pack with a direct DS-30 link to the network.

This is a preparatory feature that introduces the hardware independent portions of the software in BCS35. The full functionality of this feature will be implemented in BCS36, together with the introduction of the hardware. The BCS36 feature will be AQ0968.

BCS history

This feature was created in BCS35.

Hardware requirements

The following Product Engineering Codes were introduced into the DMS software:

- NT1X81AA (domestic: u-Law PCM)
- NT1X81BA (international: A-Law PCM)

Restrictions and limitations

No maintenance functions, such as BSY, RTS, TST, or LoadPM are provided in this feature. They will be implemented in BCS36 feature AQ0968.

Datafill

Table	Description
TMINV	New fields
CONF6PR	Modified
CONF3PR	Modified

The following four fields were added to table TMINV: SINGLE_CARD_TM_SELECTOR, LOC_TM_TYPE, LOC_TM_NUMBER, and LOC_SLOT_NUMBER. The SINGLE_CARD_TM_SELECTOR field determines whether the next three fields will be displayed to the user. The LOC_TM_TYPE field contains the type of shelf where the Conference Trunk Module (CTM) is currently residing. The LOC_TM_NUMBER field contains the external PM number of the shelf where the CTM is currently residing. The

LOC_SLOT_NUMBER field contains the card position or slot number within the shelf where the CTM in question resides.

The CTM and its associated PEC were added to tables CONF6PR and CONF3PR as valid entries.

User interface

The circuit locate command in the TRK level and the query PM command in the PM level were modified.

Feature name

AINSSP-Basic Trunk Trigger Processing

Description

AR0225 restructures basic trunk call processing software into the Advanced Intelligent Network (AIN), Release 0.1 ‘‘Basic Call Models.” This feature also implements the AIN trigger detection points (TDP) applicable to trunk type agents. AIN is a service-control architecture that is engaged during basic call processing when a certain event occurs or a pre-specified condition is met.

BCS history

This feature was created in BCS35.

Restrictions and limitations

This feature supports the following trunk facilities: IBNT1, IBNT2, IT, T1, and T2.

All domestic ISDN user part (ISUP) trunk facilities are supported along with multifrequency (MF), dual-tone multifrequency (DTMF), and dial-pulse (DP) signaling type trunks associated with the trunk types listed above.

Feature interactions

This feature uses the following features:

- AR0219 AINSSP Base: Trigger Tables
- AR0222 AINSSP Base: FPE Based Trigger Processors (Orig/Term)
- AR0223 AINSSP: AIN Line Call Processing to Support Orig/Term Trigger
- AR0224 AINSSP Base: FPE to Support into Collect/Analyzed Triggers
- AR0226 AINSSP: Message Encoder/Decoder I

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX022AB contents	
Feature number	**Description**
AG1630	DCR: Multiple Outpulsing Schemes
AG1974	DCR: Dynamic Network Modifications (Add and Del Destinations)
AJ2446	LDR: MNA Base
BC1989	High Performance Routing
BV1534	Dynamically Controlled Routing

BCS history

This feature package was created in BCS21.

BCS36-AJ2446 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX273AA	Multi-Protocol Controller BX.25
NTX560AB	NOP-Generic RO Service (replaces NTX560AA)
NTX801AA	Toll Features I
NTXE65AA	MPC X.25 Interface

AJ2446

Feature name

LDR: MNA Base

Description

This feature is part of a set of features that together enhance the dynamically controlled routing (DCR) within the DMS system. This enhancement permits the DMS switch to handle multiple network access (MNA), allowing a single DMS node to be part of both the local network and the toll network.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The network name must be no more than 12 characters long. The abbreviated network name must be no more than four characters long.

Feature interactions

The existing DCR software is enhanced to handle local dynamic routing (LDR) and MNA.

Operational measurements

This feature changes the software so that the network name is the key to access the peg count registers for the DCRMISC operational measurements (OM) group.

The key to the DCRDEST and DCRLINK OM groups is changed from the destination node name to NETNAME$DEST_NODE_NAME.

In order to display the peg counts of the OM group registers using the OMSHOW command, both the network name and the node name must be entered with the special $ character.

Logs

This feature adds the DCR network name field to the following logs:

- DCR100
- DCR101
- DCR102
- DCR103
- DCR104

User interface

This feature modifies the syntax of DCRMOCH MAPCI command in the network management. MAPCI level is modified and DCRSEL command is added in the level as command 11.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX022AC contents	
Feature number	**Description**
AG1630	DCR: Multiple Outpulsing Schemes
AG1974	DCR: Dynamic Network Modifications (Add and Del Destinations)
AJ2446	LDR: MNA Base
AJ2884	DCR: MNA Table Control
AJ2886	DCR: Base RO Modifications
BC1989	High Performance Routing
BV1534	Dynamically Controlled Routing

BCS history

This feature package was created in BCS20.

BCS36-AJ2446, AJ2884, and AJ2886 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX273AA	Multiprotocol Controller BX.25
NTX560AB	NOP-Generic RO Service (replaces NTX560AA)
NTX801AA	Toll Features I
NTXE65AA	MPC X.25 Interface

AJ2446

Feature name

LDR: MNA Base

Description

This feature is part of a set of features that together enhance the dynamically controlled routing (DCR) within the DMS system. This enhancement permits the DMS switch to handle multiple network access (MNA), allowing a single DMS node to be part of both the local network and the toll network.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The network name must be no more than 12 characters long. The abbreviated network name must be no more than four characters long.

Feature interactions

The existing DCR software is enhanced to handle local dynamic routing (LDR) and MNA.

Operational measurements

This feature changes the software so that the network name is the key to access the peg count registers for the DCRMISC operational measurements (OM) group.

The key to the DCRDEST and DCRLINK OM groups is changed from the destination node name to NETNAME$DEST_NODE_NAME.

In order to display the peg counts of the OM group registers using the OMSHOW command, both the network name and the node name must be entered with the special $ character.

Logs

This feature adds the DCR network name field to the following logs:

- DCR100
- DCR101
- DCR102
- DCR103
- DCR104

User interface

This feature modifies the syntax of DCRMOCH MAPCI command in the network management. MAPCI level is modified and DCRSEL command is added in the level as command 11.

AJ2884

Feature name

DCR: MNA Table Control

Description

This feature modifies table control as part of a group of changes that collectively implement the multiple network access (MNA) capability.

BCS history

This feature was created in BCS36.

Restrictions and limitations

A dynamically controlled routing (DCR) trunk group must belong to one network only.

Feature interactions

This feature builds upon the base provided by feature AJ2446 (LDR: MNA Base). It also interacts with the following two features to implement MNA capability:

- AJ2885 DCR: MNA Activation
- AJ2886 DCR: Base RO Modifications

Datafill

Table	Description
DCRNETID	New table, containing network name, short network name, network type, and operation mode status for each network
DESTKEY	Field NETLIST added to record the networks to which the destination belongs
DESTNODE	Field NETNAME added
DCROPT	This table no longer contains tuples. The information is now contained in table DCRNETID
TKTONODE	Field NETNAME added
OFRT	Field added for DCR network name
RTEREF	Field added for DCR network name

This feature also removes control of the size of table DESTNODE from field SIZE in table SYSDATA.

AJ2886

Feature name

DCR: Base RO Modifications

Description

This feature makes changes to the remote operation (RO) communications messaging between the DMS switch and the network processor (NP). It is part of a group of changes that collectively implement the multiple network access (MNA) capability. It extends the dynamically controlled routing (DCR) services to include both the local and the toll networks.

BCS history

This feature was created in BCS36.

Feature interactions

This feature builds upon the base provided by feature AJ2446 (LDR: MNA Base). It also interacts with the following two features to implement MNA capability:

- AJ2610 NP MNA Preparation
- AJ2884 DCR: MNA Table Control

Logs

Log DCR 105 has six new reasons added to cover the extra invalid arguments that can be generated.

Log DCR 107 has one additional value added to field DCRINFO to allow identification of inconsistencies in the MNA mode values.

This feature package contains features that modify linkset management. It also allows for national and international variations of point codes.

This feature package applies to DMS-100 SuperNode and DMS-STP offices.

Feature package contents

Feature package NTX041AB	
Feature number	**Description**
AL1248	CCS7 Base Expansion
AL1249	CCS7 Static Data Audits
AL1499	CCS7 CC Store Reduction for NT40
AL1249	CCS7 Static Data Audits
AL1496	Removal of CLLI from CCS7 RTESET and LINKSET
AL2334	SRC Controlled Restart and No-Restart SWACT for CCS7
NC0110	MSB7 OMs
AL1344	CCITT7 MTP Australian Screening
BF0650	CCS7 - Signaling T erminal
BC1814	CCS7 Base
BC2289	CCS7 Base Insertion
BV2000	CCS7 Link Set Management
BF0551	CCS7 MSB Commissioning Load
BF0526	CCS7 MSB ST Interface Handling
BV2001	CCS7 Route Set Management
BF0658	CCS7 SCCP for SSP
BF0550	CCS7 ST Commissioning Load
BF0457	CCS7 ST MP Buffer Retrieval
BF0454	CCS7 ST MP Pro/Congestion Control and Flow Control
AC0443	Data Manager Robustness
BF1025	Generalize XPM/MSB7 Channel Allocation
BC1807	Linkset - Basic Link Management - MSB
BC1811	Linkset - Man Machine Interface - CC
BC1813	Linkset Table Control - CC

-continued-

Feature package NTX041AB	
Feature number	**Description**
AC0228	MTP - CC Restart Handling Improvements
AC0150	MTP - CC Routing Capability
BC2292	MTP - Congestion Handling
BC2290	MTP - Congestion/Timer Option T able Control
AC0149	MTP - COV, CBK, Reroute Enhancements
AC0225	MTP - Distributed Data Audits and OM Collection
AC0226	MTP - Distributed MTP Data
AC0148	MTP - Generic Distributed Data Manager
AL0076	MTP - Message Transfer Part
AC0223	MTP - Multi-MSB Capability
AC0220	MTP - Multi-MSB MMI
BF1024	MTP - Point Code Routing Algorithm
BC2291	MTP - Quasi Associated Signaling
BF0989	MTP - Robustness Improvements
AC0411	MTP - Robustness Improvements
BC2293	MTP - ST Pools for CCS7 Signaling Links
BF0942	MTP Audits for CCS7
BC1798	Routeset - Basic Routing Control - MSB
BC1800	Routeset - Distributor - MSB
BC1803	Routeset - Man Machine Interface - CC
BC1799	Routeset - Router - MSB
BC1804	Routeset - T able Control - CC
BF0941	Routeset - Changeover/Changeback - MSB
AC0107	SCCP - Audits and Enhancements
AC0141	SCCP - Data Distribution
AC0143	SCCP - For DMS-SCP
AC0144	SCCP - Management Robustness
AC0306	SCCP - MMI Changes
AC0140	SCCP - Routing Control

-continued-

Feature package NTX041AB	
Feature number	**Description**
BC1749	SCCP Man Machine Interface
AC0431	SCCP Management Robustness
BC1750	SCCP Table Control
BC2046	SCCP - Connectionless Control
BC2047	SCCP - Management - PC Management
BC2048	SCCP - Management - Subsystem
BC2045	SCCP - Routing Control
AC0361	CCS7 Timer Enhancements
AE0313	CCITT7 MTP (DMS-250)
AL1474	CCITT7 National Network Point Code MMI
AL1330	Signaling Link Marginal Performance Report
End	

BCS history

This feature package was created in BCS19.

BCS36 - AL2334 added.

Required feature packages

Feature package number	Description
NTX000AA	Bilge
NTX001AA	Common Basic
NTX270AA	New Peripheral Maintenance Package

AL2334

Feature name

SRC Controlled Restart and No-Restart SWACT for CCS7

Description

This feature allows the system recovery controller (SRC) to control the recovery of Common Channel Signaling 7 (CCS7) links, linksets, routesets, and pools during warm, cold, and reload restarts, or during a no-restart switch of activity (SWACT).

BCS history

This feature was created in BCS36.

Restrictions and limitations

The no-restart SWACT for CCS7 offices is a function of office size, and certain configurations may not meet the target maximum of 30 seconds for complete switch recovery. Partial call processing will be available within the 30-s limit.

This feature does not support the CCS7 part of service control point I (SCPI) nodes.

This feature does not support the CCITT-based versions of signal connection control part (SCCP).

Feature interactions

This feature is one of four features that function together to allow CCS7, link peripheral processors (LPP), and ISDN user part (ISUP) to use the SRC for core restart recovery. The other features are as follows:

- AI0704 SRC Restart and No-Restart SWACT Support for SCCP and DDM
- AI0705 SRC Restart and No-Restart SWACT Support for LIMs and LIUs
- AR0467 SRC Restart and No-Restart SWACT Support for ISUP

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX042AA contents	
Feature number	**Description**
AR0238	AINSSP: AIN AMA
BR0001	Remote ONI to SP-1 TOPS
BR0002	Magnetic Tape Local Inhibit
BR0008	Remote ONI to WE TSPS
BR0080	Total Calls Summary on AMA Records
BR0216	ONI Service from DMS-100 LAMA
BR0222	End of Tape Alarm
BR0475	AMA Failure Routing Options
BR0591	Flexible Long Duration Call Reporting
BT0190	AMA Uncompleted Calls on Tape
BV0036	End of AMA Alarm

BCS history

This feature package was created in BCS00.

BCS36-AR0238 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX901AA	Local Features I

AR0238

Feature name

AINSSP: AIN AMA

Description

Feature AR0238 provides Bellcore automatic message accounting (AMA) format (BAF) recording for Advanced Intelligent Network (AIN) release 0.1, as defined in Bellcore Technical Advisory, *Advanced Intelligent Network 0.1 Switching Systems Generic Requirements* (TA-NWT-001284, issue 1).

A service switching point (SSP) is a switch that can recognize a call that requires AIN processing by an off-board processor, such as a service control point (SCP), without making assumptions about the service being provided. The SSP produces BAF records for AIN calls as specified by the off-board processor and switch-based translations. The response message sent from the off-board processor may contain optional parameters that are used by the SSP billing function.

BCS history

This feature was created in BCS36.

Restrictions and limitations

Message Detail Recording (MDR) module 105 is not provided by this feature.

AIN billing and universal billing are mutually exclusive. Universal billing takes precedence.

Some switch-based features cause a module to be appended to the AMA record that is generated for a call during which the feature is active. With such a module appended, it is not possible to generate a corresponding AIN AMA record for any feature that is not supported for AIN.

Feature interactions

This feature interacts with existing switch-based billing features as follows:

- When a call triggers for the first time, any currently open AMA billing record is discarded. The off-board processor is responsible for sending AMA parameters to restart the billing record. Failure to do this results in loss of the switch-based AMA record for that call. If the call retranslates and becomes a billable call, then a switch-based record is started.

- When either the 3/6/10 Public Office Dial Plan (PODP) trigger or the terminating attempt trigger is met, then a new call leg is established. Any billing (switch-based or AIN) is closed and a new record is started, provided the off-board processor response indicates this. The internal registers that monitor the number of AMA parameters received are reset to initial values.
- Calls that produce terminating billing records will continue to produce these records, along with any AIN billing that occurs on the call.
- The Conference Trunk Usage and Call Forwarding AMA records continue to be produced in addition to the AIN record or switch-based record for interactions with Three-Way Calling and Call Forwarding.
- All AMA pretranslation information is discarded unless the call retranslates following an AIN query.
- If a Centrex line or trunk originates a call that requires a Station MDR (SMDR) call record based on the originating line or trunk group data or IBN translation datafill, the SMDR record will be generated whether or not the call is an AIN call. The SMDR call record generated is a result of the dialed digits. Any retranslation that results directly from an AIN response does not produce an additional SMDR record.

Datafill

Table	Description
AMAOPTS	Option UNANS_AIN added
BCCODES	Tuple AIN added

Operational measurements

Three new operational measurement (OM) registers are provided for tracking AIN AMA errors:

- AMAMAX is incremented whenever the maximum parameter count per AMA record is exceeded.
- AMASLPID is incremented whenever any AMA parameters arrive at the SSP before an AMAslpID parameter.
- AMACONV is incremented whenever any AMA parameters are received in a conversation package.

Automatic message accounting

This feature implements the following functionality:

- AIN Call Completion Structure Code 0220
- AIN Call Termination Structure Code 0221
- Translation Settable Module Code 030
- Service Logic Program Identification Module 039

- Digits Module 040
- Account Code Module 103
- AIN Default Call Type 047
- AIN Default Service Feature 027

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX098AA contents	
Feature number	**Description**
AD4733	AWS 1203 AMA Billing
AE1275	Global EBAF AMA (Clone)
AF1093	VFG AMA Support for FX and ETS Calls
AF1981	AMA Test Call Enhancements
AF3078	AMA Compliance (TR508)
AN0101	AMA TR508 Compliancy II
AN0319	AMA Base Re-Engineering II
BC0505	AT&T Format for AMA Records and AMA Tape
BR0378	AT CAMA Format
NC0267	Universal Bellcore Centrex Billing

BCS history

This feature package was created in BCS10.

BCS36-AD4733, AN0319 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX044AA	Central Automatic Message Accounting (CAMA)
NTX801AA	Toll Features I

AD4733

Feature name

DWS 1203 AMA Billing

Description

Feature AD4733 provides Bellcore AMA format (BAF) recording for dialable wideband service (DWS), as defined in Bellcore technical reference, *Generic Requirements for the Switched DS-1/Switched Fractional DS-1 Service Capability from an ISDN Interface* (TR-NWT-001203, Issue 2, December, 1992).

The feature provides BAF recording for intranetwork, originating access, or terminating circuit-switched calls that have an information transfer rate of 128 kbit/s or greater.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the enhanced network (ENET) and an NTAX78AA card (time switch).

Restrictions and limitations

The Canadian network has not yet established local access and transport areas (LATA) or interexchange carriers (IEC). DWS calls in Canada will, therefore, use only call type code 148, associated with structure code 0190.

Outgoing wideband calls on ATC trunks use call type code 149 instead of call type code 110.

Incoming wideband calls on ATC trunks use call type code 150 instead of call type code 119.

Feature interactions

This feature interacts with the following features:

- AD3936 LEC Wideband Call Processing
- AD4433 LEC WSS ISUP to PRI Interworking
- AD4449 LEC WSS PRI
- AD4732 LEC DWS FGD ISUP

Datafill

Table	Description
AMAOPTS	Field OCCTERM is set to YES to initiate LAMA recording.
CRSFMT	Tuple AMA has value BCFMT added.
OFCENG	Parameter UNIVERSAL_AMA_BILLING is set to OFF to suppress universal AMA.
OFCOPT	Parameter LAMA_OFFICE is set to YES to initiate LAMA recording.

Automatic message accounting

In providing this feature, the following newly defined call types are used:

- Code 148, associated with structure code 0190
- Code 149, associated with structure code 0645
- Code 150, associated with structure code 0645

This feature also adds DWS information transfer rate indicator (ITR) to the existing ITR in structure codes 0190 and 0645.

AN0319

Feature name

Base Automatic Message Accounting (AMA) Re-engineering II

Description

This feature provides an improved method of determining the elapsed time of a call for billing purposes. This is achieved by using the more reliable central control (CC) timing instead of peripheral timing.

With CC timing the answer timestamp and the disconnect timestamp are determined by the CC. When the call disconnects, the answer timestamp is subtracted from the disconnect timestamp to determine the elapsed time of the call.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature forces all calls to use CC timing in the following billing formats:

- Bellcore AMA (Local/Toll/TOPS)
- Northern Telecom (NT) AMA (Local/Toll/TOPS)
- Station Message Detail Recording (SMDR)
- DMS-100 United Kingdom Call Detail Recording (DMS-100 UK CDR)
- Variable CDR (VCDR)

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX159AA contents	
Feature number	**Description**
AD4733	DWS 1203 AMA Billing
AE1275	Global EBAF AMA (Clone)
AF1093	VFG AMA Support for FX and ETS Calls
AF1462	AMA Test Call Capability
AF1665	UMCD Indicator in AMA Record
AF1981	AMA Test Call Enhancements
AF3078	AMA Compliance (TR508)
AF3556	TR862 AMA Compliance: Circuit
AN0101	AMA TR508 Compliancy II
AN0319	AMA Base Re-Engineering II
BC0505	AT&T Format for AMA Records and AMATAPE
BC0683	AT&T Local AMA (Continued)
BC1393	Rename ATT AMA to BC AMA
BR0378	AT CAMA Format
BR0439	AT&T-LAMA Format
BR0512	IBN Compatibility with ATT AMA Format and MUMR
NC0267	Universal Bellcore Centrex Billing

BCS history

This feature package was created in BCS10.

BCS36-AD4733, AN0319 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX042AA	Local Automatic Message Accounting (LAMA)
NTX901AA	Local Features I

Feature name

DWS 1203 AMA Billing

Description

Feature AD4733 provides Bellcore AMA format (BAF) recording for dialable wideband service (DWS), as defined in Bellcore technical reference, *Generic Requirements for the Switched DS-1/Switched Fractional DS-1 Service Capability from an ISDN Interface* (TR-NWT-001203, Issue 2, December, 1992).

The feature provides BAF recording for intranetwork, originating access, or terminating circuit-switched calls that have an information transfer rate of 128 kbit/s or greater.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the enhanced network (ENET) and an NTAX78AA card (time switch).

Restrictions and limitations

The Canadian network has not yet established local access and transport areas (LATA) or interexchange carriers (IEC). DWS calls in Canada will, therefore, use only call type code 148, associated with structure code 0190.

Outgoing wideband calls on ATC trunks use call type code 149 instead of call type code 110.

Incoming wideband calls on ATC trunks use call type code 150 instead of call type code 119.

Feature interactions

This feature interacts with the following features:

- AD3936 LEC Wideband Call Processing
- AD4433 LEC WSS ISUP to PRI Interworking
- AD4449 LEC WSS PRI
- AD4732 LEC DWS FGD ISUP

Datafill

Table	Description
AMAOPTS	Field OCCTERM is set to YES to initiate LAMA recording.
CRSFMT	Tuple AMA has value BCFMT added.
OFCENG	Parameter UNIVERSAL_AMA_BILLING is set to OFF to suppress universal AMA.
OFCOPT	Parameter LAMA_OFFICE is set to YES to initiate LAMA recording.

Automatic message accounting

In providing this feature, the following newly defined call types are used:

- Code 148, associated with structure code 0190
- Code 149, associated with structure code 0645
- Code 150, associated with structure code 0645

This feature also adds DWS information transfer rate indicator (ITR) to the existing ITR in structure codes 0190 and 0645.

Feature name

Base Automatic Message Accounting (AMA) Re-Engineering II

Description

This feature provides an improved method of determining the elapsed time of a call for billing purposes. This is achieved by using the more reliable central control (CC) timing instead of peripheral timing.

With CC timing the answer timestamp and the disconnect timestamp are determined by the CC. When the call disconnects, the answer timestamp is subtracted from the disconnect timestamp to determine the elapsed time of the call.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature forces all calls to use CC timing in the following billing formats:

- Bellcore AMA (Local/Toll/TOPS)
- Northern Telecom (NT) AMA (Local/Toll/TOPS)
- Station Message Detail Recording (SMDR)
- DMS-100 United Kingdom Call Detail Recording (DMS-100 UK CDR)
- Variable CDR (VCDR)

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX186AB contents	
Feature number	**Description**
AN0172	Carrier Code Expansion for ISDN
AN0173	Carrier Code Expansion for E800/PVN
BC1124	EA: End Office-Translation and Carrier Screening
BC1125	EA: End Office-Trunk to AT and IC
BC1126	EA: End Office-Originating and T erminating Billing
BC1129	EA: End Office-New Treatments
BC1130	EA: End Office-Logs
BC1131	EA: End Office-Abbreviated Dialing
BC1364	Feature Groups C and D Compatibility
BC1367	Overlap Carrier Selection
BC1368	Equal Access on IBN Datapath
BC1379	Equal Access-Expanded T oll Denial
BC1380	Equal Access-CC Real Time Improvement
BC1389	EA-00 Minus Dialing Routed via PIC
BC1395	OMS-PIC and Non-PIC Calls per IC/INC
BC1791	EAEO: P2(PX) Trunk Compatibility
NC0335	FGD Carrier Identification Code Expansion
NC0428	FGD CIC Expansion-Phase 2

BCS history

This feature package was created in BCS16.

BCS36-AN0173 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX042AA	Local Automatic Message Accounting (LAMA)
NTX072AA	International Direct Distance Dialing (IDDD)
NTX159AA	Bellcore LAMA Format
NTX901AA	Local Features I

Feature name

Carrier Identification Code for E800/PVN

Description

Prior to the introduction of this feature the carrier identification code (CIC) was a three-digit code. This limited the number of CICs to a theoretical maximum of 1 000. For the enhanced 800 (E800) and Private Virtual Network (PVN) database services, this feature provides the equal access end office (EAEO) service switching point (SSP) and the access tandem (AT) SSP with the ability to request and accept four-digit CICs from the switching control point (SCP). This raises the theoretical maximum number of CICs to 10,000.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature does not change table TOPECAR to support a four-digit CIC. Under certain conditions E800 calls completing to the inter-LATA (local access and transport area) carrier (IC) use table TOPECAR, field CARDIG, to look up the CIC. If the SCP returns a four-digit CIC and the CIC is not datafilled in table OCCINFO, the leading digit, if zero, is stripped off and the lookup is performed in table TOPECAR. If the leading digit is not zero, the call is routed to treatment.

Similarly, this feature does not change table CLSVSCRC to support a four-digit CIC. Under certain conditions, E800 calls originating at an AT SSP over TOPS trunk groups using feature group C (FGC) signaling use tables TOPECAR and CLSVSCRC to determine the call completion route. If the SCP returns a four-digit CIC, the leading digit is stripped off and the resulting three-digit CIC is used in tables TOPECAR and CLSVSCRC

Feature interactions

This feature builds on features NC0335 (FGD Carrier Identification Code Expansion) and NC0428 (FGD CIC Expansion-PH2) by completing the changes to allow an EAEO or AT to accept four-digit CICs.

Datafill

Table	Description
NSCDEFS	New option 4DGTCIC added
STDPRTCT. STDPRT	Field MAXDIGSR maximum value changed from 18 to 25

Office parameter SSP_NSC_CARRIER_ID is changed to accept a four-digit service code.

Logs

Logs DFIL 110 and DFIL 111 are changed to output a four-digit CIC in the log text.

User interface

The output from command TESTSS at the SCCPLOC level of the MAP is changed to print either a three-digit or a four-digit CIC. The output is based upon the size of the CIC received in the response package from the SCP.

Automatic message accounting

This feature changes existing billing records produced for E800 and PVN to include the four-digit CIC returned from the SCP. The IC/INC prefix field of the E800 141 AMA billing and the PVN 021 carrier access module code are redefined to include a four-digit CIC.

New Peripheral Maintenance Package

This feature package applies to DMS-100 office switches equipped with the new messaging extended multiprocessor system (XMS)-based peripheral module (XPM). Depending on the hardware configuration of a particular switch, various processor combinations can be supported, including the master processor (MP), signaling processor (SP), file processor (FP), ISDN signaling processor (ISP), and unified processor (UP).

Feature package contents

Feature package NTX270AA contents

Feature number	Description
AC0151	DS-1 EFF Card-(NT6X50AB)
AF1647	LCM Takeover/Takeback Enhancement
AF1747	Processor Occupancy OMs for XLCM
AF2583	XPM RTS Enhancements
AF2987	Enhanced Field Failure Information
AF2988	XLCM Diagnostic Enhancement
AF2989	XPM REX/SWACT Robustness
AF3053	CM Static Data Update Tracking
AF3086	XLCM Diags Phase II-6X54 Relay, Scan Chip
AF3200	XPM REX Results/FFI PH II
AF3234	XLCM REX Results/FFI PH II
AF3271	UTR Diagnostic Enhancements-T one Filtering
AF3684	XPM Static Data Management
AF3685	SWACT Evolution: CC XPM Maintenance
AF3747	Enhanced Warm SWACT
AF4826	Loadtime Enhancements
AF5006	PM Diagnostic History
AF5007	XPM Pre-SWACT/Post-SWACT Audit
AF5008	XPM REX Control and Trouble Notification Improvements
AG0309	XPM IPML Messaging for Office Recovery
AG0310	XPM Bootstrap IMC/IPML Messaging Enhancement for NT6X69

-continued-

Feature package NTX270AA contents (continued)	
Feature number	**Description**
AG0366	Audible Alarms for Remote C-side Link Failures
AG0664	XPM Sync Diagnostic
AG0917	Trunk Access Measurements
AG1046	6X50 Loop Diagnostic
AG1241	CC Manual Support for Dead System Recovery
AJ0338	XPM Parity Audit
AJ0964	Enhanced XPM SWACT Management
AJ0965	Cold SWACT Recovery on Failures of Planned SWACTs
AJ1038	SWACT Operation Robustness
AJ1039	XPM Data Management Robustness
AL0095	XPM ROM Diagnostic MMI
AL0173	6X50AB Diagnostic
AL0174	Enhanced XPM DS-1 Maintenance
AL0227	DTSR Realtime Enhancements
AL0335	XPM RTS Enhancement
AL0474	XPM ROM Diagnostic Improvements
AL0477	Better CC Interpretation of Messaging Failures
AL0495	DTSR on a per-PM Basis
AL0563	Enhanced CC Support for 6X50AB on Host Peripherals
AL0608	Decouple CC Reload Restart and XPM Static Data
AL1460	XPM MTC for DMS-X Part 2
AL2416	Convert Series II PMs to Recovery Controller
AN0336	XPM Base Card Analysis and Test
AN0337	P-side Looparound Facility Redesign
AR0086	Add MAPCI Perform Level for the DTCI
BC0474	MSB-DTC NUC Basic MTCE
BC0475	NPE-MSB Basic MTCE-Dev S/W
BC0476	NPE-LCM Basic MTCE-Dev S/W
BC0477	NPE-LGC/DTC Basic MTCE-Dev S/W

-continued-

Feature package NTX270AA contents (continued)	
Feature number	**Description**
BC0482	NPE-LCM MTCE Enhancements
BC0498	NPE-Basic T1 MTCE for DTC, LGC
BC0499	NPE-Basic PM Loader
BC0617	NPE-LGC MTCE Enhancements
BC0626	Enhanced MSB MTC
BC0651	Loader Enhancements
BC0669	NPE-LCM Maintenance Enhancements II
BC0670	NPE-LGC/DTC Maintenance Enhancements II
BC0671	NPE-Loader for LGC
BC0712	NPE Enhanced NPE Loader
BC0880	LCM Enhancements
BC0883	NPE-PM Load File Patcher
BC1184	PM MAP/Log Robustness
BC1217	LM Speech Link Diagnostics
BC2093	CC Data Support for 6X50AB
BF0954	XPM Real-time Enhancements
BF0955	XPM Routine Exercise Test
BF0969	XPM Diag Driver Enhancements
BV1103	Dial Tone Speed Recording for LCM
BV1111	NPE-OMs for LGC/DTC
NC0033	OMs for XPM Links
NC0105	E911 Warm SWACT Enhancement
NC0108	DTSR OM Enhancements
NC0322	PM180 Cleanup
End	

BCS history

This feature package was created in BCS14.

BCS36- AF5006, AF5007, and AF5008 changed

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTXG21AA or NTX001AA	DMS-250 EIOC Base Package Common Basic

AF5006

Feature name

XPM Diagnostic History

Description

AF5006 captures diagnostics results that indicate the health of the extended multiprocessor system (XMS)-based peripheral module (XPM). Diagnostic failure counts and card fault counts are stored for each XPM unit. The data is used by feature AF5007 (XPM Pre-SWACT/Post-SWACT Audit) to help determine whether an XPM SWACT is advisable. The data is also available through MAP commands to aid in maintenance activities and outage analysis.

BCS history

This feature was created in BCS35.

Restrictions and limitations

The diagnostic history is supported on the following XPMs:

- line trunk controller (LTC) and LTC with unified processor (UP) (LTC+)
- line group controller (LGC) and LGC with UP (LGC+)
- digital trunk controller (DTC) and DTC with UP (DTC+)
- ISDN DTC (DTCI)
- remote cluster controller (RCC), RCC2, RCC with UP (RCC+), and ISDN RCC with UP (RCCI+)
- subscriber carrier module-100 access
- subscriber carrier module-100 rural (SMR)
- subscriber carrier module-100S (SMS)
- subscriber carrier module-100 urban (SMU)
- subscriber carrier module-100S remote (SMS-R)

On NT40 switches, only the diagnostics (and associated cards) required by feature AF5007 are recorded.

Feature interactions

This feature can stand alone, but it is needed by feature AF5007 (XPM Pre-SWACT/Post-SWACT Audit).

Logs

Log PM601 is generated whenever the long-term failure (LTF) counters for a particular PM are manually reset. A summary of the counters previous to reset are listed in the log to ensure that no data is lost.

User interface

A new option is added to command DISP at the PM level of the MAP terminal. This option displays the diagnostic history data (as shown below) for all XPMs in the office or for all XPMs of a given PM type.

```
Disp <Option> {state<state>{SysB, ManB, Offl, CBsy, ISTb, InSv},
                    DiagHist}
                        [pmtype]
```

Command QUERYPM, at the directory of a posted PM, is enhanced to display the diagnostic history data (shown below).

```
QUERYPM [<option>  {Flt,
                    Cntrs,
                    DiagHist [<diag> {DIAG},
                              <card>  {CARD),
                              <reset> {RESET}]}]
```

Option DIAGHIST is added to command QUERYPM to allow the following actions:

- The default action displays the failed diagnostics and associated cards.
- Option DIAG displays the summary of diagnostic failures counts.
- Option CARD displays the summary of the cards reported as hardware failures.
- Option RESET resets the LTF counters to zero and displays log PM601 with a summary of the counters prior to the reset.

Feature name

XPM Pre-SWACT/Post-SWACT Audit

Description

AF5007 enhances the existing audit that occurs before a switch of activity (SWACT), creates a centralized SWACT controller, creates a post-SWACT audit, and implements a SWACT back capability. The overall purpose of this feature is to reduce extended multiprocessor system (XMS)-based peripheral module (XPM) outages by preventing a SWACT (whether initiated manually or by the system) if the inactive unit is deemed unreliable. AF5007 also checks to see if the newly active unit can communicate with the central control (CC) after a SWACT, and performs a SWACT back to the previously active unit if the newly active unit cannot communicate.

BCS history

This feature was created in BCS35.

BCS36 Changed

Restrictions and limitations

The warm SWACT enhancements are supported on the following XPMs:

- line trunk controller (LTC) and LTC with unified processor (UP) (LTC+), without an ISDN signaling preprocessor (ISP)
- line group controller (LGC) and LGC with UP (LGC+), without an ISP
- digital trunk controller (DTC), DTC with UP (DTC+), without an ISP
- CCS7 digital trunk controller (DTC7)
- remote cluster controller (RCC) and RCC with UP (RCC+)
- ISDN RCC (RCCI+)
- subscriber carrier module-100 rural (SMR)
- subscriber carrier module-100S (SMS)
- subscriber carrier module-100 urban (SMU), without an ISP
- subscriber carrier module-100S remote (SMS-R)

The warm SWACT enhancements are supported on the following commands at the PM level of the MAP terminal attempting a warm SWACT:

- SWACT <no option>
- SWACT ALL
- SWACT FORCE
- SWACT NOW
- SWACT TEST
- BSY UNIT <unit_no> (where unit_no is the active unit)

- BSY ACTIVE
- TST REX NOW (provided by feature AF5008, XPM REX Control and Trouble Notification Improvements)

The following are also supported:

- REX initiated by the system
- warm SWACT initiated by the XPM

In the event of a SWACT back, all calls made after the SWACT and before completion of the SWACT back are taken down.

The system cannot automatically recognize that a card has been replaced to repair a fault on which the SWACT controller bases a SWACT decision.

If the fault is a fault used by the SWACT controller and stored in the history database in the CC (by feature AF5006, PM Diagnostic History), the SWACT controller continues to deny a SWACT to the unit for which the fault was repaired until the fault counters for that unit are cleared. The operating company personnel must cause that unit to successfully gain activity to clear the fault counters. Option FORCE of command SWACT can be used for this purpose.

If the fault is used by the SWACT controller and stored in the status information in the XPM (by feature AF5006), the SWACT controller continues to deny a SWACT to the unit for which the fault was repaired until the fault indicators for that unit are cleared. The XPM must run the appropriate diagnostics and these must pass for the fault indicator to be cleared.

Operational measurements (OM) and peg counts are not reinitialized following a SWACT back. Data will be lost for the 5-s time period that it may take to SWACT and SWACT back.

When a SWACT back occurs, no OM counts for the two transfers of activity (SWACT and SWACT back) are incremented. Affected counters are as follows:

- PM2MWXFR Peripheral Module Dual-unit Manual Warm Transfer
- PM2SWXFR Peripheral Module Dual-unit System Warm Transfer
- PMMWXFR Peripheral Module Manual Warm Transfer
- PMSWXFR Peripheral Module System Warm Transfer

This feature is not functional without prior loading of the BCS35 communications module (CM) load.

Feature interactions

This feature requires feature AF5006 (PM Diagnostic History) and is used by AF5008 (XPM REX Control and Trouble Notification Improvements).

Logs

The existing PM181 log that reports a SWACT is enhanced to report that a SWACT override occurs when personnel use option FORCE of command SWACT MAP to override the SWACT controller's denial of a SWACT.

PM181 log is enhanced as follows:

- When users override the SWACT controller, the log indicates which user name performed the override.
- The log that indicates whether a SWACT passed, failed, or aborted contains an override string when appropriate.
- When a SWACT back occurs, the log indicates XPM SWACT Back.

User interface

This feature affects commands BSY, and the SWACT at the PM;POST level of the MAP terminal also affects the TST REX NOW command.

AF5008

Feature name

XPM REX Control and Trouble Notification Improvements

Description

AF5008 creates log PM600 (REX Failed), which is produced upon routine exercise (REX) failure. The log is a record of each maintenance action performed during REX, the extended multiprocessor system (XMS)-based peripheral module (XPM) unit affected, and the time each action began. The log includes the failure reason and, if applicable, supplemental data consisting of the failed diagnostics and card list reported by the XPM. This feature significantly reduces the number of logs produced during REX. This feature also allows REX to use the enhanced pre-activity switch (SWACT) query and SWACT back created by feature AF5007 (XPM Pre-SWACT/Post-SWACT Audit).

BCS history

This feature was created in BCS35.

BCS36 Changed.

Restrictions and limitations

The system REX runs on only one XPM at a time if the office uses the NT40 processor. SuperNode supports concurrent REXs for up to ten XPMs with the same REX test class: line group controller (LGC), remote cluster controller (RCC), subscriber carrier module-100S remote (SMS-R), and message switch and buffer (MSB).

A REX can be run only on a unit in one of the following states:

- in service (InSv)
- in-service trouble (ISTb) due to REX failed
- ISTb due to peripheral-side (P-side) DS-1 links of carrier type trunk OOS (out of service)

If a warm SWACT is not possible, REX terminates rather than performing a cold SWACT.

REX does not fail as a result of the pre-SWACT audit for the following peripheral types that do not support the audit:

- message switch and buffer CCIS6 (MSB6)
- message switch and buffer CCIS7 (MSB7)
- subscriber module access (SMA)
- Traffic Operator Position System (TOPS) message switch (TMS)
- small-memory digital trunk controller (DTC)

After successful completion of the REX, the XPM has a new active unit due to the SWACT.

Operational measurements (OM) normally generated for certain system actions are suppressed if REX initiates these actions.

The last REX date and time stored in the maintenance record may be due to either a system REX or manual REX, and is measured from the last system reload restart.

The REX maintenance record does not survive BCS applications.

If a restart occurs while REX is in progress, log PM600 is not generated, because the restart aborts the REX and deallocates the temporary data store used to build the PM600.

The capture and MAP display of diagnostics that fail during XPM REX applies to all XPMs.

Log PM600 and associated log reduction provided by this feature applies to the following XPMs:

- line trunk controller (LTC) and LTC with unified processor (UP) (LTC+)
- line group controller (LGC) and LGC with UP (LGC+)
- digital trunk controller (DTC), DTC with UP (DTC+), DTC7
- remote cluster controller (RCC), RCC with UP (RCC+), and ISDN RCC with UP (RCCI+)
- subscriber carrier module-100S (SMS) and SMS with UP (SMS+)
- subscriber carrier module-100 access (SMA)
- subscriber carrier module-100 remote (SMR)
- subscriber carrier module-100 urban (SMU) and SMU with UP (SMU+)
- enhanced subscriber carrier module-100 urban (ESMU)
- subscriber carrier module-100S remote (SMS-R) and SMS-R with UP (SMS-R+)

No SWACT controller override is provided for REX.

Feature interactions

This feature requires feature AF5007 (XPM Pre-SWACT/Post-SWACT Audit) for REX to use the enhanced pre-SWACT audit, post-SWACT audit, and SWACT back capability.

Logs

Log PM600 (REX Failed) is produced if a REX fails. The log is a record of each action performed during REX (BSY, RTS, TST, SWACT, pre-SWACT, or SYNC), which unit the action affected, when the action was initiated, the failure reason, and supplemental data consisting of diagnostics that failed, applicable card list, or list of problems detected by the pre-SWACT audit.

Log PM600 allows the suppression of multiple logs during REX (a REX pass produces 3 logs instead of 17; a REX failed produces 3 logs instead of up to 32 logs).

User interface

REX failure reasons are updated to specify, if applicable, the unit with a failure and the diagnostics that failed. If REX fails during the pre-SWACT step, TST REX QUERY displays the reason for pre-SWACT failure.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX386AB contents	
Feature number	**Description**
AN0173	Carrier Code Expansion for E800/PVN
BC1028	EA: Access Tandem-Translation and Carrier Screening
BC1029	EA: Access Tandem-Trunk to/from EAEO
BC1030	EA: Access Tandem-Trunk to/from Interexchange Carrier
BC1031	EA: Access Tandem-T erminating Billing
BC1032	EA: Access Tandem-New Treatment
BC1034	EA: Access Tandem-New Logs
BC1035	EA: Access Tandem-Operation Measurements
BC1380	Equal Access-CC Real-Time Improvement
NC0335	FGD Carrier Identification Code Expansion

BCS history

This feature package was created in BCS14.

BCS36-AN0173 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX044AA	Central Automatic Message Accounting (CAMA)
NTX098AA	Bellcore CAMA Format
NTX290AA	Tandeming/Supervision and Treatment
NTX801AA	Toll Features I

AN0173

Feature name

Carrier Identification Code for E800/PVN

Description

Prior to the introduction of this feature the carrier identification code (CIC) was a three-digit code. This limited the number of CICs to a theoretical maximum of 1 000. For the enhanced 800 (E800) and Private Virtual Network (PVN) database services, this feature provides the equal access end office (EAEO) service switching point (SSP) and the access tandem (AT) SSP with the ability to request and accept four-digit CICs from the switching control point (SCP). This raises the theoretical maximum number of CICs to 10 000.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature does not change table TOPECAR to support a four-digit CIC. Under certain conditions E800 calls completing to the inter-LATA (local access and transport area) carrier (IC) use table TOPECAR, field CARDIG, to look up the CIC. If the SCP returns a four-digit CIC and the CIC is not datafilled in table OCCINFO, the leading digit, if zero, is stripped off and the lookup is performed in table TOPECAR. If the leading digit is not zero, the call is routed to treatment.

Similarly, this feature does not change table CLSVSCRC to support a four-digit CIC. Under certain conditions, E800 calls originating at an AT SSP over TOPS trunk groups using feature group C (FGC) signaling use tables TOPECAR and CLSVSCRC to determine the call completion route. If the SCP returns a four-digit CIC, the leading digit is stripped off and the resulting three-digit CIC is used in tables TOPECAR and CLSVSCRC

Feature interactions

This feature builds on features NC0335 (FGD Carrier Identification Code Expansion) and NC0428 (FGD CIC Expansion-PH2) by completing the changes to allow an EAEO or AT to accept four-digit CICs.

Datafill

Table	Description
NSCDEFS	New option 4DGTCIC added
STDPRTCT. STDPRT	Field MAXDIGSR maximum value changed from 18 to 25

Office parameter SSP_NSC_CARRIER_ID is changed to accept a four-digit service code.

Logs

Logs DFIL 110 and DFIL 111 are changed to output a four-digit CIC in the log text.

User interface

The output from command TESTSS at the SCCPLOC level of the MAP is changed to print either a three-digit or a four-digit CIC. The output is based upon the size of the CIC received in the response package from the SCP.

Automatic message accounting

This feature changes existing billing records produced for E800 and PVN to include the four-digit CIC returned from the SCP. The IC/INC prefix field of the E800 141 AMA billing and the PVN 021 carrier access module code are redefined to include a four-digit CIC.

NTX387AD

SMU-Subscriber Module Urban

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX387AD contents	
Feature number	**Description**
AF0055	Operator Verification for RCU Lines
AF0082	SMU CC MMI
AF0083	SMU Basic RTS
AF0084	SMU Call Processing/Node and Line MNTC
AF0085	SMU Maintenance and OMS
AF0086	SMU Alarms/Channel Reassignment
AF0088	SMU OAM Enhancements
AF0147	SMU NT6X44CA A/B Bit Diagnostics
AF0148	Shared Metallic Test Access
AF0179	SMU IBN
AF0232	RCU Carrier Maintenance Enhancements
AF0233	SMU Warm SWACT (PP)
AF0268	SMU Line Mtce-Coin, FXB (PP)
AF0269	SMU Forward Disconnect (PP)
AF0270	SMU Expanded RCU Connections (PP)
AF0450	Programmable Spare Alarms for RCU
AF0530	RCU Office Parameter
AF0828	Automatic System Test for RCU (CC)
AF0829	Automatic System Test for RCU
AF0915	SMU PP AST II
AF1734	Flow Controls for SMU
AF2251	SMU Forward Disconnect for EPOTS (PP)
AF2254	SMU Forward Disconnect for EPOTS (CC)
AF2255	SMU CLASS Calling Number Delivery (CC)
AF2672	RCU Line Test Processor

-continued-

Feature package NTX387AD contents (continued)	
Feature number	**Description**
AF2983	Integrated Line Test W/DRTU
AF3673	SMU ISDN Call Processing
AF3680	SMU ISDN/MBS Line Provisioning
AF3681	SMU LAPD Support for MBS Messages
AF3683	SMU MBS Call Processing
AF3687	SMU MBS/ISDN Special Connections
AF3688	SMU EISP & DCH Provisioning & Maintenance
AF3689	SMU MBS Messaging Network Layer
AF3690	SMU ISDN/MBS Channel Reassignment
AF3691	SMU ISDN Line Testing
AF3692	SMU MBS Line Testing
AF3693	SMU MBS Message Link Management
AF4252	ESMU IDSN SPECCONN Link Reconfiguration
AF4310	SMU Base Support of UTR Card
AF4495	ISDN/MBS SMU UTR Support
AF4512	ISDN/MBS SMU Unified Processor Support
AF4836	ESMU: MX77 Support (XPM)
AF4837	ESMU: MX77 Support (CC)
AF4861	MX77 for SMU
AF4892	ESMU EDCH Integration
AF4935	TA RCUINV: New Tuple for Equipment Location
BC1685	RCU Basic PM Maintenance
BC1686	SMU Maintenance (CC)
BC1724	RCU Inventory Basic Table Control (CC)
BC1725	SMU Static Data (CC)
BC1726	RCU Lines Inventory (CC)
BC1728	RCU MAP Support (CC)
BC2154	RCU Lines Maintenance
BC2155	RCU System Audits/24-h Switchover

-continued-

Feature package NTX387AD contents (continued)	
Feature number	**Description**
BC2156	RCU Maintenance Enhancements
BC2159	DTSR/OMS for RCU
BC2161	RCU Unsolicited Message Handling
BF0585	PP DMS-1U (RT) MSG Proc Software
BF0586	PP SMU PM Maintenance
BF0587	PP SMU Static Data (PM)
BF0588	PP SMU Basic Call Processing
BF0590	PP SMU Loop and Line-Card Testing
BF0591	SMU Message Channel Management
BF0592	PP SMU Channel Reassignment
BF0593	PP FSR Support for SMU
BF0599	SMU Messaging Hooks
BF0610	SMU Alarms Processing
BF0994	SMU (PP) Audits
BF0995	SMU Link Maintenance
End	

BCS history

This feature package was created in BCS22.

BCS36-AF4252, AF4836, AF4837, AF4861, AF4892, and AF4935 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX270AA	New Peripheral Maintenance Package
NTX901AA	Local Features I

AF4252

Feature name

SMU with SPECCONN Link Reconfigurations

Description

This feature allows C-side links of ISDN remote carrier urban (RCU) having ISDN/Meridian Business Services (MBS) special connections to be reconfigured from one ISDN enhanced subscriber carrier module-100 urban (ESMU) to another while the ESMUs are in service and no four-wire or two-wire special connections exist on the RCU. A link can be reconfigured on to the same ESMU or another ESMU by means of a single change to table RCUINV.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature only supports reconfiguration of RCU from and to ISDN ESMUs.

Reconfiguration cannot be carried out if two-wire or four-wire special connections exist, or if one or more logical terminal identifiers (LTID) is provisioned.

The RCU, and its associated C-side links, must be manually busied (MANB) or taken offline (OFFL) before reconfiguration is attempted.

If the RCU being reconfigured has more that 10 ISDN signaling groups (ISG) assigned, then the associated ESMUs must be set to MANB condition.

Any link reconfiguration should ensure that sufficient ESMU C-side capacity remains for existing special connection (SPECCONN) and call processing requirements.

If a C-side node of an RCU is returned to service during reconfiguration, a static data mismatch between the central control (CC) and the ESMU may occur. If this happens, the ESMU should be removed from service and returned to service once reconfiguration is completed.

Datafill

Table	Description
LNINV	New replies created
RCUINV	New replies created
SPECCONN	New replies created

User interface

The busy command of an RCU fails if it is attempted on an offline RCU under reconfiguration.

AF4836

Feature name

ESMU: MX77 Support (XPM)

Description

This feature is introduced to ensure that there is no loss of functionality in the enhanced subscriber carrier module-100 urban (ESMU) as a result of the introduction of the NTMX77AA card (unified processor circuit pack). This pack replaces two NT6X45BA cards (master processor [MP] and signaling processor [SP]), the NT6X47AC card (MP memory) and the NT6X46BB card (SP memory).

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires an ESMU equipped with the NTMX77AA card and the NTBX01AB card (enhanced ISDN signaling processor).

Feature interactions

This feature is part of an integrated package and requires the following features in order to function correctly:

- AF4861 MX77 for SMU
- AF4512 ISDN/MBS SMU Unified Processor Support
- AF4837 ESMU: MX77 Support (CC)

AF4837

Feature name

ESMU: MX77 Support (CC)

Description

This feature provides the necessary software changes in the central control (CC) to allow the NTMX77AA card (unified processor [UP] circuit pack) to replace four existing packs in the enhanced subscriber carrier module-100 urban (ESMU). It ensures that the UP card can be integrated into the ESMU with no loss or degradation of existing functionality.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires an ESMU equipped with the NTMX77AA card and the NTBX01AB card (enhanced ISDN signaling processor).

The ESMU requires a backplane modification (NT6X01) to upgrade to the UP.

Restrictions and limitations

This feature does not support the NTMX77AA card on a subscriber carrier module-100 urban (SMU) without ISDN/MBS capabilities.

BCS applications to BCS37 and above will require that all ESMUs are upgraded to include the UP.

Feature interactions

This feature interacts with the following features to enable the use of the NTMX77AA card:

- AF3732 XPM Software Modifications for UP in Base XPM
- AF3733 CC Software Modifications for UP in Base XPM
- AL2540 Unified Processor Integration in ISDN LTC
- AF4512 ISDN/MBS SMU Unified Processor Support
- AF4836 ESMU: MX77 Support (XPM)

Datafill

Feature AF4512 provided the ability to datafill MX77 in table LTCINV. This feature ensures that the datafill and upgrade function correctly.

AF4861

Feature name

MX77 for SMU

Description

This feature provides the necessary software changes in the extended multiprocessor system (XMS)-based peripheral module (XPM) to allow the NTMX77AA card (unified processor [UP] circuit pack) to replace four existing packs in the subscriber carrier module-100 urban (SMU). It ensures that the NTMX77AA card can be integrated into the SMU with no loss or degradation of existing functionality.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires an SMU equipped with the NTMX77AA card.

The SMU requires a backplane modification (NT6X01) to upgrade to the UP.

Feature interactions

This feature interacts with the following features to enable the use of the NTMX77AA card:

- AF3732 XPM Software Modifications for UP in Base XPM
- AF3733 CC Software Modifications for UP in Base XPM
- AF4512 ISDN/MBS SMU Unified Processor Support
- AF4836 ESMU: MX77 Support (XPM)
- AF4837 ESMU: MX77 Support (CC)

AF4892

Feature name

ESMU EDCH Integration

Description

This feature provides for the integration of the NTBX02BA card (enhanced D-channel handler [EDCH] circuit pack) into the enhanced subscriber carrier module-100 urban (ESMU). It includes all necessary software changes.

The EDCH is an upgraded version of the NTBX02AA card (ISDN D-channel handler [DCH]) with a full 32-bit data bus, 4 Mbyte of RAM, and a processor running at 20 MHz.

Incorporation of the EDCH into the ESMU provides the necessary capacity and performance to prepare for increased functionality in BCS36 and later software releases.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the NTXB02BA card.

Restrictions and limitations

The EDCH card can exist on both the master processor/signaling processor/ISDN signaling processor (MP/SP/ISP) platform and on the unified processor/enhanced ISDN signaling preprocessor (UP/EISP) platform. However, the EDCH software can exist only on the UP/EISP platform.

An EDCH card with an EDCH load cannot be spared to a DCH card with a DCH load.

A cold activity switch (SWACT) of the extended multiprocessor system (XMS)-based peripheral module (XPM) is required if the active unit contains a UP/EISP/EDCH configuration with an EDCH load in some or all of the EDCHs, and if the inactive unit is configured with an MP/SP, ISP, or EISP.

Logs

All logs that reference the NTBX02AA card are modified to reflect the addition of the NTBX02BA circuit pack.

AF4935

Feature name

TA RCUINV: New Field for Equipment Location

Description

This feature provides the ability to store the location or address of a remote carrier urban (RCU) and to display that information in the PM128 log report.

BCS history

This feature was created in BCS36.

Datafill

Table	Description
RCUINV	Field LOCATION added

Logs

Log PM128 is changed to display the location information datafilled in field LOCATION of table RCUINV for the relevant RCU.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX398AA contents	
Feature number	**Description**
AF4309	SMS Base Support of UTR Card
AF4936	New Tuple in RCSINV to Identify Equipment
BV1171	Operator Verification for SMR

BCS history

This feature package was created in BCS16.

BCS36-AF4936 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX270AA	New Peripheral Maintenance Package
NTX901AA	Local Features I

AF4936

Feature name

New Tuple in RCSINV to Identify Equipment Location

Description

This feature provides the ability to store the location or address of a remote concentrator SLC-96 (RCS) and to display that information in the PM128 log report.

BCS history

This feature was created in BCS36.

Datafill

Table	Description
RCSINV	Field LOCATION added

Logs

Log PM128 is changed to display the location information datafilled in field LOCATION of table RCSINV for the relevant RCS.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX710AB contents	
Feature number	**Description**
AF0305	VPU Local Maintenance
AF0306	VPU Service Circuit Resource Management
AF1453	LEAS-Special Directory Number Identification
AN0304	Interchangeable NPA for LEAS
BC1701	Incoming Trunk Call Processing
BC1702	Translation and Routing
BC1703	Signaling Conversion
BC1704	Originating Billing
BC1705	Database System Enhancements
BC1706	Database Reporting

BCS history

This feature package was created in BCS23.

BCS36-AN0304 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX072AA	International Direct Distance Dialling
NTX801AA	Toll Features I
NTX187AA	TOPS - Equal Access
or NTX386AA	Access Tandem Switch
or NTX386AB	Access Tandem Switch

AN0304

Feature name

Interchangeable NPAs for LEAS

Description

This feature is an upgrade to the existing Local Equal Access System (LEAS) base package and does not alter the LEAS functionality. It only extends its engineering limits by increasing the number of datafilled Numbering Plan Area (NPAs) in table DNPIC (LEAS InterLATA PIC) and DNLPIC (LEAS IntraLATA PIC) from 160 to 800. This feature also modifies Command Interpreter (CI) command DNPICLIST to support the expanded range. This command is used for reporting database presubscription for LEAS.

BCS history

This feature was created in BCS36.

Datafill

This feature will increase the data store requirements for table DNPIC and table DNLPIC from 640 bytes to 3200 btyes for each table regardless of the package upgrade is present or not.

User interface

This feature will modify the Command Interpreter (CI) command DNPICLIST to support the new NPA range format of NXX.

This feature package applies to ISDN offices.

Feature package contents

Feature package NTX750AC contents

Feature number	Description
AC0092	ISDN Terminal Test and Configuration
AC0093	ISDN ST Maintenance
AC0094	Bearer Capability for ISDN
AC0095	CC Software for XPM Special Connections
AC0096	ISDN Call Progress Indication
AC0097	Multiple Terminals per ISDN Loop
AC0098	Service Orders for ISDN Terminals
AC0139	ISDN Multiple Terminals Call Processing
AC0180	ISDN LCM Base Load Development
AC0214	ISDN LCM Call Processing I
AC0215	ISDN LCM Line Maintenance Support
AC0216	ISDN LCM Maintenance XPM Support
AC0266	DCH Enhancements for ISDN Functional Signaling
AC0269	Service Parameters for PRA
AC0289	ISDN LTC ISP Loader
AC0290	ISDN LTC ISP ROM Base and Diagnostic
AC0292	ISDN LTC PM Maintenance I
AC0294	ISDN LCM CC Maintenance III
AC0295	ISDN LCM Call Processing II
AC0296	ISDN LCM C-Channel Interface Enhancements
AC0298	ISDN LCM (LCMI) Software
AC0301	ISDN LTC/ISP Communications
AC0302	ISDN HDLC Device R8071 Interface
AC0356	Increase Maximum Number for ISDN Terminal Profiles
AC0366	CC BCS SWACT Support for the LTCI

-continued-

Feature package NTX750AC contents (continued)

Feature number	Description
AC0368	DCH Q.921 Frame Routing
AC0371	LTCI Warm SWACT
AC0380	Table Control for ISDN BRA Functional Signaling
AC0445	LTCI ISDN Loop Expansion
AC0452	XPM ISDN Call Capacity Expansion
AC0458	LCMI Processor Upgrade Support
AC0475	LTCI-OM Collection and Reporting
AC0476	LTCI-ISP/DCH Base Enhancements and T ools
AC0487	LTCI-ISP Audit Enhancements
AC0519	CC XPM Support of POTS on LCMI
AC0520	LCMI Software for POTS Support
AC0528	LTCI Trunks and UTR Integration
AC0530	D-Channel Link Fault Handling
AC0531	DCH Sparing XPM Support
AC0551	2B1Q LCME Base Load Development
AC0552	2B1Q LCME CC Maintenance I
AC0553	2B1Q LCME XPM Support
AC0567	LCME Drawer Control Task and Hardware Interface
AC0568	XPM 1B1Q Loop Maintenance Interface
AC0569	LCME Diagnostics
AC0570	2B1Q LCME CC Maintenance II
AC0571	2B1Q XPM TDM Connection Support
AC0574	ISP/DCH R8071 Audit
AC0575	LTCI-Datafill Enhancements
AC0576	LTCI-ISDN BRA Overload Controls
AC0601	LCME Connection and TDM Control
AC0602	LCME Drawer Task Enhancements
AC0603	LCME ISDN Loop Maintenance Interface

-continued-

Feature package NTX750AC contents (continued)

Feature number	Description
AC0604	LCME TDM Dump and Restore Procedures
AC0634	ISP/DCH Diagnostic Enhancements
AF2071	LRU CC Static Data
AJ0426	Name and Reason Display for ISDN Functional Calls
AJ0428	ACD Agent Position Using MFT
AJ0431	Dynamic Protocol Version Control
AJ0912	BRA Meridian Feature Transparency: MTCE and CP Integration
AJ0913	BRA Meridian Feature Transparency: XPM Support for Mtce and CP
AL0087	ISDN Loop Maintenance II
AL0164	ISDN LTC Maintenance
AL0165	ISDN LCM Maintenance
AL0166	New LTP Level for Data Lines
AL0167	ISDN Loop Maintenance I
AL0381	ISDN Loop Maintenance Robustness
AL0382	Identification of ISDN ISLC-1B in DMS Architecture
AL0483	ISDN LCM CC Maintenance II
AL0596	BERT for ISDN Basic Access Loops
AL0680	Loop Maintenance for ISDN 1C Line Card
AL0735	Optical BRA Line Card Maintenance
AL0942	S/T Line Card XPM Interface
AL0944	ISDN Loop Maintenance Enhancements
AL0955	S/T Line Card Diagnostic
AL0956	DCH Sparing Maintenance
AL1040	Loop Maintenance for ISDN S/T Line Card
AL1294	SPECCONN Network Connections
AL1296	ISG Performance MAP Display
AL1314	2B1Q Loop and TDM Connection Provisioning
AL1316	No Test Trunk Access for ISDN Lines

-continued-

Feature package NTX750AC contents (continued)

Feature number	Description
AL1322	ISG Performance Tools
AL1388	2B1Q Loop Maintenance Base
AL1389	Enhanced DCH Loader
AL1585	ISDN Support on LTC
AL1588	Metallic Testing for 2B1Q Loops
AL1589	2B1Q Diagnostic and Performance Reporting
AL1629	Link Reconfiguration for XPMs with Special Connections
AL1666	ISDN Support on LTC II
AL1667	LTC Perform Tool Enhancements for ISDN
AL1668	CSM Support for SPECCONN Network Connection
AL1674	Layer 1 Performance Monitoring for 2B1Q Loops
AL1914	CC Layer 2/3 Protocol Monitoring Development
AL2279	DCH Performance OMs (XPM)
AL2280	DCH Performance OMs (CC)
AL2539	ISG Channel Maintenance Enhancement
AL2541	Enhanced ISP Integration in LTCI
AL2542	Unsolicited Messages and LAPD Cleanup
AQ0671	Layer 2/3 Protocol Monitoring Development
AQ0672	DCH Overload Controls
AQ0695	XPM Support for LCME POTS & 2B1Q L1 Performance
AQ0696	POTS/EBS/Datapath on LCME
AQ0778	ISDN XPM Robustness and Memory Recovery
AQ0788	Layer 2 High Protocol Abnormality Rate (CC)
AQ0789	Layer 2 High Protocol Abnormality Rate (XPM)
AQ0882	Layer 2 High Protocol Rate (XPM)
AQ0884	Dial-up B-channel Loopbacks
AR0496	DCH/EDCH State Audit
BC2096	ISDN IAC DCH Maintenance Support

-continued-

Feature package NTX750AC contents (continued)	
Feature number	**Description**
BC2233	IAC Warm SWACT for ISDN Call Processing
BF0943	ISDN D-Channel Handler Robustness Enhancement
BF0947	ISLM Enhancement
End	

BCS history

This feature package was created in BCS23.

BCS36-AR0496 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX100AA	Integrated Business Networks-Basic (IBN)
NTX106AA	IBN-Proprietary Business Set
NTX108AA	IBN-Display Features
NTX142AA	DS-1 64 kbps Clear
NTX270AA	New Peripheral Maintenance Package
NTX901AA	Local Features I
NTXR34AB	XPM Plus (Product Line Upgrade Strategy) Basic
NTXR42AA	Firmware Downloading

AR0496

Feature name

DCH/EDCH State Audit

Description

This feature enhances the current D-channel handler (DCH) or enhanced D-channel handler (EDCH) audit and includes a check of the congestion and overload status. The MAP (maintenance and administration position) and logs are updated appropriately.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The overload and congestion state audits apply only to DCHs with a host extended multiprocessor system (XMS)-based peripheral module (XPM) that has a unified processor (UP) in the active state.

This feature will support XPM switch of activity (SWACT) from a master processor (MP) or signaling processor (SP) to a UP, but not in the other direction.

Logs

The audit part of this feature ensures the correct printing of PM270 logs for DCHs with host XPMs that have UPs in the active state.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX750AD contents

Feature number	Description
AC0092	ISDN Terminal Test and Configuration
AC0093	ISDN ST Maintenance
AC0094	Bearer Capability for ISDN
AC0095	CC Software for SPN Special Connection
AC0096	ISDN Call Progress Indication
AC0097	Multiple Terminals per ISDN Loop
AC0098	Service Orders for ISDN Terminals
AC0139	ISDN Multiple Terminals Call Processing
AC0180	ISDN-LCM Base Load Development
AC0214	ISDN LCM Call Processing I
AC0215	ISDN LCM Line Maintenance Support
AC0216	ISDN LCM Maintenance XPM Support
AC0266	DCH Enhancements for ISDN Functional Signaling
AC0269	Service Parameters for PRA
AC0289	ISDN LTC ISP Loader
AC0290	ISDN LTC ISP ROM Base and Diagnostic
AC0292	ISDN LTC PM Maintenance I
AC0294	ISDN LCM CC Maintenance III
AC0295	ISDN LCM Call Processing II
AC0296	ISDN-LCM C-Channel Interface Enhancements
AC0298	ISDN-LCM (LCMI) Software
AC0301	ISDN LTC/ISP Communications
AC0302	ISDN HDLC Device R8071 Interface
AC0356	Increase Maximum Number for ISDN Terminal Profiles
AC0366	CC BCS SWACT Support for the LTCI

-continued-

Feature package NTX750AD contents (continued)

Feature number	Description
AC0368	DCH Q.921 Frame Routing
AC0371	LTCI Warm SWACT
AC0380	Table Control for ISDN BRA Functional Signaling
AC0445	LTCI ISDN Loop Expansion
AC0452	XPM ISDN Call Capacity Expansion
AC0458	LCMI Processor Upgrade Support
AC0475	LTCI-OM Collection and Reporting
AC0476	LTCI-ISP/DCH Base Enhancements and T ools
AC0487	LTC-ISP Audit Enhancements
AC0519	CC/XPM Support of POTS on LCMI
AC0520	LCMI Software for POTS Support
AC0528	LTCI Trunks and UTR Integration
AC0530	D-Channel Link Fault Handling
AC0531	DCH Sparing XPM Support
AC0551	2B1Q LCME Base Load Development
AC0552	2B1Q LCME CC Maintenance I
AC0553	2B1Q LCME XPM Support
AC0567	LCME Drawer Control Task and Hardware Interface
AC0568	XPM 2B1Q Loop Maintenance Interface
AC0569	LCME Diagnostics
AC0570	2B1Q LCME CC Maintenance II
AC0571	2B1Q XPM TDM Connection Support
AC0574	ISP/DCH R8071 Audit
AC0575	LTC-Datafill Enhancements
AC0576	LTCI-ISDN BRA Overload Controls
AC0601	LCME Connection and TDM Control
AC0602	LCME Drawer Task Enhancements
AC0603	LCME ISDN Loop Maintenance Interface

-continued-

Feature package NTX750AD contents (continued)

Feature number	Description
AC0604	LCME TDM Dump and Restore Procedures
AC0634	ISP/DCH Diagnostic Enhancements
AF2071	LRU CC Static Data
AF4841	RSC-S LCME Link Rearrangement
AF4842	RSC-S Layer 1 Performance Monitoring
AJ0426	Name and Reason Display for ISDN Functional Calls
AJ0428	ACD Agent Position using MFT
AJ0431	Dynamic Protocol Version Control
AJ0912	BRA Meridian Feature Transparency: MTC
AJ0913	BRA Meridian Feature Transparency: XPM
AL0087	ISDN Loop Maintenance II
AL0164	ISDN LTC Maintenance
AL0165	ISDN LCM Maintenance
AL0166	New LTP Level for Data Lines
AL0167	ISDN Loop Maintenance I
AL0381	ISDN Loop Maintenance Robustness
AL0382	Identification of ISDN ISLC-1B in DMS
AL0483	ISDN LCM CC Maintenance II
AL0596	Bert for ISDN Basic Access Loops
AL0680	Loop Maintenance for ISDN 1C Line Card
AL0735	Optical BRA Line Card Maintenance
AL0942	S/T Line Card XPM Interface
AL0944	ISDN Loop Maintenance Enhancements
AL0955	S/T Line Card Diagnostic
AL0956	DCH Sparing Maintenance
AL1040	Loop Maintenance for ISDN S/T Linecard
AL1294	SPECCONN Network Connections
AL1296	ISG Performance MAP Display

-continued-

Feature package NTX750AD contents (continued)

Feature number	Description
AL1314	2B1Q Loop and TDM Connection Provision
AL1316	No Test Trunk Access for ISDN Lines
AL1322	ISG Performance Tools
AL1388	2B1Q Loop Maintenance Base
AL1389	Enhanced DCH Loader
AL1585	ISDN Support on LTC
AL1588	Metallic Testing for 2B1Q Loops
AL1589	2B1Q Diagnostic and Performance Report
AL1629	Link Reconfiguration for XPMs with Special Connections
AL1666	ISDN Support on LTC II
AL1667	LTC Perform Tool Enhancements for ISDN
AL1668	CSM Support for SPECCONN Network Connection
AL1674	Layer 1 Performance Monitoring for 2B1
AL1914	CC Layer 2/3 Protocol Monitoring Development
AL2279	DCH Performance OMs (XPM)
AL2280	DCH Performance OMs (CC)
AL2539	ISG Channel Maintenance Enhancements
AL2541	Enhanced ISP Integration in ISDN LTC
AL2542	Unsolicited Messages and LAPD Cleanup
AL2572	Enhanced DCH Integration in ISDN LTC
AQ0671	Layer 2/3 Protocol Monitoring Development
AQ0672	DCH Overload Controls
AQ0695	XPM Support for LCME POTS & 2B1Q L1 Performance Monitoring
AQ0696	POTS/EBS/Datapath on LCME
AQ0778	ISDN XPM Robustness and Memory Recover
AQ0788	Layer 2 High Protocol Abnormality Rate (CC)
AQ0789	Layer 2 High Protocol Abnormality Rate (XPM)

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Feature package NTX750AD contents (continued)

Feature number	Description
AQ0882	Layer 2 High Protocol Rate (XPM)
AQ0884	Dial-up B-Channel Loopbacks
AR0496	DCH/EDCH State Audit
AR0358	EDCH Patcher CC Part
BC2096	ISDN IAC SWACT For Transport Services
BC2233	IAC Warm SWACT for ISDN Call Processing
BF0943	ISDN D-Channel Handler Robustness Enhancement
BF0947	ISLM Enhancement

End

BCS history

This feature package was created in BCS23.

BCS36-AF4841, AF4842, AR0358 and AR0496 added

Required feature packages

Required feature packages

Feature package number	Description
NTX000AA	Bilge
NTX001AA	Common Basic
NTX100AA	Integrated Business Networks-Basic (IBN)
NTX106AA	IBN-Proprietary Business Set
NTX108AA	IBN-Display Features
NTX142AA	DS-1 64 kbps Clear
NTX270AA	New Peripheral Maintenance Package
NTX901AA	Local Features I
NTXR34AB	XPM Plus (Product Line Upgrade Strategy) Basic
NTXR42AA	Firmware Downloading

AF4841

Feature name

RSC-S LCME Link Rearrangement

Description

This feature permits reconfiguration of the C-side links of an enhanced line concentrating module (LCME) with common peripheral module (CPM)-based ISDN compact remote cluster controller (RCC2) without deleting the special connections on these links from their respective inventory tables and subsequently re-adding them to the tables.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The C-side links of an LCME can be reconfigured on to an extended multiprocessor system (XMS)-based peripheral module (XPM) or to a remote XPM with ISDN capabilities.

Ensure that there is sufficient LCME C-side capacity for the existing SPECCONN and call processing requirements before starting C-side link reconfiguration.

All of the logical terminal identifiers (LTID) relating to the line equipment number (LEN) of an LCME must be deleted from inventory table LTMAP before the C-side links of that LCME can be reconfigured.

All of the digital test access (DTA) connections on an LCME must be deleted before the C-side links of that LCME can be reconfigured.

The LCME must be put in an offline state before the C-side links are reconfigured.

Only one reconfiguration is allowed at any time. If another reconfiguration is attempted while one is in progress, the attempted reconfiguration is rejected.

During the C-side link reconfiguration process, no changes are allowed to special connections in inventory table SPECCONN or to time division multiplexed (TDM) connections in table LNINV if either involves an LCME.

If the link configuration is carried out while the XPM is in emergency stand-alone (ESA) mode and if the XPM then exits the ESA mode while in the warm state, a static data mismatch will result.

Reconfiguration is restricted to one link at a time if the LCME is reconfigured on to the same XPM and the XPM is not in an out-of-service state. There is no restriction if the XPM is in an out-of-service state.

If the LCME is reconfigured from one XPM on to another XPM, both XPMs must be in an out-of-service state.

If the reconfiguration process is abruptly terminated (for example, by a system restart or spontaneous error condition), subsequent maintenance activity on that LCME will be blocked until the end of the audit process that restores the data structure associated with the reconfiguration. This can take up to 15 minutes.

Feature interactions

This feature extends the capabilities of features AL1629 (Link Reconfiguration for XPMs with Special Connections) and AJ2328 (PCM30 SPECCONN and Dynamic Reconfiguration Robustness).

AF4842

Feature name

RSC-S Layer 1 Performance Monitoring

Description

This feature extends to the ISDN common peripheral module (CPM) compact remote cluster controllers (RCC2) the functionality provided by the following features:

- AL2040 Bd Channel Logical Loopback
- AL2279 DCH Performance OMs (XPM)
- AL2280 DCH Performance OMs (CC)
- AL1674 Layer Performance Monitoring for 2B1Q Loops
- AQ0947 Multipoint EOC 1 (CC)
- AQ0948 Multipoint EOC 1 (XPM)

Bd channel logical loopback provides the logical loopback capability between the D-channel handler (DCH) and the packet handler (PH) in the Data Packet Network (DPN) for a particular ISDN logical terminal (LT). The LT is identified by its logical terminal identifier (LTID). The loopback helps to determine if there is a fault within or outside of the DCH.

DCH performance operational measurements (OM) provide the central office (CO) personnel with a means of monitoring the CPU occupancy and possible overload of DCHs.

