
Nortel Communication Server 1000

Nortel Communication Server 1000 Release 4.5

Features and Services

Book 1 of 3 (A to C)

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Revision history

October 2007

Standard 18.00. This document is up-issued to reflect the following changes:

- Added description for DNDR feature, due to CR Q01730835.
- Addition of missing value for Last Number Redial Size on pages 737, 738 (Book 2), due to CR Q01260845.
- Deletion of Dial Tone Detection (DTD) chapter (Book 2); deletion of DTD reference in LD 13 table of International Meridian 1 chapter on page 676 (Book2); addition of DTD descriptive information to Extended Tone Detector Global Parameters Download chapter on pages 312 and 313 (Book 2), due to Q01309336

July 2006

Standard 17.00. This document is up-issued to reflect the following changes:

- Addition of M3900 Full Icon Support feature on pages 797 to 800 (Book 2), due to CR Q00926961.
- Addition of M3900 Set-to-Set Messaging feature on pages 801 to 806 (Book 2), due to CR Q00926961.
- Addition of M3900 series digital telephone feature reference on pages 341, 342 of the Personal Directory chapter (Book 3), due to CR Q00926961.
- Addition of Flexible Feature Codes to list on pages 371 to 376 of Flexible Feature Codes chapter (Book 2), due to CR Q0136199.

April 2006

Standard 16.00. This document is up-issued to reflect the following changes in content:

- Addition of keycode commands for CP PIV on pages 595 to 610 (Book 2), due to CR Q01296486.
- Addition of IPMG on CS1000E to the following: operating parameters on page 364 (Book 3); and LD 97 on page 379 (Book 3), due to CR Q01272524.
- Additions to the following: Call Redirection by Day on page 848 (Book1); the CRDAY prompt on page 852 (Book 1); and Call Redirection by Time of Day on page 858 (Book 1), due to CR Q01297600.
- Correction to Message Intercept for Set Status Lockout on pages 982-983 (Book 2), due to CR Q01168852.
- Correction to SECA001 alarm message on page 402 (Book 1), due to CR Q01223733.

January 2006

Standard 15.00. This document is up-issued to reflect the following changes in content:

- Addition of Converged Office feature on page 1247 (Book 1); changes to interactions with Call Forward All Calls on pages 647, 648, 721, 725 (Book 1), and 521 (Book 2), due to CR Q01200310.
- Addition of IP Phones to supported sets referenced in Selectable Conferee Display and Disconnect on pages 667 to 700 (Book 3), due to CR Q01009956.

August 2005

Standard 14.00. This document is up-issued to support Communication Server 1000 Release 4.5.

September 2004

Standard 13.00. This document is up-issued for Communication Server 1000 Release 4.0.

October 2003

Standard 12.00. This document is issued to support Succession 3.0.

November 2002

Standard 11.00. This document is up-issued to support Meridian 1 Release 25.40 and Succession Communication Server for Enterprise (CSE) 1000, Release 2.0. This is book 1 of a 3 book set.

January 2002

Standard 10.00. Up-issued to include content for Meridian 1 Release 25.40 and Succession Communication Server for Enterprise 1000, Release 1.1.

April 2000

Standard 9.00. This is a global document and is up-issued for Release 25.0x. Document changes include removal of: redundant content; references to equipment types except Options 11C, 51C, 61C, and 81C; and references to previous software releases.

June 1999

Issue 8.00 released as Standard for Generic Release 24.2x.

October 1997

Issue 7.00. This is the Release 23.0x standard version of this document. Certain application-specific features have been removed from this document and have been placed in their appropriate Nortel Networks technical publications (NTPs). Automatic Call Distribution features can be found in *Automatic Call Distribution Feature description* 553-2671-110; Call Detail Recording features can be found in *Call Detail Recording Description and formats* 553-2631-100; Primary Rate Interface features can be found in *International ISDN PRI Feature description and administration* 553-2901-301; R2MFC and MFC features can be found in *Multifrequency Compelled Signaling* 553-2861-100; and DPNSS1 features can be found in *DPNSS1 Features and Services* 553-3921-300.

August 1996

Issue 6.00. This is the Release 22.0x standard version of this document. The features Automatic Number Identification, Automatic Trunk Maintenance, Multi Tenant Service, Radio Paging and X08/11 Gateway have been incorporated into this document. Accordingly, the following Nortel Networks technical publications have been retired to reflect this change: 553-2611-200, 553-2751-104, 553-2831-100, 553-2721-111 and 553-2941-100.

December 1995

Issue 5.00. This is the Release 21.1x standard version of this document.

July 1995

Issue 4.00. This is the Release 21 standard version of this document.

October 1994

Issue 2.0. This is the Release 20.1x soak version of the document.

July 1994

Issue 1.0. This is the Release 20.0x standard version of this document.

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How to get help

This chapter explains how to get help for Nortel products and services.

Getting help from the Nortel web site

The best way to get technical support for Nortel products is from the Nortel Technical Support web site:

www.nortel.com/support

This site provides quick access to software, documentation, bulletins, and tools to address issues with Nortel products. From this site, you can:

- download software, documentation, and product bulletins
- search the Technical Support Web site and the Nortel Knowledge Base for answers to technical issues
- sign up for automatic notification of new software and documentation for Nortel equipment
- open and manage technical support cases

Getting help over the telephone from a Nortel Solutions Center

If you do not find the information you require on the Nortel Technical Support web site, and you have a Nortel support contract, you can also get help over the telephone from a Nortel Solutions Center.

In North America, call 1-800-4NORTEL (1-800-466-7835).

Outside North America, go to the following web site to obtain the telephone number for your region:

www.nortel.com/callus

Getting help from a specialist by using an Express Routing Code

To access some Nortel Technical Solutions Centers, you can use an Express Routing Code (ERC) to quickly route your call to a specialist in your Nortel product or service. To locate the ERC for your product or service, go to:

www.nortel.com/erc

Getting help through a Nortel distributor or reseller

If you purchased a service contract for your Nortel product from a distributor or authorized reseller, contact the technical support staff for that distributor or reseller.

About this document

This document is a global document. Contact your system supplier or your Nortel representative to verify that the hardware and software described are supported in your area.

Subject

Features and Services (553-3001-306) describes the software features available with CS 1000 and Meridian 1 systems.

Note on legacy products and releases

This NTP contains information about systems, components, and features that are compatible with Nortel Communication Server 1000 Release 4.5 software. For more information on legacy products and releases, click the **Technical Documentation** link under **Support** on the Nortel home page:

www.nortel.com/

Applicable systems

This document applies to the following systems:

- Communication Server 1000S (CS 1000S)
- Communication Server 1000M Chassis (CS 1000M Chassis)
- Communication Server 1000M Cabinet (CS 1000M Cabinet)
- Communication Server 1000M Half Group (CS 1000M HG)
- Communication Server 1000M Single Group (CS 1000M SG)
- Communication Server 1000M Multi Group (CS 1000M MG)

- Communication Server 1000E (CS 1000E)
- Meridian 1 PBX 11C Chassis
- Meridian 1 PBX 11C Cabinet
- Meridian 1 PBX 51C
- Meridian 1 PBX 61C
- Meridian 1 PBX 81
- Meridian 1 PBX 81C

Note: When upgrading software, memory upgrades may be required on the Signaling Server, the Call Server, or both.

System migration

When particular Meridian 1 systems are upgraded to run CS 1000 Release 4.5 software and configured to include a Signaling Server, they become CS 1000M systems. Table 1 lists each Meridian 1 system that supports an upgrade path to a CS 1000M system.

Table 1
Meridian 1 systems to CS 1000M systems

This Meridian 1 system...	Maps to this CS 1000M system
Meridian 1 PBX 11C Chassis	CS 1000M Chassis
Meridian 1 PBX 11C Cabinet	CS 1000M Cabinet
Meridian 1 PBX 51C	CS 1000M Half Group
Meridian 1 PBX 61C	CS 1000M Single Group
Meridian 1 PBX 81	CS 1000M Multi Group
Meridian 1 PBX 81C	CS 1000M Multi Group

For more information, see one or more of the following NTPs:

- *Communication Server 1000M and Meridian 1: Small System Upgrade Procedures (553-3011-258)*
- *Communication Server 1000M and Meridian 1: Large System Upgrade Procedures (553-3021-258)*
- *Communication Server 1000S: Upgrade Procedures (553-3031-258)*
- *Communication Server 1000E: Upgrade Procedures (553-3041-258)*

Intended audience

This document is intended for individuals responsible for configuring CS 1000 and Meridian 1 software features.

Conventions

Terminology

In this document, the following systems are referred to generically as “system”:

- Communication Server 1000S (CS 1000S)
- Communication Server 1000M (CS 1000M)
- Communication Server 1000E (CS 1000E)
- Meridian 1

The following systems are referred to generically as “Small System”:

- Communication Server 1000M Chassis (CS 1000M Chassis)
- Communication Server 1000M Cabinet (CS 1000M Cabinet)
- Meridian 1 PBX 11C Chassis
- Meridian 1 PBX 11C Cabinet

The following systems are referred to generically as “Large System”:

- Communication Server 1000M Half Group (CS 1000M HG)

- Communication Server 1000M Single Group (CS 1000M SG)
- Communication Server 1000M Multi Group (CS 1000M MG)
- Meridian 1 PBX 51C
- Meridian 1 PBX 61C
- Meridian 1 PBX 81
- Meridian 1 PBX 81C

Format

The features contained in this document are described in feature modules that are arranged alphabetically by feature name. Each feature module contains some or all of the following information:

- Feature description
- Operating parameters
- Feature interactions
- Feature packaging
- Feature implementation
- Feature operation

Feature description

The feature description, immediately following the title, provides an overview of the feature's functionality.

Operating parameters

The operating parameters section explains hardware and software requirements, in addition to any limitations or parameters that may exist when operating the feature.

Feature interactions

The feature interactions section explains how the feature is affected by or affects other features. When two features are mutually exclusive, they cannot be active in the system at the same time.

Feature packaging

The feature packaging section provides the packaging information (package name, package number, and package mnemonic) for the feature, as well as any package dependencies.

Feature implementation

The feature implementation section provides Overlay (LD) tables for those overlays that must be used to activate the feature. The overlay tables list only the prompts required for the feature. Prompts in parenthesis are defaults. For a complete discussion of prompts, refer to *Software Input/Output: Administration* (553-3001-311).

Feature operation

The feature operation section outlines the procedures the end user must perform from their telephone in order for the feature to function.

Related information

This section lists information sources that relate to this document.

NTPs

The following NTPs are referenced in this document:

- *Attendant Administration User Guide*
- *M1250/M2250 Attendant Console User Guide*
- *Electronic Switched Network description* (309-3001-100)
- *Circuit Card: Description and Installation* (553-3001-211)
- *ISDN Basic Rate Interface: Installation and Configuration* (553-3001-218)
- *Software Input/Output: Administration* (553-3001-311)
- *Call Detail Recording: Description and Formats* (553-3001-350)
- *Automatic Call Distribution: Description* (553-3001-351)
- *Hospitality Features: Description and Operation* (553-3001-353)

- *Telephones and Consoles: Description, Installation, and Operation* (553-3001-367)
- *ISDN Primary Rate Interface: Features* (553-3001-369)
- *ISDN Basic Rate Interface: Features* (553-3001-380)
- *Software Input/Output: Maintenance* (553-3001-511)
- *Communication Server 1000M and Meridian 1: Large System Maintenance* (553-3021-500)

For information on branch offices, refer to *Branch Office: Installation and Configuration* (553-3001-214).

For an alphabetical list of packages, refer to the Features and Software options module in this document. This list provides the package name and the features available with the package, the package number, the package mnemonic, and the earliest software release for which the package is available.

For a complete list of features available, as well as where information on these features can be found, refer to the *Feature Listing* (553-3001-011).

Online

To access Nortel documentation online, click the **Technical Documentation** link under **Support** on the Nortel home page:

www.nortel.com/

CD-ROM

To obtain Nortel documentation on CD-ROM, contact your Nortel customer representative.

Features and Software options

Package Name	Number	Mnemonic	Release
1.5 Mbit Digital Trunk Interface	75	PBXI	5
— Hong Kong Digital Trunk Interface			
— Reference Clock Switching (See also packages 129, 131, and 154)			
16-Button Digitone/Multifrequency Telephone	144	ABCD	14
— 16-Button Digitone/Multifrequency Operation			
2 Mbit Digital Trunk Interface	129	DTI2	10
— DID Recall features on DTI2 for Italy – DID Offering			
— DID Recall features on DTI2 for Italy – DID Recall			
— Italian Central Office Special Services (see also packages 131, and 157)			
— Italian Periodic Pulse Metering			
— Pulsed E&M DTI2 Signaling			
— Reference Clock Switching (see also packages 75, 131, and 154)			
— R2MFC 1.5 Mbps DTI			
Continued...			

Package Name	Number	Mnemonic	Release
2 Mbit Digital Trunk Interface (continued)			
— 2 Mbps Digital Trunk Interface			
— 2 Mbps Digital Trunk Interface Enhancements:			
• Alarm Handling on DID Channels			
• Alarm Handling on Incoming COT/DID Calls			
• Call Clearance			
• Clock Synchronization			
• DID Call Offering			
• Disable Out-of-Service Alarm State			
• Fault Signal			
• Incoming Seizure			
• Outpulsing Delay			
• Release Control			
• Signal Recognition			
• Trunk Entering Alarm Status/Trunk Pack Exiting Alarm Status			
• 64 Kbps Alarm Indication Signal (AIS) Handling			
2.0 Mb/s Primary Rate Interface	154	PRI2	14
— Reference Clock Switching (see also packages 75, 129, and 131)			
2500 Set Features	18	SS25	1
— Call Hold, Permanent			
— 2500 Set Features			
500 Set Dial Access to Features	73	SS5	4
— 500 Set Features			
— 500/2500 Line Disconnect			

Package Name	Number	Mnemonic	Release
AC15 Recall	236	ACRL	20
— AC15 Recall: Timed Reminder Recall			
— AC15 Recall: Transfer from Norstar			
— AC15 Recall: Transfer from Meridian 1			
— Access Restrictions			
ACD/CDN Expansion	388	ACDE	25.40
— ACD/CDN Expansion			
Administration Set	256	ADMINSET	21
— Set-based Administration Enhancements			
Advanced ISDN Network Services	148	NTWK	13
— Advice of Charge – Charging Information and End of Call for NUMERIS Connectivity (see also package 101)			
— Advice of Charge Real-time Supplementary Services for NUMERIS and SWISSNET (see also package 101)			
— Alternative Conference PAD Levels			
— Alternative Loss Plan			
— Alternative Loss Plan for China			
Analog Calling Line Identification	349	ACLI	25
— CLID on Analog Trunks for Hong Kong (A-CLID)			
Aries Digital Sets	170	ARIE	14
— Meridian Communications Adapter			
— Meridian Modular Telephones			
Attendant Administration	54	AA	1
— Attendant Administration			

Package Name	Number	Mnemonic	Release
Attendant Alternative Answering	174	AAA	15
— Attendant Alternative Answering			
— Attendant Barge-In			
Attendant Announcement	384	AANN	25.40
— Attendant Announcement			
Attendant Break-In/Trunk Offer	127	BKI	1
— Attendant Break-In			
— Break-In busy Indication and Prevention			
— Break-In to Inquiry Calls			
— Break-In to Lockout Set Denied			
— Break-In with Secrecy			
— China Number 1 Signaling – Toll Operator Break-In (see also Package 131)			
— Network Individual Do Not Disturb (see also packages 9, and 159)			
— Attendant Busy Verify			
— Attendant Call Selection			
— Attendant Calls Waiting Indication			
— Attendant Consoles			
— Attendant Delay on Hold			
— Attendant Display of Speed Dial or Autodial			
Attendant Forward No Answer	134	AFNA	14
— Attendant Forward No Answer			
— Attendant Forward No Answer Expansion			
— Attendant Incoming Call Indicators			
— Attendant Interpositional Transfer			
— Attendant Lockout			

Package Name	Number	Mnemonic	Release
Attendant Overflow Position	56	AOP	1
— Attendant Overflow Position			
— Attendant Position Busy			
— Attendant Recall			
— Attendant Recall with Splitting			
Attendant Remote Call Forward	253	ARFW	20
— Call Forward, Remote (Network and Attendant Wide)			
— Attendant Secrecy			
— Attendant Splitting			
— Attendant Trunk Group Busy Indication			
— Audible Reminder of Held Calls			
Autodial Tandem Transfer	258	ATX	20
— Autodial Tandem Transfer			
Automated Modem Pooling	78	AMP	5
Automatic Answerback	47	AAB	1
— Automatic Answerback			
— Automatic Call Distribution Answer Time in Night Service			
— Automatic Call Distribution Call Delays (see also package 40)			
— Automatic Call Distribution Call Priority (see also package 40)			
— Automatic Call Distribution Call Waiting Thresholds (see also packages 40 and 41)			

Continued...

Package Name	Number	Mnemonic	Release
Automatic Answerback (continued)			
— Automatic Call Distribution Calls on Hold (see also package 40)			
— Automatic Call Distribution Dynamic Queue Threshold (see also package 40)			
Automatic Call Distribution Enhanced Overflow	178	EOVF	15
— Automatic Call Distribution Enhanced Overflow			
Automatic Call Distribution Load Management	43	LMAN	1
— Automatic Call Distribution Load Management Reports			
Automatic Call Distribution Night Call Forward without Disconnect Supervision	289	ADSP	23
— Call Processor Input/Output)			
Automatic Call Distribution Package C	42	ACDC	1
— Automatic Call Distribution Report Control (see also package 50)			
— 500/2500 Line Disconnect			
Automatic Call Distribution Package D, Auxiliary Link Processor	51	LNK	2
— ACD Package D Auxiliary Processor Link			
Automatic Call Distribution Package D, Auxiliary Security	114	AUXS	12
— ACD-D Auxiliary Security			
Automatic Call Distribution Package D	50	ACDD	2
— Automatic Call Distribution Report Control (see also package 42)			
— Automatic Call Distribution Threshold Visual Indication (see also packages 40 and 41)			
Automatic Call Distribution, Account Code	155	ACNT	13
— Automatic Call Distribution Activity Code			

Package Name	Number	Mnemonic	Release
Automatic Call Distribution, Package A	45	ACDA	1
— Automatic Call Distribution			
Automatic Call Distribution, Package B	41	ACDB	1
— Automatic Call Distribution Call Waiting Thresholds (see also packages 40, and 131)			
— Automatic Call Distribution Least Call Queuing			
— Automatic Call Distribution Threshold Visual Indication (see also packages 40, and 131)			
Automatic Call Distribution, Priority Agent	116	PAGT	12
— Automatic Call Distribution Priority Agent			
Automatic Call Distribution, Timed Overflow Queuing	111	TOF	10
— ACD Timed Overflow			
— Automatic Gain Control Inhibit			
— Automatic Guard Detection			
— Automatic Hold			
Automatic ID of Outward Dialing	3	AIOD	1
Automatic Installation (Option 11 only)	200	AINS	16
— Automatic Installation			
Automatic Line Selection	72	LSEL	4
— Automatic Line Selection			
Automatic Number Identification Route Selection	13	ANIR	1
— Automatic Number Identification Route Selection			
Automatic Number Identification	12	ANI	1
— Automatic Number Identification			
— Automatic Number Identification on DTI			
— Automatic Preselection of Prime Directory Number			

Package Name	Number	Mnemonic	Release
Automatic Redial	304	ARDL	22
— Automatic Redial			
— Automatic Timed Reminders			
Automatic Wake-Up	102	AWU	10
— Automatic Wake Up			
Auxiliary Processor Link	109	APL	10
— Auxiliary Processor Link			
— Auxiliary Signaling			
— B34 Dynamic Loss Switching (see also packages 164 and 203)			
Background Terminal	99	BGD	10
— Background Terminal Facility			
Basic Alternate Route Selection	57	BARS	1
— Network Alternate Route Selection/Basic Alternate Route Selection Enhancement – Local Termination (see also package 58)			
Basic Authorization Code	25	BAUT	1
— Basic Authorization Code			
Basic Automatic Call Distribution	40	BACD	1
— Automatic Call Distribution Alternate Call Answer			
— Automatic Call Distribution Call Delays (see also package 131)			
— Automatic Call Distribution Call Priority (see also package 131)			
— Automatic Call Distribution Call Waiting Thresholds (see also packages 41, and 131)			
— Automatic Call Distribution Calls on Hold (see also package 131)			

Continued...