Layer 1 performance monitoring provides layer 1 surveillance of ISDN two-binary, one-quaternary (2B1Q) loops terminating at an enhanced ISDN line concentrating module (LCME).

Multipoint embedded operations channel (MP-EOC) allows maintenance personnel to determine the MP-EOC configuration of a 2B1Q loop, to perform diagnostics on 2B1Q lines equipped with MP-EOC, and to set or release a B1, B2 or 2B+D loopback at any one of the MP-EOC line units.

BCS history

This feature was created in BCS36.

Hardware requirements

For layer 1 performance monitoring using this feature, the LCME must be equipped with the appropriate common cards, as well as the following ISDN cards:

- NTBX27AA ISDN 2B1Q line card
- NTBX26AA ISDN S/T line card

The NTBX26AA card is required only if this type of loop supports change of S/T synchronization (TSYNC) reporting.

For MP-EOC using this feature, the LCME must be equipped with the appropriate common cards, as well as the following equipment:

- NTBX27AA ISDN 2B1Q line card
- ISDN line extension equipment
- Network termination 1 (NT1) that complies with Bellcore technical reference TR-TSY-000829

Restrictions and limitations

The restrictions and limitations applicable to the features listed in ”Descriptions”, above, also apply to this feature.

Due to interaction problems with emergency stand-alone, activity switches, and restarts, it is recommended that all Bd channel logical loopbacks and multipoint line unit loopbacks (MPLU) be removed prior to performing these maintenance activities.

DCH performance OMs may be lost during during periods of stand-alone operation.

This feature does not address the MP-EOC items of Bellcore technical reference, *Operations Technology Generic Requirements (OGTR): Embedded Operations Channels* (TR-TSY-000829, issue 1).

Operational measurements

This feature ensures that operational measurement (OM) groups ISGCPU and ISGOVLD will be supported for ISDN services group (ISG) DCHs resident in an ISDN RCC2. No changes are made to the existing registers in these groups.

User interface

If an attempt is made to add layer 1 data for a line equipment number (LEN) resident on a remote unit that does not support layer 1 performance monitoring, a message is returned to the MAP. This message has been changed, as follows:

- Old message - The loop must not be on a REMOTE
- New message - The loop is on REMOTE not supporting this function

AR0358

Feature name

EDCH Patcher CC Part

Description

This feature provides the Central Control (CC) portion of the Enhanced D-Channel Handlers (EDCH) patcher feature. Its purpose is to provide the man machine interface, utility routines and loader routines which are required to support basic patching commands for EDCHs. This feature also provides the messaging required to send patch records from the computing module (CM) to EDCH devices. EDCH source code patching will be supported only on the ENhanced D-Channel Handlers (DCH) loads on peripheral devices with XMS-based Peripheral Module (XPM) Plus architecture.

This other features being developed in conjunction with this feature are:

- AG3335 EDCH Patcher - CC Base Part
- AN0320 Patch Generation Tool
- AF4849 EDCH Source Code Patch Tool
- AF4840 EDCH Patcher Communication Link
- AR0524 EDCH Patcher XPM part.

BCS history

This feature was created in BCS36.

Restrictions and limitations

In order to patch a DCH, the following state conditions must be met:

- The XPM containing the DCHs cannot be in a system busy (SYSB), manually busy (MANB), c-side busy (CBSY), or off-line state (OFFL)
- The DCHs themselves cannot be in a system busy (SYSB), C-side busy (CBSY), or off-line state (OFFL)

DCH sparing will not be deactivated during the patching process. In the event that sparing occurs while patching the spare and/or the DCH that is currently attempting to spare, the patch command being performed (apply remove etc.) will fail.

This feature and its companion features will provide source code patching capability only for EDCH loads on the XPM Plus architecture.

When loadset patching, has part of the loading process or a single DCH from the CI commands, if a patch in the loadset fails, the remainder of the patches will not be applied to that DCH. If a patch fails during the loading process on a specific DCH, only that DCH is removed from the patching set.

Feature interactions

This feature is being developed in conjunction with features

- AN0320 Patch Generation Tool
- AF4849 EDHC Source Code Patch Tool
- AF4840 EDCH Patcher Communication Link
- AR0524 EDCH Patcher XPM part.

This feature requires AF4840 and AR0524 to be present in the XPM and EDCH software loads in order to function.

THe time required to load a DCH may increase due to the addition of the patching step in the loading process.

Logs

The following logs are updated to output DCH identifier(s) in the log:

- PCH104 (patch action successful) Log
- PCH105 (patch action failed) Log
- PCH106 (patch audit successful) Log
- PCH107 (patch audit failed) Log

User interface

A number of Patcher CI commands are updated to include the ability to patch DCHs. The following list of commands support the patching DCHs. The syntax for all of the patching commands required to patch DCHs has not changed. The DCHs will be considered as a ‘PM’ device.

The NODESET command is used to develop sets of peripheral devices that can patch actions performed upon them. THe NODESET command has four parameters:

- ADD: to add a DCH or a range of DCHs to an existing nodeset or to create a new nodeset with the specified DCH(s).
- REMOVE: to remove a DCH or range of DCHs from a nodeset.
- DELETE: deletes an entire nodeset.
- QUERY: provides a list of DCH(s) in the nodeset.

The APPLY command is used to apply DCH patches to a single DCH or a nodeset of DCHs.

The CHECK command is used prior to applying a patch to ensure that the conditions for applying the patch have been met. In the case of DCHs this means that the correct loadname must be in the DCHs and all the patches needed by the patch being applied must be present and applied in DCH. In

addition, the old code in the DCH is matched with the old code section of the patch to ensure that the code being replaced is the code that you wish to have replaced.

The MATCH and MATCHALL commands are used to determine mismatches between the CM patch database and the actual status of patches applied in the DCH. The MATCH command is used to match the status of a single DCH while the MATCHALL command is used to determine the status of all DCHs.

The INFORM command is used to allow the craftperson access to the CM patch database information. This information can be accessed in a number of ways (by date, DCHs, patched, by patch etc.)

AR0496

Feature name

DCH/EDCH State Audit

Description

This feature enhances the current D-channel handler (DCH) or enhanced D-channel handler (EDCH) audit and includes a check of the congestion and overload status. The MAP (maintenance and administration position) and logs are updated appropriately.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The overload and congestion state audits apply only to DCHs with a host extended multiprocessor system (XMS)-based peripheral module (XPM) that has a unified processor (UP) in the active state.

This feature will support XPM switch of activity (SWACT) from a master processor (MP) or signaling processor (SP) to a UP, but not in the other direction.

Logs

The audit part of this feature ensures the correct printing of PM270 logs for DCHs with host XPMs that have UPs in the active state.

This feature package provides the ISDN equivalent of the Meridian Digital Centrex Three-Way Calling/Call Transfer feature.

This feature package applies to ISDN offices.

Feature package contents

Feature package NTX755AC contents	
Feature number	**Description**
AF3243	TR860 Terminal Portability
AF3244	Three-Port Flexible Call Chaining
AF3245	TR268 Terminal Portability Compliance I
AF3269	Prep for DMS Packet Handler (DMS PH) Bellcore AMA
AF3554	Miscellaneous Terminal Portability Compliance
AF3555	TR855 Terminal Portability Compliance
AF3603	Delivery of TR860 Terminal Portability
AF4847	ISDN Three-Way Call, Flex Call Interworking
AF4848	ISDN Flex Call Implicit Transfer
AG1301	Flexible Calling and DN Budging Capability for ISDN EKTS
AG1611	Flexible Calling Interaction Improvements
AQ0736	ISDN Six-Port, Thirty-Port Flexible Calling
AQ0737	ISDN Call Coverage Prep
AQ0779	Support of Notification Busy Limit Parameter

BCS history

This feature package was created in BCS29.

BCS36-AF4847 and AF4848 added; AF3555 changed

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX100AA	Integrated Business Networks-Basic (IBN)
NTX106AA	IBN-Proprietary Business Set
NTX108AA	IBN-Display Features
NTX142AA	DS-1 64 kbps Clear
NTX270AA	New Peripheral Maintenance Package
NTX753AB	ISDN Functional Mode Basic Rate Services
NTX901AA	Local Features I
Either NTX750AB or NTX750AC or NTX750AD	 ISDN Basic Access ISDN Basic Access ISDN Basic Access

AF3555

Feature name

TR-855 Terminal Portability Compliance

Description

AF3555 provides the first step toward DMS-100 compliance with Bellcore technical reference TR-855 (ISDN Automatic Callback). This feature implements Ring Again (RAG) so that it works similar to the TR-855 specification for Automatic Call Back (ACB). AF3555 introduces the following activities:

- using a notify message to inform party A (terminal that invoked RAG) that party B (monitored terminal) has become idle
- saving the following information on RAG calls so that the data can be used in RAG recall (however, this information is not presented in notify message):
  - called directory number (CDN)
  - called party subaddress (CDS)
  - calling directory number (CGN)
  - calling party subaddress (CGS)
- checking for compatibility between the bearer capability (BC) of the recall against the BC of the original call, before the RAG recall is completed

BCS history

This feature was created in BCS34.

BCS36 Changed

Restrictions and limitations

The BC in the setup message is checked and must be compatible with the BC of the notify message before the RAG recall is completed.

No BC, CDN, CDS, CGN, or CGS is present in notify message.

Transfer of a CDN subaddress is available only on an intraoffice call.

Feature interactions

This feature requires the following feature packages:

- NTX106AA-IBN-Proprietary Business Set
- NTX750AB-ISDN Basic Access
- NTX753AA-ISDN Functional Mode Basic Rate Services
- NTX755AA-ISDN Supplementary Services Compliance

This feature also uses feature AC0262 (Network Wide Ring Again).

AF4847

Feature name

ISDN 3-Way Call/Flex Call Interworking

Description

This feature provides additional flexible calling (FC) capabilities. It allows non-ISDN sets that are linked to an FC chain (FCC) to invoke three-way calling (3WC) and establish a conference to another party. This builds a 3WC/FC chain. The action can be repeated by any of the non-controlling parties in the conference to build a more extensive 3WC FCC.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature allows the chaining of three-party calls only. It does not support the chaining of larger conference calls.

Feature interactions

This feature interacts with feature AF4848 (Flex Call Implicit Transfer) to support implicit transfer.

AF4848

Feature name

ISDN Flex Call Implicit Transfer

Description

With the provision of this feature, implicit transfer is automatically activated for any caller using flexible calling (FC) on a set that is assigned a transfer feature key. Implicit transfer automatically transfers an FC conference whenever the controller disconnects or releases from the call.

BCS history

This feature was created in BCS36.

Restrictions and limitations

If a user's set is not assigned a transfer feature key, implicit transfer is automatically disabled for that set.

In order to implicitly transfer a call, the conference configuration must satisfy the transfer type (XFERTYPE) assigned to the controller's set. If the conference configuration does not correspond to the assigned XFERTYPE, then the entire conference is cleared when the controller exits.

In order to implicitly transfer a call, the conference configuration must also pass the same supervision checks that are applied to feature key transfer requests. If, for example, a feature key transfer would fail due to inadequate supervision, then an implicit transfer request on the same conference would fail, and the entire conference would be cleared when the controller exits.

If a transfer feature key is assigned, implicit transfer is automatically enabled, and the exit messages DISC, REL, or REL COM are interpreted as a request to transfer the conference call. To clear the conference without transferring the other users, the controller must use the DROP key. This reduces the conference to a two-party connection, which can then be cleared in the normal way.

Implicit transfer does not support the form of transfer that allows an FC controller to transfer an active call to a held two-party conference. This is due to the different interpretation of the DISC message.

Feature interactions

This feature enhances the following features:

- AF4847 ISDN 3-Way Call/Flex Call Interworking
- AG1301 Flexible Calling and DN Bridging Capability for ISDN EKTS
- AG3244 3-Port Flexible Call Chaining
- AQ0736 ISDN Six-Port, Thirty-Port Flexible Calling

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX790AC contents

Feature number	Description
AC0267	Maintenance for ISDN PRA I
AC0268	Trunk Group Tables for PRA
AC0270	Call Processing Environment for ISDN PRA
AC0271	Signaling Manager for ISDN Functional Signaling
AC0272	Connection Manager for ISDN PRA
AC0277	PRA Call Redirection Service
AC0280	FPR Enhancements for ISDN Functional Signaling
AC0444	Signaling Manager Enhancements for ISDN PRA
AC0474	PRA Call Redirection (XPM)
AD0679	Basic ISDN PRA Maintenance
AD0770	LTCALLS Table Control
AD0775	Static Data Downloading
AD0881	PRA Interworking with SL-100 Agencies
AD1615	PRA Maintenance IV
AD1942	PRA Interworking with MSL-100 Agencies
AD1943	Basic Rate Access Interworking on MSL-100
AD2097	ISDN DTC Table Control
AD2228	ISDN DTC B/D Maintenance
AD2231	ISDN DTCI Special Connections
AD2606	ISDN DTC Robustness
AE0744	PRA/SMA Prep Work for UK Centrex
AE1089	Global PRI-Protocol Variant Control
AG0981	Network Dial Plan Display
AG1298	PRA IAC Warm SWACT
AG1299	Flow and Overload Control for PRA

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Feature package NTX790AC contents (continued)	
Feature number	**Description**
AG1300	PRA Interworking in MDC
AJ0170	Interworking ISDN Services I
AJ0385	ISDN DTC PM Maintenance
AJ0463	DTCI PRA Layer-II Signaling
AJ0465	DTCI PRA Layer-III Signaling
AJ0789	PRA on LTCI
AJ1183	CCITT Blue Book Conformance-PRA
AJ1539	DMS-100 PRI Enhancements
AR0245	Align North American PRI with Protocol Variant Arch
AR0246	CLID Screening per Trunk Group
AR0305	Provide ISP Level for Perform Tool
AR0435	Robustify Cause Handling for PRI
NC0032	PRI/ESB Interworking for Billing Number Delivery
End	

BCS history

This feature package was created in BCS25.

BCS36-AE1089 and AR0435 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX100AA	Integrated Business Networks-Basic (IBN)
NTX106AA	IBN-Proprietary Business Set
NTX108AA	IBN-Display Features
NTX142AA	DS-1 64 kbps Clear
NTX270AA	New Peripheral Maintenance Package
End	

Required feature packages (continued)

Feature package number	Description
NTX901AA	Local Features I
Either	
NTX244AA	Sequential Trunk Selection
or	
NTX244AB	Enhanced Sequential Trunk Hunting
Either	
NTX750AB	ISDN Basic Access
or	
NTX750AC	ISDN Basic Access
or	
NTX750AD	ISDN Basic Access

End

AR0435

Feature name

Robustify Cause Handling for PRI

Description

This feature makes the ISDN primary rate interface (PRI) call clearing procedures more robust when handling the cause information element (IE) received in the CCITT-defined Q.931 call clearing messages. It provides cause handling for multiple ISDN protocols, screens cause values that are received at the interface, and provides inband treatment capability when a speech or 3.1-kHz audio call is terminated to intercept treatment.

BCS history

This feature was created in BCS36.

Restrictions and limitations

Due to possible incompatibility in functionality, only the Northern Telecom North American PRI (NTNAPRI) variant is supported by this feature.

The inband treatment subscription flag in field AUDTRMT of table LTDATA has no effect on calls with a bearer capability other than speech or 3.1-kHz audio.

Feature interactions

Cause screening is supported for ISUP to PRI and basic rate interface (BRI) to PRI interworking.

Datafill

Table	Description
LTDATA	Feature enabled by entering Y in field AUDTRMT

This feature package allows standardized message activation and deactivation of the Message Waiting indicator to be passed over primary rate interface (PRI) links. This feature package uses Common Channel Signaling 7 (CCS7) to provide a Message Waiting indication against a station served by another switch using CCS7 and PRI signaling. This allows a message service to use a central location to cover multiple business locations over an entire city or a local access and transport area (LATA).

The upgrade to this feature package creates an environment on a DMS switch that enables it to send Network Message Service messages to, and receive messages from, a Meridian-1 switch.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX797AB contents

Feature number	Description
AJ1538	Message Waiting Indicator-PRI
AR0293	DMS PRI Message Waiting Indicator Interwork with SL-1

BCS history

This feature package was created in BCS36 as an upgrade of NTX797AA.

BCS36-AR0293 added

Required feature packages

Required feature packages

Feature package number	Description
NTX001AA	Common Basic
NTX100AA	Integrated Business Networks-Basic (IBN)
NTX106AA	IBN-Proprietary Business Set
NTX108AA	IBN-Display Features
NTX142AA	DS-1 64 kbps Clear
NTX270AA	New Peripheral Maintenance Package
NTX901AA	Local Features I

-continued-

Required feature packages (continued)

Feature package number	Description
NTXA68AA	Network Message Service
Either NTX244AA or NTX244AB	Sequential Trunk Selection Enhanced Sequential Trunk Hunting
Either NTX750AC or NTX750AD	ISDN Basic Access ISDN Basic Access
Either NTX790AB or NTX790AC	ISDN Primary Rate Access Base ISDN Primary Rate Access Base

End

Feature name

DMS PRI Message Waiting Indicator Interwork with SL-1

Description

The Network Message Service (NMS) allows a message center connected to one switch to activate or deactivate the message-waiting indicators (MWI) of users who are located on a different switch. This feature creates an environment on a DMS switch that allows it to send NMS messages to a Meridian-1 switch and to receive NMS messages from the Meridian-1 switch.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature assumes that each customer using a different network identifier has a separate message center directory number (DN).

For interworking between a DMS switch and a Meridian-1 switch, this feature requires the following software at the point of contact between the two types of switch:

- BCS36 on the DMS switch
- Release 19 on the Meridian-1 switch

To support 10-digit user DNs, Meridian Mail release 8 is required.

This feature provides the changes to the DMS switch only. A corresponding change must be made to the Meridian-1 switch to permit successful interworking.

Meridian-1 NMS voice mail softkey update messages are ignored if the destination is a DMS switch.

NMS can work between a DMS switch with BCS36 software and a DMS switch with BCS35 software.

This feature does not support intelligent services networks (ISN).

Manual message center on a DMS switch is not supported.

This feature supports only the activation and deactivation of the MWI.

Network message service identifications (NMSID) must not conflict. An NMSID must not conflict with number plan areas (NPA) of the DNs using the message center. The first digit of an NMSID must not be 1 or 2.

Table MSGRTE at the customer's switch must convert the destination DN to a valid 10-digit public DN.

Message Centers connected to a Meridian 1 switch cannot activate MWIs on a DMS switch with pre-BCS36 software.

Customers who use a 10-digit public DN as a notification address must use simplified message desk interface (SMDI) desk 63, otherwise the message center DN sent in the notification will be incorrect.

The selected NMSID must not cause the customer's DN to exceed 10 digits, as this is the maximum DN size that the SMDI link can support.

On a forwarded call, the calling DN and the customer's DN must be in the same customer group, otherwise Meridian Mail may treat the call as an external call.

Feature interactions

This feature alters the way that per-trunk signaling (PTS) trunks forward.

Datafill

Table	Description
NMSDATA	New table. Stores NMSID and network identifier against a message center DN
MSGRTE	Option NEWTOR added to set the type of route indicator in the destination information element of a facility message
SLLNKDEV	Option NMSPVT added to identify SMDI interfaces that support the sending of private DNs

This feature is an upgrade to feature NTX833AA

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX833AA contents

Feature number	Description
AI0119	RD Full Maintenance of STP FBUS
AI0086	RD Physical Level Maintenance for FBUS
AL1449	F-Bus Support for 2 Slot LIU7
AI0116	RD LIM CM MTC I
AI0118	RD LIM CM MTC II
AI0036	RD Link Interface Module Local Control
AI0167	RD Link Interface Module Maintenance Enhancements
AI0038	RD MAP for the STP LIM
AI0039	RD OMs and Logs for the STP LIM
AI0056	Link Interface Module Subsystem Control
AI0059	RD Rate Adapter Diagnostics for the STP LIM
AI0060	RD Rate Adapter Firmware
AI0704	SRC Restart Norestart SWACT Support for SCCP and DDM
AI0705	SRC Restart and Norestart SWACT Support for LIMs and LIUs
AL1009	Integrated Link Maintenance Robustness 2
AL1271	REx Test on LPP
AI0036	Link Interface Module Local Control
AI0037	RD Separate MMI from Control
AI0087	Basic Virtual Channel MTC
AI0103	RD STP LIM Clock Diagnostic
AI0117	RD STP LIM Local MTC
AI0040	RD Table Control for STP LIM
AI0051	RD TPS 3.5 (SOS)
AI0115	RD 9X73 0D1 Enhancements

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Feature package NTX833AA contents (continued)

Feature number	Description
AI0153	RD 9X74 Card ID Firmware
AI0124	RD Buffer Management System
AI0047	RD FTS Phase I
AI0120	Integrated Link Maintenance Robustness I
AI0121	Complete MCM/VCM Support for STP
AI0123	RD FTS Robustness and Fault Handling
AI0126	RD TPS Robustness and Performance Improvements
AI0127	FTS Routing Control
AC0160	RD CCS7 - Inter Link to Link Protocol
AL1333	Enhanced LIU Maintenance
AI0273	RA Generic LIU Maintenance
AL1328	Integrated Processor and F-Bus Interface Software
AL1405	LIU Maintenance Support for Mininode
AC0383	RD LIU7 - CM Maintenance Phase II
AI0167	Link Interface Module Maintenance Enhancements
AI0173	FTS Performance and Robustness Enhancements
AI0226	RA LIU7 - Enhanced LIU Diagnostics
AC0382	LA LIU7 - Maintenance Phase II
AC0381	LA LIU7 - Maintenance ST Loading
AC0203	RD LIU7 - MTC Base Development
AC0233	RD MTP - Capability Codes
AC0124	RD MTP - Diagnostics for 9X76/9X77/9X78 Cards
AC0219	LA MTP - LGP L2/L3 Interface
AC0247	RD MTP - Signal Transfer Point
AC0230	RD MTP - STP Linkset Management
AC0231	RD MTP - STP Routeset Management
AC0425	STP V.35 Capability for STP

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Feature package NTX833AA contents (continued)	
Feature number	**Description**
AL1794	TR-82 OM Compliance
AL2334	SRC Controlled Restart and No-Restart SWACT for CCS7
End	

BCS history

This feature package was created in BCS36.

Required feature packages

Feature package number	Description
NTX001AA	Common Basic
NTX041AB	CCS7 - MTP SCCP
NTX940AA	CM Bilge
NTX941AA	CM Common
NTX950AA	MS Bilge
NTX951AA	MS Common

Feature package number	Description
EITHER	
NTXF15AA	DMS-Core MC68030 33 MHz Processor
OR	
NTXF16AA	DMS-Core MC68030 40 MHz Processor
OR	
NTXF70AA	SuperNode SN-20 Processor

Feature name

SRC Controlled Restart and No-Restart SWACT for CCS7

Description

This feature allows the system recovery controller (SRC) to control the recovery of Common Channel Signaling 7 (CCS7) links, linksets, routesets, and pools during warm, cold, and reload restarts, or during a no-restart switch of activity (SWACT).

BCS history

This feature was created in BCS36.

Restrictions and limitations

The no-restart SWACT for CCS7 offices is a function of office size, and certain configurations may not meet the target maximum of 30 seconds for complete switch recovery. Partial call processing will be available within the 30-s limit.

This feature does not support the CCS7 part of service control point I (SCPI) nodes.

This feature does not support the CCITT-based versions of signal connection control part (SCCP).

Feature interactions

This feature is one of four features that function together to allow CCS7, link peripheral processors (LPP), and ISDN user part (ISUP) to use the SRC for core restart recovery. The other features are as follows:

- AI0704 SRC Restart and No-Restart SWACT Support for SCCP and DDM
- AI0705 SRC Restart and No-Restart SWACT Support for LIMs and LIUs
- AR0467 SRC Restart and No-Restart SWACT Support for ISUP

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX891AA contents	
Feature number	**Description**
AF0719	TOPS-Exchange Access Operator Service
AN0325	TOPS Operator Hold Enhance
NC0340	EAOSS FGD Enhancements

BCS history

This feature package was created in BCS24.

BCS36-AN0325 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX030CC	TOPS Call Processing Features
NTX098AA	Bellcore CAMA Format
NTX187AA	TOPS-Equal Access

AN0325

Feature name

TOPS Operator Hold Enhancements

Description

This feature allows operator hold to be datafilled on an outgoing trunk group basis for incoming exchange access operator services signaling (EAOSS) calls on Traffic Operator Position System (TOPS) trunks, and outgoing on access to tandem carrier (ATC) trunks. If a carrier fails to release this type of call, it could be left in an operator hold state, so this feature also provides a datafillable timeout (EAOSS with feature group C (FGC)) to protect trunks and other equipment from being unexpectedly locked up.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The implementation of operator hold by this feature does not apply to calls or trunks using signaling system 7 (SS7).

The operator hold capability provided by this feature is only provided for calls to carriers that are not already provided with operator services by the operating company. It is not provided for TOPS inter-LATA (local access and transport area) carrier services (TICS) calls.

Datafill

Table	Description
TRKGRP.ATC	Fields OPRHOLD and HLDTIMER added

Logs

Log TOPS 122 is provided as part of this feature. The log appears under the following circumstances:

- If a TOPS call with operator hold is released because the operator hold timeout timer has expired
- If an off-hook signal is returned from the carrier to the TOPS access tandem (AT) and operator hold is not datafilled for the call

In the first case, the message OPRHOLD_EXPIRED will appear. In the second case, the message UNEXPECTED_OPRHOLD_OFFHOOK will appear.

Automatic message accounting

If operator hold is applied, and the operator hold timeout timer is invoked for a call outgoing on an ATC trunk group, the call will be released when the carrier releases it, or when the timer times out.

The wording in the inter-LATA/international carrier (IC/INC) call event status has been modified to recognize that an off-hook signal may be returned instead of the acknowledgement wink.

Module code 053 table descriptions have been extended or reworded to reflect the provision of operator hold.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX901AA contents

Feature number	Description
AD0633	DN Network Attributes
AD0943	Office Line Totals/QNCOS
AF0966	Called Party Released Timing Enhancement
AN0114	LINEDATA Re-Engineering
AF1439	AMA: Separation of Billing and Routing Function
AF2565	E800 on PX Trunks
AF2599	Test Desk Robustness
AF2668	RCU Line Card Configuration
AG0156	Automatic Line Testing Rewrite
AG0358	LTP CIBINCOM Rewrite
AG0487	6X17AD Line Card Maintenance Support
AG0649	Enhanced Line Access Measurements
AG0923	DN Attributes Service Order Enhancements
AG1109	LCM CND Support
AG1285	Change Line Treatment Group Command
AG1318	Enhanced Line Access Measurements-Part 2
AG1854	200-ms Disconnect Timing
AG1973	Distinctive Ringing on Ring Side Only
AJ1224	Open Numbering Plan Phase I
AL0495	DTSR on a per-PM Basis
AL0499	Call Fwd Asgnmt to PBX Mess Rate Line (CFW for PBM)
AL1541	Expansion of LCD Number to 1000
AL1608	Line Card Code Expansion
AR0491	LTP Enhancement
BC0157	Line Cut-off Relay Operation on Disconnect

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Feature package NTX901AA contents (continued)

Feature number	Description
BC0329	Dial Tone Speed Measurement
BC0552	Failure Flag from Line Diagnostics
BC0553	ALT Daddy & Tidy Cleanup
BC0731	NPE-Digit Collection Data Downloading
BC0749	New LEN Numbering Cleanup
BC0805	LM/RLM Warm Takeback
BC0807	LM/RLM Warm Takeover
BC0829	Auto Retest of ALT Failures
BC0844	Line Status in Journal File
BC0866	Data Facility for 3X09 MTA
BC0867	MTA Gating Facility
BC0884	Utilities for 3X09 MTA
BC0890	TTP Support for 3X09 MTA
BC1155	Type B Line Card Maintenance
BC1835	3X09BA MTA Switch
BC1931	Immediate Answer Reporting
BC2135	Coin Disposal Signal Polarity Option
BF0197	LCM Ringing/ANI/Coin
BF0200	LCM-Ringing Maintenance
BF0287	LCM Maintenance Enhancement
BF0411	LCM-Memory Recovery
BF0490	Guaranteed Dial Tone
BF0498	LM Enhancements to Support NET/PM Speech Link Diagnostics
BF0556	Revertive Ringing for Parties on Different Sides
BF0803	Analog Coin Functions on LCM
BF1027	LM-T akeover/Takeback Enhancement
BR0020	Fraud Prevention
BR0028	Frequency Ringing (Decimonic)

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Feature package NTX901AA contents (continued)

Feature number	Description
BR0029	Harmonic Ringing (Five Frequencies)
BR0030	Frequency Ringing (20 Hz)
BR0031	Interface with Pulsar II IMTS
BR0036	Multiwink Coin Control
BR0052	Class of Service Tones
BR0057	Badger 612 Interface
BR0060	Line Treatment on Call Disconnect
BR0061	AE LTD Interface
BR0063	No Revertive Ring
BR0073	Interface with SARTS
BR0075	Bridged and Grounded Ringers on Same Line
BR0089	Frequency Ringing (Synchromonic 16)
BR0094	Free Number Terminating
BR0095	AE-21 Interface
BR0102	Two Party ANI
BR0122	I-F to S-L No. 14 LTD
BR0129	Digital Analog MF Receiver Compatibility
BR0134	Fully- and Semi-Selective (Superimposed) Ringing U.S.
BR0148	Interface with Teradyne Loop Test Unit
BR0152	Coin Control (Line Number Method)
BR0153	Frequency Ringing (Synchromonic 20)
BR0154	N11 Service Code Calls Terminating to Lines
BR0181	411 Recording on Magtape
BR0193	Frequency Ringing (Harmonic) 20-Hz Base
BR0197	Line Cut-off Relay Operation on Disconnect
BR0219	Pending Order File on Disk
BR0229	Line Data Base Queries
BR0234	Third Wire Coin Control

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Feature package NTX901AA contents (continued)

Feature number	Description
BR0235	Threshold on Permanent Signals (Line Cable Failures)
BR0236	Tip and Ring Coin Control
BR0242	Prepay Coin First
BR0256	Port A System Line Test Interface
BR0269	Revertive Call Peg Count Register
BR0281	Test Lines: Loop Around
BR0282	Loop Around Test-ATT Mode
BR0283	Station Ringer Test Number for DMS-100
BR0320	CLI-Trunk T ermination
BR0427	Charge-a-Call (Coin Free Dialing)
BR0433	Expanded Inband Signaling
BR0436	Denied Origination-Two- or Four-Party ANI
BR0437	Coin Features-AT&T DTF
BR0442	958 990 660 Service Codes-N.Y . Tel
BR0450	Per-Call Loop Test on Ground
BR0453	ANI (Bell Std) Outpulsing in Response to Wink Signal
BR0460	Detection of Open Line at MDF
BR0463	Initial Coin Return and Initial Coin Retain Option
BR0491	IMR/INW Read Reset by NNX
BR0493	Test Assigned/Unassigned LEN (Host and RLM)
BR0497	010 Service Code
BR0501	Flexible ANI ID = 8,9 Assignment
BR0511	Automatic Line Testing Speedup
BR0519	Toll Diversion Enhancements
BR0585	Test Access of Individual Lines in a Hunt Group
BR0606	Revertive Calling-Ringing to Both Parties on Four Party
BR0623	Station Ringer Test-Three-Digit Access Code
BR0653	COD Option on Office Basis

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Feature package NTX901AA contents (continued)

Feature number	Description
BR0670	Permanent Signal Time Out-Open Interval
BR0686	SO-System Response to QDN
BR0751	0+ DA and 0+ 800 Permissive Dialing
BT0020	Individual Flat Rate Lines
BT0021	Individual Message Rate Lines
BT0022	Manual Lines
BT0023	AC DC Ringing
BT0024	Loop Start
BT0025	Ground Start
BT0027	Digitone Receiver
BT0028	DP Receiver
BT0030	Translation and Screening
BT0034	EAS Trunk (DP/MF) (A/D)
BT0035	DACS Trunk (DP/MF) (A/D)
BT0039	No. 14 Local Test Desk
BT0042	Hunting (MLH, DLH, DNH) (LIN/DIST/CIRC)
BT0044	Coin Lines (DTF)
BT0045	Purple Box Wire Tap
BT0046	Two Party Flat Rate
BT0047	Revertive Ringing
BT0049	PBX Flat Rate Non-DID
BT0050	ANI (One & Two Party)
BT0052	FX Lines (Line Card Termination)
BT0054	PBX Message Rate
BT0056	Toll Divert
BT0057	Denied Service Options
BT0058	Free Number Terminating
BT0059	Inband Coin Control

-continued-

Feature package NTX901AA contents (continued)

Feature number	Description
BT0060	Intercept Trunk (A/D)
BT0061	Hotel/Motel (RB and Third Wire)
BT0062	Voice Number Verification Trunk
BT0063	Station Ringer
BT0064	Operator Verification Trunk (DP/MF) (A/D)
BT0068	Receiver Off-Hook Trunk
BT0069	PS/PD Treatment
BT0072	Calling Line Identification
BT0083	LTSTL-Short Circuit (I/C)
BT0084	LTSL-Open Circuit (I/C)
BT0085	LTSTL-1120 (Nonsync) (I/C)
BT0087	LTSTL-1000 (BAL) (O/G & I/C)
BT0088	LTSTL-1111 (Net Loss) (I/C)
BT0090	LTSTL-1181 (Sync) (I/C)
BT0095	LTP and Associated Level
BT0097	PBX Flat Rate (DID)
BT0150	O/G TTSTL Synchronous
BT0341	Inc/Out TTSTL Synchronous
BT0342	Inc/Out TTSTL Loop Around
BT0347	OM-Local (Pegs and Usage)
BV0019	Flash Ignore (PBX-2-sec Disc)
BV0034	Touch Tone Testing-External Facilities
BV0045	Multiparty Flat Rate
BV0048	Coin Control (Tip and Ring)
BV0051	Coded Ringing (5 Codes)
BV0052	Coin Control (Third Wire)
BV0071	Superimposed Ringing
BV0076	Threshold on Permanent Signals (Line Cable Failures)

-continued-

Feature package NTX901AA contents	
Feature number	**Description**
BV0087	Prepay Coin First Coin Line
BV0088	Semi-Post-Pay Coin Line
BV0196	Line Data Base Queries
BV0198	Dial Tone Speed Test
BV0424	Hunting
BV0948	6X17AA Line Card Facility Maintenance
BV1109	NPE-OMs for LCM
NC0020	Keypad Enable
NC0313	SERVORD Enhancements for SLE
NC0495	Off-Hook Testing
End	

BCS history

This feature package was created in BCS00.

BCS36-AR0491 added
BCS35-AN0114 and NC0495 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX270AA	New Peripheral Maintenance Package

AN0114

Feature name

LINEDATA Re-Engineering

Description

This feature is part of a quality re-engineering program directed at areas of DMS software which are particularly error-prone. This feature will improve the reliability and maintainability of the existing LINEDATA software.

BCS history

This feature was created in BCS35.

AR0491

Feature name

LTP Enhancement

Description

This feature increases the number of line test positions (LTP) on the MAP from 15 to 64. It also provides a means of releasing the LTP resources allocated to a user when that user has been away from the LTP level for more than one hour.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The maximum number of LTP users is 64.

The maximum number of LTP users that can actively perform tests is dependent upon the quantity of available test equipment. If no test equipment is available, error messages are displayed.

Feature interactions

This feature requires 4 kbyte of data store for each LTP user.

User interface

This feature adds one LTP level hidden command, LTPRSRC, which is associated with the LTP resource release mechanism. The LTP resource release mechanism is invoked automatically when a user has been away from the LTP level for one hour, and frees the user's LTP resource. Command LTPRSRC allows the user to remove the LTP from the automatic release mechanism, or to return it to automatic control, as required. A query option allows the user to obtain information about the LTP resources and users.

NC0495

Feature name

Off-hook Testing

Description

NC0495 provides an automatic off-hook balance test to determine whether a subscriber line should be on a 900 ohm + 2μF (900+2) balance network or on a loaded or non-loaded balance network. This feature is applicable to subscriber line circuits where a selectable line balance network is employed.

BCS history

This feature was created in BCS35.

Restrictions and limitations

This feature supports balance network tests on originating calls only.

This feature is available on domestic DMS-100 switches only.

Datafill

Table	Description
LNADMIN	Table added to datafill office administration parameters required for off-hook balance test
LNBNV	Table added to datafill balance test information for each line

Logs

This feature adds logs LINE220 to 222.

Log LINE220 is generated when the off-hook BNV test indicates that the recommended BNV is the same as the existing BNV.

Log LINE221 is generated when the off-hook BNV test indicates that the recommended BNV is different than the existing BNV.

Log LINE222 is generated when the off-hook BNV test does not complete the line test.

User interface

This feature adds command QBNV at the CI level of a MAP terminal. Command QBNV displays a range of lines with the existing balance network value (BNV) and the associated recommended BNV.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTX940AA contents

Feature number	Description
AL0709	CM REXTEXT Enhancements
AL1923	Enhanced CM Maintenenace CPU Alarms
AL0631	Enhanced 9X12 Diagnostics
AL0727	Message Switch Software Support for 9X32
AL0548	MS MAP, MMI, and Log Enhancements
AL0720	Rewrite Store Allocator
AL0706	24MB Memory for CM SW (Phase 1)
AL0809	DMS-BUS Software Support for the New 9X23 Back Card
AL1109	CMIC Link Diagnostic Enhancements
AR0160	BCS34 Hook Feature for 7N10
AR0359	Integrated Node Maintenance (INM) LoadPM Enhancements

BCS history

This feature package was created in BCS23.

BCS36-AR0491 added
BCS35-AR0359

Required feature packages

Required feature packages

Feature package number	Description
NTXR46AA	Robustness Enhancements

AR0359

Feature name

Integrated Node Maintenance (INM) LoadPM Enhancements

Description

This feature provides enhancements to the Integrated Node Maintenance (INM) LOADPM and PMRESET maintenance operations in the following areas:

- Disabling fault handling on Integrated Line Maintenance (ILM) Links and Message Channels terminating on an INM node prior to expected resets or restarts of that node
- Using a Who Am I (WAI) event as an acknowledgement of a successful RESET
- Allowing INM to control load activation instead of node firmware autonomously activating the load after booting
- Not giving the default cardlist if the node is manually isolated

BCS history

This feature was created in BCS36.

Restrictions and limitations

The following restrictions and limitations apply:

- Fault Handling Disable is only supported for INM nodes with ILM maintained links. These nodes include AP, FP, and HSI. For other nodes, the Fault Handling Disable function provides no visible behavior change.
- Load Setup and Run message is optional for all INM nodes.
- WAI support is optional.

Feature interactions

This feature interacts with the existing INM Central Agent LOADPM and PMRESET state machines.

NTXA90AA

TOPS-MP Terminal Handler High Speed

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXA90AA contents

Feature number	Description
AF0533	HSDA ROM Maintenance
AF0534	TPC HSDA Download Server
AF0535	TPC HSDA Driver
AF0536	TPC HSDA Maintenance Server
AF0547	TPC MP Services Interworking
AF0721	Porting MPC S/W to TPC HSDA
AF0744	TPC Diagnostic Enhancements
AF0746	TPC Messaging System
AF1317	TPC TAMI Enhancements
AF1318	TPC HSDA MMI
AF1319	TPC Message Handler
AF1388	French MMI for TOPS MP
AF1426	TPC HSLI Software Enhancements
AF1463	Operator Logon Password for TOPS MP
AF1509	Remote Sonalert for TOPS MP
AF1563	TPC Mass Storage SCSI Support
AF1699	TPC-CC Messaging via HSDA
AF1723	TPC HSDA Diagnostics
AF1802	TPC Integrated Maintenance
AF1909	TPC TAMI Enhancements
AF1974	TPC Integrated TAMI Enhancements
AF1975	TPC Integrated MP Diagnostics
AF1998	TPC HSDA MTC Enhancements
AF2085	TPC MP Grey Scale Enhancements
AF2374	TPC SA Logon Enhancements

-continued-

Feature package NTXA90AA contents (continued)	
Feature number	**Description**
AF2378	TPC Operator Handoff to AABS
AN0212	Customer Configurable Keyboard
BC2139	Terminal Handling Software for TOPS MP
BC2141	TPC Diagnostics
BC2142	TPC Drivers
BC2145	TPC Tutor Interface
BC2146	TPC Debug Terminal Handler
BC2157	TPC System Support
BC2158	TPC Administration
NC0116	Locality Enhancements for BTDAS
End	

BCS history

This feature package was created in BCS23.

BCS36-AN0212 added

Required feature packages

Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX030BA	TOPS ACD Features
NTX030CC	TOPS Call Processing Features
NTX645AA	TOPS - Service Billing
NTX724AA	TOPS MP Interface
Either NTX801AA or NTX131AA	Toll Features I Auxiliary Operator Services System

Feature name

Customer Configurable Keyboard

Description

This feature provides Traffic Operator Position System (TOPS) multipurpose position (MP) customers with the ability to custom configure the keyboards of their TOPS-MP operator positions. It allows total flexibility in the layout of the keyboard to optimize keyboard usage and convenience, to introduce letters or symbols not currently available, and to help in the creation of keyboards for foreign languages.

BCS history

This feature was created in BCS36.

Restrictions and limitations

All MPs that connect to a single TOPS position controller (TPC) must use the same keyboard layout. Datafill of the keyboard layout is performed at the TPC level.

Care must be taken to ensure that changes to the keyboard datafill are coordinated with changes to the corresponding keycaps.

User interface

A new TAMI menu is added to allow the key action table to be datafilled. The existing copy datafill function is extended to include the key action table.

This feature package supports the deployment of the enhanced network (ENET) as an additional switching matrix subsystem type for DMS SuperNode. ENET is a single-stage, nonblocking, junctorless time switch that can expand capacity from 4000 to 128 000 unidirectional channels in each plane of a single cabinet.

This feature package applies to DMS SuperNode offices.

Feature package contents

Feature package NTXE01AA contents

Feature number	Description
AL0573	ENET Operational Measurements
AL0856	ENET Maintenance
AL0857	ENET Pathend Test MMI
AL0957	ENET REX Test
AL0958	ENET PM Table Control Modifications
AL0959	ENET Shelf Test
AL0960	ENET Path Diagnostics
AL1230	ENET MAP Enhancements
AL2038	ENET Support for 9X45BA
AL2107	Enable A-Law PADROM
AL2162	NT9X45 MMI
AL2260	Support for Warm SWACT Recovery Time Reduction Feature
AR0005	64-K ENET Support
AR0141	ENET PS Link Enhancements
AR0186	ENET Integrity Fault Handling and HMI

BCS history

This feature package was created in BCS31.

BCS36-AL2260 changed

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX001AA	Common Basic
NTX940AA	CM Bilge
NTX941AA	CM Common
NTX950AA	MS Bilge
NTX951AA	MS Common
Either NTXF71AA or NTXF71AB	SuperNode Enhanced Messaging SuperNode Enhanced Messaging

AL2260

Feature name

Support for Warm SWACT Recovery Time Reduction Feature

Description

AL2660 enhances the current ENET system recovery mechanism and ensures proper recovery of ENET nodes, cards, and links after a no-restart warm switch of activity (SWACT)

BCS history

This feature was created in BCS33.

BCS36 Changed

Restrictions and limitations

This feature applies only to switches equipped with ENET.

Feature interactions

This feature interacts with the following features:

- AG2149 CCWarm SWACT Restart Outage Reduction-Phase I
- AG2276 CCWarm SWACT Restart Outage Reduction-Phase II
- AQ0738 DMS-Bus SWACT Reduced Restart High Level Design

Datafill

Table	Description
ENMLASST	New table. This table is used for dump and restore only and cannot be datafilled by the customer.

This feature package provides the maintenance and control software resident in the Ethernet interface unit (EIU). The EIU, together with support circuitry, manages the lower levels of the communications protocol. The signaling message's access to the rest of the node is managed by the link peripheral processor (LPP) local message switch (LMS), which uses the same architecture as the DMS-bus.

The EIUs are located in the LPP frame and provide a protocol gateway into the DMS-100 environment. They support communications to and from an Ethernet LAN that serves terminals, workstations, modem accesses, and BX.25 serial accesses.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXF04AA	
Feature number	**Description**
AL1167	FP Central Maintenance Base
AL1169	FP Local Control
AL1170	FP Device Access
AL1173	FP Device Logs, OMs, and Alarms
AL1391	FP Device Maintenance
AL1392	FP Sync/SWACT Control
AL1705	FP DABM Exception Handler
AR0200	FP Maintenance Evolution

BCS history

This feature package was created in BCS33.

BCS36-AR0200 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXF06AA	Application Processor Base
NTX000AA	Bilge
NTX001AA	Common Basic
NTX940AA	CM Bilge
NTX941AA	CM Common
NTX950AA	MS Bilge
NTX951AA	MS Common

AR0200

Feature name

FP Maintenance Evolution

Description

This is an umbrella feature for File Processor (FP) Maintenance work in BCS34. This feature describes the functionality of all FP features. The following are the BCS34 FP Maintenance Feature:

- AL1707 FP Rex Test and Audit
- AR0131 FP Fault Isolation Enhancements
- AR0132 FP Exception Handlers Enhancements
- AR0136 FP SIP FW Disconnects

BCS history

This feature was created in BCS34.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXF05AA contents	
Feature number	**Description**
AL1167	FP Central Maintenance Base
AL1169	FP Local Control
AL1170	FP Device Access
AL1173	FP Device Logs, OMs and Alarms
AL1391	FP Device Maintenance
AL1392	FP Sync/SwAct Control
AL1705	FP DABM Exception Handler
AL2238	FP Fault Isolation
AR0200	FP Maintenance Evolution

BCS history

This feature package was created in BCS33.

BCS36-AQ1026 and AR0200 added

AR0022

Feature name

IP Route Path Display

Description

This feature provides a tool for the display of the route taken by Internet Protocol (IP) datagrams transmitted from one SuperNode host to any destination that can be specified by its IP address.

BCS history

This feature was created in BCS36.

Restrictions and limitations

If two or more users try to employ the same source IP address then only one of them will be services and the rest will get a message saying that the tool server is busy. Note that if the server is actually executing a test at that time, it may not reply promptly causing the client to time out.

The user can not issue multiple requests. Given a pair of source and destination nodes the user has to wait for the tool to terminate and display all results before he can issue a new source/destination.

User Datagram Protocol (UDP) has to be present in every node that is used as a source node for sending IP datagrams.

There are two methods for tracing. The first, called Record Route (RR) can trace that path to-and-from a destination; however, only 9 IP addressed can be saved due to IP header size limitations. The second, called Time To Live (TTL) can trace the path to a destination. No upper bound on the number of IP addressed when using this method; however, it takes more time than suing RR.

User interface

A command increment (IPRPDCI) provides the user interface for specifying the source and destination nodes, the number of IP datagrams to be sent and the information that the user wishes to see about all possible paths.

NTXF06AA

Application Processor Base

This feature package provides the maintenance and control software that resides in the application processor.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXF06AA	
Feature number	**Description**
AL1113	Table Control for CM-based Application Processors
AL1114	P-Base Maintenance for CM-based RPS
AL1115	MAP for CM-based Resource Processors
AL1121	RP Link Maintenance
AL1375	Enhancement to P-Base Maintenance for CM-based RP
AL1376	AP Maintenance Support for Six-Slot CPU
AL1379	Logs, OMs for CM-based AP and FP
AL1974	Application Processor Split Mode
AL1975	Application Processor Load Mode
AL1976	Application Processor Footprint
AL1977	Application Processor Support of OM and SPMS
AQ1027	SM Node MAP Enhancements
AR0348	Application Processor Mtce Support of AP BCS Applications

BCS history

This feature package was created in BCS31.

BCS36-AL1974, AL1975, AQ1027, and AR0348 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX001AA	Common Basic
NTX940AA	CM Bilge

-continued-

Required feature packages (continued)

Feature package number	Description
NTX941AA	CM Common
NT9X44AA	Base Node Maintenance
NT9X45AA	MS Base Link Maintenance
NTX950AA	MS Bilge
NTX951AA	MS Common

End

AL1974

Feature name

Application Processor Split Mode

Description

Application processors (AP) provide a provisionable multicomputing environment for use by applications such as call processing. This feature provides AP split mode functionality, assigning separate links to the inactive processor and allowing the two processors to operate independently.

BCS history

This feature was created in BCS36.

Hardware requirements

In order for split mode to operate correctly, the AP and file processor (FP) must be equipped with NT9X13LA (AP/FP 68030 HPM-based CPU card) circuit packs that are release 187 or greater.

Feature interactions

This feature functions in conjunction with the following features:

- AL0963 High Level Design for Multi-CM
- AL1121 RP Link Maintenance
- AL1664 MRS Development and AP Split-Mode Messaging Study
- AL2131 MRS Enhancements
- AR0078 Application/Port Mtc II
- AR0124 ILM Fault Isoilation Enhancements

Logs

The AP port card state change log AP502 will be modified to show when the AP enters and exits split mode.

User interface

This feature introduces a new AP plane port card man-machine interface (MMI) state when the AP enters split mode. This state is indicated on the inactive PORT CARD of the AP plane level by a colon (:).

AL1975

Feature name

Application Processor Load Mate

Description

The SuperNode multicomputing base (SMB) has been developed to provide expanded computing resources within the DMS SuperNode environment. One node class introduced under SMB is the application processor (AP). APs provide a multicomputing environment for use by applications such as call processing.

This feature implements AP loadmate functionality. AP loadmate loads the inactive plane of an AP-based peripheral module through the DMS-bus while the AP is running in split mode.

BCS history

This feature was created in BCS36.

Restrictions and limitations

Option INACTIVE of the LOADPM command must be specified in order to initiate the AP LOADMATE process.

Feature interactions

This feature interacts with the following features to provide the AP loadmate functionality:

- AL1974 Application Processor Split Mode
- AL1111 Integrated Node Maintenance
- AL1195 Central RP Control II
- AL1664 MRS Development and AP Split Mode Messaging Study
- AL2131 MRS Enhancements
- AL1121 RP Link Maintenance
- AL0963 High Level Design for Multi-CM

User interface

This feature creates one new command, LdMate, at the AP PLANE level of the MAP (maintenance and administration position). This command is used to initiate the AP LOADMATE process.

This feature also modifies the LOADPM command at the AP NODE level of the MAP.

AQ1027

Feature name

SM Node MAP Enhancements

Description

This feature implements changes to the application processor (AP) MAP (maintenance and administration position) to make it more consistent in layout and function with MAPs of other node types. This includes the format of information provided by MAP commands, such as QUERYPM. In addition it provides the ability to include or exclude a specific AP type node in the routine exercise (REX) test schedule, and to query the REX controller for data concerning the last REX test performed on the node.

BCS history

This feature was created in BCS36.

Feature interactions

This feature requires the following features in order to function:

- AL1117 Local RP Control II
- AL2030 System REX Test Controller
- AR0077 Application Processor MAP enhancements

This feature directly affects feature AL1115 (MAP for CM-based Resource Processors) by making changes to the AP MAP (maintenance and administration position) display.

User interface

The enhancements provided by this feature result in new information and new command responses to the MAP display. One option, TST<LONG/SHORT>, is removed. New responses are provided for BSY and TST REX <ON/OFF>, and additional information is output for QUERYPM and TST REX QUERY. Option TST REX NOW replaces the command TST REX.

AR0348

Feature name

Application Processor Mtce Support of AP BCS Applications

Description

This feature provides a means of installing a new software load on the applications processor (AP) while performing a cold switch of activity (SWACT). The node will go through an outage period while the process goes through the busy, SWACT, and return-to-service sequence.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature is applicable only to SYNC-matched peripherals, APs, and file processors (FP) that are based on the SYNC-matched duplex computing module (CM) hardware as defined in feature AL0963 (High Level Design for Multi-CM).

Restrictions and limitations

This feature provides only limited software protection for an AP against other types of maintenance when a cold SWACT is being executed. Some types of maintenance carried out during a cold SWACT can cause serious memory corruption, failure of the BCS application, or catastrophic failure of the node. Because of this risk, no other maintenance should be carried out during a cold SWACT software upgrade.

Feature interactions

This feature interacts with the following features:

- AL1974 Application Processor Split Mode
- AL1975 Application Processor Load Mate
- AL1111 Integrated Node Maintenance
- AL1195 Central RP Control II
- AL2131 MRS Enhancements
- AL1121 RP Link Maintenance

Logs

One new log, AP BCS application, is created by this feature. The log is generated when the AP BCS upgrade process is started and when it ends, and shows the success or failure of the process. If the process has failed, the log includes the reason for failure.

User interface

This feature introduces one new MAP command, BCSUpd. The command is available at the AP node level, and is used to start the AP BCS application process.

This feature package provides central and node maintenance for the application processing unit with UNIX (APUX).

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXF19AA contents

Feature number	Description
AF2689	APU Maintenance for SuperNode/UNIX
AR0022	IP Route Path Display

BCS history

This feature package was created in BCS34.

BCS36-AR0022 added

Required feature packages

Required feature packages

Feature package number	Description
NTX940AA	CM Bilge
NTX941AA	CM Common
NTX950AA	MS Bilge
NTX951AA	MS Common
Either NTXN18AA, NTX833AA, or NTX833AB	 FBUS-LIU Base STP Operations STP Operations

AR0022

Feature name

IP Route Path Display

Description

This feature provides a tool for the display of the route taken by Internet Protocol (IP) datagrams transmitted from one SuperNode host to any destination that can be specified by its IP address.

BCS history

This feature was created in BCS36.

Restrictions and limitations

If two or more users try to employ the same source IP address then only one of them will be services and the rest will get a message saying that the tool server is busy. Note that if the server is actually executing a test at that time, it may not reply promptly causing the client to time out.

The user can not issue multiple requests. Given a pair of source and destination nodes the user has to wait for the tool to terminate and display all results before he can issue a new source/destination.

User Datagram Protocol (UDP) has to be present in every node that is used as a source node for sending IP datagrams.

There are two methods for tracing. The first, called Record Route (RR) can trace that path to-and-from a destination; however, only 9 IP addressed can be saved due to IP header size limitations. The second, called Time To Live (TTL) can trace the path to a destination. No upper bound on the number of IP addressed when using this method; however, it takes more time than suing RR.

User interface

A command increment (IPRPDCI) provides the user interface for specifying the source and destination nodes, the number of IP datagrams to be sent and the information that the user wishes to see about all possible paths.

NTXF20AA

LPP on DMS-100 SuperNode for CCS7

This feature package enables the use of link peripheral processors (LPP) to terminate CCS7 signaling links on DMS SuperNode service switching point offices, and to enable the routine exercise test for the LPP.

This feature package applies to SuperNode and DMS-100 offices.

Feature package contents

Feature package NTXF20AA	
Feature number	**Description**
AI0036	Link Interface Module Local Control
AI0038	MAP for the STP LIM
AI0039	OMs and Logs for the STP LIM
AI0040	Table Control for STP LIM
AI0103	STP LIM Clock Diagnostic
AI0116	LIM CM MTC I
AI0117	STP LIM Local MTC
AI0118	LIM CM MTC II
AI0167	Link Interface Module Maintenance Enhancements
AL1271	REX Test on LPP
AL1895	LMS Isolation
AL2334	SRC Controlled Restart and No-Restart SWACT Support
AQ1030	LPP(LMS) Autoloading
AQ1031	Mapper Refresh on LMS State Transition
AQ1070	NT9X13DD Standalone Support in the LMS

BCS history

This feature package was created in BCS25.

BCS36-AL2334, AQ1030, AQ1031, and AQ1070 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX940AA	CM Bilge
NTX941AA	CM Common
NTX950AA	MS Bilge
NTX951AA	MS Common
Either NTX942AA or NTX942AB	DSM-SuperNode System Load Module (SLM) DSM-SuperNode System Load Module (SLM)
Either NTXF71AA or NTXF71AB	SuperNode Enhanced Messaging SuperNode Enhanced Messaging

Feature name

SRC Controlled Restart and No-Restart SWACT for CCS7

Description

This feature allows the system recovery controller (SRC) to control the recovery of Common Channel Signaling 7 (CCS7) links, linksets, routesets, and pools during warm, cold, and reload restarts, or during a no-restart switch of activity (SWACT).

BCS history

This feature was created in BCS36.

Restrictions and limitations

The no-restart SWACT for CCS7 offices is a function of office size, and certain configurations may not meet the target maximum of 30 seconds for complete switch recovery. Partial call processing will be available within the 30-s limit.

This feature does not support the CCS7 part of service control point I (SCPI) nodes.

This feature does not support the CCITT-based versions of signal connection control part (SCCP).

Feature interactions

This feature is one of four features that function together to allow CCS7, link peripheral processors (LPP), and ISDN user part (ISUP) to use the SRC for core restart recovery. The other features are as follows:

- AI0704 SRC Restart and No-Restart SWACT Support for SCCP and DDM
- AI0705 SRC Restart and No-Restart SWACT Support for LIMs and LIUs
- AR0467 SRC Restart and No-Restart SWACT Support for ISUP

AQ1030

Feature name

LPP (LMS) Autoloading

Description

This feature provides the local message switch (LMS) with the ability to recover automatically from loss or corruption of its software load.

During a system-busy recovery, the maintenance system automatically starts the reload of an LMS if there are indications that the software load is missing or has been corrupted.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The trigger for automatic reload of the LMS software is failure of the reset and restart sequence. If some other fault causes the reset and restart to fail, this feature will still initiate the reload sequence.

Logs

A log is generated when the recovery mechanism initiates a reload sequence. This separates system-initiated reloads from manually initiated reloads.

A log is also generated when the maintenance system reaches the threshold number of recovery attempts and stops. The log shows the number of failed recovery attempts, and indicates that manual action is required.

User interface

The MAP (maintenance and administration position) that has a given LMS posted displays a flag when that LMS is being automatically reloaded.

The maintenance flags displayed during an automatic reload are the same as those shown during a LOADPM command.

The MAP displays a different flag (new for this feature) when the maintenance system is in periodic reload phase, or has stopped recovery. This flag tells maintenance personnel that manual action is required.

AQ1031

Feature name

Mapper Refresh on LMS State Transition

Description

This feature improves the robustness of the local message switch (LMS) recovery from the system-busy state.

BCS history

This feature was created in BCS36.

Feature interactions

This feature interacts with the frame transport system (FTS). Requests are made to the FTS, which then causes the message switch (MS) mapper to be re-initialized. This results in messaging traffic between the computing module (CM) and the MS.

AQ1070

Feature name

NT9X13DD Standalone Support in the LMS

Description

This feature provides the NT9X13DD card (processor with 16 Mbyte of DRAM) with optional memory card capability when it is used in the local message switch (LMS). The feature enhances both the central and local link interface module (LIM) software to support the NT9X13DD card as a standalone processor without a memory card.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature is invoked when the NT9X13DD processor card is configured without an accompanying memory card. If no memory card is provisioned, an NT9X19AA filler plate is inserted into either or both of slots 16 and 23 as required.

Restrictions and limitations

The new memory configurations available on the LMS require that new loads be built to access the added memory. There is currently no check to determine if the configured memory will support a given LMS software load.

Datafill

When a processor card is datafilled in table LIMCDINV, the memory card of the same LMS is allowed to be un-datafilled. However, a fault will be generated if an in-service memory card is not datafilled.

Command LOADPM will fail if a memory card is datafilled but is not physically present in the LMS.

This feature package creates a base software load for the development of the frame relay application in the frame relay interface unit (FRIU) located in the link peripheral processor (LPP).

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXF25AD contents

Feature number	Description
AJ1847	DataSPAN Local Management Interface
AJ1921	T1 ALLC Implementation
AJ1969	DataSPAN Signaling
AJ2292	Frame Relay Provisioning Table Enhancement
AJ2294	Frame Relay Frame Capture Tool
AJ2877	ISDN 64-kbit/s Access to DataSPAN
AJ2946	DataSPAN Congestion Control and Buffer
AL1282	FRIU Maintenance Support
AL1283	FRIU PM Logs and Alarms
AL1284	FRIU Data Loop Diagnostics
AL1286	FRIU per-Channel OA&M
AL1287	FRIU T1 Mtce Support
AL1288	FRIU Switching Thread
AL1907	Frame Relay T1 Trunking
AL1908	FRIU Performance Enhancements
AL2119	T1 Non-Channelized Loopback

BCS history

This feature package was created in BCS32.

BCS36-AJ2877 and AJ2946 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX940AA	CM Bilge
NTX941AA	CM Common
NTX950AA	MS Bilge
NTX951AA	MS Common
NTXF71AB	SuperNode Enhanced Messaging
NTXN18AA	F-Bus-LIU Base
Either NTXF15AA or NTXF16AA or NTXF70AA or NTXF96AA	DMS-Core MC68030 33-MHz Processor DMS-Core MC68030 40-MHz Processor SuperNode SN-20 Processor SuperNode SN-10 Processor

Feature name

ISDN 64-kbit/s Access to DataSPAN

Description

This feature provides ISDN customers with an alternative to the existing 56 kbit/s switched access to the frame relay network. This is achieved by setting up a permanent (nailed-up) connection, using a B-channel, through a T1 trunk that terminates on a frame relay interface unit (FRIU). In this way basic rate interface for both 56 kbit/s and 64 kbit/s is supported for the "nailed-up" B-channels through the network.

BCS history

This feature was created in BCS36.

Restrictions and limitations

Running 64 kbit/s clear implicitly means that the A/B bit is not used to monitor connectivity. Users who wish to use 64 kbit/s must use the local management interface (LMI) to monitor connectivity.

SPECCONN connections can only be removed by manually deleting the tuple from table SPECCONN.

Primary rate access (PRI) B-channels cannot be "nailed-up" using SPECCONN.

AJ2946

Feature name

DataSPAN Congestion Control and Buffer Enhancements

Description

This feature provides customers with congestion control mechanisms to improve handling of congestion caused by momentary bursts of traffic. This enhances the quality of service to frame relay service (FRS) subscribers. It also provides tools to monitor the frame relay traffic on various components of the network.

BCS history

This feature was created in BCS36.

Restrictions and limitations

Frame switching performance is reduced under the following conditions:

- when the congestion control procedures are activated
- with the use of egress random access memory (ERAM)
- with the use of tool QPLLC

Datafill

Table	Description
FRSCCTRL	New table, to allow configuration of congestion control parameters
PVDNAGEN	Two fields added, one for egress buffering utlization, the other as an index reference for the selected template in FRSCCTRL

Operational measurements

Group FRSAGENT is expanded to allow the capture of additional information on line utilization. Separate registers are provided for each channel.

The following counters are added to FRSAGENT:

- octrec Number of octets received
- octsent Number of octets transmitted
- fecnorig Number of times the frame relay interface unit (FRIU) sets the FECN bit on the channel
- becnorig Number of times the FRIU sets the BECN bit on the channel
- de1disc Number of frames discarded with DE = 1
- de0disc Number of frames discarded with DE = 0

User interface

Tool QPLLC is modified to capture information on each permanent virtual circuit (PVC) separately.

NTXF46AA

Subscriber Carrier Module-100 Access

This feature package provides a direct digital interface between the DMS SuperNode system and the S/DMS Access Node.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXF46AA contents	
Feature number	**Description**
AF2155	CP Tools 1
AF2442	PP IDT Maintenance II
AF2443	CC IDT Maintenance II
AF2444	RFT External Alarm Interface
AF2521	SMA Coin Call Control
AF2522	SMA EBS Call Control
AF2530	RFT Lines Table Control II
AF2613	RFT No Test Trunk Access
AF2614	RFT Line Provisioning
AF2649	SMA RFT Test Response Circuit Support
AF2650	SMA CLASS Call Control
AF2651	SMA CC EOC/TMC/CSC Path Protection Switching
AF2656	EOC Router
AF2686	SMA and IDT OMs
AF2687	RFT Event Handler
AF2688	RFT Line Test Position I
AF2724	SMA Base Upgrade
AF2725	SMA Miscellaneous Services Verification
AF2726	SMA ISDN and MADN Call Control
AF2762	SMA MDC Services Verification
AF2967	RFT Line Test Position II
AF2968	RFT LIne Test Position III
AF2969	RFT IMC Remote Access/Test Bypass Pair Access

-continued-

Feature package NTXF46AA contents (continued)	
Feature number	**Description**
AF2970	RFT Subscriber Premises Tests
AF2971	SMA Peripheral IDT Maintenance III
AF2984	RFT Line Provisioning Integrity
AF2986	SMA Warm SWACT
AF2997	SMA Peripheral IDT Maintenance IV
AF2998	SMA CC IDT Maintenance III
AF2999	SMA/IDT Flow Control and Overload Controls
AF3004	SMA Peripheral EOC/TMC/CSC Path Protection Switching
AF3798	SMA RFT Alarm Report Handler
AF3800	SMA Dynamic Option Update I
AF3801	SMA Dynamic Option Update II
AF3805	RFT Line Test Resource Audit
AF3807	RFT ALT Support
AF3832	SMA Multiple OPC Support
AF4332	SMA Processor/Memory Upgrade
AF4438	RFT Line Provisioning Extensions
AF4439	RFT Event Handling Enhancements
AF4979	SMA ISDN Line Test Object Interface
AN0230	SMA Enhanced Time-Switch I
End	

BCS history

This feature package was created in BCS35.

BCS36-AF3805, AF3832, AF4332, AF4438, AF4439, AF4979, and AN0230 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX270AA	New Peripheral Maintenance Package
NTX901AA	Local Features I
NTX940AA	CM Bilge
NTX941AA	CM Common
NTXR34AB	XPM Plus (Product Line Upgrade Strategy) Basic

AF2687

Feature name

RFT Event Handler

Description

This feature allows the DMS-100 switch to keep track of events occurring in remote fiber terminals (RFT). The event handler forms part of the operations gateway (OGW) in the DMS-100 switch and covers attribute changes and alarm reports.

BCS history

This feature was created in BCS36.

Feature interactions

In order to function properly, this feature needs to interact with the following features:

- AF2444 RDT External Alarm Interface
- AF2656 EOC Router
- AF2966 EOC Local Object Database

AF2864

Feature name

Diagnostics for the EISP

Description

This feature integrates the enhanced ISDN signaling processor (EISP) into the subscriber carrier module-100 access (SMA) environment. The existing ISDN signaling processor (ISP) diagnostics are modified and new diagnostics are added to test new hardware functions. The feature also includes additional software to put the EISP into a known state under power-up or reset conditions.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature contains the firmware for the NTBX01AB card (EISP).

Pack diagnostic specifics

The ROM diagnostics consist of the original ISP diagnostics modified to align with EISP functionality. An additional diagnostic test is provided to verify the operation of the write-protection circuitry.

The RAM diagnostics also consist of the original ISP diagnostics modified to align with EISP functionality.

Restrictions and limitations

The firmware developed for this feature is not compatible with the NTBX01AA card (ISP).

AF3800

Feature name

SMA Dynamic Service Option Update I

Description

This feature provides additional software in the central control (CC). This ensures the proper setting of toll diversion (TDV) line termination object (LTO) attributes on POTS lines served by remote fiber terminals (RFT).

BCS history

This feature was created in BCS36.

Restrictions and limitations

All service provisioning for locally switched lines is carried out at the DMS-100 switch, using the table editor.

The DMS-100 table editor must be used to make any change to the TDV signal value in table OFCVAR.

Any change to the TDV or FD attributes must be made from the DMS-100 switch.

Lines with loopstart signaling support only the reversal type of TDV.

Feature interactions

This feature requires feature AF3801 (SMA Dynamic Service Option Update II) to send line object provisioning requests to the RFT line objects provisioning process.

This feature requires feature AF2614 (RFT Line Provisioning) to create and modify LTOs. When the embedded operations channel is not available, feature AF2614 is capable of handling LTO modification.

This feature requires feature AF2984 (RFT Line Provisioning Integrity) to monitor consistency of line provisioning data stored in the DMS-100 tables and in the RFT.

AF3801

Feature name

SMA Dynamic Service Option Update II

Description

This feature provides the ability to handle remote digital terminal (RDT) lines that are in the "babbling" state. A "babbling line" is a line that exhibits incoming message overload conditions.

This feature also provides the following functions:

- Disabling of call processing when a "babbling line" is detected
- Enabling of call processing when the "babbler" fault is cleared

BCS history

This feature was created in BCS36.

Feature interactions

This feature affects feature AF2614 (RDT Line Provisioning). The time at which a line (and its associated line termination object) is put in service is changed.

Logs

The "babbling line" logs apply to RDT lines when this feature is active.

AF4438

Feature name

RFT Line Provisioning Extensions

Description

This feature enhances the robustness of remote fiber terminal (RFT) and remote digital terminal (RDT) line provisioning processes by the following means:

- simplifying the ISDN line provisioning process
- enhancing RDT objects audit, including ISDN line audit
- strengthening the situation management mechanism where provisioning of an already provisioned slot is attempted
- upgrading of log generation procedures and line provisioning log reports
- enhancing the RDT line state change mechanism

BCS history

This feature was created in BCS36.

Feature interactions

In order to function properly, this feature requires the following features:

- AF1618 Integrated Event Management
- AF2530 RFT Lines Table Control II
- AF2614 RFT Line Provisioning
- AF2655 EOC Protocol Stack I
- AF2656 EOC Router
- AF2727 EOC Protocol Stack II
- AF2966 EOC Local Object Database
- AF2984 RFT Line Audit
- AF3800 Dynamic Service Option Update I
- AF3801 Dynamic Service Option Update II

Feature name

Data Path Line Testing

Description

This feature implements the necessary software to provide line testing for data path units. The testing will be performed from levels ALT, LTP, and LTPDATA of the maintenance and administration position (MAP).

BCS history

This feature was created in BCS36.

User interface

This feature is accessible from levels ALT, LTP, and LTPDATA of the MAP. Command DIAG is accessible from levels ALT and LTP of the MAP.

Command SDIAG is available only from level ALT. Option LC is available through level LTP. This option is equivalent to command SDIAG in level ALT.

Commands EQUIP, LOOPBK, and CONNECT are available for basic error rate testing (BERT) at the LTPDATA level.

AF4979

Feature name

SMA ISDN Line Test Object I/F

Description

This feature AF4979 SMA ISDN Line Test Object I/F completes the work started by the feature AF2968, RTF Line Test Position III, in BCS34 to support maintenance of Integrated Services Digital Network (ISDN) lines equipped on S/DMS AccessNode.

BCS history

This feature was created in BCS36.

Feature name

OPC and NE Identification at the DMS

Description

This feature simplifies the process of locating the source of a remote digital terminal (RDT) alarm. It accomplishes this by providing the following information in DMS displays of RDT alarms:

- RDT network element identifier (NE ID)
- RDT network element name (NE NAME)
- Primary operations controller identifier (primary OPC ID)
- Backup operations controller identifier (backup OPC ID)

BCS history

This feature was created in BCS36.

Restrictions and limitations

Operations controller (OPC) ID cannot be propagated to the DMS switch automatically. Manual provisioning of fields PRIMOPC and BACKOPC of table RDTINV is necessary.

Feature interactions

This feature modifies the output from the following features:

- AF3798 SMA RFT Alarm Report Handler
- AF4439 SMA RFT Event Handler Enhancements

Datafill

Table	Description
RDTINV	Field SID renamed to NENAME
RDTINV	Fields PRIMOPC and BACKOPC added

Logs

This feature modifies the following DMS logs:

- RDT301
- RDT302
- RDT303
- RDT304
- RDT305

For each of the above logs the NE ID, NE NAME, primary OPC ID and backup OPC ID are added within the body of the log entry. Field PROCEDURE is added to supplement field ACTION.

User interface

This feature modifies the following command interpreter (CI) functions:

- Command QueryPM at the IDT level of MAPCI
- Command RDTalarm at the IDT level of MAPCI

For each of the above commands the NE ID, NE NAME, primary OPC ID and backup OPC ID are added to the output.

Feature name

SMA Dynamic Static Data Update

Description

This feature allows the extended multiprocessor system (XMS)-based peripheral module (XPM) and the central control (CC) to send a subset of static data to in-service subscriber carrier module-100 access (SMA) units automatically when the data is changed. This eliminates the need to busy the SMA, allowing service to be maintained to those integrated digital terminals (IDT) that are not directly affected by the changes.

BCS history

This feature was created in BCS36.

Restrictions and limitations

Existing engineering rules governing the reconfiguration of an SMA, its links and associated nodes, still apply.

If an SMA is in an in-service trouble (ISTB) state with a static data mismatch, and an associated static data table is dynamically changed, the static data is dynamically updated. However, since the original reason for going ISTB is not remedied by the data changes, the SMA remains in an ISTB state.

If any ISDN lines are datafilled for a remote digital terminal (RDT), existing links from the SMA to that RDT cannot be deleted or reconfigured. New links can be added.

Datafill

Table	Description
RDTINV	Fields CLAPDPAR, EOC, ELAPDPAR, and LINKTAB modified

AN0230

Feature name

SMA Enhanced Time-Switch I

Description

This feature provides the modifications necessary to incorporate the NTAX78AA card (digital cellular time-switch) into the subscriber carrier module-100 access (SMA).

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the SMA to be equipped with an NT6X44CA card.

Datafill

Table	Description
LTCINV	DCTAX78 (the OPTCARD code for the NTAX78) is listed as a valid OPTCARD for the SMA

Feature name

IRTU Provisioning

Description

This feature provides all data dictionary and table control changes required for the addition of the integrated remote test unit (IRTU) card S/DMS AccessNode.

BCS history

This feature was created in BCS36.

Restrictions and limitations

Maintenance and administration position (MAP) testing is provided only by test bypass pair (TBP).

An external remote test unit (ERTU) and an IRTU cannot be provisioned on the same AccessNode. IRTU or ERTU can be provisioned with the TBP or provisioned individually as ERTU or IRTU.

The ERTU or IRTU is always a No-test Trunk (NTT) test head user.

If an ERTU or IRTU and a TBP are provisioned, the the ERTU or IRTU will be used as a NTT.

Feature interactions

This feature requires AN07 in the AccessNode.

Datafill

Table	Description
RDTINV	Value IRTU added to field MTSTACPT

Service orders

Additional inputs required to allow provisioning of the IRTU.

AN0453

Feature name

SMA CM XPM Robustness Program

Description

This feature adds the Subscriber Module Access (SMA) to the group of extended peripheral modules (XPM) supported by the enhanced computing module (CM) resident XPM maintenance services. These services are provided for:

- a CM resident base to record selected diagnostic results from XPMs
- an improved switch of activity (SWACT) controller for the control of XPM SWACTs
- an improved control and trouble notification mechanism for XPM Routine Exercise (REX) failures.

BCS history

This feature was created in BCS36.

Logs

Log PM600 allows the suppression of multiple logs during REX (a REX pass produces 3 logs instead of 17; a REX failed produces 3 logs instead of up to 32 logs).

User interface

A new option is added to command DISP at the PM level of the MAP terminal. This option displays the diagnostic history data (as shown below) for all XPMs in the office or for all XPMs of a given PM type.

```
Disp <Option> {state<state>{SysB, ManB, Offl, CBsy, ISTb, InSv},
                  DiagHist}
                      [pmtype]
```

Command QUERYPM, at the directory of a posted PM, is enhanced to display the diagnostic history data (shown below).

```
QUERYPM [<option>  {Flt,
                    Cntrs,
                    DiagHist [<diag> {DIAG},
                              <card>  {CARD),
                              <reset> {RESET}]}]
```

Option DIAGHIST is added to command QUERYPM to allow the following actions:

- The default action displays the failed diagnostics and associated cards.
- Option DIAG displays the summary of diagnostic failures counts.

- Option CARD displays the summary of the cards reported as hardware failures.
- Option RESET resets the LTF counters to zero and displays log PM601 with a summary of the counters prior to the reset.

NTXF71AB

SuperNode Enhanced Messaging

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXF71AB contents	
Feature number	**Description**
AI0037	Separate MMI from Control
AI0047	FTS Phase 1
AI0051	TPS 3.5 (SOS)
AI0123	FTS Robustness and Fault Handling
AI0124	Buffer Management System
AI0126	TPS Robustness and Performance Improvements
AL1010	Physical Link Maintenance Base II
AL1276	ILM Connection Support II
AL1277	ILM VCM Support for ISN I
AL1278	ILM MCM Support for ISN I
AL1279	ILM Connections Support I
AL1280	ILM VCM Support for ISN II
AL1281	ILM MCM Support for ISN II
AL1655	ILM Central Resource Controller Enhancement
AL1656	ILM Local Controller Enhancements
AL1657	Virtual Channel Maintenance Enhancements for ISN
AL1658	ILM Capacity and Performance Enhancements
AL1659	ILM Enhanced Diagnostics
AL1660	VCM Support for Reduced Capability Virtual Channels
AL1663	Message Base Enhancements for ISN
AL1664	MRS Support for AP Split Mode
AL1740	ILM Notification Service Enhancements
AL2129	ILM Logs & OMS II
AL2130	ILM Support for Warm-spared Nodes
AR0124	ILM Fault Isolation Enhancements

-continued-

Feature package NTXF71AB contents (continued)	
Feature number	**Description**
AR0125	ILM Isolation Detection Enhancements
AR0128	ILM Controller Robustness
AR0129	ILM Support Tools
End	

BCS history

This feature package was created in BCS25.

BCS36-AR0125 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX940AA	CM Bilge
NTX941AA	CM Common
NTX950AA	MS Bilge
NTX951AA	MS Common
Either NTX942AA or NTX942AB	DMS-SuperNode System Load Module (SLM) DMS-SuperNode System Load Module (SLM)

AR0125

Feature name

ILM Isolation Detection Enhancements

Description

This feature provides enhancements to the isolation detection function (IDF) that allows it to provide full support for the following nodes:

- application processor (AP)
- file processor (FP)
- link interface unit (LIU)
- network interface unit (NIU)

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature applies only to the nodes listed in the description paragraph, above.

Feature interactions

This feature requires the provision of feature AL1740 (ILM Notification Enhancements) in order to function properly.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXF86AA contents	
Feature number	**Description**
AL1162	TRMS Client Interface (Phase I)
AL1163	TRMS Indexed Record Management
AL1164	TRMS Composite Files
AL1209	TRMS Recovery Manager
AL1212	TRMS Lock Manager
AL1213	TRMS Transactions Support
AL1511	Integration of TRMS and FTFS
AL1714	TRMS Primary Index Support
AL1732	TRMS Replicated Database Support
AL1734	TRMS Configuration, Logs and OMs
AL1737	TRMS Offline DB Backup and Restore
AL1738	TRMS Performance and Robustness - Phase I
AL1970	TRMS Database Creation
AR0061	TRMS Database Directory
AR0317	Cache Statistic OMS

BCS history

This feature package was created in BCS33.

BCS36-AR0317 added

Required feature packages	
Feature package number	**Description**
NTX001AA	Common Basic
NTX940AA	CM Bilge
NTX941AA	CM Common

-continued-

Required feature packages (continued)

Feature package number	Description
NTX950AA	MS Bilge
NTX951AA	MS Common
NTX942AA	DMS - Supernode Load Module
or NTX942AB	DMS - Supernode Load Module
NTXF07AA	Fault Tolerant File System

End

Feature name

Cache Statistics OMS

Description

This feature defines and implements the definition and the collection of Operational Measurements (OMs) for the Cache Manager system that provides memory buffering of data that are stored on disk for NPP management services.

This feature implements two types of OMs:

- Application-independent OMs which are collected and reported through the OM system by the cache manager on a single cache. The application independent OMs on each File Processor (FP) node are collected and provided to the DMS central OM system. The new OMs which are implemented by this activity are bound to the existing DMS OM system. Analysis and reporting of the Cache OMs are also handled through the existing DMS OM System mechanisms
- Application-dependent OMs which are bound to an application on request. This feature also implements an interface to be used by the Transactional Record Management System (TRMS) applications to bind OM data to its registers on request.

BCS history

This feature was created in BCS36.

Feature interactions

This feature (AR0317) provides a cache OMs data that is required by performance oriented applications.

AR0317 uses systems services provided under the following features:

- AD1605 Distribute OM System Design

Datafill

There are no new data scheme for this feature. However, it uses existing table control parameter.

The OM collection interval is configured using table control according to standard DMS practices. THe collection intervals may be 5, 15 or 30 minutes. (see NTP 298-1001-451 ‘DMS-100 Family Common Customer Data Schema).

The Distributed OM system is configured by using table control OFCNG office parameter DISTRIBUTION.

Operational measurements

Cache Oms are collected for each cache. The name chosen for this OM group is ‘‘CACHEMGR”. There is no key identified for this group because it can not be uniquely predefined. The info field contains the cache name which is assigned dynamically at run time by the application when the cache is allocated. One cache is assigned for each OM tuple. Only tuples for allocated caches are reported.

When a cache is deallocated, its associated tuple is suppressed, the data for the interval during which this cache is being deleted is not reported. Also, if a cache is deallocated as a side effect of operations, such as closing the database than reopening it, will cause the OM system to assign a new tuple rather then suing existing tuple because the Cache Manager does not keep information to indicate that the same cache is reallocated.

The counters from the memory reads and writes contains data for operations which are done in memory without access to disk. For example, the DISKREAD counter is only incremented for a read operation which requires to get data from disk.

The following is a list of counts for each cache instance. Note that the counts listed below require two registers each since the OM count may exceed the capacity of a single register. Counts listed below peg operations for cache pages at the Cache Manager level because the cache manager provides paged view of the disk.

- MEMREAD Number of successful memory read operations to the cache bound to this OM (i.e. the number of pages read from the cache without accessing the disk).
- MEMREAD2 The extension register of MEM READ
- DISKREAD Number of successful disk read operations by the caches bound to this OM (i.e. the number of pages read into the caches from disk).
- DISKREAD2 The extension register of DISKREAD
- DISKREAD Number of successful memory write operations to the caches bound to this OM (i.e. the number of pages written from the cache without accessing the disk).
- MEMWRIT Number of successful memory write operations to the caches bound to this OM (i.e. the number of pages written from the cache without accessing the disk).
- MEMWRIT2 The extension register of MEMWRIT
- DISKWRIT Number of successful disk write operations to the caches bound to this OM (i.e. the number of pages written to disk).
- DISKWRIT2 The extension register of DISKWRIT

User interface

Standard DMS procedures are used to view TRMS OMs once they are captured in the central DMS OM system. Log reports of TRMS defined events are also accessed through standard DMS man-machine interface for logs.

NTXJ39AA

CLASS Visual Message Waiting Indicator

This feature package provides a visual indication that messages are waiting for customers who forward their telephones to a Voice Message Service (VMS) provider. A VMS provider allows customers to both leave and receive voice messages.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXJ39AA contents	
Feature number	**Description**
AG1954	CLASS Message Waiting Indicator
NC0499	CMWI Enhancements for Universal Digital Loop Carriers

BCS history

This feature package was created in BCS31.

BCS36-NC0499 added

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX100AA	Integrated Business Networks - Basic
NTX119AA	IBN-Message Service
NTX270AA	New Peripheral Maintenance Package
NTX413AB	IBN-Enhanced Call Forwarding
NTX824AB	Enhanced Call Waiting - IBN
NTX898AA	Variable Speed Call Access Code
NTX901AA	Local Features I
NTXA64AA	RES (Residental Enhanced Services)
NTXA82AA	CLASS Line Office Data
NTXA68AA	Network Message Service
or NTX732AA	Simplified Message Desk Interface

NC0499

Feature name

CMWI Enhancements for Universal Digital Loop Carriers

Description

This feature allows CLASS Messaging Waiting Indicator) CMWI to function on lines which physically exist on the Universal Digital Loop Carriers (UDLCs). CMWI requires a path to be established from the switch to the line. For lines which are on a UDLC, a path is not established on a terminating call until physical ringing is detected at the UDLC. This feature provides a half second of ringing prior to activating or deactivating the MWI (Messaging Waiting Indicator) to establish the path to the customer premise equipment (CPE). This functionality is provided by table control on a per line basis, as part of the MWT line option.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The same restrictions that apply to CMWI apply to this feature. It is not supported in feature groups. It is not supported on KSETs.

Currently, ringing does not occur with audit functionality. This feature does not provide ringing capability with audits.

Feature interactions

Lines with this feature will be considered busy from the start of the ring splash until the message to activate/deactivate the MWI has been sent. Attempts to terminate to these lines at this time will receive busy treatment.

Datafill

Table	Description
IBNFEAT	changes in field CMWIRING

This field indicates whether ringing should precede messages to activate or deactivate the MWI.Prior to this feature, the range of values for this field was ‘N’ or ‘Y’. ‘N’ indicates that ringing should not precede activation or deactivation. ‘Y’ indicates that ringing should precede activation only. New value, ‘UDLC’ indicates that ringing should precede activation and deactivation. Under new value ‘UDLC’ the IRN field associated with CRN cannot be set of OFFHOOK. This is due to the fact that ringing must always accompany a msg to the set, not just when the user had been offhook.

Service orders

This feature allows field CMWIRING of the line option MWT, to have a value of ‘UDLC’.

NTXJ51AA

ISDN Digital Test Access

This feature package allows ISDN basic rate B-channels and D-channels to be monitored with a commercially available protocol analyzer.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXJ51AA contents	
Feature number	**Description**
AF4839	RSC-S Digital Test Access
AL1320	ISDN XPM Digital Test Access
AL1321	ISDN Digital Test Access Maintenance
AQ0875	DTA on ISLC Circuit-switched B-Channel

BCS history

This feature package was created in BCS31.

BCS36-AF4839 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX270AA	New Peripheral Maintenance Package
NTX901AA	Local Features I
Either NTX750AB or NTX750AC or NTX750AD	ISDN Basic Rate Access ISDN Basic Rate Access (upgrade from NTX750AB) ISDN Basic Rate Access (upgrade from NTX750AC)

AF4839

Feature name

RSC-S Digital Test Access

Description

This feature provides the ability to monitor B and D channels on the remote switching center SONET (RSC-S) from an external protocol analyzer at the central office. The feature also allows service access point identifier (SAPI) users to select terminal endpoint identifiers for terminals on the RSC-S platform. The link access procedure on the D-channel (LAPD) is verified by this feature for compliance with Bellcore technical reference TR-TSY-000793, *ISDN D-Channel Exchange Access Signaling and Switching Requirements (Layer 2)*.

BCS history

This feature was created in BCS36.

Hardware requirements

The monitored data streams obtained by digital test access (DTA) must be directed toward either an ISDN line card, or a DS-1 trunk. If a DS-1 trunk is used, it must be provisioned for 64-kbit/s data transmission.

Restrictions and limitations

B sub-D channel (Bd) connections that terminate at the DMS packet handler cannot be monitored.

The number of DTA connections active in the office is limited by office parameter MAX_DTA_ON_SWITCH in table OFCENG.

The maximum number of simultaneous DTA connections allowed for each extended multiprocessor system (XMS)-based peripheral module (XPM) is six.

DTA allocates channels on the links between the loop monitoring point and the monitoring equipment. It also makes connections across peripheral and network modules between those channels. While the DTA is active, these channels are unavailable for call processing.

DTA connections are downloaded as part of the XPM static data. Care should, therefore, be taken when adding or removing DTA connections when either unit of the CPM remote cluster controller (RCC2) is out of service, or in emergency stand-alone (ESA) mode. Changes to DTA connections during these circumstances will require static data to be downloaded in its entirety, possibly increasing return-to-service (RTS) time.

Feature interactions

When DTA connections are active on lines connected to an enhanced line concentrator module (LCME), feature AF4841 (RSC-S LCME Link Rearrangement) must not be used.

User interface

The EQUIP command at the LTPDATA level of the MAP (maintenance and administration position) is modified to allow DS-1 endpoints on an RCC2 to be defined as DTA monitor points.

NTXN07AB

SMDI Private CLID Suppression

This feature package prevents restricted directory numbers from being forwarded over a simplified message desk interface (SMDI) to an enhanced service provider (ESP). The feature supports both nodal and Common Channel Signaling 7 (CCS7) networked calls, and is typically used for connection to voice mail systems.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXN07AB	
Feature number	**Description**
AF3679	SMDI Calling DN Delivery Optionality
AG1980	Blocking of Restricted Number to SMDI

BCS history

This feature package was created in BCS31.

BCS36-AF3679 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX100AA	Integrated Business Networks-Basic (IBN)
NTX730AA	Multilink ASCII Device Driver
NTX732AA	Simplified Message Desk Interface (SMDI)
NTX901AA	Local Features I

AF3679

Feature name

SMDI Calling DN Delivery Optionality

Description

On intra-group calls, this feature allows the calling and forwarding directory numbers (DN) to be delivered to a simplified message desk interface (SMDI).

BCS history

This feature was created in BCS36.

Restrictions and limitations

Residential Enhanced Services (RES) lines will not pass intra-group checking for this feature.

If Integrated Business Network (IBN) ISDN user part (ISUP) trunking is used, and both business group (BG) and network information (NETINFO) parameters are passed in the initial address message (IAM), the BG parameter takes precedence in determining the customer group.

Option SMDICND allows the operating company to deliver or block a DN on the basis of the customer groups of the agents involved in the call. If this option is active, an ISUP call where both the calling and forwarding parties are on another node will not pass the intra-group criteria check.

If it is not possible to determine the customer groups involved in a call, the call is not considered an intra-group call.

The SMDICND option is incompatible with bridged night number (BNN), call pickup (CPU), multiple position hunt (MPH), or preferential hunt (PRH) types of hunt groups.

The customer group associated with a virtual facility group (VFG) that has been spanned within a call will not be recognized by the intra-group determination process. The only exception to this is ISUP originations that include multilocation business group (MBG) or NETINFO parameters.

Datafill

Table	Description
SLLNKDEV	Option DNSUPPR, field CALLING, value NODIRECT added
UCDGRP	Option SMDICND added
HUNTGRP	Option SMDICND added

Service orders

Option SMDICND added for hunt groups. The option can be added using table control or the Service Order System, SERVORD. SERVORD is recommended.

NTXN75AA

Remote Call Forward without Unique PIN

This feature package allows call forward remote access (CFRA) personal identification numbers (PIN) to be non-unique. This feature package introduces station-programmable PINs, which allow subscribers to change their PIN numbers from their own telephones, using a feature access code.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXN75AA	
Feature number	**Description**
NC0192	Remote Call Forwarding without Unique PIN

BCS history

This feature package was created in BCS33.

BCS36 NC0192 changed

Required feature packages

Feature package number	Description
NTX000AA	Bilge
NTX001AA	Common Basic
NTX100AA	Integrated Business Networks-Basic
NTX901AA	Local Features I
NTXA43AA	Call Forward Remote Activation

NC0192

Feature name

Remote Call Forwarding Without Unique PIN

Description

NC0192 provides call forwarding-remote access (CFRA) with personal identification numbers (PIN) that are not necessarily unique to each subscriber line. This feature also provides Station Programmable PINs (SPP). An SPP allows a subscriber to use their own telephone to change a PIN, using a feature access code.

BCS history

This feature was created in BCS33.

BCS36 Changed

Hardware requirements

This feature requires a digital recorded announcement machine (DRAM) with a controller card (version 1X75BA), the CFRA PROM card (version 1X76AM), and either an auxiliary operator services system voice response unit (AOSS/VRU) English announcements card (version 1X76AG), or a CLASS phase I English announcements card (version 1X76AK).

Restrictions and limitations

The recorded phrase must be stored on a DRAM memory card located in the same maintenance trunk module (MTM) as the CFRA PROM card (version 1X76AM).

SPP users are not allowed to enter a new PIN that equals the old PIN.

SPP users must wait for announcement prompts to enter digits for PIN feature access codes

The following announcements disallow digit entry

- PIN feature prompt announcement: CALL FORWARD REMOTE ACCESS
- incorrect PIN announcement: YOU HAVE ENTERED AN INCORRECT PIN
- exceeded retries announcement: YOU HAVE EXCEEDED THE RETRY COUNT
- CFRA first announcement: YOU MUST FIRST CHANGE YOUR PIN BEFORE USING THIS FEATURE. THE PIN CHANGE MUST BE PERFORMED FROM YOUR OWN PHONE

Only basic rate access Meridian feature transparency (BRAMFT) ISDN sets are supported by this feature. Attempts to use other ISDN set types for SPP or CFRA result in a feature not allowed (FNAL) treatment.

BRAMFT ISDN sets can add CFRA by service orders only. All other ISDN sets are incompatible

Activation of SPP from a second multi-appearance directory number (MADN) is not allowed.

Bridging is not allowed from the second leg of a three-way call (3WC), or during CNF calls.

Multiline hunt (MLH) and distributed line hunt (DLH) hunt group members cannot use SPP. These hunt groups allow CFRA to be assigned to the pilot only.

Call waiting (CWT) and call waiting intragroup (CWI) are disallowed during SPP or CFRA.

Only primary MADNs or single line appearance directory numbers (DN) can have call forward universal (CFU), call forward fixed (CFF), or call forward intragroup (CFI).

A minimum value of 3 is recommended for the PINRETRY field in table CUSTSTN for the CFRA option.

Datafill

Table	Description
CUSTSTN	SPP added to the range of values for field OPTNAME
	SPP added to the range of values for field OPTION
	Range 1 to 3 in field RETRIES available for use with fields OPTNAME and OPTION
IBNXLA	SPP added to the range of values for field FEATURE to datafill the SPP access code
ANNS	SPP added to the range of values for field FEATURE to datafill the SPP access code
	-continued-

Table	Description
DRMUSERS	SPPANNC1, SPPANNC2, SPPANNC3, SPPANNC4, SPPANNC5, SPPANNC16, SPPANNC7, SPPANNC8, and CFRAFRSTadded to the range of values of field PHRASELIST to datafill the phrase names for SPP custom announcements
	End

Office parameter SPP_MAX_PROGRAMMERS is added to table OFCENG to specify the maximum number of users that can be simultaneously performing a change using the SPP function.

This feature increases program store by a maximum of 9 Kbytes and increases data store by a maximum of 120 Kbytes.

Service orders

If a package change or update is implemented, this feature will rename the PIN prompt from AUTHCODE to CFRAPIN during service order commands ADO, NEW, or CHF.

Operational measurements

This feature adds the operational measurements (OM) group SSPN. This group consists of the registers SPPSUCC, SPPNOMAT, SPPNOVER, SPPRETRY, SPPLIMEX, and SPPPROG.

Register SPPSUCC is incremented each time a subscriber successfully changes a PIN with the SPP feature.

Register SPPNOMAT is incremented each time a PIN and a DN do not match.

Register SPPNOVER is incremented each time a new PIN entry fails verification.

Register SPPLIMEX is incremented each time a caller exceeds the retry count during an SPP attempt.

Register SPPPROG is incremented each time the number of simultaneous SPPs used exceeds the office parameter SPP_MAX_PROGRAMMERS.

Logs

This feature adds log IBN136, which is generated each time an SPP user exceeds the retry count during any part of the SPP function.

LIS Common-LMS Functionality on MS

This feature package provides the frame transport bus (F-bus) user interface support for the Mininode. It also provides generic F-bus maintenance support for a variable number of link interface unit (LIU) shelves.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXN83AA contents

Feature number	Description
AL1453	DMS-Bus Support for the F-Bus MAP Level
AL1458	DMS-Bus Support of 0, 1, and 2 LIU SHE
AR0478	F-Bus Operation and Maintenance Enhancements

BCS history

This feature package was created in BCS33.

BCS36-AR0478 added

Required feature packages

Required feature packages

Feature package number	Description
NTX000AA	Bilge
NTX001AA	Common Basic
NTX940AA	CM Bilge
NTX941AA	CM Common
NTX945AA	MS Base Link Maintenance
NTX950AA	MS Bilge
NTX951AA	MS Common
NTXF71AB	SuperNode Enhanced Messaging (upgrade of NTXF71AA)
NTXN18AA	F-Bus-LIU Base

AR0478

Feature name

F-Bus Operation and Maintenance Enhancements

Description

This feature streamlines the DMS-bus F-bus operations and interactions and provides enhancements in the following areas:

- Restart initialization
- No restart switch of activity (SWACT)
- Log output
- Combination of the rate adaptor F-bus and single-shelf link peripheral processor (SSLPP) on the SuperNode SE (SNSE) DMS-bus
- Simplified reconfiguration of the bandwidth of the supporting interface card pair for the SSLPP

BCS history

This feature was created in BCS36.

Restrictions and limitations

The changes made in this feature apply only to DMS-bus and supported application service units (ASU).

Feature interactions

The software provided by this feature structures the interactions between F-bus and ASUs.

This feature package modifies line maintenance utilities to allow them to be used by both the existing line maintenance and by ISDN TL1 line maintenance.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXN87AA	
Feature number	**Description**
AF4838	RSC-S Enhanced Line Testing I
AL2359	Change Line Maintenance Utilities 1
AL2360	ITS TL1 Line Maintenance Process
AL2367	Stand-alone ESTU Definition
AL2368	Stand-alone ESTU Utilities

BCS history

This feature package was created in BCS33.

BCS36-AF4838 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX901AA	Local Features I

AF4838

Feature name

RSC-S Enhanced Line Testing I

Description

Maintenance for ISDN two binary, one quaternary (2B1Q) loops and lines consists of controlling their state, and accessing, monitoring, testing, and requesting information concerning them. The purpose of this feature is to provide the same functionality for ISDN 2B1Q loops connected to enhanced line concentrator modules (ELCM) that are attached to ISDN common peripheral module (CPM) compact remote cluster controller units (RCC2), or to ISDN remote switching center offshore 2 units (RCO2).

BCS history

This feature was created in BCS36.

Hardware requirements

The 1X89AA/AB card (multiprorocol controller) is required for the multiprotocol controller (MPC).

The test network terminator 1 is a standard NT1 unit, such as the NTBX80AA unit (2B1Q NT1 test box).

An NT0J42BA test box (enhanced services test unit) serves as the ESTU master module.

The loop emulator must be capable of simulating 3 960 m (13 000 ft) of 26-gauge wire at 300-kHz bandwidth.

The digital modem (DMODEM) consists of the following two circuit packs:

- NT3X02AA Modem circuit pack
- NT3X03AA D modem circuit pack

A line circuit (LC) is wired to the ESTU dedicated modem port. The LC must be a ground start circuit, such as the NT6X18AB card (line card type B with +48 V).

The ISDN 2B1Q LC is the NTBX27AA card (2B1Q U-interface ISDN line card). This must be release 0D07 in order to carry out layer-1 performance monitoring and testing.

Restrictions and limitations

The limitations and restrictions that apply to the ISDN 2B1Q loops and lines connected to ELCMs that are attached to an ISDN trunk controller or ISDN line group controller also apply to this feature.

This feature package modifies line maintenance utilities to allow them to be used by both the existing line maintenance and by ISDN TL1 line maintenance. This feature is an upgrade to feature NTXN87AA.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXN87AB	
Feature number	**Description**
AF4838	RSC-S Enhanced Line Testing I
AL2359	Change Line Maintenance Utilities 1
AL2360	ITS TL1 Line Maintenance Process
AL2367	Stand-alone ESTU Definition
AL2368	Stand-alone ESTU Utilities

BCS history

This feature package was created in BCS36.

BCS36-AF4838 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX901AA	Local Features I

AF4838

Feature name

RSC-S Enhanced Line Testing I

Description

Maintenance for ISDN two binary, one quaternary (2B1Q) loops and lines consists of controlling their state, and accessing, monitoring, testing, and requesting information concerning them. The purpose of this feature is to provide the same functionality for ISDN 2B1Q loops connected to enhanced line concentrator modules (ELCM) that are attached to ISDN common peripheral module (CPM) compact remote cluster controller units (RCC2), or to ISDN remote switching center offshore 2 units (RCO2).

BCS history

This feature was created in BCS36.

Hardware requirements

The 1X89AA/AB card (multiprorocol controller) is required for the multiprotocol controller (MPC).

The test network terminator 1 is a standard NT1 unit, such as the NTBX80AA unit (2B1Q NT1 test box).

An NT0J42BA test box (enhanced services test unit) serves as the ESTU master module.

The loop emulator must be capable of simulating 3 960 m (13 000 ft) of 26-gauge wire at 300-kHz bandwidth.

The digital modem (DMODEM) consists of the following two circuit packs:

- NT3X02AA Modem circuit pack
- NT3X03AA Dmodem circuit pack

A line circuit (LC) is wired to the ESTU dedicated modem port. The LC must be a ground start circuit, such as the NT6X18AB card (line card type B with +48 V).

The ISDN 2B1Q LC is the NTBX27AA card (2B1Q U-interface ISDN line card). This must be release 0D07 in order to carry out layer-1 performance monitoring and testing.

Restrictions and limitations

The limitations and restrictions that apply to the ISDN 2B1Q loops and lines connected to ELCMs that are attached to an ISDN trunk controller or ISDN line group controller also apply to this feature.

This feature package provides the DMS packet handler (DMS-PH) application on the link peripheral processor (LPP).

This feature package applies to SuperNode offices with ISDN.

Feature package contents

Feature package NTXP47AA contents

Feature number	Description
AG2273	DMS-PH CPP Messaging
AG2322	DMS-PH Call Processing Data Structures
AG2327	DMS-PH E.164 Translations and Routing
AG2328	DMS-PH X.75 Call Processing I
AG2343	DMS-PH Call Processing Billing Interface
AJ1833	X.75 Service Assignment
AJ1836	DMS-PH PCVs/CUGs Provisioning
AJ1837	DMS-PH Data Distribution-CM
AJ1838	DMS-PH Data Distribution-XLIU
AL1615	Packet Processor Maintenance
AL1616	TR-846 Provisioning in CM and Data Distribution
AL1906	XLIU LGP Base Load and HFC Loader Implementation
AL2025	DMS-PH Call Processing Base
AL2056	HFP Base Load
AL2057	HFP Base Load and Maintenance Subsystem
AL2058	HFP LAPD Protocol
AL2059	HFP LAPB Protocol
AL2061	HFP Maintenance and Performance Enhancements
AL2065	X.25, X.75, VC Base
AL2066	X.25, X.75 Service I/F to Provisioning
AL2067	X.25 Phase Two
AL2068	X.75 Phase Two
AL2069	X.25, X.75 Virtual Circuit Phase Two

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Feature package NTXP47AA contents (continued)	
Feature number	**Description**
AL2125	Packet Terminal Provisioning
AL2126	X.75 Trunk Data
AL2127	X.75 Basic and Supplementary Service Data
AL2128	Channel and Link Allocation
AL2195	DMS-PH Bd Channel Maintenance
AL2198	DMS-PH X.75 Trunk Maintenance I
AL2200	DMS-PH Provisioned B-channel Maintenance
AL2290	Local XLIU Maintenance
AL2291	X.25 Basic Service Provisioning
AL2326	SPECCONN for the DMS-PH
AL2438	DMS-PH Channel and Link Maintenance
AL2440	DMS-PH Operational Measurements
AL2441	DMS-PH C-Bus Interface Paddle Board Maintenance
AQ0845	DMS-PH Call Processing II
AQ0847	DMS-PH Switchwide Parameters
AQ0849	DMS-PH CALLP Operational Measurements
AQ0852	DMS-PH PVC Call Processing
AQ0862	DMS-PH CC Warm SwAct
AQ0887	DMS-PH TRAVER
AQ0894	DMS-PH Hunt I
End	

BCS history

This feature package was created in BCS34.

BCS36-AL2200 and AL2440 changed

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX001AA	Common Basic
NTX042AA	Local Automatic Message Accounting (LAMA)
NTX159AA	Bellcore LAMA Format
Either NTX750AB or NTX750AC or NTX750AD	ISDN Basic Access ISDN Basic Access ISDN Basic Access
NTX767AA	ISDN Digit Analysis Compliance - End Office
NTXH77AA	Channelized Access on LPP/LIS

AL2200

Feature name

DMS PH Line Maintenance Interactions

Description

AL2200 provides ISDN line maintenance support for the DMS packet handler (DMS-PH). This feature also provides maintenance and test capabilities for nailed-up B-channel (Bb) connections to the DMS-PH.

BCS history

This feature was created in BCS34.

BCS35 Changed

BCS36 Changed

Restrictions and limitations

This feature applies to the following card types only:

- NTBX25AB (ISDN U-line card)
- NTBX26AA (ISDN S/T line card)
- NTBX27AA (2B1Q U-interface ISDN line card)

Feature interactions

This feature interacts with the following features:

- AJ1837 DMS-PH Data Distribution-CM
- AL2025 DMS-PH Call Processing Base
- AL2195 DMS-PH Bd Channel Maintenance
- AL2326 SPECCONN for the DMS-PH
- AQ0845 DMS-PH Call Processing II
- AQ0852 DMS-PH PVC Call Processing

Datafill

This feature increases program store by a maximum of 10 kbytes and increases data store by a maximum of 3 kbytes.

User interface

This feature modifies commands BSY, FRLS, CKTLOC, DIAG, POST, and RTS at the LTP level of a MAP terminal.

Command CKTLOC is modified to display additional information when a B-channel of an ISDN line is posted.

Command DIAG is modified to perform a Bb-channel continuity test as part of the full diagnostics.

Commands BSY and FRLS are modified so that Bb-channels connected to the DMS-PH are brought out of service when an ISDN line is set to manual-busy (MANBSY). Command BSY is also modified to disallow the busy state if the Bb-channel has a permanent virtual circuit (PVC).

Command RTS is modified to return nailed-up B-channels to service.

This feature adds command BCHCON to the LTPISDN level of a MAP terminal. Command BCHCON performs Bb-channel continuity tests on nailed-up B-channels connected to the DMS-PH on a posted ISDN line card.

AL2440

Feature name

DMS-PH Query Commands

Description

AL2440 provides a set of query commands for the DMS packet handler (DMS-PH). This feature modifies existing ISDN query commands and adds commands specific to the DMS-PH.

BCS history

This feature was created in BCS34.

BCS36 Changed

Restrictions and limitations

The associated X.25/X.75 link interface unit (XLIU) must be in service for command QCOUNTS to function correctly.

Feature interactions

This feature interacts with the following features:

- AL2195-DMS-PH Bd Channel Maintenance
- AL2061-HFP Maintenance and Performance Enhancements
- AL2066-X.25, X.75 Service I/F to Provisioning
- AL2125-Packet Terminal Provisioning
- AL2126-X.75 Trunk Data
- AL2127-X.75 Basic and Supplementary Service Datafill
- AL2291-X.25 Basic Service Provisioning
- AJ1833-X.75 Service Assignment
- AJ1836-DMS-PH PVCs/CUGs Provisioning
- AL2326-SPECCONN for the DMS-PH
- AL2438-DMS-PH Channel and Link Maintenance

User interface

This feature modifies MAP commands QDCH, QIT, QBB, and QSCONN at the DMSCI level.

Command QDCH is modified to display Bd channels for the DMS-PH that are mapped to an X.25 services group (XSG) endpoint in table SPECCONN.

Command QIT is modified to display a message when the queried logical terminal identifier (LTID) is provisioned for DMS-PH.

Command QBB is modified to display Bd channels mapped to an XSG channel.

Command QSCONN is modified to display special connections on a particular XSG.

This feature modifies command QLOOP at the LTPISDN level of a MAP terminal.

Command QLOOP is modified to display LTIDs, directory numbers (DN), and terminal endpoint identifiers (TEI) on a posted ISDN loop.

This feature adds commands QCOUNTS and QPHF to the DMSCI level of a MAP terminal.

Command QCOUNTS displays link level counts and packet level counts for X.25 terminals or X.75/X.75' trunks connected to the DMS-PH.

Command QPHF displays information on how the DMS-PH is configured and what service data is associated with each XLIU.

This feature package provides the DMS packet handler (DMS PH) application on the link peripheral processor (LPP).

This feature package applies to SuperNode offices with ISDN.

Feature package contents

Feature package NTXP47AB contents

Feature number	Description
AG2273	DMS PH CPP Messaging
AG2322	DMS PH Call Processing Data Structures
AG2327	DMS PH E.164 Translations and Routing
AG2328	DMS PH X.75 Call Processing I
AG2343	DMS PH Call Processing Billing Interface
AJ1833	X.75 Service Assignment
AJ1836	DMS PH PCVs, CUGs Provisioning
AJ1837	DMS PH Data Distribution-CM
AJ1838	DMS PH Data Distribution-XLIU
AL1615	Packet Processor Maintenance
AL1616	TR846 Provisioning in CM and Data Distribution
AL1906	XLIU LGP Base Load and HFC Loader Implementation
AL2025	DMS PH Call Processing Base
AL2056	HFP Interfaces and Diagnostics
AL2057	HFP Base Load and Maintenance Subsystem
AL2058	HFP LAPD Protocol
AL2059	HFP LAPB Protocol
AL2061	HFP Maintenance and Performance Enhancements
AL2065	X.25, X.75, VC Base
AL2066	XLIU X.25, X.75 Services Interface to Provisioning
AL2067	XLIU X.25, X.75 Protocols
AL2068	XLIU Permanent Virtual Circuits
AL2069	XLIU DMS PH Billing Support

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Feature package NTXP47AB contents (continued)	
Feature number	**Description**
AL2125	Packet Terminal Provisioning
AL2126	X.75 Trunk Data
AL2127	X.75 Basic and Supplementary Service Data
AL2128	Channel and Link Allocation
AL2195	DMS PH Bd Channel Maintenance
AL2198	DMS PH X.75 Trunk Maintenance I
AL2200	DMS PH Line Maintenance Interactions
AL2290	Local XLIU Maintenance
AL2291	X.25 Basic Service Provisioning
AL2326	SPECCONN for the DMS PH
AL2438	DMS PH Channel and Link Maintenance
AL2440	DMS PH Query Commands
AL2441	DMS PH C-Bus Interface Paddle Board Maintenance
AQ0845	DMS PH Call Processing II
AQ0847	DMS PH Switchwide Parameters
AQ0849	DMS PH CALLP Operational Measurements
AQ0852	DMS PH PVC Call Processing
AQ0862	DMS PH CC Warm SWACT
AQ0887	DMS PH TRAVER
AQ0894	DMS PH Hunt I
AQ1008	Telco Setable Defaults
AQ1010	PCV Type II Billing
End	

BCS history

This feature package was created in BCS34.

BCS36-AQ1008 and AQ1010 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX001Aa	Common Basic
NTX042AA	Local Automatic Message Accounting (LAMA)
NTX159AA	Bellcore LAMA Format
NTXH77AA	Channelized Access on LPP/LIS
Either NTX750AB or NTX750AC or NTX750AD	ISDN Basic Access ISDN Basic Access (upgrade from NTX750AB) ISDN Basic Access (upgrade from NTX750AC)

AQ1008

Feature name

Telco Settable Defaults

Description

This feature allows operating companies to define defaults for the DMS Packet Handler X.25 service parameters.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The following restrictions apply to this feature:

- The feature only affects parameters in tables DNCTINFO and DNCHNL
- This feature does not apply to defaults for permanent virtual circuit (PVC) and closed user group (CUG) information
- The default values for parameters NDWS, NDPS, and DTCA must be changed in order to be able to change the default values for window size, packet size, and throughput size.
- Only one set of defaults exists for parameters DNCTINFO and DNCHNL
- When changing defaults in table SVCDATA, only subsequent SERVORD NEW commands will be affected. Existing datafill is not modified.
- The default values for parameters CUGS and NUI in table DNCTINFO cannot be changed in table SVCDATA

Feature interactions

With this feature, the defaults for tables DNCTINFO and DNCHNL can be modified by changing the appropriate tuples in table SVCDATA. Once the defaults are modified in table SVCDATA, and SERVORD is used, the defaults in DNCTINFO and DNCHNL will be the changed defaults.

Datafill

Table	Description
SVCDATA	Fields FSA, RCA, ICS, TCN, FCPN, OCB, ICB, LCP, RPOAB, LLFSQ, LLWS, I1, T2, T3, N2, LCA, SLCN, NPVC, NOWI, NOWO, NNRC, PLSQ, NDWS, NDPS, IMPS, OMPS, DTCA, ODTCA, IDTCA added

Feature name

PVC Type II Billing

Description

This feature provides the capability of permanent virtual circuit (PVC) type II billing for DMS packet handler (DMS-PH) call processing.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature is supported only on SuperNode ISDN switches.

Restrictions and limitations

This feature is supported only on SuperNode offices.

The SERVORD interface does not support the setting of PVC type II billing in table PVCINFO, subfields ADDRFMT, CHRGDN, and CHNLTY, or table BILLSEL, field CHRGDN, subfield LCN.

This feature checks the chargeable directory number (DN) provided for length and for leading zeros. For an E.164 format the feature verifies that the number of digits is 4-14. For an X.121 format the range is 5-14. A valid DN begins with either a country code or a data network identifier code (DNIC). Neither of these codes have zero as the first digit, so DNs with leading zeros are not accepted.

Billing cannot be enabled for an X.75 master.

Feature interactions

This feature builds upon the capabilities provided by the following two features:

- AG2343 DMS-PH Billing Base
- AQ0852 DMS-PH PVC Call Processing

Datafill

Table	Description
PVCINFO	Field BILLSEL, value CHRGDN added
BILLSEL	Field CHRGDN added

Automatic message accounting

This feature provides type II billing facilities for PVC calls.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXP55AA contents	
Feature number	**Description**
AG1630	DCR: Multiple Outpulsing Schemes
AG1974	DCR: Dynamic Network Modifications
AJ2446	LDR: MNA Base
BC1989	High Performance Routing
BV1534	Dynamically Controlled Routing

BCS history

This feature package was created in BCS13.

BCS36-AJ2446 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX273AA	Multiprotocol Controller BX.25
NTX560AB	NOP-Generic RO Service (replaces NTX560AA)
NTX901AA	Local Features I
NTXE65AA	MPC X.25 Interface

AJ2446

Feature name

LDR: MNA Base

Description

This feature is part of a set of features that together enhance the dynamically controlled routing (DCR) within the DMS system. This enhancement permits the DMS switch to handle multiple network access (MNA), allowing a single DMS node to be part of both the local network and the toll network.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The network name must be no more than 12 characters long. The abbreviated network name must be no more than 4 characters long.

Feature interactions

The existing DCR software is enhanced to handle local dynamic routing (LDR) and MNA.

Operational measurements

This feature changes the software so that the network name is the key to access the peg count registers for the DCRMISC operational measurements (OM) group.

The key to the DCRDEST and DCRLINK OM groups is changed from the destination node name to NETNAME$DEST_NODE_NAME.

In order to display the peg counts of the OM group registers using the OMSHOW command, both the network name and the node name must be entered with the special $ character.

Logs

This feature adds the DCR network name field to the following logs:

- DCR100
- DCR101
- DCR102
- DCR103
- DCR104

User interface

This feature modifies the syntax of DCRMOCH MAPCI command in the network management. MAPCI level is modified and DCRSEL command is added in the level as command 11.

NTXP55AB

Dynamically Controlled Routing (DCR/LD)

This feature package contains features that support dynamically controlled routing (DCR) within the DMS switch and implement multiple network access (MNA), allowing a single DMS node to be part of both the local network and the toll network.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXP55AB contents	
Feature number	**Description**
AG1630	DCR: Multiple Outpulsing Schemes
AG1974	DCR: Dynamic Network Modifications
AJ2446	LDR: MNA Base
AJ2884	DCR: MNA Table Control
AJ2886	DCR: Base RO Modifications
BC1989	High Performance Routing
BV1534	Dynamically Controlled Routing

BCS history

This feature package was created in BCS36 as an upgrade of NTXP55AA.

BCS36-AJ2446, AJ2884, AJ2886 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX273AA	Multiprotocol Controller BX.25
NTX560AB	NOP-Generic RO Service (replaces NTX560AA)
NTX901AA	Local Features I
NTXE65AA	MPC X.25 Interface

AJ2446

Feature name

LDR: MNA Base

Description

This feature is part of a set of features that together enhance the dynamically controlled routing (DCR) within the DMS system. This enhancement permits the DMS switch to handle multiple network access (MNA), allowing a single DMS node to be part of both the local network and the toll network.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The network name must be no more than 12 characters long. The abbreviated network name must be no more than 4 characters long.

Feature interactions

The existing DCR software is enhanced to handle local dynamic routing (LDR) and MNA.

Operational measurements

This feature changes the software so that the network name is the key to access the peg count registers for the DCRMISC operational measurements (OM) group.

The key to the DCRDEST and DCRLINK OM groups is changed from the destination node name to NETNAME$DEST_NODE_NAME.

In order to display the peg counts of the OM group registers using the OMSHOW command, both the network name and the node name must be entered with the special $ character.

Logs

This feature adds the DCR network name field to the following logs:

- DCR100
- DCR101
- DCR102
- DCR103
- DCR104

User interface

This feature modifies the syntax of DCRMOCH MAPCI command in the network management. MAPCI level is modified and DCRSEL command is added in the level as command 11.

AJ2884

Feature name

DCR: MNA Table Control

Description

This feature modifies table control as part of a group of changes that collectively implement the multiple network access (MNA) capability.

BCS history

This feature was created in BCS36.

Restrictions and limitations

A dynamically controlled routing (DCR) trunk group must belong to one network only.

Feature interactions

This feature builds upon the base provided by feature AJ2446 (LDR: MNA Base). It also interacts with the following two features to implement MNA capability:

- AJ2885 DCR: MNA Activation
- AJ2886 DCR: Base RO Modifications

Datafill

Table	Description
DCRNETID	New table, containing network name, short network name, network type, and operation mode status for each network
DESTKEY	Field NETLIST added to record the networks to which the destination belongs
DESTNODE	Field NETNAME added
DCROPT	This table no longer contains tuples. The information is now contained in table DCRNETID
TKTONODE	Field NETNAME added
OFRT	Field added for DCR network name
RTEREF	Field added for DCR network name

This feature also removes control of the size of table DESTNODE from field SIZE in table SYSDATA.

AJ2886

Feature name

DCR: Base RO Modifications

Description

This feature makes changes to the remote operation (RO) communications messaging between the DMS switch and the network processor (NP). It is part of a group of changes that collectively implement the multiple network access (MNA) capability. It extends the dynamically controlled routing (DCR) services to include both the local and the toll networks.

BCS history

This feature was created in BCS36.

Feature interactions

This feature builds upon the base provided by feature AJ2446 (LDR: MNA Base). It also interacts with the following two features to implement MNA capability:

- AJ2610 NP MNA Preparation
- AJ2884 DCR: MNA Table Control

Logs

Log DCR 105 has six new reasons added to cover the extra invalid arguments that can be generated.

Log DCR 107 has one additional value added to field DCRINFO to allow identification of inconsistencies in the MNA mode values.

This feature package provides basic fiber remote switching center (RSC) capabilities for use with a DS-1 interface.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXP92AB	
Feature number	**Description**
AF2784	CPM Data Structures and MMI
AF2785	CPM UP Software and Basic Maintenance
AF2786	CPM PCM Signaling Processor Maintenance
AF2787	CPM Matrix Software
AF2788	CPM DS-1 Software: Support for 4x2 DS-1 Interface Packs
AF2790	CPM Diagnostics
AF2791	CPM Basic RSC Applications Support
AF2792	New CPM Extension Shelf and DS60 Pack Support for CPM
AF2793	CPM ISDN Applications Support for RCC2
AF2867	CPM: Intraswitching and Dual RCC2 CP Support
AF4319	RCC2 Provisionable EISP
AF4326	Single RCC2 Warm Exit MTC and CALLP (CC)
AF4327	Single RCC2 Warm Exit MTC and CALLP (XPM)
AF4328	RCC2 Dual Warm Exit
AF4903	Real-Time Performance of MX73 and MX76
AG2798	CPM New Hardware Dependencies
AN0191	RSC-S NI-1 Host Compliance

BCS history

This feature package was created in BCS33.

BCS36-AF4903 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX145AA	Remote Switching Center
NTX269AA	Universal Tone Receiver (Domestic)
NTX270AA	New Peripheral Maintenance Package
NTX901AA	Local Features I
NTXR42AA	Firmware Downloading

AF4903

Feature name

Real-Time Performance of MX73 and MX76 Packs

Description

This feature provides maintenance personnel with real-time performance information about the NTMX73AA card (PCM signaling pack) and the NTMX76AA card (HDLC/DMSX messaging interface). The data will reflect real-time usage within each processor.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the NTMX73 card and the NTMX76AA card.

Restrictions and limitations

The NTMX73AA card is used only in the remote switching center-SONET (RSC-S), and therefore the NTMX73AA real-time performance is supported only for the domestic (compact remote cluster controller [RCC2]) and the international (remote switching center offshore 2 [RCO2]) peripherals.

Logs

Two data fields are added to logs PRFM200. These fields reflect the additional information concerning the NTMX73AA card and the NTMX76AA card. The logs are printed every 15 minutes, or as requested.

User interface

At the PMACT sub-level of the MAP (maintenance and administration position) a new line is inserted. This contains information relative to the NTMX73AA card and the NTMX76AA card.

This feature package restructures the Automated Alternate Billing Service (AABS) cross-processor code in preparation for the addition of Automated Directory Assistance Service (ADAS).

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXQ23AA contents

Feature number	Description
AF3011	AABS VSN XP Restructure
AF3012	ADAS VSN Simulator
AF3204	ADAS MTS Message Composer/Interpreter
AF3205	ADAS VSN XP
AF3206	ADAS TOPS XP
AN0327	ADAS APU Software Installation (Phase II)

BCS history

This feature package was created in BCS33.

BCS36-AN0327 added

Required feature packages

Required feature packages

Feature package number	Description
NTG310AA	EIU Peripheral Load for SuperNode OPC
NTX001AA	Common Basic
NTXA62AA	TOPS MP-DA Audio Response Call Handling
NTXF20AA	LMS on LPP
NTXH77AA	Channelized Access on LPP/LIS
NTXS31AA	Enhanced Service Resource Management

AN0327

Feature name

ADAS APU Software Installation (Phase II)

Description

This feature provides the ADAS-specific components for software installation on the application processor unit (APU).

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the provision of two cards: NTEX22BA (integrated processor and F-bus interface card) and NT9X14DB (24-Mbyte memory card). These cards together make up the APU, and occupy two slots of a link peripheral processor (LPP) cabinet.

The ADAS application uses an HP 9000-series 700 workstation as the operation, administration, and maintenance position.

Restrictions and limitations

Due to memory limitations, only one application can be installed on an APU.

Feature interactions

This feature interacts with the following features:

- AJ0839 Binary Elector
- AN0162 COVM APU Software Installation, Phase II
- AI0302 IWS Multinodal Interprocess Communication
- AR0142 SuperNode File Transfer, Phase II

This feature also modifies feature AN0069 (ADAS UNIX Loadbuild and Software Installation).

Datafill

Table	Description
SNIXAPPL	Value ADAS and subfields added to field APPLTYPE

Logs

This feature adds log USLG100. The log is generated if the specified system resource cannot be allocated.

This feature package provides base software for Advanced Intelligent Network (AIN) including table control for database queries, datafill to support AIN, an interface to the DMS service switching point (SSP) to access existing customized announcements, flexible routing of database queries, and basic trunk call processing.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXQ42AA contents

Feature number	Description
AR0219	AINSSP Base: Trigger Tables
AR0231	AIN Recorded Announcements Enhancement
AR0235	AINSSP: Basic Trunks Trigger Processing
AR0238	AINSSP: AIN AMA
AR0298	AINSSP: AFR Trigger Preparatory

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages

Feature package number	Description
NTX000AA	Bilge
NTX001AA	Common Basic
NTX167AB	CCS7-Trunk Signaling (replaces NTX167AA)
NTX270AA	New Peripheral Maintenance Package
NTX550AA	CCS7-Transaction Service Support
NTX941AA	CM Common
NTXA79AA	IBN Trunks with ISUP Signaling
NTXQ45AA	AIN Generic Messaging
NTXQ55AA	TCAP Monitor Enhancements
NTXR72AA	CCS7 MTP/SCCP for LPP-based Platforms

-continued-

Required feature packages (continued)

Feature package number	Description
Either	
NTX901AA	Local Features I
or	
NTX801AA	Toll Features I
Either	
NTXQ56AA	AIN Rel. 0.1 TCP/IP
or	
NTXQ43AA	AIN RO.1 SSP

End

Feature name

AINSSP Base: Trigger Tables

Description

This feature forms part of the base framework for Advanced Intelligent Network (AIN) architecture. It provides the table control for provisioning triggers and for trigger criteria. It also implements datafill and data query enhancements that are necessary to support AIN.

BCS history

This feature was created in BCS36.

Restrictions and limitations

Deletion of data from table TRIGGRP is allowed only when AIN is not active, and when the data is referenced in table TRIGGRP. However, if a call is referencing the data, the call may not trigger properly.

Changes to the data in table TRIGGRP are allowed only when AIN is not active, or during dump and restore.

Datafill

Table	Description
TRIGGRP	New table
TRIGDIG	New table
TRIGINFO	New table
DNFEAT	New table
LENFEAT	Fields AIN and AINGRP added
IBNFEAT	Fields AIN and AINGRP added
KSETFEAT	Fields AIN AINGRP and KEYLIST added
TRKGRP	Fields AIN and AINGRP added
CUSTSTN	Fields AIN and AINGRP added
DNROUTE	Value AIN added to FEATURE field. Fields DNTYPE, CUSTGRP, SUBGRP, LINEATTR, AINOPT, and NCOS added

The following six parameters are created for this feature:

- AIN_ACTIVE
- AIN_NUM_EXT_BLKS
- AIN_MAX_SERIAL_TRIGGERS
- AIN_T1_TIMER
- AIN_OFFICE_TRIGGRP
- TRIGDIG_NUM_DGLTR_POOLS

All of the above parameters are contained in table OFCENG.

Service orders

Service orders are enhanced to allow the subscription to AIN for the following users:

- POTS lines
- Meridian Digital Centrex (MDC) and Residential Enhanced Service (RES) lines
- Electronic business sets (EBS) and Meridian feature transparency (MFT) terminals

The AIN Directory Number (AINDN) option can also be activated through SERVORD on a directory number basis.

User interface

The query commands are enhanced to display the type of terminal that has subscribed to AIN. The corresponding AIN behavior is also displayed.

Feature name

AIN Recorded Announcements Enhancements

Description

This feature provides an interface into the existing customized announcements capability in a DMS service switching point (SSP). The interface indicates which announcement should be played, based upon the announcement identifier received.

BCS history

This feature was created in BCS36.

Restrictions and limitations

A maximum of 32 phrases can be pronounced upon receipt of a StrParameterBlock.

A maximum of 24 phrases can be composed by digits phrases.

Feature interactions

This feature interacts with feature AR0229 (AIN Base: Trigger Processing II) if collection of subsequent digits from a calling party is required.

This feature interacts with feature AR0229 and feature AR0374 (AINSSP: AIN Message Encoder/Decoder II) to report certain announcement failures to the off-board processor.

This feature interacts with feature AR0229 and feature AR0242 (AINSSP: AIN OM) to register an operation measurement on receipt of a system announcement identifier that is not datafilled within the SSP.

Datafill

Table	Description
AINANNS	New table

Operational measurements

Operational measurement INVCMDMG registers if the StrParameterBlock parameter contains a system announcement identifier that is not datafilled in table AINANNS.

AR0235

Feature name

AINSSP: Basic Trunks Trigger Processing II

Description

This feature aligns the DMS basic trunk call processing software with the advanced intelligent network (AIN) basic call models. In addition, the feature implements the AIN trigger detection points applicable to trunk facilities.

BCS history

This feature was created in BCS36.

Restrictions and limitations

All public facility trunk groups can subscribe to the shared interoffice trunk trigger, but only the intertoll trunk groups can trigger as a result of this trigger.

This feature does not support the processing of a call that is identified by the automatic number identification II (ANI-II) information as requiring AIN processing.

This feature does not support identification based upon the called digits received within the signaling.

Datafill

Table	Description
STDPRT	Selector SSP added

Feature name

AINSSP: AIN AMA

Description

Feature AR0238 provides Bellcore automatic message accounting (AMA) format (BAF) recording for Advanced Intelligent Network (AIN) release 0.1, as defined in Bellcore Technical Advisory, *Advanced Intelligent Network 0.1 Switching Systems Generic Requirements* (TA-NWT-001284, issue 1).

A service switching point (SSP) is a switch that can recognize a call that requires AIN processing by an off-board processor, such as a service control point (SCP), without making assumptions about the service being provided. The SSP produces BAF records for AIN calls as specified by the off-board processor and switch-based translations. The response message sent from the off-board processor may contain optional parameters that are used by the SSP billing function.

BCS history

This feature was created in BCS36.

Restrictions and limitations

Message Detail Recording (MDR) is not provided by this feature.

AIN billing and universal billing are mutually exclusive. Universal billing takes precedence.

Some switch-based features cause a module to be appended to the AMA record that is generated for a call during which the feature is active. With such a module appended, it is not possible to generate a corresponding AIN AMA record for any feature that is not supported for AIN.

Feature interactions

This feature interacts with existing switch-based billing features as follows:

- When a call triggers for the first time, any currently open AMA billing record is discarded. The off-board processor is responsible for sending AMA parameters to restart the billing record. Failure to do this results in loss of the switch-based AMA record for that call. If the call retranslates and becomes a billable call, then a switch-based record is started.
- When either the 3/6/10 Public Office Dial Plan (PODP) trigger or the terminating attempt trigger is met, then a new call leg is established. Any billing (switch-based or AIN) is closed and a new record is started, provided the off-board processor response indicates this. The internal registers that monitor the number of AMA parameters received are reset to initial values.

- Calls that produce terminating billing records will continue to produce these records, along with any AIN billing that occurs on the call.
- The Conference Trunk Usage and Call Forwarding AMA records continue to be produced in addition to the AIN record or switch-based record for interactions with Three-Way Calling and Call Forwarding.
- All AMA pretranslation information is discarded unless the call retranslates following an AIN query.
- If a Centrex line or trunk originates a call that requires a Station MDR (SMDR) call record based on the originating line or trunk group data or IBN translation datafill, the SMDR record will be generated whether or not the call is an AIN call. The SMDR call record generated is a result of the dialed digits. Any retranslation that results directly from an AIN response does not produce an additional SMDR record.

Datafill

Table	Description
AMAOPTS	Option UNANS_AIN added
BCCODES	Tuple AIN added

Operational measurements

Three new operational measurement (OM) registers are provided for tracking AIN AMA errors:

- AMAMAX is incremented whenever the maximum parameter count per AMA record is exceeded.
- AMASLPID is incremented whenever any AMA parameters arrive at the SSP before an AMAslpID parameter.
- AMACONV is incremented whenever any AMA parameters are received in a conversation package.

Automatic message accounting

This feature implements the following functionality:

- AIN Call Completion Structure Code 0220
- AIN Call Termination Structure Code 0221
- Translation Settable Module Code 030
- Service Logic Program Identification Module 039
- Digits Module 040
- Account Code Module 103
- AIN Default Call Type 047
- AIN Default Service Feature 027

Feature name

AINSSP: AFR Trigger Preparatory

Description

This feature provides the automatic flexible routing (AFR) trigger, which initiates a database query when all routes in the routing list of a call are unavailable.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature applies to SuperNode switches only.

This feature supports subscription of triggers for the following line types only:

- POTS individual flat rate, residence (1FR)
- POTS individual message rate, residence (1MR)
- Residential Enhanced Services lines (RES)
- Private branch exchange rate (PBX)
- Private branch exchange message rate (PBM)
- Integrated Business Network (IBN)
- Electronic business set (EBS)

This feature supports subscription of triggers for the following trunk types only:

- Incoming end office (T1)
- Two-way end office (T2)
- Intertoll (IT)
- Integrated Business Network (IBNT1, IBNT2)
- Primary rate interface

Triggering at the AFR trigger detection point (TDP) will not occur if the originating agent is not a supported Advanced Intelligent Network (AIN) agent.

This feature package supplies software to create an Advanced Intelligent Network (AIN) environment by providing trigger detection points in the call processing architecture of the service switching point (SSP). Trigger detection points enable the operating company to create and modify services for subscribers. The feature package also provides enhanced translation verification to cover AIN-specific information in an AIN office.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXQ43AA contents

Feature number	Description
AR0220	AINSSP: TDPS and TRIGGERS I
AR0229	AINSSP Base: Trigger Processing II
AR0449	AINSSP Base: AIN TRAVER

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages

Feature package number	Description
NTX901AA	Local Features I
NTX941AA	CM Common
NTXQ42AA	AIN Base
Either NTXQ45AA or NTXQ56AA or NTXS71AA	 AIN Generic Messaging AIN REL > 0.1 TCP/IP TCAP/TCP Handler

AR0220

Feature name

AINSSP: TDPS and TRIGGERS I

Description

This feature will enable the Advanced Intelligent Network (AIN) Release 0.1 Call Processing services on a Service Switching Point (SSP). This is achieved by allowing the Operating Company to assign triggers on an office wide basis or on an individual Directory Number (DN) or group subscription basis.

BCS history

This feature was created in BCS36.

Feature name

AINSSP Base: Trigger Processing II

Description

Advanced Intelligent Network (AIN) provides operating companies with the capability of creating and modifying telecommunications service for subscribers. This is accomplished by providing trigger detection points (TDP) in the call processing architecture of the service switching point (SSP), where the call is suspended until direction is given by a service control point (SCP), or a database or processor capable of sending AIN version 0.1 messages to the SSP (adjunct).

This feature introduces the following activities:

- accumulation of the information required to communicate with, and query, the SCP or adjunct
- interpretation of messages from the SCP or adjunct, and implementation of appropriate call processing actions

BCS history

This feature was created in BCS36.

Restrictions and limitations

The DMS system supports only the following values when populating the userID parameter in query messages:

- IMPLICIT DN
- IMPLICIT Trunk Group ID
- IMPLICIT Private Facility GID

Local access and transport area (LATA) is not supported in the following situations:

- Non-equal-access end offices
- private facilities making private calls
- incoming trunks

Since there is no means of triggering in these situations, the DMS system, when populating the called party ID parameter, does not support the following values for the NATURE OF NUMBER field:

- a 950+ call from a local exchange carrier public station, a hotel or motel line, or a non-equal-access end office (EAEO)
- test line test code

The access code parameter is not supported for feature access codes.

The charge party station type is supported, subject to the following restrictions:

- the appropriate DMS packages must be available
- values for ISUP and MF are supported only if they are also supported by the relevant DMS system protocols
- AIN01 value is not supported for originating line facilities

The primary carrier parameter is applicable only to equal access offices.

Since feature interactions with public features are not allowed, the vertical service code parameter is not supported for SSPs.

The travelling class mark (TCM) parameter is subject to the following restrictions:

- it will not be built as part of the termination attempt query message
- the parameter will not be provided if the originating access is from an SS7 trunk and the type of digits is specified as “private network TCM”

Datafill

Table	Description
TMTCNTL	Treatment types AIND and AINF added
TMTMAP	Treatment types AIND and AINF added

The following new office parameters have been added to table OFCENG:

- AIN_NUM_EXT_BLKS
- AIN_NUM_PROCESSING_EXT_BLKS

The following office parameters in table OFCENG have been changed:

- NO_OF_HIS_DATA_BLKS
- NO_OF_HIS_CONTROL_BLKS
- NO_OF_FTR_XLA_BLKS
- NUM_RC_EXT_BLKS

Operational measurements

This feature creates the following operational measurement (OM) fields in the TRMTFR2 OM group:

- TFRAIND. This measures the number of calls that are disconnected due to a request from the SCP or adjunct
- TFRAINF. This measures the call failures due to fatal call-related errors

Feature name

AINSSP Base: AIN TRAVER

Description

This feature enhances translation verification (TRAVER) to cover advanced intelligent network (AIN)-specific information in an AIN office. The feature covers AIN version 0.1.

BCS history

This feature was created in BCS36.

Restrictions and limitations

With the implementation of this feature, TRAVER supports the following agents:

- POTS lines
- Integrated Business Network (IBN) lines
- Residential Enhanced Services (RES) lines
- electronic business set (EBS) lines
- T1 and T2 trunks
- intertoll trunks
- IBN incoming end-office trunk group (IBNTI) and IBN two-way end-office trunk group (IBNT2) trunks
- primary rate interface (PRI) trunks

The following limitations also apply:

- TRAVER does not provide the capability of reading a series of calling and called party number combinations from a file.
- The network busy trigger detection point (TDP) criterion is not fully supported by TRAVER. TRAVER simply displays a message to indicate that if the network were busy, then a trigger would occur.
- TRAVER does not support virtual directory numbers (DN) as originating agents.
- TRAVER does not check if a vertical service code (VSC) is used with the “continue” response.
- If a call originates from a primary rate access trunk and is routed over the public network, the customer group information concerning the originator is still displayed, even if it is not relevant to the call. This also happens if a 9+ call is dialed from an IBN agent.

User interface

TRAVER is enhanced to display the following AIN trigger data tables:

- TRIGGRP
- TRIGDIG
- TRIGINFO
- TRIGESC

The following AIN subscription tables are also displayed:

- subscription on a line basis
  - LENFEAT
  - IBNFEA T
  - KSETFEA T
  - DNFEA T
  - TRKGRP
- subscription on a group basis
  - CUSTSTN
- subscription on an office basis
  - OFCV AR

NTXQ44AA

AIN Test Tools

This feature package supplies Advanced Intelligent Network (AIN) test tools to send queries to and receive responses from off-board processors such as a service control point.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXQ44AA contents	
Feature number	**Description**
AR0239	AINSSP Tool: Test Queries - I

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX901AA	Local Features I
NTX941AA	CM Common
NTXQ42AA	AIN Base
NTXQ45AA	AIN Generic Messaging

AR0239

Feature name

AINSSP Tool: Test Queries - I

Description

This feature provides the capability of sending advanced intelligent network (AIN) version 0.1 test queries to the off board processor (OBP), such as a service control point (SCP), and receiving responses. The OBP cannot distinguish these queries from normal AIN version 0.1 queries. The functionality is provided by means of the TSTQUERY test tool.

BCS history

This feature was created in BCS36.

Restrictions and limitations

If a message containing an automatic code gap (ACG) installation is received, TSTQUERY displays it, but does not handle the actual installation.

The response time measurement function is not provided.

Caller-abandoned messages are not sent automatically by TSTQUERY.

Automatic Message Accounting (AMA) data will not be generated as a result of TSTQUERY activity.

Feature interactions

This feature uses the following features from the AIN generic message handler in order to interface with the OBP:

- AD4443 Enhancements for Conversational Messaging
- AD4446 Generic RDB Interface Package
- AR0226 AINSSP: Message Encoder/Decoder I

Logs

Each time a message is sent or received by TSTQUERY a report is generated for the AIN log.

User interface

When TSTQUERY is started, the user is provided with a menu of commands to perform the required tasks. No parameters are required for TSTQUERY.

NTXQ48AA

SCP-CBIS SMS Interface

This feature package provides an interface for the Advanced Intelligent Network (AIN) message handler to enable the transaction ID management and timing facility, verify the INVOKE ID utility, and enhance the transaction capabilities application part (TCAP) monitor to increase the maximum number of transaction ideas allowed.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXQ48AA contents	
Feature number	**Description**
AD4443	RDB Enhancements for Conversational Messaging
AR0374	AINSSP: Message Encoder/Decoder II

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXQ45AA	AIN Generic Messaging
NTXQ55AA	TCAP Monitor Enhancements
NTXR72AA	CCS7 MTP/SCCP for LPP-based Platforms

AD4443

Feature name

RDB Enhancements for Conversational Messaging

Description

This feature provides the transaction ID management and timing facility for the advanced intelligent network (AIN) message handler. It also verifies that the INVOKE ID management works correctly for the AIN application.

This feature enhances the transaction capability application part (TCAP) monitor to increase the maximum number of transaction IDs allowed. In addition, a new TCAP subsystem, designated AIN, is created for the AIN application.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature does not remove the COLD or RELOAD restart requirement whenever table TCAPTRID is modified.

The maximum allowable number of transaction IDs for each switch is 32 000 only if package NTXY97AA (TCAPTRID expansion) is in the DMS switch. If this package is not in the switch, the maximum allowable number of transaction IDs remains at the previous figure of 820.

If package NTXY97AA is in the switch, the total number of transaction IDs datafilled in table TCAPTRID cannot exceed the number specified by office parameter MAX_NO_OF_TRANS_ID.

The maximum number of transaction IDs over all applications is 32 000. Each transaction ID has an associated 50 word data store requirement. It is the responsibility of each application to decide the number of transaction IDs required.

Feature interactions

This feature requires features AD4446 (Generic RDB Interface Package) and AR0227 (AINSSP Base: Message Handler) in order to operate fully.

Datafill

Table	Description
TCAPTRID	Value AIN added to Ffield TCAPAPPL
C7LOCSSN	Value AIN added to field SSNAME
C7NETSSN	Value AIN added to subfield SSNAME

This feature also adds optional office parameter MAX_NO_OF_TRANS_ID to indicate the maximum number of transaction IDs allowed. With this parameter installed in the switch, the default maximum number of transaction IDs for the AIN feature is 4096.

AR0374

Feature name

AINSSP: Message Encoder/Decoder II

Description

This feature provides the application protocol interface between the service switching point and an off-board processor. The service control point (SCP) with associated unit (adjunct), if required, is a typical example of an off-board processor. This feature provides application layer messages to be sent to the SCP/adjunct and decodes responses received from the SCP/adjunct.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature differs from Bellcore technical requirement TR-NWT-001284, *Advanced Intelligent Network (AIN) 0.1 Switching Systems Generic Requirements* and from Bellcore technical requirement TR-NWT-001285, *Advanced Intelligent Network (AIN) 0.1 Switch-Service Control Point (SCP) Application Protocol Interface Generic Requirements* in the following areas:

- Parameter Display_Text in message Authorize_Term is not decoded
- The following parameters are partially encoded or decoded
  - UserID (the sub-parameter sequence of Spid and Dn is not handled)
  - Failed_Message (only parameter ID is sent in Failed_Message for erroneous data value application error)
- Missing mandatory protocol error is detected after the detaction of all application errors
- Missing mandatory protocol error is reported using a different problem code or incorrect parameter protocol
- SendToResource message, when received in a conversation package, with parameter ResourceType set to Play Announcements Collect Digits, and DisconnectFlag present, is treated as a non-fatal error.

Feature interactions

This feature provides the encoding and decoding capabilities for the complete AIN release 0.1 message set, as defined in TR-NWT-001285. However, features that interact with this feature, and are responsible for processing these messages, do not handle the complete message set.

The following lists the other features that interact with this feature, and the messages that are processed by them:

- AR0229 AINSSP Base Trigger Processor. This feature is responsible for processing both query and response messages. It does not handle any of the non-call-related messages
- AR0239 AINSSP Tool: Test Queries I. This feature does not process the following SCP originated messages and their associated responses:

  SCP - Monitor_For_Change

  SCP - Update_Request

  SSP - Monitor_Success

  SSP - Status_Reported

  SSP - Update_Data

This feature package forms part of the base framework for advanced intelligent network (AIN) architecture by supporting datafill and data queries for AIN.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXQ50AA contents

Feature number	Description
AR0219	AINSSP Base: Trigger Tables
AR0228	AINSSP: Feature Interactions with AIN

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages

Feature package number	Description
NTX901AA	Local Features I
NTX941AA	CM Common
NTXQ42AA	AIN Base

AR0219

Feature name

AINSSP Base: Trigger Tables

Description

This feature forms part of the base framework for Advanced Intelligent Network (AIN) architecture. It provides the table control for provisioning triggers and for trigger criteria. It also implements datafill and data query enhancements that are necessary to support AIN.

BCS history

This feature was created in BCS36.

Restrictions and limitations

Deletion of data from table TRIGGRP is allowed only when AIN is not active, and when the data is referenced in table TRIGGRP. However, if a call is referencing the data, the call may not trigger properly.

Changes to the data in table TRIGGRP are allowed only when AIN is not active, or during dump and restore.

Datafill

Table	Description
TRIGGRP	New table
TRIGDIG	New table
TRIGINFO	New table
DNFEAT	New table
LENFEAT	Fields AIN and AINGRP added
IBNFEAT	Fields AIN and AINGRP added
KSETFEAT	Fields AIN AINGRP and KEYLIST added
TRKGRP	Fields AIN and AINGRP added
CUSTSTN	Fields AIN and AINGRP added
DNROUTE	Value AIN added to FEATURE field. Fields DNTYPE, CUSTGRP, SUBGRP, LINEATTR, AINOPT, and NCOS added

The following six parameters are created for this feature:

- AIN_ACTIVE
- AIN_NUM_EXT_BLKS
- AIN_MAX_SERIAL_TRIGGERS
- AIN_T1_TIMER
- AIN_OFFICE_TRIGGRP
- TRIGDIG_NUM_DGLTR_POOLS

All of the above parameters are contained in table OFCENG.

Service orders

Service orders are enhanced to allow the subscription to AIN for the following users:

- POTS lines
- Meridian Digital Centrex (MDC) and Residential Enhanced Service (RES) lines
- Electronic business sets (EBS) and Meridian feature transparency (MFT) terminals

The AIN Directory Number (AINDN) option can also be activated through SERVORD on a directory number basis.

User interface

The query commands are enhanced to display the type of terminal that has subscribed to AIN. The corresponding AIN behavior is also displayed.

AR0228

Feature name

AINSSP: AIN Feature Interactions - I

Description

This feature provides interworking between selected features and the Advanced Intelligent Network (AIN) version 0.1 call model, in accordance with the specifications contained in Bellcore technical requirement TR-NWT-001284, *Advanced Intelligent Network (AIN) 0.1 Switching Systems Generic Requirements.*

BCS history

This feature was created in BCS36.

Restrictions and limitations

AIN distinctive ringing is supported only on peripherals using coded ringing.

One of the enhanced call waiting packages NTX807AA, NTX807AB, NTX824AA, or NTX824AB must be present in the office in order to use enhanced call waiting tones.

It is recommended that parameter CallingPartyID always be sent as a 10-digit number to ensure the correct interaction with custom local area signaling service (CLASS) and simplified message desk interface (SMDI) features.

It is recommended that parameter RedirectingPartyID always be sent as a 10-digit number to ensure the correct interaction with SMDI features..

If a call involves a number of switch-based and AIN redirections, other than call forwarding, the order of redirections is not, at present, being tracked. In this situation the forwarding directory number and the type of call forwarding sent to to the SMDI link may not be correct.

When originating a 911 call, subscribed originating triggers at the information collected trigger detection point (TDP) in the originating office will take precedence over 911 features, unless 911 is dialed as an escape code.

Feature interactions

This feature provides interworking between a number of features and the AIN call model.

This feature package supports the following processes:

- define and create the virtual network services (VNS) databases for the service control point (SCP), Virtual Communication Network (VCN), or Virtual Private Network (VPN), as appropriate, based upon the market-specific requirements
- provide an interface to the transactional record management system (TRMS) layer
- allocate the storage resources required for the processing of VNS query or update transactions

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXQ54AA contents	
Feature number	**Description**
AR0327	SCP VNS Database Create and Access

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXN21AB	DMS-SCP Base
NTXQ47AA	SCP Generic Base Interface

Feature name

SCP VNS Database Create and Access

Description

This feature supports the following processes:

- define and create the virtual network services (VNS) databases for the service control point (SCP), Virtual Communication Network (VCN), or Virtual Private Network (VPN), as appropriate, based upon the market-specific requirements
- provide an interface to the transactional record management system (TRMS) layer
- allocate the storage resources required for the processing of VNS query or update transactions

BCS history

This feature was created in BCS36.

Feature interactions

This feature is invoked by the following features:

- AR0400 VNS Service Query Processing
- AR0339 SCP Database Audit

NTXQ54AB

SCP Application Framework

This feature package enhances the service application framework layer of the service control point (SCP) in the following ways:

- enables the service management system to audit a service control point database using database management retrieve requests
- provides a command interface to capture and display SCP transaction control blocks during query processing
- provides four additional flexible service logic building block types
- implements enhancements to the SCP database tools
- improves the robustness and performance of query and update processing

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXQ54AB contents	
Feature number	**Description**
AQ1092	SCP/SMS Audit Efficiency
AR0326	TCB Dump Utility
AR0406	Additional FSL Building Blocks
AR0577	SCPII Database Tools
AR0704	SAF Phase II

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXN21AB	DMS-SCP Base
NTXQ47AA	SCP Generic Base Interface

AQ1092

Feature name

SCP/SMS Audit Efficiency

Description

This feature enables the service management system (SMS) to audit a service control point (SCP) database using database management retrieve requests without having to process response files. The SMS can use the last key retrieved in the retrieve response to determine the next key to be issued for the next retrieve request of an audit.

BCS history

This feature was created in SCP02.

Feature interactions

This feature enhances feature AL2093 (SCPII Update Batch Handling).

AR0326

Feature name

TCB Dump Utility

Description

Transaction control blocks (TCB) are data blocks that are used to store query information for the second generation service control point (SCP) node during query processing. This feature provides a command interface to capture and display SCP TCBs during query processing.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature is available to only one user at a time for each node.