Package Name	Number	Mnemonic	Release
Basic Automatic Call Distribution (continued)			
— Automatic Call Distribution Dynamic Queue Threshold (see also package 131)			
— Automatic Call Distribution Enhancements			
— Automatic Call Distribution in Night Service			
— Automatic Call Distribution Threshold Visual Indication (see also packages 41, and 131)			
— INIT Automatic Call Distribution (ACD) Queue Call Restore			
Basic Call Processing	0	BASIC	1
Basic Queuing	28	BQUE	1
— Basic Queuing			
Basic Rate Interface	216	BRI	18
— Integrated Services Digital Network Basic Rate Interface (see also packages 216, and 235)			
Basic Routing	14	BRTE	1
— Basic Routing			
Boss Secretary Filtering (FFC activation)	198	FTCSF	15
— Flexible Feature Code Boss Secretarial Filtering			
BRI line application	235	BRIL	18
— Integrated Services Digital Network Basic Rate Interface (see also packages 216, and 233)			
— ISDN Basic Rate Interface Connected Line Presentation/Restriction			
— Bridging			
— Busy Lamp Field Array			

Package Name	Number	Mnemonic	Release
Business Network Express	367	BNE	25
— Business Network Express/EuroISDN Call Diversion			
— Business Network Express/EuroISDN Explicit Call Transfer			
— Business Network Express/Name and Private Number Display			
Busy Tone Detection	294	BTD	21
— China Phase II – Busy Tone Detection			
— Busy Tone Detection for Asia Pacific and CALA			
— Call Capacity Report			
Call Center Transfer Connect	393	UUI	3.0
— Call Center Transfer Connect			
Call Detail Recording Enhancement	259	CDRX	20
— Call Detail Recording Enhancement			
Call Detail Recording Expansion (7 digit)	151	CDRE	13
— Call Detail Recording Expansion			
Call Detail Recording on Teletype Terminal	5	CTY	1
— CDR on TTY			
Call Detail Recording Queue Record	83	CDRQ	3
— ACD CDR Queue Record			
Call Detail Recording, Data Link	6	CLNK	1

Package Name	Number	Mnemonic	Release
Call Detail Recording	4	CDR	1
— Call Detail Recording			
— Call Detail Recording Enhancement			
— Call Detail Recording on Redirected Incoming Calls			
— Call Detail Recording with Optional Digit Suppression			
— Call Detail Recording 100 Hour Call			
— NPI and TON in CDR Tickets			
— Call Forward and Busy Status			
— Call Forward Busy			
— Call Forward by Call Type			
— Call Forward External Deny			
— Call Forward No Answer, Second Level			
— Call Forward No Answer/Flexible Call Forward No Answer			
— Call Forward Save on SYSLOAD			
— Call Forward Save on SYSLOAD			
— Call Forward to Trunk Restriction			
— Call Forward, Break-In & Hunt Internal/External Network Wide			
— Call Forward, Internal Calls			
Call ID (for AML applications)	247	CALL ID	19
— Call Identification			
Call Page Networkwide	307	PAGENET	22
— Call Page Network Wide			

Package Name	Number	Mnemonic	Release
Call Park Networkwide	306	CPRKNET	22
— Call Park Network Wide			
Call Park	33	CPRK	2
— Call Park			
— Recall after Parking			
— Call Pickup			
Call Processor Input/Output (Option 81)	298	CPIO	21
— Call Processor Input/Output)			
— Call Redirection by Time of Day			
— Call Transfer			
Call Waiting Notification (Meridian 911)	225	CWNT	19
— Call Waiting Notification (Meridian 911)			
— Call Waiting/Internal Call Waiting			
Call-by-Call Service	117	CBC	13
— Call-by-Call Service			
Called Party Control on Internal Calls	310	CPCI	22
— China Phase III - Called Party Control on Internal Calls			
— Called Party Disconnect Control			
Calling line Identification in Call Detail Recording	118	CCDR	13
— Calling Line Identification in Call Detail Recording			
Calling Party Name Display	95	CPND	10
— Call Party Name Display			
— DNIS Name Display (see also packages 98, and 113)			
— Calling Party Name Display Denied			

Package Name	Number	Mnemonic	Release
Calling Party Privacy	301	CPP	21
— Calling Party Privacy			
— Camp-On			
— Camp-On			
— Camp-on to Multiple Appearance Directory Number			
— Capacity Expansion			
— Card LED Status			
Centralized Attendant Services (Main)	26	CASM	1
— Centralized Attendant Services - Main			
Centralized Attendant Services (Remote)	27	CASR	1
— Centralized Attendant Services – Remote			
— Centralized Multiple Line Emulation			
Charge Account for CDR	23	CHG	1
— Charge Account and Calling Party Number			
Charge Account/Authorization Code	24	CAB	1
— Charge Account/Authorization Code Base			
— Charge Display at End of Call (see also package 101)			
China Attendant Monitor Package	285	CHINA	21
— China – Attendant Monitor			
— China Number 1 Signaling – Toll Operator Break-In (see also Package 127)			
— China Number 1 Signaling Enhancements			
— China Number 1 Signaling Trunk Enhancements (see also packages 49, 113, and 128)			

Package Name	Number	Mnemonic	Release
China Toll Package	292	CHTL	21
— China Phase II – Toll Call Loss Plan			
CLASS Calling Name Delivery	333	CNAME	23
— CLASS			
CLASS Calling Number Delivery	332	CNUMB	23
— CLASS			
Collect Call Blocking	290	CCB	21
— Collect Call Blocking			
Command Status Link	77	CSL	8
— Command Status Link			
Commonwealth of Independent States Multifrequency Shuttle Signaling	326	CISMFS	23
— CIS Multifrequency Shuttle Signaling			
Commonwealth of Independent States Trunks	221	CIST	21
— Commonwealth of Independent States Digital Trunk Interface			
— Three-Wire Analog Trunk – CIS			
— Commonwealth of Independent States Automatic Number Identification (ANI) Digits Manipulation and Gateways Enhancements			24
— Commonwealth of Independent States Automatic Number Identification (ANI) Reception			24
— Commonwealth of Independent States Toll Dial Tone Detection			24
— Conference			
— Conference Warning Tone Enhancement for Italy			
Console Operations	169	COOP	14
— Console Operations			

Package Name	Number	Mnemonic	Release
Console Presentation Group	172	CPGS	15
— Console Presentation Group Level Services			
Controlled Class Of Service	81	CCOS	7
— Controlled Class of Service			
Coordinated Dialing Plan	59	CDP	1
— Coordinated Dialing Plan			
Core Network Module	299	CORENET	21
— Core Network Module			
— CP3			
Corporate Directory	381	CDIR	25
— Corporate Directory			
CSL with Alpha Signalling	85	CSLA	8
Customer Controlled Routing	215	CCR	17
— Customer Controlled Routing			
— MFC Interworking with AML Based Applications (see also packages 128, and 214)			
— Dataport Hunting			
CP Pentium® Backplane for Intel® Machine	368	CPP_CNI	25
Deluxe Hold	71	DHLD	4
— Call Hold, Deluxe			
— Call Hold, Individual Hold Enhancement			
Departmental Listed Directory Number	76	DLDN	5
Dial Intercom	21	DI	1
— Dial Intercom			
— Distinctive Ringing for Dial Intercom			
— Dial Pulse/Dual-tone Multifrequency Conversion			

Package Name	Number	Mnemonic	Release
Dial Tone Detector	138	DTD	10
— Dial Tone Detection			
— Flexible Dial Tone Detection			
Dialed Number Identification System	98	DNIS	10
— Dialed Number Identification Services			
— Dialed Number Identification Services Length Flexibility			
— Dialed Number Identification Services Name Display (see also packages 95, and 131)			
— 7 Digit DNIS for MAX			
— N Digit DNIS			24
Digit Display	19	DDSP	1
— Digit Display			
Digit Key Signaling	180	DKS	1
Digital Access Signaling System 2	124	DASS2	16
— Analog Private Network Signaling System (APNSS) (see also packages 190, 122, and 123)			
— DASS2/DPNSS1 – Integrated Digital Access (see also packages 122, and 123)			
Digital Private Network Signaling Network Services (DPNSS1)	231	DNWK	16
— Attendant Call Offer			
— Attendant Timed Reminder Recall and Attendant Third Party Service			
— Call Back when Free and Next Used			
— D-channel Handler Interface Expansion			
— Extension Three-Party Service			
Continued...			

Package Name	Number	Mnemonic	Release
Digital Private Network Signaling Network Services (DPNSS1) (continued)			
— Loop Avoidance			
— Redirection			
— Route Optimization			
— Step Back on Congestion			
— Diversion			
— Night Service			
— Route Optimisation/MCDN Trunk Anti-Tromboning Interworking			
Digital Private Network Signaling System 1 Message Waiting Indication	325	DMWI	23
— DPNSS1 Message Waiting Indication			
Digital Private Network Signaling System 1	123	DPNSS	16
— Analog Private Network Signaling System (APNSS) (see also packages 190, 122, and 124)			
— DASS2/DPNSS1 – Integrated Digital Access (see also packages 122, and 124)			
— Digital Trunk Interface Enhancements			
— Digitone Receiver Enhancements: – Digitone Receiver Time-out Enhancement			
— Digitone Receiver Enhancements: – Quad Density Digitone Receiver Card			
Direct Inward Dialing to TIE (Japan only)	176	DTOT	16
— Direct Inward Dialing to TIE			
— Direct Inward Dialing to TIE Connection			

Package Name	Number	Mnemonic	Release
Direct Inward System Access	22	DISA	1
— Call Park on Unsupervised Trunks			
— Direct Inward System Access			
— Direct Inward System Access on Unsupervised Trunks			
Direct Private Network Access	250	DPNA	21
— Direct Private Network Access			
Directed Call Pickup	115	DCP	12
— Call Pickup, Directed			
— Directory Number Delayed Ringing			
Directory Number Expansion (7 Digit)	150	DNXP	13
— Directory Number Expansion			
— Directory Number			
• Flexible Attendant Directory Number			
• Listed Directory Numbers			
• Single Appearance Directory Number			
• Multiple Appearance Directory Number			
• Prime Directory Number			
— Diskette Overflow Warning			
— Display of Calling Party Denied			
Distinctive Ringing	74	DRNG	4/9
— Distinctive/New Distinctive Ringing			
Do Not Disturb, Group	16	DNDG	1
— Do Not Disturb Group			

Package Name	Number	Mnemonic	Release
Do Not Disturb, Individual	9	DNDI	1
— Do Not Disturb			
— Network Individual Do Not Disturb (see also packages 127, and 159)			
— Electronic Brandling			
Emergency Services Access Calling Number Mapping	331	ESA_CLMP	23
— Emergency Services Access (See also packages 329 and 330)			
Emergency Services Access Supplementary	330	ESA_SUPP	23
— Emergency Services Access (See also packages 329 and 331)			
Emergency Services Access	329	ESA	23
— Emergency Services Access (See also packages 330 and 331)			
— End of Selection			
— End of Selection Busy			
— End-of-Dialing on Direct Inward/Outward Dialing Incoming Call Indicator Enhancement			
End-To-End Signaling	10	EES	1
— Attendant End-to-End Signaling			
— End-to-End Signaling			
Enhanced ACD Routing	214	EAR	17
— Enhanced Automatic Call Distribution Routing			
— MFC Interworking with AML Based Applications (see also packages 128, and 215)			
Enhanced Call Trace	215	ECT	18
— Customer Controlled Routing			
— MFC Interworking with AML Based Applications (see also packages 128, and 214)			

Package Name	Number	Mnemonic	Release
Enhanced Controlled Class of Service	173	ECCS	15
Enhanced DPNSS Services	288	DPNSS_ES	21
— DPNSS1 Executive Intrusion			
Enhanced DPNSS1 Gateway	284	DPNSS189I	20
— Enhanced DPNSS1 Gateway			
Enhanced Hot Line	70	HOT	4/10
— Hot Line			
— Network Intercom			
— Enhanced input/output buffering			
— Enhanced Maintenance (Patching)			
Enhanced Music	119	EMUS	12
— Music, Enhanced			
Enhanced Night Service	133	ENS	20
— Enhanced Night Service			
— Enhanced package printout			
— Equal Access Compliance			
Euro ISDN Trunk - Network Side	309	MASTER	22
— EuroISDN Trunk - Network Side			
Euro ISDN	261	EURO	20
— ISDN – Advice of Charge for EuroISDN			
— ISDN BRI and PRI Trunk Access for Europe (EuroISDN)			
— EUROISDN Continuation			
Euro Supplementary Service	323	ETSI_SS	22
— EuroISDN Call Completion Supplementary Service			

Package Name	Number	Mnemonic	Release
Executive Distinctive Ringing	185	EDRG	16
— Executive Distinctive Ringing			
Fast Tone and Digit Switch	87	FTDS	7
— Fast Tone Digit Switch			
FCC Compliance for DID Answer Supervision	223	FCC68	17
— Federal Communications Commission Compliance for DID Answer Supervision			
Feature Group D	158	FGD	17
— Feature Group D (Inbound to Meridian 1)			
— Federal Communications Commission Compliance for Equal Access			
— First-Second Degree Busy Indication			
— First-Second Degree Busy Indication, ISDN			
— Flexible Attendant Call Waiting Thresholds			
— Flexible Busy Tone Timer			
Fiber Network	365	FIBN	25
Flexible Call Back Queuing	61	FCBQ	1
— Flexible Call Back Queuing			
Flexible Direct Inward Dialing	362	FDID	24
— Flexible Direct Inward Dialing			
Flexible Feature Codes	139	FFC	15
— Call Forward/Hunt Override Via Flexible Feature Code			
— China Number 1 Signaling – Flexible Feature Codes			
— Dial Access to Group Calls (see also package 48).			
Continued...			

Package Name	Number	Mnemonic	Release
Flexible Feature Codes (continued)			
— Direct Inward Dialing Call Forward No Answer Timer			
— Electronic Lock Network Wide/Electronic Lock on Private Lines			
— Flexible Feature Codes			
— Automatic Wake FFC Delimiter			
— Call Forward Destination Deactivation			
Flexible Numbering Plan	160	FNP	14
— Alternative Routing for DID/DOD			
— Flexible Numbering Plan			
— Special Dial Tones after Dialed Numbers			
— Flexible Numbering Plan Enhancement			
— Flexible Orbiting Prevention Timer			
Flexible Tones and Cadences	125	FTC	16
— Flexible Tone and Digit Switch Control			
— Reverse Dial on Routes and Telephones			
— Tones and Cadences			
Forced Charge Account	52	FCA	1
— Charge Account, Forced			
French Type Approval	197	FRTA	15
— Camp-on to a Set in Ringback or Dialing			
— Forward No Answer Call Waiting Direct Inward Dialing			
— Group Hunt Queuing (see also package 120)			
— Group Hunt Queuing Limitation Enhancement (see also package 120)			
— Loopback on Central Office Trunks			
Geographic Redundancy Primary system	404	GRPRIM	4.0

Package Name	Number	Mnemonic	Release
Geographic Redundancy Secondary system	405	GRSEC	4.0
Group Call	48	GRP	1
— Dial Access to Group Calls (see also package 139).			
— Group Call			
— Group Hunt Queuing Limitation (see also package 120)			
Group Hunt/DN Access to SCL	120	PLDN	15
— Group Hunt Queuing (see also package 197)			
— Group Hunt Queuing Limitation (see also package 131)			
— Group Hunt Queuing Limitation Enhancement (see also package 197)			
— Group Hunt			
— Speed Call Directory Number Access			
— Handset Volume Reset			
— Handsfree Download (Meridian Digital Telephones)			
— Held Call Clearing			
H323 Virtual Trunk	399	H323_VTRK	3.0
— IP Peer Networking Phase 2			
— Branch Office			
HiMail Fax Server	195	FAXS	18
History File	55	HIST	1
— History File			
Hold in Queue for IVR	218	IVR	18
Hospitality Management	166	HOSP	16

Package Name	Number	Mnemonic	Release
Hospitality Screen Enhancement	208	HSE	17
— Hospitality Enhancements: Display Enhancements			
— Hunting By Call Type			
— Hunting			
• Circular Hunting			
• Linear Hunting			
• Secretarial Hunting			
• Short Hunting			
• Data Port Hunting			
• Trunk Hunting			
— Incoming Call Indicator Enhancement			
Incoming DID Digit Conversion	113	IDC	12
— China Number 1 Signaling Trunk Enhancements (see also packages 49, 128, and 131)			
— DNIS Name Display (see also packages 95, and 98)			
— Incoming DID Digit Conversion			
— Incoming Trunk Programmable Calling Line Identification			
— Incremental Software Management			
— Input/Output Access and System Limits			
Integrated Digital Access	122	IDA	16
— Analog Private Network Signaling System (APNSS) (see also packages 190, 123, and 124)			
— DASS2/DPNSS1 – Integrated Digital Access (see also packages 123 and 124)			
— DPNSS1 Satellite			
— DASS2/DPNSS INIT Call Cutoff			

Package Name	Number	Mnemonic	Release
Integrated Message System UST and UMG are part of IMS Package.	35	IMS	2
— Integrated Messaging System Link			
Integrated Services Digital Network Application Module Link for Third Party Vendors	153	IAP3P	13
— Application Module Link			
— Network Application Protocol Link Enhancement			
Integrated Services Digital Network BRI Trunk Access	233	BRIT	18
— Integrated Services Digital Network Basic Rate Interface (see also packages 216, and 235)			
Integrated Services Digital Network Supplementary Features	161	ISDN INTL- SUP	14
— Call Connection Restriction (see also packages 146 and 147)			
— Direct Inward Dialing to Network Calling			
— Incoming Digit Conversion Enhancement			
— Network Time Synchronization			
— X08 to X11 Gateway			
Integrated Services Digital Network Signaling Link	147	ISL	13
— Call Connection Restriction (see also packages 146 and 161)			
Integrated Services Digital Network	145	ISDN	13
— Backup D-Channel to DMS-100/250 and AT&T 4ESS			
— Call Pickup Network Wide			
— D-Channel Error Reporting and Monitoring			
— Integrated Services Digital Network (ISDN) Primary Rate Interface			
Continued...			

Package Name	Number	Mnemonic	Release
Integrated Services Digital Network (continued)			
— Network Name Display (Meridian 1 to DMS-100/250)			
— Total Redirection Count			
— T309 Time			
— Integrated Voice and Data			
Intercept Computer Interface	143	ICP	10
— Intercept Computer Dial from Directory			
— Intercept Computer Enhancements			
— Intercept Computer Flexible DN Length			
— Intercept Computer Interface			
— Intercept Computer Meridian Mail Interactions			
— Intercept Computer Network Screen Activation, Flexible DN, Meridian Mail Interactions			
— Intercept Treatment Enhancements			
Intercept Treatment	11	INTR	1
— Intercept Treatment			
Inter-Exchange Carrier	149	IEC	13
— Inter Exchange Carrier			
Internal CDR	108	ICDR	10
— Internal Call Detail Recording			
International 1.5/2.0 Mb/s Gateway	167	GPRI	18
— Radio Paging			
— International Meridian 1			
International nB+D	255	INBD	20
— ISDN PRI D70 Trunk Access for Japan (nB+D)			

Package Name	Number	Mnemonic	Release
International Primary Rate Access (CO)	146	PRA	13
— Call Connection Restriction (see also packages 147 and 161)			
— Integrated Services Digital Network Primary Rate Access			
— Integrated Services Digital Network Primary Rate Access Central Office Connectivity to Japan D70			
International Primary Rate Access	202	IPRA	15
— Integrated Services Access/Call by Call Service Selection Enhancements			
— Integrated Services Digital Network Primary Rate Access to 1TR6 Connectivity			
— Integrated Services Digital Network Primary Rate Access to NUMERIS Connectivity			
— Integrated Services Digital Network Primary Rate Access to SwissNet 2 Connectivity			
— Integrated Services Digital Network Primary Rate Access to SYS-12 Connectivity			
International Supplementary Features	131	SUPP	9
— IODU/C			
IP Expansion	295	IPEX	25.40
— IP Expansion			
IP Media Gateway	403	IPMG	4.0
ISDN Semi-Permanent Connection	313	ISPC	22
— ISDN Semi-Permanent Connections for Australia			
— Italian Central Office Special Services (see also packages 129, and 157)			
Japan Central Office Trunks	97	JPN	9
— Japan Central Office Trunk			

Package Name	Number	Mnemonic	Release
Japan Digital Multiplex Interface	136	JDMI	14
— Japan Digital Multiplex Interface			
Japan Telecommunication Technology Committee	335	JTTC	23
— Japan TTC Common Channel Signaling			
Japan Tone and Digit Switch	171	JTDS	14
— Japan Tone and Digit Switch			
Last Number Redial	90	LNR	8
— Last Number Redial			
Latin American Spanish	279	MLMS_SPL	20
— Latin American Spanish			
Limited Access to Overlays	164	LAPW	16
— B34 Dynamic Loss Switching (see also packages 131 and 203)			
— Faster I/O			
— Limited Access to Overlays			
— Limited Access to Overlays Password Enhancement			
— Teletype Terminal Access Control in Multi-Customer Environment (see also package 131)			
Line Load Control	105	LLC	10
— Line Load Control			
— Line Lockout			
Local Steering Code Modifications	137	LSCM	10
— Local Steering Code Modifications			
— Lockout, DID Second Degree Busy and MFE Signaling Treatments			
— LOGIVOX Telephone			
Continued...			