This feature has a pre-determined store limit of 500 TCBs.

User interface

This feature introduces a new command interface, TCBCI. TCBCI provides access to a series of subcommands that control the operation of the utility.

AR0406

Feature name

Additional FSL Building Blocks

Description

This feature enhances the service application framework layer of the service control point (SCP) by providing four additional flexible service logic (FSL) building block types.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature does not provide update processing validation on the new FSL building blocks.

Feature name

SCPII Database Tools

Description

This feature implements enhancements to the following service control point (SCP) database tools:

- AFRECMAN
- TRMSDBREQ
- UPDBREQ

BCS history

This feature was created in BCS36.

Feature interactions

This feature enhances feature AQ0944 (SCPII GIN Building Blocks - Query Processing).

User interface

In directory AFRECMAN, ten commands have been changed. A HELP command has also been added.

In directory TRMSDBQ, five commands have been changed. A HELP command has also been added.

AR0704

Feature name

SAF Phase II

Description

This feature provides a number of enhancements to the service control point (SCP) application framework (SAF) layer code to improve the robustness and performance of query and update processing.

BCS history

This feature was created in BCS36.

Feature interactions

This feature interacts with the database audit in order to provide faster identification of a corrupt record.

This package modifies the Advanced Intelligent Network (AIN) Release 0.1 test query, trigger processing and trigger tables to support interaction with the Transmission Control Protocol/ Internet Protocol (TCP/IP) transport protocol.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXQ56AA contents	
Feature number	**Description**
AR0422	AINSSP: release 0.1 on the TCP/IP Transport Protocol

BCS history

This feature package was created in BCS36.

Required feature packages	
Feature package number	**Description**
NTXF05AA	Ethernet Interface UnitNTX
NTXF19AA	TCP/IP Protocols
NTXQ42AA	AIN Base
NTXQ45AA	AIN Generic Messaging
NTXQ48AA	SCP - CBIS SMS Interface
NTXS71AA	TCAP/TCP Handler
or NTXQ43AA	AIN R0.1 SSp
NTX167AB	CCS7 - Trunk Signalling
NTX901AA	Local Features I
or NTX801AA	Toll Features I
NTXQ56AA	AIN REL 0.1 TCP/IP
and NTX801AA	Toll Features I
NTX040AA	Common Channel Interoffice Signalling

AR0422

Feature name

AINSSP: Release 0.1 on the TCP/IP Transport Protocol

Description

This feature modifies the Advanced Intelligent Network (AIN) Release 0.1 test query, trigger processing and trigger tables to support interaction with the Transmission Control Protocol/ Internet Protocol (TCP/IP) transport protocol.

BCS history

This feature was created in BCS36.

Restrictions and limitations

One socket address per application is allowed. A hot standby link is not supported for TCP/IP transports.

Feature interactions

The Test Query command for AIN Release 0.1 is updated to include the option to route messages over the Ethernet network. Please refer to feature AR0239, ‘‘AINSSP TOOL: Test Queries - I”.

The relationship between application/instance and TCP/IP socket address is datafilled internally via a CI command. This CI command is expanded fully in feature AR0521, ‘‘TCAP Over Ethernet”.

Datafill

Table	Description
TRIGDIG	changes to table
TRIGINFO	changes to table

The transport field in table TRIGINFO is changed by this feature. For the TCPIP selector, a subfield INSTANCE representing the instance number of the TCP application is added. The application name and instance number are mapped internally to the TCP/IP socket address of an application service provider (ASP) in an off-board processor.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXR21AA contents	
Feature number	**Description**
AF4680	EADAS Hardware Inventory Freeze-Part II
NC0390	EADAS Hardware Inventory

BCS history

This feature package was created in BCS35.

BCS36-AF4680 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX001AA	Common Basic
NTX218AA	1A/1B EADAS Interface
NTX273AA	Multi - Protocol Controller BX.25

AF4680

Feature name

EADAS Hardware Inventory Freeze-Part II

Description

This feature modifies several peripheral inventory tables adding a new field to hold an administrative number. The table modified are LMINV, DLMINV, RCTINV, IPEINV, LTCINV, LCMINV, RCSINV, RCUINV, LDTINV AND RDTINV.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The value of the ADNUM field must be unique across all of the peripheral inventory tables. Attempts to add a PM with an ADNUM already in use are rejected. The craftperson will see one message indicating the selected ADNUM is already in use and another message giving the next available ADNUM value.

The ADNUM field in inventory tables may not be changes if Operational Measurement (OM) counts for the PM are included in an EADAS/DC section associated with RLCDIS or RSCIS. Attempts to do so will result in a message indicating that the PM has active counts against it in an EADAS/DC section.

Datafill

Table	Description
RCCINV	A new field is added

A new field, ADNUM, is added to table RCCINV. This field holds the administrative number associated with a given PM.

Logs

OMPRnnn logs are generated as defined in the OM scheduling system. OM scheduling to the log system and the distribution for the log output are defined by a craftperson. OMPRnnn logs that contain OM groups RLCDIS or RSCIS will now use the AADNUM value of the PM as identifiers for the tuples within these groups. These ADNUM values are associated with the PM when datafilled in the peripheral inventory tables.

User interface

The EADAS/DC CI commands EADASKEY and EADASFMT are altered to accept ADNUM values for the record id when an EADAS/DC section is associated with OM groups RLCDIS or RSCIS.

Operational measurements

The ADNUM value will be used as the new key for indexing into OM data for OM groups RLCDIS and RSCIS.

NTXR49AA

Dialable Wideband Service PRI

This feature package provides user-controllable access to bandwidths ranging from 128 kbyte/s through 1.5 Mbyte/s over an ISDN PRI loop.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXR49AA contents	
Feature number	**Description**
AD3936	DMS-100 WSS Call Processing Phase I
AD3937	DMS-100 WSS Billing, TC, OMs, and Logs
AD3938	DMS-100 WSS Maintenance and Messages
AD4433	LEC WSS ISUP to PRI Interworking
AD4449	LEC WSS PRI
AD4735	LEC DWS FGD ISUP to PRI

BCS history

This feature package was created in BCS35.

BCS36-AD4735 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX790AC	ISDN-Primary Rate Access Base
NTXE01AA	Enhanced Network-Basic
NTXS08AA	Enhanced Time Switch
NTXS25AA	DWS Base
NTXS26AA	DWS PRI Base

AD4735

Feature name

LEC DWS FGD ISUP to PRI

Description

This feature provides feature group D (FGD) ISDN user part (ISUP) trunk interworking with North American primary rate interface (PRI) trunks for dialable wideband services.

BCS history

This feature was created in BCS36.

Hardware requirements

The enhanced network (ENET) is required to provide constant delay among all the wideband DS-0 channels across the switching network.

The digital trunk controller (DTC) must be equipped with the NTAX78AA card (digital cellular timeswitch card). This provides a constant delay across the ISDN digital trunk controller (DTCI).

DTCI frame NT6X01AB (ISDN common peripheral controller equipment frame) is required for the CCS7 digital trunk controller (DTC7).

A 6X50AB card (DS-1 EFF card), rev. 67 or greater, is required.

Feature interactions

This feature interacts with the following features:

- AD4732 LEC DWS FGD ISUP
- AD4449 LEC WSS PRI

NTXR50AA

QMS External Management Information System Interface

This feature package provides an interface between the TOPS Queue Management System (QMS) Automatic Call Distribution (ACD) and an external vendor.

This feature package applies to DMS SuperNode offices.

Feature package contents

Feature package NTXR50AA contents	
Feature number	**Description**
AF2964	QMS: MIS Interface

BCS history

This feature package was created in BCS34.

BCS36-AF2964 changed

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXR48AA	QMS: Call and Agent Manager

AF2964

Feature name

QMS: MIS Interface

Description

AF2964 provides an interface between the TOPS queue management system (QMS) Automatic Call Distribution (ACD) and an external vendor. This feature provides data to vendors with a management information system (MIS) that can monitor individual operator and queue performance. The DMS sends the pertinent event information continuously over X.25 data links to the external MIS, which manages the calculations, format, and display of the reports.

BCS history

This feature was created in BCS34.

BCS36 Changed

Hardware requirements

This feature requires an NT1X89AB card (extended multiprotocol controller (EMPC)).

Restrictions and limitations

When a buffer is ready to be transmitted and no EMPC links are in service, then the contents of the buffer are discarded, and all the messages in the buffer are lost.

On occasions when the DMS time of day (TOD) is changed forward or backward, the report boundary time is realigned to follow the new TOD.

Feature interactions

This feature requires the following features:

- AF2783-QMS: Call and Agent Manager
- AF2875-QMS: Call Queue Assignment
- AF2965-QMS: Basic MIS Stats

In a TOPS stand-alone environment, the following feature is also required:

- AF2876-QMS: Stand-alone Call Processing Changes

In a TOPS operator centralization *host* environment, the following feature is also required:

- AF2877-QMS: Host Call Processing Changes

In a TOPS operator centralization *remote* environment, the following feature is also required:

- AF2878-QMS: Remote Call Processing Changes

Datafill

Table	Description
QMSMIS	Table added to datafill the links used by the QMS MIS application
TQMISOPT	Table added to datafill office parameters used by the QMS MIS

This feature adds office parameter TQMS_MIS_MPC_BUFFS to table OFCENG as a tuple for the QMS MIS interface.

This feature increases data store by a maximum of 135 Kbytes and increases program store by a maximum of 28 Kbytes.

Operational measurements

This feature adds operational measurements (OM) group QMSMIS to measure message activity for the QMS MIS interface.

These counts include

- the number of messages (for both position events and call queue events) generated by the TOPS QMS
- the number of message buffers sent successfully to the FM vendor
- the number of message buffers that the DMS failed to send

The following registers are used to peg these counts: POSMSG, POSMSG2,QMSG, QMSG2, BUFFSX, BUFFSX2, and BUFFAIL.

Logs

This feature adds log QMIS100, which is generated each time an MPC data link fails to transmit a TOPS QMS MIS buffer.

This feature also adds logs MIST100-104. These are debugging logs that are turned on by means of a datafillable office parameter, TQMS_MIS_TEST_LOGS, in table OFCENG.

This feature modifies log EXT107 and log EXT108.

Log EXT107 is generated each time the TOPS_QMS_MIS_MAJOR alarm or the TOPS_QMS_MIS_MINOR alarm goes on or off.

Log EXT108 is generated each time any of the following critical alarms go on or off: TOPS_QMS_MIS_CRITICAL, TOPS_QMS_MIS_PROCESS, or TOPS_QMS_MIS_BUFFS.

User interface

The system does not restart the MPC child process; this process can be restarted by issuing command REVIVE from the MPC MAP level.

This package allows Stuttered Dialtone MWI to work with such devices as autodialler.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXR62AA contents	
Feature number	**Description**
AN0303	Variable Stuttered Dialtone

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXC07AF	Smart Management Series 30 (CND)
NTXC08AF	Smart Management Series 30 (CND)
NTXC41AD	DMS-100 BCS36 S/W Load for SN20
NTXC43AD	DMS-100 BCS36 S/W Load for SN30
NTXC45AD	DMS-100 BCS36 S/W Load for SN40
NTXC48AB	DMS-100/200 BCS36 S/W Load for SN20
NTXC49AB	DMS-100/200 BCS36 S/W Load for SN30
NTXC50AB	DMS-100/200 BCS36 S/W Load for SN40
NTXC57AB	DMS-100 S/W Load for SNSE Series 20
NTXC58AB	DMS-100/200 S/W Load for SNSE Series 20
NTXC63AB	Smart Management SNSE Series 20

AN0303

Feature name

Variable Stuttered Dialtone

Description

This optional feature will allow the time the subscriber hears Stuttered Dailtone (STD) for Message Waiting (MWT) to be set in one second intervals from 1 to 7 seconds on a switch wide basis. After the interval has elapsed, the subscriber hears normal continuous dialtone. Presently, the subscriber with Stuttered Dialtone as their Message Waiting Indication (MWI) upon going offhook hears Stuttered Dialtone continuously if a message is queued until digits are entered. Some devices such as autodiallers expect continuous dialtone before outpulsing digits. This feature allows Stuttered Dialtone MWI to work with these devices. The default value will be set to 0 which will indicate that Stuttered Dialtone will be continuous until the subscriber inputs digits.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature applies only to lines with STD as their MWI. This feature does not effect lines with a lamp as their MWT.

Lines that do not have a UTR (universal Tone Receiver) available for digit reception may exhibit a perceptible dialtone start time under traffic. Due to the different messages that are used for UTRs and receivers, this is unavoidable. Worse case will be remotes not serviced by UTRS.

A possible race condition exists when the value VARIABLE_STUTTER_DIALTONE_TIMING is changed from a non zero value to zero. If a line that is not services by a UTR happens to be in the set up stage for stutter dialtone when the value is changes to zero, a default value of 2 seconds of stutter dialtone will be given for the particular line(s) only for this origination. Upon the next origination if a message is queued, continuous stutter dialtone will be presented if VARIABLE_STUTTER_DIALTONE_TIMING is still zero.

Lines that are in progress of receiving stutter dialtone when this value is updated will use the old value until the next origination.

This feature does not work with ground start lines.

Feature interactions

This feature interacts with MWT. When the feature is active, lines with MWT and STD as their MWI will receive stuttered dialtone for the number

of seconds datafilled in office parameter VARIABLE_STUTTER_DIALTONE_TIMING in table OFCVAR.

Datafill

Table	Description
OFCVAR	A new tuple is added

The range of values will be 0 to 7 with 0 as the default. This is the number of seconds lines with STD as the MWI will hear stuttered dailtone before normal dialtone is heard. A value of 0 indicates continuous stuttered dialtone with no change to normal dialtone.

This feature package provides increased capacity for the E911 selective routing database (SRDB).

This feature package applies to DMS-100 offices.

This package does not replace package NTX451AA (E-911 Database). The two packages are mutually exclusive. Package NTX451AA limits table E911SRDB to 800 000 tuples, and should be used for smaller selective routing database needs.

Feature package contents

Feature package NTXR63AA contents

Feature number	Description
AN0102	SRDB Capacity Enhancements

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages

Feature package number	Description
NTX000AA	Bilge
NTX001AA	Common Basic
NTX100AA	Integrated Business Networks-Basic (IBN)
NTX270AA	New Peripheral Maintenance Package
NTX877AB	Interface to Non-Data-Link Console (upgrade of NTX877AA)
NTX901AA	Local Features I
Either NTX007AA or NTX007AB	PBX Interface I (replaced by NTX008AB) PBX Interface I (upgrade of NTX008AA)
Either NTXF61AA or NTXF61AB	DMS Integrated E911 PSAP Functionality DMS Integrated E911 PSAP Functionality (replaces NTXF61AA)

AN0102

Feature name

SRDB Capacity Enhancements

Description

This feature provides capacity enhancements for the E911 selective routing database (SRDB).

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature applies only to the SuperNode switch.

The number of tuples in table E911SRDB is now limited by the amount of data store available on the E911 tandem switch.

There is a limit of 16 serving numbering plan areas.

There is a limit of 4 numbering plan digits.

Feature interactions

This feature interacts with the E911 aspects of the following feature packages:

- NTX447AA E911 Tandem
- NTXF61AA E911 ACD PSAP Integration
- NTXP58AA VFG Support for E911
- NTXQ18AA E911 Memory Management
- NTXN60AA Dial Up into ALI Database for SRDB Update

Datafill

The tuple limit on table E911SRDB is removed by this feature. The table limit is now restricted only by the amount of data store available on the E911 tandem switch.

User interface

The communications interface command QSRDB is changed to allow the new limit on table E911SRDB to be set.

NTXR66AA

DWS Access to Carrier (Access Tandem)

This feature package provides wideband call processing for access to carrier (ATC) trunks on DMS-100 and DMS-200 switches, using feature group D (FGD) ISDN user part (ISUP) signaling.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXR66AA contents	
Feature number	**Description**
AD4732	LEC DWS FGD ISUP

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX142AA	DS-1 64 kbps Clear
NTX167AB	CCS7-Trunk Signaling (upgrade of NTX167AA)
NTXE01AA	Enhanced Network-Basic
NTXS08AA	Enhanced Time Switch
NTXS09AA	Dialable Wideband Service SS7 Trks
NTXS25AA	DWS Base
Either NTX041AB or NTXR72AA	 CCS7-MTP/SCCP CCSY MTP/SCCP for LPP-based Platforms
Either NTXE13AB or NTXE14AB	 CCS7 ISUP Inter-LATA Connection EAEO CCSY ISUP Inter-LATA Connection Access Tandem

AD4732

Feature name

LEC DWS FGD ISUP

Description

This feature provides local exchange carrier (LEC) wideband call processing for access to carrier (ATC) trunks on DMS-100 and DMS-200 switches, using feature group D (FGD) ISDN user part (ISUP) signaling.

BCS history

This feature was created in BCS36.

Hardware requirements

The enhanced network (ENET) is required to provide constant delay among all the wideband DS-0 channels across the switching network.

The digital trunk controller (DTC) must be equipped with the NTAX78AA card (digital cellular time switch card). This provides a constant delay across the digital trunk controller (DTC).

XPM peripheral life upgrade strategy (XPM PLUS) is recommended to run on the CCS7 digital trunk controller (DTC7).

Since ENET is only available on SuperNode, this feature is only applicable to a SuperNode switch.

Restrictions and limitations

If an ISUP initial address message (IAM) with wideband indicators is received on a non-wideband ATC ISUP-FGD agency, the call will receive BC_NOT_IMPLEMENTED treatment.

If an originating wideband call is translated so as to attempt to terminate on a non-wideband trunk group, then the call will route advance until a wideband trunk group is reached.

Each wideband call requires two extension blocks.

Wideband test calls, continuity testing, off-hook and on-hook queuing, abbreviated dialing, and speed calling are not supported by this feature.

Feature interactions

In order to function properly, this feature requires the following features:

- AD4735 LEC DWS FGD ISUP to PRI
- AD4749 IEC DWS FGD ISUP

This feature also uses logs created by the following features:

- AJ2864 Switched Wideband on the ASGW (WB log 105)
- AD4751 DWS Trunk Audit (WB logs 106 and 107)

This feature is also dependent upon the glare recovery implementation of feature AD3318 (Wideband Trunk Datafill and Maintenance).

Datafill

Table	Description
TRKGRP	Option WIDEBAND added for ATC trunk groups. Subfields WBSELSEQ, WBGRPING and WBSEARCH added.

The following datafill requirements and recommendations apply to this feature:

- All of the DS-0 trunks used in a wideband call must be datafilled in the same trunk group and reside on the same DS-1 span.
- It is recommended that all DS-0 trunks datafilled on the T1 link be in the same trunk group.
- It is recommended that the circuit identification codes and T1 spans be datafilled consecutively and be consistent at both ends of the spans.
- In table TRKSGRP the glare type (GLARETYP) must be SGRPYLD.

Operational measurements

This feature creates the following three new wideband operational measurements (OM):

- TWBSWTCH counts the total number of wideband intra-switch call attempts
- TWBINTER counts the total number of wideband inter-LATA (local access and transport area) call attempts
- TWBINTRA counts the total number of wideband intra-LATA call attempts

Automatic message accounting

The wideband module code 913 is appended to the automatic message accounting (AMA) recording unit. This module code contains a count of the number of circuits used in the wideband call.

For calls originating within the LATA, an originating access billing record is generated in the DMS-100 switch. For calls entering the LATA from an interexchange carrier (IEC), a terminating access billing record is generated at the first point at which the call enters the LATA.

This feature package contains features that modify linkset management. It also allows for national and international variations of point codes.

This feature package applies to DMS-100 SuperNode and DMS-STP offices.

Feature package contents

Feature package NTXR72AA contents

Feature number	Description
AC0140	SCCP-Routing Control
AC0141	SCCP-Data Distribution
AC0142	SCCP-Management Changes
AC0143	SCCP-For DMS-SCP
AC0144	SCCP-Management Robustness
AC0148	MTP-Generic Distributed Data Manager
AC0149	MTP-COV, CBK, Reroute Enhancements
AC0150	MTP-CC Routing Capability
AC0220	MTP-Multi-MSB MMI
AC0223	MTP-Multi-MSB Capability
AC0225	MTP-Distributed Data Audits and OM Collection
AC0226	MTP-Distributed MTP Data
AC0228	MTP-CC Restart Handling Improvements
AC0306	SCCP-MMI Evolution for STP
AC0361	CCS7 Timer Enhancements
AC0411	MTP-Robustness Improvements
AC0431	SCCP Management Robustness
AC0443	Data Manager Robustness
AE0775	Q791 MTP Performance Enhancements
AE0982	Base SCCP GTT Enhancements
AE1015	SCCP Numbering and Translations
AL0076	MTP-Message Transfer Part
AL1249	CCS7 Static Data Audits

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Feature package NTXR72AA contents (continued)	
Feature number	**Description**
AL1330	Signaling Link Marginal Performance Report
AL1474	CCITT7 National Network Point Code MMI
AL1496	Removal of CLLI from CCS7 RTESET and LINKSET
AL1499	CCS7 CC Store Reduction for NT40
AL1893	STP Robustness
AR0010	CCS7 Flow Control 1
AR0117	DDM Audit Enhancement
AR0118	DDM User Independent Resource
BC1749	SCCP Man-Machine Interface
BC1750	SCCP Table Control
BC1798	Routeset-Basic Routing Control-MSB
BC1799	Routeset-Router-MSB
BC1800	Routeset-Distributor-MSB
BC1803	Routeset-Man-Machine Interface-CC
BC1804	Routeset-T able Control-CC
BC1807	Linkset-Basic Link Management-MSB
BC1811	Linkset-Man-Machine Interface-CC
BC1813	Linkset Table Control-CC
BC1814	CCS7 Base
BC2045	SCCP-Routing Control
BC2046	SCCP-Connectionless Control
BC2047	SCCP-Management-PC Management
BC2048	SCCP-Management-Subsystem
BC2290	MTP-Congestion/Timer Option T able Control
BC2291	MTP-Quasi-associated Signaling
BC2292	MTP-Congestion Handling
BC2293	MTP-ST Pools for CCS7 Signaling Links
BF0454	CCS7 ST MP Pro/Congestion Control and Flow Control
BF0457	CCS7 ST MP Buffer Retrieval

-continued-

Feature package NTXR72AA contents (continued)	
Feature number	**Description**
BF0526	CCS7 MSB ST Interface Handling
BF0529	CCS7 MSB ST/STAI Audits
BF0550	CCS7 ST Commissioning Load
BF0551	CCS7 MSB Commissioning Load
BF0650	CCS7-Signaling T erminal
BF0941	Routeset-Changeover/Changeback-MSB
BF0942	MTP Audits for CCS7
BF1025	Generalize XPM/MSB7 Channel Allocation
BV2000	CCS7 Link Set Management
BV2001	CCS7 Route Set Management
End	

BCS history

This feature package was created in BCS19.

BCS36-AR0010 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX270AA	New Peripheral Maintenance Package
NTX940AA	CM Bilge
Either NTXN19AA or NTX833AB	LIU7 for LPP-based CCS7 Applications STP Operations

AL2334

Feature name

SRC Controlled Restart and No-Restart SWACT for CCS7

Description

This feature allows the system recovery controller (SRC) to control the recovery of Common Channel Signaling 7 (CCS7) links, linksets, routesets, and pools during warm, cold, and reload restarts, or during a no-restart switch of activity (SWACT).

BCS history

This feature was created in BCS36.

Restrictions and limitations

The no-restart SWACT for CCS7 offices is a function of office size, and certain configurations may not meet the target maximum of 30 seconds for complete switch recovery. Partial call processing will be available within the 30-s limit.

This feature does not support the CCS7 part of service control point I (SCPI) nodes.

This feature does not support the CCITT-based versions of signal connection control part (SCCP).

Feature interactions

This feature is one of four features that function together to allow CCS7, link peripheral processors (LPP), and ISDN user part (ISUP) to use the SRC for core restart recovery. The other features are as follows:

- AI0704 SRC Restart and No-Restart SWACT Support for SCCP and DDM
- AI0705 SRC Restart and No-Restart SWACT Support for LIMs and LIUs
- AR0467 SRC Restart and No-Restart SWACT Support for ISUP

This feature package provides the potential to assign Meridian Digital Centrex (MDC) features with networking capability to a group of lines through the access feature group (AFG) mechanism.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXR83AA contents	
Feature number	**Description**
AR0323	Per Line Feature Control

BCS history

This feature package was created in BCS35.

BCS36-AR0323 changed

Required feature packages

Required feature packages	
Feature package number	**Description**
Either NTX041AB or NTXR72AA	CCS7-MTP/SCCP CCS7 MTP/SCCP for LPP-based Platforms
NTX100AA	Integrated Business Networks-Basic (IBN)
NTX106AA	IBN-Proprietary Business Set
NTX108AA	IBN-Display Features
NTX167AB	CCS7-Trunk Signaling
NTXA35AA	Network Number Display

AR0323

Feature name

Network Feature Access Restriction

Description

AR0323 provides the functionality to assign Meridian Digital Centrex (MDC) features with networking capability to a group of lines through the access feature group (AFG) mechanism. Specifically, this functionality is provided for the Name Display, Reason Display, and Calling Number Display features.

BCS history

This feature was created in BCS35.

BCS36 Changed

Datafill

Table	Description
FTRGDEFS	Field MAXLINES added to specify the total number of lines that can be associated with a feature group
CUSTSTN	Field SERVCTL added to specify consolidation of networkable features to the AFG

This feature package provides committed information rate (CIR) capability on DataSPAN frame relay interface units (FRIU).

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXR86AA contents	
Feature number	**Description**
AJ2878	Committed Information Rate for DataSPAN

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX940AA	CM Bilge
NTX941AA	CM Common
NTX944AA	Base Node Maintenance
NTX945AA	MS Base Link Maintenance
NTX950AA	MS Bilge
NTX951AA	MS Common
NTXF25AD	Frame Relay Basic
NTXF71AB	SuperNode Enhanced Messaging
NTXN18AA	F-Bus-LIU Base
Either NTXF15AA or NTXF16AA or NTXF70AA or NTXF96AA	 DMS-Core MC68030 33-MHz Processor DMS-Core MC68039 40-MHz Processor SuperNode SN-20 Processor SuperNode SN-10 Processor

AJ2878

Feature name

Committed Information Rate for DataSPAN

Description

This feature implements committed information rate (CIR) capability on DataSPAN frame relay interface units (FRIU).

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature does not provide operational measurements (OM) for individual private virtual circuits (PVC).

This feature does not include dynamic rate reduction.

Datafill

Table	Description
FRSCIR	New table
FRSACCCN	Fields SRCCIR, SRCINDEX, DESTCIR, and DESTINDEX added to specify the CIR template on the source and destination endpoints
FRSTRKCN	Field CONTYPE and refinement CIR added to specify the CIR template index on the agent or data link connection identifier (DLCI)
FRSCNEND	Fields SRCCIR and DESTCIR added to specify the CIR template index on the agent or DLCI

Operational measurements

Two new registers are added to FRSAGENT by this feature. CIRDISC counts the number of frames discarded at the user-to-network input channel because they exceeded the summed information rate (SIR) of committed burst size (Bc) plus excess burst size (Be). CIREXCES counts the number of frames that exceed Bc.

User interface

Commands QPLLC, QRYCHAN, and PVDNCI are modified to allow tracing of CIR information.

Automatic message accounting

This feature does not provide billing based upon Be or Bc.

This package allows enhanced method of throttling or ‘‘trunk equivalency’’ for calls into and from a meridian digital centrex (MDC) customer group.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXR88AA contents	
Feature number	**Description**
AN0322	Network Access Register (NARS)

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXC07AF	Smart Management Series 30 (CND)
NTXC08AF	Smart Management Series 30 (CND)
NTXC41AD	DMS-100 BCS36 S/W Load for SN20
NTXC43AD	DMS-100 BCS36 S/W Load for SN30
NTXC45AD	DMS-100 BCS36 S/W Load for SN40
NTXC48AB	DMS-100/200 BCS36 S/W Load for SN20
NTXC49AB	DMS-100/200 BCS36 S/W Load for SN30
NTXC50AB	DMS-100/200 BCS36 S/W Load for SN40
NTXC57AB	DMS-100 S/W Load for SNSE Series 20
NTXC58AB	DMS-100/200 S/W Load for SNSE Series 20
NTXC63AB	Smart Management SNSE Series 20

AN0322

Feature name

Network Access Registers (NARS)

Description

This feature allows enhanced method of throttling or ‘‘trunk equivalency’’ for calls into and from a meridian digital centrex (MDC) customer group.

BCS history

This feature was created in BCS36.

Feature interactions

Call Forwarding
NARS will interact with Call Forwarding Features. WHen a call reaches a station with call forwarding active and a NAR is encountered on the forwarded-to route, the call will need to gain access to a NAR member before proceeding.

Hunt Groups
Calls made to hunt groups will use the Customer Group and NCOS of the Pilot hunt member to throttle the incoming call to three hunt group. Calls from hunt group members will use the Customer Group and NCOS assigned to that member when considering NARS.

Multiple Appearance Directory Numbers (MADN)
Calls terminating on MADN groups will use the Customer Group and NCOS of the primary MADN member to determine whether the call should be throttled. Calls from MADN members to will use the Customer Group and NCOS assigned to that member when considering NARS.

Attendant Consoles
Calls terminating on Attendant Consoles will use the Customer Group Nars. NCOS based NARS will not be applicable when terminating on the Attendant Console. Calls from Attendant Consoles will use the Customer Group and NCOS assigned to the Attendant Console when considering NARS.

Direct Inward System Access (DISA)
Outgoing NARS may have access to three different NCOS for DISA. The DISA feature may use the NCOS specified by the external NCOS in table CUSTHEAD. DISA may be assigned the NCOSOPT in table DNROUTE. The DISA feature may be used in conjunction with the Authorization Code feature by setting the DNROUTE field AUTHREQ to Y.

ACB/AR
A party will be allowed to activate ACB on calls that required access to a NAR. Once ACB/AR has been activated, the system rings the activator

when the called party becomes idle. When the ACB/AR activator picks up the receiver, the system will cause the call to retranslate. If there are no NAR members available the call will route to the NAR overflow treatment.

LNR
When a station activates LNR and the rout requires NAR access, the call will be required to gain access through the NAR before terminating.

Overlap Carrier Selection
Overlap Carrier Selection is permitted with NARS.

Overlap Outpulsing
Overlap Outpulsing is permitted with NARS.

ESA
NARS will not be available during Emergency Stand-Slone (ESA).

Restrictions and limitations

If the NARS option is datafilled both in tables CUSTENG and NCOS, then the NCOS NARS option will be considered.

Datafilling NILNAR in fields NAROUT and NARIN of table CUSTENG, may cause a call not to be throttled. The call may be allowed to continue without gaining access through a NAR.

MARS overflow of busy treatment (T60) may be confusing to an end user. An end user with the ACB/AR or RAG features may be confused if upon answering the recall they hear busy treatment due to NAR unavailability.

A call from a customer group terminating back into that same customer group may be throttled if translations and routing determine the call is throttleable. This is true even if the originator and terminator are on the same line.

Datafill

Table	Description
RCCINV	A new field is added

A new field, ADNUM, is added to table RCCINV. This field holds the administrative number associated with a given PM.

Operational measurements

A new OM group is created by this feature. OM group, NARUSAGE, collects each NAR defined in the office. NARUSAGE has three register, NARTOTAL, NARBLCKD, AND NARTRAF.

This feature package provides the transaction capabilities application part (TCAP) interface for Custom Local Area Signaling Service (CLASS) Calling Name Delivery. It also implements the call processing and application part of the residential Calling Name Delivery architecture.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXR95AA contents	
Feature number	**Description**
AN0232	CLASS: TCAP for Calling Name Delivery
AN0323	CLASS Calling Name TR Compliancy-RES

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX550AA	CCS7-Transaction Service Support
NTXA64AA	Residential Enhanced Services (RES) Base
NTXA823AA	Class Line Office Data
NTXE52AA	Calling Name Delivery Switch Based

AN0232

Feature name

CLASS: TCAP for Calling Name Delivery

Description

This feature provides the transaction capabilities application part (TCAP) interface for Custom Local Area Signaling Service (CLASS) Calling Name Delivery.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature does not provide the TCAP procedures required to support the business group architecture described in Bellcore technical requirements TR-NWT-001188, *CLASS Calling Name Delivery Generic Requirements*. Neither the intelligent network 1 (IN/1), nor the Advanced Intelligent Network (AIN) release 0 business group switch procedures are provided. For the same reason, this feature does not support a different subsystem number and translation type for the business group architecture.

The software management system (SMS)-originated code control procedures and the manual code control procedures described in technical requirements specification TR-TSY-000402, *Additional Service Switching Point and Related End Office Capabilities*, are not supported by this feature.

If an error is encountered in a Calling Name Delivery (CNAMD) TCAP response package received from the centralized residence name database, the TCAP response package will be consumed. No reply will be sent to the centralized name database to indicate that the SSP encountered an error in the TCAP response package.

This feature does not provide the TCAP procedures required to support the transmittal of name information to an Automatic Callback (ACB) or Automatic Recall (AR) subscriber.

Feature interactions

This feature uses operational measurements from group CNAMD, provided in feature AN0323 (CLASS Calling Name TR Compliance - Residential).

Datafill

Table	Description
TCAPTRID	Value CNAMD added to field TCAPAPPL
C7GTT	CNAMD added as a valid subsystem name
C7LOCSSN	CNAMD added as a valid subsystem name
C7RPLSSN	CNAMD added as a valid subsystem name
C7GTTYPE	CNAMDGT added as a valid translation type

Logs

Three new log reports are created by this feature: TCAP 100, TCAP 101, and AUD 591.

A TCAP 100 log is generated for each TCAP response package that is returned from the centralized residence with a return error component.

A TCAP 101 log is generated for each TCAP QWP package returned in an SCCPUDTS package.

An AUD 591 log report is generated whenever a call traps or fails while holding a CNAMD TCAP extension block.

User interface

This feature creates a new CI command, CNAMDCG, to display the internally stored list of CNAMD ACG six-digit code controls at the MAP (maintenance and administration position).

AN0323

Feature name

CLASS Calling Name TR Compliance - Residential

Description

This feature implements the call processing and application part of the residential calling name delivery architecture. This architecture is described in Bellcore technical requirements TR-NWT-001188, *Custom Local Area Signaling Services (CLASS) Calling Name Delivery General Requirements*.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the provision of the 6X51AB card (extended line concentrator module processor), and the 6X78AB card (CLASS modem resource card).

Restrictions and limitations

This feature is supported only on Residential Enhanced Services (RES) lines where transaction capabilities application part (TCAP) calling name applies. It is not supported in the Meridian Digital Centrex (MDC) environment

This feature does not address basic business group (BBG) or multiswitch business group (MBG) issues referenced in TR-NWT-001188.

Non-RES line class codes (LCC) in customer groups with the TCAPNM option datafilled in table CUSTNTWK will not receive information through TCAP queries. TCAP queries for calling name information are supported only by RES LCCs.

Calling name information is not delivered to the RES members of a MADN EXB group in which TCAPNM applies to the customer group. Calling name information is provided to non-RES lines of the MADN group using the proprietary method.

Calling name information is not delivered in the following situations:

- during the ringback phase of Automatic Call Back or Automatic Recall
- during Call Waiting ringback
- to the ringing party of a call transfer, if the TCAP query is pending when the call was transferred
- to the ringing party of a three-way call, if the TCAP query is pending when the three-way call was established

Feature interactions

This feature requires the TCAP interfaces provided by feature AN0232 (CLASS: TCAP for Calling Name Delivery).

Datafill

Table	Description
CUSTNTWK	OPTION TCAPNM ADDED
CUSTHEAD	Range of option NDTIMOUT changed from 1-3 to 1-6
RESFEAT	Meaning of counts “AVAIL” and “UNAVAIL” changed

The following two office parameters are added to table OFCVAR by this feature:

- TCAPNM_INTERLATA_QUERY
- TCAPNM_BLK_QUERY_PRIV_DNS

Operational measurements

This feature creates a new OM group, CNAMD. This group contains a total of 22 registers. Of these, 13 are new registers, the remaining 9 registers being CNAMD-specific registers moved from the CND group.

The following 13 registers are created by this feature:

- CNAMDEL indicates the number of times the name is transmitted to a CPE
- CNAMDEL2 indicates the number of times the name is transmitted to a CPE (overflow register for CNAMDEL)
- NANUMDEL indicates the number of times both the name and the number are delivered to a CPE
- NANUMDE2 indicates the number of times both the name and the number are delivered to a CPE (overflow register for NANUMDEL)
- CNAMPDEL indicates the number of times the private indication for the calling name is sent to a CPE
- CNAMODEL indicates the number of times an out-of-area indication for the calling name is sent to a CPE
- NAMTCPQ indicates the number of TCAP name queries launched toward a name database for RES lines
- NAMTCPQ2 indicates the number of TCAP name queries launched toward a name database for RES lines (overflow register for NAMTCPQ)

- NAMTCPTO indicates the number of TCAP timeouts that occurred when the switch was waiting for a response from the name database
- TRIDUAVL indicates the number of times a query was not initiated because transaction ID (TRID) was unavailable
- NAMACGBK indicates the number of times a query was blocked due to an active automatic call gapping (ACG) six-digit code control
- NAMACGOV indicates the number of times the SCP requested an ACG six-digit code control be applied, but the control could not be applied because of a full code control table
- NAMISPTO indicates the number of ISUP query timeouts that occurred when the switch was waiting for a response from the originating switch (applies to the proprietary architecture only)

Automatic message accounting

This feature establishes new billing requirements for the following cases:

- where CNAMD and CND are both assigned to a line as AMA (SUSP)
- where CNAMD and DDN are both assigned to a line as AMA (SUSP)

The feature package provides communication base services initially intended for second-generation service control point (SCPII) applications.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS11AA contents	
Feature number	**Description**
AL1693	File Transfer Client Interface for DMS-SCP II
AR0142	SuperNode File Transfer Provocol Phase 2

BCS history

This feature package was created in BCS34.

BCS36-AR0142 changed

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXF05AA	Ethernet Interface Unit
NTXF19AA	TCP/IP Provocols

AR0142

Feature name

SuperNode File Transfer Protocol Phase 2

Description

AR0142 provides support for the following file transfer protocol (FTP) functionality:

- configurable number of FTP connections for each node
- security check
- absolute and relative pathnames
- reservation of client/server session in FTP

This feature belongs to the set of features that provide communication base services initially intended for applications based on the second-generation service control point (SCPII).

This feature provides user interfaces and a command interpreter (CI) for FTP client sessions.

BCS history

This feature was created in BCS34.

BCS36 Changed

Restrictions and limitations

There is a limit to the number of concurrent file transfers for a given node. The limit is determined by the number of FTP and transmission control protocol (TCP) connections.

The number of FTP connections should not be more than half of the total TCP connections.

There is a limit to the number of usernames. Usernames cannot be duplicated while recovering FTP server sessions.

Wild cards are not allowed in file names or pathnames.

Users are disconnected during login after being idle for 2 min or after three unsuccessful attempts.

Logs

This feature creates the following new logs:

- ITN 501 File transfer protocol login
- ITN 599 File transfer protocol summary

This feature package enables operating company personnel to monitor primary rate interface (PRI) primary or backup D-channels using digital test access (DTA). Digital test access is nonintrusive since the monitored data is broadcast to its normal destination and to the DTA endpoint.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS12AA contents	
Feature number	**Description**
AQ1018	DTA on PRI D-Channel (CC)

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX750AD	ISDN Basic Access
NTX790AC	ISDN-Primary Rate Access Base

AQ1018

Feature name

DTA on PRI D-Channel (CC)

Description

This feature enables operating company personnel to monitor primary rate interface (PRI) primary or backup D-channels using digital test access (DTA). DTA is nonintrusive since the monitored data is broadcast to its normal destination and to the DTA endpoint.

BCS history

This feature was created in BCS36.

Hardware requirements

The ISDN digital trunk controller (DTCI) /line trunk controller (LTC) supporting the PRI D-channel must be equipped with the following hardware:

- NTMX77AA unified processor circuit pack
- NTBX01AB enhanced ISDN signaling processor card
- NT6X44 timeswitch

Restrictions and limitations

This feature supports only PRI D-channels on DTCI/LTC using DS-1 interface technology.

The system removes DTA connections at the time of a BCS application by an ONP pre-switch of activity (PRESWACT) step.

Feature interactions

This feature builds on the DTA features introduced by features AL1321 (ISDN Digital Test Access Maintenance), AL1320 (ISDN XPM Digital Test Access), and AQ0875 (DTA on ISLC Circuit Switched B-channel).

User interface

Two commands have been added to the trunk test position (TTP) level, PRADCH sublevel, of the MAP (maintenance and administration position). The EQUIP command allows DTA monitoring equipment to be reserved for DTA use. EQUIP also allows all of the data connections on the switch to be queried and allows the monitoring equipment to be released from reserve. The CONNECT command allows the monitoring equipment to connect to the PRI D-channel. CONNECT also allows DTA connections to be verified and released.

NTXS17AA

ISN CCS7 Interface

This feature package provides a Common Channel Signaling 7 (CCS7) interface to the intelligent services node, to implement

- a memory call management system for storage of the test results reported by the data call tester (DCT) network tool
- a user interface for the DCT network tool
- call processing of the DCT network tool

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS17AA contents	
Feature number	**Description**
AJ2887	DCT Call Processing
AJ2888	DCT MAPCI Modifications
AJ2889	DCT Memory Management for Test Results

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX259AA	Datapath-Basic
NTX883AA	Interoffice Trunk Bit Error Rate Testing
Either	
NTX801AA	Toll Features I
or	
NTX901AA	Local Features I
Either	
NTX881AB	Switch Bit Error Rate NTCE
or	
NTX881AC	Switch Bit Error Rate Maintenance
or	
NTX882AA	Bit Error Ratio Indicator for Toll Switches

AJ2887

Feature name

DCT Call Processing

Description

This feature implements the call processing aspect of the data call tester (DCT) network tool. It allows maintenance personnel to make data calls on a DMS switch between integrated bit error rate tester (IBERT) devices, between an IBERT device and an external bit error rate tester (BERT) device, or between an IBERT and a trunk loopback (TRKLPBK) circuit to run bit error rate tests. The data call is originated by user commands from the DCT level of the MAP (maintenance and administration position).

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the provision of an IBERT line card (ILC) and a digital test unit (DTU).

Restrictions and limitations

This feature is supported only on the SuperNode version of the DMS-100, DMS-200, or the combined DMS-100/200 switches. This feature is not supported on the NT40 switch.

Intra-switch DTU to DTU, DTU to ILC, or ILC to DTU DCT calls are not supported.

A maximum of 20 concurrent DCT calls can be made on a DMS switch. This includes originating DCT calls, terminating DCT calls, and delayed calls.

The DCT class tuple in table FMRESUSE is always present, even if the DCT package is not present in the office.

On a DCTTERMBERT call that terminates normally, the last bin of the call at the terminating switch is always *out of synch*, because the network connection has already been dropped by the originating switch before the last bin is polled.

Operator calls using digit 0 are not supported by DCT. Table control for table DCTDIAL rejects any attempt to datafill a single 0 into field DN

Feature interactions

This feature interacts with the following features in order to function properly:

- AJ2888 DCT MAPCI Modification
- AJ2889 DCT Test Data Storage

Datafill

Table	Description
DCTDIAL	New table
DNIBERT	New table
FMREUSE	New tuple added to define a new application class for DCT
OFCVAR	Parameter DCT_TEST_CALL_SPILL added

Operational measurements

Extension block DCT is added to EXT OM by this feature.

Logs

A new log, AUD 592, is generated if the call dump occurs and the DCT extension block is present.

Automatic message accounting

The automatic message accounting (AMA) billing number is taken from office parameter DCT_TEST_CALL_SPILL in table OFCVAR.

AJ2888

Feature name

DCT MAPCI Modifications

Description

This feature implements the user interface for the data call tester (DCT) network tool. The DCT allows maintenance personnel to make data calls on a DMS switch between integrated bit error rate tester (IBERT) devices, between an IBERT device and an external bit error rate tester (BERT) device, or between an IBERT and a trunk loopback (TRKLPBK) circuit to run bit error rate tests. The data call is originated by user commands from the DCT level of the MAP (maintenance and administration position).

BCS history

This feature was created in BCS36.

Restrictions and limitations

The DCTTOOL command interpreter (CI) increment allows displaying and deleting of test results using a full screen. No other DCT functionality is accessible from this CI increment. DCTTOOL cannot be accessed from the DCT MAP levels.

Only one DIAL command at a time can be executed in any one testbook. If simultaneous dials are required, additional DIAL commands can be issued from other testbooks.

When testbook TERMRES0 or TERMRES1 is active, only commands DISPLAY, DELETE, INJECT, or TESTBOOK are valid.

For a specific MAP session, real-time errors can only be displayed for the current test of the active testbook. Also, if the same testbook is active on more than one MAP, only one of the MAP sessions can display real-time errors for the current test of that book.

Feature interactions

This feature provides the user interface for feature AJ2887 (DCT Call Processing) and feature AJ2889 (DCT Memory Management for Test Results). The three features together provide DCT functionality.

User interface

The DCT network tool is accessible from the DCT sublevels of both the line test position (LTP) and trunk test position (TTP) levels of the MAP. The DCT commands available at both sublevels are the same. DCTTOOL, a CI increment, is also provided to allow the display and deletion of test results.

Feature name

DCT Memory Management for Test Results

Description

This feature provides a memory call management system for storage of the test results reported by the data call tester (DCT) network tool. Bit error rate test (BERT) results related to a single trouble report are grouped together under a testbook supplied by the tester. The testbook identifier (ID) must be unique in an office, and testbook IDs TERMRES0 and TERMRES1 are reserved for DCT calls that terminate within the office. Within a testbook, each test is assigned a unique test number by the DCT application.

BCS history

This feature was created in BCS36.

Hardware requirements

The maximum amount of memory needed for DCT test results depends upon the number of days the results are kept, and also the number of concurrently running integrated BERTs (IBERT).

Restrictions and limitations

To minimize the number of bins needed, only bins in error are recorded.

On a reload restart all test results and testbooks are lost, and test numbers are reset to 1.

This feature does not support NT40 switches.

Test results are lost over a BCS upgrade (one night process).

Feature interactions

This feature works in conjunction with the following features to create DCT functionality:

- AJ2877 DCT Call Processing
- AJ2888 DCT MAPCI Modifications

Datafill

Table	Description
OFCENG	Parameter DCT_MEM_LIMIT added

NTXS18AA

TOPS Interchangeable NPA

This feature package enables Traffic Operator Position System (TOPS) call processing of interchangeable numbering plan area (NPA) format, thus permitting use of the expanded NPA range.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS18AA contents	
Feature number	**Description**
AN0259	TOPS Interchangeable NPA

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX030CC	TOPS Call Processing Features

AN0259

Feature name

TOPS Interchangeable NPA

Description

This feature modifies the Traffic Operator Position System (TOPS) to allow it to handle the interchangeable numbering plan area (NPA) format. This enables TOPS to use NPAs of format NXX, where N is in the range 2-9 and X is in the range 0-9. The changes include modifications to table control key types and checks, and to TOPS call processing where required to permit use of the expanded NPA range.

BCS history

This feature was created in BCS36.

Hardware requirements

Table control utilizes a dynamic store allocation scheme to allocate or deallocate data store as tuples are added to, or deleted from, the affected tables.

Restrictions and limitations

The ranges of the relevant keys and fields of the affected tables have been increased to encompass the interchangeable NPA (ICNPA) range. When this feature is present, the ICNPA range (NXX) can be datafilled in the relevant tables. If this feature is not present, then only NPA codes in the N 0/1 X range can be datafilled in the relevant tables.

Datafill

Table	Description
CARRTRF	Range of field CLGNPA changed to 200-999
CITYMAP	Range of field NPA changed to 200-999
CLDNPA/ CLDNPAI	Range of field CLDNPA changed to 200-999
CLDNPAEX/ CLDNPAEXI	Range of field NPA changed to 200-999
NPACHECK	Range of field NPACODE changed to 200-999
REGNUM	Range of field DOMNUM changed to 200-999
SPLDNID	Range of field SPLDN changed to 200-999
TERMNPA	Range of fields NPA and TNPA changed to 200-999
TERMRC/ TERMRCI	Range of field NPA changed to 200-999

-continued-

Table	Description (continued)
VH	Range of field NPA changed to 200-999
ZENITH	Range of field FWDDN changed to 200-999
	End

This feature package provides an infrastructure for a Traffic Operator Position System (TOPS) directory number (DN) database that increases the number of restricted, coin, or hotel DNs that can be datafilled, and provides call screening services for these DNs.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS19AA contents	
Feature number	**Description**
AN0324	TOPS DN Database Phase I

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX030CC	TOPS Call Processing Features
NTXV00AA	DN Screening Database-Base

AN0324

Feature name

TOPS DN Phase I

Description

This feature provides an infrastructure for a Traffic Operator Position System (TOPS) directory number (DN) database. The feature increases the number of restricted, coin, or hotel directory numbers that can be datafilled. It also provides the capability of modifying the automatic number identification (ANI) data that is sent to the carrier from restricted, coin, or hotel directory numbers. The limitation imposed by the maximum size of table SPLDNID (approximately 20 000 tuples) is removed.

BCS history

This feature was created in BCS36.

Hardware requirements

Additional memory may be required if a significant number of tuples are datafilled in table DNSCRN.

Feature interactions

This feature requires feature packages NTX030CC (TOPS Call Processing) and NTXV00 (DNSCRN Base).

Datafill

Table	Description
TOPSDB	New table
TDBCLASS	New table
DNSCRN	Attribute TOPSDB added

Logs

Log TRK118 is generated when there is difficulty receiving the ANI of the call.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS22AA contents	
Feature number	**Description**
AR0215	CompuCALL Agent Control Messager

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX000AA	Bilge
NTX001AA	Common Basic
NTX100AA	Integrated Business Networks - Basic
NTX407AA	ACD - Call Processing
NTX901AA	Local Features I
NTXJ59AB	CompCall Base Utilities
or NTXJ59AC	CompCall Base Utilities

AR0215

Feature name

CompuCALL Agent Control Messager

Description

This feature provides enhancements to the existing CumpuCALL interface. It allows an external host computer to Log In or Log Out Automatic Call Distribution (ACD) agents through Switch Computer Application Interface (SCAI) signalling. It also allows the host computer to request an ACD agent be made Not Ready or Ready to receive ACD calls through SCAI. These are provided through new Extended Call Management (ECM) application message.

BCS history

This feature was created in BCS36.

Restrictions and limitations

ACD Agent Position Login
When logging in a 2500 set ACD agent position through CompuCALL, the line state of the agent terminal must be idle. WHen logging in to an MBS ACD agent position through CompuCALL, the InCalls Key (ICK) of the agent position must be idle.

ACD Agent Position Ready/Not Ready
When requesting an ACD agent position be made available or not available to receive incoming ACD calls through a CompuCALL Ready or Not Ready request, the agent position must be logged in. The INCALLS key of MBS ACD agent positions must be idle or active in a call. For the line state of 2500 set ACD agent positions must be idle or active in a call. In addition, the agent terminal must have the ACDNR feature datafilled in order to be able to make a CompuCALL Ready/Not Ready request. If the NR feature is not datafilled, a Return Error (RE) of ‘‘Invalid-Line-Configuration: will be returned to the host.

ACD Call Transfer or Call Park Recalls
Since activation of Not Ready is disallowed during a recall of a transferred or parked call, a Return Error of‘‘Invalid-Agtpos-State’’ is returned to the host when a CompuCALL Not Ready request is received during a recall of a transferred or parked call.

Meridian Business Set (MBS) Display
A LogIn Request through CompuCALL will not display the Login ID, nor the password entered by the ACD agent position. The walkaway Reason entered by the agent in the Not Ready CompuCALL request will also not be displayed on the agent terminal.

Supervisor Position ID vs Agent Position ID
It is important to note an ACD agent position that is also a supervisor position can only log in through CompuCALL using the Position ID associated with the agent position, not with the Position ID associated with the supervisor position (if there is one).

High Traffic Volume
If many dv-SET-FEATURE RO requests are made within a short period of time, the performance of the ACD agent terminals as well as the performance of the host computers may be adversely affected due to the high volume of traffic generated.

Feature interactions

CompuCALL vs. Agent Terminal Feature Activations
The ACD LogIn/LogOut and ACD Not Ready /(Ready) features can be activated from the agent terminal or through CompuCALL dv-SET-FEATURE RO.

ACD Management Information System (MIS)
All activations of ACD LogIn/LogOut and ACD Ready/Not Ready by the CompuCALL dv-SET-FEATURE message interact with the MIS in the same manner as if the features had been activated through the agent terminal. No new ACD MIS messages are added to the MIS interface and all the existing ACD MIS messages are sent as required to fully support ACD MIS functionality.

Optionality of Password
There are two levels of password optionality-base DMS table control and CompuCALL subscription.

Optionality of WALKAWAY feature
WALKAWAY through CompuCALL is available to ACD agents independent of terminal type. The only restriction being the ACD group the ACD agent belongs to has MIS and the group subscribes to the CompuCALL WalkawayReason parameter in the dv-SET-FEATURE noReady RO.

Variable Wrap-Up vs. CompuCALL Ready/Not Ready
The Variable Wrap-up (VARWRAP) feature can be considered an extension of the previous ACD call, which allows the ACD agent to do follow-up work on the call.

InCalls Key on Hold vs. CompuCALL Not Ready
Presently, due to agent MBS terminal limitations, a Not Ready keyhit is ignored if the ICK key is in the held state. CompuCALL has no such

restriction, therefore, a Not Ready CompuCALL request will be accepted and processed if the agent is talking to an attendant console.

Attendant Console vs. CompuCALL Ready/Not Ready
Presently a Not Ready keyhit on an MBS set ACD terminal is ignored while the agent is talking to an Attendant Console (AC). CompuCALL has no such restriction, therefore, a Not Ready CompuCALL request will be accepted and processed if the agent is talking to an attendant console.

Datafill

Table	Description
SCAISSRV	Table modified

The table SCAISSRV is modified by this feature as follows:

- A new category, Third Party Agent Control (TCAP), is added to the last of CompuCALL service categories. Four service functions belong to this category: LOGIN, LOGOUT, READY and NOT-READY.
- Four event messages are added to the existing ACDEVENT category: dv-AGENT-LOGGED-IN-U, dv-AGENT-LOGGED-OUT-U, dv-AGENT-READY-U, and dv-AGENT-NOT-READY-U.

The following office parameter is introduced by this feature in table OFCSTD:

- MA_NUM_ECM_TPAC. This parameter, together with the previously defined CompuCALL Pricing control Office parameters, governs CompuCALL usage in a given DMS-100. Its default value is the minimum value, zero. It is set and modified by Northern Telecom. No restart is required if the parameter value is changed.

Operational measurements

There are six new operational measurements added to the OM group SCAISERV which are AGLDINU, AGLDOUTU, AGRDYU, AGNRDYU, INREJ and OUTREJ.

This feature introduces a new OM group, SCAISRV2, which consists of nine new operational measurements: SETFTRRE, LINAGRR, LINAGRE, LOUTAGRR, LOUTAGRE, RDYAGRR, RDYAGRE, NRDYAGRR, and NRDYAGRE

This feature package provides the base and maintenance software needed to support dialable wideband services (DWS) functionality on ISUP-, ISDN-, and CCS7-based trunks.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS25AA contents

Feature number	Description
AD3317	Power: Wide Band Trunk Selection (CC)
AD3318	Power: Wide Band Trunk Datafill and Maintenance (CC)
AD3319	Power: Wide Band Channel Management (XPM)
AD3320	Power: Wide Band ISUP and Maintenance in DTC7 (XPM)
AD3321	Power: Wide Band Call Machine and Glare Recovery (XPM)
AD3322	Power: Wide Band Integrity Management (PM)
AD3443	Power: Wide Band SWACT Support in DTC7 (XPM)
AD4421	LEC WSS Trunk Selection and OMS
AD4750	Network Management with DWS
AD4751	DWS Trunk Audit 1
AD4755	DWS DTCI XPM PLUS
AD4756	DWS DTC7 XPM PLUS
AD4948	DWS XPM PLUS Overload Controls

BCS history

This feature package was created in BCS35.

BCS36-AD4750, AD4751, AD4755, AD4756, and AD4948 added

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXE01AA	Enhanced Network-Basic
Either	
NTX901AA	Local Features I
or	
NTX220BA	DMS-250 Base Package (Type II)
or	
NTX220CA	DMS-250 Base Package (Type III)

AD4750

Feature name

Network Management with DWS

Description

This feature enhances network management control for trunks datafilled to use dialable wideband services (DWS).

BCS history

This feature was created in BCS36.

Restrictions and limitations

Any time that a wideband call is alternate routed, a wideband trunk group must be in the alternate route list in order for the call to complete.

Feature interactions

This feature interacts with all calls made on wideband trunk groups when one or more of the network management controls are active.

AD4751

Feature name

DWS Trunk Audit I

Description

This feature implements a dialable wideband services (DWS) trunk queue audit. This ensures the integrity of the DWS trunk queue data structures.

BCS history

This feature was created in BCS36.

Logs

Four logs are created by this feature. These logs are generated when discrepancies are identified as a result of the wideband audit, as follows:

- WB106. Conflicting Trunk State. This is generated when a discrepancy is found between the trunk state in the internal wideband data structures and the actual trunk state as determined by the trunk audit
- WB107. Conflicting Max Avail. This is generated when a discrepancy is found between the maximum available bandwidth for this carrier in the internal wideband data structures and the actual maximum available bandwidth for this carrier as calculated by the wideband audit.
- WB108. Conflicting Avail Band BM. This is generated when a discrepancy is found between the available bandwidth bitmap stored in the internal wideband data structures and the actual available bandwidth bitmap calculated by the wideband audit for this carrier
- WB109. Conflicting Max Trkgrp. This is generated when a discrepancy is found between the maximum available bandwidth for this trunk group in the internal wideband data structures and the actual maximum available bandwidth for this trunk group as calculated by the wideband audit

AD4755

Feature name

DWS DTCI XPM PLUS

Description

This feature verifies the interoperability between dialable wideband services (DWS) and the extended multiprocessor system (XMS)-based peripheral module (XPM) peripheral live upgrade strategy (PLUS) for the ISDN digital trunk controller (DTCI).

BCS history

This feature was created in BCS36.

Hardware requirements

For this feature, the DTCI must be upgraded to support XPM PLUS.

The enhanced network (ENET) is required to provide constant delay among all the wideband DS-0 channels across the switching network.

The DTCI must be equipped with an NTAX78AA card (digital cellular time switch card). This provides a constant delay across the DTCI.

This feature requires a 6X50AB card (DS-1 EFF card), revision 67 or later.

Restrictions and limitations

This feature applies only to DTCIs with XPM PLUS.

DTCIs support North American PRI protocol messaging.

AD4756

Feature name

DWS DTC7 XPM PLUS

Description

This feature verifies the interoperability between dialable wideband services (DWS) and the extended multiprocessor system (XMS)-based peripheral module (XPM) peripheral live upgrade strategy (PLUS) for the CCS7 digital trunk controller (DTC7).

BCS history

This feature was created in BCS36.

Hardware requirements

For this feature, the DTCI must be upgraded to support XPM PLUS.

The enhanced network (ENET) is required to provide constant delay among all the wideband DS-0 channels across the switching network.

The DTCI must be equipped with an NTAX78AA card (digital cellular time switch card). This provides a constant delay across the DTCI.

This feature requires a 6X50AB card (DS-1 EFF card), revision 67 or later.

Restrictions and limitations

This feature is intended for DTC7s supporting XPM PLUS upgrade only.

DTC7s currently support DWS over trunks with ISDN user part intertoll (ISUP-IT) protocol messaging.

AD4948

Feature name

DWS XPM PLUS Overload Controls

Description

This activity enhances the extended multiprocessor system (XMS)-based peripheral module (XPM) peripheral life upgrade strategy (PLUS) overload controls for ISDN digital trunk controllers and digital trunk controllers with CCS7 software in order to handle dialable wideband services (DWS).

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires XPM PLUS.

Restrictions and limitations

This feature applies only to XPM PLUS.

Operational measurements

Under conditions of severe overload, this feature may ignore origination messages.

This feature package provides software to extend SuperNode computing module operations in a UNIX application environment (UAE), including

- access to UNIX file systems hosted on the system load module or the input/output controller disks
- transfer of operational measurements and logs
- loadbuilding of the UNIX components of Automated Directory Assistance Service (ADAS)

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS30AA contents

Feature number	Description
AF2980	OM Transmission
AF3379	SuperNode/UNIX File System Access to SLM/SLMII/IOC
AF3391	Logs Transfer-UNIX-SOS
AN0069	ADAS UNIX Loadbuild and Software Installation

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages

Feature package number	Description
NTXS29AA	APU Maintenance

AF2980

Feature name

OM Transmission

Description

This feature integrates operational measurements (OM) from the UNIX application environment (UAE) on an application processing unit (APU) into the DMS OM system. The DMS OM system resides in the DMS SuperNode computing module (CM).

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires a SuperNode switch with a link peripheral processor (LPP) installed. The LPP should have at least one application processor unit (APU) with the UAE load.

Restrictions and limitations

When the APU on which the central OM receiver resides is busied, communication between the CM and that particular APU is not possible. Any OMs that were present on the APU are lost.

The OM data is transferred from the central OM receiver to the DMS OM system a minute before the DMS OM system transfers its ACTIVE registers to its HOLDING registers. At transfer time, if the APU on which the central OM receiver resides is overloaded, or the UAE/SOS OM interface process does not have time to run, the OM data may not be transferred within the time window. However, the data is not lost. Instead, the current ACTIVE register on the DMS OM system is updated. This results in a slight skew in the reporting of the OM data.

If OMSHOW is used on the CM to display the registers for UAE OM groups, then only the HOLDING registers will be valid. This is due to the OM data being transferred into the ACTIVE registers on the CM a minute before they become the HOLDING registers. Until that transfer the ACTIVE registers will have zero values. An exception to this is the situation where the one-minute transfer period is missed completely, in which case the new ACTIVE registers receive the OM data. Once the OM group is allocated, or tuples reallocated, there is no way to deallocate the memory space, other than with a restart.

The key IDs name must be not more than eight characters long.

If a register overflows at the CM, then any extension register associated with the register on the central OM receiver is not incremented.

Feature interactions

This feature interacts with the following features:

- AF2976 UAE Collector Enhancement for OM Collection
- AL1982 MTS Messaging Access for UNIX Applications on SNIX Nodes

Logs

The following six logs have been created for this feature:

- OMX101 generated when the UNIX OM transfer process on the CM receives an OM data message from a central OM receiver, containing bad data
- OMX102 generated when the UNIX OM transfer process on the CM attempts to allocate memory to store OM group data and fails
- UOAM300 generated when the COMR process cannot send a connection message to the USOMI process on the CM
- UOAM301 generated when the COMR attempts to send OMs to the CM, but is unable to do so
- UOAM302 generated when the APUX is unable to re-send either a data message or a connection message to the CM
- UOAM503 generated when the COMR on an APU has successfully established communications with the USOMI process on the CM

AF3379

Feature name

SuperNode/UNIX File System Access to SLM/SLMII/IOC

Description

This feature provides SuperNode UNIX (SNIX) applications access to disks based on the computing module (CM). SNIX applications may now use UNIX file systems hosted on the system load module (SLM), or the input/output controller (IOC) disks, and access them from a SNIX node. The feature allows for a maximum of 16 SNIX file systems, and also supports file shadowing, which provides increased reliability in the host SNIX distributed file system (HSDF).

BCS history

This feature was created in BCS36.

Hardware requirements

This feature is intended for a SuperNode switch. The switch must have at least a system load module (SLM), or an input/output controller (IOC) disk as well as an applications processor unit (APU) running SuperNode UNIX.

Restrictions and limitations

The Support Operating System (SOS) will not interwork with UNIX files, as the UNIX file system structure is hidden within the contents of an SOS file.

An HSDF read/write volume is dependent upon an owner SNIX node.

The DISKUT BACKUP facility will support only the backup of HSDF read-only files. DISKUT BACKUP does not support the backup of HSDF read/write files.

The HSDF system has a limit of 16 file systems.

It is strongly recommended that the SOS files for the HSDF be placed on SLM devices for greater performance.

Feature interactions

This feature interacts with existing SNIX and message transport system (MTS) base software, and with the file and cache systems within the UNIX kernel.

Datafill

Table	Description
SNIXVOLS	New table
SNIXAPPL	New table
LIUINV	Change of LIU-type to APU, removal of subfields SOSTIX and SNIXTIX
IPHOST	Node name changed from APUX to APU
SNIXINFO	Changed to allow APUs to be datafilled

Logs

This feature creates the following logs:

- HSDF301 file access failure
- HSDF302 file system access failure
- HSDF501 state change
- HSDF502 configuration change

AF3391

Feature name

Logs Transfer - UNIX-SOS

Description

This feature provides a distributed mechanism for collecting and transferring logs between Support Operating System (SOS)-based nodes. The messages are received from the UNIX application environment (UAE) data collector and the UNIX system log (Syslog) utility, and are then inserted into the DMS log system.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature functions on any node that runs the SuperNode/UNIX (SNIX) environment.

Restrictions and limitations

This feature does not maintain all of the information from a UAE log report to the generated SOS log report. However, the lost information has no relevance to the DMS log system. For example, the UNIX node name is not transferred, but this becomes irrelevant in the DMS environment.

Because all syslogs are mapped to USLG100, it is not possible to apply thresholds or to suppress Syslogs from different applications that generate logs.

This feature does not check the /etc/syslog.conf file to verify that it is causing the Syslogs to be sent to the appropriate pipes. Currently, however, there is no requirement for this functionality.

Feature interactions

This feature interacts with the SOS log system, the UAE data collector, and the UNIX Syslog system.

Logs

This feature creates the following five new logs:

- USLG100 Generated when a Syslog is generated on a SOS/SNIX node
- USLG101 Generated when the Syslog receiver on a SOS/SNIX node receives an improperly formatted Syslog
- USLG102 Generated when the ltr program, that starts various log receivers, is started with invalid parameters
- USLG103 Generated when the /etc/syslog.conf file on a SOS/SNIX node does not reference all of the buffers used for log transfer
- USLG104 Generated when the UNIX log transfer process detects that the Syslog daemon has stopped execution

AN0069

Feature name

ADAS UNIX Loadbuild and Software Installation

Description

This feature provides a loadbuilding process for the UNIX components of the Automated Directory Assistance Service (ADAS). This includes the ADAS application that resides on an application processor running SuperNode UNIX (APU), as well as on a Hewlett-Packard workstation. The feature also modifies the workstation manager component of the UNIX application environment base, and outlines the APU software installation process.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the provision of two cards: NTEX22BA (integrated processor and F-bus interface card) and NT9X14DB (24-Mbyte memory card). These cards together make up the APU, and occupy two slots of a link peripheral processor (LPP) cabinet.

Restrictions and limitations

This feature enforces a naming convention on future applications that run on an APU.

Feature interactions

This feature interacts with the following features:

- AF3379 SuperNode/UNIX File System Access
- AJ0322 IWS Manager
- AJ0839 Binary Elector
- AL2010 APU Maintenance, Phase II

Logs

This feature generates logs if any of the following events occur:

- An installation process is unable to locate necessary files or configuration data
- The configuration data obtained from SNIXAPPL contains invalid data
- An installation process is terminated abnormally
- Either the application process or workstation manager (WSM) cannot be started
- Necessary links needed to access the ADAS load could not be established on the CM

Enhanced Service Resource Management

This feature package provides enhanced service resource management (ESRM) services including

- the configuration and allocation of voice processing units (VPU)
- the ability to datafill and assign services to VPU nodes
- call processing, common maintenance, and data transfer functions for Automated Directory Assistance Service (ADAS) in a UNIX environment

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS31AA contents

Feature number	Description
AF3006	VPU Service Circuit Resource Management
AF3049	ADAS APUX Resource Management
AF3532	VPU MAP and Table Control
AN0047	Enhanced Services Resource Management
AN0178	ADAS MMI Data Transfer

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages

Feature package number	Description
NTXS11AA	File Transfer Protocol (DARPA)
NTXS30AA	UAE/UNIX Conversant Software

AF3006

Feature name

VPU Service Circuit Resource Management

Description

This feature coordinates the configuration of voice processing units (VPU) and the allocation of VPU service circuits to applications. It also provides the mechanism to notify the application of VPU faults.

BCS history

This feature was created in BCS36.

Restrictions and limitations

There is a limit of 720 network channels provided by NIU nodes in an office. These channels are a shared resource for VPU service circuits and any other APU-based application that requires network access through an NIU.

This feature does not include a resource audit. All resources are initially allocated by way of the enhanced services resource manager (ESRM), which implements its own audit.

Feature interactions

This feature interacts with the following features:

- AF3007 VPU Service Circuit Processing
- AF3532 VPU MAP and Table Control
- AI0273 Generic LIU Maintenance
- AI0410 Network Interface Unit (NIU) Central Maintenance
- AN0047 Enhanced Services Resource Manager

Operational measurements

This feature creates a new operational measurements (OM) group, VPSC. This group contains the following eight registers:

- VPSCSZR indicates the total number of service circuits that have been allocated on the VPU
- VPSCMAX indicates the maximum number of service circuits that were allocated on the VPU at any one time
- VPSCUSE is incremented every 10 s by the number of service circuits in use at that time
- VPSCMTC is incremented every 10 s by the number of unavailable service circuits
- VPSCIDL is incremented every 10 s by the number of available but unallocated service circuits

- VPSCMIS indicates the total number of service circuit session mismatches detected by the VPU
- VPSCAUD indicates the total number of service circuits that have been reclaimed by audit
- VPSCFLT indicates the total number of service circuits that were in use when they suffered a service-affecting fault

AF3049

Feature name

ADAS APUX Resource Management

Description

The Automated Directory Assistance Service (ADAS) application processor running SuperNode UNIX (APUX) resource manager (AARM) is a software entity that resides on the computing module (CM) of the DMS system. It is used by maintenance applications and, through its interface with the enhanced services resource manager (ESRM), by call processing. AARM defines, allocates, deallocates, and performs common maintenance functions on APUX-based call processing engine (CPE) service circuits.

BCS history

This feature was created in BCS36.

Restrictions and limitations

Changes to the capacity of an application node through table control in table SNIXAPPL are not reflected in the OM display for APU-based advanced services (AASV) until after the next restart.

Feature interactions

This feature interacts with the following features:

- AF2989 Channel Performance Monitor
- AF3291 APUX Process Manager
- AF3382 ADAS Data Manager
- AI0273 Generic LIU Maintenance
- AN0047 Enhanced Services Resource Manager
- AN0056 ADAS Service Data MMI
- AN0162 ADAS UN*X Loadbuild and Software Installation

Datafill

Table	Description
ESRVATTR	Field SRVDATA added

Operational measurements

This feature creates a new operational measurements (OM) group, AASV. This group gathers information on APU service circuit availability and usage on the basis of each APU.

Group AASV consists of the following registers:

- AASVALOC counts the number of allocations
- AASVHWM counts the highest number of simultaneous calls
- AASVTRAF counts the call traffic
- AASVUNAV counts unavailable channels
- AASVIDLE counts channels not in use
- AASVFLT counts the number of channel failures
- AASVSFLT counts the number of APU service data synchronization failures

AF3532

Feature name

VPU MAP and Table Control

Description

This feature provides maintenance personnel with the ability to datafill voice processing unit (VPU) nodes in table LIUINV, and to assign services to these nodes by means of table VPUSERV. This feature also defines the VPU MAP (maintenance and administration position) as a sub-level of the peripheral module MAP.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the following cards:

- NTEX22BB integrated processor and F-bus card
- NTMX97AA recording-announcement processor card
- NTMX99AA C-bus interface, 512-channel paddle board

Restrictions and limitations

VPU nodes operate only in simplex mode. There is no “warm” sparing.

A maximum of 180 VPU nodes can be used in a single office.

Feature interactions

This feature interacts with the following features in the manner indicated:

- AI0273 Generic LIU Maintenance. Provides the central maintenance base for all application specific units (ASU)
- AI0410 NIU Central Maintenance. VPU table control registers the VPU with the NIU channel database to enable subsequent channel allocation
- AF3005 VPU Local Maintenance. Implements some of the maintenance commands initiated from the VPU MAP

Datafill

Table	Description
LIUINV	ASU type VPU added
VPSRVDEF	New table
VPUSERV	New table

Operational measurements

The following PM1 registers are associated with the VPU:

- PM1ERR Indicates the number of VPU state mismatches, test failures and in-service (Insv) to in-service trouble (Istb) PM-state transitions
- PM1FLT Indicates the number of VPU autonomous fault reports
- PM1INITS Indicates the number of VPU restarts
- PM1LOAD Indicates the number of VPU load operations
- PM1MBU Indicates the number of manual busy (ManB) VPUs
- PM1SBU Indicates the number of system busy (SysB) VPUs

User interface

This feature creates a new PM Map level, VPU. Seven new commands have been created and 15 commands have been changed to allow their usage with the VPU node type.

The following are the new commands:

- TST Run diagnostics on the posted VPU peripheral
- BSY Manually busy the selected VPUs
- RTS Return the specified VPU to service
- OFFL Place the specified VPU in the offline state
- LOADPM Load the currently posted VPUs
- QUERYPM Display miscellaneous engineering and PM status information
- PMRESET Reset the specified VPU

AN0047

Feature name

Enhanced Services Resource Management

Description

This feature provides enhanced services resource management (ESRM) with a distributed resource management (DRM)-compliant interface. The ESRM is used by call processing and maintenance applications to define, allocate, deallocate and perform common maintenance functions on Automated Directory Assistance Service (ADAS) circuits.

BCS history

This feature was created in BCS36.

Restrictions and limitations

Operating company personnel can read, but not alter, tables ESRVATTR and ESRVCAP.