Package Name	Number	Mnemonic	Release
Local Steering Code Modifications (continued)			
— Loop Start Answer Supervision XUT			
— Loop Start Supervisory Trunks			
— Loop Start Supervisory Trunks (Incoming Calls)			
Location Code Expansion	400	LOCX	4.0
M2000 Digital Sets	88	DSET	7
— Distinctive Ringing for Digital Telephones			
— M2317 Telephones			
— Flexible Voice/Data Terminal Number			
M2250 Attendant Console	140	DCON	15
— Digital Attendant Console			
M2317 Digital Sets	91	DLT2	9
— M2317 Digital Sets			
M3000 Digital Sets	89	TSET	7
— M3000 Telephones			
M3900 Full Icon Support	397	ICON_ PACKAGE	3.0
— M3900 Full Icon Support			
M3900 Phase III Virtual Office Enhancement	387	VIR_OFF_ ENH	25.40
— Virtual Office Enhancement			
M3900 Ring Again	396	M3900_RGA_ PROG	3.0
M911 Enhancement Display	249	M911 ENH	25
— 10/20 Digit ANI on 911 Calls			
Maid Identification	210	MAID	17
— Maid Identification			
— Make Set Busy and Voice Call Override			

Package Name	Number	Mnemonic	Release
Make Set Busy	17	MSB	1
— Make Set Busy			
— Make Set Busy Improvement			
— Malicious Call Trace on Direct Inward Dialing			
Malicious Call Trace	107	MCT	10
— Enhanced Malicious Call Trace			
— Malicious Call Trace			
— Malicious Call Trace DN/TN Print			
— Malicious Call Trace Idle			
— Manual Line Service			
— Manual Service Recall to Attendant			
— Manual Signaling (Buzz)			
— Manual Trunk Service			
MAT 5.0	296	MAT	22
— Meridian 1 Attendant Console Enhancements (see also package 76)			
Meridian 1 Companion Option	240	MCMO	19
— Nortel Networks Integrated DECT			
MCDN End to End Transparency	348	MEET	24
Meridian 1 Enhanced Conference, TDS and MFS	204	XCT0	15
— Meridian 1 Enhanced Conference, TDS and MFS			
Meridian 1 Fault Management	243	ALRM_FILTER	19
— Alarm Management			
— Meridian 1 Initialization Prevention and Recovery			
Meridian 1 Microcellular Option	303	MMO	22
Meridian 1 Mobility Multi-Site Networking	314	MMSN	22

Package Name	Number	Mnemonic	Release
Meridian 1 Packet Handler	248	MPH	19
— Meridian 1 Packet Handler			
Meridian 1 Superloop Administration (LD 97)	205	XCT1	15
— Extended DID/DOD Software Support – Europe			
— Extended Flexible Central Office Trunk Software Support			
— Extended Tone Detector and Global Parameters Download (see also package 203)			
— Generic XFCOT Software Support			
Meridian 1 XPE	203	XPE	15
— B34 Codec Static Loss Plan Downloading			
— B34 Dynamic Loss Switching (see also packages 131, and 164)			
— Extended Multifrequency Compelled Sender/ Receiver			
— Extended Tone Detector and Global Parameters Download (see also package 205)			
— Intelligent Peripheral Equipment Software Support Enhancements			
Meridian 911	224	M911	19
— Meridian 911 Enhancements – Call Abandon			
— Meridian 911 Enhancements – MADN Display Coordination			
Meridian Hospitality Voice Service	179	HVS	16
— Meridian Hospitality Voice Services			
Meridian Link Modular Server	209	MLM	16
— Meridian Link Enhancements			
Meridian SL-1 ST Package	96	SLST	9
— Meridian SL-1 ST Package			

Package Name	Number	Mnemonic	Release
Message Intercept	163	MINT	15
— Message Intercept			
Message Waiting Center	46	MWC	1
— Message Waiting Lamp Maintenance			
— Message Waiting Unconditional			
— Meridian Mail Trunk Access Restriction			
Message Waiting Indication Interworking with DMS	219	MWI	19
— Message Waiting Indication (MWI) Interworking			
Mini CDR	31	MCDR	1
Mobility Server	302	MOSR	22
— Modular Telephone Relocation			
Multifrequency Compelled Signaling	128	MFC	9
— China Number 1 Signaling Trunk Enhancements (see also packages 49, 113, and 131)			
— China Number 1 Signaling – Active Feature Dial Tone (see also package 126)			
— China Number 1 Signaling – Audible Alarm (see also package 126)			
— China Number 1 Signaling – Vacant Number Announcement (see also package 126)			
— India Phase 2			
— R2 Multifrequency Compelled Signaling (MFC) DID/DTMF DOD			
— R2 Multifrequency Compelled Signaling (MFC) Selective Route To Attendant			

Continued...

Package Name	Number	Mnemonic	Release
Multifrequency Compelled Signaling (continued)			
— MFC Interworking with AML Based Applications (see also packages 214 and 215)			
— R2Multifrequency Compelled Signaling Timer Control			
— Semi-Compelled MFC and Calling Name Identification Charges			
Multifrequency Signaling for Socotel	135	MFE	10
— Multifrequency Signaling for Socotel			
Multi-Language I/O Package	211	MLIO	16
— Multi-language TTY Input/Output			
Multi-Language Wake Up	206	MLWU	16
— Multi-language Wake Up			
— Multi-Party Operation Enhancements			
Multi-Party Operations	141	MPO	20
— Attendant Clearing during Night Service			
— Multi-Party Operations			
— Multiple Appearance DN Redirection Prime			
— Multiple Console Operation			
Multiple Queue Assignment	297	MQA	21
— Multiple Queue Assignment			
Multiple-Customer Operation	2	CUST	1
— Multiple Customer Operation			
Multiple-Tenant Service	86	TENS	7
— Multi-Tenant Service			

Package Name	Number	Mnemonic	Release
Multi-purpose Serial Data Link Serial Data Interface	227	MSDL SDI	19
— Multi-purpose Serial Data Link Serial Data Interface			
Multi-purpose Serial Data Link Single Terminal Access	228	MSDL STA	19
— Single Terminal Access			
Multi-purpose Serial Data Link	222	MSDL	18
— Multi-purpose Serial Data Link			
Multi-Site Mobility Networking	370	MSMN	25
Multi-User Login	242	MULTI_USER	19
— Multi-User Login			
Music Broadcast	328	MUSBRD	23
— Music Broadcast			
Music	44	MUS	1
— Music			
N/W Communications Management Center	30	CMAC	1
Network Alternate Route Selection	58	NARS	1
— Equi-distribution Network Attendant Service Routing (see also package 159)			
— Network Alternate Route Selection/Basic Alternate Route Selection Enhancement – Local Termination (see also package 57)			
— Network Anti-tromboning			
— Virtual Network Services/Virtual Directory Number Expansion (see also package 183)			

Package Name	Number	Mnemonic	Release
Network Attendant Service	159	NAS	20
— Equi-distribution Network Attendant Service Routing (see also package 58)			
— Network Individual Do Not Disturb (See also packages 9 and 127).			
Network Authorization Code	63	NAUT	1
— Network Authorization Code			
Network Automatic Call Distribution	207	NACD	15
— Network Automatic Call Distribution			
Network Call Back Queuing	38	MCBQ	2
— Network Call Back Queuing			
Network Call Transfer	67	NXFR	3
Network Class Of Service	32	NCOS	1
— Network Class of Service			
Network Message Services	175	NMS	16
Network Priority Queuing	60	PQUE	1
— Network Priority Queuing			
Network Signaling	37	NSIG	2
— Network Signaling			
Network Speed Call	39	NSC	2
— Network Speed Call			
Network Traffic Measurements	29	NTRF	1
— Network Traffic Measurement			
New Flexible Code Restriction	49	NFCR	2
— China Number 1 Signaling Trunk Enhancements (see also packages 113, 128, and 131)			
— New Flexible Code Restriction			

Package Name	Number	Mnemonic	Release
New Format CDR	234	FCDR	18
— Call Detail Recording Time to Answer			
— CDR on Busy Tone			
Next Generation Connectivity	324	NGEN	22
NI-2 Call By Call Service Selection	334	NI-2 CBC	23
— Night Restriction Classes of Service			
— Night Service			
— Night Service Enhancements – All Calls Remain Queued for Night Service			
— Night Service Enhancements – Recall to Night DN			
— Night Service Enhancements – Requeuing of Attendant Present Calls			
— Night Service Enhancements – Requeuing of Attendant Present Calls			
NI-2 Name Display Service	385	NDS	25.40
— NI-2 Name Display Supplementary Service			
Nortel Symposium Call Center	311	NGCC	22
North America National ISDN Class II Equipment	291	NI2	21
— North American Numbering Plan			
— Off-Hook Alarm Security			
Observe Agent Security	394	OAS	3.0
— Observe Agent Security			
Off-Hook Queuing	62	OHQ	1
— Network Drop Back Busy and Off-hook Queuing (see also package 192)			

Package Name	Number	Mnemonic	Release
Office Data Administration System	20	ODAS	1
— Office Data Administration System			
— Off-Premise Extension			
On Hold On Loudspeaker	196	OHOL	20
— On-Hook Dialing			
Open Alarms	315	OPEN ALARM	22
Operator Call Back (China #1)	126	OPCB	14
— Busy Verify on Calling Party Control Calls			
— China Number 1 Signaling – Active Feature Dial Tone (see also package 128)			
— China Number 1 Signaling – Audible Alarm (see also package 128)			
— China Number 1 Signaling – Called Party Control			
— China Number 1 Signaling – Calling Number Identification on Outgoing Multifrequency Compelled Signaling			
— China Number 1 Signaling – Calling Party Control			
— China Number 1 Signaling – Flexible Timers			
— China Number 1 Signaling – KE Multifrequency Compelled Tandem Signaling			
— China Number 1 Signaling – Malicious Call Trace Enhancement			
— China Number 1 Signaling – Off-hook Tone			
— China Number 1 Signaling – Toll Call Identification			
— China Number 1 Signaling – Toll Operator Call Back			
— China Number 1 Signaling – Toll Operator Call Back Enhancement			
— China Number 1 Signaling – Vacant Number Announcement (see also Package 128)			

Package Name	Number	Mnemonic	Release
Optional Features	1	OPTF	1
— Autodial			
— Call Forward All Calls			
— Ring Again			
— Speed Call			
— Speed Call on Private Lines (see also package 0)			
— Speed Call/Autodial with Authorization Codes (see also package 34)			
— Speed Call Delimiter (see also package 34)			
Optional Outpulsing Delay	79	OOD	5
— Optional Outpulsing Delay			
Originator Routing Control	192	ORC_RVQ	18
— Network Drop Back Busy and Off-hook Queuing (see also package 62)			
— Remote Virtual Queuing			
— Out-of-Service Unit			
Outpulsing, asterisk (*) and octothorpe (#)	104	OPAO	
— Outpulsing of Asterisk “*” and Octothorpe “#”			
Overlap Signaling (M1 to M1 and M1 to 1TR6 CO)	184	OVL P	15
— Overlap Signaling			
— Overlay 45 Limited Repeats			
— Overlay Cache Memory			
— Override			
— Paging			
— Partial Dial Timing			
— PBX (500/2500) Telephones			
Continued...			

Package Name	Number	Mnemonic	Release
Overlap Signaling (M1 to M1 and M1 to 1TR6 CO) (continued)			
— Periodic Camp-on Tone			
— Periodic Clearing			
— Periodic Clearing Enhancement			
— Periodic Clearing on RAN, Meridian Mail, ACD, and Music			
Personal Call Assistant	398	PCA	3.0
— Personal Call Assistant			
Phantom TN	254	PHTN	20
— Phantom TNs			
— Position Busy with Call on Hold			
PPM/Message Registration	101	MR	10
— Advice of Charge Real-time Supplementary Services for NUMERIS and SWISSNET (see also package 131)			
— Advice of Charge – Charging Information and End of Call for NUMERIS Connectivity (see also package 131)			
— Message Registration			
— Periodic Pulse Metering			
— Predictive Dialing			
Pretranslation	92	PXLT	8
— Pretranslation			
— Preventing Reciprocal Call Forward			
Priority Network Override	389	PONW	25.40
— Network Breakin and Force Disconnect			

Package Name	Number	Mnemonic	Release
Priority Override/Forced Camp-On	186	POVR	20
— Forced Camp-on and Priority Override			
— Privacy			
— Privacy Override			
— Privacy Release			
— Private Line Service			
Proactive Voice Quality Management	401	PVQM	4.0
Property Management System Interface	103	PMSI	10
— Property Management System Interface			
— Public Switched Data Service			
Pulsed E&M (Indonesia, French Colisée)	232	PEMD	18
— Pulsed E&M DTI2 Signaling			
Q Reference Signaling Point Interface	263	QSIG	20
— Integrated Services Digital Network QSIG Basic Call			
QSIG Generic Functional protocol	305	QSIG GF	22
— ISDN QSIG Generic Functional Transport			
QSIG Supplementary Service	316	QSIG-SS	22
— ISDN QSIG Call Completion			
— ISDN QSIG Call Diversion Notification			
— ISDN QSIG Path Replacement			
Radio Paging	187	RPA	15
— Radio Paging			
— Radio Paging Product Improvements			
Continued...			

Package Name	Number	Mnemonic	Release
Radio Paging (continued)			
— Recall to Same Attendant			
— Recall with Priority during Night Service			
— Recall With Priority during Night Service			
— Recall With Priority during Night Service Network Wide			
Recorded Announcement Broadcast	327	RANBRD	23
— Recorded Announcement Broadcast			
Recorded Announcement	7	RAN	1
— Recorded Announcement			
Recorded Overflow Announcement	36	ROA	2
— Recorded Overflow Announcement			
— Recorded Telephone Dictation			
— Recovery of Misoperation on the Attendant Console			
— Recovery on Misoperation of Attendant Console			
— Reference Clock Switching			
— Reference Clock Switching (see also packages 75, 129, and 154)			
Remote IPE	286	REMOTE_IPE	
— Remote Intelligent Peripheral Equipment			
Remote Virtual Queuing	192	RVQ	18
— Network Drop Back Busy and Off-hook Queuing (see also package 62)			
— Remote Virtual Queuing			

Package Name	Number	Mnemonic	Release
Resident Debug	82	RSDB	9
— Restricted Call Transfer			
— Ring and Hold Lamp Status			
— Ringback Tone from Meridian 1 Enhancement			
Ringin Change Key	193	RCK	15
— Ringin Change Key			
Room Status	100	RMS	10
— Room Status			
Scheduled Access Restrictions	162	SAR	20
— Scheduled Access Restrictions			
— Secrecy Enhancement			
— Secretarial Filtering			
— Seizure Acknowledgment			
— Selectable Conferee Display and Disconnect			
— Selectable Directory Number Size			
Semi-Automatic Camp-On	181	SACP	15
— Attendant Blocking of Directory Number			
— Attendant Idle Extension Notification			
— Semi-Automatic Camp-On			
— Serial Port Expansion			
Series Call	191	SECL	15
— Series Call			

Package Name	Number	Mnemonic	Release
Set Relocation	53	SR	1
— Automatic Set Relocation			
— Short Buzz for Digital Telephones			
— Short Memory Test			
— Single Digit Access to Hotel Services			
Set-to-Set Messaging	380	STS	25
— Set-to-Set Messaging			
Single Term Access	228	STA	19
— Single Term Access			
— Slow Answer Recall Enhancement			
— Slow Answer Recall for Transferred External Trunks			
— Source Included when Attendant Dials			
SIP Gateway and Converged Desktop	406	SIP	4.0
Soft Switch	402	SOFTSWITCH	4.0
Spanish KD3 DID/DOD interface	252	KD3	20
— KD3 Direct Inward Dialing/Direct Outward Dialing for Spain			
— Special Signaling Protocols			
— Special Trunk Support			
— Speed Call Directory Number Access			
— Speed Call on Private Lines (see also package 1)			
— Speed-Up Data Dump			
Standalone Meridian Mail	262	SAMM	20
— Meridian Mail, Standalone			

Package Name	Number	Mnemonic	Release
Station Activity Records	251	SCDR	20
— Station Activity Records			
Station Camp-On	121	SCMP	20
— Station Camp-On			
Station Category Indication	80	SCI	7
— Station Category Indication			
Station Loop Preemption	106	SLP	10
Station Specific Authorization Codes	229	SSAU	19
— Station Specific Authorization Code			
— Station-to-Station Calling			
Stored Number Redial	64	SNR	3
— Stored Number Redial			
Supervisory Attendant Console	93	SUPV	8
— Supervisory Attendant Console			
Supervisory Console Tones	189	SVCT	20
— System Capacity Enhancements			
System Errors and Events Lookup	245	SYS_MSG_ LKUP	19
— System Message Lookup			
System Speed Call	34	SSC	2
— Speed Call/Autodial with Authorization Codes (see also package 1)			
— Speed Call, System			
— Speed Call Delimiter (see also package 34)			
— Telephones (PBX)			
— Teletype Terminal Access Control in Multi- Customer Environment (see also package 164)			
— Telsset Call Timer Enhancement			

Package Name	Number	Mnemonic	Release
Time and Date	8	TAD	1
— Time and Date			
Tone Detector Special Common Carrier	66	SCC	7
Tone Detector	65	TDET	7
— Tone Detector			
— Tone to Last Party			
— Tones, Flexible Incoming			
Traffic Monitoring	168	TMON	
Trunk Anti-Tromboning	293	TAT	21
— Trunk Anti-Tromboning			
Trunk Barring	132	TBAR	20
— Trunk Barring			
Trunk Failure Monitor	182	TFM	15
— Trunk Failure Monitor			
— Trunk Failure Monitor Enhancement			
Trunk Hook Flash (Centrex)	157	THF	14
— Centrex Switchhook Flash			
— Italian Central Office Special Services (see also packages 129, and 131)			
— Trunk to Trunk Connections			
— Trunk Traffic Reporting Enhancement			
Trunk Verification from Station	110	TVS	9.32
— Trunk Verification from a Station			
— Uninterrupted Line Connection			

Package Name	Number	Mnemonic	Release
United Kingdom	190	UK	16
— Analog Private Network Signaling System (APNSS) (see also packages 122 123, and 124)			
— UK Analog Hardware Support			
Universal ISDN Gateways	283	UIGW	20
— Universal ISDN Gateway			
— Variable Flash Timing and Ground Button			
— Variable Guard Timing			
VIP Auto Wake Up	212	VAWU	17
— Hospitality Enhancements: V.I.P. Auto Wake Up			
Virtual Network Services	183	VNS	16
— Virtual Network Services			
— Virtual Network Services/Virtual Directory Number Expansion (see also package 58)			
— Voice Call			
Virtual Office	382	VIRTUAL_ OFFICE	25
— Branch Office			
— Emergency Services For Virtual Office			
— Internet Telephone Virtual Office			
— Virtual Office			
Virtual Office Enhancement	387	VOE	3.0
— Branch Office			
— Emergency Services For Virtual Office			
— Internet Telephone Virtual Office			
Voice Mailbox Administration	246	VMBA	19
— Meridian Mail Voice Mailbox Administration			

Package Name	Number	Mnemonic	Release
X08 to X11 Gateway	188	L1MF	15
— X08 to X11 Gateway			
Zone Call Admission Control	407	ZCAC	4.5
— Adaptive Network Bandwidth Management			

10/20 Digit ANI on 911 Calls

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Feature description

This feature brings the system into compliance with the Federal Communications Commission (FCC) decision that requires a circuit switched network, working as a Public Safety Answering Point (PSAP), to accept a 10 or 20 digit Automatic Number Identification (ANI) when terminating 911 calls.

10 digit ANI feature

The 10 digit ANI feature addresses the increasing number of Numbering Plan Areas (NPAs) in North America. The increasing number of NPAs requires that a single PSAP must be capable of handling multiple NPAs within its jurisdiction.

The 10/20 Digit ANI on 911 Calls feature changes the ANI format to include the NPA in the ANI field. A single PSAP can handle any number of valid NPAs with the 10 digit format.

20 digit ANI feature

The 20 digit ANI feature addresses the problem of accurately determining the location of a wireless calling party dialing 911.

The first 10 ANI digits provide the Calling Station Number (CSN). The CSN for a 911 call is the Calling Party Number (CPN), if available, or the billing number if the CPN is not available. The CPN, if available, is used to call the originator back when a 911 call is disconnected.

The second 10 ANI digits, or Pseudo Automatic Number Identification (PANI), provides the cell site and sector information to best define the wireless calling party's location. The PANI allows emergency assistance to be sent to the correct area.

II digit definition

The 10/20 Digit ANI feature replaces the NPD with two II digits. The definition of II digits is as follows:

- 40 for normal display
- 44 for flashing display (Default Routing)
- 48 for a test call

Note: The system uses an attached "*" instead of a "flashing display". Default Routing is used when the Selective Routing process at the Central Office does not produce a valid Emergency Service Number (ESN). If no valid CSN information is available on a wireline call, or if no valid cell site and sector information is available on a wireless call, the call is sent to the default ESN associated with the incoming trunk group for that call.

CSN wireline calls format

The CSN wireline call format is as follows:

KP II NPA NXX YYYY STP

Where:

- KP is the key pulse.
- NPA NXX YYYY represents the originator's CSN.
- STP is a digit that tells the system that there is only 10 digits. Termination of the call occurs immediately after receiving the STP digit.

CSN wireless calls format

The CSN wireless call format is as follows:

KP II NPA NXX YYYY ST KP X...X ST

Where:

- KP is the key pulse.
- NPA NXX YYYY represents the originator's CSN.
- The first ST digit flags the call register as a wireless call for display purposes.
- The second KP marks the beginning of the PANI.
- X...X represents the cell site and sector identification. Although 10 digits are required for this information to be complete, any available information is sent. Therefore, this information can range from 0 to 10 digits.
- The second ST digit terminates the call.

Digit Display

Wireline

Wireline M911 calls display on a digital telephone as follows:

- For calls with II digits equal to 40, the 10 digits display as:
— NPA NXX YYYY
- For calls with II digits equal to 44, the 10 digits display as:
— NPA NXX YYYY*

Wireless

Wireless M911 calls display on a digital telephone as follows:

- For calls with II digits equal to 40, the 20 digits display as:
 - (PANI) NPA NXXX YYYY WIRELESS
 - (CSN) NPA NXX YYYY
- For calls with II digits equal to 44, the 20 digits display as:
 - (PANI) NPA NXXX YYYY WIRELESS
 - (CSN) NPA NXX YYYY*

911E (end-office) call processing

With the 10/20 digit ANI for 911 Calls feature, the system continues to expect the dialed digit(s) first.

The dialed digit format is KP+digits+ST, where the digit(s) are 911, 11, or 1, followed by the ANI CSN information.

911T (tandem) call processing

With the 10/20 digit ANI for 911 Calls feature, the system does not expect the dialed digit(s) (911, 11, or 1), only the ANI CSN information.

Operating parameters

This feature is compatible with the system.

The functionality of the 10/20 Digit ANI on 911 Calls feature depends on the local telephone company to comply with Bellcore GR-2953. Therefore, the ability to collect the 10/20 digit ANI formats must be enabled on a separate trunk route basis.

If the 20 digit wireless calls are tandem to the ISDN route, the display shows the II + 10 digit CSN.

The Custom Local Area Signaling Service (CLASS) telephone only displays up to 10 digit ANI.

Feature interactions

Call Trace

Call Trace in LD 80 is modified to show II NPID + 10 digit ANI information. The Call Trace record also shows the PANI information.

Call Detail Recording

The Call Detail Recording record (with package 234) is modified to display PANI for wireless calls when FCDR = NEW in LD 17.

Display on CLASS telephones

Only 10 digit ANI will display on a CLASS telephone for both 911E or 911T trunk. The PANI will not display. However, if it is a wireless call, the PANI can be traced by LD 80.

Display on tandem call

Only II + 10 digit ANI will display on the telephone when M911 calls are forwarded or transferred through ISDN or PRA routes. This only applies for 911E route types.

Malicious Call Trace

The Malicious Call Trace record is modified to show II NPID + 10 digit ANI information. The record also contains the PANI information.

Feature packaging

M911 Enhancement Display (M911 ENH) package 249 is introduced with this feature.

The 10/20 Digit ANI on 911 Calls feature requires the following packages:

- Digit Display (DDSP) package 19
- Basic Automatic Call Distribution (BACD) package 40
- Automatic Call Distribution Package B (ACDB) package 41
- Automatic Call Distribution Package A (ACDA) package 45

- Enhanced Automatic Call Distribution Routing (EAR) package 214
- Meridian 911 (M911) package 224
- Call Waiting Notification (CWNT) package 225
- M911 Enhancement Display (M911 ENH) package 249

The following additional packages are not required, but are recommended:

- At least one of either Call Detail Recording (CDR) package 4 or Call Detail Recording on Teletype Machine (CTY) package 5
- Automatic Call Distribution Package C (ACDC) package 42

Note: package 42 is not needed if packages 51 and 52 are enabled

- Automatic Call Distribution Load Management Reports (LMAN) package 43
- Automatic Call Distribution Package D (ACDD) package 50
- Automatic Call Distribution Package D, Auxiliary Link Processor (LNK) package 51
- Call Party Name Display (CPND) package 95
- Malicious Call Trace (MCT) package 107
- Calling Line Identification in Call Detail Recording (CCDR) package 118
- Flexible Tones and Cadences (FTC) package 125
- Limited Access to Overlays (LAPW) package 164
- New Format CDR (FCDR) package 234 (recommended for wireless calls)

Note: The M911 Call Abandon feature is included in Meridian 911 (M911) package 224, and requires Call Identification (CALL ID) package 247. If an application also requires Meridian Link, Meridian Link Module (MLM) package 209 is required.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Set the Pseudo Automatic Number Identification (PANI) prompt to YES to display PANI.
- 2 LD 16 – Configure the M911 ANI format.

LD 15 – Set the Pseudo Automatic Number Identification (PANI) prompt to YES to display PANI.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	ANI	Change Automatic Number Identification options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
....	
PANI	YES (NO)	Display. Do not display Pseudo Automatic Number Identification (default). Note: When PANI is set to NO (Do not display PANI), the PANI will display briefly, then disappear.
....	

LD 16 – Configure the M911 ANI format.

Prompt	Response	Description
REQ	CHG	Change existing data.

TYPE	RDB	Route data block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
DES	x...x	Designator field for trunk (0-16 character alphanumeric).
TKTP	DID	Direct Inward Dialing trunk data block.
M911_ANI	YES	Receive ANI digits for M911 route.
M911_TRK_TYPE	(911T) 911E	Meridian 911 ANI trunk type. E911 tandem connections (default). End office connections.
M911_FORM	2 (1)	M911 ANI format. II (2 digits) +10/20-digit ANI. NPD (1 digit) +7-digit ANI (default).
....	

Feature operation

No specific operating procedures are required to use this feature.

16-Button Digitone/Multifrequency Operation

Contents

This section contains information on the following topics:

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Feature packaging	83
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Feature operation	85

Feature description

This feature allows the use of a 2500-type telephone with 16 buttons instead of 12 buttons. The extra keys provide single button access to features that would otherwise require the use of Flexible Feature Codes. The feature also provides an autodial function. With this feature, autodial is also available to 12-button Digitone/Multifrequency (DTMF) telephones equipped with a true ground (GRD) button and 2500-type telephones with switchhook flash and calibrated flash.

Not all telephones must share the same assignments. In LD 18, functions can be overlay programmed against a key for each of the three modes. A set of these key-function definitions can then be assigned to one or more telephone station groups. Up to 127 sets of key function assignments (called ABCD tables) are permitted.

The following Flexible Feature Code functions can be accessed using the new (A, B, C, D, * and #) keys while in the pre-dial mode (when the telephone is receiving dial tone):

- authorization code
- automatic set relocation
- automatic wake-up activate
- automatic wake-up deactivate
- automatic wake-up verify
- Call Detail Recording charge account
- call forward all calls activate
- call forward all calls deactivate
- call forward all calls verify
- call forward toggle
- call park access
- conference diagnostics
- deactivate RGA, LND, SNR, or CFW
- electronic lock phone
- electronic lock phone (remote)
- Group Hunting pilot DN
- Incoming Call Identification (ICI) activate
- ICI deactivate
- ICI print
- integrated message system access
- last number redial
- maintenance access
- pick up DN
- pick up group

- pick up ringing number
- radio paging initiate (parallel)
- radio paging initiate (serial)
- radio paging answer (parallel)
- ring again deactivate
- ring again verify
- room status
- speed call controller
- speed call erase
- speed call user
- store number (erase)
- store number (redial)
- store number (save)
- system speed call user
- trunk answer from any station
- terminal diagnostics
- trunk verification, and
- user status.

The following functions can be accessed using the new (A, B, C, D, * and #) keys while in the post-dial mode (when it receives special dial tone after a recall during an active call, or after a busy DN has been dialed):

- Call Detail Recording charge account
- call park
- Conference six trunk disconnect
- ICI override
- last number redial
- Malicious Call Trace

- override
- permanent hold
- radio paging initiate (parallel)
- radio paging initiate (serial)
- ring again activation
- speed call user
- store number (redial)
- store number (save), and
- system speed call user.

Operating parameters

All Digitone Receivers (DTRs) on the system must have the correct strap settings for full 16-button DTMF detection.

An ABCD table must be defined, and associated with a station group.

The customer must have the SPRE code defined, in order to activate FFC functions through the A, B, C, and D keys.

The Multi-party Operations feature must be present if control digits are to be used.

The user needs a 16-button DTMF 2500-type telephone to make full use of this feature.

The 2500-type telephone must be defined as a member of a station group with an associated ABCD table.

All the requirements for the existing system, customer and station combination must be met.

Feature interactions

China – Flexible Feature Codes - Busy Number Redial

BNR allowed can be a postdial function, and BNR denied can be a predial function. Both FFCs may be dialed normally from a 16-button DTMF telephone.

China – Flexible Feature Codes - Customer Call Forward

CCFA and CCFD are allowed as predial ABCD functions. They can also be dialed normally from 16-Button DTMF telephones.

China – Flexible Feature Codes - Outgoing Call Barring

The Outgoing Call Barring FFCs are not allowed as ABCD functions. They can be dialed normally from 16-Button DTMF telephones.

Flexible Feature Codes

The Flexible Feature Codes (FFC) package must be installed, or the FFC functions are not available. However, control functions are still available. An FFC table must be defined for the customer, or the FFC functions are not available.

Group Hunt

Group Hunt Pilot DN (GRHP) function is not supported. Group Hunting and Speed Call DN Access can be accessed through the Autodial function.

Italian Central Office Special Services

The special service FFC is not supported on the ABCD keys of 16-button DTMF telephones.

Feature packaging

16-Button Digitone/Multifrequency Telephone (ABCD) package 144.

Dependency:

- Flexible Feature Codes (FFC) package 139

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 17 – Modify the system hardware and software parameters to enable or disable the 16-Button Digitone/Multifrequency Operation feature.
- 2 LD 18 – Create or modify data for this feature in the 16-Button DTMF Data block.

LD 17 – Modify the system hardware and software parameters to enable or disable the 16-Button Digitone/Multifrequency Operation feature.

Prompt	Response	Description
REQ	NEW CHG	Add, or change.
TYPE	PARM	System Parameters.
...		
PARM	(NO) YES	(No) Change to system parameters.
- ABCD	(NO) YES	16-Button DTMF (is not) is enabled.

LD 18 – Create or modify data for this feature in the 16-Button DTMF Data block.

Prompt	Response	Description
REQ	NEW CHG	Add, or change.
TYPE	ABCD	16-Button DTMF data.
...		

Feature operation

Each button (A, B, C, D, * and #) can have up to three functions assigned to it. The function accessed when a key is pressed is determined by the mode of operation (pre-dial, post-dial or control mode). Functions are assigned to keys by way of overlay programs. The functions can be either Flexible Feature Code functions or the autodial function. An autodial number (of up to 23 digits) can be assigned to any of these buttons for either the pre-dial or post-dial modes. In addition, an autodial number can be assigned to the recall (RCAL) button in the pre-dial mode.

2 Mbps Digital Trunk Interface

Contents

This section contains information on the following topics:

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Feature description

The 2 Mbps Digital Trunk Interface (DTI2) feature provides digital connectivity between a system digital network loop and an external digital carrier termination. It provides digital speech on up to 30 channels at 2 Mbps on one system loop and the bipolar carrier terminal. Within the system, the DTI2 operates as a general purpose sender and receiver of ABCD (signaling) bits. The DTI software sets the ABCD bits to represent the appropriate signaling for the trunk being supported.

For 2 Mbps DTI, use the QPC775 clock controller.

Operating parameters

There are no operating parameters associated with this feature.

Feature interactions

Periodic Pulse Metering

Periodic Pulse Metering operates the same for 2 Mbps DTI as for analog trunks.

Pulsed E&M DTI2 Signaling

Pulsed E&M DTI2 signaling is based on 2 Mbps DTI.

Feature packaging

2 Mbps Digital Trunk Interface (DTI2) package 129.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 14 – Create or modify trunk data blocks for DTI2 on a per trunk basis.
- 2 LD 16 – Create or modify DTI2 trunk route data blocks.
- 3 LD 17 – Modify the system hardware and software parameters to enable or disable the feature.
- 4 LD 73 – Implement the system hardware and software parameters to enable or disable the DTI feature.

LD 14 – Create or modify trunk data blocks for DTI2 on a per trunk basis.

Prompt	Response	Description
REQ	NEW CHG	Add, or change
TYPE	a...a	Type of data block.

SICA	(1)-16	Signaling Category table number. The category must already be defined in LD 73. Default is 16 if loop type = Japanese Digital Multiplex Interface (JDMI).
PDCA	(1)-16	Pad Category table number. The PAD category must already be defined in LD 73. Default is 16 if loop type = JDMI.
PCML	MU A	Indicate whether Mu-law or A-law Pulse Code Modulation (PCM) for voice calls is active in the channel. Not prompted for JDMI loops.

LD 16 – Create or modify DTI2 trunk route data blocks.

Prompt	Response	Description
REQ	NEW CHG	Add, or change.
TYPE	a...a	Route type.
DTRK	(NO) YES	Digital trunk route.
DGTP		Digital trunk type.
	(DTI)	1.5 Mbps DTI (default).
	PRI	1.5 Mbps Primary Rate Interface.
	DTI2	2 Mbps DTI.
	PRI2	2 Mbps Primary Rate Interface.
	JDMI	Japanese Digital Multiplex Interface.
		Prompted when the DTI2 or PRI2 package is equipped.

LD 17 – Modify the system hardware and software parameters to enable or disable the feature.

Prompt	Response	Description
REQ	NEW CHG	Add, or change.
TYPE	CEQU	Common Equipment Parameters.

...		
- DTI2	0-159	2 Mbps Digital Trunk Interface (DTI) loop number. Prompted the when DTI2 or PRI2 package is equipped.

LD 73 – Implement the system hardware and software parameters to enable or disable the DTI feature.

Prompt	Response	Description
REQ	NEW CHG	Add, or change.
TYPE	DTI2	2 Mbps DTI.
...		

Feature operation

No specific operating procedures are required to use this feature.

2 Mbps Digital Trunk Interface Enhancements

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Feature description

The following enhancements have been added to the existing 2 Mbps Digital Trunk Interface (DTI2) in order to meet various customer requirements.

Alarm Handling on Direct Inward Dialing Channels

If an alarm condition occurs on a Direct Inward Dialing (DID) channel, this enhancement delays the sending of connect and disconnect signals, until the alarm condition is cleared.

Alarm Handling on Incoming Public Exchange/Central Office or Direct Inward Dialing Trunks

This enhancement clears non-established calls on incoming Public Exchange/Central Office (CO) or Direct Inward Dialing (DID) trunks when an alarm condition occurs. When the alarm condition is cleared, the calls are diverted to the attendant.

Call Clearance

This enhancement affects the handling of incoming and outgoing call clearance for Central Office (CO) calls.

Call Clearance is handled differently if the Clear Forward signal (CLRF) is defined, or if the Clear Forward signal and the IDLE signal do not have the same definition. The Call Clearance is also handled differently for outgoing and incoming calls.

For outgoing calls being disconnected by the system, a clear forward and then an IDLE signal is sent by the system. The call state determines when the IDLE signal is sent. If the call is answered, the IDLE signal is sent within 300 milliseconds of the reception of a clear back signal from the CO. If the outgoing call is not answered, the IDLE signal is sent after 800 milliseconds (plus or minus 50 milliseconds) of the clear forward signal being sent. If the CO answers during this 800 milliseconds period, the system continues to send the clear forward signal until it receives a clear back signal from the CO.

For outgoing calls being disconnected by the CO, a clear back signal is sent by the CO when it wishes to disconnect. The system then sends a clear forward signal within 300 milliseconds of having received the clear back signal, followed by an IDLE signal within 800 milliseconds (plus or minus 50 milliseconds) of having sent the clear forward signal.

For incoming calls being disconnected by the system, a clear back signal is sent by the system. Upon receiving a clear forward signal from the CO, the system sends an IDLE signal within 300 milliseconds of having received the clear forward signal.

For incoming calls being disconnected by the CO, a clear forward signal is sent by the CO when it wishes to disconnect. If the call is answered, the system sends a clear back signal within 300 milliseconds of having received the clear back signal from the CO, and then an IDLE signal after 800 milliseconds (plus or minus 50 milliseconds) of having sent the clear forward signal. If the call is not answered, the system sends an IDLE signal within 300 milliseconds of having received the clear forward signal from the CO.

If an alarm condition occurs while a clear forward or clear back signal is being sent for the 800 milliseconds time period, the system continues to send the signal until the alarm condition clears.

Clock Synchronization

This enhancement affects the clock synchronization controller. If a DTI loop enters its most severe alarm state (the No-New-Calls state), the system disables the clock port.

Direct Inward Dialing Call Offering

The Central Office (CO) operator will be able to offer a Direct Inward Dialing (DID) call to the attendant. When a DID call terminates on a busy station, and the End of Selection Busy (EOSB) signal has been sent to the CO by the analog (500/2500 type) telephone, the CO can then send an Operator Pulse Signal (OPRS) back to the analog (500/2500 type) telephone. This OPRS causes the analog (500/2500 type) telephone to forward the call on to the attendant.

Disable Out-of-Service Alarm State

This enhancement allows the system to disable the Out-of-Service (OOS) alarm state for an error, leaving the No New Call alarm state as the most severe state. This is done by setting the OOS threshold time for an error to zero.

Fault Signal

On an incoming call, if a Fault (FALT) Signal is received by the circuit switched network while in an IDLE state, the circuit switched network will respond with a Fault Signal until the CO returns to the IDLE state. On an outgoing call, the circuit switched network will enter the FALT state if a Release Control (RCTL) signal is not received within 30 seconds.

Incoming Seizure

This enhancement, applied on a group basis, allows the Central Office to initiate a call from a lockout or far-end fault state.

Outpulsing Delay

This enhancement provides a delay before outpulsing on 2 Mbps DTI trunks.

Release Control

The circuit switched network will now be able to send and receive the Release Control (RCTL) signal, which is sent by the called party on both incoming and outgoing calls to indicate disconnection is complete. The RCTL signal is sent by either the CO or circuit switched network in response to a Release Clear Forward signal.

Signal Recognition

This enhancement gives the system more flexibility in handling receive signals. The system can recognize a signal based on the ABCD signaling bits. Any non-significant signaling bits of a receive signal can be flagged as do-not-care. The system can then ignore these do-not-care bits before trying to determine which signal it has received.

64 Kbit Alarm Indication Signal Handling

This enhancement adds the 64 Kbit Alarm Indication Signal (AIS) as a sixth group II error state. This error state is treated the same as the other group II error states.

Centre National d'Études des Télécommunications enhancement for trunks entering an alarm state

This enhancement requires the QPC915 and ensures compliance with the Centre National d'Études des Télécommunications (CNET) requirements for trunks entering an alarm state.

Trunks entering an alarm state are processed according to the type of trunk they are configured as and their previous state.

For all cases, signaling will not occur on the trunk while it is in an alarm state.

Idle trunk

When an idle trunk enters an alarm state, it will not send the "FAULT" signal.

DID trunk

Trunk seized and receiving digits

The call is taken down and the trunk is idled.

Call initiated but not answered

A timer is started when the alarm state is entered, its duration is between 20 and 40 seconds, and the called telephone continues to ring. During this time one of three cases may occur:

- **The timer expires:** the call is disconnected, all resources but the incoming trunk are released (delayed disconnect). This occurs even if the following case has already happened.
- **The called telephone answers:** no affect on the timer; the delayed disconnect will occur if the alarm is not cleared.
- **The alarm stops:** no affect on the connection, the timer is stopped and reset, and delayed signals are sent to the far end.

Call answered

The call is not dropped upon entering an alarm state. If the near-end party goes on-hook during alarm, the party is released and all resources are idled except the trunk, which is put in a delayed disconnect state.

Disconnect

The alarm is ignored with respect to internal system processing, and the trunk is put in a delayed disconnect state.

Outgoing Central Office Trunk (COT) call

If the destination has not answered, no action is taken when entering an alarm state. If the originator goes on-hook during an alarm state, the disconnect signal is delayed.

If the destination goes on-hook while in an alarm state, the software waits for the originator to go on-hook also. If the alarm is still present when the originator goes on-hook, system resources are idled, but the trunk is left in a delayed disconnect state.

Incoming COT call

Call initiated

When entering an alarm state, the call is disconnected and all system resources are idled, including the trunk itself.

If the Attendant or Night telephone answered before the trunk entered the alarm state, the call is connected and the “CONNECT” signal is delayed until the alarm state is cleared.

Disconnect

The system completes the disconnect and idles the trunk without waiting for an “IDLE” signal from the far end.

Centre National d'Études des Télécommunications enhancement for trunk cards exiting an alarm state

This enhancement requires the QPC915 and ensures compliance with the Centre National d'Études des Télécommunications (CNET) requirements for cards exiting an alarm state.

At the end of a group I alarm state, the software requires the pack to send the ABCD status of each configured trunk. At the end of a group II alarm state, the software receives a report of valid ABCD status after having received a confirmation from the firmware that the firmware is functioning as expected. The system software state is updated according to this report.

Processing of overload conditions

Several enhancements occur:

- When receiving more than 100 messages per second from a 2 Mbps Digital Trunk Interface (QPC915) pack, the system attempts to go into No New Call (NNC) state and disables the error reporting. A DTA320 message is printed on the Maintenance Terminal to inform the technician. After at least two seconds have elapsed, the error reporting is re-enabled and a DTA321 message is printed. If this situation repeats itself more than 20 times within the next two minutes, the pack is disabled.
- The software status is updated to reflect the firmware status after overload.
- The overload process is able to recognize the channel causing the overload when the case arises.

Operating parameters

There are no operating parameters associated with this feature.

Feature interactions

There are no feature interactions associated with this feature.

Feature packaging

There are no specific packaging requirements associated with this feature.

Feature implementation

Note: LD 73 is modified to allow the implementation of the CNET enhancement for trunks entering an alarm state and trunk cards exiting an alarm state. The enhancement is implemented by responding YES to the new FRFW prompt in LD 73.

LD 73 – Implement the system hardware and software parameters.

Prompt	Response	Description
REQ	NEW CHG	Add, or change
TYPE	DTI2	2.0 Mbps DTI.
GP2	T2 mt dt ct ot	Group 2 error thresholds.
FRFW	(NO) YES	<p>French Firmware.</p> <p>Enter YES to enable the CNET enhancement for trunks entering an alarm state processing capabilities. Requires that QPC915 packs be equipped.</p> <p>Enter YES to enable the CNET enhancement for trunk cards exiting an alarm state processing. Requires that QPC915 packs be equipped.</p> <p>Enter NO if the CNET enhancement for trunks entering an alarm state processing capabilities are not required.</p> <p>Enter NO if the CNET enhancement for trunk cards exiting an alarm state processing is not required.</p> <p>Default is NO.</p>

Feature operation

No specific operating procedures are required to use this feature.