The following limitations apply to the implementation of the ESRM with this feature:

- The facility for binding in failure callback procedures is not implemented
- Queries and registrations for ADAS service circuit component instances are not supported

Feature interactions

This feature interacts with the following features:

- AF3006 VPU Service Circuit Resource Management
- AF3049 ADAS APUX Resource Management
- AF3205 ADAS VSN XP
- AF3206 ADAS TOPS XP
- AF3381 APUX Process Management
- AN0056 ADAS Service Data MMI

Datafill

Table	Description
ESRVATTR	New table

AN0178

Feature name

ADAS MMI Data Transfer

Description

This feature provides a data transfer process for the Automated Directory Assistance Service (ADAS) man-machine interface (MMI). ADAS service data can be transferred from a workstation to a SuperNode load module (SLM) disk. The data can then be retrieved and used by ADAS service components, such as call processing engines (CPE) or voice processing units (VPU). This feature also manages the interactions involved in notifying the enhanced services resource management (ESRM) of service updates.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature is installed on the operations, administration, maintenance, and provisioning (OAM&P) workstation. This is an HP 7XX-series workstation, running UN*X and UAE base software. A local area network (LAN) connection is required to allow the workstation to communicate with the computing module (CM) over an Ethernet link. An ethernet interface unit (EIU) is also required.

Feature interactions

This feature interacts with the following features:

- AF3006 VPU Service Circuit Resource Management
- AF3049 ADAS APUX Resource Management
- AI0302 UAE Multinodal Interprocess Communication
- AN0047 Enhanced Services Resource Management
- AN0056 ADAS Service Data MMI
- AR0142 SuperNode File Transfer

This feature package implements SuperNode/UNIX base functions including

- transfer of Automated Directory Assistance Service (ADAS) logs to the support operating system (SOS)
- memory allocation, shutdown, and reboot protocols
- virtual machine scheduling of UNIX applications and support of SuperNode/UN*X on the file processor platform

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS32AA contents

Feature number	Description
AF2684	UNIX Kernel Changes for SuperNode/UNIX
AF3290	Logs and Alarms Transfer (Receiver)
AL2016	Enhanced VM Scheduler
AL2479	FPX VM Modifications

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages

Feature package number	Description
NTXS30AA	UAE/UNIX Conversant Software

AF2684

Feature name

UNIX Kernel Changes for SuperNode/UNIX Phase 2

Description

This feature implements three changes to the UNIX operating system HP-UX to create part of the SuperNode/UNIX software:

- improved memory allocation
- floating point emulation
- graduated shutdown and warm reboot process for UNIX

BCS history

This feature was created in BCS36.

AF3290

Feature name

Logs and Alarms Transfer (Receiver) - UNIX-SOS

Description

This feature provides a base receiver to receive the Automated Directory Assistance Service (ADAS) logs from the data collector and to prepare them for transfer to the support operating system (SOS) log system. System logs (Syslogs) do not go through the data collector, but can indicate serious problems. A process is also established for collecting these logs and formatting them in preparation for sending to the SOS log system.

BCS history

This feature was created in BCS36.

Restrictions and limitations

If the syslog configuration file is incorrect, but still references all of the eight buffer files, incoming logs could be placed into the incorrect syslog buffer files. If this occurs, the feature does not generate an entry in the xferlogs file.

AL2016

Feature name

Enhanced VM Scheduler

Description

This feature enhances the virtual machine (VM) scheduling mechanism to provide fair-share scheduling for UNIX applications. This is applied over the existing priority-based UNIX scheduler. The VM fair-share classes are scheduled in the usual manner by the Support Operating System (SOS) fair-share scheduler, thereby merging behavior and characteristics of the two schedulers.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The SOS scheduler consumes a larger portion of the CPU when the VM fair-share classes are enabled.

This feature is not integrated with other SOS applications. In particular, it defines a part of the scheduler that is specific to APUX, APX, and FPX nodes.

User interface

The VM fair-share classes appear in the ANALYSIS tool as VM1, VM2, and VM3. Any processes performed within these classes also appear in the CPSTATUS tool, within the FORE category.

Feature name

FPX VM Modifications

Description

This feature completes the virtual machine (VM) modifications required to support SuperNode/UN*X on the file processor (FP) platform. It provides support for an FP controlled by a dual operating system, SOS and UN*X. Some parts of this feature also apply to the application processor (APX) and to the application processor unit (APUX).

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the standard file processor (FP) and application processor (AP) hardware.

Restrictions and limitations

This feature provides a transparent environment, so that both operating systems (SOS and UNIX) behave as if each one is the sole operating system.

Logs

This feature creates the following two logs:

- SNIX107 SNIX no ip address
- SNIX108 SNIX kernel log

This feature package implements upgrades to the Traffic Operator Position System (TOPS) computing module to provide message delivery service selection for third-number and calling-card calls that have been transferred to Automated Alternate Billing Service (AABS), and for routing of these calls to automated services or to an operator or agent.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS37AA contents	
Feature number	**Description**
AF5009	TOPS Enhancements for MDS

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX030CC	TOPS Call Processing Features
NTXA17AA	Automatic Alternate Billing Service
NTXA83AA	TOPS Message Switch
NTXN84AA	Automatic OIA Session Start
NTXP41AA	TOPS Host Queue Management System
NTXP49AA	TOPS Open Position Protocol
NTXR48AA	QMS: Call and Agent Manager
NTXR52AA	TOPS Increased Multiplexing

AF5009

Feature name

TOPS Enhancements for MDS

Description

This feature implements enhancements to the Traffic Operator Position System (TOPS) computing module (CM) . This provides message delivery service (MDS) selection for collect, third number and calling card calls that have been handled by the Alternate Automated Billing Service (AABS), and for routing of these calls to automated or live MDS operators or agents.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature is intended for use in a specific market area for a limited period of time only. It is not intended for general application.

In order to avoid possible problems with equal access, MDS should be offered only for calls within a local access and transport area (intra-LATA).

On third-number calls, a 3-port connector is attached during billing acceptance verification. If direct network connections cannot be set up, the 3-port connector is not released. Under these circumstances the DMS switch does not monitor the call for MDS selection.

Calls arriving on trunks designated QMSCAM in table TOPSTOPT are the only calls eligible for MDS handling.

Feature interactions

This feature is provided only if AABS base is installed.

For routing, this feature requires the queue management system. Either of feature packages NTXP41AA (TOPS Host/Standalone QMS) or NTXP42AA (TOPS Remote QMS) must be installed.

Automated MDS operators require the open position protocol (OPP).

Datafill

Table	Description
MDSACTN	New table
MDSLANG	New table

Table	Description
TOPSLANG	Crosscheck added to table control to prevent deletion of any language that is datafilled in table MDSLANG or MDSACTN
TOPSPARM	Parameter AUTO_MDS_QMS_CQPROF added

This feature package enables the NT9X78 card (enhanced DS-0 interface paddle board) to generate DS-0 loopback codes so that the software can implement CCS7 link fault sectionalization.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS51AA contents

Feature number	Description
AR0540	FW Support for CCS7 Link Fault Sectionalization

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages

Feature package number	Description
NTX833AB	STP Operations (update of NTX833AA)
NTX839AB	LPP-Enhanced Maintenance and BERT (replaces NTX839AA)
NTXN19AA	LIU7 for LPP-based CCS7 Applications
NTXR72AA	CCS7 MTP/SCCP for LPP-based Platforms

AR0540

Feature name

FW Support for CCS7 Link Fault Sectionalization

Description

This feature provides the necessary firmware for the NT9X78DA card (DS-0A interface paddleboard) to generate DS-0 loopback codes so that the software can implement Common Channel Signaling 7 (CCS7) link fault sectionalization.

BCS history

This feature was created in BCS36.

Hardware requirements

The NT9X78DA card (enhanced DS-0A interface paddle board) is created as part of this feature. This unit is backwards compatible with current hardware.

Restrictions and limitations

The NT9X78DA card cannot be used with pre-BCS35 software.

With BCS35 software the NT9X78DA card can be used only in a signal transfer point (STP).

In cases where the hardware along the CCS7 signaling link does not support control of loopback by link fault sectionalization (LFS) control codes, it is assumed that the control codes are passed transparently along to the next network element.

Feature interactions

This feature is required by feature AR0518 (CCS7 Link Fault Sectionalization) to facilitate LFS maintenance procedures.

This feature requires feature AR0518 to provide user interface for its new functionality, as well as to signal to the software that it is compatible with previous NT9X78 hardware issues.

NTXS64AA

RSC-S Enhanced ESA (Lines Only)

This feature package supports emergency stand-alone (ESA) call processing for intra-ISDN calls on remote cluster controller 2 (RCC2), dual RCC2, and extended multiprocessor system (XMS)-based peripheral modules (XPM).

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS64AA contents

Feature number	Description
AF4893	RCC2 ISDN Warm Entry, Exit-CC
AF4894	RCC2 ISDN Warm Entry, Exit-XPM
AF4895	RCC2 ISDN Warm Entry, Exit for ISDN Call

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages

Feature package number	Description
NTXP92AB	RSC-S Basic (upgrade of NTXP92AA)
NTXQ12AA	RSC Enhanced ESA (Lines Only)

AF4893

Feature name

RCC2 ISDN Warm Entry/Exit - CC

Description

This feature provides central controller (CC) call processing changes for emergency stand-alone (ESA) warm entry and exit on intra-ISDN calls on remote cluster controller 2 (RCC2).

This feature uses two packages for remote switching center-SONET (RSC-S) enhanced ESA. For ISDN lines only, package NTXQ12AA (RSC enhanced ESA [lines only]) is required. For ISDN lines and trunks package NTXN82AB (RSC enhanced ESA [lines and trunks]) is required.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature supports RCC2 only.

This feature does not support features and hardware that are not supported by RCC2.

This feature does not support ISDN dual RCC2 warm ESA entry and exit.

Feature activation is not supported on calls surviving ESA warm entry and exit.

Generic services framework (GSF) calls are not supported over cold or warm entry, cold or warm exit, or during ESA.

Foe warm exit, dial tone is restored as soon as possible, usually within seconds. The actual dial tone delay depends on many factors, such as the call mix, occupancy of the CC RCC2 and host extended multiprocessor system (XMS)-based peripheral module (XPM) CPUs, or the distance of the RCC2 from the host XPM.

Feature interactions

This feature requires feature AF4894 (RCC2 ISDN Warm Entry/Exit - XPM) in order to function.

Feature AF4895 (Dual RCC2 Warm Entry/Exit for ISDN Calls) requires this feature in order to function.

Feature name

RCC2 ISDN Warm Entry/Exit - XPM

Description

This feature implements extended multiprocessor system (XMS)-based peripheral module (XPM) call processing changes for emergency stand-alone (ESA) warm entry for ISDN intraswitch calls. It also provides the ESA reports on the ISDN calls.

This feature uses two packages for remote switching center-SONET (RSC-S) enhanced ESA. For ISDN lines only, package NTXQ12AA (RSC enhanced ESA [lines only]) is required. For ISDN lines and trunks package NTXN82AB (RSC enhanced ESA [lines and trunks]) is required.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature supports RCC2 only.

This feature does not support features and hardware that are not supported by RCC2.

This feature does not support ISDN dual RCC2 warm ESA entry and exit.

Feature activation is not supported on calls surviving ESA warm entry and exit.

Generic services framework (GSF) calls are not supported over cold or warm entry, cold or warm exit, or during ESA.

Foe warm exit, dial tone is restored as soon as possible, usually within seconds. The actual dial tone delay depends on many factors, such as the call mix, occupancy of the CC RCC2 and host XPM CPUs, or the distance of the RCC2 from the host XPM.

Feature interactions

This feature requires feature AF4893 (RCC2 ISDN Warm Entry/Exit - CC) in order to function.

Feature AF4895 (Dual RCC2 Warm Entry/Exit for ISDN Calls) requires this feature in order to function.

AF4895

Feature name

Dual RCC2 Warm Entry/Exit for ISDN Calls

Description

This feature provides support for ISDN calls on dual remote cluster controller 2 (DRCC2) emergency stand-alone (ESA) warm entry and exit.

This feature uses two packages for remote switching center-SONET (RSC-S) enhanced ESA. For ISDN lines only, package NTXQ12AA (RSC enhanced ESA [lines only]) is required. For ISDN lines and trunks package NTXN82AB (RSC enhanced ESA [lines and trunks]) is required.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature supports single RCC2 and dual RCC2 only.

This feature does not support features and hardware that are not supported by RCC2.

Feature activation is not supported on calls surviving ESA warm entry and exit.

Generic services framework (GSF) calls are not supported over cold or warm entry, cold or warm exit, or during ESA.

Foe warm exit, dial tone is restored as soon as possible, usually within seconds. The actual dial tone delay depends on many factors, such as the call mix, occupancy of the CC RCC2 and host extended multiprocessor system (XMS)-based peripheral module (XPM) CPUs, or the distance of the RCC2 from the host XPM.

Feature interactions

This feature requires features AF4893 (RCC2 ISDN Warm Entry/Exit - CC) and AF4894 ((RCC2 ISDN Warm Entry/Exit - XPM) in order to function.

NTXS65AA

RSC-S Enhanced ESA (Lines and Trunks)

This feature package supports emergency stand-alone (ESA) call processing for intra-ISDN calls on remote cluster controller 2 (RCC2), dual RCC2, and extended multiprocessor system (XMS)-based peripheral modules (XPM).

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS65AA contents

Feature number	Description
AF4893	RCC2 ISDN Warm Entry, Exit-CC
AF4894	RCC2 ISDN Warm Entry, Exit-XPM
AF4895	RCC2 ISDN Warm Entry, Exit for ISDN Call

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages

Feature package number	Description
NTXN82AB	RSC Enhanced ESA (Lines and Trunks)
NTXP92AB	RSC-S Basic (upgrade of NTXP92AA)

AF4893

Feature name

RCC2 ISDN Warm Entry/Exit - CC

Description

This feature provides central controller (CC) call processing changes for emergency stand-alone (ESA) warm entry and exit on intra-ISDN calls on remote cluster controller 2 (RCC2).

This feature uses two packages for remote switching center-SONET (RSC-S) enhanced ESA. For ISDN lines only, package NTXQ12AA (RSC enhanced ESA [lines only]) is required. For ISDN lines and trunks package NTXN82AB (RSC enhanced ESA [lines and trunks]) is required.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature supports RCC2 only.

This feature does not support features and hardware that are not supported by RCC2.

This feature does not support ISDN dual RCC2 warm ESA entry and exit.

Feature activation is not supported on calls surviving ESA warm entry and exit.

Generic services framework (GSF) calls are not supported over cold or warm entry, cold or warm exit, or during ESA.

Foe warm exit, dial tone is restored as soon as possible, usually within seconds. The actual dial tone delay depends on many factors, such as the call mix, occupancy of the CC RCC2 and host extended multiprocessor system (XMS)-based peripheral module (XPM) CPUs, or the distance of the RCC2 from the host XPM.

Feature interactions

This feature requires feature AF4894 (RCC2 ISDN Warm Entry/Exit - XPM) in order to function.

Feature AF4895 (Dual RCC2 Warm Entry/Exit for ISDN Calls) requires this feature in order to function.

Feature name

RCC2 ISDN Warm Entry/Exit - XPM

Description

This feature implements extended multiprocessor system (XMS)-based peripheral module (XPM) call processing changes for emergency stand-alone (ESA) warm entry for ISDN intraswitch calls. It also provides the ESA reports on the ISDN calls.

This feature uses two packages for remote switching center-SONET (RSC-S) enhanced ESA. For ISDN lines only, package NTXQ12AA (RSC enhanced ESA [lines only]) is required. For ISDN lines and trunks package NTXN82AB (RSC enhanced ESA [lines and trunks]) is required.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature supports RCC2 only.

This feature does not support features and hardware that are not supported by RCC2.

This feature does not support ISDN dual RCC2 warm ESA entry and exit.

Feature activation is not supported on calls surviving ESA warm entry and exit.

Generic services framework (GSF) calls are not supported over cold or warm entry, cold or warm exit, or during ESA.

Foe warm exit, dial tone is restored as soon as possible, usually within seconds. The actual dial tone delay depends on many factors, such as the call mix, occupancy of the CC RCC2 and host XPM CPUs, or the distance of the RCC2 from the host XPM.

Feature interactions

This feature requires feature AF4893 (RCC2 ISDN Warm Entry/Exit - CC) in order to function.

Feature AF4895 (Dual RCC2 Warm Entry/Exit for ISDN Calls) requires this feature in order to function.

AF4895

Feature name

Dual RCC2 Warm Entry/Exit for ISDN Calls

Description

This feature provides support for ISDN calls on dual remote cluster controller 2 (DRCC2) emergency stand-alone (ESA) warm entry and exit.

This feature uses two packages for remote switching center-SONET (RSC-S) enhanced ESA. For ISDN lines only, package NTXQ12AA (RSC enhanced ESA [lines only]) is required. For ISDN lines and trunks package NTXN82AB (RSC enhanced ESA [lines and trunks]) is required.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature supports single RCC2 and dual RCC2 only.

This feature does not support features and hardware that are not supported by RCC2.

Feature activation is not supported on calls surviving ESA warm entry and exit.

Generic services framework (GSF) calls are not supported over cold or warm entry, cold or warm exit, or during ESA.

Foe warm exit, dial tone is restored as soon as possible, usually within seconds. The actual dial tone delay depends on many factors, such as the call mix, occupancy of the CC RCC2 and host extended multiprocessor system (XMS)-based peripheral module (XPM) CPUs, or the distance of the RCC2 from the host XPM.

Feature interactions

This feature requires features AF4893 (RCC2 ISDN Warm Entry/Exit - CC) and AF4894 ((RCC2 ISDN Warm Entry/Exit - XPM) in order to function.

This feature package supports the virtual private network on service control point II (SCPII).

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS66AA contents	
Feature number	**Description**
AJ2369	SCPII VPN Dial Plan Tables
AJ2860	VPN CALLP I
AJ2861	VPN SSP Messaging
AJ3280	VPN Callp II
AJ3285	DISA Calling DN Override

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX106AA	IBN-Proprietary Business Set
NTX167AB	CCS7-Trunk Signaling
NTX270AA	New Peripheral Maintenance Package
NTX550AA	CCS7-Transaction Service Support
NTX941AA	CM Common
NTXA79AA	IBN Trunks with ISUP Signaling
NTXN18AA	FBUS-LIU Base
NTXN19AA	LIU7 for LPP Based CCS7 Applications
NTXR72AA	CCS7 MTP/SCCP for LPP Based Platforms
NTXS62AA	VPN SSP Base

AJ2369

Feature name

SCPII VPN Dial Plan Tables

Description

This feature provides the dial plan tables in the SSP that are required to support virtual private network (VPN) on service control point II (SCPII)

BCS history

This feature was created in BCS36.

Restrictions and limitations

Tables SITEDIAL, CITYWIDE, and SITELOC are restricted to a 256K size.

Feature interactions

This feature interacts with advanced intelligent network (AIN) features.

Datafill

Table	Description
SITEDIAL	New table for business group, site ID to dial plan mapping
SITELOC	New table for business group, site ID to location code mapping
BGIDCUST	New table for business group to customer group mapping
CITYWIDE	New table for business group to sets of site IDs mapping

AJ2860

Feature name

VPN Callp I

Description

This feature implements the changes required to support service control point (SCP) based virtual private network (VPN) on integrated business network (IBN) lines and market-specific trunks. This feature also provides call processing utilities for the VPN dial plan tables and base changes required for least cost routing (LCR) and PBX (authcode required) indicator.

BCS history

This feature was created in BCS36.

Restrictions and limitations

SCP based VPN does not support interaction with SSP based VPN.

This feature does not support LCR querying.

VPNTEST can only display those parameters that pass successfully through the parameter handler routines.

Datafill

Table	Description
TRIGGRP	VPN specific trigger detection points and triggers added

Office parameters are added to provide the capability of generating intrasite and intra-citywide billing calls.

Operational measurements

This feature will generate data for OM group VPN.

User interface

TRAVER is enhanced to display advanced intelligent network (AIN) information from the following tables:

- TRIGGRP
- TRIGINFO
- CUSTSTN
- TRKGRP
- BGIDCUST
- SITEDIAL
- SITELOC
- VPNMAP

- VPNXLA

TRAVER also displays any DIALPLAN trigger queries that are sent to the database, and any responses that are received from the database.

Automatic message accounting

The following new module code records terminating information

- Module Code 130 Termination attributes
- Table 338 Facility release cause
- Table 339 Call characteristic

The following new billing module and table provide for VPN billing:

- Module Code 508 Virtual Private Network billing details
- Table 340 Location value

Digit identifier table 78 has the following values added:

- 007 Originating private digits
- 008 terminating private digits
- 009 Alternate billing digits

Feature name

VPN SSP Messaging

Description

This feature introduces two new service switching point (SSP) based virtual private network (VPN) tables. These tables are required for VPN service control point (SCP) based translations

This feature also provides the required transaction capabilities application part (TCAP) utilities to allow VPN call processing to interact with the advanced intelligent network (AIN).

BCS history

This feature was created in BCS36.

Restrictions and limitations

Tables VPNMAP and VPNXLA are restricted to 256K size. The entries in tables VPNMAP and VPNXLA are ignored when ISDN translations are used and the call is not ONNET or LCR-ONNET.

A network class of service (NCOS) response value of zero, from the adjunct, does not alter the NCOS value associated with the incoming VPN agent.

The context specific parameter USERID is restricted to a 10 digit maximum.

The party selector value for parameter CallingPartyBGID is always equal to CALLING_PTY_NUM.

As part of the identification of VPN trigger information a valid global title transaction name and source must be specified.

Feature interactions

This feature requires the following tables in order to integrate VPN call processing into an AIN framework:

- AJ2369 SCPII VPN Dialplan Tables
- AJ2860 VPN Callp I

Datafill

Table	Description
VPNMAP	New table, for business group and site ID to VPN translation index mapping
VPNXLA	New table, for VPN translation index and NCOS to integrated business network (IBN) mapping

AJ3280

Feature name

VPN Callp II

Description

This feature updates virtual private network (VPN) billings by allowing terminating billing recording for trunks terminating on busy or congestion treatments.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The billing for termination attributes, field facility release cause, are only affected by VPN billable calls terminating on ANSI-ISDN user part (ANSI-ISUP), Australian ISDN user part (AISUP), and Australian telephone user part (ATUP).

Feature interactions

This feature interacts with the following SCP based VPN features:

- AJ2860 VPN Callp I
- AJ2861 VPN SSP Messaging

Datafill

Table	Description
AMAOPTS	Tuple RECORD TERMINATION added to record terminating information on trunk calls routed from the VPN feature, and encountering busy or no-circuit problems

Automatic message accounting

New values are added to table 338 of module code 130 to indicate the facility release cause.

Feature name

DISA Calling DN Override

Description

This feature is used to provide dial-on access for the virtual private network (VPN). It allows the direct inward systems access (DISA) directory number (DN) to overwrite the originator's calling party number, where the protocol is supported.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature supports line originations to the DISA port if the called number terminates on an Australian telephone user part (ATUP) trunk.

The VPN DN override option (VPNDNOVR) only functions if interworking is supported. If interworking is not supported, the values are not changes.

Datafill

Table	Description
DNROUTE	Refinement VPNDNOVR added to option DISA

This feature package implements dynamically controlled routing for the multiple network access capability within the DMS switch.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS67AA contents	
Feature number	**Description**
AJ2885	DCR: MNA Activation

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
Either NTX022AB or NTXP55AA	 Dynamically Controlled Routing (DCR/HPR) Dynamically Controlled Routing (DCR/LDR)

AJ2885

Feature name

DCR: MNA Activation

Description

This feature implements multiple network access (MNA) capability within the DMS system.

BCS history

This feature was created in BCS36.

Restrictions and limitations

If the DMS node is being accessed by a network processor and the priming sequence is in progress, the value of parameter NUM_DCR_NP_ACCESS cannot be changed from 1, or to 1.

The value of parameter NUM_DCR_NP_ACCESS can be lowered only to the number of networks datafilled in table DCRNETID.

Feature interactions

This activity is directly associated with features AJ2884 (DCR: MNA Table Control) and AJ2886 (DCR: Base RO Modifications), and requires both in order to function.

Datafill

Parameter NUM_DCR_NP_ACCESS is created in table OFCENG. The value of this parameter is in the range 1-6.

This feature package implements market-specific Virtual Private Network (VPN) service on a service control point (SCP).

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS70AA contents	
Feature number	**Description**
AR0341	SCP-Telecom Australia VPN Service
AR0400	SCP - VNS Generic Query Processing
AR0401	SCP - VNS Generic Update Processing
AR0402	SCP - Virtual Network Service Generic OMs
AR0403	SCP - VNS Test Query (Tests)
AR0485	SCP AIN 0.1 TCAP Message Handler
AR0486	SCP TCAP to TCB Parameter Mapper
AR0630	SCP - VPN FSL Enhancements

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXQ54AB	SCP Application Framework

AR0341

Feature name

SCP - Telecom Australia VPN Service

Description

This feature implements the market-specific Virtual Private Network (VPN) service on a service control point (SCP), using the generic virtual network service (VNS) as a base.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The SCP does not provide operational measurements (OM) on a customer basis.

The SCP does not provide OMs on the received database update service orders.

This feature allows the SCP to support dial-on access by calling card account number (CCAN). However, this access type is not supported by the service switching point (SSP).

Feature interactions

This feature requires the following SCP II base features:

- AQ1092 SCP/SMS Audit Efficiency
- AR0326 TCB Dump Utility
- AR0327 FSL Service DB Creation and Access
- AR0400 SCP - VNS Generic Query Processing
- AR0401 SCP - VNS Generic Update Processing
- AR0402 SCP - Virtual Network Service Generic OMs
- AR0406 Additional FSL Building Blocks
- AR0577 SCP II Database Tools
- AR0704 SAF Phase II

This feature interacts with the following features in order to implement the VPN:

- AR0403 SCP - VNS Test Query (TESTSS)
- AR0485 SCP AIN 0.1 TCAP Message Handler
- AR0486 SCP TCAP to TCB Parameter Mapper
- AR0630 SCP - VPN FSL Enhancements

Operational measurements

The following two new OM groups are provided by this feature:

- VPN Query Traffic Counts (SCP wide)
- VPN Query Traffic Counts (by originating SSP)

Each of the above groups contains 11 registers.

AR0400

Feature name

SCP - VNS Generic Query Processing

Description

This feature provides generic query processing capabilities to support market specific virtual network services (VNS). Query processing involves receipt of decoded transaction capabilities application part (TCAP) messages, retrieving the appropriate subscriber record, passing the record to the application framework, instructing the server layer to formulate the appropriate TCAP response, and invoking operational measurements processing.

BCS history

This feature was created in BCS36.

Feature interactions

This feature is required by market-specific VNS query processing.

This feature is dependent upon the following features:

- AR0163 SCP Query Processing Application Framework
- AR0324 Transaction Control Block Manager
- AR0327 SCP VNS Database Create and Access
- AR0406 Additional FSL Building Blocks
- AR0485 SCP AIN 0.1 TCAP Message Handler
- AR0486 SCP TCAP to TCB Mapper

Feature name

SCP - VNS Generic Update Processing

Description

This feature provides the generic virtual network services (VNS) update processing capabilities. Update processing consists of the validation of data sent from the service management system (SMS), and in writing the data into the VNS database. A component of update processing also provides record retrieval capability, so that the SMS can audit or dump the VNS database.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature does not allow emergency deletions.

Feature interactions

This feature is dependent upon the following features:

- AR0164 SCP Update Processing Application Framework
- AR0334 ASN 0.1 Encode/Decode
- AR0336 SCP Database Create and Access

This feature also interacts with appropriate market-specific servicekit building block development features.

AR0402

Feature name

SCP - Virtual Network Service Generic OMs

Description

This feature provides the operational measurements (OM) for the virtual network service (VNS). These OMs are generic and are used by all market-specific variants of VNS.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature resides on the file processor series III peripheral of the DMS-SCP II product.

Restrictions and limitations

There is no OM pegging for VNS update processing.

OMs are not provided on a customer basis.

Feature interactions

This feature is invoked by feature AR0324 (Transaction Control Block Manager).

This feature interacts with the following features:

- AR0158 SCP II Service OM and Log Interface Enhancements
- AR0400 SCP - VNS Generic Query Processing

Operational measurements

The following two groups of VNS specific OMs are provided by the SCP with this feature:

- SAVFTQP VNS Query Traffic Counts (SCP wide)
- SAVFOQP VNS Query Traffic Counts (by originating SSP)

Each of the above groups consist of 11 registers that provide individual OMs information. The OMs are specified only for query processing.

Feature name

SCP - VNS Test Query (Tests)

Description

This feature provides a MAP (maintenance and administration position) command interpreter (CI) to allow a test query to be sent to a virtual network services (VNS) database, and to allow the response to be displayed at the MAP terminal. This facility is applicable to all market-specific VNS services.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature runs on the computing module of the service control point (SCP II).

Restrictions and limitations

This feature may result in the formation of queries that are not valid VNS queries (for example, they may have no parameters). They are, however, valid TCAP queries.

The maximum number of valid telephony digits sent in a query is 24, not 18, as supported by VNS. This increase permits testing of the advanced intelligent (AIN) network encode/decode feature.

Feature interactions

This feature interacts with feature AR0485 (SCP AIN 0.1 TCAP Message Handler).

User interface

One new MAP command, VPNSCP, is introduced with this feature. This command can be entered from any level of the MAP display, and provides access to command TestSS. TestSS allows the user to send valid queries to one or all instances of the SCP VNS application from the MAPCI level.

AR0485

Feature name

SCP AIN 0.1 TCAP Message Handler

Description

This feature provides message handling functions for service control point (SCP) advanced intelligent network (AIN) release 0.1 transaction capabilities application part (TCAP) query processing. The feature includes encoding and decoding of AIN 0.1 TCAP messages based on service-specific requirements and driving the AIN service-specific state machine for handling the exchange of an agreed message set between service switching points (SSP) and SCPs.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature implements a subset of the AIN 0.1 message set as described in Bellcore Technical Reference TR-NWT-001285, issue 1, August, 1992, *Advanced Intelligent Network (AIN) 0.1 Switch-Service Control Point (SCP) Application Protocol Interface Generic Requirements.*

In order to support virtual network services (VNS) for the first set of SCP applications, the description of the TCAP messages is augmented with 17 VNS private optional parameters. These parameters are not a part of the above-referenced specification.

This feature does not support conversation package types. As a result, no transaction ID management functions are implemented as part of this feature.

The TCAP AIN 0.1 message handler supports only single component TCAP packages.

Feature interactions

This feature defines a new entity in the SCP application framework (SAF), called the TCAP manager. All incoming and outgoing TCAP messages are processed by the TCAP manager and re-directed to the appropriate application service within the query processing function. This requires changes in the SAF event manager during execution of the process query event.

Feature name

SCP TCAP to TCB Mapper

Description

This feature provides the service control point (SCP) with the following capabilities:

- conversion of received transaction capabilities application part (TCAP) message parameters into internal transaction control block (TCB) message parameters
- conversion of TCB fields into outgoing TCAP message parameters
- allowing a service application to define the quantity and type of TCAP parameters and the equivalent TCB field attributes from an easily configurable data driven engineering file

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature will support only message parameters defined by Bellcore Technical Reference TR-NWT-001285, issue 1, August 1992, *Advanced Intelligent Network (AIN) 0.1 Switch-Service Control Point (SCP) Application Protocol Interface Generic Requirements*.

This feature will support only parameters defined by feature AR0341, SCP - Telecom Australia VPN services.

Feature interactions

This feature affects only service applications that use the AIN 0.1 message set.

AR0630

Feature name

SCP - VPN FSL Enhancements

Description

This feature enhances the service control point (SCP) application framework (AF) update processing (UP) software (SAF UP). It enables the service management system (SMS) to update or retrieve a subscriber record that contains a call aggregate building block (CallABB) with no dynamic parameters. The feature also adds the AnalyzeDialPlan building block (BB) to the BB library of the SAF layer.

BCS history

This feature was created in BCS36.

Feature interactions

This feature is built upon the SCP II base features.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS71AA contents	
Feature number	**Description**
AR0521	TCAP Over Ethernet

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX550AA	CCS7 - Transaction Service Support
NTXF05AA	Ethernet Interface Unit
NTXF19AA	TCP/IP Protocols
NTXQ43AA	AIN R0.1 SSP
or NTXQ45AA	AIN Generic Messaging
NTXQ42AA	AIN Base
and NTXS71AA	TCAP/TCP Handler
NTXQ56AA	AIN REL 0.1 TCP/IP

AR0521

Feature name

TCAP Over Ethernet

Description

This feature provides an Interface to the Internet Transmission Control Protocol (TCP) which enables an Advanced Intelligent Network (AIN) Application to access services offered by an Application Service Provider (ASP) located on an Offboard Processor (OP) on an Etherneet Local Area Network (LAN). The AIN Application uses the services of the Signalling System Number 7 (SS7) Transaction Capability Application Part (TCAP) Application Protocol.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The following restrictions apply to this feature:

Only TCP/IP on Ethernet is supported. TCP/IP on IEEE 802.2 and IEEE 802.3 are not supported.

Only TCAP Issue-1 and TCAP Issue-2 specifications are supported. Other TCAP specifications (such as CCITT) are not supported.

The maximum TCAP message size is limited.

This features uses the ‘‘keep-alive” signal provided by TCP/IP to monitor TCP connection sanity during idle periods. The TCP/IP software at the adjunct must respond to this periodic message.

The number of endpoint identifiers are a finite resource shared by all applications in a DMS office

To simplify maintenance, a CCS7 subsystem number is used in order to reuse existing SCCP Subsystem Management. SCCP Subsystem Management software limits the maximum number of AIN TCP connections in the CM to 32.

Only one TCP connection between an AIN Application and one ASP is supported by this feature but the implementation is done in such a way as to minimize the work required to support multiple TCP connections between multiple AIN applications and multiple ASPs should such flexibility be required in the future.

The current implementation of the TCP Handler does not support TCP urgent data.

All TCP connections are closed over all restarts or BCS software applications (restart swacts or norestart swacts).

Since Table Control is not used to datafill the remote socket, all connection configuration data is lost after any type of BCS upgrade.
WARNING - Because of this restriction, it is essential that all AINTCPMG subsystem instance are offlined and then deleted prior to performing a BCS application. Deletion must be performed using the AINTCPCI tool as described in the user interface section . If desired, the connection may be re-datafilled using AINTCPCI following the BCS application.

There are certain corruptions of the Package Type Identifier byte and/or Total TCAP Message Length byte (s) which are handled by this feature in a non-compliant manner.

NTXS72AA

CC Software Support for EDRAM Uploading

This feature package provides central control software for the enhanced digital recorded announcement machine (EDRAM) to implement the following functionality:

- conversion of announcement-file formats to binary format
- provision of a means for maintenance personnel to query announcement file names in EDRAM
- uploading of EDRAM announcement files to an external storage device on a DMS switch

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXS72AA contents	
Feature number	**Description**
AQ0984	CC Support for EDRAM Uploading

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXN16AA	Enhanced DRAM

AQ0984

Feature name

CC Support for EDRAM Uploading

Description

This feature implements the following functionality for the enhanced digital recorded announcement machine (EDRAM):

- uploading of EDRAM announcement files to an external storage device on a DMS switch
- providing a means for maintenance personnel to query announcement file names in EDRAM
- enhancement of the loader to support the EDRAM announcement files in a new binary format

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires that at least one digital trunk module be installed on the switch.

Restrictions and limitations

This feature works only with single-density announcement files.

Uploaded announcement files are in a new binary format. They can only be used on a switch where this feature is active.

The uploading part of this feature supports only three external storage devices: SFDEV, disk, or tape.

Feature interactions

This feature is built upon feature AL1696 (CC Software Support for Enhanced DRAM), and requires this feature in order to function.

The digital trunk module firmware is modified to support uploading and name query. The correct firmware for this feature is EDRAM.AC01 or higher revision.

User interface

This feature creates a new command, UPLOAD. This command is activated on the DTM level of the MAP (maintenance and administration position) to upload files from the EDRAM to a specified storage device.

Command QUERYPM, on the DTM level of the MAP, is enhanced to display the names of the files in EDRAM.

This feature package applies to DMS-100 offices with CCS7.

Feature package contents

Feature package NTXS74AA contents	
Feature number	**Description**
AR0628	Productization of FORCENI Tool

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXR72AA	CCS7 MTP/SCCP for LPP Based Platforms

AR0628

Feature name

Productization of FORCENI Tool

Description

The purpose of this feature is to associate an incoming CCS7 message with a network and a protocol on the basis of the link on which the message arrives, regardless of the network indicator (NI) sent in the message. It accomplishes this by permanently modifying the NI (located in the service information octet (SIO) of the message transfer part (MTP) of the incoming CCS7 message).

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature is active on an office basis and cannot be disabled.

The NI in the SIO is permanently overwritten for all incoming messages, although datafill can be engineered such that the NI is overwritten with its original value.

NTXT10AA

Billing Server Poller Access Manager

This feature package provides support for the AMA teleprocessing system (AMATPS) and XFER protocols as part of the implementation of a hybrid billing server (HBS).

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXT10AA contents	
Feature number	**Description**
AD6516	Poller Access Manager-Phase 1

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXP94AA	FTFS Disk Shadowing

AD6516

Feature name

Poller Access Manager - Phase I

Description

This feature provides support for the automatic message accounting (AMA) teleprocessing system (AMATPS) and XFER protocols as part of the implementation of a hybrid billing server (HBS).

BCS history

This feature was created in BCS36.

Hardware requirements

Implementation of AMATPS in the HBS system requires the standard distributed processing peripheral hardware configuration.

Restrictions and limitations

The DPP data spooler and XFER data poller are mutually exclusive.

The DPP can interpret only AMA Bellcore compliant data.

User interface

This feature creates a new command interpreter directory, HBSXFER. This directory is available from any MAP (maintenance and administration position) level.

This feature package provides a new off-hook balance test (OHBT) procedure. The test is used by call processing on individual lines to optimize the balance network for loaded subscriber loops. In addition, the test determines the attenuation pad values necessary for the subscriber's line to meet the transhybrid loss requirements.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXT11AA contents

Feature number	Description
AR0900	37-0109 Line Admin PII (CC Part)

BCS history

This feature package was created in BCS36.

AR0900

Feature name

37-0109 Line Admin PII (CC Part)

Description

This feature provides a new off-hook balance test (OHBT) procedure. The test is used by call processing on individual lines to optimize the balance network for loaded subscriber loops. In addition, the test determines the attenuation pad values necessary for the subscriber's line to meet the transhybrid loss requirements.

The OHBT introduced by this feature is enabled or disabled for a complete office by datafillable parameters in table OHBTADMN. Table OHBTINV is datafilled to enable or disable OHBT for individual lines.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature uses the dedicated resources of an NT4X23AA digital test unit (DTU) with downloadable firmware specific to this application.

Restrictions and limitations

For any given line, the automatic balance selection off-hook test can only be run if this feature is disabled for that line.

Testing is supported for line-to-line, trunk-to-line and line-to-trunk calls only. OHBT will be invoked only when both parties on the call are either standard lines or standard trunks.

All OHBT testing is disabled while an image dump is in progress.

When the originating and terminating parties on a call have the same line equipment number, no test will be performed on either party.

OHBT will not be attempted on lines datafilled as WL902B with ground start.

If an OHBT test is scheduled for either party of a call that would normally be intraswitched, the intraswitching is blocked for that call.

If both parties in a call are scheduled for OHBT test, then the originating party takes precedence.

Originating tests on lines connected to Northern Telecom channel banks will fail, as channel banks use tones while setting up the call. These tones conflict with the test tones.

The terminating OHBT requires an answer message to invoke the feature.

Maintenance Trunk Modules or TM8 peripheral modules do not support some of the supervision required by the OHBT. An OHBT is not performed on calls using these peripheral devices.

An OHBT is stopped as soon as a flash message is received.

After an OHBT has been attempted on a call, reanswer is not supported for that call.

Feature interactions

This feature replaces feature NC0495 (Off-hook Testing).

This feature interacts with feature AE1298 (World Line Card 40 mA).

The following feature packages are required if 900 Ω + 2.16 µF balance networks are to be used with World Line Cards:

- NTXW20AA North American 900 Ω + 2.16 µF Template (Type A WLC)
- NTXW21AA North American 900 Ω + 2.16 µF Template (Type B WLC)

Datafill

Table	Description
OHBTADMN	New table, used to set office administration parameters
OHBTINV	New table, used to set up balance test information for each line

Operational measurements

This feature introduces DTU peg counts and usage counts to enable the operating company to carry out the following operations:

- monitor the traffic pattern
- monitor the number of DTUs required to support this feature
- count the number of tests that failed to complete due to lack of DTU resource

Logs

The following logs are generated by this feature:

- LINE 300 DTU failed maintenance tests

- LINE 301 Result handling process failed to update the balance network configuration after testing
- LINE 600 Test Completed successfully. OHBT recommends the same balance network as that datafilled before the test.
- LINE 601 Test Completed successfully. OHBT recommends a different balance network from that datafilled before the test.
- LINE 602 Test failed to complete
- LINE 603 Feature is enabled or disabled.

User interface

This feature introduces the following communications interface commands:

- SCHDOHBT Schedule Lines for OHBT. Allows a series of lines within one peripheral module to be scheduled for OHBT, or for all supported lines within the office to be scheduled with a single command.
- QOHBT Query OHBT Information for Lines. Provides detailed information on lines involved in OHBT.
- QDTU Query Digital Test Units. Provides information on DTUs datafilled for OHBT, and provides a mechanism for forcing DTU maintenance to run.

This feature package brings CLASS: Spontaneous Call Waiting Identification into compliance with the following Bellcore Technical Requirements:

- TR-NWT-000575, *CLASS Feature: Calling Identity on Call Waiting (CIDCW),* issue 1, October, 1992
- TR-NWT-000030, *Voiceband Data Transmission Interface Generic Requirements,* issue 2 October, 1992

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXT12AA contents	
Feature number	**Description**
AN0616	SCWID TR Compliancy - CC
AN0631	SCWID TR Compliancy - XPM

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXN97AA	Call Waiting Display

AN0616

Feature name

SCWID TR Compliancy - CC

Description

This feature modifies the operation of feature AG2073 (CLASS: Spontaneous Call Waiting Identification) to bring it into compliance with the following Bellcore Technical Requirements:

- TR-NWT-000575, *CLASS Feature: Calling Identity on Call Waiting (CIDCW)*, issue 1, October, 1992
- TR-NWT-000030, *Voiceband Data Transmission Interface Generic Requirements*, issue 2 October, 1992

This feature covers modifications to the central control only.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the provision of an NT6X78AB (CLASS modem resource) card for the transmission of display information to the customer premises equipment (CPE).

Spontaneous Call Waiting Identification (SCWID) compatible CPE must be installed.

This feature also requires the provision of a new NT6X69AD (tones and messaging) card to support the analog display services interface tones.

Restrictions and limitations

The following peripheral equipment must be based upon the unified processor (UP) in order to support SCWID:

- line group controllers (LGC)
- line trunk controllers (LTC)
- Remote Cluster Controller (RCC)
- Subscriber Module SLC-96 (SMS)
- Subscriber Module Urban - ISDN (SMU-ISDN)

Feature interactions

This feature interacts with feature AN0323 (CLASS: Calling Name TR Compliancy - Residential) to allow for transaction capabilities application part (TCAP) name delivery to a SCWID subscriber.

This feature modifies the interaction of the proprietary SCWID feature for the following subscriber features:

- Call Forwarding on Call Waiting
- Distinctive Call Waiting Tones
- Three-way Calling

Datafill

Table	Description
RESOFC	Field ACK_TONE removed
RESOFC	Field DATETIME added for the SCWID tuple

Service orders

Any attempt to add SCWID to a line extended from an LGC, LTC, RCC, RCC2, SMS, SMU-ISDN, or subscriber carrier module-100 access (SMA) that is not UP based will be denied and an error message returned.

If Call Waiting (CWT) is not present on a line when SCWID is added, it will be added automatically. Likewise, when SCWID is removed, CWT will automatically be removed.

Feature name

SCWID TR Compliancy - XPM

Description

This feature modifies the operation of feature AG2073 (CLASS: Spontaneous Call Waiting Identification) to bring it into compliance with the following Bellcore Technical Requirements:

- TR-NWT-000575, *CLASS Feature: Calling Identity on Call Waiting (CIDCW),* issue 1, October, 1992
- TR-NWT-000030, *Voiceband Data Transmission Interface Generic Requirements,* issue 2, October, 1992

This feature covers modifications to the XMS-based peripheral module (XPM) only.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the provision of an NT6X78AB (CLASS modem resource) card (CMR) for the transmission of display information to the customer premises equipment (CPE).

Spontaneous Call Waiting Identification (SCWID) compatible CPE must be installed.

This feature also requires the provision of a new NT6X69AD (tones and messaging) card to support the analog display services interface tones.

Restrictions and limitations

If the XPM does not have universal tone receivers (UTR) datafilled, the normal call waiting tone will be applied to the line.

If the CMR and UTRs are datafilled, but no UTR channels are available, the line will receive normal call waiting tone and no display data.

During the data transmission period, the original talk path is left in a silent state. If the silent state is maintained for 1 s without completion of data transmission, the data transmission is terminated and the talk path is re-established.

Any established call with a feature function block attached will not survive a warm activity switch (SWACT) of the XPM. If the XPM undergoes a warm SWACT between the alert and re-alert sequence before the incoming call is acknowledged, all parties of the SCWID call will drop.

Feature interactions

This feature interacts with feature AN0323 (CLASS: Calling Name TR Compliancy - Residential) to allow for transaction capabilities application part (TCAP) name delivery to a SCWID subscriber.

This feature modifies the interaction of the proprietary SCWID feature for the following subscriber features:

- Call Forwarding on Call Waiting
- Distinctive Call Waiting Tones
- Three Way Calling

NTXT13AA

Analog Display Service Interface

This feature package modifies the Analog Display Services Interface (ADSI) to ensure that it complies with Bellcore Technical Reference TR-NWT-001273, *Generic Requirements for an SPCS to Customer Premises Equipment Data Interface for Analog Display Services*, issue 1, December, 1992.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXT13AA contents	
Feature number	**Description**
AN0632	ADSI Compliancy - CC
AN0633	ADSI Compliancy - XPM

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXP91AA	ADSI Services Protocol
NTXQ91AA or NTXP95AA or NTXP96AA	Enhanced Call Waiting ID - CLASS ADSI Visual Screen List Editing ADSI Call Logging

AN0632

Feature name

ADSI Compliancy - CC

Description

This feature modifies the central control (CC) part of the existing proprietary Analog Display Services Interface (ADSI) to ensure that it complies with Bellcore Technical Reference TR-NWT-001273, *Generic Requirements for an SPCS to Customer Premises Equipment Data Interface for Analog Display Services*, issue 1, December, 1992.

This feature also modifies existing applications that use ADSI.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the provision of an NT6X78AA (CLASS modem resource) card (CMR) for the transmission of softkey and display information to the customer premises equipment (CPE).

This feature also requires the provision of a new NT6X69AD (tones and messaging) card to support the ADSI tones.

Restrictions and limitations

ADSI is limited by the throughput of the CMR card. Only 10 ADSI application sessions can be active in a CMR card at one time.

TCAP Name is not supported for Call Log.

Feature interactions

This feature modifies the operation of the following features:

- AF2993 Visual Screen List Editing
- AN0082 Call Logging
- NC0377 SCWID with Disposition

Datafill

Table	Description
LTCINV	Tone set NORTHAA added
OPTCTL	Tuple added to control the assignment of ADSI to subscriber lines

-continued-

Table	Description
RESFEAT	Line option ADSI added
RESOFC	Tuple ADSI added
SOFTKEY	Field LLABEL increased from 7 to 18 characters
	Field SLABEL increased from 4 to 7 characters
	Field RETURN changed from 14 characters to 14 bytes
TEXTLOG	Field DEFNLIST increased to a maximum of 8 definer numbers
	Fields MODE and SKT added to vector DEFNLIST
TEXTPHRS	Field LRCI added
	Vector HLMODE added
End	

Service orders

This feature adds option ADSI to the RES and IBN line class code (LCC).

AN0633

Feature name

ADSI Compliancy - XPM

Description

This feature modifies the extended multiprocessor system (XMS) based peripheral module (XPM) part of the existing proprietary Analog Display Services Interface (ADSI) to ensure that it complies with Bellcore Technical Reference TR-NWT-001273, *Generic Requirements for an SPCS to Customer Premises Equipment Data Interface for Analog Display Services,* issue 1, December, 1992.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires the provision of an NT6X78AA (CLASS modem resource) card (CMR) for the transmission of softkey and display information to the customer premises equipment (CPE).

This feature also requires the provision of a new NT6X69AD (tones and messaging) card to support the ADSI tones.

A successful ADSI session requires ADSI compatible CPE.

Restrictions and limitations

ADSI is limited by the throughput of the CMR card. Only 10 ADSI application sessions can be active in a CMR card at one time.

TCAP Name is not supported for Call Log.

Feature interactions

This feature requires feature AN0632 (ADSI Compliancy - CC) to provide the central control component of the ADSI enhancement.

This feature modifies the operation of the following features:

- AF2993 Visual Screen List Editing
- AN0082 Call Logging
- NC0377 SCWID with Disposition

This feature package simplifies the installation procedures for Meridian Business Sets (MBS), with display, that support power features. The user can verify the line equipment number (LEN) of a set, and use the power features to assign the set's feature keys.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXT14AA contents	
Feature number	**Description**
AR0307	Power Features Installer Application

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX001AA	Common Basic
NTX056AA	Enhanced Administration
NTX100AA	Integrated Business Networks - Basic
NTX106AA	IBN - Proprietary Business Set
NTX108AA	IBN - Display Features
NTXF88AB	MBS Interactive Displays
NTXR44AA	Power Feature Audit Trail

AR0307

Feature name

Power Features Installer Application

Description

This feature simplifies the installation procedures for Meridian Business Sets (MBS), with display, that support power features. The user can verify the line equipment number (LEN) of a set, and use the power features to assign the set's feature keys.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The user application can be invoked only from an idle directory number key, using code access.

This feature can be used only on terminals or sets that support power features.

The Query LEN feature is not a set-assignable feature, and cannot be added to a key.

The station ringer test that is invoked through the installer menu does not implement the run integrity test (RIT).

Feature interactions

This feature requires the following feature packages in order to provide the required functions:

- NTX056AA Enhanced Administration. Supports the journal files
- NTXF88AA MBS Interactive Displays. Supports the power features.
- NTXR44AA Power Feature Audit Trail. Supports the audit log.

Datafill

Table	Description
PFCTRL	QLEN (Query LEN) added as a valid feature
IBNXLA	INSTALL added as a valid access code
	-continued-

Table	Description
FTRGOPTS	QLEN added as a valid PFAPPL option for PFCNTL
INSTALL	New table. Stores information concerning the installers
End	

NTXT15AA

SMDR for PVN

This feature package enhances station message detail recording (SMDR) for calls accessing a private virtual network (PVN). The data returned from the service control point (SCP) is recorded in a new SMDR extension record.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXT15AA contents

Feature number	Description
AN0739	SMDR for PVN

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages

Feature package number	Description
NTX102AA	IBN - Station Message Detail Recording
NTX983AB	Service Switching Point Private Virtual Network

AN0739

Feature name

SMDR for PVN

Description

This feature enhances station message detail recording (SMDR) for calls accessing a private virtual network (PVN). The data returned from the service control point (SCP) is recorded in a new SMDR extension record.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature applies only to advanced intelligent network (AIN) version 0.0.

This feature will not function in an SL100 switch for which the SMDRLNK pool is used. SMDRLNK and the DF03 extension records created by this feature are incompatible.

SMDR is not started as a result of the translations following an SCP response message.

Normal SMDR activation applies to PVN calls

Feature interactions

This feature requires the following features in order to function correctly:

- AG0829 Private Virtual Networking Deliverable
- AG2243 Directory Number Trigger for Intelligent Networking

Datafill

Table	Description
CUSTSMDR	Option PVN added

Automatic message accounting

This feature introduces an extension record specifically for SMDR PVN calls. The extension record has a record code DF and a format code 03. The information for extension record DF03 is derived from existing parameters retrieved from the SCP response message.

This feature package implements the necessary software changes to allow the NTMX77AA or upward unified processor (UP) card to replace the master processor/signal processor card and the memory circuit cards in the carrier module for SLC-96 (SMS).

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXT16AA contents

Feature number	Description
AN0463	MX77 for SMS and SMS-R: CC

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages

Feature package number	Description
NTX398AA	SCM - 100S
NTXR34AB	XPM Plus (Product Line Upgrade Strategy) Basic
NTXR42AA	Firmware Downloading

AN0463

Feature name

MX-77 for SMS and SMS-R: CC

Description

This feature implements the necessary software changes to allow the NTMX77AA or upward unified processor (UP) card to replace the master processor/signal processor card and the memory circuit cards in the carrier module for SLC-96 (SMS).

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires an SMS equipped with the NTMX77 card. The appropriate backplane modifications must also be made to accommodate the changes in hardware configuration.

Feature interactions

This feature requires feature package NTX398AB (SCM - 1005) in order to function correctly.

This feature package implements the necessary software changes to allow the NTMX77AA or upward unified processor (UP) card to replace the master processor/signal processor card and the memory circuit cards in the carrier module for SLC-96 remote (SMSR).

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXT17AA contents	
Feature number	**Description**
AN0465	MX77 for SMS:CC

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXA85AB	Subscriber Module SLC-96/Remote
NTXR34AB	XPM Plus (Product Line Upgrade Strategy) Basic
NTXR42AA	Firmware Downloading

AN0465

Feature name

MX77 for SMS-R: CC

Description

This feature implements the necessary software changes to allow the NTMX77AA or upward unified processor (UP) card to replace the master processor/signal processor card and the memory circuit cards in the carrier module for SLC-96 remote (SMSR).

BCS history

This feature was created in BCS36.

Hardware requirements

This feature requires an SMS equipped with the NTMX77 card. The appropriate backplane modifications must also be made to accommodate the changes in hardware configuration.

Feature interactions

This feature requires feature package NTX885AC in order to function correctly.

Datafill

Table	Description
LTCRINV	Field E2LOAD added

NTXT18AA

CIC Expansion for Tandem Offices (LEAS)

This feature package provides the required changes to support feature group D (FGD) carrier identification code (CIC) expansion for local access and transport area (LATA) equal access system (LEAS) calls, using multi frequency and signaling system number 7 (SS7) signaling.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXT18AA contents	
Feature number	**Description**
AN0174	Carrier Code Expansion for LEAS

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX386AB	Access Tandem Switch

AN0174

Feature name

Carrier Code Expansion for LEAS

Description

This feature provides the required changes to support feature group D (FGD) carrier identification code (CIC) expansion for local access and transport area (LATA) equal access system (LEAS) calls, using multi frequency and signaling system number 7 (SS7) signaling.

This feature also includes CIC expansion changes for equal access intermediate tandem (EAIT).

BCS history

This feature was created in BCS36.

Restrictions and limitations

Due to the size of the digit register, the maximum number of digits for a LEAS call is 24. Expanding the number of carrier access code (CAC) digits by two, from 5 to 7, reduces the maximum number of called digits by two.

Feature interactions

This feature interacts with the following features:

- AN0834 TOPS Equal Access: FGD CIC Expansion
- AN0883 TOPS Equal Access: FGD CIC Expansion - Signaling

Datafill

This feature introduces the following new office parameter:

- LEAS_FOUR_DIGIT_CIC_STATUS

This parameter is added to table OFCENG, and is initialized to value THREEDIG.

NTXT19AA

TOPS EA: FGD CIC Expansion

This feature package provides the required changes and restructuring in key functions, screen displays, automatic message accounting (AMA), and operational measurements (OM) to support feature group D (FGD) carrier identification code (CIC) expansion for TOPS calls to accept and process four-digit CICs.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXT19AA contents	
Feature number	**Description**
AN0834	TOPS EA: FGD CIC Expansion

BCS history

This feature package was created in BCS30.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTX030CC	TOPS Call Processing Features
NTX187AA	TOPS - Equal Access

AN0834

Feature name

TOPS Equal Access: FGD CIC Expansion

Description

This feature, in conjunction with feature AN0883 (TOPS Equal Access: FGD CIC Expansion Signaling), provides the changes necessary to support feature group D (FGD) carrier identification code (CIC) expansion for TOPS calls to accept and process four-digit CICs. This feature provides the required changes and restructuring in key functions, screen displays, automatic message accounting (AMA), and operational measurements (OM).

BCS history

This feature was created in BCS36.

Restrictions and limitations

In an operator centralization environment this feature will only work when all the hosts and remote units are upgraded to TOPS02.1 or higher.

Offices with open position protocol positions must be upgraded with a load compatible with this feature before this feature can be activated.

Offices with TOPS position controllers (integrated or stand alone) must be upgraded with a load compatible with this feature before this feature can be activated.

Feature interactions

This feature is coupled with feature AN0883 (TOPS Equal Access: FGD CIC Expansion Signaling) to provide the necessary CIC expansion.

Datafill

Table	Description
TOPEACAR	Fields CARDIGS and ALTCARR expanded from three digits to four digits

Operational measurements

The registers in the existing OM group TOPSEA are updated to accommodate four digit CICs.

User interface

This feature updates KP IC on TOPS 4 and IC on TOPS MP to allow four digit input.

This feature also updates the display for the CIC field after IC message to allow it to display four digit CICs

Automatic message accounting

Table 57 is upgraded to record four digit CICs for FGD.

This feature package modifies the network facility access (NFA) automatic message accounting (AMA) generation procedures to incorporate the new definition for the access type field.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXT20AA contents	
Feature number	**Description**
AN0435	NFA: AMA Modifications

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages	
Feature package number	**Description**
NTXR25AA	Network Facility Access

AN0435

Feature name

NFA: AMA Modifications

Description

This feature modifies the network facility access (NFA) automatic message accounting (AMA) generation procedures to incorporate the new definition for the access type field. It also alters the use of the CONV_REQ field of AMA module record 047. This module is appended to AMA records that are generated to record an NFA trunk connection, as well as AMA records that are generated to record calls that are extended by an NFA trunk connection.

BCS history

This feature was created in BCS36.

Datafill

The provisioning rules for Office Parameter CRS_SUBRU_POOL2_SIZE are modified to eliminate all scenarios where two 047 modules are attached to an NFA AMA record. This feature removes any situation where this could occur.

Automatic message accounting

This feature redefines the access method field of AMA module 047. The access field now indicates the type of NFA connection that took place prior to the event that is recorded in the corresponding AMA record.

This feature package enhances the maintenance and diagnostic functions of the trunk module/ maintenance trunk module (TM/MTM), and enhances the slot verification procedure to include the ISM shelf in the verification task.

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXT22AA contents

Feature number	Description
AR0918	CC Support for the Integrated Service Module (ISM)

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages

Feature package number	Description
NTX001AA	Common Basic

AR0918

Feature name

CC Support for the Integrated Service Module (ISM)

Description

This feature completes the functionality required to incorporate the ISM into the DMS system. It enhances the maintenance and diagnostic functions of the trunk module/ maintenance trunk module (TM/MTM) as required, and enhances the slot verification procedure to include the ISM shelf in the verification task.

In addition to the above, this feature adds a new display function to provide information concerning the circuits resident on the ISM shelf.

BCS history

This feature was created in BCS36.

Hardware requirements

This feature supports the following hardware:

- NTFX42AA ISM controller card
- NTFX4101 ISM shelf assembly
- NTFX43AA ISM DC converter

Feature interactions

This feature requires the provision of preparatory feature AQ0972 (CC Support for the ISM)

User interface

This feature adds command TRNSL P to the POST TM/MTM level of the maintenance and administration position (MAP).. This command results in a display of information concerning the cards and circuits based on the ISM shelf.

This feature package provides the DMS-100 TR303 MultiVendor Interface (MVI).

This feature package applies to DMS-100 offices.

Feature package contents

Feature package NTXT23AA contents

Feature number	Description
AF4879	MVI Lines Provisioning Enhancements
AF4882	MVI Protocol Stack Application Layer
AF4883	MVI Convergence Function I
AF4887	MVI Protocol Stack Application Layer II
AF5378	MVI CM Path Protection Switching
AF5455	MVI Per Line Ringing - CM
AF5533	TR-303 MVI Object Model
AF5536	MVI Line Testing - CM
AF5537	MVI Line Provisioning - CM

BCS history

This feature package was created in BCS36.

Required feature packages

Required feature packages

Feature package number	Description
NTXF46AA	Subscriber Carrier Module-100 Access

AF4879

Feature name

MVI Lines Provisioning Enhancements

Description

This feature enhances feature AF2614, RFT Line Provisioning, to datafill the locally switched single party subscriber lines of the remote digital terminal (RDT) for the DMS-100 TR303 multivendor interface (MVI). This feature also handles the incoming message overload faults (babble) for the MVI RDT lines.

BCS history

This feature was created in BCS36.

Restrictions and limitations

This feature supports only those RDT lines withy locally switched single party services. Multi-party and direct inward dialing services are not supported by this feature.

Feature interactions

This feature requires the following features in order to function correctly:

- AF2614 RFT Line Provisioning
- AF3801 SMA Dynamic Service Option Update II
- AF4438 RFT Line Provisioning Extensions
- AF4880 MVI Call Processing I
- AF4882 MVI Protocol Stack Application Layer I
- AF4883 MVI Convergence Function I
- AF4884 MVI Convergence Function II
- AF4887 MVI Protocol Stack Application Layer II
- AF5444 MVI Call Processing Line Data - CM
- AF5445 MVI Call Processing Line Data - SMA
- AF5455 MVI Per Line Ringing - CM
- AF5456 MVI Per Line Ringing - SMA
- AF5533 MVI Object Module II

Datafill

Table	Description
RDTINV	Subfields INHLINE and MAXLINES added to variant RDT, types GENCSC and GENTMC
RDTINV	Field SHELFSLT moved to variant RDT, type RFT only
RDTLT	Subfields ds1_lt and ds0_ct added to field qds0info

AF4882

Feature name

MVI Protocol Stack Application Layer

Description

This feature is one of a group of features that allow the DMS-100 switch to provide the necessary interfaces and services for access vehicles conforming to Bellcore Technical Requirements TR-TSY-000303, issue 1, March, 1990, *Integrated Digital Loop Carrier System Generic Requirements, Objectives and Interface* for integrated digital loop carrier (IDLC) systems. This group of features is known as the DMS-100 TR303 MultiVendor Interface (MVI).

This feature provides the following functions to support the TR303 MultiVendor Interface (MVI):

- Mechanisms to allow applications to access and utilize the services of the MVI protocol stack
- Services and protocol support for common management information service element (CMISE) messages
- Abstract Syntax Notation 1 (ASN.1) basic encoding rules (BER) translation invocation

BCS history

This feature was created in BCS36.

Restrictions and limitations

Application protocol data unit message size must not exceed 2 000 octets when encoded in the BER transfer syntax. This limit is imposed by the convergence function.

Object references must exist in the MVI object model.

Due to the operation of the convergence function as defined by Bellcore Technical Requirements TR-TSY-000303, and the possibility of path protection switches, the MVI protocol stack cannot guarantee error free CMISE message delivery.

Feature interactions

This feature requires the following features in order to function correctly:

- AF4877 MVI Path Protection Switching
- AF5533 TR-303 MVI Object Model
- AG1608 FLC Base Messaging

The following features use this feature to transport and receive CMISE messages:

- AF5536 MVI Line Testing - CM
- AF4879 MVI Lines Provisioning Enhancement
- AF4881 MVI LDS Applications I

AF4883

Feature name

MVI Convergence Function I

Description

This feature is one of a group of features that allow the DMS-100 switch to provide the necessary interfaces and services for access vehicles conforming to Bellcore Technical Requirements TR-TSY-000303, issue 1, March, 1990, *Integrated Digital Loop Carrier System Generic Requirements, Objectives and Interface* for integrated digital loop carrier (IDLC) systems. This group of features is known as the DMS-100 TR303 MultiVendor Interface (MVI).

The embedded operations channel (EOC) represents an input/output interface for DMS MVI applications that communicate with a remote digital terminal (RDT). This feature provides elements of tthe EOC relating to the convergence function (CF). CF performs segmentation and reassembly of application messages as its main function.

BCS history

This feature was created in BCS36.

Restrictions and limitations

TR-303 compliance is based upon Northern Telecom Implementation Specification NIS A217-2, issue 01.01, October, 1993.

Feature interactions

This feature cannot function without the provision of the following features:

- AF4882 MVI Protocol Stack Application Layer
- AF4887 MVI Protocol Stack Application Layer II
- AF5533 TR-303 MVI Object Model

This feature is designed to operate in conjunction with feature AF4884 (TR-303 Convergence Function XPM). Feature AF4884 is an extended peripheral module (XPM) feature.

AF4887

Feature name

MVI Protocol Stack Application Layer II

Description

This feature is one of a group of features that allow the DMS-100 switch to provide the necessary interfaces and services for access vehicles conforming to Bellcore Technical Requirements TR-TSY-000303, issue 1, March, 1990, *Integrated Digital Loop Carrier System Generic Requirements, Objectives and Interface* for integrated digital loop carrier (IDLC) systems. This group of features is known as the DMS-100 TR303 MultiVendor Interface (MVI).

This feature provides the following parts of the TR-303 stack:

- Communications control
- Initialization and recovery control
- Remote operations service element (ROSE) messaging

BCS history

This feature was created in BCS36.

Feature interactions

This feature is dependent upon feature AF4882 (MVI Protocol Stack Application Layer) to provide gates for association state change notification.

This feature also depends upon features AF4883 (MVI Convergence function I) and AF4884 (MVI Convergence function II). These features provide presentation layer services that are needed by the ROSE messaging part of this feature.

AF5378

Feature name

MVI CM Path Protection Switching

Description

This feature is one of a group of features that allow the DMS-100 switch to provide the necessary interfaces and services for access vehicles conforming to Bellcore Technical Requirements TR-TSY-000303, issue 1, March, 1990, *Integrated Digital Loop Carrier System Generic Requirements, Objectives and Interface* for integrated digital loop carrier (IDLC) systems. This group of features is known as the DMS-100 TR303 MultiVendor Interface (MVI).

Path protection switching (PPS) is a recovery mechanism for the IDLC communication channels. PPS maintains active and standby message paths for the embedded operations channel and the time-slot message channel, and provides path switching upon automatic fault detection or when initiated by maintenance personnel.

BCS history

This feature was created in BCS36.

Restrictions and limitations

Application messages may be lost during a path switch.

Recovery from double faults, such as loss of both active and standby, is not possible.

Datafill

Table	Description
RDTINV	Field RDTPPLNK added to identify the path protection facility configured by the remote digital terminal

Feature name

MVI Per Line Ringing - CM

Description

This feature is one of a group of features that allow the DMS-100 switch to provide the necessary interfaces and services for access vehicles conforming to Bellcore Technical Requirements TR-TSY-000303, issue 1, March, 1990, *Integrated Digital Loop Carrier System Generic Requirements, Objectives and Interface* for integrated digital loop carrier (IDLC) systems. This group of features is known as the DMS-100 TR303 MultiVendor Interface (MVI).

This feature provides the necessary software in the local digital switch (LDS) to allow coded or superimposed ringing on individual lines connected to remote digital terminals that use hybrid signaling as defined in the above-referenced Bellcore document.

BCS history

This feature was created in BCS36.

Feature interactions

Feature AF5456, MVI Per Line Ringing - SMA, complements this feature by providing the individual line ringing function at the subscriber carrier module - 100 access.

Datafill

Table	Description
RDTINV	Field RNGDATA removed
LNINV	Values RDTC and RDTS added to field CARDINFO

AF5533

Feature name

TR-303 MVI Object Model

Description

This feature provides an object model for use in subscriber carrier module-100 access (SMA) multivendor applications, in accordance with Bellcore Technical Requirements TR-TSY-000303, issue 1, March, 1990, supplement 3, *Integrated Digital Loop Carrier System Generic Requirements, Objectives and Interface: Operations (ROS/CMIS/ASN.1) Messages Release 1.0*. This feature also provides access to the ASN.1 object model through the Cristal toolset.

BCS history

This feature was created in BCS36.

Restrictions and limitations

The DMS family switch must be able to communicate simultaneously with the multivendor and the FiberWorld Product (FWP) network elements. It is a requirement, therefore, that the object model created by this element can co-exist with the FWP object model.

Feature interactions

This feature is used by all features that generate SMA multivendor interface applications requiring the object model.

AF5536

Feature name

MVI Line Testing - CM

Description

This feature provides the necessary computing module software to perform maintenance on remote digital terminal (RDT) POTS, coin, ISDN, and multiparty line types from the line test position (LTP), or remotely using the no test trunk (NTT).

BCS history

This feature was created in BCS36.

Feature interactions

This feature interacts directly with feature AF5354, Line Testing - SMA.

AF5537

Feature name

MVI Line Provisioning - CM

Description

This feature is one of a group of features that allow the DMS-100 switch to provide the necessary interfaces and services for access vehicles conforming to Bellcore Technical Requirements TR-TSY-000303, issue 1, March, 1990, *Integrated Digital Loop Carrier System Generic Requirements, Objectives and Interface* for integrated digital loop carrier (IDLC) systems. This group of features is known as the DMS-100 TR303 MultiVendor Interface (MVI).

This feature implements multiparty provisioning for the TR303 MVI. In addition it implements datafill restrictions and updates the provisioning of link access procedure D-channel (LAPD) parameters.

BCS history

This feature was created in BCS36.

Feature interactions

This feature requires the following features:

- AF1957 RDT Table Control
- AF2530 RDT Line Table Control II
- AF2614 RFT Line Provisioning
- AF3801 SMA Dynamic Service Option Update II
- AF4438 RFT Line Provisioning Extensions
- AF4870 Enhanced Flow Through Provisioning I
- AF4879 MVI Lines Provisioning Enhancements
- AF4882 MVI Protocol Stack A

Datafill

Table	Description
RDTINV	Values for subfields ELAPDPAR and CLAPDPAR updated

Service orders

The GND option is now compatible with line class codes of 2FR (for two-party lines) and 4FR (for four-party lines).