2500 Telephone Features

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This section contains information on the following topics:

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Feature description

This feature allows 2500 telephones (that is, basic push-button telephones without feature keys) to access features otherwise available only on Meridian 1 proprietary telephones. By dialing an octothorpe (#) and a single-digit access code, 2500 telephones can access the following features:

- Call Forward All Calls Dial #1
- Speed Call Controller Dial #2
- Speed Call User Dial #3
- Permanent Hold Dial #4

Operating parameters

Allow or deny the Call Forward All Calls, Speed Call Controller, Speed Call User, and Permanent Hold features in LD10.

Except for the access codes used, feature operation is the same as for Meridian 1 proprietary telephones.

Feature interactions

500 Telephone Features

When 500 Set Dial Access to Features (SS5) package 73 is equipped, 2500-type telephones also access features by dialing SPRE and a two-digit access code as follows:

- System Speed Call User SPRE + 73
- Call Forward All Calls SPRE + 74
- Speed Call Controller SPRE + 75
- Speed Call User SPRE + 76
- Permanent Hold SPRE + 77

Remote Call Forward

When Flexible Feature Codes (FFC) package 139 is defined and active on your system, a telephone provisioned for Call Forward in LD 10 can also Call Forward All Calls from a remote internal DN.

Feature packaging

There are no specific packaging requirements associated with this feature.

Feature implementation

LD 10 – Enable 2500 Telephone Features.

Prompt	Response	Description
REQ:	CHG	Change.
TYPE:	500	Telephone type.

TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(XFD) XFA	(Deny) allow transfer.
FTR	CFW xx	Call Forward All Calls and DN length (4-23). Enter X CFW to remove.
	SCC xxxx	Speed Call Controller and list number. Enter X SCC to remove.
	SCU xxxx	Speed Call User and list number. Enter X SCU to remove.
	SSU xxxx	System Speed Call User and list number. Enter X SSU to remove.
	PHD	Allow Permanent Hold. Enter X PHD to remove.

Feature operation

Call Forward All Calls

Case 1: FFC active, CFW not active

On a telephone with Flexible Feature Codes implemented, but without Call Forward currently active, use these steps to activate the feature:

- 1 Lift the handset and dial SPRE + 74. You hear dial tone.
- 2 Dial the DN where you want calls to be forwarded. The dial tone disappears.
- 3 Hang up to complete the activation.

To deactivate Call Forward, follow these steps:

- 1 Lift the handset and dial SPRE + 74. You hear dial tone.
- 2 Hang up to complete deactivation.

Case 2: FFC not active, CFW not active

On a telephone without Flexible Feature Codes or Call Forward currently Active, use these steps to activate the feature:

- 1 Lift the handset and dial #1. You hear dial tone.
- 2 Dial the DN where you want calls to be forwarded. The dial tone disappears.
- 3 Hang up to complete the activation.

To deactivate Call Forward, follow these steps:

- 1 Lift the handset and dial #1. You hear dial tone.
- 2 Hang up to complete deactivation.

Case 3: FFC active, CFW active

On a telephone with Flexible Feature Codes and Call Forward currently active, use these steps to deactivate the feature:

- 1 Lift the handset and dial #1. You hear confirmation tone.
- 2 Hang up to complete the deactivation.

To reactivate Call Forward, follow these steps:

- 1 Lift the handset and dial #1. You hear dial tone.
- 2 Dial the DN where you want calls to be forwarded. The dial tone disappears.
- 3 Hang up to complete the activation.

– or –

- 1 Lift the handset and dial #1. You hear dial tone.
- 2 Dial the DN where you want calls to be forwarded. The dial tone disappears.

- 3 Dial the EOD string. You hear a confirmation tone.
- 4 Hang up to complete the activation.

– or –

- 1 Lift the handset and dial #1. You hear dial tone.
- 2 Hang up to complete the activation. Calls are forwarded to the last Call Forward DN used by this telephone.

Speed Call Controller

To update a predefined Speed Call list, follow these steps:

- 1 Lift the handset and dial #2. You hear dial tone.
- 2 Dial the Speed Call code (0-999), followed by the telephone number it represents. If the entry is accepted, you hear silence. If the entry is not accepted, you hear a fast busy tone.
- 3 Hang up.

To change a number associated with a list, follow these steps:

- 1 Lift the handset and dial #2. You hear dial tone.
- 2 Dial the Speed Call code (0-999), followed by the new telephone number. The new number automatically replaces the old one. If the entry is accepted, you hear silence. If the entry is not accepted, you hear a fast busy tone.
- 3 Hang up.

To remove an entry from a Speed Call list, follow these steps:

- 1 Lift the handset and dial #2. You hear dial tone.
- 2 Dial the Speed Call code (0-999) you want to remove.
- 3 Hang up.

Speed Call User

To make a Speed Call, follow these steps:

- 1 Lift the handset and dial #3. You hear dial tone.
- 2 Dial the Speed Call code (0-999).
- 3 The number is dialed automatically.

System Speed Call User

To make a System Speed Call, follow these steps:

- 1 Lift the handset and dial SPRE 73. You hear dial tone.
- 2 Dial the System Speed Call code (0-999).
- 3 The number is dialed automatically.

Permanent Hold

To activate Permanent Hold while on a call, follow these steps:

- 1 Flash the switchhook. You hear dial tone.
- 2 Dial #4.
- 3 Hang up.

The call remains on hold until you lift the handset again or the other party disconnects.

500 Telephone Features

Contents

This section contains information on the following topics:

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Feature description

This feature allows 500-type (rotary dial) telephones to use Call Forward, Speed Call, and Permanent Hold. Since 500-type telephones do not have an octothorpe (#), the following features are activated by dialing SPRE and a two-digit access code.

- System Speed Call SPRE + 73
- Call Forward All Calls SPRE + 74
- Speed Call Controller SPRE + 75
- Speed Call User SPRE + 76
- Permanent Hold SPRE + 77

Operating parameters

Allow or deny the System Speed Call, Call Forward All Calls, Speed Call Controller, Speed Call user, and permanent hold features in LD 10.

Except for the SPRE codes used, feature operation is the same as for Meridian 1 proprietary telephones.

Feature interactions

2500 telephone features

When Special Service for 2500 Sets (SS25) package 18 is equipped, 2500 telephones also access the above listed features by dialing the SPRE and a two-digit access code.

Feature packaging

500 Set Dial Access to Features (SS5) package 73 requires Special Service for 2500 Sets (SS25) package 18.

Feature implementation

LD 10 – Enable 500 type telephone features.

Prompt	Response	Description
REQ:	CHG	Change.
TYPE:	500	Telephone type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.

CLS	(XFD) XFA	(Deny) allow transfer.
FTR	CFW xx	Call Forward All Calls and DN length (4-23). Enter X CFW to remove.
	SCC xxxx	Speed Call Controller and list number. Enter X SCC to remove.
	SCU xxxx	Speed Call User and list number. Enter X SCU to remove.
	SSU xxxx	System Speed Call User and list number. Enter X SSU to remove.
	PHD	Allow Permanent Hold. Enter X PHD to remove.

Feature operation

Call Forward All Calls

To forward your calls, follow these steps:

- 1 Lift the handset and dial SPRE + 74. You hear dial tone.
- 2 Dial the DN to where you want your calls forwarded.
- 3 Hang up.

To cancel forwarding, follow these steps:

- 1 Lift the handset and dial SPRE + 74. You hear dial tone.
- 2 Hang up.

Speed Call Controller

To update a predefined Speed Call list, follow these steps:

- 1 Lift the handset and dial SPRE + 75. You hear dial tone.
- 2 Dial the Speed Call code (0-999), followed by the telephone number it represents. If the entry is accepted, you hear silence. If the entry is not accepted, you hear fast busy tone.
- 3 Hang up.

To change a number associated with a list, follow these steps:

- 1 Lift the handset and dial SPRE + 75. You hear dial tone.
- 2 Dial the Speed Call code (0-999), followed by the new telephone number. The new number automatically replaces the old one. If the entry is accepted, you hear silence. If the entry is not accepted, you hear fast busy tone.
- 3 Hang up.

To remove an entry in a Speed Call list, follow these steps:

- 1 Lift the handset and dial SPRE + 75. You hear dial tone.
- 2 Dial the Speed Call code (0-999) you want to remove.
- 3 Hang up.

Speed Call User

To make a Speed Call, follow these steps:

- 1 Lift the handset and dial SPRE + 76. You hear dial tone.
- 2 Dial the Speed Call code (0-999).
- 3 The number is dialed automatically.

System Speed Call User

To make a System Speed Call, follow these steps:

- 1 Lift the handset and dial SPRE + 73. You hear dial tone.
- 2 Dial the System Speed Call code (0-999).
- 3 The number is dialed automatically.

Permanent Hold

To activate Permanent Hold while active on a call, follow these steps:

- 1 Flash the switchhook. You hear dial tone.
- 2 Dial SPRE + 77.
- 3 Hang up.

The call remains on hold until you lift the handset again or the other party disconnects.

500/2500 Line Disconnect

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This section contains information on the following topics:

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Feature description

500/2500 Line Disconnect

500/2500 Line Disconnect is invoked when the system detects on-hook/disconnect supervision from a party connected to an analog (500/2500-type) port. Dial tone is sent to this port for a specified period of time (the default is six seconds) which is defined in LD 15 at the Line Disconnect Tone Timer (LDTT) prompt.

It is used when the analog (500/2500-type) port is connected to an automated attendant or voice mail. It allows the system to know that it is not connected to a telephone, and to disconnect if the other telephone has hung up (for example, during an automated message or a voice mail message).

An analog (500/2500-type) port with LDTA Class of Service receives disconnect tone in the following cases:

- an incoming internal call is placed to an LDTA port and then disconnects
- incoming call from a trunk with disconnect supervision is placed to an LDTA port and then the incoming trunk disconnects, or
- an internal DN places an outgoing call on a trunk with disconnect supervision, then transfers the call to the LDTA port and then the trunk disconnects.

Figure 1 illustrates how an incoming trunk call or internal call functions with 500/2500 Type Line Disconnect. This illustration shows the incoming trunk call or internal call disconnected and dial tone being provided by the analog (500/2500-type) port with the new Class of Service (CLS) Line Disconnect Tone Allowed (LDTA).

Figure 1
Incoming trunk call of internal call disconnect function when 500/2500 line disconnect feature is configured

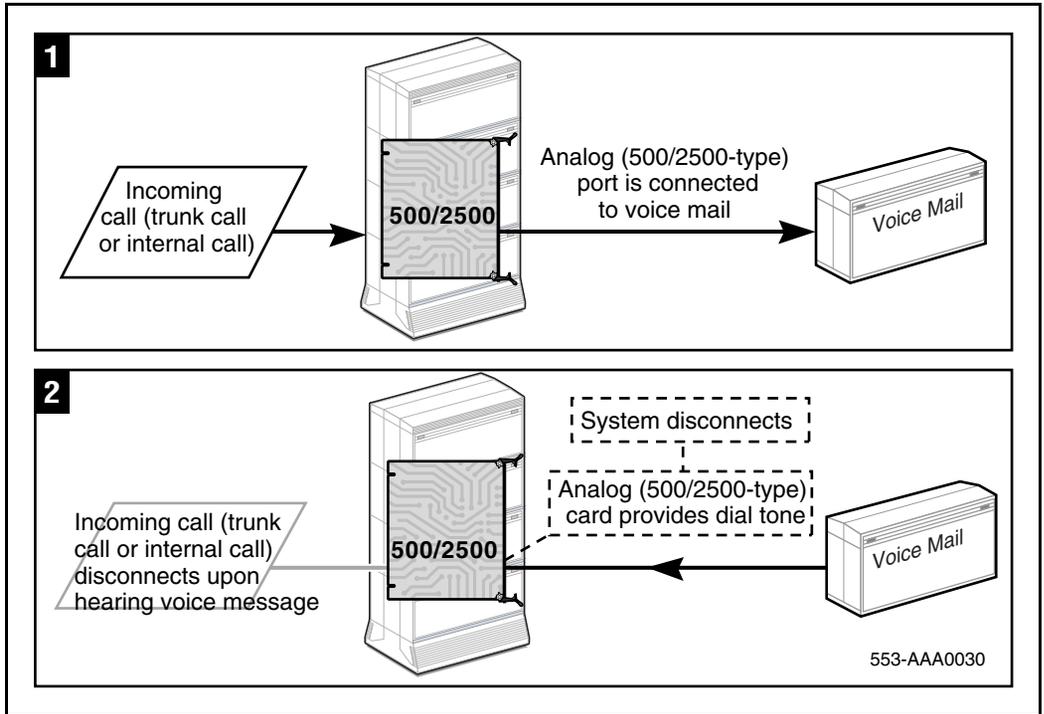
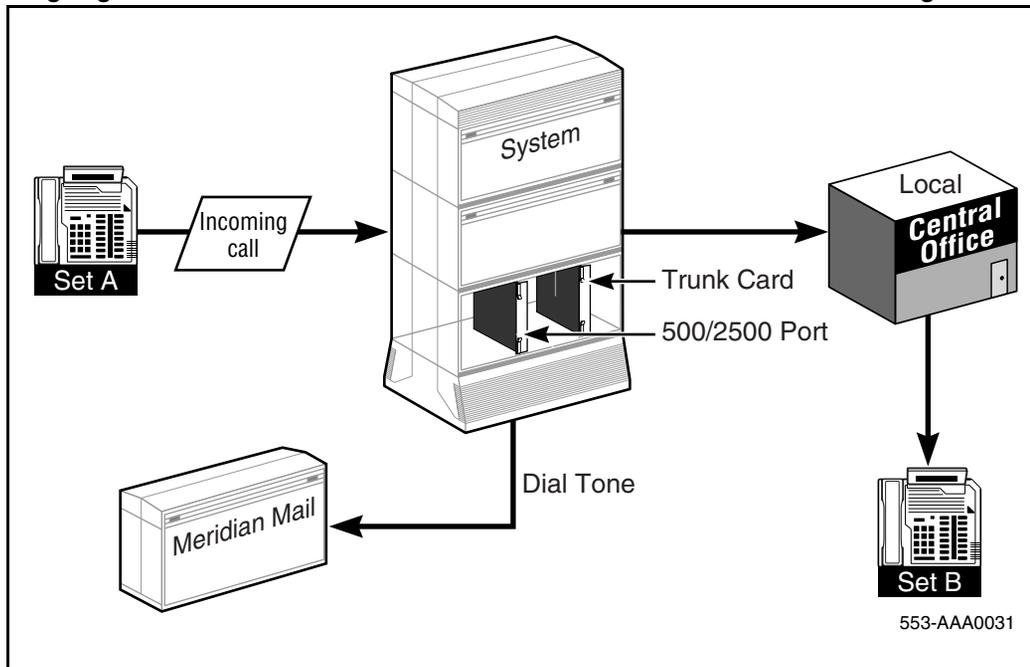


Figure 2 illustrates how an outgoing call functions with this feature. This illustration shows an outgoing call from the system to the Central Office. Station A transfers Station B to Meridian Mail and goes on-hook. When Station B disconnects, dial tone is provided by the analog (500/2500-type) port with the new LDTA Class of Service.

Figure 2
Outgoing call disconnect function when 500/2500 line disconnect feature is configured



500/2500 Line Disconnect for Outgoing Calls

When devices such as dictation machines are connected to an analog (500/2500-type) line port, they rely on detecting a tone to indicate that the far end has released. This is necessary because the line conditions on an analog (500/2500-type) circuit do not change regardless of the status of the far end.

Currently, when a system detects an on-hook/disconnect supervision signal from a party on a trunk that provides disconnect supervision, and the trunk is connected to an analog (500/2500-type) port with the Line Disconnect Tone Allowed (LDTA) Class of Service, dial tone is sent for the time specified in the Customer Data Block. Thus, the device physically connected to the 500/2500 port disconnects itself and the line port as well. This functionality is used in applications requiring predictive dialing; however, previously it was limited to incoming calls.

The 500/2500 Line Disconnect for Outgoing Calls feature expands the 500/2500 Disconnect capability to encompass outgoing calls.

Operating parameters

500/2500 Line Disconnect

Line Disconnect Tone is not provided on outgoing calls from the LDTA port.

500/2500 Line Disconnect for Outgoing Calls

This feature only works with internal calls or with trunks that provide disconnect supervision. If a trunk is used that does not have disconnect supervision, the system does not detect the far end disconnection and the release of the call is still dependent upon the internal timing of the Automated Dialing Equipment.

This feature only applies to Automated Dialing Equipment systems capable of recognizing dial tone as a disconnect signal.

When an analog (500/2500-type) port is receiving a disconnect dial tone, it is not possible to dial a number. Dial tone cannot be broken. The port has to be released before dialing out.

Feature interactions

500/2500 Line Disconnect

500/2500 Automatic Call Distribution agent

If a call is involved with an analog (500/2500-type) Automatic Call Distribution (ACD) agent that is connected to a VRU and the other party has disconnected, 500/2500 Line Disconnect applies. When the other party disconnects, the analog (500/2500-type) agent will be returned to the idle agent queue.

Attendant Extended Call

500/2500 Line Disconnect applies if the attendant extends a call to an analog (500/2500-type) port that is connected to a Voice Response Unit (VRU); or the attendant extended a call to an analog (500/2500-type) port that is connected to a VRU and remains in the call, and the other party has disconnected.

Conference No Hold Conference

If one of the parties in the conference is connected to an analog (500/2500-type) port that is in turn connected to a VRU, dial tone is provided to the analog (500/2500-type) port when all the other parties in the conference disconnect. This feature enhancement applies in the same way to Call Transfer and Hunting.

500/2500 Line Disconnect for Outgoing Calls

Attendant Extended Call

The 500/2500 Line Disconnect for Outgoing Calls feature applies if an attendant extends a call originated from an analog (500/2500-type) line port with LDTA Class of Service to a trunk or an internal extension, and the attendant has disconnected from the call. When the far end disconnects and this is a simple call, dial tone is provided to the analog (500/2500-type) line port.

Call Forward All Calls
Call Forward No Answer
Call Forward Busy
Call Forward by Call Type

The 500/2500 Line Disconnect for Outgoing Calls feature applies if a call originated from an analog (500/2500-type) line port with LDTA Class of Service is Call Forwarded to a trunk or another internal extension.

Call Transfer

The 500/2500 Line Disconnect for Outgoing Calls feature applies if a call originating from an analog (500/2500-type) line port with LDTA Class of Service is transferred by the called party to a trunk or another internal extension.

Conference
No Hold Conference

If Automated Dialing Equipment is connected to an internal extension that uses transfer or conference to include a trunk or another internal extension in the call, dial tone will be provided to the analog (500/2500-type) port when all the other parties disconnect.

Hunting

The 500/2500 Line Disconnect for Outgoing Calls feature applies if a call originated from an analog (500/2500-type) line port with LDTA Class of Service reaches a busy telephone that hunts to a trunk or to another internal extension.

Tone to Last Party

With the Tone to Last Party (TLP) feature configured, tones given to telephones, whether involved in an internal or external call, are defined in the Tone Tables defined for the customer. If the TLP timer in the tone table is set to zero, the feature is disabled. If the TLP timer has a value greater than zero, this feature is active for all analog (500/2500-type) telephones at the customer location. The 500/2500 Line Disconnect feature takes precedence if the Tone to Last Party feature is enabled for a customer and the analog (500/2500-type) telephone has LDTA Class of Service.

Analog (500/2500-type) Automatic Call Distribution Agents

If an Automated Dialing Equipment (ADE)/Voice Response Unit (VRU) is involved in a call with an analog (500/2500-type) Automatic Call Distribution Agents (ACD) agent and the party disconnects, the ADE will be provided dial tone when the last party (except for the ADE/VRU) has disconnected.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 10 – Allow Line Disconnect Tone for analog (500/2500-type) ports.
- 2 LD 15 – Specify the dial tone timer for analog (500/2500-type) ports.

Note: Feature implementation is the same for both 500/2500 Line Disconnect and 500/2500 Line Disconnect for Outgoing Calls.

LD 10 – Allow Line Disconnect Tone for analog (500/2500-type) ports. (Part 1 of 2)

Prompt	Response	Description
REQ:	NEW CHG	New, or change.
TYPE:	500	Telephone type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.

LD 10 – Allow Line Disconnect Tone for analog (500/2500-type) ports. (Part 2 of 2)

Prompt	Response	Description
CLS	c u (LDTD) LDTA (WTA) WTD	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit. (Deny) allow Line Disconnect Tone. (Allow) deny Warning Tone.

LD 15 – Specify the dial tone timer for analog (500/2500-type) ports.

Prompt	Response	Description
REQ:	NEW CHG	New, or change.
TYPE:	TIM	Timers.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
...		
- LDTT	2-(6)-30	Line Disconnect Tone timer for the 500/2500 port, in seconds.

Feature operation

No specific operating procedures are required to use this feature.

AC15 Recall: Timed Reminder Recall

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Feature description

The AC15 Timed Reminder Recall feature allows timed recall functionality in an environment where a system is used as a hub for systems that are connected with an AC15 TIE trunk.

The feature enables a call established with a local system telephone or trunk and extended by a controlling party over an AC15 TIE trunk to be recalled after a programmed period of time to the system attendant. The controlling party is an attendant or a telephone connected to the system. When Night Service is activated, the call will be recalled to the Night DN if the original call is external and the International Supplementary Features (SUPP) package 131 is equipped.

Operating parameters

The call must be extended to the AC15 TIE trunk by a controlling party on the system. The feature is not applicable to tandem calls through the system, calls routed directly by system routing controls, and direct calls over the AC15 TIE trunk.

AC15 TIE trunks must be configured on a route basis.

Night Service must be activated, the original call must be an external call, and International Supplementary Features (SUPP) package 131 equipped for a call to be recalled to the Night DN. That is the only situation where an AC15 recall will not be presented to the attendant.

Answer supervision must be configured on the AC15 TIE trunk for the feature to be activated.

XFEM trunk cards that support AC15 signaling are required (for example, the NT5K19AC trunk card for the UK).

Feature interactions

AC15 Recall: Transfer from Norstar

A transfer performed by an AC15 trunk using the Transfer from Norstar feature to another AC15 trunk is not subject to Timed Reminder Recall. This is to prevent a call transferred by someone on Norstar from recalling the system attendant.

It is recommended that all AC15 cards on the network's system are NT5K19AC or later. This is mandatory for the system which directly interfaces with the Norstar (this requirement applies to all of this switch's AC15 cards, even to those that do not directly interface with the Norstar).

Access Restrictions

With call modification, a trunk-to-trunk connection is controlled by signaling, recall capability and the supervision assigned to each trunk. For example, an established call from an unsupervised trunk cannot be transferred over another trunk.

When the AC15 Timed Reminder Recall feature is to be activated, an established call with an unsupervised trunk may be extended over an AC15 trunk because the connection is controlled before the called party answers by the AC15 recall timer.

Attendant Clearing During Night Service (ACNS)

If ACNS is active and there is a call being extended over an AC15 TIE trunk, when the attendant goes into Night Service, the transfer is completed and the feature is activated.

If there is an AC15 recall presented to the attendant and it goes in Night Service, the recall is put in the attendant queue.

If an AC15 recall has been answered by the attendant and it goes in Night Service, the call is removed from the attendant port and the feature is activated again.

Attendant Console

The Incoming Call Indicator (ICI) can be configured to work with this feature. When there is a recall, the ICI RLL key lamp is updated, and is either lit or flashing. The attendant can answer the recall by pressing the ICI RLL key instead of the Loop key.

Attendant Console – Call Key Lamp State and Display

When the attendant is dialing over an AC15 TIE trunk and the AC15 Timed Reminder Recall feature is to be activated, the destination lamp state is winking instead of lit. It is only lit when the called party answers.

Attendant Forward No Answer

If the Attendant Forward No Answer feature is activated and the attendant fails to answer, the attendant is forced into Busy Position and the call goes to the first idle attendant or is put into the attendant queue. If the conditions are also satisfied to put the customer in Night Service and the original call is an external call, the AC15 recall is directed to the Night DN.

Attendant Overflow Position

AC15 recalls are not routed to the Attendant Overflow Position. They are directed to the first idle attendant or put in the attendant queue.

Attendant Secrecy

Secrecy is not activated when AC15 recalls are presented to the attendant.

Call Hold, Permanent

Call Hold Permanent is activated when the attendant presses the HOLD key then the Release (RLS) key when extending a call, the call will then be permanently held on the Loop key. If the attendant retrieves the original call on hold by pressing the Loop key, the recall timer is stopped. If the attendant then presses the RLS key, the call is extended and the recall timer is restarted.

Called Party Name Display

When the AC15 recall is presented to an attendant or a telephone with a display, the source and destination names are shown beside the DNs or the ACODs.

Conference

The conference feature is sometimes used to perform a transfer when a controlling party establishes a call, the controlling party establishes a conference with a third party and releases, and a call is established between the two remaining parties.

If an established call is extended over a trunk to initiate a conference call, this conference call cannot be set up if this trunk has answer supervision and the called extension has not answered. The AC15 Timed Reminder Recall feature cannot be activated by using the conference feature to extend a call over an AC15 TIE trunk, because the AC15 TIE trunk must have answer supervision and the called extension must be ringing.

Digit Display

When an AC15 recall is directed to the Night DN, if the Night DN telephone has a display, the display shows the external trunk and the AC15 trunk information.

Network Attendant Service

If Night Service and Network Attendant Service are active, the recall is routed to a remote attendant. The original party is kept, the destination party is disconnected and the AC15 TIE trunk is released.

Night Service Enhancements

This feature is used to direct the call to the Night DN if the original call is an external call and the SUPP package 131 is equipped. When there is an AC15 recall and the attendant is in Night Service, the called party is disconnected (the AC15 trunk is released) and the original call is presented to the Night DN.

Periodic Clearing

When the Periodic Clearing feature is active, the Disconnect timer will interfere with the AC15 recall timer. The Disconnect timer is activated on a TIE trunk or an incoming Direct Inward Dialing (DID) or Central Office (CO) trunk which is connected to the AC15 TIE trunk. If the Disconnect timer expires first, the AC15 recall is cancelled and the trunk is disconnected. This is the case with a call which has been established with a TIE trunk or an incoming call on a DID or CO trunk that has been extended over an AC15 TIE trunk with the timed recall activated.

Recall to Same Attendant

With the AC15 Timed Reminder Recall feature, if Recall to Same Attendant = RSAA the call is presented to the attendant who last extended the call, if RTSAX = RSAX the call is presented to the attendant who last extended the call or put in the queue if this attendant is busy.

Secrecy Enhancement

When the attendant answers an AC15 recall, the destination party is excluded from the connection. The attendant is connected to the source party and the excluded destination lamp is lit to show the exclusion of the destination party.

Series Calls

Series Calls cause a source call that has been extended to a local destination party to be recalled to the attendant when the destination party hangs up. In activating the AC15 Timed Reminder Recall, the called party is not local. Therefore, the Series Calls feature is not applicable.

Slow Answer Modification (SLAM)

With the AC15 Timed Reminder Recall feature, if SLAM is allowed, when the attendant answers an AC15 recall the destination party is disconnected and the AC15 TIE trunk is released.

Feature packaging

The AC15 Recall (ACRL) package 236 must be equipped to activate the AC15 Timed Reminder Recall feature.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Set the Slow Answer Recall timer at the RTIM prompt.
- 2 LD 16 – Define a TIE route and telephone ATRR option.
- 3 LD 14 – Define an AC15 TIE trunk on an XFEM card.

LD 15 – Set the Slow Answer Recall timer at the RTIM prompt. (Part 1 of 2)

Prompt	Response	Description
REQ:	CHG	Change.
TYPE:	TIM	Timers Data Block.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
...		

LD 15 – Set the Slow Answer Recall timer at the RTIM prompt. (Part 2 of 2)

Prompt	Response	Description
- RTIM	xxx yyy zzz	xxx = timer in seconds for the Slow Answer Recall and the AC15 Timed Reminder Recall. yyy = timer in seconds for Camp-on Recall. zzz = timer in seconds for Call Waiting Recall.

LD 16 – Define a TIE route and telephone ATRR option.

Prompt	Response	Description
REQ	NEW	New.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
TKTP	TIE	Trunk type.
...		
DTRK	NO	Digital trunk.
...		
TIDY	xxxx yyyy	Trunk identity.
ATRR	YES	AC15 Recall: Timed Reminder Recall. Calls transferred to an AC15 trunk on this route are subject to Timed Reminder Recall. Prompted with ACRL package 236 if TKTP = TIE and DRTK = NO.

LD 14 – Define an AC15 TIE trunk on an XFEM card.

Prompt	Response	Description
REQ	NEW	New.
TYPE	TIE	TIE trunk.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CDEN	4D	Card density.
CUST	xx	Customer number, as defined in LD 15
...		
SIGL	WR4	AC15 signaling.
...		
SUPN	YES	Answer and disconnect supervision required.

Feature operation

Activate Timed Reminder Recall

The activation of the feature depends on whether the controlling party is the attendant or a telephone.

Attendant as a controlling party

- 1 A call is established on the source side of the attendant. The lamps displays appear as follows:
 - Loop is **lit**
 - Source is **lit**
 - Destination is **dark**
 - RLs key is **dark**
 - 2 Dial an extension over an AC15 TIE trunk on the destination side. The lamps displays appear as follows:
 - Loop is **lit**
 - Source is **lit**
 - Destination is **winking**
 - RLs key is **dark**
 - 3 Press the RLS key before the extension is answered. The AC15 recall timer is started. The lamps displays appear as follows:
 - Loop is **dark**
 - Source is **dark**
 - Destination is **dark**
 - RLs key is **lit**
- Note:* If the called extension answers the call, the recall timer is stopped.

Telephone as a controlling party

- 1 A call is established with a telephone on the system.
- 2 Transfer to an extension over an AC15 TIE trunk by using a flash hook on an analog (500/2500 type) telephone or pressing the TRN key on a proprietary telephone.
- 3 Complete the transfer before the extension answers by going on-hook on an analog (500/2500 type) telephone or pressing the TRN key on a proprietary telephone. This will start the AC15 recall timer.

Answer a Recall

Attendant

- 1 The recall rings the attendant. The original call is put on the source side and the destination party is put on the destination side. The lamps displays appear as follows:

Loop is **dark**
Source is **flashing**
Destination is **winking**
Rls key is **dark**

Note: If the called extension answers, the recall is removed from the attendant console.

- 2 Answer the recall. The called extension is still ringing on the destination side. The lamps displays appear as follows:

Loop is **lit**
Source is **lit**
Destination is **winking**
Rls key is **dark**

Pressing the Rls key at this point will reactivate the feature.

If the called extension answers the call after the attendant has picked up the recall, the originating party is kept on the source side and the destination party on the destination side of the attendant. A conference will occur between the attendant, the source, and the destination party. If the attendant releases, a normal call will then be established.

Night DN or Central Answering Position (Small System)

A Central Answering Position (CAP) is used as an alternative to an attendant on a system, particularly a Small System, which is not equipped with an attendant console. Any customer appears in Night Service and the CAP DN is the Night DN in this configuration. For the Night DN or the CAP operation, the following applies:

- For the original call to be directed to the Night DN, the call must be a direct CO/DID call or a DID/CO call through a Digital Private Network Signaling System (DPNSS1) or Network Attendant Service (NAS) ISDN trunk.
- For recall to the Night DN, the destination party is disconnected before the recall is presented to the Night DN.

AC15 Recall: Transfer from Meridian 1

Contents

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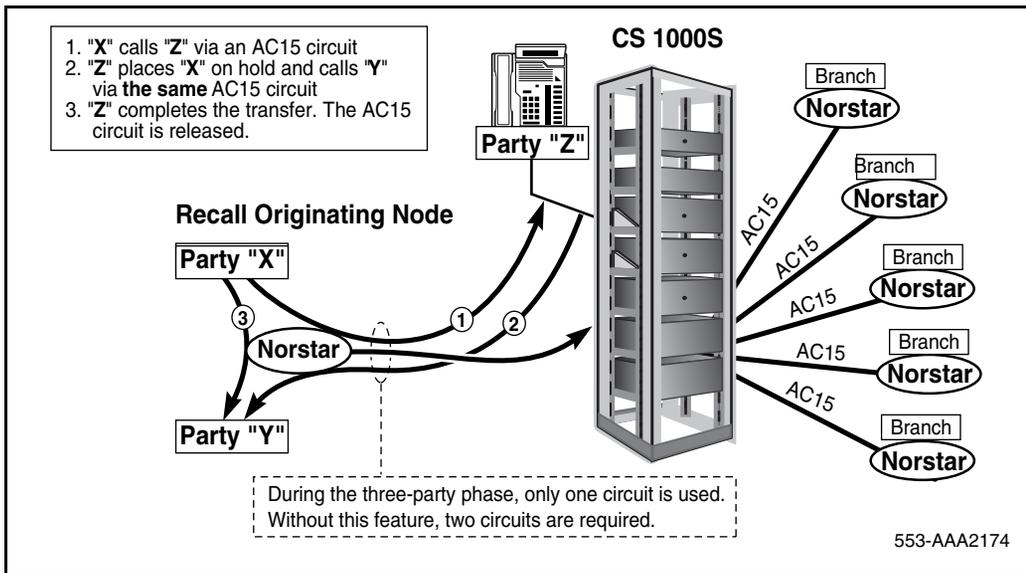
Feature description

The AC15 Recall: Transfer from Meridian 1 (ACRL) allows the system to function as a “recall originating node” in situations where the Norstar functions as a control node. This capability permits signaling over AC15 trunks, which minimizes the number of AC15 circuits, optimizes the use of AC15 TIE trunks and avoids tromboning connections.

When a call with a party on the Norstar is transferred from the system, the ACRL feature enables the system to send a recall signal to the Norstar. This recall message permits the re-use of the same AC15 circuit, on which the call was received, to transfer the call. When a transfer is completed, the AC15 trunk is released. The following scenario demonstrates the ACRL feature capabilities.

A call occurs between party X (external call) and party Z (on the system). Party Z initiates the transfer feature and a recall signal is sent over the AC15 trunk. This signal is detected by the control node which puts the calling party X on hold and provides a dial tone to party Z to invoke a call transfer. The transfer dialed digits are sent on the AC15 trunk to the control node. A new call to party Y is placed that connects party Z with party Y. A release signal is sent when party Z completes the transfer and the AC15 trunk is released. Figure 3 illustrates this example.

Figure 3
System to Norstar call transfer



Operating parameters

AC15 Recall: Transfer from Meridian 1 requires XFEM trunk card NT5K19AC or later. This feature is only available in countries that use this card type.

There is no signaling capability for the control node to inform the tandem node or recall originating node that a party has answered or that there has been a release of any call on a split line.

The recall signal received on an AC15 trunk is not tandemed. No recall signal is sent on the reception of a “recall” in message.

Unsplitting of lines is not supported. In instances where a line is split, the line remains split until the whole trunk is released. This parameter ensures consistency on both sides of the AC15 channel. Additionally, it eliminates the possibility of selective release of a call in split mode.

The AC15 trunk must be configured with a digitone (CLS = DTN) Class of Service (LD 14) to ensure that the recall signal is received by the trunk. The trunk must also be configured on a modified XFEM trunk card.

The far end control node must be a switch that supports the recall signal, such as a Norstar.

Transfer chaining is not possible. There is no way to know if party X or party Y has gone on-hook once a trunk has been split. Therefore, Party Z cannot transfer to another telephone or initiate another consultation to a party on another node.

Electronic Switched Networks are supported on the initial transfer, provided that digits are outpulsed on the trunk after the End-to-End Signaling Delay (EESD) timer expires. If the far end is not ready for an incoming call, the call will fail because no dial tone will be detected by the system.

The recall transfer for applications, such as Meridian Mail, Customer Controlled Routing or Meridian Link, is not supported.

Optimization is not performed if a Conference key is used.

AC15 trunks using MFC signaling are not supported.

When a trunk has been split, the Release Key functions as a Hold Key. A user cannot selectively release one call in a split mode.

With new functionality of the Release Key, the following events occur if party Z goes on-hook when a trunk is split:

- if HCC = NO, the active call is put on hold;
- if HCC = YES, all calls are released and party X and party Y are connected; or
- if HCC = XFER, or if one of the calls is active, the trunk is released and party X and party Y are connected. If both calls are held, then there is no effect.

Feature interactions

AC15 Recall: Transfer from Norstar

If a recall message is received on a “split out” AC15 trunk, then this message is ignored.

Authorization Codes

Authorization Codes, Basic Authorization Codes and Station Specific Authorization Codes are not supported with the ACRL feature. Recall digits are outputted with the End-to-End Signaling, which does not support the aforementioned features. If a user has trunk access restrictions, it is not possible to override the priority by dialing an authorization code. Another trunk will be seized.

Autodial Last Number Redial

Autodial and Last Number Redial are supported with the AC15 Recall: Transfer from Meridian 1 on the first transfer, provided that the digits are outputted on the trunk after the End-to-End Signaling Delay timer expires. If the far end is not ready, the call will fail because no dial tone detection is performed by the system.

Additional transfers are supported if the stored digits are outputted without any treatment. For example, a route is seized and the route access code is outputted to the far end and interpreted as a Directory Number. No dial tone detector or timer is started, so the digits are outputted immediately without checking the state at the far end.

Call Park

If party Z parks the call initiated by party X (an external caller), then the AC15 Recall: Transfer from Meridian 1 cannot be used to call party Y. Party Z can neither park, selectively, one member of a split trunk nor park a whole split trunk. This avoids a recall to an attendant on the recall originating node that would not be able to send a recall to toggle from one party to another.

Call Detail Recording

Call Detail Recording generates one N record. This record contains information on the first call associated with the Directory Number. Information on the transfer is not retained.

Conference

The use of the Conference key does not activate the AC15 Recall: Transfer from Meridian 1 feature. Conference call is not supported because it is not possible to have two parties on the same trunk.

Digit Display

The toggling from party X to party Y changes on the display of party Z. All digits dialed during the call are displayed. If Party X or Party Y goes on-hook, party Z still displays the number dialed. If an additional extension is dialed, the digits are added to the previously dialed digits.

Redirection

If party Z transfers party X to party Y through Call Forward/Hunting, then the AC15 trunk to party Y is not supported. The AC15 trunk cannot be split. If possible, another AC15 trunk is used.

Speed Call

Network Speed Call

Speed Call and Network Speed Call are supported with the AC15 Recall: Transfer from Meridian 1 on the first transfer, provided that the digits are outpulsed on the trunk after the End-to-End Signaling Delay timer expires. If the far end is not ready, the call will fail because no dial tone is detected by the system.

Additional transfers are supported if the digits are outpulsed without any treatment. For example, the route access code will be outpulsed to the far end. No dial tone detector is assigned and no timer is started so the digits are outpulsed immediately without checking the state at the far end.

Feature packaging

AC15 Recall: Transfer from Meridian 1 requires the following packages:

- AC15 Recall (ACRL) package 236
- International Supplementary (SUPP) package 131
- UK Program (UK) package 190
- Autodial Tandem Transfer (ATX) package 258

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Disable the End-to-End Signaling Tone to originating party at the EEST prompt.
- 2 LD 16 – Define the route accepting recall signal.
- 3 LD 14 – Define the AC15 trunk.
- 4 LD 11 – Define the Aries telephones.

LD 15 – Disable the End-to-End Signaling Tone to originating party at the EEST prompt.
(Part 1 of 2)

Prompt	Response	Description
REQ:	CHG	Change existing data block.
TYPE:	FTR	Customer Features and Options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
...		

LD 15 – Disable the End-to-End Signaling Tone to originating party at the EEST prompt.
(Part 2 of 2)

Prompt	Response	Description
EEST	NO	End-to-End Signaling Tone to originating party.

LD 16 – Define the route accepting recall signal.

Prompt	Response	Description
REQ	NEW CHG	New, or Change.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number, as defined in LD 15
...		
ROUT		Route number
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
TKTP	TIE	Trunk type requires response when REQ = NEW.
...		
CNTL	YES	Changes to controls or timers.
TIMR	EESD 0 - (1024) - 4992	End-to-End Signaling Delay timer. If EESD = 0, the timer is not started and the buffered digits will not be outpulsed.
...		
DLTN	YES	Dial tone provided by the system to the far end switch.
TRRL	YES	Recall signal can be received and transmitted on this route.

LD 14 – Define the AC15 trunk.

Prompt	Response	Description
REQ	NEW CHG	New, or Change.
TYPE	TIE	Type of trunk.
...		
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
XTRK	XFEM	Extended Flexible E & M trunk card.
RTMB		Route number and Member Number
	0-511 1-4000	Range for Large System and CS 1000E system.
	0-127 1-4000	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
SIGL	WR4	AC15 signaling.
SUPN	YES	Answer and disconnect supervision required.
CLS	DTN	Digitone Class of Service.

LD 11 – Define the Aries telephones. (Part 1 of 2)

Prompt	Response	Description
REQ:	NEW CHG	New, or Change.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.

LD 11 – Define the Aries telephones. (Part 2 of 2)

Prompt	Response	Description
...		
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CUST	xx	Customer number, as defined in LD 15
...		
KEY	0-69 TRN 0-69 NUL	To add or remove a Call Transfer key.

Feature operation

- 1** Party X initiates a call to Party Z through an AC15 circuit.
- 2** Party Z places Party X on hold and calls Party Y through the same AC15 circuit.
- 3** Party Z completes the transfer. The AC15 circuit between Party X and Party Z is released.

AC15 Recall: Transfer from Norstar

Contents

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Feature description

The AC15 Recall: Transfer from Norstar (TRRL) feature is typically used in network configurations where a great number of branch nodes (small offices using a Norstar key system) are linked to a centralized system with back office functions (for example, answering facilities, Public Switched Telephone Network access) using AC15 TIE trunks. With this feature, when the system receives a call that has been transferred from Norstar, it can reuse the same AC15 circuit during the three-party phase and can release it when the transfer is complete. Therefore, call blocking between the Norstar and the system is reduced, and the number of necessary AC15 trunks could potentially be reduced.

A call between Party X (on the system) and Party Z (on Norstar) is established. Party Z invokes the transfer feature on Norstar. A recall signal (similar to a dial pulse 1) is sent over the AC15 trunk, which is detected by the Extended Flexible E&M pack (XFEM) card on the system. Party X is placed on hold by the system, dialtone is provided to Party Z, and dialed digits are expected on the trunk. A new call to Party Y progresses based on the analysis of the received digits. Subsequent recall signals are used by Party Z to toggle between Party X (the original party) and Party Y (the desired party).