Cross-references-feature numbers listed by BCS

BCS28

AC0277	PRA Call Redirection Service
AC0361	CCS7 Timer Enhancements
AC0425	STP V.35 Capability for STP
AC0428	STP-V.35 Subrate Links for STP
AC0474	PRA Connected Number (XPM)
AC0475	LTCI-OM Collection and Reporting
AC0487	LTCI-ISP Audit Enhancements
AC0509	Datapath Automatic Modem Insertion
AC0519	CC/XPM Support of POTS on LCMI
AC0520	LCMI Software for POTS Support
AC0528	LTCI Trunks and UTR Integration
AC0530	D-channel Link Fault Handling
AC0531	DCH Sparing XPM Support
AC0534	S/W Definition of New 6X76AC Line Cards
AD1778	SMDI-Port Expansion
AD1857	ACD 2500 Set Call Processing Interactions
AD1858	ACD 2500 Set Login/Logout
AD1862	ACD 2500 Set Load Management and ACD Show
AD1863	ACD 2500 Set Not Ready
AD1929	ACD Distinctive Ringing
AD1950	ACD on 2500 Set Feature Assignment
AD2238	Verification of Time Delayed Overflow
AD2239	Limited ACD-Enhanced Agent Features
AF1092	Enhanced WATS
AF1097	IDDD via ARS
AF1252	Expanded Trunk Guard Timing
AF1269	VFG Look Ahead
AF1275	Meet Me Page
AF1276	Outgoing Restriction Control
AF1426	TPC HSLI Software Enhancements
AF1455	MDR Data in the AMA Stream
AF1462	AMA Test Call Capability
AF1527	TOPS Data and Voice Link Utilities
AF1528	Billing Method Collection
AF1564	Suspend and Restore Remote Call Forward LInes
AF1565	Change Speed Call Controller
AF1647	LCM Takeover/Takeback Enhancement
AF1663	Change EBS Features During Talking State
AF1665	UMCD Indicator in AMA Record
AF1735	E911 and 3WC Interaction
AF1756	LTG Capacity Increase
AF1778	FGB on ATC Trunks
AF1784	TOPS Base Changes
AF1789	SMS-R Lines Support XPM
AF1909	TPC TAMI Enhancements
AG0649	Enhanced Line Access Measurements
AG0724	PARMCALC-Verify Office Parameters (Phase 2)

AG0919	Decouple CC Hardware and Software System Initialization I
AG0925	Private Virtual Network Enhancements
AG0967	RES Feature Set Expansion 1
AG1004	Log Retrieve Facility for E1 Incidents
AG1047	DS0-A Diagnostic
AG1104	Network Name Display for Attendant Consoles
AG1214	NETPATH Automation
AG1221	TABS Call Distributor
AG1222	TABS OA&M
AG1223	TABS Control Link Interface to DMS
AG1243	TABS Data Definition
AG1250	T1 Resource and Voice Connection Manager
AG1318	Enhanced Line Access Measurements-Part 2
AG1341	Functional Signaling Access to Additional MDC Features: 3
AG1385	Presheduled Image Taking on SLM
AG1474	Background Streamlining
AG1489	IBN Attendant Console-DModem Robustness
AG1495	Switch Performance Monitoring System (SPMS) Enhancements II
AG1538	ISUP Rel Cause to Treatment Mapping
AG1541	Call Forward Don't Answer Interaction with 3WC
AG1542	RES: Service Order Simplification for Hunt Groups
AG1543	RES: Toll Denied
AG1544	RES: 1MR Service in RES
AG1555	PVN Attendant Services
AI0167	Link Interface Module Maintenance Enhancements
AI0227	LIU7-DS0-A Control Code Maintenance
AI0273	Generic LIU Maintenance
AJ0162	Service Order Enhancements for BRA Functional Signaling
AJ0164	Dynamic TEI and Service Profile Identification
AJ0165	Multiple Directory Number Capability for ISDN EKTS
AJ0166	Intercom and Group Intercom Capability for ISDN EKTS
AJ0170	Interworking ISDN Services I
AJ0190	Executive Morning Report
AJ0191	Hardware-Software Initialization Coordination II
AJ0192	RCC/LCM Loading Enhancements I
AJ0194	CC Warm SWACT Enhancements
AJ0338	XPM Parity Audit
AJ0509	ISDN-OAM Name Display Control-DMS Changes
AL0479	Trunk Return to Service (RTS) Enhancements
AL0537	Non-data Link Console Call Extension
AL0688	Master External/Internal Clock Synchronization
AL0797	DMS-bus MMI Enhancements
AL0914	Remote File System Improvements
AL0942	S/T Line Card XPM Interface
AL0955	S/T Line Card Diagnostic
AL0956	DCH Sparing Maintenance
AL1040	Loop Maintenance for ISDN S/T Linecard
AL1052	Lost Messages Reporting Enhancements
AL1054	DMS-core Enhanced Image Test
AL1055	DMS-core REX Test Speedup II
AL1071	SEAS-Enhanced CCS7 OMs
AL1126	SEAS SWACT
AL1161	Master External Clock Support for Composite Clock Signal
AL1197	DMS-core Inventory Audit
BC2150	SMS-R Provisioning and MAP

BCS29

AC0368	DCH Q.921 Frame Routing
AC0451	Service Profile Configuration for BRA Functional Signaling
AC0545	DIALAN CUG and MTC Loopback S/W for CD6X76AC
AC0546	Printer Support on Coax Eliminator

AD0943	Office Line Totals/QNCOS
AD1313	Feature Group-D on SL-100
AD1609	ACD-Agent Status Lamp Enhancement
AD1610	ACD-Observe Agent Enhanced
AD1612	Controlled Interflow
AD2068	Enhanced Serial Calling
AD2085	DSN Access Restriction
AD2097	ISDN DTC Table Control
AD2129	ACD Line of Business Code Key
AD2130	ACD Queue Slot Announcement Allocation
AD2228	ISDN DTC B/D Maintenance
AD2231	ISDN DTCI Special Connections
AD2245	Network Name Display on PRA
AD2247	Enhancements to Sigman to Interwork #5ESS
AD2318	ACD on IVD Digital Sets
AF0163	SMS-R Call Processing I XPM
AF0164	SMS-R Basic MTC XPM
AF0744	TPC Diagnostic Enhancements
AF0966	Called Party Released Timing Enhancement
AF1093	VFG AMA Support for FX and ETS Calls
AF1335	E911 Trunk Origination
AF1336	E911 Origination Table Control
AF1337	E911 Trunk Origination Call Procssng Support
AF1338	E911 Translations
AF1375	E911 Selective Routing Database
AF1387	E911 Line Interface on a Digital Trunk
AF1400	Improved Coin Service-Revenue Allocation
AF1407	DMS CC Software for High Capacity DPP
AF1643	E911 PSAP Call Processing Support
AF1644	E911 PSAP Table Control
AF1645	E911 Selective Routing Database Update
AF1650	E911 Line Appearnace PP Maintenance
AF1651	E911 Line Appearance Signal Processing Signaling Utilities
AF1664	MDC Enhanced WATS
AF1668	E911 Line Appearance PP Call Processing
AF1731	Cancel Call Waiting-Per Line
AF1736	E911 Line Appearance Basic Maintenance
AF1737	E911 Line Appearance General Maintenance for PM and LTP Levels
AF1749	Realtime Input OM
AF1780	DIRP Space Rotation
AF1790	SMS-R-RCC ESA MTC XMP
AF1791	SMS-R-RCC ESA MTC CC
AF1794	SMS-R Call Processing II XPM
AF1977	E911 LTD Maintenance
AF1980	Authcode for MDR
AF1981	AMA Test Call Enhancements
AF1998	TPC HSDA MTC Enhancements
AF2001	E911 Product Delivery
AF2014	Preset Conference (Large)
AF2017	TOPS Screen and Bellcore AMA Expanded Calling Card
AF2019	Directory Assistance/Toll Branding
AF2022	Improved Statspac Force Management Capability
AF2071	LRU CC Static Data
AF2085	TPC MP Grey Scale Enhancements
AF2086	Automated DA Call Completion -with Alternate Billing
AF2087	NWMSD Table Rewrite
AG1082	Detection and Correction of Slow CP Babblers
AG1162	Access Feature Grouping
AG1301	Flexible Calling and DN Bridging Capability for ISDN EKTS
AG1342	MADN SCA for Electronic Key Telephone Service
AG1447	TOPS International Telephone Credit Card (CCITT)
AG1524	JFFREEZE-DMO Enforcement for Journal File

AG1547	Feature Group D and PRA Trunk Interworking
AG1575	EBS as a Message Center-Enhancements
AG1605	CLASS: Selective Call Rejection
AG1611	Flexible Calling Interaction Improvements
AG1708	MF Feature Group D and CAMA Interworking for ONA/ESP
AJ0301	DMS Query Application for ISDN OAM
AJ0302	ISDN OAM Session Service Manager
AJ0303	DMS-based PH Server for ISDN OAM Processor
AJ0304	PH Data Table and Audit Process
AJ0305	SERVORD Enhancements for ISDN OAM
AJ0385	ISDN DTC PM Maintenance
AJ0388	TOPS-Administration-1200 Baud Printers
AJ0397	ISDN Packet Handler Service Provisioning Interface
AJ0398	ISDN Packet Handler Service Data File Compiler/Decompiler
AJ0399	ISDN Packet Handler to OAM Processor Upload/Download
AJ0400	ISDN Provisioning Packet Handler Activation
AJ0425	Status Enquiry Support
AJ0426	Name and Reason Display for ISDN Functional Calls
AJ0432	Key Access for Message Waiting Indication
AJ0443	Interactive Display Service Order
AJ0463	DTCI PRA Layer II Signaling
AJ0465	DTCI PRA Layer III Signaling
AJ0472	Morning Maintenance Report II
AJ0473	ICTS Enhancements
AJ0474	XPM P-side Data Distribution Enhancement
AJ0493	DMS ISDN OAM Packet Handler NAS Co-existence
AJ0507	Functional Signaling Interactions with Attendant Console
AJ0576	NCS Access From MAP
AJ0577	DS-1 Mapping for ISDN PH
AJ0729	Trunk Return to Service (RTS) Enhancements II
AL0290	Intra-LATA PIC with LEAS
AL0532	SMDI on RES
AL0787	DMS-bus Diagnostic Enhancements Using the Tracer Card
AL0790	DMS-bus Software Support for 4 Meg Memory CPU Card
AL0934	Software Support for 68030 At 33 Mhz
AL1053	Enhanced DMS-core Mate Link RTS
AL1060	SLM Phase II-Disk/Tape Replacements
AL1149	User Passwords Survivability Over BCS Application
AL1166	SLM Maintenance Enhancements
AL1182	DMS-core Link Hit Analysis
AL1183	DMS-bus Central Communication Audit Enhancements
AL1192	Enhanced DMS-core Memory Alarm
AL1201	DMS-bus Central Software Enhancements for P-side Node Isolation
AL1274	Reload Restart in Restart Progression
AL1296	ISG Performance MAP Display
AL1298	SLM File System Enhancement-Phase 2
AL1322	ISG Performance Tools
AL1330	Signaling Link Marginal Performance Report
AL1333	Enhanced LIU Maintenance
AL1334	SEAS 1.1 Enhancements
BC2147	SMS-R Serving Lines Support
BC2153	SMS-R Basic MTC I CC

BCS30

AC0222	MTP-Preventative Cyclic Retransmission
AC0552	2B1Q LCME CC Maintenance I
AC0553	2B1Q LCME XPM Support
AC0565	Datapath Call Path Restoration
AC0570	2B1Q LCME CC Maintenance II
AC0574	ISP/DCH R8071 Audit
AC0575	LTCI-Datafill Enhancements
AC0576	LTCI-ISDN BRA Overload Controls
AD0351	Attendant Console Call Queue Status
AD1607	Night Service Recorded Announcement and Forward
AD2125	ACD Walk-away/Closed Key Operation
AD2126	Group Intercom All Call
AD2131	Virtual Facility Group Data in ACD MIS
AD2445	Display Agents Summary Key
AD2467	IBN ISUP NETINFO Translations
AD2488	Attendant Console Call Hold Recall
AD2588	ACD Transfer to Incalls Key
AD2591	ACD MSQS Refresh
AD2606	ISDN DTC Robustness
AD2665	Distinctive Tone Burst for Emergency Operation
AD2810	Override ACR for CFU
AF1214	TMS TDC Maintenance (PP)
AF1235	XFER Subsystem Table
AF1266	IBM DA Protocol and Simulator
AF1471	TMS X.25 Base (PP)
AF1472	TMS Base Maintenance (PP)
AF1473	TMS Protocol Admin/Router
AF1474	TMS Static Data Route Table Management (PP)
AF1529	Billing Verification
AF1563	TPC Mass Storage SCSI Support
AF1581	TMS Route Table Loader (PP)
AF1652	TMS Maintenance Hook (CC)
AF1687	TPC/MP Datafill for TMS
AF1699	TPC-CC Messaging via HSDA
AF1727	Integrated MP Maintenance
AF1728	TMS Static Data (CC)
AF1785	TOPS CC CALLP TMS Interface
AF1802	TPC Integrated Maintenance
AF1936	IBN LCC Compatibility with FRO Line Option
AF1940	Integrated TPC MAP Support
AF1974	TPC Integrated TAMI Enhancements
AF1975	TPC Integrated MP Diagnostics
AF1991	Integrated MP MAP Support
AF1992	Integrated TPC Maintenance
AF1993	TMS SWACT/DCH Memory Maintenance (PP)
AF2016	Equal Access Intermediate Tandem
AF2018	Two Terminal Directory Assistance/Intercept
AF2070	ORDB Access via TMS/TOPS -LTCI
AF2110	TMS ISP Router (PP)
AF2161	TDC Maintenance for TMS
AF2244	WATS on RES
AF2251	SMU Forward Disconnect for EPOTS (PP)
AF2254	SMU Forward Disconnect for EPOTS (CC)
AF2255	SMU CLASS Calling Card Delivery
AF2256	RCU 4-wire Special Services
AF2267	RCCI BCS SWACT, BERP Support, and Perform Tools
AF2270	RCCI Warm SWACT
AF2271	RCCI Non-ISDN ESA Support
AF2303	Distinctive Ringing Enhancements
AF2310	SA Dialback on ATC Trunks
AF2316	DIRP on SLM
AF2331	TOPS Trunks Interworking with CCS7 Trunks
AF2341	NT6X81 Firmware Robustness
AF2342	SMR B-word Facility Robustness
AF2343	SMR Maintenance Robustness
AF2344	SMR Audit Robustness
AF2345	RCT Subscriber Loop Test Digital (SLTD) Robustness
AF2347	SMR Call Processing Robustness
AF2348	SMR A-bit Facility Robustness

AF2372	SA Logon
AF2374	TPC SA Logon Enhancements
AF2379	DTMF Billing Acceptance
AF2380	Operator Handoff
AF2390	TOPS-VSN Prompt Manager: Administration and Maintenance
AF2391	TOPS-VSN Prompt Manager: Prompt/Set Issue Managment
AF2392	TOPS-VSN Prompt Manager: Voice Editor
AF2394	TMS DA/ORDB Product Verification
AF2395	Dedicated DA Subtending TMS
AF2396	Locality Database
AF2397	Locality Call Processing Support
AF2398	TOPS-VSN Prompt Manager-Overview
AF2409	TMS OM
AF2412	High Speed MPC, ROM, and Diagnostics
AF2471	SMDI Conversion to Use MPC
AF2473	MPC PP Asynchronous Level 1
AF2474	MPC PP Asynchronous Support
AF2475	MPC CC Asynchronous Support
AG1568	MADN Cutoff on Disconnect (COD)
AG1628	CLASS: Selective Call Forwarding
AG1629	CLASS: Distinctive Ringing/ Call Waiting
AG1675	CLASS: Selective Call Acceptance
AG1709	BRA Access to Enhanced Service Providers
AG1785	CLASS: Phase Two on Multiline Variety Plan
AG1824	Matching Line Drawer Status Over CC Warm SWACT
AG1854	200 MS Disconnect Timing
AG1866	Access Feature Group Enhancement
AG1877	CLASS-MDC: CLASS on Centrex Basic
AG1913	CRM/CRA Optionality for TR-394 ISUP
AG1922	Improve Memory Parity Detection
AG1923	NT40 Memory Handling Improvements
AG1924	NT40 Mismatch Handler Refinements
AG1925	NT40 CMC RTS Improvements (Diagnostics)
AG1926	Inclusion of CCS7 into SPMS
AG1927	BCSMON-Enhanced Monitoring Capabilities
AG1947	Increased Number of ACDMIS Links
AG1950	ACD Observe Agent 3WC
AG1973	Distinctive Ringing on Ring Side Only
AJ0445	MBS Power Feature-Name Programming
AJ0607	ISDN Packet Handler Maintenance Data Collection
AJ0810	TR268 Channel Identification (CID) Comprehensive Compliance
AJ0901	QCUST Upload Enhancements for CDC
AJ0902	CDC Enhancements for ISDN
AJ0908	Q.932 Facility Interface to RO Service in LTCI
AJ0909	Coordinated Voice and Data for ACD Interface
AJ0912	BRA Meridian Feature Transparency: MTCE and CP Integration
AJ0913	BRA Meridian Feature Transparency: XPM Support for MTCE and CP
AJ0942	E.164 Support for PVCS and DCS
AJ0964	Enhanced XPM SWACT Management
AJ0965	Cold SWACT Recovery on Failure of Planned SWACTs
AL0612	Multiple Position Hunt with Queue
AL0944	ISDN Loop Maintenance Enhancements
AL1043	ISDN RCCI XPM Base
AL1046	ISDN RCCI CC Maintenance I

AL1186	DMS-bus Fault Correlation Using Tracer Card (9X49CB)
AL1247	CCS7 Enhancements to Support LPP on a CCS7 SSP
AL1271	REX Test on LPP
AL1294	SPECCON Network Connections
AL1389	Enhanced DCH Loader
AL1498	LPP on SCP
AL1565	ESF Support on 6X50AB
AL1566	Path Verification Automation
AL1717	Clear 64 KBPS on 6X50AB
NC0001	End-to-end Signaling via Speed Call
NC0013	Operator Handoff to AABS
NC0019	Teen Service on MDC

BCS31

AC0442	MTP-BERT Capability for SSP
AC0538	BRA: Meridian Feature Transparency-Power Softkeys
AC0567	LCME Drawer Control Task and Hardware Interface
AC0568	XPM 2B1Q Loop Maintenance Interface
AC0569	LCME Diagnostics
AC0571	2B1Q XPM TDM Connection Support
AC0601	LCME Connection and TDM Control
AC0603	LCME ISDN Loop Maintenance Interface
AC0604	LCME TDM Dump and Restore Procedures
AC0634	ISP/DCH Diagnostic Enhancements
AC0638	Maintain Messaging Over Restarts
AD2128	ACD Call Forcing Tone to Headset
AD2587	SCAI-SS7 Release Link Trunk (RLT)
AD2851	Ring Again Cancellation Timer
AD2852	Precedence Progressive Conferencing
AD2895	ACD Call Transfer with Time
AD2964	DISA: Invalid Authcode Treatment Option
AF1085	Secretarial Hunt
AF1439	AMA: Separation of Billing and Routing Functions
AF1715	TOPS Expanded Bellcore AMA Format (EBAF) Extensions
AF1734	Flow Controls for SMU
AF1750	Line Load Control-Phase II
AF2012	IBNRTE Table Capacity Increase
AF2020	TOPS Expanded Calling Card Format-CCS7 Validation
AF2118	RCCI Intraswitching
AF2145	E911 Single Button Transfer Operation
AF2261	TPC IBM DA Application
AF2262	TPC IBM DA Application Messaging
AF2273	RCCI ISDN ESA Static Data
AF2274	ISDN ESA Base
AF2275	ISDN ESA Stimulus Call Processing
AF2276	RCCI ISDN ESA Functional Call Processing
AF2301	SMDI on Hunt Groups
AF2307	Single Line Variety
AF2361	LEAS Interworking with SS7
AF2367	CCS7 Basic Test Utility
AF2370	DMS-100 Increased Digit Outpulsing
AF2450	RCCI ISDN ESA Line Integration
AF2452	RCCI Dual Support and ISDN ESA Trunk Integration
AF2454	RCCI ISDN ESA SWACT
AF2470	Special Application Patching
AF2476	RCCI 2B1Q Maintenance and Call Processing Integration
AF2529	Enhanced MFADS
AF2532	Obsolete Packaging
AF2560	E911 ACD PSAP MIS Enhancements
AF2565	E800 on PX Trunks
AF2582	Broadcast Patching for Active and Inactive XPMs
AF2583	XPM RTS Enhancements
AF2587	Extended Calling Card Format Support
AF2594	Prompt Manager Enhancements

AF2595	Prompt Manager: Set Archive
AF2599	Test Desk Robustness
AF2601	PARS OC Remote
AF2668	RCU Line Card Configuration
AF2739	E911 Integrated PSAP ACD Functionality
AF2759	E911 Direct Accesses to AT&T ALI Controller
AG1159	Intraswitched CMR on RSC
AG1565	Call Pickup Transparency
AG1566	MADN Bridging-3 Way Call
AG1638	Message Service-Network Message Waiting Indicator
AG1818	CP Long Messaging Implementation I
AG1839	Bulk Calling Line Identification
AG1868	Provide CC Warm SWACT Residency in All Loads
AG1869	CC Warm SWACT Man Machine Interface Enhancements
AG1880	CLASS-MDC: Screening List Editing Feature Interactions
AG1954	CLASS Message Waiting Indicator
AG1980	Blocking of Restricted Number to SMDI
AG1997	Call Request Retrieve/Keyset Short Hunt Interaction Control
AG2001	TR444 Comprehensive Compliance
AG2035	Ten Digit GTT for CLASS Features
AG2057	CLASS: Feature Not Allowed Announcement
AG2286	Virtual Access to Private Networks
AJ0431	Dynamic Protocol Version Control
AJ0447	LAN Management from DMS MAP
AJ0479	Remote MAP Access through TELNET Server on DMS, Phase I
AJ0605	ISDN Packet Handler AM/RM Maintenance
AJ0789	PRA on LTCI
AJ0811	TR448 Compliance Activity
AJ0812	TR268 PI/CSE/SIG and Error Recovery Compliance
AJ0814	TR268 Address Information Compliance
AJ0943	ISDN SERVORD Enhancements-OAMP Resident
AJ0944	ISDN OAM Upgrade to G26 Service Data
AJ0945	ISDN OAM LAPB/LAPD Configuration (DMS)
AJ0955	ISDN OAM LAPB/LAPD Configuration (OAMP)
AJ0956	ISDN OAM MAP Level and OAMP Downloading
AJ0957	ISDN Packet Handler NAS Activation from MAP
AJ1018	Integrated Hardware Maintenance for Packet Handler-OAMP Resident Software
AJ1038	SWACT Operation Robustness
AJ1039	XPM Data Management Robustness
AJ1040	Circuit Group Blocking
AJ1056	OSS-SERVORD Compatibility
AL0457	Port MTS and TPS to ENET Processor
AL0470	ENET Database
AL0486	Enhanced Network Central Node Maintenance
AL0571	ENET C-side Link Maintenance
AL0572	ENET MAP
AL0573	ENET Operational Measurements
AL0575	ENET Card Maintenance System Structure Definition
AL0577	ENET Clock Sync
AL0578	ENET 9X35 Maintenance Software
AL0580	ENET Node Test Control
AL0582	ENET Local Processor Node Transactor
AL0583	ENET Connection Control
AL0584	ENET PSLink Physical Link Maintenance
AL0585	ENET Integrity Fault Handler

AL0586	ENET I/O System PSLink Targets
AL0604	DT After CFW Cancel and SPD Call Pickup Transparency
AL0687	ENET Fiber XPM Support
AL0803	DMS-bus MMI Enhancements II
AL0850	ENET System Recovery
AL0851	ENET Switching Matrix Diagnostics Support
AL0853	ENET Matrix Test Software
AL0854	ENET Bit Error Rate Test (BERT)
AL0855	ENET Message Reswitching
AL0856	ENET Maintenance
AL0857	ENET Pathend Test MMI
AL0957	ENET REX Test
AL0958	ENET PM Table Control Modifications
AL0959	ENET Shelf Test
AL0960	ENET Path Diagnostics
AL0990	SEAS-RC&V Command Implementation for SEAS Release 2.0
AL1011	CM-ENET Software Communication via NT9X36BA
AL1069	ENET Card Maintenance
AL1109	CMIC Link Diagnostic Enhancements
AL1199	DMS-bus Central Data Distribution and Initialization II
AL1200	DMS-bus MMI Enhancements III
AL1208	EIU Central Control
AL1229	PATHEND Expansion for ENET
AL1230	ENET MAP Enhancements
AL1231	128K ENET XPM Support
AL1238	ENET Link Maintenance Enhancements
AL1240	ENET Switching Matrix Transactor Network Phase II
AL1314	2B1Q Loop and TDM Connection Provisioning
AL1316	No Test Trunk Access for ISDN Lines
AL1320	ISDN XPM Digital Test Access
AL1321	ISDN Digital Test Access Maintenance
AL1326	ENET Integrity Handling Enhancements
AL1328	Integrated Processor and F-bus Interface (IPF) Software
AL1376	AP Maintenance Support for Six-slot CPU
AL1388	2B1Q Loop Maintenance Base
AL1449	F-bus Support for 2-slot LIU7
AL1460	XPM MTC for DMS-X Part 2
AL1496	Removal of CLLI From CCS7 Rteset and Linkset
AL1499	CCS7 CC Store Reduction for NT40
AL1500	CCS7 STP Gateway Traver Tool
AL1518	User Programmable LTP Levels
AL1585	ISDN Support on LTC
AL1588	Metallic Testing for 2B1Q Loops
AL1589	2B1Q Diagnostic and Performance Reporting
AL1618	ENET Retrofit
AL1640	MDR7: EIU Transmit Function
AL1666	ISDN Support on LTC II
AL1667	LTC Perform Tool Enhancements for ISDN
AL1668	CSM Support for SPECCONN Network Connection
AL1677	MDR7-SS7 Message Detail Recording
AL1893	STP Robustness
AL1912	ENET-ICTS
AM0071	PRA D-channel Backup-CC
NC0003	TOPS Personal Audio Response System (CC)
NC0009	SMDI: Called DN Option and KSH Support
NC0011	MDC Warm Line
NC0014	ACD Forced Agent Availability
NC0015	ACD MIS for Call Transfer, Call Hold
NC0028	Residential Call Hold
NC0053	Ring Reminder Off/On Option Per Line
NC0056	Multipilot Directory Number on MLH Group

NC0077	Service Order Simplification for Hunt Groups
NC0079	Mandatory DIRP Parallel Recording
NC0080	Station Camp On for Meridian Business
NC0081	Direct Station Selection/Busy Lamp Field for MBS
NC0084	Call Forward Busy-Inhibit Make Busy & Inhibit Line Busy
NC0086	Standard Pretranslation Expansion

BCS32

AC0615	ISDN Inbound Modem Pooling Deliverable
AD2997	Trunk Group Expansion to 8K
AF1725	Multivolume Tape Files
AF2013	Office Routes Capacity Increase
AF2146	E911 Direct Access to CCI ALI Database
AF2531	Forced Sequence Application
AF2588	Automatic T1 Switchover
AF2592	TMS Datafill for Intra/Inter Office TMS Networking
AF2597	TMS Base Changes for TMS Networking
AF2642	Forward Number Capability for TOPS-MP DA Application
AF2659	RCC Warm ESA High Level Design
AF2672	RCU Line Test Processor
AF2699	PP Maintenance for RCC Warm ESA: Phase I
AF2700	PP Call Processing for RCC Warm ESA: Phase 1
AF2701	RSC-Fast Cold Exit Driver and Instant RTS of Lines
AF2702	RSC-Instant RTS of Links for Fast Cold Exit
AF2704	Parallel Storage Size Increase and MMI Improvements
AF2705	Automatic DIRP Death Recovery
AF2755	Increase Flexibility of AMA Software Platform
AF2777	MPC 1984 X.25 CC Development
AF2782	TOPS Multiservice Queuing-Base Changes
AF2801	MMI Enhancements for Bilingual AABS
AF2802	ACPE Maintenance Position
AF2803	VSN Log and OM Enhancements
AF2810	BCLID: USP Billing and DN Changes in Message Format
AF2815	XPM Patcher Integration Phase I
AF2816	Auto-apply Enhancements
AF2830	Spontaneous Call Waiting ID XPM Changes
AF2858	CLASS Calling Name Delivery on MADN
AF2859	Series Completions Enhancements
AF2860	Prep for Multiple Directory Numbers (DN) per LEN
AF2865	RSC-Instant RTS of Nodes for Fast Cold Exit
AF2879	CLASS: Anonymous Caller Rejection
AF2987	Enhanced Field Failure Info
AF2988	XLCM Diagnostic Enhancements
AF2989	XPM REX/SWACT Robustness
AG1252	Multilocation Business Group I
AG1631	CLASS: Automatic Recall Date and Time
AG1945	Table Control for ISI Services
AG1978	ACD Service Order Enhancements
AG1984	ISUP Shared Trunking Enhancement
AG2003	Computer Assisted Signaling Over ISI
AG2004	MIS Enhancements
AG2073	CLASS: Spontaneous Call Waiting Identification Preparatory
AG2108	Elimination of Old Table Control Phase I
AG2150	Core SWACT Exec Optimization-Phase I

AG2159	VIP Service
AG2210	TR-448 Compliance (Part 2)
AG2211	TR-444 Compliance (Part 2)
AG2243	Directory Number Trigger for Ameritech in Release 0
AG2255	CC Warm SWACT Module Check Program
AG2553	Interworking of ISUP to MF with Two-stage Outpulsing
AI0234	Frame Relay Interface Unit Software Base
AI0235	Frame Relay Interface Unit Addition to LPP
AJ1138	CCITT Selective Blue Book Conformance-PRA
AJ1162	OAM Database-Bulk Data Upload and Synchronization
AJ1165	Report Selection and Customization for 10 Nodes and 10 Custs
AJ1167	OAM Database-Partitioning, User Access, and Security
AJ1266	QCUST Consolidation and Query Call Forward Sequences
AJ1321	Shell Tool Utilities-CM
AJ1340	Network Packet Handler
AJ1485	CC COT Enhancements for Cutover (2-wire Trunks)
AJ1486	XPM COT Enhancements for Cutover (2-wire Trunks)
AL1058	Frame Relay Interface Unit PM Maintenance Phase I
AL1059	Frame Relay Connection Database
AL1249	CCS7 Static Data Audits
AL1282	Frame Relay Interface Unit Maintenance Support
AL1283	Frame Relay Interface Unit PM Logs and Alarms
AL1284	Frame Relay Interface Unit Data Loop Diagnostics
AL1286	Frame Relay Interface Unit per Channel OA&M
AL1287	Frame Relay Interface Unit T1 Maintenance Support
AL1288	Frame Relay Interface Unit Switching Thread
AL1426	SEAS 3.0-Autonomous Message Reporting
AL1427	SEAS 3.0-Data Collection
AL1428	SEAS 3.0-Application Control Messages
AL1629	Link Reconfiguration for XPMs with Special Connections
AL1678	Integrated Node (Single Point Code)
AL1696	CC Software Support for Enhanced DRAM (E-DRAM)
AL1719	ENET-SPMS for ENET OMs
AL1753	NT9X12AC Software Support
AL1759	Maintenance Action Pre-check
AL1794	TR-82 OM Compliance
AL1834	F-bus Maintenance Enhancements for LIU Fault Isolation
AL1885	DDU Robustness-I
AL1895	LMS Isolation
AL1907	Frame Relay T1 Trunking
AL1908	Frame Relay Interface Unit Performance Enhancements
AL1914	CC Layer 2/3 Protocol Monitoring Development
AL1978	ENET-ICTS Applications (ICERT and NETFAB)
AM0162	Enhancement for #4ESS and #5ESS
AQ0671	Layer 2/3 Protocol Monitoring Development
AQ0672	DCH Overload Controls
AQ0695	XPM Support for LCME POTS & 2B1Q L1 Performance Monitoring
AQ0696	POTS/EBS/DATAPATH on LCME
NC0022	ACD Variable Wrap-up Time
NC0030	Ringback to 911 Callers (Onhook/Offhook)
NC0032	PRI/ESA Interworking for Billing Number Delivery
NC0052	TOPS Service Analysis Enhancements
NC0055	Call Forward Do Not Answer and Call Waiting Interaction
NC0083	Semi-restricted Incoming Lines Call Intercept
NC0094	ACD Emergency Key Back-up
NC0104	ACD Forced Announcement for New/Overflowed Calls

NC0112	Fast Transfer for Meridian Business Set
NC0117	User Specified COT Announcement
NC0120	Pending Order File (POF) Enhancements
NC0130	Load Route Selection Enhancements
NC0152	Host/Remote Networking by Queue Type
NC0162	Dial-up into ALI DB for SRDB Update
NC0185	ACD Observe Agent from 2500 Set
NC0192	Remote Call Forwarding Without Unique PIN
NC0200	CFBL Inhibit Line Busy/Inhibit MB Enhancements
NC0240	BBF AMA Record
NC0248	Terminating Trunk Group Usage

BCS33

AC0639	MMI for Inter-MS Links
AC0644	Central MS-ILM Interactions on Physical Links
AD3492	NSS Propagate Answer Back via ATDS
AE0896	World Line Card in the LCM
AE0905	World Line Card Software Support
AE0958	World Line Card Type A Template for North American 900 +2 Applications
AF1094	Subscriber Controlled Toll Restriction
AF1935	Transfer Calls to Restricted Station
AF2021	Adding Options on a Secondary Directory Number (DN)
AF2332	Intra-LATA PIC for POTS
AF2333	Intra-LATA PIC for IBN
AF2676	SMS-R Warm SWACT-CC
AF2677	SMS-R Warm SWACT-XPM
AF2678	SMS-R Operator Verification
AF2784	CPM Data Structures and MMI
AF2785	CPM Up Software and Basic Maintenance
AF2786	CPM PCM Signaling Processor Maintenance
AF2787	CPM Matrix Software
AF2788	CPM DS-1 Software: Support for 4x2 DS-1 I/F Packs
AF2790	CPM Diagnostics
AF2791	CPM Basic RSC Applications Support
AF2792	New CPM Extension Shelf and DS60 Pack Support for CPM
AF2793	CPM ISDN Applications Support for RCC2
AF2867	CPM: Intraswitching and Dual RCC2 CP Support
AF2983	Integrated Line Test W/DRTU
AF2985	CLASS Phase I MBS-Single Key Feature Activation
AF2993	Visual Screen List Editing
AF3011	AABS VSN XP Restructure
AF3013	CCITT Extended Calling Card and End of Dialing Delimiter
AF3019	CLASSPLUS: Call Logging
AF3020	CLASSPLUS: Calling Name Display Enhancements
AF3022	MAP Access via MPC Phase I
AF3023	TOPS Service Number Routing on MP
AF3036	Locality Print Soft Key
AF3191	OPP Base TOPS Changes
AF3200	XPM REX Results/FFI PH II
AF3234	XCLM REX Results/FFI PH II
AF3243	TR-860 Terminal Portability
AF3244	3-port Flexible Call Chaining
AF3245	TR-268 Terminal Portability Compliance I
AG1865	Network Leave Message Service
AG1946	Call Processing Interface for ISI
AG2003	Computer Assisted Signaling Over ISI
AG2005	Inbound ECM-Increased Event Reporting

AG2149	Core SWACT Restart Outage Reduction-Phase I
AG2150	Core SWACT Exec Optimization -Phase I
AG2160	CLASS-Screening List Features on MBS/MADN
AG2186	Overflow Call Routing for 800+
AG2195	ECM Inbound-Redirection and Extended Call History
AG2276	CC Warm SWACT Restart Outage Reduction-Phase II
AG2277	CC Warm SWACT MMI Enhancements-Phase II
AG2302	DMS-100 Support for M5212
AG2323	Logical Reformatting for OTC
AG2329	RLT with No Third Party Interaction
AG2336	ISI Base-Session Management
AG2337	ISI Base-ECM Robustness
AG2478	IOD Maintenance Over SWACT
AG2479	Procedure Oriented Practices Online
AG2480	Footprint Enhancements
AG2481	SCAI-Consultation XFER/3WC
AJ0478	Remote MAP Access Through TELNET Server on DMS, Phase II
AJ0591	Feature Display Enhancements
AJ1224	Open Number Plan Phase I
AJ1480	Frame Relay Billing Requirements
AJ1538	Message Waiting Indicator-PRI
AJ1539	DMS-100 PRI Enhancements
AL0011	ACTS Coin Tone Generation Test
AL1113	Table Control for CM-based Application Processors
AL1114	Pbase Maintenance for CM-based RPs
AL1115	MAP for CM-based Resource Processors
AL1117	Local RP Control II
AL1121	RP Link Maintenance
AL1167	FP Central Maintenance Base
AL1169	FP Local Control
AL1170	FP Device Access
AL1173	FP Device Logs, OMs and Alarms
AL1193	Porting DMS-core Maintenance to Run on RISC (Phase I)
AL1195	Central RP Control II
AL1212	TRMS Lock Manager
AL1276	ILM Connection Support II
AL1277	ILM VCM Support for ISN I
AL1278	ILM MCM Support for ISN I
AL1279	ILM Connection Support I
AL1280	ILM VCM Support for ISN II
AL1281	ILM MCM Support for ISN II
AL1297	Disk Utilities-Phase 2
AL1375	Enhancement to PBase Maintenance for CM-based RP
AL1378	Audit/REX Driver for INM Nodes
AL1379	Logs/OMs for CM-based AP and FP
AL1391	FP Device Maintenance
AL1392	FP Sync/SWACT Control
AL1396	File System Device Management- FP
AL1456	Design and Data Definition for DS30/IOUI Inter-MS Links
AL1476	DMS-bus Data and Message Format for ILM Links
AL1477	Central DMS-bus and ILM Interactions on Message Channels
AL1478	Local DMS-bus Node, Link, and Port Initialization
AL1480	Central DMS-bus MMI Information for Message Channels
AL1482	Central DMS-bus Data Recovery on System Restarts
AL1570	System Recovery Controller Interfaces
AL1587	Footprint Support for RISC
AL1647	SCP II Query Handling
AL1648	SCP II Update Processing Module
AL1652	SCP II Local Database Maintenance for QPS
AL1655	ILM Central Resource Controller Enhancement

AL1656	ILM Local Controller Enhancements
AL1657	Virtual Channel Maintenance Enhancements for ISN
AL1659	ILM Enhanced Diagnostics
AL1660	VCM Support for Reduced Capability Virtual Channels
AL1663	Message Base Enhancements for ISN
AL1664	MRS Support for AP Split-mode
AL1681	Integrated Event Management System Base Phase I
AL1701	SCP II Query Traffic Maintenance
AL1702	SCP II Maintenance MMI
AL1705	FP DABM Exception Handler
AL1714	TRMS Primary Index Support
AL1718	DDM Enhancements for INM
AL1729	IEM Basic Event Consolidation
AL1732	TRMS Replicated Database Support
AL1734	TRMS Configuration, Logs, and OMs
AL1740	ILM Notification Service Enhancements
AL1779	Local DMS-bus Support for MCM/PLM Primitives
AL1780	Central DMS-bus/ILM Interactions on PLM
AL1781	Central DMS-bus MMI Information for Physical Links
AL1782	NT9X62BA 0D1 Support
AL1816	TPS Resource Monitoring User Interface
AL1818	TPS Resource Allocation System Enhancements
AL1826	DMS-bus MMI Enhancements for ISN
AL1884	DMS-bus Message Flow Control-II
AL1917	UDP/IP Development to Support NFS Delivery
AL1968	DMS-bus Backward Compatibility Support
AL1970	TRMS Database Creation
AL1976	Application Processor Footprint
AL1977	Application Processor Support of OM and SPMs
AL2020	SCP II Database Copy Maintenance
AL2021	Distributed Log System
AL2030	System REX Test Controller
AL2038	ENET Support for 9X45BA
AL2040	Bd Channel Logical Loopback
AL2042	ISOS Nucleus Size Reduction
AL2107	Enable μ-Law
AL2120	INM System Agent
AL2121	INM Support for IEM Event Generation and OM
AL2147	SCP II 800 Service
AL2148	SCP II 800 Update Process Validation
AL2158	FTFS-Performance Optimalization
AL2162	NT9X45 MMI
AL2182	Frame Relay Interface Unit Billing Data Collection
AL2236	Run-time System Data Checksum
AL2260	Support for Warm SWACT Recovery Time Reduction Feature
AL2271	INM Support for BCS Application/CC Warm SWACT
AL2276	TCP/IP Enhancements
AL2279	DCH Performance OMS (XPM)
AL2280	DCH Performance OMs (CC)
AL2294	SCP II 800 Southbound Multicarrier Service
AL2330	SCP II Server Layer
AL2331	E2A Monitoring Software
AL2359	Change Line Maintenance Utilities 1
AQ0697	BRISC RTIF Firmware
AQ0717	DMS-bus Support for PLM Primitive Enhancements
AQ0718	DMS-bus Support for MS-ILM Data Transfer and Audits
AQ0721	Hardware Baseline Monitor
AQ0733	ISDN Key Short Hunt
AQ0734	ISDN EKTS Ring Forward
AQ0735	ISDN Secondary EKTS Member Call Forward Programming
AQ0736	ISDN Six Port, Thirty Port Flexible Calling
AQ0737	ISDN Call Coverage Prep

AQ0778	ISDN XPM Robustness and Memory Recovery
AQ0779	Support of Notification Busy Limit Parameter
AR0004	X.25 Transport for SCAI
AR0102	Bellcore Frame Relay Billing
NC0010	RES Message Waiting/Reminder
NC0020	Key Pad Enable
NC0035	Account Code Billing
NC0109	Line Card Monitor
NC0146	Automated Intercept Call Completion
NC0164	Repeated Alert for MBS
NC0192	Remote Call Forwarding Without Unique PIN
NC0196	Standard Pretranslation Expansion-Phase II
NC0202	Carrier Access Code Expansion (FGB)
NC0256	Auto Set Relocate for MBS 2500 Sets
NC0262	ACD Station Maintenance and Configuration Enhancements
NC0269	ACD Agent Stability During Switch Maintenance
NC0288	Call Park by ACD Agent
NC0292	Office Wide Activation of CNDB for POTS
NC0295	VFG Support for Incoming ISUP and Local Calls to E911
NC0299	DDN AR Voiceback
NC0303	ANI to ISUP Conversion
NC0316	ADACC Toll Restrictions
NC0317	One-line E911 Call Record
NC0322	PM180 Cleanup
NC0343	DMS-100 Centrex Wakeup-Call Service

BCS34

AD3363	S/DMS DRM
AD3496	EIU Data Link Maintenance
AD3579	Remote Fault Tolerant File System
AE0945	WLC In the LCME
AE0946	WLC Enhancements-Types A and B
AE0956	World Line Card Diagnostic Enhancements
AE1013	World Line Card Overvoltage Reporting
AE1099	WLC in the SRU
AE1106	WLC Type-B Template for North America
AF2469	SMS-R Special Services
AF2489	SMS-R CLASS CND/CNAMD
AF2490	SMS-R MDC Testing
AF2527	SMSR Dual RCC Environment
AF2528	SMSR New Arch/New Messaging
AF2613	RFT No Test Trunk Access
AF2670	SMU Enhanced 2-wire Special Services
AF2671	Integrated Local Specials Enhancement
AF2689	APU Maintenance for SuperNode/UNIX
AF2725	SMA Miscellaneous Services Verification
AF2783	QMS: Call and Agent Manager
AF2795	PP Maintenance for RCC Warm ESA: Phase II
AF2796	PP Call Processing for RCC Warm ESA: Phase II
AF2797	CC Maintenance for RCC Warm ESA: Phase II
AF2798	CC Call Processing for RCC Warm ESA: Phase II
AF2875	QMS: Call Queue Assignment
AF2876	QMS: Stand-alone Call Processing Changes
AF2877	QMS: Host Call Processing Changes
AF2878	QMS: Remote Call Processing Changes
AF2956	SMS-R Warm RCC Exit-XPM
AF2957	SMS-R Additional CLASS Features
AF2964	QMS: MIS Interface
AF2965	QMS: Basic MIS Stats
AF2968	RFT Line Test Position III
AF2984	RFT Line Provisioning Integrity
AF2986	SMA Warm SWACT

AF3004	SMA Peripheral EOC/TMC/CSC Path Protection Switching
AF3053	CC Static Data Manager
AF3078	AMA Compliance (TR-508)
AF3187	RSC ESA Warm Entry for Trunks
AF3271	UTR Diagnostic Enhancements: Tone Filtering
AF3554	Miscellaneous Terminal Portability Compliance
AF3555	TR-855 Terminal Portability Compliance
AF3556	TR-862 AMA Compliance : Circuit
AF3573	SESAME: Visual Screen List Editing
AF3603	Delivery of TR-860 Terminal Portability
AF3604	TR-268 (Basic Call) Terminal Portability Compliance
AF3622	SMS-R Overload Control/ESP
AF3624	SMS-R BERT Functionality
AF3658	MX77 Firmware Download
AF3663	SMS-R Warm RCC Exit-CC
AF3673	SMU ISDN Call Processing
AF3680	SMU ISDN/MBS Line Provisioning
AF3681	SMU LAPD Support for MBS Messages
AF3683	SMU MBS Call Processing
AF3684	XPM Static Data Manager
AF3685	SWACT Evolution: CC XPM Maintenance
AF3687	SMU MBS/ISDN Special Connections
AF3688	SMU EISP & DCH Provisioning & Maintenance
AF3689	SMU MBS Messaging Network Layer
AF3690	SMU ISDN/MBS Channel Reassignment
AF3691	SMU ISDN Line Testing
AF3692	SMU MBS Line Testing
AF3693	SMU MBS Message Link Management
AF3732	XPM Software Modifications for UP in Base XPM
AF3733	CC Software Modifications for UP in Base XPM
AF3747	Enhanced Warm SWACT
AF3798	SMA RFT Alarm Report Handler
AF3807	RFT ALT Support
AF3893	SMDI Robustness
AF4220	XPM Support of the UP on the RCCI
AF4221	CC Support of the UP on the RCCI
AG2244	DMS Announcement Expansion Preparatory
AG2273	DMS-PH CPP Messaging
AG2291	SCAI TWC for ECM
AG2322	DMS-PH Call Processing Data Structures
AG2327	DMS-PH E.164 Translations and Routing
AG2328	DMS-PH X.75 Call Processing I
AG2343	DMS-PH Call Processing Billing Interface
AG2464	TR-850 BBG Dial Access Compliance
AG2554	MBG II-Support of IBN7 Trunk Features
AG2555	MBG III-Support of Private Numbering Plan
AG2556	MBS IV-Support of Display and Network EMW Features
AJ0446	Multilingual Interactive Display
AJ1053	OM Acquisition
AJ1529	TR-847 Compliance for FA in Setup Message
AJ1833	X.75 Service Assignment
AJ1836	DMS-PH PVCS/CUGS Provisioning
AJ1837	DMS-PH Data Distribution-CM
AJ1838	DMS-PH Data Distribution-XLIU
AJ1846	Fractional T1 Support for Frame Relay
AJ1847	CPE Certification Tool for Frame Relay
AJ1921	T1 ALLC Implementation
AJ1957	Table Integrity Checker
AJ1959	Table Version System
AJ1969	DataSPAN Signaling

AL1402	Internet Dynamic Routing
AL1429	SEAS 3.0-Recent Change and Verify
AL1453	DMS-bus Support for the F-bus MAP Level
AL1455	Basic Integration of Rate Adaptor Transactor into DMS-bus
AL1615	Packet Processor Maintenance
AL1616	TR846 Provisioning in CM and Data Distribution
AL1658	ILM Capacity and Performance Enhancements
AL1676	Gateway Verification
AL1693	File Transfer Client Interface for DMS-SCP II
AL1727	SNSE CM Maintenance Software Support
AL1756	DMS-bus S/W for SuperNode SE (SNSE)
AL1774	SNSE SLM1 Maintenance Software Support
AL1790	File System Modifications for SLM1A
AL1906	XLIU LGP Base Load and HFC Loader Implementation
AL2024	SMB and SIII High Runner Log Reduction
AL2025	DMS-PH Call Processing Base
AL2037	Concurrent Activity Manager
AL2055	NM S/W Optionality
AL2056	HFP Base Load
AL2057	HFP MTC One
AL2058	HFP LAPD Protocol
AL2059	HFP LAPB Protocol
AL2061	HFP Maintenance and Performance Enhancements
AL2065	X.25,X.75, VC Base
AL2066	XLIU X.25/X.75 Services Interface
AL2067	X.25 Phase Two
AL2068	XLIU Permanent Virtual Circuits
AL2069	X.25,X.75 Virtual Circuit Phase Two
AL2080	SCP II External Database Dump
AL2082	SCP II DB/TRMS Enhancements
AL2089	SCP II UBH MMI
AL2090	SCP II UBH Maintenance
AL2093	SCP II Update Batch Handling
AL2110	Group Manager and Maintenance Base Enhancements
AL2119	T1 Non-Channelized Loopback
AL2125	Packet Terminal Provisioning
AL2126	X.75 Trunk Data
AL2127	X.75 Basic and Supplementary Service Data
AL2128	Channel and Link Allocation
AL2130	ILM Support for Warm-spared Nodes
AL2195	DMS PH Bd Channel Maintenance
AL2198	DMS PH X.75 Trunk Maintenance I
AL2200	DMS PH Provisioned B-channel Maintenance
AL2289	SERVORD+ for DMS-PH
AL2290	Local XLIU Maintenance
AL2291	X.25 Basic Service Provisioning
AL2319	DDM Capacity Enhancement to Support more than 200 DTC7
AL2326	SPECCONN for the DMS-PH
AL2416	Convert Series II PMS to Recovery Controller
AL2417	Convert Series I PMS to Recovery Controller
AL2438	DMS-PH Channel and Link Maintenance
AL2440	DMS-PH Operational Measurements
AL2441	DMS-PH C-bus Interface Paddle Board Maintenance
AL2539	ISG Channel Maintenance Enhancement
AL2540	Unified Processor Integration in LTCI
AL2542	Unsolicited Messages and LAPD Cleanup
AN0081	E911 Log Robustness (FPE)
AN0084	TR-205 EKTS Compliance
AN0099	AIN AMA
AN0100	CMR Enhancements for Sesame
AN0101	AMA TR-508 Compliancy II

AQ0741	SuperNode Clock Robustness Restructure-1
AQ0777	Master-External Remote Clock
AQ0788	Layer 2 High Protocol Abnormality Rate (CC)
AQ0789	Layer 2 High Protocol Abnormality Rate (XPM)
AQ0835	DMS-bus Clock Restructuring - II
AQ0840	S/DMS MMI Consistency and Enhancements
AQ0841	DMS-bus Message Flow Control III
AQ0845	DMS-PH Call Processing II
AQ0847	DMS-PH Switchwide Parameters
AQ0849	DMS-PH CALLP Operational Measurements
AQ0852	DMS-PH PVC Call Processing
AQ0854	MS Backwards Compatibility-II
AQ0857	SNS DMS-bus S/W for Subrate CMIC Links
AQ0858	DMS-bus S/W for Sub-rate MS-ENET Links
AQ0862	DMS-PH CC Warm SWACT
AQ0875	DTA on ISLC Circuit-switched B-channel
AQ0882	Layer 2 High Protocol Rate (XPM)
AQ0887	DMS-PH TRAVER
AQ0894	DMS-PH Hunt I
AR0005	64K ENET Support
AR0024	SCAI-Make Call: Distinctive Ringing
AR0038	ISDN: Call Appearance Call Handling
AR0040	Information Request Procedures
AR0041	TR-847 Compliance: Terminal Initialization/SPID
AR0042	TR-850 BBG Call Access Compliance
AR0043	TR-847 Compliance for FA in Setup Message
AR0048	SCAI Call Redirection to Specfic ACD/Non-ACD Line
AR0051	ECM Base Enhancements
AR0079	INM Warm-spared Support II
AR0081	INM Fault Reporting
AR0086	Add MAPCI PERFORM Level for DTCI
AR0105	SNSE ENET XPT Diagnostics
AR0106	SNSE ENET MMI
AR0112	Handle SID Field for Incoming PRI ISA Calls
AR0114	ISUP Maintenance Enhancements II
AR0117	DDM Audit Enhancements
AR0118	DDM User Independent Resource
AR0124	ILM Fault Isolation Enhancements
AR0127	IOC Disk File System Robustness
AR0128	ILM Controller Robustness
AR0129	ILM Support Tools
AR0141	ENET PSLINK Enhancements
AR0145	E-ILPT7-Enhanced CCS7 Test Tool
AR0147	Variable Dial Plan for AIN SSP
AR0148	Flexible Call Observing-Part 1
AR0158	SCP II Service Processing and Utility Interfaces
AR0160	BCS34 Hook Feature for 7N10
AR0168	Support TR-448 BC Routing for Calls with More than 1 Leg
AR0179	Name and Reason Display
AR0183	SEAS 4.0 Interface for STP
AR0429	Multiple CCS7 Point Code Capability
NC0033	OMs for LGC Links
NC0105	Call Status Preservation Across Warm SWACT
NC0301	SMDR Allocation for Inbound Toll Calls
NC0313	SERVORD Enhancements For SLE
NC0314	ACB/AR Scans Entire Hunt Group
NC0335	FGD Carrier Identification Code Expansion
NC0337	SRDB Memory Management
NC0356	NACD Operational Measurements (OM) Enhancements
NC0358	NACD Network Transport Parameter

NC0363	Multistage Queue Status Key/Lamp
NC0388	VSN-Name+Locality Enhancement
NC0418	Network Facility Access

BCS35

AD3317	Power: Wide Band Trunk Selection (CC)
AD3318	Power: Wide Band Trunk Datafill and Maintenance (CC)
AD3319	Power: Wide Band Channel Management (XPM)
AD3320	Power: Wide Band ISUP and Maintenance in DTC7 (XPM)
AD3321	Power: Wide Band Call Machine & Glare Recovery (XPM)
AD3322	Power: Wide Band Integrity Management (PM)
AD3443	Power: Wide Band SwAct Support in DTC7 (XPM)
AD3879	Power-N*64 Wideband Optionality
AD3936	DMS-100 WSS Call Processing Phase I
AD3937	DMS-100 WSS Billing, TC, OMs and Logs
AD3938	DMS-100 WSS Maintenance and Messages
AD4337	Billing Server Performance Improvements
AD4339	Multiple File Transfer Sessions on FTAM
AD4340	FTAM Enhanced File Management
AD4341	OSI Performance/Robustness on EIU
AD4421	LEC WSS Trunk Selection and OMs
AD4433	LEC WSS ISUP to PRI Interworking
AD4438	WSS ISUP Messaging
AD4439	DWS Test Tools and Maintenance
AD4449	LEC WSS PRI
AD4464	DWS PRI Messaging
AD4550	FCC DID Answer Supervision Compliance
AD4574	LEC WSS Flexible Channel Assignments
AE1101	DMS-100 Forced On-Net
AE1124	Global EBAF AMA
AE1275	Global EBAF AMA (Clone)
AF1747	Processor Occupancy OMs for XLCM
AF2442	PP IDT Maintenance II
AF2443	CC IDT Maintenance II
AF2444	RFT External Alarm Interface
AF2521	SMA Coin Call Control
AF2522	SMA EBS Call Control
AF2530	RFT Lines Table Control II
AF2613	RFT No Test Trunk Access
AF2614	RFT Line Provisioning
AF2649	SMA RFT Test Response Circuit Support
AF2650	SMA CLASS Call Control
AF2651	SMA CC EOC/TMC/CSC Path Protection Switching
AF2656	EOC Router
AF2686	SMA and IDT OMs
AF2687	RFT Event Handler
AF2688	RFT Line Test Position I
AF2724	SMA Base Upgrade
AF2725	SMA Miscellaneous Services Verification
AF2726	SMA ISDN & MADN Call Control
AF2762	SMA MDC Services Verification
AF2861	OPP Utilities
AF2862	TOPS OPP Action Identifier Processing
AF2863	TOPS OPP Data Identifier Processing
AF2864	Diagnostics for the EISP
AF2964	QMS: MIS Interface
AF2967	RFT Line Test Position II
AF2968	RFT Line Test Position III
AF2969	RFT IMC Remote Access/Test Bypass Pair Access
AF2970	RFT Subscriber Premises Tests

AF2971	SMA Peripheral IDT Maintenance III	AF4512	ISDN/MBS SMU Unified Processor Support
AF2984	RFT Line Provisioning Integrity	AF4826	XPM Load Time Enhancements
AF2986	SMA Warm SwAct	AF5006	PM Diagnostic History
AF2997	SMA Peripheral IDT Maintenance IV	AF5007	XPM Pre-SwAct/Post-SwAct Audit
AF2998	SMA CC IDT Maintenance III	AF5008	XPM REX Control and Trouble Notification Improvements
AF2999	SMA/IDT Flow Control and Overload Controls	AG2303	CompuCALL Resource & Queue Status Query
AF3003	Increased Multiplexing of TOPS Operator Data	AG2338	Study of SCAI Convergence-1
AF3004	SMA Peripheral EOC/TMC/CSC Path Protection Switching	AG2479	Procedure Oriented Practices Online
AF3019	CLASSPlus: Call Logging	AJ1914	FRIU Modifications for TATS
AF3379	SuperNode/UNIX File System Access to SLM/SLMII/IOC	AJ2240	Removing Requirements of Reformats for Hidden Fields
AF3391	Logs Transfer-UNIX-SOS	AJ2290	BCS Update Enhancements
AF3536	TOPS OPP Operational Measurements	AJ2292	Frame Relay Provisioning Table Enhancements
AF3573	ADSI: Visual Screen List Editing (Phase II)	AJ2294	Frame Relay Frame Capture Tool
AF3798	SMA RFT Alarm Report Handler	AL1674	Layer 1 Performance Monitoring for 2B1Q Loops
AF3805	RFT Line Test Resource Audit	AL1729	IEM Basic Event Consolidation
AF3807	RFT ALT Support	AL2044	Interrupt Level Trap Handling Enhancements
AF3832	SMA Multiple OPC Support	AL2147	SCPII 800 Service
AF4218	CC Support of UP on RCC	AL2148	SCPII 800 Update Process Validation
AF4219	XPM Support of UP on the RCC	AL2294	SCPII 800 Southbound Multicarrier Service
AF4281	Auto-Apply for ISN Patches	AL2365	ISDN TL1 Line Testing 2
AF4283	Patchset Simplification	AL2367	Stand-alone ESTU Definition
AF4286	ISDV File Format Prep	AL2368	Stand-alone ESTU Utilities
AF4309	SMS Base Support of UTR Card	AL2486	TPC Application Resource Usage Control Enhancement
AF4310	SMU Base Support of UTR Card	AL2572	Enhanced DCH Integration in ISDN LTC
AF4319	RCC2 Provisionable EISP	AL2667	MTCBASE Robustness and Performance Enhancements
AF4326	Single RCC2 Warm Exit MTC and CALLP (CC)	AL2669	Restart Performance Enhancements
AF4327	Single RCC2 Warm Exit MTC and CALLP (XPM)	AN0082	SESAME Call Logging
AF4328	RCC2 Dual Warm Exit	AN0114	LINEDATA Re-Engineering
AF4332	SMA Processor/Memory Upgrade	AN0146	ASP Support for Intelligent Service Node
AF4439	RFT Event Handling Enhancements	AN0150	SPM Maintenance for ISN
AF4495	ISDN/MBS SMU UTR Support		

AN0151	Ethernet Support for Intelligent Service Node
AN0152	Intelligent Service Node Call Control
AN0153	Intelligent Services Node Routing Software
AN0162	COVM APU S/W Installation (Phase II)
AN0172	Carrier Code Expansion for ISDN
AN0181	SMDR Architecture Revision
AN0183	ISDN MADN Message Bundling
AN0189	CLASS Services on ISDN-Part1
AN0191	RSC-S NI-1 Host Compliance
AN0196	Universal Access to CLASS Features
AN0216	Table Sync Phase II
AN0235	Domestic 6X69LB for ADSI
AN0303	Variable Stuttered Dialtone
AN0322	Network Access Registers (NARS)
AN0336	Base Car Analysis
AN0337	P-Side Loop Around Test
AQ0884	Dial-up B-channel Loopbacks
AQ0878	Call CLean Up Robustness
AQ0947	Multipoint EOC 1 (CC)
AQ0948	Multipoint EOC 1 (XPM/LCME)
AQ0967	CC Support For COmpact Conference Peripheral (Part 1)
AR0011	CCS7 MTP Routing Enhancements
AR0023	Internet Protocol Throttling
AR0047	CompuCALL Link Reliability
AR0170	MFT Display Enhancements II
AR0186	ENET Integrity Fault Handling and HMI Enhancements
AR0209	Northbound/Southbound for 800+E
AR0217	CompuCALL Integrity Enhancements
AR0225	AINSSP-Basic Trunk Trigger Processing
AR0245	Align North American PRI with Protocol Variant ARCH
AR0246	CLID Screening per Trunk Group
AR0252	SMS Originated Code Control for AIN Release 0.0
AR0295	Documentation of 64 kb Signaling Link Support
AR0305	Provide ISP Level for Perform Tool
AR0311	CompuCALL Delivery of Forwarding Party Information
AR0322	New ACB Feature Key on Meridian Business Set
AR0323	Network Feature Access Restriction
AR0361	MBG Enabling of Feature Networking
AR0391	CompuCALL Pricing Controls
NC0097	PIN Configuration by Customer Group
NC0108	DTSR OM Enhancements
NC0336	Stage 4 Binary Format CDR
NC0340	EAOSS FGD Enhancements
NC0368	Universal Access to CLASS FTRS
NC0377	SCWID with Disposition
NC0387	VSN-Account Code Billing
NC0390	EADAS Hardware Inventory Freeze
NC0428	FGD CIC Expansion-Phase 2
NC0429	CCS7 Increased Route Sets
NC0440	Automatic Recall AMA Enhancements-PR
NC0483	CLASS: Split NPA Management
NC0485	Line Option RES LCC Compatibility Ph 2
NC0495	Off-hook Testing
NC0497	NFA-Remote Access, Flash Processing
NC0501	SRDB Update Enhancements

BCS36

AD4443	RDB Enhancements for Conversational Messaging
AD4732	LEC DWS FGD ISUP
AD4733	DWS 1203 AMA Billing
AD4735	LEC DWS FGD ISUP to PRI
AD4750	Network Management with DWS

AD4751	DWS Trunk Audit I
AD4755	DWS DTCI XPM Plus
AD4756	DWS DTC7 XPM Plus
AD4948	DWS XPM Plus Overload Controls
AD6516	Poller Access Manager-Phase I
AF2684	UNIX Kernel Changes for SuperNode/UNIX Phase 2
AF2687	RFT Event Handler
AF2864	Diagnostics for the EISP
AF2980	OM Transmission
AF3005	VPU Local Maintenance
AF3006	VPU Service Circuit Resource Management
AF3007	VPU Service Circuit Processing
AF3031	VPU RAP and CBI Low Level I/O
AF3381	ADAS APUX Call Processing Application
AF3382	ADAS Data Manager
AF3033	VPU RAP and CBI Diagnostic Support
AF3035	VPU Local Resource Management
AF3048	ADAS Communications Interface
AF3049	ADAS APUX Resource Management
AF3050	ADAS CPE Internals
AF3290	Logs and Alarms Transfer (Receiver)-UNIX-SOS
AF3291	APUX Process Management
AF3379	SuperNode/UNIX File System Access to SLM/SLM2/IOC
AF3384	ADAS Voice/CM Utilities
AF3391	Logs Transfer-UNIX-SOS
AF3394	RAP DTMF Support
AF3532	VPU MAP and Table Control
AF3679	SMDI Calling DN Delivery Optionality
AF3800	SMA Dynamic Service Update I
AF3801	SMA Dynamic Service Update I
AF4252	SMU with SPECCONN Link Reconfigurations
AF4438	RFT Line Provisioning Extensions
AF4680	EADAS Hardware Inventory Freeze - Part II
AF4836	ESMU: MX77 Support (XPM)
AF4837	ESMU: MX77 Support (CC)
AF4838	RSC-S Enhanced Line Testing I
AF4839	RSC-S Digital Test Access
AF4841	RSC-S LCME Link Rearrangement
AF4842	RSC-S Layer 1 Performance Monitoring
AF4847	ISDN 3-Way Call/Flex Call Interworking
AF4848	ISDN Flex Call Implicit Transfer
AF4861	MX77 for SMU
AF4874	Data Path Line Testing
AF4879	MVI Lines Provisioning Enhancements
AF4882	MVI Protocol Stack Application Layer
AF4883	MVI Convergence Function I
AF4887	MVI Protocol Stack Application Layer II
AF4892	ESMU EDCH Integration
AF4893	RCC2 ISDN Warm Entry/Exit-CC
AF4894	RCC2 ISDN Warm Entry/Exit-XPM
AF4895	Dual RCC2 Warm Entry/Exit for ISDN Calls
AF4903	Real-Time Performance of MX73 and MX76 Packs
AF4935	TA RCUINV: New Field for Equipment Location
AF4936	New Field in RCSINV to Identify Equipment Location
AF4979	SMA ISDN Line Test Object I/F
AF5009	TOPS Enhancements for MDS
AF5330	OPC and NE Identification at the DMS
AF5378	MVI CM Path Protection Switching
AF5455	MVI Per Line Ringing-CM
AF5533	TR-303 MVI Object Model
AF5536	MVI Line Testing-CM
AF5537	MVI Line Provisioning-CM
AF5766	PArm E1 Outrage Robustness Plan
AJ2369	SCPII VPN Dial Plan Tools
AJ2860	VPN CALLP I
AJ2861	VPN SSP Messaging
AJ2446	LDR: MNA Base

AJ2877	ISDN 64kbit/s Access to DataSPAN
AJ2878	Committed Information Rate for DataSPAN
AJ2884	DCR: MNA Table Control
AJ2885	DCR: MNA Activation
AJ2886	DCR: Base RO Modifications
AJ2887	DCT Call Processing
AJ2888	DCT MAPCI Modifications
AJ2889	DCT Memory Management for Test Results
AJ2946	DataSPAN Congestion Control and Buffer Enhancements
AJ3280	VPN Callp II
AJ3285	DISA Calling DN Override
AL1974	Application Processor Split Mode
AL1975	Application Processor Load Mate
AL2016	Enhanced VM Scheduler
AL2334	SRC Controlled Restart and Norestart SWACT for CCS7
AL2479	FPX VM Modifications
AN0016	RAP Play and Record Processing
AN0046	RAP Application State Machine
AN0047	Enhanced Services Resource Management
AN0056	ADAS Service Data MMI
AN0069	ADAS UNIX Loadbuild and Software Installation
AN0102	SRDB Capacity Enhancements
AN0114	LINEDATA Re-Engineering
AN0173	Carrier Identification Code for E800/PVN
AN0174	Carrier Code Expansion for LEAS
AN0178	ADAS MMI Data Transfer
AN0182	VDS to VREC Conversion Tool
AN0212	Customer Configurable Keyboard
AN0225	SMA Dynamic Static Data Update
AN0230	SMA Enhanced Time-Switch I
AN0232	CLASS: TCAP for Calling Name Delivery
AN0259	TOPS Interchangeable NPA
AN0303	Variable Stutter Dial Tone
AN0304	Interchangeable NPA for LEAS
AN0319	Base Automatic Message Accounting (AMA) Re-engineering II
AN0322	Network Access Registers (NARS)
AN0323	CLASS Calling Name TR Compliance-Residential
AN0324	TOPS DN Phase I
AN0325	TOPS Operator Hold Enhancements
AN0327	ADAS APU Software Installation (Phase II)
AN0351	IRTU Provisioning
AN0435	NFA: AMA Modifications
AN0463	MX-77 for SMS and SMS-R: CC
AN0453	SMA CM XPM Robustness Program
AN0465	MX77 for SMS-R: CC
AN0616	SCWID TR Compliancy-CC
AN0631	SCWID TR Compliancy-XPM
AN0632	ADSI Compliancy-CC
AN0633	ADSI Compliancy-XPM
AN0739	SMDR for PVN
AN0834	TOPS Equal Access: FGD CIC Expansion
AQ0984	CC Support for EDRAM Uploading
AQ1008	TELCO Seetable Defaults
AQ1010	PBC Type II Billing
AQ1018	DTA on PRI D-Channel (CC)
AQ1027	SM Node MAP Enhancements
AQ1030	LPP (LMS) Autoloading
AQ1031	Mapper Refresh on LMS State Transition
AQ1070	NT9X130D Standalone Support in the LMS
AQ1092	SCP/SMS Audit Efficiency
AR0022	IP Route Path Display
AR0125	ILM Isolation Detection Enhancements
AR0200	FP Maintenance Evolution
AR0215	COMPUCALL Agent Control MSGS
AR0219	AINSSP Base: Trigger Tables
AR0200	FP Maintenance Evolution
AR0220	AINSSP: TOPS and Triggers I
AR0225	AINSSP-Basic Trunk Trigger Processing

AR0228	AINSSP: Feature Interactions with AIN Basic Call Model-I	AR0406	Additional FSL Building Blocks
AR0229	AINSSP Base: Trigger Processing II	AR0422	AINSSP: Release 0.1 on the TCP/IP Transport Protocol
AR0231	AIN Recorded Announcements Enhancements	AR0435	Robustify Cause Handling for PRI
AR0235	AINSSP: Basic Trunks Trigger Processing II	AR0449	AINSSP Base: AIN TRAVER
AR0238	AINSSP: AIN AMA	AR0478	F-bus Operation and Maintenance Enhancements
AR0239	AINSSP Tool: Test Queries II	AR0485	SCP AIN 0.1 TCAP Message Handler
AR0293	DMS PRI Message Waiting Indicator Interwork with SL1	AR0486	SCP TCAP to TCB Parameter Mapper
AR0298	AINSSP: AFR Trigger Preparatory	AR0491	LTP Enhancement
Ar0307	Power Features Installer Application	AR0496	EDCH State Audit
AR0326	TCB Dump Utility	AR0521	TCAP Over Ethernet
AR0317	Cache Statistics OMS	AR0540	FW Support for CCS7 Link Fault Sectionalization
AR0327	SCP VNS Database Create and Access	AR0577	SCP11 Database Tools
AR0341	SCP-Telecom Australia VPN Service	AR0628	Productization of FORCENI Tool
AR0348	Application Processor Mtce Support of AP BCS Applications	AR0630	SCP-VPN FSL Enhancements
AR0358	DCH Patcher - CC Portion	AR0704	SAF Pjase II
AR0374	AINSSP: Message Encoder/Decoder II	AR0900	37-0109 Line Admin PII (CC Part)
AR0400	SCP-VNS Generic Query Processing	AR0918	CC Support for the Integrated Service Module (ISM)
AR0401	SCP-VNS Generic Update Processing	NC0428	FGD Carrier Identification Code Expansion
AR0402	SCP-Vitrual Network Service Generic OMs	NC0495	Off-hook Testing
AR0403	SCP-VNS Test Query (Tests)	NC0499	CMWI Changes for Universal DLC

Cross-references-feature number to feature package and BCS

Note: The BCS number indicates the BCS in which the feature was released

AC0222	NTXE32AA	BCS30	AC0604	NTX750AB	BCS31
AC0277	NTX790AB	BCS28	AC0615	NTXN99AA	BCS32
AC0361	NTX041AB	BCS28	AC0634	NTX750AB	BCS31
AC0368	NTX750AB	BCS29	AC0638	NTX950AA	BCS31
AC0425	NTX833AA	BCS28	AC0639	NTX951AA	BCS33
AC0428	NTX836AA	BCS28	AC0644	NTX945AA	BCS33
AC0442	NTX839AB	BCS31	AD0351	NTX853AA	BCS30
	NTXE30AA		AD0943	NTX901AA	BCS29
AC0451	NTX753AA	BCS29	AD1313	NTXJ42AA	BCS29
AC0474	NTX790AB	BCS28	AD1607	NTX416AF	BCS30
AC0475	NTX750AB	BCS28	AD1609	NTX415AA	BCS29
AC0487	NTX750AB	BCS28	AD1610	NTX415AA	BCS29
AC0509	NTX251AA	BCS28	AD1612	NTX416AF	BCS29
AC0519	NTX750AB	BCS28	AD1778	NTX732AA	BCS28
AC0520	NTX750AB	BCS28	AD1857	NTXE09AA	BCS28
AC0528	NTX750AB	BCS28	AD1858	NTXE09AA	BCS28
AC0530	NTX750AB	BCS28	AD1862	NTXE09AA	BCS28
AC0531	NTX750AB	BCS28	AD1863	NTXE09AA	BCS28
AC0534	NTX250AA	BCS28	AD1929	NTXE09AA	BCS28
AC0538	NTXF88AA	BCS31	AD1950	NTXE09AA	BCS28
AC0545	NTX250AA	BCS29	AD2068	NTX100AA	BCS29
AC0546	NTX250AA	BCS29	AD2085	NTX103AA	BCS29
AC0552	NTX750AB	BCS30	AD2097	NTX790AB	BCS29
AC0553	NTX750AB	BCS30	AD2125	NTX991AD	BCS30
AC0565	NTX250AA	BCS30	AD2126	NTX878AC	BCS30
AC0567	NTX750AB	BCS31	AD2128	NTX407AB	BCS31
AC0568	NTX750AB	BCS31	AD2129	NTX991AD	BCS29
AC0569	NTX750AB	BCS31	AD2130	NTX416AF	BCS29
AC0570	NTX750AB	BCS30	AD2131	NTX991AD	BCS30
AC0571	NTX750AB	BCS31	AD2228	NTX790AB	BCS29
AC0574	NTX750AB	BCS30	AD2231	NTX790AB	BCS29
AC0575	NTX750AB	BCS30	AD2238	NTX416AF	BCS28
AC0576	NTX750AB	BCS30	AD2239	NTX415AA	BCS28
AC0601	NTX750AB	BCS31	AD2245	NTX792AA	BCS29
AC0603	NTX750AB	BCS31	AD2247	NTXJ43AA	BCS29

AD2318	NTX415AA	BCS29	AD4733	NTX098AA	BCS36
AD2445	NTX416AF	BCS30		NTX159AA	
AD2467	NTXJ68AA	BCS30	AD4735	NTXR49AA	BCS36
AD2488	NTX100AA	BCS30	AD4750	NTXS25AA	BCS36
AD2587	NTXN13AA	BCS31	AD4751	NTXS25AA	BCS36
AD2588	NTX416AF	BCS30	AD4755	NTXS25AA	BCS36
AD2591	NTX416AF	BCS30	AD4756	NTXS25AA	BCS36
AD2606	NTX790AB	BCS30	AD4948	NTXS25AA	BCS36
AD2665	NTX149AB	BCS30	AD6516	NTXT10AA	BCS36
AD2810	NTX100AA	BCS30	AE0222	NTXQ42AA	BCS36
AD2851	NTX100AA	BCS31	AE0896	NTXW00AA	BCS33
AD2852	NTXJ90AA	BCS31	AE0945	NTXW00AA	BCS34
AD2895	NTX416AG	BCS31	AE0946	NTXW01AA	BCS34
AD2964	NTX103AA	BCS31	AE0956	NTXW02AA	BCS34
AD2997	NTX001AA	BCS32	AE0958	NTXW20AA	BCS33
AD3003	NTXR52AA	BCS35	AE1013	NTXW03AA	BCS34
AD3317	NTXS25AA	BCS35	AE1088	NTXR91AA	BCS36
AD3318	NTXS25AA	BCS35	AE1099	NTXW00AA	BCS34
AD3319	NTXS25AA	BCS35	AE1101	NTXM93AA	BCS35
AD3320	NTXS25AA	BCS35	AE1106	NTXW21AA	BCS34
AD3321	NTXS25AA	BCS35	AE1124	NTX102AA	BCS35
AD3322	NTXS25AA	BCS35	AE1275	NTX098AA	BCS35
AD3363	NTXF07AA	BCS34		NTX159AA	
AD3443	NTXS25AA	BCS35	AF0163	NTXA85AA	BCS29
AD3492	NTX100AA	BCS33	AF0164	NTXA85AA	BCS29
AD3496	NTXF05AA	BCS34	AF0744	NTX731AA	BCS29
AD3579	NTXF07AA	BCS34		NTXA90AA	
AD3879	NTXR65AA	BCS35	AF0966	NTX901AA	BCS29
AD3936	NTXR49AA	BCS35	AF1085	NTXJ82AA	BCS31
	NTXS28AA		AF1092	NTXA16AA	BCS28
AD3937	NTXR49AA	BCS35	AF1093	NTX098AA	BCS29
	NTXS28AA			NTX159AA	
AD3938	NTXR49AA	BCS35	AF1094	NTXA18AA	BCS33
	NTXS09AA		AF1097	NTXA22AA	BCS28
AD4337	NTXP17AA	BCS35	AF1214	NTXA83AA	BCS30
AD4339	NTXP23AA	BCS35	AF1235	NTX562AA	BCS30
AD4340	NTXP23AA	BCS35	AF1252	NTX244AB	BCS28
AD4341	NTXP23AA	BCS35	AF1266	NTXE05AA	BCS30
AD4421	NTXS09AA	BCS35	AF1269	NTXA30AA	BCS28
	NTXS25AA		AF1275	NTXA73AA	BCS28
AD4433	NTXR49AA	BCS35	AF1276	NTXA74AA	BCS28
AD4438	NTXS09AA	BCS35	AF1335	NTX447AA	BCS29
AD4439	NTXS27AA	BCS35	AF1336	NTX447AA	BCS29
AD4443	NTXQ48AA	BCS36	AF1337	NTX447AA	BCS29
AD4449	NTXR49AA	BCS35	AF1338	NTX447AA	BCS29
AD4538	NTXS08AA	BCS35	AF1375	NTX451AA	BCS29
AD4547	NTXR65AA	BCS35	AF1387	NTX447AA	BCS29
AD4550	NTXR92AA	BCS35	AF1400	NTX089AA	BCS29
AD4732	NTXR66AA	BCS36	AF1407	NTXF14AA	BCS29