During the three-party phase, if the active party (X or Y) disconnects, dialtone is provided to Norstar. If the held party (X or Y) disconnects, the active call is unaffected. In both cases, the AC15 trunk is not disconnected. When Party Z goes on-hook, a release signal is received, the transfer is completed, and the AC15 trunk is released. If the transfer cannot be completed due to access restrictions, the Access Denied (ACCD in LD 15) intercept treatment is provided to the held party and the active party is disconnected. If the transfer cannot be completed because the active call is not in a ringing or established state, the active call is abandoned and the held party recalls the attendant. During the three-party phase, only one trunk is used. Without this feature, however, two AC15 trunks are needed.

Operating parameters

There is no signaling capability to inform Norstar that the second called party (Party Y) has answered. Similarly, there is no signaling capability to inform Norstar that there has been a release of any call by Party X or Party Y on the line.

This feature enables the system to process a recall signal received on the AC15 trunk. It does not enable the system to send such a signal.

The AC15 trunk must be configured with digitone Class of Service and answer supervision.

Currently, only Norstar key systems are supported on the far end.

When dialtone is provided by the system, the digits are dialed according to the system's numbering plan, not that of the Norstar.

This feature requires the XFEM trunk card (NT5K19AC) or later. It is only applicable to the UK market.

Whenever a recall signal from Norstar is not allowed by the system (for example, impossible to put a call on hold, conference, or transfer chaining prevention), the signal is ignored.

Feature interactions

This feature introduces a new concept: a trunk can now put a call on hold and perform a transfer. Wherever possible, treatment is kept consistent with that of an analog (500/2500 type) telephone performing the same actions.

AC15 Recall: Timed Reminder Recall

A transfer performed by an AC15 trunk using the Transfer from Norstar feature to another AC15 trunk is not subject to Timed Reminder Recall. This is to prevent a call transferred by someone on Norstar from recalling the system's attendant.

It is recommended that all AC15 cards on the network's system are NT5K19AC or later. This is mandatory for the system which directly interface with the Norstar. This requirement applies to all AC15 cards for this switch, including the cards that do not directly interface with the Norstar.

AC15 Recall: Transfer from Meridian 1

If a recall message is received on a "split out" AC15 trunk, then this message is ignored.

Attendant Consoles

If a party dials the DN of an attendant, current operation interprets this as an attendant recall request. The call is presented to the attendant on the ICI RLL. If the attendant answers, the transferred party is on the source and the controlling party is on the destination. If enhanced secrecy is denied, a three-party conference is established between the transferred party, the controlling party and the attendant.

With the Transfer from Norstar feature, if Y is an attendant it is a simple call presented on the source side of the attendant. When the attendant answers, a two-party conversation is established between the party and the attendant. No conference is established. To prevent transfer chaining, the attendant cannot transfer this party to another destination – dialed digits will be ignored.

Break-in to Enquiry Calls

It is not possible to Break-in to an enquiry call made by the Transfer from Norstar feature.

Call Detail Recording

In all cases, the conditions required for generating a CDR record are not changed by this feature. If the customer wants to see all records generated with this feature, the route containing the AC15 trunk must be configured with CDR = YES. If the customer only wants to see records generated as if the call were transferred by a local telephone, the route containing the AC15 trunk must be configured with CDR = NO.

It is possible to generate S records during simple call transfers. In multiple call transfers, X records are produced in some situations due to the CDR Enhancement feature.

It is possible, with this feature, to define an initial connection record (Q record) for incoming calls. The Q record is generated when an incoming trunk and an ACD agent are connected.

The CDR with Outpulsed Digits and the CDR Time to Answer features can also be applied to this feature.

Call Park

Remote access to Call Park from AC15 TIE trunks is not permitted. It is not possible to park an AC15 trunk if it has a call on hold. When an AC15 trunk is parked, it is not allowed to initiate a consultation call.

Call Trace

When the AC15 trunk is handling two calls during the three-party phase, both calls are traced in LD 80.

Call Trace Enhancement

This enhancement is applicable to the AC15 Recall: Transfer from Norstar feature. A record is issued any time the call state or the active call changes after a recall or a release message has been received from Norstar.

Calling Party Control

If a call comes from a trunk with calling party control, and the destination is a trunk, transferring the call is not allowed. When the AC15 trunk receives the release message, Access Denied treatment is provided.

Call Transfer

A party involved in a consultation call (an active or held party) cannot initiate a consultation call for preventing call chaining. This principle is maintained in the following cases:

- the party is an AC15 trunk (if it attempts to initiate a consultation call, the recall signal is ignored), and
- the party is a local telephone, but the consultation call is made by an AC15 trunk.

Conference

It is not possible in any situation with Transfer from Norstar to establish a three-party conference. It is not possible for an AC15 trunk to initiate a consultation if it is involved in a conference.

Dial Access to Group Calls

If Norstar sends a recall signal in order to initiate a consultation, the consultation will not be authorized because it is not possible to put a group call on hold. It is, however, possible to transfer a party to a group call using an AC15 trunk.

Digital Private Network Signaling System 1 (DPNSS1) Route Optimization

If the call is the active call at the originating exchange and the originator (including an AC15 trunk) has another call on hold, Route Optimization will not be initiated.

If the call is the active call at the terminating exchange and the terminator (including an AC15 trunk) has another call on hold, Route Optimization will not be initiated.

If the call is held at the originating exchange (including an AC15 trunk), Route Optimization should not be initiated. When this call is restored as the active call, it may be optimized.

If the call is held at the terminating exchange (including an AC15 trunk), Route Optimization may be requested by the originator, but the terminating circuit switched network will reject it. When this call is restored as the active call, it may be optimized.

If the call has been transferred to an already answered party (including an AC15 trunk), the transfer signaling sequence is used to initiate optimization.

During a route optimization attempt, if an AC15 trunk is involved in the call either at the originating or terminating exchange, a recall signal is ignored.

DPNSS1 Three-party Service

When the telephone on a Norstar system completes a call transfer between two telephones located within a DPNSS1 network:

- DPNSS1 access restrictions are checked
- the telephones' displays are updated, and
- DPNSS1 route optimization after transfer can be activated.

Incoming Call Indicator Enhancement

If the held party recalls the attendant due to intercept or recall treatment, the recall is presented to the corresponding ICI key (INT or RLL).

Initialize

If initialization occurs during the three-party phase, the call on hold is cleared. If the active call is established, it is kept, otherwise it is cleared as well (and the AC15 trunk is idled).

MFC Signaling

AC15 trunks using MFC signaling are not supported.

Music

A party put on hold by an AC15 trunk hears music if Music is configured.

Periodic Pulse Metering

If Party Z (on Norstar) calls Party X and transfers the call to Party Y, if Party X is an outgoing trunk with PPM or Advice of Charge on the system, the call is charged against the AC15 trunk route's meter until the transfer is completed. When Party Z completes the transfer in ringing status, the charges still accumulate in the AC15 trunk route's meter. If the call is in established status, the charges accumulate against Party Y, if Party Y has a meter, or otherwise against the customer meter.

Radio Paging

It is possible for an AC15 trunk to complete a transfer to a paging trunk. If the held party is a trunk and the RPA recall timer is configured, the call recalls the attendant when the timer expires.

A telephone (or attendant console) involved in a consultation call cannot pick up (by the RPAN Flexible Feature Code) a paged call which is itself a consultation call. This principle applies to consultation calls made with AC15 trunks.

Slow Answer Recall for Transferred External Trunks

In both standalone and Network Attendant Service (NAS) environments, when a call is transferred to a ringing telephone on the system by an AC15 trunk, the RTIM recall timer is not started.

Feature packaging

The AC15 Recall (ACRL) package 236 must be equipped to activate the Transfer from Norstar feature.

For recalls to the Night DN, International Supplementary Features (SUPP) package 131 is required.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Define the access denied intercept treatment.
- 2 LD 16 – Define the route accepting recall signal.
- 3 LD 14 – Define an AC15 TIE trunk.

LD 15 – Define the access denied intercept treatment.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	INT	Intercept treatment options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
INTR	YES	Intercept treatment.
- ACCD	(OVF ATN ATN ATN)	Choice of access denied intercept treatment.
- LLT	(OVF) OFA ATN	Treatment given to calling party when dialtone timer expires: when OVF or OFA is entered, overflow is provided. When ATN is entered, the party is forwarded to the attendant.

LD 16 – Define the route accepting recall signal.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
TKTP	TIE	Trunk type.
NEDC	ETH	Near-end disconnect control by either originator or terminator.
FEDC	ETH	Far-end disconnect control by either originator or terminator.
DLTN	YES	Dialtone provided by the system to the far-end switch.
TRRL	YES	AC15 Recall: Transfer from Norstar. An AC15 trunk on this route is able to receive a recall signal. Prompted with ACRL package 236 if TKTP = TIE, and DTRK = NO.

LD 14 – Define an AC15 TIE trunk.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	TIE	TIE trunk.
TN	l s c u	Terminal number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
XTRK	XFEM	XFEM card.
RTMB		Route number and Member Number
	0-511 1-4000	Range for Large System and CS 1000E system.
	0-127 1-4000	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
SIGL	WR4	AC15 signaling.
SUPN	YES	Answer and disconnect supervision.
CLS	DTN	Digitone Class of Service.

Feature operation

Initiate a consultation

A call is established between Party X (a telephone or trunk) on the system and Party Z on Norstar, through an AC15 trunk. When Party Z initiates a consultation call (Norstar sends a recall signal), Party X is placed on hold and dialtone is provided to Norstar using the same AC15 trunk. The digits received from Norstar are processed according to the system's dialing plan, and eventually Party Y (a telephone, trunk, or attendant console) rings. If no digits are received from Norstar for 14 seconds while Z hears dialtone, overflow tone (for 14 seconds), and then silence (indefinitely) are provided to Party Z. At any time, Norstar may then send another recall signal to be reconnected to Party X.

Toggling during the three-party phase

If Z toggles (Norstar sends a recall signal) while calls with both X and Y are established, the active party is put on hold, and the held party becomes active. If the active call is not established (for example, dialing, ringing, or busy), it is disconnected.

If the held party has released, then if the active call is established it is put on hold, otherwise it is disconnected; in both cases dialtone is provided to Z.

Active or held party disconnects during the three-party phase

If the active party (X or Y) disconnects during the three-party phase, dialtone is provided to Z and a new call can be processed. If the party on hold (X or Y) disconnects, the active call is unaffected. In both cases, the AC15 trunk is not disconnected.

Complete the transfer

Party Z completes the transfer from X to Y, regardless of which is the active party, by going on-hook (Norstar sends a release signal). The transfer is allowed when the active call is ringing or established. Note that if Y is a trunk, although Z is hearing ringback tone, the call will not be considered in a proper state for being transferred until Y's end of dialing timer (EOD or ODT) has expired, or Z has pressed the # sign. In the other call states, the active call is abandoned and the held party recalls the attendant. If the call cannot be transferred due to access restrictions, the active party is disconnected and the held party is given the Access Denied (ACCD) intercept treatment. In all cases, when the release signal is received, the AC15 trunk is disconnected.

Access Restrictions

Contents

This section contains information on the following topics:

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Feature description

Access Restrictions limit terminal access to the exchange network, private network, and certain services and features.

Access Restrictions can be temporarily overridden by the use of other features, if equipped, including Forced Charge Account, Authorization Code, and System Speed Call.

During the call origination process, access checks are made by the system on the following:

- the Class of Service (CLS) of the individual terminal
- the Trunk Group Access Restriction (TGAR) code of the terminal if a direct trunk access code is dialed or as an optional feature when a Basic Alternate Route Selection (BARS) or Network Alternate Route Selection (NARS) access code is dialed
- the area and exchange codes dialed by terminals with Toll Denied or Conditionally Toll Denied Class of Service using direct trunk access codes and Code Restriction tables, and
- the Network Class of Service (NCOS) of the terminal if BARS/NARS or Coordinated Dialing Plan (CDP) access codes are dialed or if direct trunk access codes are dialed and New Flexible Code Restriction tables are programmed.

If any restrictions are detected when a call is placed, the call is given intercept treatment as defined in the Customer Data Block.

Class of Service restrictions

The Class of Service restrictions assigned to telephones and TIE trunks control the degree of access to and from external networks and certain features within the system. The eight possible Class of Service Access Restrictions are described in this feature module. These restrictions are applied by service change overlay programs to terminals. Table lists the type of terminals and the corresponding overlay program.

Table 1
Type of terminal and the corresponding overlay program for configuring Class of Service restrictions.

Terminal Type	Overlay
Analog (500/2500 type) telephone	10
Meridian 1 proprietary telephones, Meridian Mail channels	11
Incoming TIE trunks	14
Authorization Codes	88
DISA ports	24

Descriptions of the eight Class of Service Access Restrictions follow, from the most restricted to the least restricted.

Fully Restricted Service

There are three levels of Fully Restricted Service:

- FR2
 - allowed to originate and receive internal calls
 - denied access to TIE and Common Controlled Switching Arrangement networks
 - denied access to and from the exchange network, either by dialing, through an attendant, or using call modification from an unrestricted telephone

Call modification takes place when certain features are activated while a call is in progress (for example, Call Park, Call Pickup, Call Transfer, Conference, or Night Answer).

- FR1
 - allowed to originate and receive internal calls

- allowed access to TIE and CCSA networks
- denied access to and from the exchange network, either by dialing through an attendant or by using call modification from an unrestricted telephone

Note: In a networking environment, incoming and outgoing calls can be extended, through call modification, to a telephone with CLS = FR1.

If a telephone with CLS = FR1 is in a Multiple Appearance DN (MADN) arrangement, the call may be presented if at least one of the telephones has CLS = UNR. Once the call is presented, it will ring all telephones in the MADN group. However, only UNR telephones can answer the call.

- FRE
 - allowed to originate and receive internal calls
 - allowed access to TIE and CCSA networks
 - allowed access to and from the exchange network using call modification from an unrestricted telephone
- denied access (either by dialing or through an attendant) to and from the exchange network

Note: The FRPT prompt in LD 17 allows or denies access to incoming calls for FRE CLS telephones. It allows FRE calls to Call Pickup, Night Answer, and to receive modified calls.

The assignment of Incoming Call Indicator (ICI) keys allows the attendant to recognize which calls are fully restricted:

- DF0 = calls from FRE, FR1, and FR2 CLS, and
- DL0 = calls from CUN, CTD, TLD, SRE, and UNR CLS.

Semi-Restricted Service (SRE)

- allowed to receive calls from the exchange network
- restricted from all dial access to the exchange network
- allowed to access the exchange network through an attendant or an unrestricted telephone only

Toll Denied Service (TLD)

- allowed to receive calls from the exchange network
- allowed access to WATS trunks for toll calls using direct trunk access codes, unless New Flexible Code Restriction (NFCR) is programmed to deny certain digits
- denied from calls on Central Office/Foreign Exchange (CO/FX) trunks where 0 or 1 is dialed as a first or second digit following a direct trunk access code. Special numbers, such as 411, 611, and 911, are allowed by default unless restricted specifically by NFCR.
- denied from toll calls on CO/FX trunks when BARS or NARS access codes are dialed, unless NFCR tables allow the call
- allowed toll calls on WATS trunks using BARS or NARS access codes, unless NFCR tables deny digits
- allowed access to the toll exchange network through an attendant or an unrestricted telephone
- allowed toll calls and special number calls on TIE trunks, unless NFCR tables specifically deny certain digits. Direct trunk access to toll calls on TIE trunks is permitted, as well as BARS or NARS access.

Conditionally Toll Denied Service (CTD)

- allowed to receive calls from the exchange network
- allowed access to WATS trunks for toll calls using direct trunk access codes, unless New Flexible Code Restriction (NFCR) is programmed to deny certain digits
- denied from calls on CO/FX trunks where 0 or 1 is dialed as a first or second digit following a direct trunk access code (special numbers excepted). New Flexible Code Restriction tables can be used to deny or allow certain calls on these routes.

- allowed access to toll calls on CO/FX/WATS trunks placed using BARS or NARS or CDP access codes. NFCR tables, if programmed on the routes, are ignored for CTD users dialing Electronic Switched Network (ESN) access codes.
- allowed toll calls and special number calls on TIE trunks, unless NFCR tables specifically deny certain digits. Direct trunk access is permitted as well as BARS or NARS access. NFCR tables deny calls for these users only if direct TIE trunk access codes are used.

Conditionally Unrestricted Service (CUN)

- allowed access for calls placed through Automatic Number Identification (ANI) trunks
- denied access for all other types of outgoing calls

Unrestricted Service (UNR)

- allowed to originate and receive calls from the exchange network

The eight possible Class of Service Access Restrictions are described in Table 2.

Table 2
Class of Service Access Restrictions chart

	UNR	CTD/CUN	TLD	SRE	FRE	FR1	FR2
Incoming trunk calls	Yes	Yes	Yes	Yes	No Yes, if using call modification. (See page 158)	No	No
Outgoing non-toll trunk calls	Yes	Yes	Yes	No direct access Yes, if using attendant or UNR telephone	No direct access Yes, if using UNR telephone	No	No
Outgoing toll trunk calls (0 or 1+ on COT or FX)	Yes	No direct access Yes, if using BARS/NARS	No direct access Yes, if using attendant or UNR telephone	No direct access Yes, if using attendant or UNR telephone	No direct access Yes, if using UNR telephone	No	No
To/From TIE trunk	Yes	Yes	Yes	Yes	Yes	Yes	No
To/From internal	Yes	Yes	Yes	Yes	Yes	Yes	Yes
BARS/NARS calls TGAR = No	Uses NCOS only	Uses NCOS only	Uses NCOS and CLS	Uses NCOS and CLS	Uses NCOS and CLS	Uses NCOS and CLS	Uses NCOS and CLS
BARS/NARS calls TGAR = Yes	Uses NCOS and TGAR	Uses NCOS and TGAR	Uses NCOS, CLS, and TGAR	Uses NCOS, CLS, and TGAR	Uses NCOS, CLS, and TGAR	Uses NCOS, CLS, and TGAR	Uses CLS only

Code Restriction

Code Restriction allows limited access to the toll exchange network to stations and TIE trunks with a Toll Denied Class of Service (TLD). A Code Restriction Block that specifies the allowed area and exchange codes (200 through 999) is built for each trunk route. This block restricts access to specific area and exchange codes by monitoring the digits dialed.

There can be only one Code Restriction Block per route. The only routes that use Code Restriction Blocks are Central Office Trunk (COT) and FX, since they are toll routes. Code Restriction Blocks are ignored for all other types of routes.

When a telephone or TIE trunk with a CTD, CUN, or TLD Class of Service directly access a COT or FX route, the system examines the Code Restriction Block to determine the call eligibility.

Special numbers 01, 011, 411, 611, 800, and 911 are allowed by default. These special numbers, however, can be restricted in the Code Restriction Block so that they cannot be dialed successfully.

Code Restriction Blocks only perform three-digit screening. For 1+ dialing areas, the system can ignore the 1 when examining the TLD telephone dialed number. The 1 is later outpulsed with the dialed number to complete the call successfully.

Trunk Group Access Restriction

Trunk Group Access Restriction (TGAR) controls access to the exchange network, TIE trunks, CCSA trunks, and paging and dictation services.

Telephones (LD 10, LD 11), TIE trunks (LD 14), Direct Inward System Access (DISA) trunks (LD 24), Meridian Mail channels (LD 11), and Authorization Codes (LD 88) are assigned a TGAR code, which is used to block access to certain trunk groups entirely.

There can be up to 32 TGAR codes in use on a system (0-31).

When a telephone or TIE trunk dials the access code to a trunk route, the system first checks the Class of Service of the terminal. If access is allowed, the TGAR is checked next. If the TGAR of the originating terminal matches one of the listed Trunk Access Restriction Group (TARG) codes programmed against the trunk group, access is denied. Intercept treatment is given to denied calls. A list of TARG codes can be programmed in LD 16 against each route, where applicable, to block access by certain terminals.

Optionally, the TGAR can be used to block access to certain routes even when a BARS or NARS access code is dialed and the route is being seized. To enable/disable the TGAR option, the TGAR prompt must be defined in the Electronic Switched Network (ESN) data block in LD 86.

When denied access because of TGAR, a user may still gain access to a route through the attendant console or an unrestricted terminal.

If the attendant uses the Trunk Group Busy (TGB) keys on the console to make trunk groups busy, terminals with TGAR code 0-7 are intercepted to the attendant when they access the route by dialing or try to gain access using ESN access codes. Terminals with TGAR code 8-31 continue to have access to the route, unaffected by the activation of the TGB keys.

The default, TGAR code 1, means the terminal is Conditionally Toll Denied (CTD).

The following example further explains Trunk Group Access Restrictions. Assume a customer has seven trunk routes:

TGAR	Access denied to routes
Route 0	COT
1	WATS
2	FX 1
3	FX 2
4	TIE 1
5	TIE 2
6	Paging

Assume the following seven TGAR codes are required:

TGAR	Access denied to routes
0	No restrictions
1	0, 1, 2, 3, 4, 5, 6 (default)
2	2, 3, 4, 5
3	3, 4, 5
4	2, 6
5	3, 4, 5, 6
6	5, 6

The TGAR/TARG matrix summary is as follows:

Trunk Type	Route number	TARG Code
		0 1 2 3 4 5 6 7-31
COT	0	1
WATS	1	1
FX 1	2	1 2 4
FX 2	3	1 2 3 5
TIE 1	4	1 2 3 5
TIE 2	5	1 2 3 5 6
Paging	6	1 4 5 6

It follows from the matrix summary that a telephone or TIE trunk was assigned one of the following TGAR codes:

- 0 (has no restrictions)
- 1 (cannot access trunk routes 0 through 6)
- 2 (cannot access trunk routes 2 through 5)

- 3 (cannot access trunk routes 3 through 5)
- 4 (cannot access trunk routes 2 and 6)
- 5 (cannot access trunk routes 3 through 6)
- 6 (cannot access trunk routes 5 and 6)

Trunk signaling arrangements

Trunk-to-trunk connections are further controlled by the signaling and supervision arrangements assigned to each trunk. Table 3 summarizes the trunk signaling arrangements.