AF1426	NTX731AA	BCS28	AF1791	NTXA85AA	BCS29
	NTXA90AA		AF1794	NTXA85AA	BCS29
AF1439	NTX901AA	BCS31	AF1802	NTXA90AA	BCS30
AF1455	NTXA88AA	BCS28	AF1909	NTX731AA	BCS28
AF1462	NTX159AA	BCS28		NTXA90AA	
AF1471	NTXA83AA	BCS30	AF1935	NTX100AA	BCS33
AF1472	NTXA83AA	BCS30	AF1936	NTX100AA	BCS30
AF1473	NTXA83AA	BCS30	AF1940	NTXA83AA	BCS30
AF1474	NTXA83AA	BCS30	AF1974	NTX731AA	BCS30
AF1527	NTX030CC	BCS28		NTXA90AA	
AF1528	NTXA17AA	BCS28	AF1975	NTXA90AA	BCS30
AF1529	NTXA17AA	BCS30	AF1977	NTX447AA	BCS29
AF1563	NTX731AA	BCS30	AF1980	NTXA88AA	BCS29
	NTXA90AA		AF1981	NTX098AA	BCS29
AF1564	NTX733AD	BCS28		NTX159AA	
AF1565	NTX733AD	BCS28	AF1991	NTXA83AA	BCS30
AF1581	NTXA83AA	BCS30	AF1992	NTXA83AA	BCS30
AF1643	NTX447AA	BCS29	AF1993	NTXA83AA	BCS30
AF1644	NTX447AA	BCS29	AF1998	NTX731AA	BCS29
AF1645	NTX451AA	BCS29		NTXA90AA	
AF1647	NTX270AA	BCS28	AF2001	NTX447AA	BCS29
AF1650	NTX447AA	BCS29	AF2012	NTX100AA	BCS31
AF1651	NTX447AA	BCS29	AF2013	NTX001AA	BCS32
AF1652	NTXA83AA	BCS30	AF2014	NTXE74AA	BCS29
AF1663	NTX733AD	BCS28	AF2016	NTXE67AA	BCS30
AF1664	NTXE96AA	BCS29	AF2017	NTXE68AA	BCS29
AF1665	NTX159AA	BCS28	AF2018	NTXE70AA	BCS30
AF1668	NTX447AA	BCS29	AF2019	NTXE71AA	BCS29
AF1687	NTXA83AA	BCS30	AF2020	NTXE72AA	BCS31
AF1699	NTXA90AA	BCS30	AF2021	NTXE94AA	BCS33
AF1715	NTXE18AA	BCS31	AF2022	NTXE73AA	BCS29
AF1725	NTXN80AA	BCS32	AF2070	NTXA83AA	BCS30
AF1727	NTXA83AA	BCS30	AF2071	NTX750AB	BCS29
AF1728	NTXA83AA	BCS30	AF2085	NTX731AA	BCS29
AF1731	NTXJ58AA	BCS29		NTXA90AA	
AF1734	NTX387AB	BCS31	AF2086	NTXF10AA	BCS29
AF1735	NTX019AA	BCS28	AF2087	NTX060AB	BCS29
AF1736	NTX447AA	BCS29	AF2110	NTXA83AA	BCS30
AF1737	NTX447AA	BCS29	AF2118	NTXJ00AA	BCS31
AF1747	NTX270AA	BCS35	AF2145	NTXF61AA	BCS31
AF1749	NTX001AA	BCS29		NTXN50AA	
AF1750	NTXP81AA	BCS31	AF2146	NTXN17AA	BCS32
AF1756	NTX901AA	BCS28	AF2161	NTXA83AA	BCS30
AF1778	NTX186AA	BCS28	AF2244	NTXA64AA	BCS30
AF1780	NTX001AA	BCS29	AF2251	NTX387AB	BCS30
AF1784	NTX030CC	BCS28	AF2254	NTX387AB	BCS30
AF1785	NTX030CC	BCS30	AF2255	NTX387AB	BCS30
AF1789	NTXA85AA	BCS28	AF2256	NTX621AB	BCS30
AF1790	NTXA85AA	BCS29	AF2261	NTXN29AA	BCS31

AF2262	NTXN29AA	BCS31
AF2267	NTXJ00AA	BCS30
AF2270	NTXJ00AA	BCS30
AF2271	NTXJ00AA	BCS30
AF2273	NTXJ00AA	BCS31
AF2274	NTXJ00AA	BCS31
AF2275	NTXJ00AA	BCS31
AF2276	NTXJ00AA	BCS31
AF2301	NTX732AA	BCS31
AF2303	NTX100AA	BCS30
AF2307	NTXF82AA	BCS31
AF2310	NTX065AA	BCS30
AF2316	NTXJ44AA	BCS30
AF2331	NTXE14AB	BCS30
AF2332	NTXF85AA	BCS33
AF2333	NTXF69AA	BCS33
AF2341	NTX213AC	BCS30
AF2342	NTX213AC	BCS30
AF2343	NTX213AC	BCS30
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AF2345	NTX213AC	BCS30
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AF2348	NTX213AC	BCS30
AF2361	NTXE14AB	BCS31
AF2367	NTXJ41AA	BCS31
AF2370	NTXN12AA	BCS31
AF2372	NTX030CC	BCS30
AF2374	NTX731AA	BCS30
	NTXA90AA	
AF2379	NTG230AA	BCS30
AF2380	NTG230AA	BCS30
AF2390	NTG230AA	BCS30
AF2391	NTG230AA	BCS30
AF2392	NTG230AA	BCS30
AF2394	NTXA83AA	BCS30
AF2395	NTXJ67AA	BCS30
AF2396	NTG230AA	BCS30
AF2397	NTG230AA	BCS30
AF2398	NTG230AA	BCS30
AF2409	NTXA83AA	BCS30
AF2412	NTXE98AA	BCS30
AF2442	NTXF46AA	BCS35
AF2443	NTXF46AA	BCS35
AF2444	NTXF46AA	BCS35
AF2450	NTXJ00AA	BCS31
AF2452	NTXJ00AA	BCS31
AF2454	NTXJ00AA	BCS31
AF2469	NTXA86AA	BCS34
AF2470	NTX001AA	BCS31
AF2471	NTXN10AA	BCS30
AF2473	NTXN10AA	BCS30
AF2474	NTXN10AA	BCS30
AF2475	NTXN10AA	BCS30
AF2476	NTXJ00AA	BCS31
AF2489	NTXE38AB	BCS34
AF2490	NTXA85AB	BCS34
AF2521	NTXF46AA	BCS35
AF2522	NTXF46AA	BCS35
AF2527	NTXA85AB	BCS34
AF2528	NTXA85AB	BCS34
AF2529	NTXJ96AA	BCS31
AF2530	NTXF46AA	BCS35
AF2531	NTX001AA	BCS32
AF2532	NTX001AA	BCS31
AF2560	NTXN86AA	BCS31
AF2565	NTX901AA	BCS31
AF2582	NTXN68AA	BCS31
AF2583	NTX270AA	BCS31
AF2587	NTG230AA	BCS31
AF2588	NTG230AA	BCS32
AF2592	NTXN55AA	BCS32
AF2593	NTXN55AA	BCS32
AF2594	NTG230AA	BCS31
AF2595	NTG230AA	BCS31
AF2597	NTXA83AA	BCS32
AF2599	NTX901AA	BCS31
AF2601	NTXN04AA	BCS31
AF2613	NTXF46AA	BCS34
		BCS35
AF2614	NTXF46AA	BCS35
AF2642	NTXA91AA	BCS32
AF2649	NTXF46AA	BCS35
AF2650	NTXF46AA	BCS35
AF2651	NTXF46AA	BCS35
AF2656	NTXF46AA	BCS35
AF2659	NTXN82AA	BCS32
AF2668	NTX901AA	BCS31
AF2670	NTX621AB	BCS34
AF2671	NTX621AB	BCS34
AF2672	NTX387AB	BCS32
AF2676	NTXA85AA	BCS33
AF2677	NTXA85AA	BCS33
AF2678	NTXA85AA	BCS33
AF2684	NTXS32AA	BCS36
AF2686	NTXF46AA	BCS35
AF2687	NTXF46AA	BCS35
		BCS36
AF2688	NTXF46AA	BCS35

AF2689	NTXF19AA	BCS34
AF2699	NTXN82AA	BCS32
AF2700	NTXN82AA	BCS32
AF2701	NTXN82AA	BCS32
AF2702	NTXN82AA	BCS32
AF2704	NTXP14AA	BCS32
AF2705	NTX001AA	BCS32
AF2724	NTXF46AA	BCS35
AF2725	NTXF46AA	BCS34
		BCS35
AF2726	NTXF46AA	BCS35
AF2739	NTXF61AA	BCS31
AF2755	NTX098AA	BCS32
	NTX159AA	
AF2759	NTXN66AA	BCS31
AF2762	NTXF46AA	BCS35
AF2777	NTXN85AA	BCS32
AF2783	NTXR48AA	BCS34
AF2784	NTXP92AA	BCS33
AF2785	NTXP92AA	BCS33
AF2786	NTXP92AA	BCS33
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AL1456	NTX951AA	BCS33
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AL1476	NTX945AA	BCS33
AL1477	NTX945AA	BCS33
AL1478	NTX945AA	BCS33
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AL1500	NTXJ40AA	BCS31
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AL1566	NTX885AB	BCS30
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AL1589	NTX750AB	BCS31
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AL1616	NTXP47AA	BCS34
AL1618	NTX057EA	BCS31
AL1629	NTX750AB	BCS32
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AL1652	NTXN21AA	BCS33
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AL1674	NTX750AC	BCS35
	NTX750AD	BCS35
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AL1705	NTXF04AA	BCS33
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AL1717	NTX142AA	BCS30
AL1718	NTX940AA	BCS33
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		BCS35
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AL1740	NTXF71AB	BCS33
AL1753	NTX941AA	BCS32
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AL1794	NTX833AA	BCS32
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AL1834	NTXN18AA	BCS32

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AL1885	NTX074AA	BCS32	AL2125	NTXP47AA	BCS34
AL1893	NTX041AB	BCS31	AL2126	NTXP47AA	BCS34
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AL1907	NTXF25AA	BCS32	AL2130	NTXF71AB	BCS34
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AL1912	NTXP13AA	BCS31			BCS35
AL1914	NTX750AB	BCS32	AL2148	NTXN24AA	BCS33
AL1917	NTXF08AA	BCS33			BCS35
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AL1974	NTXF06AA	BCS36	AL2182	NTXQ34AA	BCS33
AL1975	NTXF06AA	BCS36	AL2195	NTXP47AA	BCS34
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AL1977	NTXF06AA	BCS33	AL2200	NTXP47AA	BCS34
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AL2016	NTXS32AA	BCS36	AL2260	NTXE01AA	BCS33
AL2020	NTXN21AA	BCS33	AL2271	NTX944AA	BCS33
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AL2024	NTXQ95AA	BCS34	AL2279	NTX750AB	BCS33
AL2025	NTXP47AA	BCS34		NTX751AA	
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AL2040	NTXP38AA	BCS33	AL2290	NTXP47AA	BCS34
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AL2061	NTXP47AA	BCS34	AL2334	NTXF20AA	BCS36
AL2065	NTXP47AA	BCS34	AL2359	NTXN87AA	BCS33
AL2066	NTXP47AA	BCS34	AL2365	NTXN89AA	BCS35
AL2067	NTXP47AA	BCS34		NTXN93AA	BCS35
AL2068	NTXP47AA	BCS34	AL2367	NTXN87AA	BCS35
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AL2089	NTXN21AA	BCS34	AL2438	NTXP47AA	BCS34
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AL2110	NTX000AA	BCS34	AL2486	NTX001AA	BCS35
AL2119	NTXF25AB	BCS34	AL2539	NTX750AB	BCS34
AL2120	NTX944AA	BCS33	AL2540	NTXR34AA	BCS34

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AL2572	NTX750AD	BCS35
AL2667	NTX001AA	BCS35
AL2669	NTX001AA	BCS35
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	NTXJ43AA	
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AR0630	NTXS70AA	BCS36
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AR0900	NTXT11AA	BCS36
AR0918	NTXT22AA	BCS36
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BC2150	NTXA85AA	BCS28
BC2153	NTXA85AA	BCS29
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NC0015	NTX991AE	BCS31
NC0019	NTXJ47AA	BCS30
NC0020	NTX901AA	BCS33
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	NTX416AI	
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NC0030	NTXN59AA	BCS32
NC0032	NTX790AB	BCS32
NC0033	NTX270AA	BCS34
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	NTX386AB	BCS35	NC0501	NTX451AA	BCS35
		BCS36			
NC0429	NTXR37AA	BCS35			

Cross-reference-feature package to feature number and BCS

Note: The BCS number indicates the BCS in which the feature was released

NTG230AA	AF2379	BCS30
	AF2380	BCS30
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	AF2802	BCS32
	AF2803	BCS32
	AF3013	BCS33
	AF3036	BCS33
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	AF3291	BCS36
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	AF3384	BCS36
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	AG1868	BCS31	NTX041AB	AC0361	BCS28
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	AG2150	BCS32	NTX056AA	AG1524	BCS29
	AG2255	BCS32	NTX057EA	AG1923	BCS30
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	AG2277	BCS33	NTX060AB	AF2087	BCS29
	AG2323	BCS33	NTX065AA	AF2310	BCS30
	AG2478	BCS33		NC0052	BCS32
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	AJ0194	BCS28		AL1885	BCS32
	AJ0729	BCS29		AR0127	BCS34
	AJ1957	BCS34	NTX089AA	AF1400	BCS29
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	AJ2240	BCS35		AN0319	BCS36
	AJ2290	BCS35		AE1275	BCS35
	AL0479	BCS28		AF1093	BCS29
	AL0914	BCS28		AF1981	BCS29
	AL1052	BCS28		AF2755	BCS32
	AL1149	BCS29		AF3078	BCS34
	AL1518	BCS31		AN0101	BCS34
	AL2319	BCS34		AN0319	BCS36
	AL2486	BCS35	NTX100AA	AD2068	BCS29
	AL2667	BCS35		AD2488	BCS30
	AL2669	BCS35		AD2810	BCS30
	AL2417	BCS34		AD2851	BCS31
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	AF2997	BCS35		AR0129	BCS34
	AF2998	BCS35		AR0125	BCS36
	AF2999	BCS35	NTXF72AB	AF2985	BCS33
	AF3004	BCS34		AG2160	BCS33
		BCS35	NTXF82AA	AF2307	BCS31
	AF3798	BCS34	NTXF85AA	NC0010	BCS33
		BCS35	NTXF86AA	AL1212	BCS33
	AF3800	BCS36		AL1714	BCS33
	AF3801	BCS36		AL1732	BCS33
	AF3805	BCS35		AL1734	BCS33
	AF3807	BCS34		AL1970	BCS33
		BCS35		AR0317	BCS36
	AF3832	BCS35	NTXF87AA	AG1162	BCS29
	AF4332	BCS35		AG1866	BCS30
	AF4438	BCS36	NTXF88AA	AC0538	BCS31
	AF4439	BCS35		AJ0443	BCS29
	AF4874	BCS36		AJ0445	BCS30
	AF5330	BCs36	NTXF88AB	AJ1240	BCS34
	AF4979	BCS36	NTXF92AA	AJ0301	BCS29
	AN0225	BCS36		AJ0577	BCS29
	AN0230	BCS36		AJ0945	BCS31
	AN0351	BCS36		AJ0956	BCS31
	AN0435	BCS36	NTXF93AA	AJ0303	BCS29
NTXF55AA	AF2810	BCS32		AJ0304	BCS29
	AG1839	BCS31		AJ0305	BCS29

	AJ0942	BCS30	NTXJ47AA	NC0019	BCS30
NTXF94AA	AJ0576	BCS29	NTXJ48AA	AJ0605	BCS31
NTXF94AB	AJ0607	BCS30		AJ0957	BCS31
NTXF95AA	AJ0302	BCS29	NTXJ51AA	AF4839	BCS36
	AJ0397	BCS29		AL1320	BCS31
	AJ0398	BCS29		AL1321	BCS31
	AJ0399	BCS29		AQ0875	BCS34
	AJ0400	BCS29	NTXJ54AA	AG1913	BCS30
	AJ0493	BCS29	NTXJ58AA	AF1731	BCS29
	AJ0943	BCS31	NTXJ59AA	AG1945	BCS32
	AJ0944	BCS31		AG1946	BCS33
	AJ0955	BCS31	NTXJ59AB	AG1945	BCS32
	AJ1018	BCS31		AG1946	BCS33
	AJ1340	BCS32		AG2336	BCS33
NTXF97AA	AL1587	BCS33		AG2337	BCS33
	AQ0697	BCS33		AG2338	BCS35
NTXJ00AA	AF2118	BCS31		AR0051	BCS34
	AF2267	BCS30	NTXJ59AC	AG2338	BCS35
	AF2270	BCS30		AR0047	BCS35
	AF2271	BCS30		AR0217	BCS35
	AF2273	BCS31		AR0391	BCS35
	AF2274	BCS31	NTXJ60AA	AG2005	BCS33
	AF2275	BCS31		AG2195	BCS31
	AF2276	BCS31		AG2337	BCS33
	AF2450	BCS31		AR0048	BCS34
	AF2452	BCS31	NTXJ60AB	AR0311	BCS35
	AF2454	BCS31	NTXJ62AA	AG2003	BCS32
	AF2476	BCS31		AG2003	BCS33
	AL1043	BCS30		AG2291	BCS34
	AL1046	BCS30		AG2481	BCS33
NTXJ00AB	AF4220	BCS34		AR0024	BCS34
	AF4221	BCS34	NTXJ63AA	AG2303	BCS35
NTXJ10AA	NC0013	BCS30	NTXJ65AA	AR0004	BCS33
NTXJ11AA	AL1816	BCS33	NTXJ67AA	AF2395	BCS30
	AL1818	BCS33	NTXJ68AA	AD2467	BCS30
NTXJ35AA	AJ0190	BCS28	NTXJ69AA	NC0028	BCS31
	AJ0472	BCS29	NTXJ70AA	NC0025	BCS31
NTXJ37AA	NC0003	BCS31	NTXJ73AA	NC0035	BCS33
NTXJ38AA	NC0011	BCS31	NTXJ78AA	AG1880	BCS31
NTXJ39AA	AG1954	BCS31	NTXJ82AA	AF1085	BCS31
	NC0499	BCS36		AF2859	BCS32
NTXJ40AA	AL1500	BCS31		NC0056	BCS31
	AL1676	BCS34	NTXJ83AA	AG1565	BCS31
NTXJ41AA	AF2367	BCS31	NTXJ84AB	AL0604	BCS31
NTXJ42AA	AD1313	BCS29		NC0053	BCS31
	AG2286	BCS31		NC0055	BCS32
NTXJ43AA	AD2247	BCS29		NC0084	BCS31
	AM0162	BCS32	NTXJ90AA	AD2852	BCS31
NTXJ44AA	AF2316	BCS30		NC0200	BCS32

NTXJ91AA	AL1640	BCS31
	AL1677	BCS31
NTXJ93AA	NC0077	BCS31
NTXJ94AA	NC0079	BCS31
NTXJ96AA	AF2529	BCS31
NTXJ97AA	NC0081	BCS31
NTXJ98AA	NC0080	BCS31
NTXK02AB	NC0336	BCS35
NTXM93AA	AE1101	BCS35
NTXN00AA	AL1678	BCS32
NTXN01AA	AG1984	BCS32
NTXN01AB	AG2554	BCS34
NTXN04AA	AF2601	BCS31
NTXN07AA	AG1980	BCS31
NTXN07AB	AF3679	BCS36
NTXN10AA	AF2471	BCS30
	AF2473	BCS30
	AF2474	BCS30
	AF2475	BCS30
NTXN11AA	AG2035	BCS31
NTXN12AA	AF2370	BCS31
NTXN13AA	AD2587	BCS31
NTXN16AA	AL1696	BCS32
NTXN17AA	AF2146	BCS32
NTXN18AA	AL1328	BCS31
	AL1449	BCS31
	AL1834	BCS32
NTXN19AA	AL1498	BCS30
NTXN21AA	AL1647	BCS33
	AL1648	BCS33
	AL1652	BCS33
	AL1701	BCS33
	AL1702	BCS33
	AL2020	BCS33
	AL2080	BCS34
	AL2082	BCS34
	AL2089	BCS34
	AL2090	BCS34
	AL2093	BCS34
	AL2330	BCS33
	AR0158	BCS34
NTXN24AA	AL2147	BCS33
		BCS35
	AL2148	BCS33
		BCS35
	AL2294	BCS33
		BCS35
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NTXN27AA	AR0252	BCS35
NTXN28AA	AN0099	BCS34
NTXN29AA	AF2261	BCS31
	AF2262	BCS31
NTXN31AA	AJ1056	BCS31
	AJ1266	BCS32
NTXN35AA	NC0117	BCS32
NTXN46AA	NC0358	BCS34
NTXN49AA	NC0146	BCS33
NTXN50AA	AF2145	BCS31
NTXN53AA	AM0055	BCS31
NTXN54AA	NC0152	BCS32
NTXN55AA	AF2592	BCS32
NTXN59AA	NC0030	BCS32
	NC0294	BCS34
NTXN60AA	NC0162	BCS32
NTXN65AA	NC0112	BCS32
NTXN66AA	AF2759	BCS31
NTXN68AA	AF2582	BCS31
NTXN75AA	NC0192	BCS32
	NC0192	BCS33
NTXN80AA	AF1725	BCS32
NTXN82AA	AF2659	BCS32
	AF2699	BCS32
	AF2700	BCS32
	AF2701	BCS32
	AF2702	BCS32
	AF2865	BCS32
NTXN82AB	AF2795	BCS34
	AF2796	BCS34
	AF2797	BCS34
	AF2798	BCS34
	AF3187	BCS34
NTXN83AA	AL1453	BCS34
	AR0478	BCS36
NTXN85AA	AF2777	BCS32
NTXN86AA	AF2560	BCS31
NTXN87AA	AL2359	BCS33
	AL2367	BCS35
	AL2368	BCS35
NTXN89AA	AL2365	BCS35
NTXN92AB	AN0191	BCS35
	AF4903	BCS36
NTXN93AA	AL2365	BCS35
NTXN97AA	AF2830	BCS32
	AG2073	BCS32
NTXN99AA	AC0615	BCS32
NTXP00AA	NC0109	BCS33
NTXP01AA	AG2243	BCS32
NTXP09AA	NC0256	BCS33

NTXP10AA	AL2055	BCS34		AL2198	BCS34
NTXP12AA	AF2879	BCS32		AL2200	BCS34
NTXP13AA	AL1912	BCS31		AL2290	BCS34
	AL1978	BCS32		AL2291	BCS34
NTXP14AA	AF2704	BCS32		AL2326	BCS34
NTXP15AA	AF3022	BCS33		AL2438	BCS34
NTXP17AA	AD4337	BCS35		AL2440	BCS34
NTXP23AA	AD4339	BCS35		AL2441	BCS34
	AD4340	BCS35		AQ0845	BCS34
	AD4341	BCS35		AQ0847	BCS34
NTXP38AA	AL2040	BCS33		AQ0849	BCS34
NTXP41AA	AF2875	BCS34		AQ0852	BCS34
	AF2876	BCS34		AQ0862	BCS34
	AF2877	BCS34		AQ0887	BCS34
	AF2965	BCS34		AQ0894	BCS34
NTXP42AA	AF2875	BCS34	NTXP47AB	AQ1008	BCS36
	AF2878	BCS34		AQ1010	BCS36
NTXP43AA	AJ1053	BCS34	NTXP48AA	AJ1485	BCS32
NTXP44AA	AL1727	BCS34		AJ1486	BCS32
	AL1756	BCS34	NTXP49AA	AF2861	BCS35
	AQ0857	BCS34		AF2862	BCS35
NTXP47AA	AG2273	BCS34		AF2863	BCS35
	AG2322	BCS34		AF3536	BCS35
	AG2327	BCS34		AF4319	BCS35
	AG2328	BCS34		AF4326	BCS35
	AG2343	BCS34		AF4327	BCS35
	AJ1833	BCS34		AF4328	BCS35
	AJ1836	BCS34	NTXP53AA	AG1978	BCS32
	AJ1837	BCS34	NTXP53AB	AG1978	BCS32
	AJ1838	BCS34	NTXP55AA	AJ2446	BCS36
	AL1615	BCS34	NTXP55AB	AJ2446	BCS36
	AL1616	BCS34		AJ2884	BCS36
	AL1906	BCS34		AJ2886	BCS36
	AL2025	BCS34	NTXP57AA	NC0343	BCS33
	AL2056	BCS34	NTXP58AA	NC0295	BCS33
	AL2057	BCS34	NTXP72AA	AR0105	BCS34
	AL2058	BCS34		AR0106	BCS34
	AL2059	BCS34	NTXP73AA	NC0292	BCS33
	AL2061	BCS34	NTXP75AA	AL2289	BCS34
	AL2065	BCS34	NTXP78AA	NC0293	BCS34
	AL2066	BCS34	NTXP80AA	NC0299	BCS33
	AL2067	BCS34	NTXP81AA	AF1750	BCS31
	AL2068	BCS34	NTXP86AA	NC0303	BCS33
	AL2069	BCS34	NTXP89AA	AJ1162	BCS32
	AL2125	BCS34	NTXP92AA	AF2784	BCS33
	AL2126	BCS34		AF2785	BCS33
	AL2127	BCS34		AF2786	BCS33
	AL2128	BCS34		AF2787	BCS33
	AL2195	BCS34		AF2788	BCS33

	AF2790	BCS33
	AF2791	BCS33
	AF2792	BCS33
	AF2793	BCS33
	AF2867	BCS33
NTXP92AB	AF4903	BCS36
NTXP95AA	AF2993	BCS33
	AF3573	BCS34
		BCS35
NTXP96AA	AF3019	BCS33
		BCS35
	AN0082	BCS35
NTXP97AA	AL1729	BCS33
NTXP99AA	NC0317	BCS33
NTXP99AB	AN0081	BCS34
NTXQ12AA	AF2795	BCS34
	AF2796	BCS34
	AF2797	BCS34
	AF2798	BCS34
	AF3187	BCS34
NTXQ18AA	NC0337	BCS34
NTXQ23AA	AN0327	BCS36
NTXQ27AA	AJ0591	BCS33
NTXQ27AB	AR0170	BCS35
NTXQ29AA	AF3020	BCS33
NTXQ31AA	AG2479	BCS33
		BCS35
NTXQ34AA	AJ1480	BCS33
	AL2182	BCS33
NTXQ35AA	AR0102	BCS33
NTXQ36AB	AR0285	BCS36
NTXQ41AA	AR0209	BCS35
NTXQ42AA	AR0219	BCS36
	AR0231	BCS36
	AR0235	BCS36
	AR0238	BCS36
	AR0298	BCS36
NTXQ43AA	AR0220	BCS36
	AR0229	BCS36
	AR0449	BCS36
NTXQ44AA	AR0239	BCS36
NTXQ48AA	AD4443	BCS36
	AR0374	BCS36
NTXQ50AA	AR0219	BCS36
	AR0228	BCS36
NTXQ52AA	AL1455	BCS34
NTXQ54AA	AR0327	BCS36
NTXQ56AB	AQ1092	BCS36
	AQ0326	BCS36
	AR0406	BCS36
	AR0577	BCS36
	AR0704	BCS36
NTXQ64AA	AG1865	BCS33
NTXQ65AA	AG2329	BCS33
NTXQ70AA	AN0196	BCS35
	NC0368	BCS35
NTXQ73AA	AG2553	BCS32
NTXQ79AA	NC0199	BCS32
NTXQ81AA	AF2858	BCS32
NTXQ89AA	AR0145	BCS34
NTXQ90AB	NC0485	BCS35
NTXQ91AA	NC0377	BCS35
NTXQ95AA	AL2024	BCS34
NTXR21AA	AF4680	BCS36
	NC0390	BCS35
NTXR25AA	NC0418	BCS34
	NC0497	BCS35
NTXR26AA	AR0183	BCS34
NTXR27AA	AR0429	BCS34
NTXR28AA	AJ1846	BCS34
		BCS35
NTXR31AA	AF3379	BCS35
	AF3391	BCS35
NTXR34AA	AF3732	BCS34
	AF3733	BCS34
	AL2540	BCS34
NTXR37AA	NC0429	BCS35
NTXR42AA	AF3658	BCS34
NTXR43AA	AG2555	BCS34
	AF2556	BCS34
NTXR44AA	AJ0446	BCS34
NTXR46AA	AL2236	BCS33
NTXR48AA	AF2783	BCS34
NTXR49AA	AD3936	BCS35
	AD3937	BCS35
	AD3938	BCS35
	AD4433	BCS35
	AD4449	BCS35
	AD4735	BCS36
NTXR50AA	AF2964	BCS34
		BCS35
NTXR52AA	AF3003	BCS35
NTXR59AA	NC0483	BCS35
NTXR62AA	AN0303	BCS36
NTXR63AA	AN0102	BCS36
NTXR65AA	AD3879	BCS35
	AD4574	BCS35
NTXR66AA	AD4732	BCS36

NTXR68AA	AR0295	BCS35
NTXR72AA	AR0010	BCS36
	AR0117	BCS34
	AR0118	BCS34
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NTXR83AA	AR0323	BCS35
NTXR84AA	AR0322	BCS35
NTXR85AA	AN0235	BCS35
NTXR86AA	AJ2878	BCS36
NTXR87AA	AN0146	BCS35
	AN0150	BCS35
	AN0151	BCS35
	AN0152	BCS35
	AN0153	BCS35
	AN0162	BCS35
	AN0216	BCS35
NTXR88AA	AN0322	BCS36
NTXR92AA	AD4550	BCS35
NTXR95AA	AN0232	BCS36
	AN0323	BCS36
NTXS01AA	AQ0947	BCS35
	AQ0948	BCS35
NTXS04AA	AR0011	BCS35
NTXS05AA	AF4218	BCS35
	AF4219	BCS35
NTXS09AA	AD3938	BCS35
	AD4438	BCS35
NTXS11AA	AL1693	BCS34
	AR0142	BCS34
NTXS12AA	AQ1018	BCS36
NTXS17AA	AJ2887	BCS36
	AJ2888	BCS36
	AJ2889	BCS36
NTXS18AA	AN0259	BCS36
NTXS19AA	AN0324	BCS36
NTXS22AA	AR0215	BCS36
NTXS25AA	AD4750	BCS36
	AD4751	BCS36
	AD4755	BCS36
	AD4756	BCS36
	AD4948	BCS36
NTXS25AA	AD3317	BCS35
	AD3318	BCS35
	AD3319	BCS35
	AD3320	BCS35
	AD3321	BCS35
	AD3322	BCS35
	AD3443	BCS35
	AD4421	BCS35
NTXS27AA	AD4439	BCS35
NTXS28AA	AD3936	BCS35
	AF3379	BCS36
	AF3391	BCS36
	AN0069	BCS36
NTXS31AA	AF3006	BCS36
	AF3049	BCS36
	AF3532	BCS36
	AN0047	BCS36
	AN0178	BCS36
NTXS32AA	AF2684	BCS36
	AF3290	BCS36
	AL2016	BCS36
	AL2479	BCS36
NTXS37AA	AF5009	BCS36
NTXS51AA	AR0540	BCS36
NTXS64AA	AF4893	BCS36
	AF4894	BCS36
	AF4895	BCS36
NTXS65AA	AF4893	BCS36
	AF4894	BCS36
	AF4895	BCS36
NTXS66AA	AJ2369	BCS36
	AJ2860	BCS36
	AJ2861	BCS36
	AJ3280	BCS36
	AJ3285	BCS36
NTXS67AA	AJ2885	BCS36
NTXS69AA	AR0487	BCS36
NTXS70AA	AR0341	BCS36
	AR0400	BCS36
	AR0401	BCS36
	AR0402	BCS36
	AR0403	BCS36
	AR0485	BCS36
	AR0486	BCS36
	AR0630	BCS36
NTXS71AA	AR0521	BCS36
NTXS72AA	AQ0984	BCS36
NTXS74AA	AR0628	BCS36
NTXT10AA	AD6516	BCS36
NTXT11AA	AR0900	BCS36
NTXT12AA	AD6516	BCS36
NTXT12AA	AN0616	BCS36
	AN0631	BCS36
NTXT13AA	AN0632	BCS36
	AN0633	BCS36
NTXT14AA	AR0307	BCS36
NTXT15AA	AN0739	BCS36

NTXT16AA	AN0463	BCS36
NTXT17AA	AN0465	BCS36
NTXT18AA	AN0174	BCS36
NTXT19AA	AN0834	BCS36
NTXT20AA	AN0435	BCS36
NTXT22AA	AR0918	BCS36
NTXT23AA	AD6516	BCS36
	AF4879	BCS36
	AF4882	BCS36
	AF4883	BCS36
	AF4887	BCS36
	AF5378	BCS36
	AF5455	BCS36
	AF5544	BCS36
	AF5536	BCS36
	AF5537	BCS36
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	AE0905	BCS33
	AE0945	BCS34
	AE0946	BCS34
	AE1099	BCS34
NTXW01AA	AE0946	BCS34
	AE1099	BCS34
NTXW02AA	AE0956	BCS34
NTXW03AA	AE1013	BCS34
NTXW20AA	AE0958	BCS33
	AR0485	BCS36
NON-PACKAGE		
	AJ3280	BCS36
	AJ3285	BCS36
	AR0400	BCS36
	AR0401	BCS36
	AR0402	BCS36
	AR0403	BCS36
	AR0630	BCS36

Cross-references-feature title to feature number, feature package and BCS

Note: The BCS number indicates the BCS in which the feature was released.

37-0109 Line Admin PII (CC Part)	AR0900	NTXT11AA	BCS36
64K ENET Support	AR0005	NTXE01AA	BCS34
128K ENET FXPM Support	AL1231	NTXE01AA	BCS31
200 MS Disconnect Timing	AG1854	NTX901AA	BCS30
2B1Q Diagnostic and Performance Reporting	AL1589	NTX750AB	BCS31
2B1Q LCME CC Maintenance I	AC0552	NTX750AB	BCS30
2B1Q LCME CC Maintenance II	AC0570	NTX750AB	BCS30
2B1Q LCME XPM Support	AC0553	NTX750AB	BCS30
2B1Q Loop Maintenance Base	AL1388	NTX750AB	BCS31
2B1Q Loop and TDM Connection Provisioning	AL1314	NTX750AB	BCS31
2B1Q XPM TDM Connection Support	AC0571	NTX750AB	BCS31
3-Port Flexible Call Chaining	AF3244	NTX755AB	BCS33
		NTX755AC	
AABS Dual Language Capabilities	NC0297	NTXP79AA	BCS33
AABS VSN XP Restructure	AF3011	NTXA17AA	BCS33
ACB/AR Scans Entire Hunt Group	NC0314	NTXA00AB	BCS34
ACD - Agent Status Lamp	AD1609	NTX415AA	BCS29
ACD 2500 Set Call Processing Interactions	AD1857	NTXE09AA	BCS28
ACD 2500 Set Load Management	AD1862	NTXE09AA	BCS28
ACD 2500 Set Login/Logout	AD1858	NTXE09AA	BCS28
ACD 2500 Set Not Ready	AD1863	NTXE09AA	BCS28
ACD Agent Stability During Switch Maintenance	NC0269	NTX416AI	BCS33
ACD Call Forcing Tone To Headset	AD2128	NTX407AB	BCS31
ACD Call Transfer With Time	AD2895	NTX416AG	BCS31

ACD Distinctive Ringing	AD1929	NTXE09AA	BCS28
ACD Emergency Key Back-up	NC0094	NTX416AH	BCS32
ACD Forced Agent Availablity	NC0014	NTX416AG	BCS31
ACD Forced Announcement for New/Overflowed Calls	NC0104	NTX416AH	BCS32
ACD Line of Business Code Key	AD2129	NTX991AD	BCS29
ACD MIS for Call Transfer, Call Hold	NC0015	NTX991AE	BCS31
ACD MSQS Refresh	AD2591	NTX416AF	BCS30
ACD Observe Agent 3WC	AG1950	NTX415AA	BCS30
ACD Observe Agent Enhanced	AD1610	NTX415AA	BCS29
ACD Observe Agent from 2500 Set	NC0185	NTXE09AB	BCS32
ACD Queue Slot Announcement Allocation	AD2130	NTX416AF	BCS29
ACD Service Order Enhancements	AG1978	NTXP53AA	BCS32
		NTXP53AB	
ACD Station Maintenance and Configuration Enhancements	NC0262	NTX416AI	BCS33
ACD Transfer to Incalls Key	AD2588	NTX416AF	BCS30
ACD Variable Wrap-Up Time	NC0022	NTX416AH	BCS32
ACD Walk-Away/Closed Key Operation	AD2125	NTX991AD	BCS30
ACD on 2500 Set Feature Assignment	AD1950	NTXE09AA	BCS28
ACD on IVD Digital Sets	AD2318	NTX415AA	BCS29
ACPE Maintenance Position	AF2802	NTG230AA	BCS32
ACTS Coin Tone Generation Test	AL0011	NTX208AB	BCS33
ADACC Toll Restrictions	NC0316	NTXE36AB	BCS33
ADAS APUX Call Processing Application	AF3391	NTG320AA	BCS36
ADAS APUX Resource Management	AF3049	NTXS31AA	BCS36
ADAS APU Software Installation (Phase II)	AN0237	NTXQ23AA	BCS36
ADAS CPE Internals	AF3050	NTG320AA	BCS36
ADAS OM Monitor (DEMO)	AF3016	NTG230AA	BCS33
ADAS MMI Data Transfer	AN0178	NTXS31AA	BCS36
ADAS UNIX Loadbuild and Software Installation	AN0069	NTXS30AA	BCS36
ADAS Communications Interface	AF3048	NTG320AA	BCS36
ADAS Data Manager	AF3382	NTG320AA	BCS36
ADAS Service Data MMI	AN0056	NTG321AA	BCS36
ADAS Voice/CM Utilities	AF3384	NTG320AA	BCS36
ADSI: Visual Screen List Editing (Phase II)	AF3573	NTXP95AA	BCS34
			BCS35
ADSI Compliancy-CC	AN0632	NTXT13AA	BCS36
ADSI Compliancy-XPM	AN0633	NTXT13AA	BCS36

AIN AMA	AN0099	NTXN28AA	BCS34
AIN Recorded Announcements Enhancements	AR0231	NTXQ42AA	BCS36
AINSSP-Basic Trunk Trigger Processing	AR0225	NTX001AA	BCS35
AINSPP: AFR Trigger Preparatory	AE0298	NTXQ42AA	BCS36
AINSSP: AIN AMA	AR0238	NTX042AA	BCS36
AINSSP: TDPS and TRIGGERS I	AR0220	NTXQ43AA	BCS36
AINSSP: Base Trunks Trigger Processing II	AR0235	NTXQ42AA	BCS36
AINSSP: Feature Interactions with AIN Basic Call Model - I	AR0228	NTXQ50AA	BCS36
AINSSP: Message Encoder/Decoder II	AR0374	NTXQ48AA	BCS36
AINSSP: Release 0.1 on the TCP/IP Transport Protocol	AR0422	NTXQ56AA	BCS36
AINSSP Base: Trigger Tables	AR0219	NTXQ42AA	BCS36
		NTXQ50AA	
AINSSP Base: AIN TRAVER	AR0449	NTXQ43AA	BCS36
AINSSP Base: Trigger Processing II	AR0229	NTXQ43AA	BCS36
AINSSP Tool: Test Queries II	AR0239	NTXQ44AA	BCS36
AMA TR-508 Compliancy II	AN0101	NTX098AA	BCS34
AMA Compliance (TR-508)	AF3078	NTX270AA	BCS34
		NTX159AA	
AMA Test Call Capability	AF1462	NTX159AA	BCS28
AMA Test Call for Trunks	AF1981	NTX098AA	BCS29
		NTX159AA	
AMA: Separation of Billing and Routing Functions	AF1439	NTX901AA	BCS31
ANI to ISUP Conversion	NC0303	NTXP86AA	BCS33
AP Maintenance Support for Six SLot CPU	AL1376	NTXF06AA	BCS31
APU Maintenance for SuperNode/UNIX	AF2689	NTXF19AA	BCS34
APUX Process Management	AF3291	NTG320AA	BCS36
ASP Support for Intelligent Service Node	AN0146	NTXR87AA	BCS35
Access Feature Group Enhancement	AG1866	NTXF87AA	BCS30
Access Feature Grouping	AG1162	NTXF87AA	BCS29
Account Code Billing	NC0035	NTXJ73AA	BCS33
Add MAPCI PERFORM Level for DTCI	AR0086	NTX270AA	BCS34
Adding Options on a Secondary Directory Number	AF2021	NTXE94AA	BCS33
Additional FSL Building Blocks	AR0406	NTXQ54AB	BCS36
Alarm Call Status on Attendant Console	AD0351	NTX853AA	BCS30
Align North American PRI with Protocol Variant ARCH	AR0245	NTX790AC	BCS35
Alternate Carrier Selection	AF1781	NTXE35AA	BCS29
Application Processor Footprint	AL1976	NTXF06AA	BCS33

Application Processor Load Mate	AL1975	NTXF06AA	BCS36
Application Processor Mtce Support of AP BCS Applications	AF0348	NTXF06AA	BCS36
Application Processor Split Mode	AL1974	NTXF06AA	BCS36
Application Processor Support of OM and SPMs	AL1977	NTXF06AA	BCS33
Attendant Console Call Hold Recall	AD2488	NTX100AA	BCS30
Audit/REX Driver for INM Nodes	AL1378	NTX944AA	BCS33
Authcode for MDR	AF1980	NTXA88AA	BCS29
Auto Display for Meridian Business Sets	AG1549	NTXE40AB	BCS29
Auto Set Relocate for MBS/2500/ISDN Sets	NC0256	NTXP09AA	BCS33
Auto-Apply Enhancements	AF2816	NTX001AA	BCS32
Auto-Apply for all ISN Patches	AF4281	NTX001AA	BCS35
Automated DA Call Completion - with Alternate Billing	AF2086	NTXF10AA	BCS29
Automated Intercept Call Completion	NC0146	NTXN49AA	BCS32
		NTXN49AA	BCS33
Automatic DA Call Completion	AF1777	NTXE36AA	BCS28
Automatic Recall AMA Enhancements	NC0440	NTXA00AC	BCS35
B911 and 3WC Interaction	AF1735	NTX019AA	BCS28
BCLID: USP Billing & DN Changes in Message Format	AF2810	NTXF55AA	BCS32
BCS Application Driver	AG1511	NTXE29AA	BCS29
BCS Update Enhancements	AJ2290	NTX001AA	BCS35
BCS34 Hook Feature for 7N10	AR0160	NTX940AA	BCS34
BCSMON - Enhanced Monitoring Capabilities	AG1927	NTX001AA	BCS30
BRA Access to Enhanced Service Providers	AG1709	NTX796AA	BCS30
BRA Meridian Feature Transparency: MTCE and CP Integration	AJ0912	NTX750AB	BCS30
BRA Meridian Feature Transparency: XPM Support for MTCE and	AJ0913	NTX750AB	BCS30
BRA: Meridian Feature Transparency-Power Softkeys	AC0538	NTXF88AA	BCS31
BRISC RTIF Firmware	AQ0697	NTXF97AA	BCS33
Basic Integration of Rate Adaptor Transactor into DMS-bus	AL1455	NTXQ52AA	BCS34
Base Automatic Message Accounting (AMA) Re-engineering II	AN0319	NTX098AA	BCS36
		NTX159AA	
Base Car Analysis	AN0336	NTX270AA	BCS35
Bd Channel Logical Loopback	AL2040	NTXP38AA	BCS33
Bellcore Frame Relay Billing	AR0102	NTXQ35AA	BCS33
Billing Method Collection	AF1528	NTXA17AA	BCS30
Billing Server Performance	AD4337	NTXP17AA	BCS35

Billing Verification	AF1529	NTXA17AA	BCS30
Blocking of Restricted Number to SMDI	AG1980	NTXN07AA	BCS31
Broadcast Interworking/Feature Interactions	AD3259	NTXP85AA	BCS33
Broadcast Patching For Active and Inactive XPMS Units	AF2582	NTXN68AA	BCS31
Bulk Calling Line Identification	AG1839	NTXF55AA	BCS31
Business Set Inspect Key	AG1403	NTXE40AB	BCS28
Carrier Access Code Expansion (FGB)	NC0202	NTX209AB	BCS33
CC/XPM Support of POTS on LCMI	AC0519	NTX750AB	BCS28
CC Call Processing for RCC Warm ESA: Phase II	AF2798	NTXN82AB NTXQ12AA	BCS34
CC IDT Maintenance II	AF2443	NTXF46AA	BCS35
CC Maintenance for RCC Warm ESA: Phase II	AF2797	NTXN82AB NTXQ12AA	BCS34
CC COT Enhancements for 2-wire trunksso	AJ1485	NTXP48AA	BCS32
CC Layer 2/3 Protocol Monitoring Development	AL1914	NTX750AB	BCS32
CC Support for Compact Conference Peripheral (CCP) (Part 1)	AQ0967	NTX001AA	BCS35
CC S/W Support for Enhanced DRAM (E-DRAM)	AL1696	NTXN16AA	BCS32
CC Software Modifications for UP in Base XPM	AF3733	NTXR34AA	BCS34
CC Static Data Manager	AF3053	NTX270AA	BCS34
CC Support for EDRAM Uploading	AQ0984	NTXS72AA	BCS36
CC Support of the UP on RCC	AF4218	NTXS05AA	BCS35
CC Support of the UP on the RCCI	AF4221	NTXJ00AB	BCS34
CC Warm SWACT Enhancements	AJ0194	NTX001AA	BCS28
CC Warm SWACT MMI Enhancements - Phase II	AG2277	NTX001AA	BCS33
CC Warm SWACT Module Check Program	AG2255	NTX001AA	BCS32
CC Warm SWACT Restart Outage Reduction - Phase II	AG2276	NTX001AA	BCS33
CC Warm Swact Man Machine Interface Enhancements	AG1869	NTX001AA	BCS31
CCITT Blue Book Conformance -PRA	AJ1138	NTX790AB	BCS32
CCITT Ext. Calling Card and End-of-Dialing Delimiter	AF3013	NTG230AA	BCS33
CCS7 Basic Test Utility	AF2367	NTXJ41AA	BCS31
CCS7 Basic Test Utility	AL1500	NTXJ40AA	BCS31
CCS7 CC Store Reduction For NT40	AL1499	NTX041AB	BCS31
CCS7 Enhancements to Support LPP on a CCS7 SSP	AL1247	NTXF20AA	BCS30
CCS7 Increased Route Sets	NC0429	NTXR37AA	BCS35
CCS7 MTP Routing Enhancements	AR0011	NTXS04AA	BCS35
CCS7 Timer Enhancements	AC0361	NTX041AB	BCS28

CDC Enhancements for ISDN	AJ0902	NTX412CA	BCS30
CFBL Inhibit Line Busy/Inhibit MB Enhancements	NC0200	NTXJ84AA	BCS32
CFD Interaction with Three-Way Calling (3WC)	AG1541	NTX100AA	BCS28
CLASS (Phase I) on MVP	AG1546	NTXE58AA	BCS28
CLASS-MDC: CLASS on Centrex Basic	AG1877	NTXF56AA	BCS30
CLASS-MDC: Screening List Editing Feature Interactions	AG1880	NTXJ78AA	BCS31
CLASS-Screening List Features on MBS/MADN	AG2160	NTXF72AB	BCS33
CLASSPlus: Call Logging	AF3019	NTXP96AA	BCS33
			BCS35
CLASS Calling Name TR Compliance - Residental	AN0323	NTXR95AA	BCS36
CLASS Calling Name Delivery on MADN	AF2858	NTXE52AA	BCS32
CLASS for SMS: Phase 1A - CND	AF1813	NTXE38AA	BCS28
CLASS Phase I MBS - Single Key Feature Activation	AF2985	NTXF72AB	BCS33
CLASS Phase Two on Multiline Variety Plan	AG1785	NTXF60AA	BCS30
CLASS Services on ISDN-Part1	AN0189	NTX761AA	BCS35
CLASS Visual Message Waiting Indicator	AG1954	NTXJ39AA	BCS31
CLASS: TCAP for Calling Name Delivery	AN0232	NTXR95AA	BCS36
CLASS: Anonymous Caller Rejection	AF2879	NTXP12AA	BCS32
CLASS: Automatic Recall Date and Time	AG1631	NTXA00AB	BCS32
CLASS: Calling Name Delivery	AG1726	NTXE52AA	BCS30
CLASS: Calling Number Delivery - Dialable Number	AG1515	NTXE27AA	BCS28
CLASS: Distinctive Ringing Call Waiting	AG1629	NTXA42AA	BCS30
CLASS: Feature Not Allowed Announcement	AG2057	NTXA82AA	BCS31
CLASS: Selective Call Acceptance	AG1675	NTXA45AA	BCS30
CLASS: Selective Call Forwarding	AG1628	NTXA95AA	BCS30
CLASS: Selective Call Rejection	AG1605	NTXA96AA	BCS29
CLASS: Split NPA Management	NC0483	NTXR59AA	BCS35
CLASSPLUS: Calling Logging	AF3016	NTXP96AA	BCS33
CLASSPLUS: Calling Name Display Enhancements	AF3020	NTXQ29AA	BCS33
CLID Screening per Trunk Group	AR0246	NTX790Ac	BCS35
CM - ENET S/W Communication VIA NT9X36BA	AL1011	NTXE01AA	BCS31
CMIC Link Diagnostic Enhancements	AL1109	NTX940AA	BCS31
CMR CRA Optionality for TR-394 ISUP	AG1913	NTXJ54AA	BCS30
CMR Enhancements for Sesame	AN0100	NTX001AA	BCS34
CMWI Enhancements for Universal Digital Loop Carriers	NC0499	NTXJ39AA	BCS36
COMV APU S/W Installation (Phase II)	AN0162	NTXR87AA	BCS35
CP Long Messaging Implementation I	AG1818	NTX001AA	BCS31

CPE Certification Tool for Frame Relay	AJ1847	NTXF25AB	BCS34
CPM ISDN Applications Support for RCC2	AF2793	NXTP92AA	BCS33
CPM Basic RSC Applications Support	AF2791	NTXP92AA	BCS33
CPM DS1 Software: Support for 4x2 DS1 I/F Packs	AF2788	NTXP92AA	BCS33
CPM Data Structures and MMI	AF2784	NTXP92AA	BCS32
		NTXP92AA	
		NTXP92AA	BCS33
CPM Diagnostics	AF2790	NTXP92AA	BCS33
CPM Dual DS-1 (MX81) Maintenance	AF2788	NTXP92AA	BCS32
CPM Matrix Software	AF2787	NTXP92AA	BCS32
CPM PCM Signalling Processor Maintenance	AF2786	NTXP92AA	BCS32
		NTXP92AA	BCS33
CPM UP Software and Basic Maintenance	AF2785	NTXP92AA	BCS32
		NTXP92AA	BCS33
CPM: Intra Switching and Dual RCC2 CP Support	AF2867	NTXP92AA	BCS33
CSM Support for SPECONN Network Connection	AL1668	NTX750AB	BCS31
Cache Statistics OMS	AR0317	NTXF86AA	BCS36
Caching DMOPRO	AG1513	NTXE29AA	BCS29
Call Clean Up Robustness	AQ0878	NTX001AA	BCS35
Call Forward Busy - Inhibit Make & Inhibit Line Busy	NC0084	NTXJ84AA	BCS31
Call Forwarding Per Key Basis	AL0211	NTXE62AA	BCS29
Call Forwarding of Call Waiting Calls	NC0025	NTXJ70AA	BCS31
Call Forwarding of Precedence Calls	AD2853	NTX715AB	BCS31
Call Hunting - 1A Transparency	AF1085	NTXJ82AA	BCS31
Call Park by ACD Agent	NC0288	NTX416AI	BCS33
Call Pickup Transparency	AG1565	NTXJ83AA	BCS31
Call Processing Interface for ISI	AG1946	NTXJ59AB	BCS33
Call Request Retrieve/Keyset Short Hunt Interaction Control	AG1997	NTX119AA	BCS31
Call Status Preservation Across Warm SWACT	NC0105	NTX270AA	BCS34
Call Waiting 1A Transparency Issues	NC0055	NTXJ84AA	BCS32
Called Party Released Timing Enhancement	AF0966	NTX901AA	BCS29
Calling Name, Number Delivery Blocking	AG1550	NTXE46AA	BCS29
Cancel Call Waiting - Per Line Option	AF1731	NTXJ58AA	BCS29
Carrier Code Expansion for ISDN	AN0172	NTX186AB	BCS35
Carrier Code Expansion for LEAS	AN0174	NTXT18AA	BCS36
Carrier Identification Code for E800/PVN	AN0173	NTX186AB	BCS36
		NTX386AB	

Central DMS BUS Data Recovery on System Restarts	AL1482	NTX945AA	BCS33
Central DMS BUS and ILM Interactions on Message Channels	AL1477	NTX945AA	BCS33
Central DMS-BUS MMI Information for Message Channels	AL1480	NTX941AA	BCS33
Central DMS-BUS MMI Information for Physical Links	AL1781	NTX945AA	BCS33
Central DMS-BUS/ILM Interactions on PLM	AL1780	NTX945AA	BCS33
Central MS-ILM Interactions on Physical Links	AC0644	NTX945AA	BCS33
Central RP Control II	AL1195	NTX944AA	BCS33
Change EBS Features During Talking State	AF1663	NTX733AE	BCS28
Change Speed Call Controller	AF1565	NTX733AE	BCS28
Channel and Link Allocation	AL2128	NTXP47AA	BCS34
Circuit Group Blocking	AJ1040	NTX167AB	BCS31
Class: Spontaneous Call Waiting Identification	AG2073	NTXN97AA	BCS32
Clear 64 KBPS on 6X50AB	AL1717	NTX142AA	BCS30
Cold SWACT Recovery on Failure of Planned SWACTs	AJ0965	NTX270AA	BCS30
Common Basic	AF2118	NTXJ00AA	BCS31
CompuCALL Agent Control Manager	AR0215	NTXS22AA	BCS36
CompCALL Delivery of Forwarding Party Infromation	AR0311	NTXJ60AB	BCS35
CompCALL Integrity Enhancements	AR0217	NTXJ59AC	BCS35
CompCALL Link Reliability	AR0047	NTXJ59AC	BCS35
CompCALL Pricing Controls	AR0391	NTXJ59AC	BCS35
CompCALL Resource & Queue Status Query	AG2303	NTXJ63AA	BCS35
Committed Infromation Rate for DataSPAN	AJ2878	NTXR86AA	BCS36
Computer Assisted Signalling Over ISI	AG2003	NTXJ62AA	BCS32
		NTXJ62AA	BCS33
Concurrent Activity Manager	AL2037	NTX000AA	BCS34
Continuity Over Restarts	AL1126	NTX835AA	BCS28
Controlled Interflow (CIF)	AD1612	NTX416AF	BCS29
Convert Series I PMS to Recovery Controller	AL2417	NTX001AA	BCS34
Convert Series II PMS to Recovery Controller	AL2416	NTX270AA	BCS34
Coordinated Voice and Data for ACD Interface	AJ0909	NTXJ60AA	BCS30
Core SwAct Exec Optimization - Phase I	AG2150	NTX001AA	BCS32
		NTX001AA	BCS33
Core SwAct Restart Outage Reduction - Phase I	AG2149	NTX001AA	BCS33
Custmoer Configurable Keyboard	AN0212	NTXA90AA	BCS36

D-channel Link Fault Handling	AC0530	NTX750AB	BCS28
DataSPAN Signaling	AJ1969	NTXF25AB	BCS34
DCH Overload Controls	AQ0672	NTX750AB	BCS32
DCH Performance MAP Display	AL1296	NTX750AB	BCS29
DCH Performance OMs (CC)	AL2280	NTX750AB	BCS33
		NTX751AA	
DCH Performance OMS (XPM)	AL2279	NTX750AB	BCS33
		NTX751AA	
DCH Q.921 Frame Routing	AC0368	NTX750AB	BCS29
DCH Sparing Maintenance	AL0956	NTX750AB	BCS28
DCH Sparing XPM Support	AC0531	NTX750AB	BCS28
DCR: Base RO Modifications	AJ2886	NTX022AC	BCS36
		NTXP55AB	
DCR: MNA Activation	AJ2885	NTXS67AA	BCS36
DCR: MNA Table Control	AJ2884	NTX022AC	BCS36
		NTXP55AB	
DCT MAPCI Modifications	AJ2888	NTXS17AA	BCS36
DCT Call Processing	AJ2887	NTXS17AA	BCS36
DCT Memory Management for Test Results	AJ2889	NTXS17AA	BCS36
DDM Audit Enhancements	AR0117	NTXR72AA	BCS34
DDM Capacity Enhancement Support more than 200 DTC7	AL2319	NTX001AA	BCS34
DDM User Independent Resource	AR0118	NTXR72AA	BCS34
DDN AR Voiceback	NC0299	NTXP80AA	BCS33
DDU Robustness -I	AL1885	NTX074AA	BCS32
DIALAN CUG and MTC Loopback S/W for CD6X76AC	AC0545	NTX250AA	BCS29
DIRP DPP Reload and SWACT Recovery	AF2705	NTX001AA	BCS32
DIRP Space Rotation	AF1780	NTX001AA	BCS29
DIRP on SLM	AF2316	NTXJ44AA	BCS30
DISA: Invalid Authcode Treatment Option	AD2964	NTX103AA	BCS31
DISA Calling DN Override	AJ3285	NTXS66AA	BCS36
DMS-100 Increased Digit Outpulsing	AF2370	NTXN12AA	BCS31
DMS-100 Forced On-Net	AE1101	NTXM93AA	BCS35
DMS-100 PRI Enhancements	AJ1539	NTX790AB	BCS33
		NTX793AA	
DMS-100 Support for M5212	AG2302	NTX106AA	BCS33
DMS-100 WSS Billing, TC OMs and Logs	AD3937	NTXR49AA	BCS35
		NTXS28AA	

DMS-100 WSS Call Processing	AD3936	NTXR49AA	BCS35
		NTXS28AA	
DMS-100 WSS Maintenance	AD3938	NXTR49AA	BCS35
		NTXS09AA	
DMS CC Software for High Capacity DPP	AF1407	NTXF14AA	BCS29
DMS ISDN OAM PH NAS Co-existence	AJ0493	NTXF95AA	BCS29
DMS-PH CALLP Operational Measurements	AQ0849	NTXP47AA	BCS34
DMS-PH CC Warm SWACT	AQ0862	NTXP47AA	BCS34
DMS-PH CPP Messaging	AG2273	NTXP47AA	BCS34
DMS-PH PVCS/CUGS Provisioning	AJ1836	NTXP47AA	BCS34
DMS-PH TRAVER	AQ0887	NTXP47AA	BCS34
DMS-PH PVC Call Processing	AQ0852	NTXP47AA	BCS34
DMS-PH X.75 Trunk Maintenance I	AL2198	NTXP47AA	BCS34
DMS-PH Bd Channel Maintenance	AL2195	NTXP47AA	BCS34
DMS-PH C-bus Interface Paddle Board Maintenance	AL2441	NTXP47AA	BCS34
DMS-PH Call Processing I	AQ0845	NTXP47AA	BCS34
DMS-PH Call Processing Base	AL2025	NTXP47AA	BCS34
DMS-PH Call Processing Billing Interface	AG2343	NTXP47AA	BCS34
DMS-PH Call Processing Data Structures	AG2322	NTXP47AA	BCS34
DMS-PH Channel and Link Maintenance	AL2438	NTXP47AA	BCS34
DMS-PH Data Distribution-CM	AJ1837	NTXP47AA	BCS34
DMS-PH Data Distribution-XLIU	AJ1838	NTXP47AA	BCS34
DMS-PH E. 164 Translations and Routing	AG2327	NTXP47AA	BCS34
DMS-PH Hunt I	AQ0894	NTXP47AA	BCS34
DMS-PH Operational Measurements	AL2440	NTXP47AA	BCS34
DMS-PH Provisioned B-channel Maintenance	AL2200	NTXP47AA	BCS34
DMS-PH Switchwide Paramaters	AQ0847	NTXP47AA	BCS34
DMS-PH W. 164 Call Processing I	AG2328	NTXP47AA	BCS34
DMS-BUS Backwards Compatibility Support	AL1968	NTX941AA	BCS33
DMS-BUS Clock Restructuring--II	AQ0835	NTX951AA	BCS34
DMS-BUS Data and Message Format for ILM Links	AL1476	NTX945AA	BCS33
DMS-BUS Message Flow Control III	AQ0841	NTX001AA	BCS34
DMS-BUS S\W for Sub-rate MS-ENET Links	AQ0858	NTX951AA	BCS34
DMS-BUS S/W for SuperNode SE (SNSE)			
DMS-BUS Support for the F-bus MAP Level	AL1453	NTXN83AA	BCS34
DMS-BUS ISN System Recovery Over Restarts	AL1478	NTX945AA	BCS33
DMS-BUS Message Flow Control - II	AL1884	NTX941AA	BCS33

DMS-BUS Support for MS-ILM Data Transfer and Audits	AQ0718	NTX945AA	BCS33
DMS-BUS Support for PLM Primitive Enhancements	AQ0717	NTX945AA	BCS33
DMS-Bus Cent. Sw Enhcmts for P-side Node Isolatn	AL1201	NTX941AA	BCS29
DMS-Bus Central Communication Audit Enhancements	AL1183	NTX941AA	BCS29
DMS-Bus Central Data Distribution and Intialization II	AL1199	NTX951AA	BCS31
DMS-Bus Diagn. Enhncmts Using the Tracer Card	AL0787	NTX950AA	BCS29
DMS-Bus Fault Correlation Using Tracer Card	AL1186	NTX951AA	BCS30
DMS-Bus MMI Enhancements	AL0797	NTX941AA	BCS28
DMS-Bus MMI Enhancements II	AL0803	NTX941AA	BCS31
DMS-Bus MMI Enhancements III	AL1200	NTX941AA	BCS31
DMS-Bus MMI Enhancements for ISN	AL1826	NTX941AA	BCS33
DMS-Bus S/W Support for 4 Mbyte Memory CPU Card	AL0790	NTX950AA	BCS29
DMS-Core Enhanced Image Test	AL1054	NTX941AA	BCS28
DMS-Core Inventory Audit	AL1197	NTX941AA	BCS29
DMS-Core Link Hit Analysis	AL1182	NTX941AA	BCS29
DMS-Core REX Test Speedup II	AL1055	NTX941AA	BCS28
DMS Announcement Expansion Preparatory	AG2244	NTXN26AA	BCS34
DMS Integrated E911 PSAP Functionality	AF2145	NTXF61AA	BCS31
		NTXN50AA	
DMS PRI Message Waiting Indicator Interwork with SL-1	AR0293	NTX797AB	BCS36
DMS Query Application for SPOAMI	AJ0301	NTXF92AA	BCS29
DMS Server for ISDN OAM Processor	AJ0303	NTXF93AA	BCS29
DS0-A Diagnostic	AG1047	NTX712AA	BCS28
DSI Mapping for ISDN PH	AJ0577	NTXF92AA	BCS29
DSN Access Restriction	AD2085	NTX103AA	BCS29
DT After CWF Cancel and SPD Call Programming	AL0604	NTXJ84AA	BCS31
DTA on ISLC Circuit-switched B-channel	AQ0875	NTXJ51AA	BCS34
DTA on PRI D-Channel (CC)	AQ1018	NTXS12AA	BCS36
DTCI PRA Layer II Signaling	AJ0463	NTX790AB	BCS29
DTCI PRA Layer III Signaling	AJ0465	NTX790AB	BCS29
DTMF Billing Acceptance	AF2379	NTG230AA	BCS30
DTSR OM Enhancements	NC0108	NTX270AA	BCS35
DWS 1203 AMA Billing	AD4733	NTX098AA	BCS36
		NTX159AA	
DWS DTC7 XPM PLUS	AD4756	NTXS25AA	BCS36
DWS DTCI XPM Plus	AD4755	NTXS25AA	BCS36
DWS PRI Messaging	AD4464	NTXS26AA	BCS35

DWS XPM PLUS Overload Controls	AD4948	NTXS25AA	BCS36
DWS Test Tools and Maintenance	AD4439	NTXS27AA	BCS35
DWS Trunk Audit I	AD4751	NTXS25AA	BCS36
DataSPAN Congestion Control and Buffer Enhancements	AJ2946	NTXF25AD	BCS36
Data Path Line Testing	AF4874	NTXF46AA	BCS36
Datapath Automatic Modem Insertion	AC0509	NTX251AA	BCS28
Datapath CUG for U.S. Market	AC0461	NTXE60AA	BCS27
Datapath Call Path Restoration	AC0565	NTX250AA	BCS30
Decouple CC Hardware and Software System Initialization	AG0919	NTX001AA	BCS28
Dedicated DA Subtending TMS	AF2395	NTXJ67AA	BCS30
Delivery of TR860 Terminal Portability	AF3603	NTX755AC	BCS34
Design & Data Definition for DS30/IOUI Inter-MS Links	AL1456	NTX951AA	BCS32
Detection/Correction of Slow CP Babblers	AG1082	NTX001AA	BCS29
Dial-up B-channel Loopbacks	AQ0884	NTX750AC	BCS35
			BCS35
Dial-up into ALI DB for SRDB Update	NC0162	NTXN60AA	BCS32
Diagnostics for the EISP	AF2864	NTXF46AA	BCS35
			BCS36
Direct Station Selection/Busylamp Field For MBS	NC0081	NTXJ97AA	BCS31
Directory Assistance Toll Branding	AF2019	NTXE71AA	BCS29
Directory Number Trigger for Intelligent Networking	AG2243	NTXP01AA	BCS32
Disk Utilities - Phase 2	AL1297	NTXF07AA	BCS33
Display Agents Summary Key	AD2445	NTX416AF	BCS30
Distinctive Ringing Enhancements	AF2303	NTX100AA	BCS30
Distinctive Ringing Ring Side Only	AG1973	NTX901AA	BCS30
Distinctive Tone Burst for Emergency Operation	AD2665	NTX149AB	BCS30
Distributed Log System	AL2021	NTX941AA	BCS33
Documentation of 64kb	AR0295	NTXR68AA	BCS35
Dual RCC2 Warm Entry/Exit for ISDN Calls	AF4895	NTXS64AA	BCS36
		NTXS65AA	
Dump and Restore: Check Command Enhancements	AG1560	NTXE29AA	BCS28
Dump and Restore: Progress Reporting	AG1570	NTXE29AA	BCS29
Dump and Restore: Real Time Savings	AG1563	NTXE29AA	BCS29
Dynamic TEI and Service Profile Identification	AJ0164	NTX753AA	BCS28
Dynamic Protocol Version Control	AJ0431	NTX750AB	BCS31
E-ILPT7--Enhanced CCS7 T est Tool	AR0145	NTXQ89AA	BCS34
E.164 Support for PVCS and DCS	AJ0942	NTXF93AA	BCS30

E2A Monitoring Software	AL2331	NTX941AA	BCS33
E800 on PX Trunks	AF2565	NTX901AA	BCS31
E911 ACDPSAP MIS Enhancements	AF2560	NTXN86AA	BCS31
E911 Call Transfer CP Support	AF1646	NTX447AA	BCS29
E911 Direct Access To AT&T ALI Controller	AF2759	NTXN66AA	BCS31
E911 Direct Access to ALI Database	AF2146	NTXN17AA	BCS32
E911 Integrated PSAP ACD Functionality	AF2739	NTXF61AA	BCS31
E911 LTD Maintenance	AF1977	NTX447AA	BCS29
E911 Line Appearance Basic Maintenance	AF1736	NTX447AA	BCS29
E911 Line Appearance General Maintenance for PM and LTP Lev	AF1737	NTX447AA	BCS28
E911 Line Appearance PP Call Processing	AF1668	NTX447AA	BCS29
E911 Line Appearance Signal Processing Signaling Utilities	AF1651	NTX447AA	BCS29
E911 Line Appearnace PP Maintenance	AF1650	NTX447AA	BCS29
E911 Line Interface on a Digital Trunk	AF1387	NTX447AA	BCS29
E911 Log Robustness (FPE)	AN0081	NTXP99AB	BCS34
E911 Origination Table Control	AF1336	NTX447AA	BCS29
E911 PSAP Call Processing Support	AF1643	NTX447AA	BCS29
E911 PSAP Table Control	AF1644	NTX447AA	BCS29
E911 Product Delivery	AF2001	NTX447AA	BCS29
E911 Remote Call Event Record	NC0317	NTXP99AA	BCS33
E911 Selective Routing Database	AF1375	NTX451AA	BCS28
E911 Selective Routing Database Update	AF1645	NTX451AA	BCS29
E911 Translations	AF1338	NTX447AA	BCS29
E911 Trk Origination Call Processing Support	AF1337	NTX447AA	BCS29
E911 Trunk Origination	AF1335	NTX447AA	BCS29
EADAS Hardware Inventory Freeze	NC0390	NTXR21AA	BCS35
EADAS Hardware Inventory Freeze II	AF4680	NTXR21AA	BCS36
EAOSS FDG Enhancements	NC0340	NTX891AA	BCS35
EBS as a Message Center - Enhancements	AG1575	NTX822AA	BCS29
ECM Base Enhancements	AR0051	NTXJ59AB	BCS34
ECM Inbound - Redirection and ECM Call History	AG2195	NTXJ60AA	BCS32
		NTXJ60AA	BCS33
EDCH Patcher CC Part	AR0358	NTX750AD	BCS36
EDCH State Audit	AR0496	NTX750AC	BCS36
EIU Central Control	AL1208	NTXF05AA	BCS31
EIU Data Link Maintenance	AD3496	NTXF05AA	BCS34

ENET - ICTS	AL1912	NTXP13AA	BCS31
ENET - ICTS Applications (ICERT and NETFAB)	AL1978	NTXP13AA	BCS32
ENET PSLINK Enhancements	AR0141	NTXE01AA	BCS34
ENET - SPMS for ENET OMs	AL1719	NTX738AC	BCS32
ENET 9X35 Maintenance S/W	AL0578	NTXE01AA	BCS31
ENET Bit Error Rate Test (BERT)	AL0854	NTXE01AA	BCS31
ENET C-Side Link MTCE	AL0571	NTXE01AA	BCS31
ENET Card MTCE System Structure Definition	AL0575	NTXE01AA	BCS31
ENET Card Maintenance	AL1069	NTXE01AA	BCS31
ENET Clock Sync	AL0577	NTXE01AA	BCS31
ENET Database	AL0470	NTXE01AA	BCS31
ENET Fiber XPM Support	AL0687	NTXE01AA	BCS31
ENET IOSYSTEM PSLINK Targets	AL0586	NTXE01AA	BCS31
ENET Integrity Fault Handler	AL0585	NTXE01AA	BCS31
ENET Integrity Handling Enhancements	AL1326	NTXE01AA	BCS31
ENET Integrity Handling Enhancements and HMI Enhancements	AR0186	NTXE01AA	BCS35
ENET Link MTCE Enhancements	AL1238	NTXE01AA	BCS31
ENET Local Processor Node Transactor	AL0582	NTXE01AA	BCS31
ENET MAP	AL0572	NTXE01AA	BCS31
ENET MAP Enhancements	AL1230	NTXE01AA	BCS31
ENET Maintenance	AL0856	NTXE01AA	BCS31
ENET Matrix Test SW	AL0583	NTXE01AA	BCS31
ENET Matrix Test SW	AL0853	NTXE01AA	BCS31
ENET Message Reswitching	AL0855	NTXE01AA	BCS31
ENET Node Test Control	AL0580	NTXE01AA	BCS31
ENET Operational Measurements	AL0573	NTXE01AA	BCS31
ENET PM Table Control Modifications	AL0958	NTXE01AA	BCS31
ENET PSLINK Physical Link Maintenance	AL0584	NTXE01AA	BCS31
ENET Path Diagnostics	AL0960	NTXE01AA	BCS31
ENET Pathend Test MMI	AL0857	NTXE01AA	BCS31
ENET REX Test	AL0957	NTXE01AA	BCS31
ENET Retrofit	AL1618	NTX057EA	BCS31
ENET Shelf Test	AL0959	NTXE01AA	BCS31
ENET Support for 9X45BA	AL2038	NTXE01AA	BCS33
ENET Switching Matrix Diagnostics Support	AL0851	NTXE01AA	BCS31
ENET Switching Matrix Transactor Network Phase II	AL1240	NTXE01AA	BCS31

ENET System Recovery	AL0850	NTXE01AA	BCS31
EOC Router	AF2656	NTXF46AA	BCS35
ESF Support on 6X50AB	AL1565	NTX143AA	BCS30
ESMU EDCH Integration	AF4892	NTX387AD	BCS36
ESMU: MX77 Support (XPM)	AF4836	NTX387AD	BCS36
ESMU: MX77 Support (CC)	AF4837	NTX387AD	BCS36
Enable A-Law	AL2107	NTXE01AA	BCS33
End-to-End Signaling Via Speed Call	NC0001	NTX100AA	BCS30
Enhanced DCH Loader	AL1389	NTX750AB	BCS30
Enhanced DCH Integration in ISDN LTC	Al2572	NTX750AD	BCS35
Enhanced DMS-Core Maintenance Link RTS	AL1053	NTX941AA	BCS29
Enhanced DMS-Core Memory Alarm	AL1192	NTX941AA	BCS29
Enhanced Field Failure Info	AF2987	NTX270AA	BCS32
Enhanced LIU Maintenance	AL1333	NTX833AA	BCS29
Enhanced Line Access Measurements - I	AG0649	NTX901AA	BCS28
Enhanced Line Access Measurements - II	AG1318	NTX901AA	BCS28
Enhanced MFADS	AF2529	NTXJ96AA	BCS31
Enhanced Network Central Node Maintenance	AL0486	NTXE01AA	BCS31
Enhanced Serial Calling	AD2068	NTX100AA	BCS29
Enhanced Services Resource Management	AN0047	NTXS31AA	BCS36
Enhanced VM Scheduler	AL2016	NTXS32AA	BCS36
Enhanced WATS	AF1092	NTXA16AA	BCS28
Enhanced Warm SWACT	AF3747	NTX270AA	BCS34
Enhanced XPM SWACT Management Phase 1	AJ0964	NTX270AA	BCS30
Enhancement for #4ESS and #5ESS	AM0168	NTX705AA	BCS32
Enhancement to PBase Maintenance for CM-based RP	AL1375	NTXF06AA	BCS33
Enhancements for #4ESS and #5ESS	AM0162	NTXE64AA	BCS32
Enhancements to Sigman to Interwork #5ess	AD2247	NTXJ43AA	BCS29
Equal Access Intermediate Tandem	AF2016	NTXE67AA	BCS30
Ethernet Support for Intelligent Service Node	AN0151	NXTR87AA	BCS35
Executive Busy Override on MADN	AF1923	NTXE44AA	BCS29
Executive Message Service Enhancement - Multi EMW per DN	AG1627	NTXE47AA	BCS30
Executive Message Waiting	AG1626	NTXE47AA	BCS29
Expanded Trunk Guard Timing	AF1252	NTX244AB	BCS30
Expansion of LCD Number to 1000	AL1541	NTX901AA	BCS30
Extended Calling Card Format Support	AF2587	NTG230AA	BCS31

F-bus Operation and Maintenance Enhancements	AR0478	NTXN38AA	BCS36
FBUS - LIU Base	AL1449	NTX833AA	BCS31
		NTXN18AA	
FBUS MTCE Enhancements for LIU Fault Isolation	AL1834	NTXN18AA	BCS32
FCC DID Answer Supervision	AD4550	NTXR92AA	BCS35
FGB on ATC Trunks	AF1778	NTX186AA	BCS28
FGD CIC Expansion-Phase 2	NC0428	NTX186AB	BCS35
		NTX386AB	
FGD Carrier Identification Code Expansion	NC0335	NTX186AB	BCS34
		NTX386AB	
		NTX386AB	BCS36
FGD Carrier Identification Code Expansion	NC0335	NTX186AB	BCS34
FP Central Maintenance Base	AL1167	NTXF04AA	BCS33
FP DABM Exception Handler	AL1705	NTXF04AA	BCS33
FP Device Access	AL1170	NTXF04AA	BCS33
FP Device Logs, OMs and Alarms	AL1173	NTXF04AA	BCS33
FP Device Maintenance	AL1391	NTXF04AA	BCS33
FP Local Control	AL1169	NTXF04AA	BCS33
FP Sync/SWACT Control	AL1392	NTXF04AA	BCS33
FP DANM Exception Handler	AL1705	NTXF04AA	BCS33
FPX VM Modifications	AL2479	NTXS32AA	BCS36
FRIU Billing Data Collection	AL2182	NTXQ34AA	BCS33
FRIU Modifications for TATS	AJ1915	NTXF25AC	BCS35
FRIU Performance Enhancements	AL1908	NTXF25AA	BCS32
FRIU per Channel OA&M	AL1286	NTXF25AA	BCS32
FTFS - Performance Optimalization	AL2158	NTXF04AA	BCS33
FTAM Enhanced File Management	AD4340	NTXP32AA	BCS35
FW Support for CCS7 Link Fault Sectionalization	AR0540	NTXS51AA	BCS36
Fast Transfer for Meridian Business Set	NC0112	NTXN65AA	BCS32
Feature Display Enhancements	AJ0591	NTXQ27AA	BCS33
Feature Group - D on MDC	AD1313	NTXJ42AA	BCS29
Feature Group B (FGB) Interworking with SS7	AF2105	NTXE13AB	BCS29
		NTXE14AB	
Feature Group D and PRA Trunk Interworking	AG1547	NTX795AA	BCS29
File System Device Management - FP	AL1396	NTXF07AA	BCS33
File System Modifications for SLM1A	AL1790	NTX942AB	BCS34
File Transfer Client Interface for DMS-SCP II	AL1693	NTXS11AA	BCS34

Flexible Calling Interaction Improvements	AG1611	NTX755AA	BCS29
Flexible Calling and DN Bridging Capability for ISDN EKTS	AG1301	NTX755AA	BCS29
Flexible Call Observing--Part 1	AR0148	NTX420AA	BCS34
Floe Controls For SMU	AF1734	NTX387AB	BCS31
Footprint Support for RISC	AL1587	NTXF97AA	BCS33
Footprt Enhancements	AG2480	NTX941AA	BCS33
Forced Sequence Application	AF2531	NTX001AA	BCS32
Forward Number Capability for TOPS-MP DA Application	AF2642	NTXA91AA	BCS32
Fractional T1 Support for Frame Relay	AJ1846	NTXR28AA	BCS34
Frame Relay Billing Requirements	AJ1480	NTXQ34AA	BCS33
Frame Relay Connection Database	AL1059	NTXF25AA	BCS32
Frame Relay Frame Capture Tool	AJ2294	NTXF25AC	BCS35
Frame Relay Interface Unit Addition to LPP	AI0235	NTXF25AA	BCS32
Frame Relay Interface Unit Data Loop Diagnostics	AL1284	NTXF25AA	BCS32
Frame Relay Interface Unit Maintenance Support	AL1282	NTXF25AA	BCS32
Frame Relay Interface Unit PM Logs and Alarms	AL1283	NTXF25AA	BCS32
Frame Relay Interface Unit PM Maintenance Phase 1	AL1058	NTXF25AA	BCS32
Frame Relay Interface Unit Software Base	AI0234	NTXF25AA	BCS32
Frame Relay Interface Unit Switching Thread	AL1288	NTXF25AA	BCS32
Frame Relay Interface Unit T1 Maintenance Support	AL1287	NTXF25AA	BCS32
Frame Relay Provisioning Table Enhancements	AJ2292	NTXF25AC	BCS35
Frame Relay T1 Trunking	AL1907	NTXF25AA	BCS32
Functional Sgnlg I/actions with Attendant Console	AJ0507	NTX753AA	BCS29
Gateway Verification	AL1676	NTXJ40AA	BCS34
Generic LIU Maintenance	AI0273	NTX833AA	BCS28
Global EBAF AMA	AE1124	NTX102AA	BCS35
Global EBAF AMA (Clone)	AE1275	NTX098AA	BCS35
		NTX159AA	
Group Intercom All Call	AD2126	NTX878AC	BCS30
Group Manager and Maintenance Base Enhancements	AL2110	NTX000AA	BCS34
HFP MTC One	AL2057	NTXP47AA	BCS34
HFP LAPB Protocol	AL2059	NTXP47AA	BCS34
HFP LAPD Protocol	AL2058	NTXP47AA	BCS34
HFP Base Load	AL2056	NTXP47AA	BCS34
HFP Maintenance and Performance Enhancements	AL2061	NTXP47AA	BCS34
HSLI Software Enhancements	AF1426	NTX731AA	BCS28
		NTXA90AA	

Handle SID Field for Incoming PRI ISA Calls	AR0112	NTX793AA	BCS34
Hardware - Software Initialization Coordination II	AJ0191	NTX001AA	BCS28
Hardware Baseline Monitor	AQ0721	NTX941AA	BCS33
High Speed MPC ROM and Diagnostics	AF2412	NTXE98AA	BCS30
Host/Remote Networking by Queue Type	NC0152	NTXN54AA	BCS32
I/COM and Group I/COM Capability for ISDN EKTS	AJ0166	NTX753AA	BCS28
IBM DA Protocol and Simulator	AF1266	NTXE05AA	BCS30
IBN Attendant Console _ DModem Robustness	AG1489	NTX100AA	BCS28
IBN ISUP NETINFO Translations	AD2467	NTXJ68AA	BCS30
IBN LCC Compatibility with FRO Line Option	AF1936	NTX100AA	BCS30
IBNRTE Table Capacity Increase	AF2012	NTX100AA	BCS31
ICTS Enhancements	AJ0473	NTX885AB	BCS29
IDDD Via ARS	AF1097	NTXA22AA	BCS28
IEM Basic Event Consolidation	AL1729	NTXP97AA	BCS33
			BCS35
ILM Capacity and Performance Enhancements	AL1658	NTXF71AB	BCS34
ILM Central Resource Controller Enhancement	AL1655	NTXF71AA	BCS33
ILM Controller Robustness	AR0128	NTXF71AB	BCS34
ILM Enhanced Diagnostics	AL1659	NTXF71AA	BCS33
ILM Fault Isolation Enhancements	AR0124	NTXF71AB	BCS34
ILM Isolation Detection Enhancements	AR0125	NTXF71AB	BCS36
ILM Local Controller Enhancements	AL1656	NTXF71AA	BCS33
ILM Notification Service Enhancements	AL1740	NTXF71AA	BCS33
ILM Support Tools	AR0129	NTXF71AB	BCS34
ILM Support for Warm-Spared Nodes	AL2130	NTXF71AB	BCS34
INM Fault Reporting	AR0081	NTX944AA	BCS34
INM Support for BCS Application/CC Warm SWACT	AL2271	NTX944AA	BCS33
INM Support for IEM Event Generation and OM	AL2121	NTX944AA	BCS33
INM System Agent	AL2120	NTX944AA	BCS33
INM Warm-spared Support II	AR0079	NTX944AA	BCS34
IOC Disk File System Robustness	AR0127	NTX074AA	BCS34
IP Route Path Display	AR0022	NTXF19AA	BCS36
IRTU Provisioning	AN0351	NTXF46AA	BCS36
ISDN: Call Appearance Call Handling	AR0038	NTX754AB	BCS34
ISDN/MBS SMU UTR Support	AF4495	NTX387AC	BCS35
ISDN/MBS SMU Unified Processor Support	AF4512	NTX387AC	BCS35
ISDN 3-Way Call/Flex Call Interworking	AF4847	NTX755AC	BCS36

ISDN 64 kbit/s Access to DataSPAN	AJ2877	NTXF25AD	BCS36
ISDN - OAM Name Display Control	AJ0509	NTX563AA	BCS28
ISDN DTC B, D Maintenance	AD2228	NTX790AB	BCS29
ISDN DTC Datafill and Table Control	AD2097	NTX790AB	BCS29
ISDN DTC PM Maintenance	AJ0385	NTX790AB	BCS29
ISDN DTC Robustness	AD2606	NTX790AB	BCS30
ISDN DTCI Special Connections	AD2231	NTX790AB	BCS29
ISDN EKTS Ring Forward	AQ0734	NTX754AA	BCS33
ISDN ESA Base	AF2274	NTXJ00AA	BCS31
ISDN ESA Stimulus	AF2275	NTXF95AA NTXJ00AA	BCS31
ISDN Digital Test Access Maintenance	AL1321	NTXJ51AA	BCS31
ISDN Flex Call Implicit Transfer	AF4848	NTX755AC	BCS36
ISDN Inbound Modem Pooling Deliverable	AC0615	NTXN99AA	BCS32
ISDN Key Short Hunt	AQ0733	NTX754AA	BCS33
ISDN Loop Maintenance Enhancements	AL0944	NTX054AA	BCS30
ISDN MADN Message Bundling	AN0183	NTX754AB	BCS35
ISDN OAM LAPB/LAPD Configuration (DMS)	AJ0945	NTXF92AA	BCS31
ISDN OAM LAPB/LAPD Configuration (OAMP)	AJ0955	NTXF95AA	BCS31
ISDN OAM MAP Level and OAMP Downloading	AJ0956	NTXF92AA	BCS31
ISDN OAM Processor Support of Multiple DMS	AJ1340	NTXF95AA	BCS32
ISDN OAM Session Service Manager	AJ0302	NTXF95AA	BCS29
ISDN PH Service Provisioning Interface	AJ0397	NTXF95AA	BCS29
ISDN Packet Handler AM/RM Maintenance	AJ0605	NTXJ48AA	BCS31
ISDN Packet Handler Maintenance Data Collection	AJ0607	NTXF94AB	BCS30
ISDN Packet Handler NAS Activation From MAP	AJ0957	NTXJ48AA	BCS31
ISDN Packet Handler Service Data File Compiler/Decompiler	AJ0398	NTXF95AA	BCS29
ISDN Packet Handler to OAM Processor Upload/Download	AJ0399	NTXF95AA	BCS29
ISDN Prefix Outbound Modem Pooling	AC0547	NTXE25AA	BCS29
ISDN Provisioning Packet Handler Activation	AJ0400	NTXF95AA	BCS29
ISDN OAM Upgrade to G26 Service Data	AJ0944	NTXF95AA	BCS31
ISDN RCCI CC Maintenance I	AL1046	NTXJ00AA	BCS30
ISDN RCCI XPM Base	AL1043	NTXJ00AA	BCS30
ISDN SERVORD Enhancements - OAMP Resident	AJ0943	NTXF95AA	BCS31
ISDN Secondary EKTS Member Call Forward Programming	AQ0735	NTX754AA	BCS33
ISDN Six Port, Thirty Port Flexible Calling	AQ0736	NTX755AB	BCS33

		NTX755AC	
ISDN Support on LTC	AL1585	NTX750AB	BCS31
ISDN Support on LTC II	AL1666	NTX750AB	BCS31
ISDN XPM Digital Test Access	AL1320	NTXJ51AA	BCS31
		NTX751AA	
ISDN TL1 Line Testing 2	AL2365	NTXN89AA	BCS35
		NTXN93AA	
ISDV File Format Prep	AF4286	NTX001AA	BCS35
ISG Channel Maintenance Enhancement	AL2539	NTX750AB	BCS34
ISG Performance Tools	AL1322	NTX750AB	BCS29
ISP/DCH Diagnostic Enhancements	AC0634	NTX750AB	BCS31
ISP/DCH R8071 Audit	AC0574	NTX750AB	BCS30
ISUP Access Tandem FGD Signaling II	AG1576	NTXE14AB	BCS29
ISUP FGD Signaling - End Office to Carrier	AG1639	NTXE13AB	BCS29
ISUP Maintenance Enhancements II	AR0114	NTX167AB	BCS34
ISUP Release Cause to Treatment Mapping 6	AG1538	NTX167AB	BCS28
ISUP Timer Control	AG1532	NTXE66AA	BCS29
ISUP Trunk Options 1	AG1531	NTXE66AA	BCS29
Increased Multiplecing of TOPS Operator Data	AF3003	NTXR52AA	BCS35
Improve Memory Parity Detection	AG1922	NTX001AA	BCS30
Improved Coin Service - Revenue Allocation	AF1400	NTX089AA	BCS29
Improved Statspac Force Management Capability	AF2022	NTXE73AA	BCS29
Improved Terminal Response	AG1474	NTX001AA	BCS28
Inbound ECM - Increased Event Reporting	AG2005	NTXJ60AA	BCS33
Inclusion of CCS7 into SPMS	AG1926	NTX738AC	BCS30
Increased Number of ACDMIS Links	AG1947	NTX991AD	BCS30
Information Request Procedures	AR0040	NTX753AB	BCS34
Integrated Event Management System Base Phase I	AL1681	NTX941AA	BCS33
Integrated Hardware Maintenance For PH - OAMP Software S/W	AJ1018	NTXF95AA	BCS31
Integrated Local Specials Enhancements	AF2671	NTX621AB	BCS34
Integrated Line Test W/DRTU	AF2983	NTX387AB	BCS33
Integrated MP MAP Support	AF1991	NTXA83AA	BCS30
Integrated Node (Single Point Code)	AL1678	NTXN00AA	BCS32
Integrated Node Maintenenace (INM) LoadPM Enhancements	AR0359	NTX940AA	BCS36
Integrated Processor and FBUS Interface (IPF) Software	AL1328	NTXN18AA	BCS31

Integrated TPC MAP Support	AF1940	NTXA83AA	BCS30
Integrated TPS Maintenance	AF1992	NTXA83AA	BCS30
Intelligent Service Node Call Control	AN0152	NTXR87AA	BCS35
Intelligent Service Node Routing Software	AN0153	NTXR87AA	BCS35
Interchangeable NPAs for LEAS	AN0304	NTX710AA	BCS36
Internet Dynamic Routing	AL1402	NTXF05AA	BCS34
Internet Protocol Throttling	AR0023	NTXF19AA	BCS35
Interrupt Level Trap Handling Enhancements	AL2044	NTX000AA	BCS35
Interworking ISDN Services I	AJ0170	NTX790AB	BCS28
Intra-LATA PIC for IBN	AF2333	NTXF69AA	BCS33
Intra-LATA PIC for POTS	AF2332	NTXF58AA	BCS33
IntraLATA PIC with LEAS	AL0290	NTX829AA	BCS29
Intraswitching CMR on RSC	AG1159	NTX150AA	BCS31
JFFREEZE - DMO Enforcement for Journal File	AG1524	NTX056AA	BCS29
Key Access for Message Waiting Indication	AJ0432	NTX119AA	BCS29
Key Pad Enable	NC0020	NTX901AA	BCS33
LAN Management From DMS MAP	AJ0447	NTXF05AA	BCS31
LCM Takeover Takeback Enhancement	AF1647	NTX270AA	BCS28
LCME Connection and TDM Control	AC0601	NTX750AB	BCS31
LCME Diagnostics	AC0569	NTX750AB	BCS31
LCME Drawer Control Task and Hardware Interface	AC0567	NTX750AB	BCS31
LCME ISDN Loop Maintenance Interface	AC0603	NTX750AB	BCS31
LCME TDM Dump and Restore Procedure	AC0604	NTX750AB	BCS31
LCMI Software for POTS Support	AC0520	NTX750AB	BCS28
LDR: MNA Base	AJ2446	NTX022AB	BCS36
		NTX022AC	
		NTXP55AA	
		NTXP55AB	
LDR: MNA Table Control	AJ2886	NTX022AC	BCS36
		NTXP55AB	
LEAS Inteworking with SS7	AF2361	NTXE14AB	BCS31
LEC DWS FGD ISUP to PRI	AD4735	NTXR49AA	BCS36
LEC DWS FGD ISUP	AD4732	NTXR66AA	BCS36
LEC WSS Flexible Channel Assignments	AD4574	NTXR65AA	BCS35
LEC WSS ISUP to PRI Interworking	AD4433	NTXR49AA	BCS35
LEC WSS PRI	AD4449	NTXR49AA	BCS35
LEC WSS Trunk Selection and OMs	AD4421	NTXS09AA	BCS35

		NTXS25AA	
LIU7 - DS0-A Control Code Maintenance	AI0227	NTX839AA	BCS28
LINEDATA Re-Engineering	AN0114	NTX901AA	BCS35
LMS Isolation	AL1895	NTXF20AA	BCS32
LPP (LMS) Autoloading	AQ1030	NTXF20AA	BCS36
LPP on SCP	AL1498	NTXN19AA	BCS30
LRU CC Static Data	AF2071	NTX750AB	BCS29
LTC Perform Tool Enhancements for ISDN	AL1667	NTX750AB	BCS31
LTCI - Datafill Enhancements	AC0575	NTX750AB	BCS30
LTCI - ISDN BRA Overload Controls	AC0576	NTX750AB	BCS30
LTCI - ISP Audit Enhancements	AC0487	NTX750AB	BCS28
LTCI - OM Collection and Reporting	AC0475	NTX750AB	BCS28
LTCI SwAct Enhancements - Trunks	AC0528	NTX750AB	BCS28
LTG Capacity Increase	AF1756	NTX901AA	BCS28
LTP Ehancements	AR0491	NTX901AA	BCS36
Layer 1 Performance Monitoring for 2B1Q Loops	AL1674	NTX750AC	BCS35
		NTX750AD	
Layer 2 High Protocol Abnormality Rate (CC)	AQ0788	NTX750AB	BCS34
Layer 2 High Protocol Abnormality (XPM)	AQ0789	NTX750AB	BCS34
Limited ACD Enhanced Agent Features	AD2239	NTX415AA	BCS28
Line Card Code Expansion	AL1608	NTX901AA	BCS30
Line Card Monitor	NC0109	NTXP00AA	BCS33
Line Option RES LCC Compatibility Ph 2	NC0485	NTXQ90AB	BCS35
Link Interface Module Maintenance Enhancements	AI0167	NTX833AA	BCS28
Link Reconfiguration for XPMS with Special Connections	AL1629	NTX750AB	BCS32
Load Route Selection Enhancements	NC0130	NTX001AA	BCS32
Local DMS-BUS Support for MCM/PLM Primitives	AL1779	NTX945AA	BCS33
Local RP Control II	AL1117	NTX944AA	BCS33
Local XLIU Maintenance	AL2290	NTXP47AA	BCS34
Locality Call Processing Support	AF2397	NTG230AA	BCS30
Locality Database	AF2396	NTG230AA	BCS30
Logs/OMs for CM-based AP and FP	AL1379	NTXF06AA	BCS33
Log Retrieve Facility for E1 Incidents	AG1004	NTX074AA	BCS28
Log Transfer-UNIX-SOS	AF3391	NTXR31AA	BCS35
		NTXS30AA	BCS36
Logical Reformating for OTC	AG2323	NTX001AA	BCS33
Logs and Alarm Transfer (Receiver) - UNIX-SOS	AF3290	NTXS32AA	BCS36

Loop Maintenance for ISDN S/T Linecard	AL1040	NTX750AB	BCS28
Lost Messages Reporting Enhancements	AL1052	NTX001AA	BCS28
Loudspeaker Paging Answer	AF1275	NTXA73AA	BCS28
MADN Bridging - 3 Way Call	AG1566	NTX878AD	BCS31
MADN Cutoff on Disconnect (COD)	AG1568	NTX878AC	BCS30
MADN Single Call Arrnagement	AG1342	NTX754AA	BCS29
MAP Access Via MPC Phase I	AF3022	NTXP15AA	BCS33
MAP for CM-based Resource Processors	AL1115	NTXF06AA	BCS33
MBG Enabling of Feature Networking	AR0361	NTXR47AA	BCS35
MBGI - Networking for Centrex Group with Pub. Num. System	AG1984	NTXN01AA	BCS32
MBGII-Support of IBN7 Trunk Features	AG2554	NTXN01AB	BCS34
MBGIII-Support of Private Numbering Plan	AG2555	NTXR43AA	BCS34
MBGIV-Support of Display and Network EMW Features	AG2556	NTXR43AA	BCS34
MBS Power Feature - Name Programming	AJ0445	NTXF88AA	BCS30
MDC Enhanced WATS	AF1664	NTXE96AA	BCS29
MDC Warm Line	NC0011	NTXJ38AA	BCS31
MDR Data in the AMA Stream	AF1455	NTXA88AA	BCS28
MDR7 - SS#7 Message Detail Recording	AL1677	NTXJ91AA	BCS31
MDR7: EIU Transmit Function	AL1640	NTXJ91AA	BCS31
MF Feature Group D and CAMA Interworking for ONA ESP	AG1708	NTX795AA	BCS29
MFT Display Enhancements II	AR0170	NTXQ27AA NTXJ59AC	BCS35
MICBASE Robustness and Performance Enhancements	AL2667	NTX001AA	BCS35
MIS Enhancements	AG2004	NTX991AF	BCS32
MMI For Inter-MS Links	AC0639	NTX951AA	BCS32
MPC 1980 CCITT X.25 PP Architecture	AF1768	NTXE65AA	BCS29
MPC 1980 CCITT X.25 PP L1	AF1770	NTXE65AA	BCS29
MPC 1980 CCITT X.25 PP L2 and L3	AF1769	NTXE65AA	BCS29
MPC 1980 CCITT X.25 Protocol Support	AF1767	NTXE65AA	BCS29
MPC 1984 X.25 CC Development	AF2777	NTXN85AA	BCS32
MPC CC Asynchronous Support	AF2475	NTXN10AA	BCS30
MPC PP Asynchronous Level - 1	AF2473	NTXN10AA	BCS30
MPC PP Asynchronous Support	AF2474	NTXN10AA	BCS30
MRS Development and AP Split Mode Messaging Study	AL1664	NTXF71AB	BCS33
MS Backwards Compatibility--II	AQ0854	NTX941AA NTX945AA	BCS34

MTCBASE Robustness and Performance	AL2667	NTX001AA	BCS35
MTP - BERT Capability For SSP	AC0442	NTX839AB	BCS31
		NTXE30AA	
MTP - Preventative Cyclic Retransmission	AC0222	NTXE32AA	BCS30
MVI CM Path Protection Switching	AF5378	NTXT23AA	BCS36
MVI Lines Provisioning Enhancements	AF4879	NTXT23AA	BCS36
MVI Lines Testing-CM	AF5536	NTXT23AA	BCS36
MVI Per Line Ringing-CM	AF5455	NTXT23AA	BCS36
MVI Per Line Provisioning-CM	AF5537	NTXT23AA	BCS36
MVI Protoocol Stack Application Layer	AF4882	NTXT23AA	BCS36
MVI Convergence Function I	AF4883	NTXT23AA	BCS36
MVI Protoocol Stack Application Layer II	AF4887	NTXT23AA	BCS36
MX-77 for SMS and SMS-R: CC	AN0463	NTXT16AA	BCS36
MX-77 for SMS-R: CC	AN0465	NTXT17AA	BCS36
MX77 Firmware Download	AF3658	NTXR42AA	BCS34
MX77 for SMU	AF4861	NTX387AD	BCS36
MWT Via Key Access	AG1341	NTX753AA	BCS28
CC Support for the Integrated Service Module (ISM)	AR0918	NTXT22AA	BCS36
MWT Via Key Access	AG1341	NTX753AA	BCS28
Maintain Messaging Over Restarts	AC0638	NTX950AA	BCS31
Maintenance Action Pre-Check	AL1759	NTX941AA	BCS32
Mandatory DIRP Parallel Recording	NC0079	NTXJ94AA	BCS31
Mapper Refresh on LMS State Transition	AQ1031	NTXF20AA	BCS36
Master External Clock Support for Composite Clock Signal	AL1161	NTXF26AA	BCS28
Master External, Internal Clock Synchronization	AL0688	NTXF27AA	BCS28
Master-External Remote Clock	AQ0777	NTX048AA	BCS34
Matching Line Drawer Status Over CC Warm SWACT	AG1824	NTX001AA	BCS30
Meridian Wake-up Service	NC0343	NTXP57AA	BCS33
Message Base Enhancements for ISN	AL1663	NTXF71AB	BCS33
Message Service - Leave Message	AG1625	NTXE47AA	BCS29
Message Service - List Management	AG1624	NTXE47AA	BCS29
Message Service - Network Message Waiting Indicator	AG1638	NTXA64AA	BCS31
		NTXN34AA	
Message Waiting Indicator - PRI	AJ1538	NTX797AA	BCS33
Metallic Testing for 2B1Q	AL1588	NTX750AB	BCS31
Miscellaneous Terminal Portability I	AF3245	NTX755AB	BCS33
		NTX755AC	

Miscellaneous Terminal Portability Compliance	AF3554	NTX755AC	BCS34
Morning Maintenance Report II	AJ0472	NTXJ35AA	BCS29
Morning Maintenance Report	AJ0190	NTXJ35AA	BCS28
Morning Maintenance Report II	AJ0472	NTXJ35AA	BCS29
Multi-Switch Business Groups	AG1252	NTXN01AA	BCS32
Multi-Volume Tape Files	AF1725	NTXN80AA	BCS32
Multilingual Interactive Display	AJ0446	NTXR44AA	BCS34
Multipilot Directory Numbers On MLH Group	NC0056	NTXJ82AA	BCS31
Multipoint EOC 1 (CC)	AQ0947	NTXS01AA	BCS35
Multipoint EOC 1 (XPM/LCME)	AQ0948	NTXS01AA	BCS35
Multiple CCS7 Point Code Capability	AR0429	NTXR27AA	BCS34
Multiple DN Capacity for ISDN EKTS	AJ0165	NTX753AA	BCS28
Multiple File Transfer Sessions on FTAM	AD4339	NTXP23AA	BCS35
Multiple Position Hunt with Queue	AL0612	NTX877AB	BCS30
Multistage Queue Status Key/Lamp	NC0363	NTX416AJ	BCS34
NACD Operational Measurements (OM) Enhancements	NC0356	NTXE22AA	BCS34
NACD Network Transport Parameter	NC0358	NTXN46AA	BCS34
NCS Access From MAP	AJ0576	NTXF94AA	BCS29
NETPATH Automation	AG1214	NTX885AB	BCS28
NFA: AMA Modifications	AN0435	NTXT20AA	BCS36
NM S/W Optionality	AL2055	NTXP10AA	BCS34
NSS Propogate Answer Back via ATDS	AD3492	NTX100AA	BCS33
NT-40 CMC RTS Improvements (Diagnostics)	AG1925	NTX001AA	BCS30
NT-40 Memory Handling Improvements	AG1923	NTX057EA	BCS30
NT-40 Mismatch Handler Refinements	AG1924	NTX001AA	BCS30
NT6X81 Firmware Robustness	AF2341	NTX213AC	BCS30
NT9X45 MMI	AL2162	NTXE01AA	BCS33
NT9X62BA 0D1 Support	AL1782	NTX941AA	BCS33
NWMSD Table Rewrite	AF2087	NTX060AB	BCS29
Name and Reason for ISDN Functional Calls	AJ0426	NTX750AB	BCS29
Name and Reason Display	AR0179	NTX756AA	BCS34
Network ACD MIS Enhancements	AD2259	NTXE22AA	BCS29
Network Facility Access	NC0418	NTXR25AA	BCS34
Network Feature Access Restriction	AR0323	NTXR83AA	BCS35
Network Leave Message Service	AG1865	NTXQ64AA	BCS33
Network Management with DWS	AD4750	NTXS25AA	BCS36
Network Name Display for Attendant Consoles	AG1104	NTXA80AA	BCS28

Network Name Display on PRA	AD2245	NTX792AA	BCS29
Networked ACD Algorithm Implementation	AD2257	NTXE22AA	BCS29
Networked ACD RLM Enhancements	AD2258	NTXE22AA	BCS29
New ACB Feature Key on Meridian Business Set	AR0322	NTXR84AA	BCS35
New CPM Extension Shelf and DS60 Pack Support for CPM	AF2792	NTXP92AA	BCS33
New Field in RCSINV to Identify Equipment Location	AF4936	NTX398AA	BCS36
Night Service Recorded Announcement & Forward	AD1607	NTX416AF	BCS30
No Test Trunk Access For ISDN Lines	AL1316	NTX750AB	BCS31
Non-Data Link Console Call Extension	AL0537	NTX877AB	BCS28
Northbound/Southbound for 800+E	AR0209	NTXQ41AA	BCS35
OAM Database - MDC Report Objects	AJ1164	NTXN44AA	BCS32
OAM Database - Partitioning, User Access and Security	AJ1167	NTXN44AA	BCS32
OM Acquisition	AJ1053	NTXP43AA	BCS34
OM Transmission	AF2908	NTXS30AA	BCS36
OMs for LGC Links	NC0033	NTX270AA	BCS34
OMs for XPM Links	NC0033	NTX270AA	BCS34
OPC and NE Identification at the DMS	AF5330	NTXF46AA	BCS36
OPP Base TOPS Changes	AF3191	NTX030CC	BCS33
OPP Utilities	AF2861	NTXP49AA	BCS35
ORDB Access Via TMS/TOPS - LTCI	AF2070	NTXA83AA	BCS30
OSI Performance/Robustness on EIU	AD4341	NTXP23AA	BCS35
OSS-SERVORD Compatibility	AJ1056	NTXN31AA	BCS31
Obsolete Packaging	AF2532	NTX001AA	BCS31
Off-hook Testing	NC0495	NTX901AA	BCS35
Office Line Totals QNCOS	AD0943	NTX901AA	BCS29
Office Routes Capacity Increase	AF2013	NTX001AA	BCS32
Office Wide Activation of CNDB for POTS	NC0292	NTXP73AA	BCS33
One Night Process Enhancements	AG2108	NTX001AA	BCS32
Operator Handoff to AABS	NC0013	NTXJ10AA	BCS30
Outgoing Restriction Control	AF1276	NTXA74AA	BCS28
Override ACR for CFU	AD2810	NTX100AA	BCS30
P-Side Loop Around Test	AN0337	NTX270Aa	BCS35
PARMCALC - Verify Office Parameters (Phase 2)	AG0724	NTX001AA	BCS28
PARS OC Remote	AF2601	NTXN04AA	BCS31
PH Data Table and Audit Process	AJ0304	NTXF93AA	BCS29
PIN Configuration by Customer Group	NC0097	NTX419AA	BCS35
PM108 Cleanup	NC0322	NTX270AA	BCS33

PM Diagnostic History	AF5006	NTX270AA	BCS35
PORT MTS and TPS To ENET Processor	AL0457	NTXE01AA	BCS31
POTS/EBS/DATAPATH on LCME	AQ0696	NTX750AB	BCS32
PP Call Processing for RCC Warm ESA: Phase 1	AF2700	NTXN82AA	BCS32
PP IDT Maintenance II	Af2442	NTXF46AA	BCS35
PP Maintenance for RCC Warm ESA: Phase I	AF2699	NTXN82AA	BCS32
PP Maintenance for RCC Warm ESA: Phase II	AF2795	NTXN82AB NTXQ12AA	BCS34
PP Processing for RCC Warm ESA: Phase II	AF2796	NTXN82AB NTXQ12AA	BCS34
PRA Call Redirection Service	AC0277	NTX790AB	BCS28
PRA Connected Number (XPM)	AC0474	NTX790AB	BCS28
PRA D-Channel Backup-CC	AM0071		BCS31
PRA on LTCI	AJ0789	NTX790AB	BCS31
PRA-D Channel Backup - XPM	AM0055	NTXN53AA	BCS31
PRI/ESB Interworking for Billing Number Delivery	NC0032	NTX790AB	BCS32
PVC Type II Billing	AQ1010	NTXP47AB	BCS36
PVN Attendant Services	AG1555	NTX984AA	BCS28
Packet Processor Maintenance	AL1615	NTXP47AA	BCS34
Packet Terminal Provisioning	AL2125	NTXP47AA	BCS34
Parallel Storage Size Increase and MMI Improvements	AF2704	NTXP14AA	BCS32
Parm E1 Outrage Robustness Plan	AF5766	NTX001AA	BCS36
Patcher Integration	AF2815	NTX001AA	BCS32
Patchset Simplification	AF4283	NTX001AA	BCS35
Path Verification Automation	AL1566	NTX885AB	BCS30
Pathend Expansion For ENET	AL1229	NTXE01AA	BCS31
Pbase Maintenance for CM-based RPs	AL1114	NTXF06AA	BCS33
Pending Order File (POF) Enhancements	NC0120	NTX412CB	BCS32
Poller Access Manager-Phase I	AD6515	NTXT10AA	BCS36
Porting DMS-Core Maintenance to Run on RISC (Phase I)	AL1193	NTX941AA	BCS33
Power Features Installer Application	AR0307	NTXT14AA	BCS36
Power-N*64 Wideband Optionality	AD3879	NTXR65AA	BCS35
Power: Wide Band Call Machine & Glare Recovery (XPM)	AD3321	NTXS25AA	BCS35
Power: Wide Band ISUP and Maintenance in DTC7 (XPM)	AD3320	NTXS25AA	BCS35
Power: Wide Band Integrity Management (PM)	AD3322	NTXS25AA	BCS35
Power: Wide Band Channel Management (XPM)	AD3319	NTXS25AA	BCS35
Power: Wide Band SwAct Support in DTC7 (XPM)	AD3443	NTXS25AA	BCS35

Power: Wide Band Trunk Data and Maintenance (CC)	AD3318	NTXS25AA	BCS35
Power: Wide Band Trunk Selection (CC)	AD3317	NTXS25AA	BCS35
Precedence Prgressive Conferencing	AD2852	NTXJ90AA	BCS31
Prep for Multiple Directory Numbers (DN) per LEN	AF2860	NTXE94AA	BCS32
Preset Conference (Large)	AF2014	NTXE74AA	BCS29
Presheduled Image-taking on SLM	AG1385	NTX942AA	BCS28
Printer Support on Coax Eliminator	AC0546	NTX250AA	BCS29
Private Virtual Network Enhancements	AG0925	NTX983AA	BCS28
Procedure Oriented Practices Online	AG2479	NTXQ31AA	BCS33
Procedure Oriented Practices	AG2479	NTXQ31AA	BCS33
			BCS35
Processor Occupancy OMs for XLCM	AF1747	NTX270AA	BCS35
Prompt Manager Enhancements	AF2594	NTG230AA	BCS31
Prompt Manager: Set Archive	AF2595	NTG230AA	BCS31
Provide CC Warm Swact Residency In All Loads	AG1868	NTX001AA	BCS31
Provide ISP Level For Perform Tool	Ar0305	NTX790AC	BCS35
Q.932 Facility Interface to RO Service in LTCI	AJ0908	NTXJ60AA	BCS30
QCUST Consolidation	AJ1266	NTXN31AA	BCS32
QCUST Upload Enhancements for ISDN	AJ0901	NTX563AA	BCS30
QMS: MIS Interface	AF2964	NTXR50AA	BCS34
			BCS35
QMS: Basic MIS Stats	AF2965	NTXP41AA	BCS34
QMS: Call and Agent Manager	AF2783	NTXR48AA	BCS34
QMS: Call Queue Assignment	AF2875	NTXP41AA	BCS34
		NTXP42AA	
QMS: Host Call Processing Changes	AF2877	NTXP41AA	BCS34
QMS: Stand-alone Call Processing Changes	AF2876	NTXP41AA	BCS34
RAP DTMF Support	AF3394	NTG322AA	BCS36
RAP Application State Machine	AN0046	NTG322AA	BCS36
RAP Play and Record Processing	AN0016	NTG32AA	BCS36
RCC2 ISDN Warm Entry/Exit - CC	AF4893	NTXS64AA	BCS36
		NTXS65AA	
RCC2 ISDN Warm Entry/Exit - XPM	AF4894	NTXS64AA	BCS36
		NTXS65AA	
RCC2 Provisionable EISP	AF4319	NTXP49AA	BCS35
RCC LCM Loading Enhancements II	AJ0474	NTXA66AA	BCS29
RCC Loading Enhancement	AJ0192	NTXA66AA	BCS28

RCC Warm ESA High Level Design	AF2659	NTXN82AA	BCS32
RCCI 2B1Q Maintenance and Call Processing Integration	AF2476	NTXJ00AA	BCS31
RCCI BCS SWACT, BERP Support, and Perform Tools	AF2267	NTXJ00AA	BCS30
RCCI Dual Support and ISDN ESA Trunk Integration	AF2452	NTXF95AA	BCS31
		NTXJ00AA	
RCCI ISDN ESA Functional Call Processing	AF2276	NTXJ00AA	BCS31
RCCI ISDN ESA Line Integration	AF2450	NTXF95AA	BCS31
		NTXJ00AA	
RCCI ISDN ESA Static Data	AF2273	NTXJ00AA	BCS31
RCCI ISDN ESA SwAct	AF2454	NTXJ00AA	BCS31
RCCI Non-ISDN ESA Support	AF2271	NTXJ00AA	BCS30
RCCI Warm SwAct	AF2270	NTXJ00AA	BCS30
RCT Subscriber Loop Test Digital (SLTD) Robustness	AF2345	NTX213AC	BCS30
RCU 4-wire Special Services	AF2256	NTX621AB	BCS30
RCU Line Card Configuration	AF2268	NTX901AA	BCS31
RCU Line Test Processor	AF2672	NTX387AB	BCS32
RDB Enhancements for Conversational Messaging	AD4443	NTXQ48AA	BCS36
RES Feature Set Expansion 1	AG0967	NTXA94AA	BCS28
RES Message Waiting/Reminder	NC0010	NTXF85AA	BCS33
RES: 1MR Service in RES	AG1544	NTXA64AA	BCS28
RES: Service Order Simplification for Hunt Groups	AG1542	NTXA64AA	BCS28
RES: Toll Denied	AG1543	NTXA64AA	BCS28
REX Test on LPP	AL1271	NTX833AA	BCS30
		NTXF20AA	
RFT ALT Support	AF3807	NTXF46AA	BCS34
			BCS35
RFT IMC Remote Access/Test	AF2969	NTXF46AA	BCS35
RFT Event Handler	AF2687	NTXF46AA	BCS35
			BCS36
RFT Event Handling Enhancements	AF4439	NTXF46AA	BCS35
RFT External Alarm Interface	AF2444	NTXF46AA	BCS35
RFT Line Test Position I	AF2688	NTXF46AA	BCS35
RFT Line Test Position II	AF2964	NTXF46AA	BCS34
			BCS35
RFT Line Test Position III	AF2968	NTXF46AA	BCS34
			BCS35
RFT Line Provisioning	AF2614	NTXF46AA	BCS35

RFT Line Provisioning Extensions	AF4438	NTXF46AA	BCS36
RFT Line Provisioning Integrity	AF2984	NTXF46AA	BCS34
			BCS35
RFT Lines Table Control II	AF2530	NTXF46AA	BCS35
RFT Line Test Position III	AF2968	NTXF46AA	BCS34
			BCS35
RFT Line Test Resource Audit	AF3805	NTXF46AA	BCS35
RFT No Test Trunk Access	AF2613	NTXF46AA	BCS34
			BCS35
RFT Subscriber Premises Tests	AF2970	NTXF46AA	BCS35
RLT with No Third Party Interaction	AG2329	NTXQ65AA	BCS33
RP Link Maintenance	AL1121	NTXF06AA	BCS33
RSC ESA Warm Entry for Trunks	AF3187	NTXN82AB	BCS34
		NTXQ12AA	
RSC-S NI-1 Host Compliance	AN0191	NTXP92AB	BCS35
RSC-S LCME Link Rearrangement	AF4841	NTX750AD	BCS36
RSC-S Digital Test Access	AF4839	NTXJ51AA	BCS36
RSC-S Enhanced Line Testing I	AF4838	NTXN87AA	BCS36
RSC - Fast Cold Exit Driver and Instant RTS of Lines	AF2701	NTXN82AA	BCS32
RSC - Instant RTS of Links for Fast Cold Exit	AF2702	NTXN82AA	BCS32
RSC - Instant RTS of Nodes for Fast Cold Exit	AF2865	NTXN82AA	BCS32
RSC - Layer I Performance Montoring	AF4842	NTX750AD	BCS36
Realtime Input OM	AF1749	NTX001AA	BCS29
Real-Time Performance of MX73 and MX76 Packs	AF4903	NTXP92AB	BCS36
Reload Restart in Restart Progression	AL1274	NTX000AA	BCS29
Remote Activation Of Line Load Control	AF1750	NTXP81AA	BCS31
Remote Call Forwarding Without Unique PIN	NC0192	NTXN75AA	BCS32
		NTXN75AA	BCS33
Remote File System Improvements	AL0914	NTX001AA	BCS28
Remote MAP Access Through TELNET Server on DMS, Phase II	AJ0478	NTXF09AA	BCS33
Remote MAP Access Through Telnet Server On DMS, Phase I	AJ0479	NTXF09AA	BCS31
Removal Of CLLI From CCS7 RTETEST and LINKSET	AL1496	NTX041AB	BCS31
Removing Requirement of Reformats for Hidden Fields	AJ2240	NTX001AA	BCS35
Remote Fault Tolerant File System	AD3579	NTXF07AA	BCS34
Repeated Alert for MBS	NC0164	NTX878AE	BCS33

Report Selection & Customization for 10 Nodes & 10 Customer	AJ1165	NTXN44AA	BCS32
Residential Call Hold	NC0028	NTXJ69AA	BCS31
Restart Performance Enhancements	AL2669	NTX001AA	BCS35
Ring Again Cancellation Timer	AD2851	NTX100AA	BCS31
Ring Reminder Off/On Option Per Line	NC0053	NTXJ84AA	BCS31
Ringback to 911 Callers (On-Hook/Off-Hook)	NC0030	NTXN59AA	BCS32
Robustify Cause Handling for PRI	AR0435	NTX790AC	BCS36
Run-time System Data Checksum	AL2236	NTXR46AA	BCS33
S/DMS DRM	AD3363	NTXF07AA	BCS34
		NTXP92AA	BCS33
S/T Line Card Diagnostic	AL0955	NTX750AB	BCS28
S/DMS MMI Consistency and Enhancements	AQ0840	NTX945AA	BCS34
S/T Line Card XPM Interface	AL0942	NTX750AB	BCS28
S/W Definition of New 6X76AC Line Card	AC0534	NTX250AA	BCS28
SA ATC Dialback	AF2310	NTX065AA	BCS30
SA Logon	AF2372	NTX030CC	BCS30
SAF Phase II	AR0704	NTXQ54AB	BCS36
SCAI - SS7 Release Link Trunk (RLT)	AD2587	NTXN13AA	BCS31
SCAI TWC for ECM	AG2291	NTXJ62AA	BCS34
SCAI Base - SCAI/Applications Interfaces	AG2337	NTXJ59AB	BCS33
SCAI Call Redirection to Specific ACD/Non-ACD Line	AR0048	NTXJ60AA	BCS34
SCAI-Consultation/XFER	AG2481	NTXJ62AA	BCS33
SCAI-Make Call: Distinctive Ringing	AR0024	NTXJ62AA	BCS34
SCAI Session and Invoke-ID Management	AG2336	NTXJ59AB	BCS33
SCP/SMS Audit Efficiency	AQ1092	NTXQ54AB	BCS36
SCP VNX Database Create and Access	AR0327	NTXQ54AA	BCS36
SCP-VNS Generic Query Processing	AR0400	NTXS70AA	BCS36
SCP-VNS Generic Update Processing	AR0401	NTXS70AA	BCS36
SCP-VNS FSL Enhancements	AR0630	NTXS70AA	BCS36
SCP-Vitrual Network Service Generic OMs	AR0402	NTXS70AA	BCS36
SCP-VNS Test Query (Test)	AR0403	NTXS70AA	BCS36
SCP-Telecom Australia VPN Service	AR0341	NTXS70AA	BCS36
SCP II DB/TRMS Enhancements	AL2082	NTXN21AA	BCS34
SCP AIN 0.1 TCAP Message Handler	AR0485	NTXS70AA	BCS36
SCP II UBH MMI	AL2089	NTXN21AA	BCS34
SCP II UBH Maintenance	AL2090	NTXN21AA	BCS34

SCP II 800 Database Consistency Audit	AL2294	NTXN24AA	BCS33
SCP II 800 Service	AL2147	NTXN24AA	BCS33
			BCS35
SCP II 800 Update Process Validation	AL2148	NTXN24AA	BCS33
			BCS35
SCP II 800 Southbound Multicarrier Service	AL2294	NTXN24AA	BCS33
SCP II Database Copy Maintenance	AL2020	NTXN21AA	BCS33
SCP II Database Tools	AR0577	NTXQ54AB	BCS36
SCP II Distributed Database Maintenance	AL1652	NTXN21AA	BCS33
SCP II External Database Dump	AL2080	NTXN21AA	BCS34
SCP II Local Master Database Request Handler	AL1648	NTXN21AA	BCS33
SCP II Query Handling	AL1647	NTXN21AA	BCS33
SCP II Query Traffic Maintenance	AL1701	NTXN21AA	BCS33
SCP II Service OM & Log Interfaces	AL2330	NTXN21AA	BCS33
SCP II Service Processing and Utility Interfaces	AR0158	NTXN21AA	BCS34
SCPII Maintenance MMI	AL1702	NTXN21AA	BCS33
SCP II Update Batch Handling	AL2093	NTXN21AA	BCS34
SCP II VPN Dial Plan Tables	AJ2369	NTXS66AA	BCS36
SCP TCAP to TCB Mapper	AR0486	NTXS70AA	BCS36
SCWID TR Compliancy-CC	AN0616	NTXT12AA	BCS36
SCWID TR Compliancy-XPM	AN0631	NTXT12AA	BCS36
SCWID with Disposition	NC0377	NTXQ91AA	BCS35
SEAS 3.0--Recent Change and Verify	AL1429	NTXE24AB	BCS34
SEAS 4.0 Interface for STP	AR0183	NTXR26AA	BCS34
SEAS - Enhanced CCS7 OMs	AL1071	NTX835AA	BCS28
SEAS - Log Reporting Support for SEAS Release 2.0	AL0991	NTXE55AA	BCS29
SEAS - RC&V Command Implementation For SEAS Release 2.0	AL0990	NTXE55AB	BCS31
SEAS 1.0 Enhancements	AL1334	NTX835AA	BCS29
SEAS 3.0 - Application Control Messages	AL1428	NTXE24AA	BCS32
SEAS 3.0 - Autonomous Message Reporting	AL1426	NTXE24AA	BCS32
SEAS 3.0 - Data Collection	AL1427	NTXE24AA	BCS32
SERVORD+for DMS-PH	AL2289	NTXP75AA	BCS34
SERVORD Enhancements for ISDN OAM	AJ0305	NTXF93AA	BCS29
SERVORD Enhancements for SLE	NC0313	NTX901AA	BCS34
SESAME: Visual Screen List Editing	AF3573	NTXP95AA	BCS34
			BCS35

SESAME Call Logging	AN0082	NTXP96AA	BCS35
SLE Enhancements	AF2384	NTXE56AA	BCS30
SLM File System Enhancement	AL1298	NTX942AA	BCS29
SLM Maintenance Enhancements	AL1166	NTX942AA	BCS29
SLM Phase II - Disk/Tape Replacements	AL1060	NTX942AA	BCS29
SLM-II Enhancements	AL1174	NTXE54AA	BCS29
SM Node MAP Enhancements	AQ1027	NTXF06AA	BCS36
SMA/IDT Flow Control and Overload Controls	AF2999	NTXF46AA	BCS35
SMA CC EOC/TMC/CSC Path Protection Switching	AF2651	NTXF46AA	BCS35
SMA CC IDT Maintenance II	AF2998	NTXF46Aa	BCS35
SMA CLASS Call Control	AF2650	NTXF46AA	BCS35
SMA CM XPM Robustness Program	AN0453	NTXF46AA	BCS36
SMA Dynamic Service Option Update I	AF3800	NTX46AA	BCS36
SMA Dynamic Service Option Update II	AF3801	NTXF25AD	BCS36
SMA Dynamic Static Data Update	AN0225	NTXF46AA	BCS36
SMA EBS Call Control	AF2522	NTXF46AA	BCS35
SMA ISDN & MADN Call Control	AF2726	NTXF46AA	BCS35
SMA ISDN Line Test Object I/F	AF4979	NTXF46AA	BCS36
SMA MDC Services Verification	AF2762	NXTF46AA	BCS35
SMA RFT Alarm Report Handler	AF3798	NTXF46AA	BCS34
SMA RFT Test Response Circuit Support	AF2649	NTXF46AA	BCS35
SMA and IDT OMs	AF2686	NTXF46AA	BCS35
SMA Base Upgrade	AF2724	NTXF46AA	BCS35
SMA Coin Call Control	AF2521	NTXF46AA	BCS35
SMA Enhanced Time-Switch I	AN0230	NTXF46AA	BCS36
SMA Peripheral EOC/TMC/CSC Path Protection Switching	AF3004	NTXF46AA	BCS34
			BCS35
SMA Processor/Memory Upgrade	AF4332	NTXF46AA	BCS35
SMA Miscellaneous Services Verification	AF2725	NTXF46AA	BCS34
			BCS35
SMA Multiple OPC Support	AF3832	NTXF46AA	BCS34
			BCS35
SMA Peripheral IDT Maintenance IV	AF2997	NTXF46AA	BCS35
SMA Peripheral IDT Maintenance	AF2971	NTXF46AA	BCS35
SMA Warm SwAct	AF2986	NTXF46AA	BCS34
			BCS35
SMB and SIII High Runner Log Reduction	AL2024	NTXQ95AA	BCS34

SMDI: Called DN Option and KSH Support	NC0009	NTX732AA	BCS31
SMDI - Port Expansion	AD1778	NTX732AA	BCS28
SMDI Conversion to Use MPC	AF2471	NTXN10AA	BCS30
SMDI On Hunt Groups	AF2301	NTX732AA	BCS31
SMDI on RES	AL0532	NTX732AA	BCS29
SMDI Calling DN Delivery Optionality	AF3679	NTXN07AB	BCS36
SMDI Robustness	AF3893	NTX732AA	BCS34
SMS-R BERT Functionality	AF3624	NTXA85AB	BCS34
SMS-R Overload Control/ESP	AF3622	NTXA85AB	BCS34
SMS-R Special Service	AF2469	NTXA86AA	BCS34
SMS-R Warm RCC Exit-CC	AF3663	NTXA85AB	BCS34
SMS-R CLASS CND/CNAMD	AF2489	NTXE38AB	BCS34
SMS-R MDC Testing	AF2490	NTXA85AB	BCS34
SMDR Architecture Revision	AN0181	NTX102AA	BCS35
SMDR Allocation for Inbound Toll Calls	NC0301	NTX103AA	BCS34
SMDR for PVN	AN0739	NTXT15AA	BCS36
SMR A-bit Facility Robustness	AF2348	NTX213AC	BCS30
SMR and RCT Audit Robustness	AF2344	NTX213AC	BCS30
SMR B-word Facility Robustness	AF2342	NTX213AC	BCS30
SMR Call Processing Robustness	AF2347	NTX213AC	BCS30
SMR Maintenance Robustness	AF2343	NTX213AC	BCS30
SMS Additional CLASS Features	AF2957	NTXE38AB	BCS34
SMS Base Support of UTR Card	AF4309	NTX398AA NTX398AB	BCS35
SMS Base Support of UTR Card	AF4310	NTX387AC	BCS35
SMS Originated Code Control for AIN Release 0.0	AR0252	NTXN27AA	BCS35
SMS Peripheral EOC/TMC/CSC Path Protection Switching	AF3004	NTXF46AA	BCS34 BCS35
SMSR Dual RCC Environment	AF2527	NTXA85AB	BCS34
SMSR New Arch/New Messaging	AF2528	NTXA85AB	BCS34
SMSR - RCC ESA Mtc CC	AF1791	NTXA85AA	BCS29
SMSR - RCC ESA Mtc XMP	AF1790	NTXA85AA	BCS29
SMSR Basic Mtc I CC	BC2153	NTXA85AA	BCS29
SMSR Basic Mtc XPM	AF0164	NTXA85AA	BCS29
SMSR Call Processing I XPM	AF0163	NTXA85AA	BCS29
SMSR Call Processing II XPM	AF1794	NTXA85AA	BCS29
SMSR Lines Support XPM	AF1789	NTXA85AA	BCS28

SMSR Operator Verification	AF2678	NTXA85AA	BCS33
SMSR Provisioning and MAP	BC2150	NTXA85AA	BCS28
SMSR Serving Lines Support	BC2147	NTXA85AA	BCS29
SMSR Warm RCC Exit-XPM	AF2875	NTXP42AA	BCS34
SMSR Warm SwAct-CC	AF2676	NTXA85AA	BCS33
SMSR Warm SwAct-XPM	AF2677	NTXA85AA	BCS33
SMU CLASS Calling Card Delivery	AF2255	NTX387AB	BCS30
SMU EISP & DCH Provisioning & Maintenance	AF3688	NTX387AC	BCS34
SMU ISDN/MBS Channel Reassignment	AF3690	NTX387AC	BCS34
SMU ISDN/MBS Line Provisioning	AF3680	NTX387AC	BCS34
SMU ISDN Call Processing	AF3673	NTX387AC	BCS34
SMU ISDN Line Testing	AF3691	NTX387AC	BCS34
SMU LAPD Support for MBS Messages	AF3681	NTX387AC	BCS34
SMU MBS/ISDN Special Connections	AF3687	NTX387AC	BCS34
SMU MBS Call Processing	AF3683	NTX387AC	BCS34
SMU MBS Line Testing	AF3692	NTX387AC	BCS34
SMU MBS Message Link Management	AF3693	NTX387AC	BCS34
SMU MBS Messaging Network Layer	AF3689	NTX387AC	BCS34
SMU Enhanced 2-wire Special Services	AF2670	NTX621AB	BCS34
SMU Forward Disconnect for EPOTS (CC)	AF2254	NTX387AB	BCS30
SMU Forward Disconnect for EPOTS (PP)	AF2251	NTX387AB	BCS30
SMU with SPECCONN Link Reconfigurations	AF4252	NTX387AD	BCS36
SNSE CM Maintenance Software Support	AL1727	NTXP44AA	BCS34
SNSE ENET MMI	AR0106	NTXP72AA	BCS34
SNSE ENET XPT Diagnostics	AR0105	NTXP72AA	BCS34
SPECCON Network Connections	AL1294	NTX750AB	BCS30
SPECCONN for the DMS-PH	AL2326	NTXP47AA	BCS34
SPM Maintenance for ISN	AN0150	NTXR87AA	BCS35
SPMS Enhancements II	AG1495	NTX738AB	BCS28
SRC Controlled Restart and No-Restart SwAct for CCS7	AL2334	NTXF20AA	BCS36
SRDB Capacity Enhancements	AN0102	NTXR63AA	BCS36
SRDB Memory Management	NC0337	NTXQ18AA	BCS34
SRDB Update Enhancements	NC0501	NTX451AA	BCS35
STP - V.35 Subrate Links for STP	AC0428	NTX836AA	BCS28
STP Robustness	AL1893	NTX041AB	BCS31
STP V.35 Capability for STP	AC0425	NTX833AA	BCS28
SWACT Evolution: CC XPM Maintenance	AF3685	NTX270AA	BCS34

Selective List Editing (SLE) for Screening Lists	AG1580	NTXE56AA	BCS29
Semi-Restricted Incoming Lines Call Intercept	NC0083	NTXJ84AA	BCS32
Series Completions Enhancements	AF2859	NTXJ82AA	BCS32
Service Order Enhancmts for BRA Funct. Sgnlg	AJ0162	NTX753AA	BCS28
Service Order Simplification For Hunt Groups	NC0077	NTXJ93AA	BCS31
Service Profile Config. for BRA Functional Sig.	AC0451	NTX753AA	BCS29
Shell Tool Utilities - CM	AJ1321	NTXP11AA	BCS32
Signaling Link Marginal Performance Report	AL1330	NTX833AA	BCS29
Single RCC2 Warm Exit MTC and CALLP (CC)	AF4326	NTXP49AA	BCS35
Single RCC2 Warm Exit MTC and CALLP (XPM)	AF4327	NTXP49AA	BCS35
Single Line Variety	AF2307	NTXF82AA	BCS31
Software Support for 68030 At 33 Mhz	AL0934	NTXF15AA	BCS29
Special Application Patching	AF2470	NTX001AA	BCS31
Spontaneous Call Waiting ID XPM Changes	AF2830	NTXN97AA	BCS32
Stage 4 Binary Format CDR	NC0336	NTXK02AB	BCS35
Stand-alone ESTU Definition	AL2367	NTXN87AA	BCS35
Stand-alone ESTU Utilities	AL2368	NTXN87AA	BCS35
Standard Pretranslation Expansion	NC0086	NTX001AA	BCS31
Standard Pretranslation Expansion - Phase II	NC0196	NTX001AA	BCS33
Station Camp On For Meridian Business Set	NC0080	NTXJ98AA	BCS31
Status Enquiry Support	AJ0425	NTX753AA	BCS29
Study of SCAI Convergence	AG2338	NTXJ59AB	BCS35
		NTXJ59AC	
Subscriber Controlled Toll Restriction	AF1094	NTXA18AA	BCS33
SuperNode Clock Robustness Restructure-1	AQ0741	NTX941AA	BCS34
SuperNode/UNIX File System Access to SLM/SLMII/IOC	AF3379	NTXR31AA	BCS35
		NTXR30AA	BCS36
Support for Warm SWACT Recovery Time Reduction Feature	AL2260	NTXE01AA	BCS33
Support of Notification Busy Limit Parameter	AQ0779	NTX755AB	BCS33
Support TR-448 BC Routing for Calls with More Than 1Leg	AR0168	NTX767AA	BCS34
		NTX755AC	
Suspend and Restore Remote Call Forward Lines	AF1564	NTX733AE	BCS28
SwAct Operation Robustness	AJ1038	NTX270AA	BCS31
System Recovery Controller Interfaces	AL1570	NTX941AA	BCS33
T1 ALLC Implentation	AJ1921	NTXF25AB	BCS34
T1 Non-Channelized Loopback	AL2119	NTXF25AB	BCS34

TA RCUINV: New Field for Equipment Location	AF4935	NTX387AD	BCS36
T1 Resource and Voice Connection Manager	AG1250	NTG230AA	BCS28
TABS Call Distributor	AG1221	NTG230AA	BCS28
TABS Data Definition	AG1243	NTG230AA	BCS28
TABS Operation, Administration, and Maintenance	AG1222	NTG230AA	BCS28
TCB Dump Utility	AR0326	NTXQ54AB	BCS36
TCP/IP Enhancements	AL2276	NTXF05AA	BCS33
TDC Maintenance for TMS	AF2161	NTXA83AA	BCS30
TME Service Order	AJ0443	NTXF88AA	BCS30
TMS Base Maintenance (PP)	AF1472	NTXA83AA	BCS30
TMS DA/ORB Product Verification	AF2394	NTXA83AA	BCS30
TMS Datafill and Maintenance	AF1652	NTXA83AA	BCS30
TMS Datafill for Intra/Inter Office TMS Networking	AF2592	NTXN55AA	BCS32
TMS Datafill for Intra/Inter Office TMS Networking	AF2593		BCS32
TMS ISP Router	AF2110	NTXA83AA	BCS30
TMS OM	AF2409	NTXA83AA	BCS30
TMS Protocol Admin/Router	AF1473	NTXA83AA	BCS30
TMS Route Table Loader	AF1581	NTXA83AA	BCS30
TMS SWACT/DCH Memory Maintenance	AF1993	NTXA83AA	BCS30
TMS Static Data Download	AF1728	NTXA83AA	BCS30
TMS Static Data Route Table Management (PP)	AF1474	NTXA83AA	BCS30
TMS TDC Maintenance (PP)	AF1214	NTXA83AA	BCS30
TMS X.25 Base (PP)	AF1471	NTXA83AA	BCS30
TOPS - Administration - 1200 Baud Printers	AJ0388	NTX030BA	BCS29
TOPS - MP Maintenance Enhancements for TMS	AF1727	NTXA83AA	BCS30
TOPS - VSN Prompt Manager - Overview	AF2398	NTG230AA	BCS30
TOPS - VSN Prompt Manager: Admin and Mntce	AF2390	NTG230AA	BCS30
TOPS - VSN Prompt Manager: Prompt/Set Issue Mgmt	AF2391	NTG230AA	BCS30
TOPS - VSN Prompt Manager: Voice Editor	AF2392	NTG230AA	BCS30
TOPS CC CALLP TMS Interface	AF1785	NTX030CC	BCS30
TOPS DN Phase I	AN0324	NTXS19AA	BCS36
TOPS OPP Action Identifier Processing	AF2862	NTXP49AA	BCS35
TOPS OPP Data Identifier Processing	AF2863	NTXP49AA	BCS35
TOPS OPP Operational Measurments	AF3536	NTXP49AA	BCS35
TOPS Base Changes	AF1784	NTX030CC	BCS28
TOPS Data and Voice Link Utilities	AF1527	NTX030CC	BCS28

TOPS Enhancements for MDS	AF5009	NTXS37AA	BCS36
TOPS Expanded Bellcore AMA Format	AF1726	NTXE20AA	BCS28
TOPS Expanded Bellcore AMA Format (EBAF) Extension	AF1715	NTXE18AA	BCS31
TOPS Expanded Calling Card Format - CCS7 Validation	AF2020	NTXE72AA	BCS31
TOPS Equal Access FGD CIC Expansion	AN0834	NTXT19AA	BCS36
TOPS Interchangeable NPA	AN0259	NTXS18AA	BCS36
TOPS International Telephone Credit Card (CCITT)	AG1447	NTXE68AA	BCS29
TOPS Multi-Service Queueing - Base Changes	AF2782	NTXP41AA	BCS32
		NTXP42AA	
TOPS Operator Hold Enhancements	AN0235	NTX891AA	BCS36
TOPS Personal Audio Response System (CC)	NC0003	NTXJ37AA	BCS31
TOPS Screen and Bellcore AMA Expanded Calling Card	AF2017	NTXE68AA	BCS29
TOPS Service Number Routing on MP	AF3023	NTXE04AA	BCS33
TOPS Trunks Interworking with CCS7 Trunks	AF2331	NTXE14AB	BCS30
TPC/MP Datafill for TMS	AF1687	NTXA83AA	BCS30
TPC - CC Messaging Via HSDA	AF1699	NTXA90AA	BCS30
TPC Diagnostic Enhancements	AF0744	NTX731AA	BCS29
		NTXA90AA	
TPC HSDA MTC Enhancements	AF1998	NTX731AA	BCS29
		NTXA90AA	
TPC IBM DA Application	AF2261	NTXN29AA	BCS31
TPC IBM DA Application Messaging	AF2262	NTXN29AA	BCS31
TPC Integrated MP Diagnostics	AF1975	NTXA90AA	BCS30
TPC Integrated Maintenance	AF1802	NTXA90AA	BCS30
TPC Integrated TAMI Enhancements	AF1974	NTX731AA	BCS30
		NTXA90AA	
TPC MP Grey Scale Enhancements	AF2085	NTX731AA	BCS29
		NTXA90AA	
TPC Mass Storage SCSI Support	AF1563	NTX731AA	BCS30
		NTXA90AA	
TPC SA Logon Enhancements	AF2374	NTX731AA	BCS30
		NTXA90AA	
TPC TAMI Enhancements	AF1909	NTX731AA	BCS28
TPS Application Resource Usage Control Enhancement	AL2486	NTX001AA	BCS35
		NTXA90AA	
TPS Resource Allocation System Enhancements	AL1818	NTXJ11AA	BCS33
TPS Resource Monitoring User Interface	AL1816	NTXJ11AA	BCS33

TR-444 Compliance (Part 2)	AG2211	NTX757AA	BCS32
TR-448 Compliance (Part 2)	AG2210	NTX767AA	BCS32
		NTX768AA	
TR-82 OM Compliance	AL1794	NTX833AA	BCS32
TR-205 EKTS Compliance	AN0084	NTXP96A	BCS35
TR-303 MVI Object Model	AF5533	NTXT23AA	BCS36
TR268 Address Information Compliance	AJ0814	NTX753AA	BCS31
TR268 (Basic Call) Terminal Portability Compliance	AF3604	NTX753AB	BCS34
TR268 Channel Identification (CID) Comprehensive Compliance	AJ0810	NTX753AA	BCS30
TR268 PI/CSE/SIG and Error Recovery Compliance	AJ0812	NTX753AA	BCS31
TR444 Comprehensive Compliance	AG2001	NTX757AA	BCS31
TR448 Compliance Activity	AJ0811	NTX767AA	BCS31
		NTX768AA	
TR846 Provisioning in CM and Data Distribution	AL1616	NTXP47AA	BCS34
TR847 Compliance for FA in Setup Message	AJ1529	NTX753AB	BCS34
TR847 Compliance for FA in Setup Message	AR0043	NTX753AB	BCS34
TR847 Compliance: Terminal Initialization/SPID	AR0041	NTX753AB	BCS34
TR850 BBG Call Access Compliance	AR0042	NTX753AB	BCS34
TR850 BBG Dial Access Compliance	AG2464	NTX753AB	BCS34
TR859 and 860 Terminal Portability	AF3243	NTX755AB	BCS33
TR855 Terminal Portability Compliance	AF3555	NTX755AC	BCS34
TR862 AMA Compliance: Circuit	AF3556	NTX159AA	BCS34
TRMS Configuration, Logs and OMs	AL1734	NTXF86AA	BCS33
TRMS Database Creation	AL1970	NTXF86AA	BCS33
TRMS Lock Manager	AL1212	NTXF86AA	BCS33
TRMS Primary Index Support	AL1714	NTXF86AA	BCS33
TRMS Replicated Database Support	AL1732	NTXF86AA	BCS33
Table Checksum Delta	AG1506	NTXE29AA	BCS29
Table Control for CM-based Application Processors	AL1113	NTXF06AA	BCS33
Table Control for ISI Services	AG1945	NTXJ59AA	BCS32
		NTXJ59AB	
		NTXJ59AA	BCS33
		NTXJ59AB	
Table Integrity Checker	AJ1957	NTX001AA	BCS34
Table Sync Phase II	AN0216	NTXR87AA	BCS35
Table Version System	AJ1959	NTX001AA	BCS34

Tabs Control Link Interface to Dms	AG1223	NTG230AA	BCS28
Teen Service on MDC	NC0019	NTXJ47AA	BCS30
Telco Settable Defaults	AQ1008	NTXP47AB	BCS36
Ten Digit GTT For Class Features	AG2035	NTXN11AA	BCS31
Terminating Billing Option	AF1922	NTXE43AA	BCS29
Terminating Trunk Group Usage	NC0248	NTXP08AA	BCS32
Test Desk Robustness	AF2599	NTX901AA	BCS31
Transfer Calls to Restricted Station	AF1935	NTX100AA	BCS33
Trunk Group Expansion to 8K	AD2997	NTX001AA	BCS32
Trunk Return to Service (RTS) Enhancements	AL0479	NTX001AA	BCS28
Trunk Return to Service (RTS) Enhancements II	AJ0729	NTX001AA	BCS29
Trunk Termination of Loudspeaker Paging Answerback	AF2523	NTXA73AA	BCS32
Two Terminal Directory Assistance/intercept	AF2018	NTXE70AA	BCS30
UDP/IP Development to Support NFS Delivery	AL1917	NTXF08AA	BCS33
UNIX Kernel Changes for SuperNode/UNIX Phase	AF2684	NTXS32AA	BCS36
UMCD Indicator in AMA Record	AF1665	NTX159AA	BCS28
UTR Diagnostic Enhancements: Tone Filtering	AF3271	NTX270AA	BCS34
Unified Processor Integration in LTCI	AL2540	NTXR34AA	BCS34
Universal Access to CLASS FTRS	NC0368	NTXQ70AA	BCS35
Universal Access to CLASS Features	AN0196	NTXQ70AA	BCS35
Unsolicited Messages and LAPD Cleanup	AL2542	NTX750AB	BCS34
User Passwords Survivability Over BCS Application	AL1149	NTX001AA	BCS29
User Programmable LTP Levels	AL1518	NTX001AA	BCS31
User Specified COT Announcement	NC0117	NTXN35AA	BCS32
VCM Support for Reduced Capability Virtual Channels	AL1660	NTXF71AA	BCS33
VDS to VREC Conversion Tool	AN0182	NTG321AA	BCS36
VFG AMA Support for FX and ETS Calls	AF1093	NTX098AA	BCS29
		NTX159AA	
VFG Look Ahead	AF1269	NTXA30AA	BCS28
VFG Support for Incoming ISUP and Local Calls to E911	NC0295	NTXP58AA	BCS33
VPN Callp I	AJ2860	NTXS66AA	BCS36
VPN Callp II	AJ3280	NTXS66AA	BCS36
VPN SSP Messaging	AJ2861	NTXS66AA	BCS36
VPU Local Maintenance	AF3005	NTG322AA	BCS36
VPU Local Resource Management	AF3035	NTG322AA	BCS36
VPU MAP and Table Control	AF3532	NTXS31AA	BCS36
VPU RAP and CBI Diagnostic Support	AF3033	NTG322AA	BCS36

VPU RAP and CBI Low Level I/O	AF3031	NTG322AA	BCS36
VPU Service Circuit Processing	AF3007	NTG322AA	BCS36
VPU Service Circuit Resource Management	AF3006	NTXS31AA	BCS36
VSN-Account Code Billing	NC0387	NTG230AB	BCS35
VSN-Name+Locality Enhancement	NC0388	NTG230AB	BCS34
VSN-Operator Handoff to AABS	AF2380	NTG230AA	BCS30
VSN Automated T1 Link Switchover	AF2588	NTG230AA	BCS32
VSN Log and OM Enhancements	AF2803	NTG230AA	BCS32
Variable Dial Plan for AIN SSP	AR0147	NTX983AB	BCS34
Variable Stuttered Dailtone	AN0303	NTXR62AA	BCS36
Verification of Time-Delayed Overflow	AD2238	NTX416AF	BCS28
Virtual Access To Private Networks	AG2286	NTXJ42AA	BCS31
Virtual Channel Maintenance Enhancements for ISN	AL1657	NTXF71AB	BCS33
Virtual Facility Group Data in ACD MIS	AD2131	NTX991AD	BCS30
Visual Screen List Editing	AF2993	NTXP95AA	BCS33
WATS on RES	AF2244	NTXA64AA	BCS30
WLC Enhancements-Types A and B	AE0946	NTXW00AA	BCS34
WLC TYPE A Template for North American 900 +2 Applications	AE0958	NTXW20AA	BCS33
WLC TYPE B Template for North American	AE1106	NTXW21AA	BCS34
WLC in the LCME	AE0945	NTXW00AA	BCS34
WLC in the SRU	AE1099	NTXW00AA	BCS34
WSS ISUP Messaging	AD4438	NTXS09AA	BCS35
World Line Card Diagnostic Enhancements	AE0956	NTXW02AA	BCS34
World Line Card Overvoltage Reporting	AE1013	NTXW03AA	BCS34
X.25 Basic Service Provisioning	AL2291	NTXP47AA	BCS34
X.25 Phase Two	AL2067	NTXP47AA	BCS34
X.25 Transport for SCAI	AR0004	NTXJ65AA	BCS33
X.25, X.75, VC Base	AL2065	NTXP47AA	BCS34
X.25, X.75 Virtual Circuit Phase Two	AL2069	NTXP47AA	BCS34
X. 75 Basic and Supplementary Service Data	AL2127	NTXP47AA	BCS34
X.75 Service Assignment	AJ1833	NTXP47AA	BCS34
X.75 Trunk Data	AL2126	NTXP47AA	BCS34
XFER Subsystem Table	AF1235	NTX562AA	BCS30
XLCM Diagnostic Enhancements	AF2988	NTX270AA	BCS32
XLIU LGP Base Load and HFC Loader Implementation	AL1906	NTXP47AA	BCS34
XLIU X.25/X.75 Services Interface	AL2066	NTXP47AA	BCS34

XLIU Permanent Virtual Circuits	AL2068	NTXP47AA	BCS34
XPM 2B1Q Loop Maintenance Interface	AC0568	NTX750AB	BCS31
XPM COT Enhancements for 2-wire trunks	AJ1486	NTXP48AA	BCS32
XPM Data Managerment Robustness	AJ1039	NTX270AA	BCS31
XPM Layer 2 Transmission Performance Monitoring	AQ0671	NTX750AB	BCS32
XPM MTC For DMS-X Part 2	AL1460	NTX270AA	BCS31
XPM Parity Audit	AJ0338	NTX270AA	BCS28
XPM Pre-SwAct/Post SwAct Audit	AF5007	NTX270AA	BCS35
XPM REX/SWACT Robustness	AF2989	NTX270AA	BCS32
XPM REX Control and Trouble Notification Improvements	AF5008	NTX270AA	BCS35
XPM REX Results/FFI PH II	AF3200	NTX270AA	BCS33
XPM RTS Enhancements	AF2583	NTX270AA	BCS31
XPM Software Modifications for UP in Base XPM	AF3732	NTXR34AA	BCS34
XPM Static Data Manager	AF3684	NTX270AA	BCS34
XPM Support for LCME POTS & 2B1Q L1 Performance Monitoring	AQ0695	NTX750AB	BCS32
XPM Support of the UP on the RCC	AF4220	NTXJ00AB	BCS34
XPM Support of the UP on the RCCI	AF4219	NTXS05AA	BCS35

DMS-100 Family

Feature Description Manual

Reference Manual

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Publication number: 297-1001-801
Product release: BCS36 and up
Document release: Standard 07.05
Date: April 1995

Printed in Canada and printed in the United States of America.