Table 3
Trunk signaling arrangements

From	To		
	Trunk with/ without disconnect supervision	Paging dictation trunk	Telephone (non-trunk)
Trunk with disconnect supervision	Yes	No	Yes
Trunk without disconnect supervision	No	No	Yes
RAN/Paging dictation trunk	No	No	No
Telephone	Yes	Yes	Yes
Note: Yes = connection allowed No = connection disallowed			

Two outgoing trunks cannot be connected unless a supervising party, local to the system, is conferenced in the call. This is true regardless of the supervisions.

Transfer from a supervised trunk to a non-supervised loop start trunk is not permitted.

Operating parameters

If a conflict exists between the Class of Service (CLS) and Trunk Group Access Restrictions (TGAR), the access denied restriction takes precedence.

Access Restrictions are applied through service change overlay programs. Access to telephone and trunk features is denied in the respective data block by allowing the system to default to a denial, by not entering the appropriate feature code, or by not assigning the feature to a key/lamp pair. You must enable the features and Access Restrictions you want, on a customer and telephone level.

Services such as paging and dictation can be restricted through TGAR codes, because the auxiliary equipment is linked to the system by way of trunks.

Feature interactions

AC15 Recall: Timed Reminder Recall

With call modification, a trunk-to-trunk connection is controlled by signaling, recall capability and the supervision assigned to each trunk. For example, an established call from an unsupervised trunk cannot be transferred over another trunk.

When the AC15 Timed Reminder Recall feature is to be activated, an established call with an unsupervised trunk may be extended over an AC15 trunk because the connection is controlled before the called party answers by the AC15 recall timer.

Call Park

A call can be parked on any DN, regardless of its Class of Service. Access to a parked call is governed by the same Class of Service restrictions for normal trunk-to-telephone call processing. Table 4 details the restrictions. These restrictions can be overridden with the Authorization Code.

Table 4
Parked call Access Restrictions.

Parked call type	Accessing telephone Class of Service		
	FRE	FR1	FR2
Telephone	allowed	allowed	allowed
CO/FX/WATS	denied	denied	denied
DID Trunk	denied	denied	denied
TIE trunk	allowed	allowed	denied

Call Pickup Network Wide

All Access Restrictions applicable to Network Alternate Route Selection (NARS)/Basic Alternate Route Selection (BARS) calls (including Class of Service, Network Class of Service, Trunk Barring (TBAR), and New Flexible Code Restriction (NFCR) restrictions based on digit manipulation) apply to a redirected call from the receiving node to the requesting node. This means that there are no limitations added to the access restriction checks for calls being redirected by the Call Pickup Network Wide feature.

If the call is blocked because of any of these Access Restrictions on either the receiving, tandeming, or requesting node, the originally called party is re-rung and the party attempting to pick up the call receives overflow tone.

Digital Private Network Signaling System (DPNSS1)/Digital Access Signaling System (DASS2) Uniform Dialing Plan (UDP) Interworking

The connection between the network user (extension or trunk) and the DPNSS1 UDP trunk can be barred based on the Class of Service Restrictions of the parties involved. The connection between the network user (extension or trunk) and the DPNSS1 trunk can also be barred based on the Trunk Group Access Restrictions feature. It is possible to bar the connection between originator and terminator through a DPNSS1 UDP trunk based on the DPNSS1 signaling information.

The Code Restriction sub-feature is not supported.

Direct Inward System Access

Access Restrictions are assigned to the Direct Inward System Access (DISA) DN as they are to any station within the system. Separate Access Restrictions are also assigned to authorization codes used by DISA callers.

Group Hunt

If a routing-associated DN is programmed in a group hunt list, the Access Restrictions based on the Class of Service and/or TGAR of the calling station/route apply.

ISDN QSIG/EuroISDN Call Completion

ISDN QSIG/EuroISDN Call Completion does not override Access, Call Restriction or Trunk Group Access Restrictions. When Call Completion is activated, the second call has the same restrictions as the initial call that received either no answer or a busy indication.

New Flexible Code Restriction

The Code Restriction feature and New Flexible Code Restriction cannot be implemented simultaneously for the same customer.

Scheduled Access Restrictions

The Trunk Access Restriction Group (TARG) defined for each route is not altered by Scheduled Access Restrictions. Access to the route is denied to any telephone or trunk assigned a Trunk Group Access Restriction code that is part of the TARG.

Trunk Barring

Trunk Barring is at the top of the hierarchy for Access Restrictions.

Virtual Network Services

Any VNS call is subject to the same Class of Service restrictions as if the call was performed on a TIE trunk, regardless of the type of Bearer trunk used.

Trunk Group Access Restrictions (TGARs) do not apply to VNS, and therefore they never restrict a VNS call from being made.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1** LD 10 – Define a Class of Service and TGAR code for analog (500/2500 type) telephones.
- 2** LD 11 – Define a Class of Service and TGAR code for proprietary telephones.
- 3** LD 14 – Define a Class of Service and TGAR code for trunks.
- 4** LD 88 – Assign a Class of Service to the Authorization Code classcode.
- 5** LD 86 – Enable or disable the Trunk Group Access Restriction (TGAR) option.
- 6** LD 24 – Assign a Class of Service to Direct Inward System Access (DISA) numbers.
- 7** LD 17 – Allow or deny incoming calls to telephones with the FRE Class of Service for all customers.
- 8** LD 16 – Add or change the TARG code for a trunk route.
- 9** LD 19 – Implement Code Restriction on trunk routes.
- 10** LD 16 – Define toll access digits that are to be ignored for Code Restriction.

LD 10 – Define a Class of Service and TGAR code for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change.
TYPE:	500	Telephone type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
TGAR	0-(1)-31	Trunk Group Access Restriction. The default of 1 automatically blocks direct access.
CLS	(CTD)	Conditionally Toll Denied (default).
	UNR	Unrestricted.
	CUN	Conditionally Unrestricted.
	TLD	Toll Denied.
	SRE	Semi-Restricted.
	FRE	Fully Restricted.
	FR1	Fully Restricted 1.
FR2	Fully Restricted 2.	

LD 11 – Define a Class of Service and TGAR code for proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
TGAR	0-(1)-31	Trunk Group Access Restriction. The default of 1 automatically blocks direct access.
CLS	(CTD)	Conditionally Toll Denied (default).
	UNR	Unrestricted.
	CUN	Conditionally Unrestricted.
	TLD	Toll Denied.
	SRE	Semi-Restricted.
	FRE	Fully Restricted.
	FR1	Fully Restricted 1.
FR2	Fully Restricted 2.	

LD 14 – Define a Class of Service and TGAR code for trunks.

Prompt	Response	Description
REQ	CHG	Change.
TYPE	TIE	TIE trunk.
	ISA	Integrated Services Access trunk.
	CSA	Common Control Management Access Line.
TN		Terminal Number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
TGAR	0-(1)-31	Trunk Group Access Restriction The default of 1 automatically blocks direct access.
	X	Precede with X to remove
CLS	(CTD)	Conditionally Toll Denied (default).
	UNR	Unrestricted.
	CUN	Conditionally Unrestricted.
	TLD	Toll Denied.
	SRE	Semi-Restricted.
	FRE	Fully Restricted.
	FR1	Fully Restricted 1.
	FR2	Fully Restricted 2.

LD 88 – Assign a Class of Service to the Authorization Code classcode.

Prompt	Response	Description
REQ	CHG	Change.
TYPE	AUB	Authcode Data Block.
CUST	xx	Customer number, as defined in LD 15
SPWD	xxxx	Secure data password (see LD 15 for description).
CLAS	0-115	Classcode number.
CLS	(CTD) UNR CUN TLD SRE FRE FR1 FR2	Conditionally Toll Denied (default). Unrestricted. Conditionally Unrestricted. Toll Denied. Semi-Restricted. Fully Restricted. Fully Restricted 1. Fully Restricted 2.
TGAR	0-(1)-31	Trunk Group Access Restriction. The default of 1 automatically blocks direct access.
NCOS	(0)-99	Toll Restricted.

LD 86 – Enable or disable the Trunk Group Access Restriction (TGAR) option.

Prompt	Response	Description
REQ	CHG	Change.
CUST	xx	Customer number, as defined in LD 15
FEAT	ESN	Electronic Switched Network.
...		
TGAR	(NO) YES	Do not check for Trunk Group Access Restrictions when a call is placed through BARS. Check for Trunk Group Access Restrictions when a call is placed through BARS.

LD 24 – Assign a Class of Service to Direct Inward System Access (DISA) numbers.

Prompt	Response	Description
REQ	CHG	Change.
TYPE	DIS	Direct Inward System data block.
CUST	xx	Customer number, as defined in LD 15
SPWD	xxxx	Secure data password (see LD 15 for description).
DN	xxx...x	DISA Directory Number.
TGAR	0-(1)-31	Trunk Group Access Restriction. The default of 1 automatically blocks direct access.
NCOS	(0)-99	Network Class of Service.
CLS	(CTD) UNR CUN TLD SRE FRE FR1 FR2	Conditionally Toll Denied (default). Unrestricted. Conditionally Unrestricted. Toll Denied. Semi-Restricted. Fully Restricted. Fully Restricted 1. Fully Restricted 2.

LD 17 – Allow or deny incoming calls to telephones with the FRE Class of Service for all customers.

Prompt	Response	Description
REQ	CHG	Change.
TYPE	PARAM	System Parameters.
...		
FRPT	(NEFR) OLFR	(Deny) allow incoming trunk calls to telephones with FRE CLS, using call modification.

LD 16 – Add or change the TARG code for a trunk route.

Prompt	Response	Description
REQ	CHG	Change.
TYPE	RDB	Route data block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
TARG	1 2 3...31	Route TARG codes (list each TARG to be blocked from using this route – put a space between each entry). To remove an entry, precede with X.

LD 19 – Implement Code Restriction on trunk routes.

Prompt	Response	Description
REQ	CHG	Change.
TYPE	CRB	Code Restriction Block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number of COT or FX
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
		There can be only one Code Restriction Block for each COT or FX route.

CLR	ALLOW	Allow all NPA/NXX codes except those entered in response to the prompt DENY.
	DENY	Deny all NPA/NXX codes except those entered in response to the prompt ALLOW.
	<CR>	Used when REQ = CHG.
ALLOW	xxx xxx...	If CLR = DENY, enter the NPA/NXX codes (200-999) allowed.
DENY	xxx xxx...	If CLR = ALLOW, enter the NPA/NXX codes (200-999) denied.

LD 16 – Define toll access digits that are to be ignored for Code Restriction.

Prompt	Response	Description
REQ	CHG	Change.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
OABS	x x x	Outgoing digits (0-9) to be ignored.

Feature operation

No specific operating procedures are required to use this feature.

Activity Codes for Not Ready State

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This section contains information on the following topics:

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Feature description

The Activity Codes for Not Ready State feature allows an agent to use the existing Activity Code key to record activities while in the Not Ready State.

Operating parameters

This feature is designed for proprietary telephones with display. This feature is not supported for analog (500/2500 type) telephones.

The Not Ready State is automatically invoked if the supervisor uses the following keys:

- Observe Agent
- Call Agent
- Answer Agent
- Answer Emergency

Note: When these keys are used, the Activity Code key lamp does not flash.

The Activity entry key and Activity key lamp are not affected if the Program key, the Display key, volume up/down, and handsfree keys are used.

If any key other than the Activity, Handsfree Mute, Dial Pad, Display key or Volume Control key is pressed while entering an Activity code, the Activity key lamp turns dark and any code entered is lost.

Activity Codes for the Not Ready State cannot be activated during Walkaway, Logged Out or Make Set Busy states.

An incoming call to the agents Individual Directory Number (IDN) does not interfere with the Activity Code entered, if the entry is completed before answering the call. If the Activity Code entry is not completed before answering an incoming call, the Activity Code is lost.

Feature interactions

Multiple Queue Assignment

If Multiple Queue Assignment (MQA) is in use, the default Activity code sent to the Meridian MAX becomes the default code for the queue of the agent's last call answered. The ACD D defaults back to the last ACD DN the telephone was logged into.

Return to Queue on No Answer

If a call is not answered by an agent, the call is sent back to the Automatic Call Distribution (ACD) queue and the agent's telephone is automatically put into the Not Ready State. The Activity key lamp does not flash.

Feature packaging

There are two minimum package combinations required to operate this feature: one for Meridian MAX and the other for the Symposium Call Center.

The feature packaging requirements for Meridian MAX are:

- Automatic Call Distribution, Account Code (ACNT) package 155
- Automatic Call Distribution Package D (ACD D) package 50
- ACD D, Auxiliary Link Processor (LNK) package 51
- Automatic Call Distribution Package D, Auxiliary Security (AUXS) package 114

The feature packaging requirements for Symposium are:

- Automatic Call Distribution, Account Code (ACNT) package 155
- Symposium Call Center (NGCC) package 311

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 11– Define an Activity Code key for proprietary telephones.
- 2 LD 23 – Enable Activity Codes in the Not Ready State for an ACD queue.

LD 11– Define an Activity Code key for proprietary telephones.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN	l s c u c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CUST	xx	Customer number, as defined in LD 15.
...	...	
KEY	xx ACNT	xx = Key number (the ACNT key cannot be configured as 0).

LD 23 – Enable Activity Codes in the Not Ready State for an ACD queue.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	ACD	Automatic Call Distribution data block. Requires Basic Automatic Call Distribution (BACD) package 40.
...	...	
ACNT	x...x	Account (Default activity code). Maximum four digits. Prompted if the ADS data block is built and the DCUS (Maximum number of ACD customers) setting in LD 17 is greater than one.
NRAC	YES	Enable Not Ready Activity Codes. (NO) = default.
- NDFL	xxxx	Not Ready Default code. Must be equipped with ACD D or NGCC package.

Feature operation

To enter an Activity Code in the Not Ready State:

- 1 Press the Not Ready key. The Not Ready key lamp lights and the Activity Code key lamp flashes.
- 2 Press the Activity key. The Activity key lamp lights steadily.
- 3 Enter the activity code.

Note: The * is used to delete one digit at a time. The # symbol delete all the digits entered.

- 4 Press the Activity key. The activity code is sent to the system and the Activity Code key lamp goes out. This completes the activity code entry.

- 5 An ACD agent can enter multiple activity codes for each activity completed during any Not Ready Session. Repeat steps 2-4 until all tasks are entered.
- 6 Press the Not Ready key. The Not Ready key lamp goes out and the agent is placed back into the ACD queue.

To use the Display key in the Not Ready State:

- 1 The agent presses the Display key. The telephone display is cleared.
- 2 The agent presses the Activity key. The previously entered Activity Code appears in the telephone display.
- 3 The agent presses the Display key twice (or presses the RLS key) to display the time and date.

Note 1: If an activity code is not entered, the code configured in Overlay 23 (the Not Ready Default code setting) is sent to the system and the Activity Code Key lamp goes out.

Note 2: The ACCT message timestamp is set the first time the Activity key is pressed.

Alarm Management

The Alarm Management feature enhances and updates system operations, administration, and maintenance. Alarm Management provides overall alarm and fault handling, as well as refinements to system displays and alarm processes.

Alarm Management provides the following subfeatures:

- Event Collector
- Event Server
- Alarm Notification
- Escalation and Suppression Thresholds

For information on the Alarm Management feature, refer to “LD 117: Ethernet and Alarm Management” in *Software Input/Output: Administration* (553-3001-311).

Alternative Conference Pad Levels

Contents

This section contains information on the following topics:

Feature description	185
Operating parameters	185
Feature interactions	185
Feature packaging	186
Feature implementation	186
Feature operation	186

Feature description

This feature allows different conference pad levels to be selected during configuration to control the audible levels for parties in a conference call. There are eight acceptable values, from zero to seven.

Operating parameters

There are no operating parameters associated with this feature.

Feature interactions

There are no feature interactions associated with this feature.

Feature packaging

This feature requires International Supplementary Features (SUPP) package 131.

Feature implementation

LD 15 – The value of the conference pad selection must be specified.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	NET	ISDN and ESN Networking options.
...		
- APAD	x y	<p>Alternative Pad, Where: x = trunk pad selection y = conference pad selection</p> <p>Valid inputs for x are: (0) = default for North America 1 = Australia 2 = UK BPC1031 4-wire TIE trunk 3 = UK BPC902 4-wire TIE trunk 4 = China 5-7 = future usage.</p> <p>Valid inputs for y are: (0) = default for North America 1 = Alternative Conference pads selected</p> <p>The default = 0 when REQ = NEW. The default is the existing value when REQ = CHG. Alternative Conference pads are only provided on specific Conference packs.</p>

Feature operation

No specific operating procedures are required to use this feature.

Alternative Loss Plan

Contents

This section contains information on the following topics:

Feature description	187
Operating parameters	188
Feature interactions	188
Feature packaging	188
Feature implementation	188
Feature operation	190

Feature description

Customers can insert or remove, during administration, an alternative trunk-pad switching matrix using this feature. The loss-plan requirements of different countries can thus be satisfied. The alternative fixed trunk-pad matrix can be used in place of the standard pad switching matrix. Refer to Figure 4 on page 237 for the pad switching matrix.

The customer selects the Alternative Loss Plan (APAD) option in LD 15 to access the alternative matrix. The default option is the use of the standard switching matrix.

The customer selects the Multifrequency Compelled (MFC) Class of Service in LD 14 to switch in the pad in the case of MFC Signaling. The Multifrequency Digit Level is also specified here.

Operating parameters

This feature is not to be used with 1.5 Mbit digital trunks.

Feature interactions

B34 Codec Static Loss Plan Downloading

The alternative loss plan tables must be enlarged as the default table is enlarged.

B34 Dynamic Loss Switching

The alternative loss plan tables must be enlarged as the default table is enlarged.

R2MFC 1.5 Mbps Digital Trunk Interface

Alternative Loss Plan is not supported on 1.5 Mbps DTI.

Feature packaging

This feature requires International Supplementary Features (SUPP) package 131.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 14 – Configure the Trunks.
- 2 LD 15 – Configure the Alternative Pad Matrix.

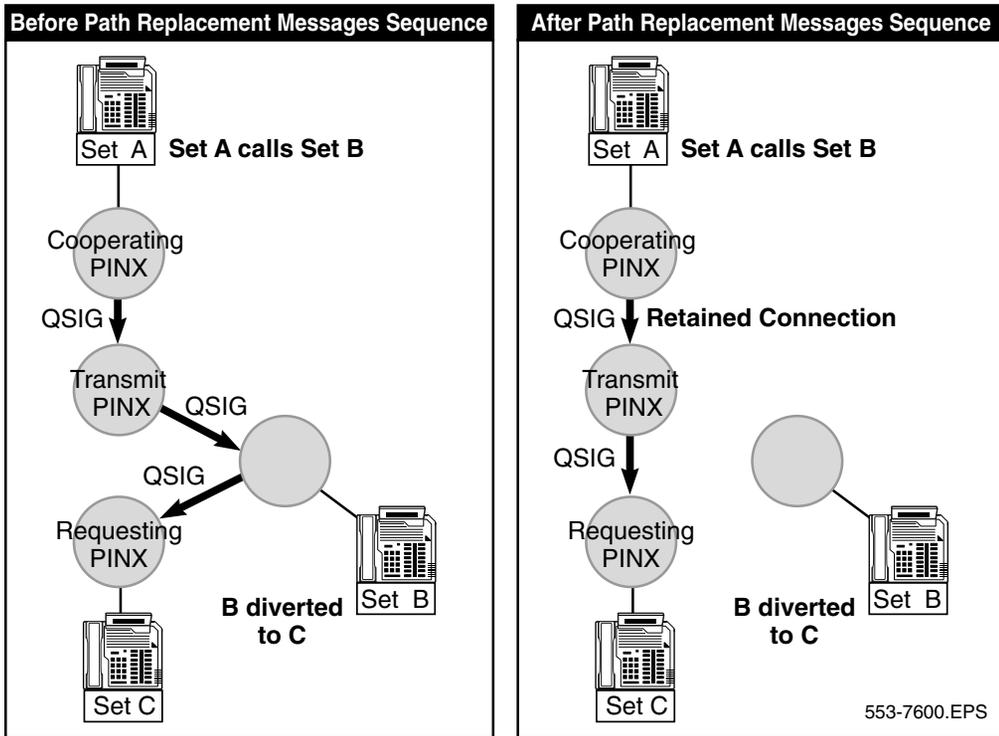
LD 14 – Configure the Trunks.

Prompt	Response	Description
REQ	NEW CHG	Add, or change.
TYPE	DID TIE	Direct Inward Dial TIE trunk data block.
CLS	MFC	R2 Multifrequency Compelled Signaling.
MFL	(0)-7	Input Multifrequency Digit Level required for signals to the PSTN.
MFPD	(NO) YES	Enter YES for pad in, and NO (the default) for pad out, during MFC signaling.

LD 15 – Configure the Alternative Pad Matrix.

Prompt	Response	Description
REQ:	NEW CHG	Add, or change.
TYPE:	NET	ISDN and ESN Networking options.
...		
- APAD	(0) 1 (2 - 7)	Alternative Pad Matrix. 0 = None 1 = Australia 4 = China 2, 3 and 5-7 = Future usage (currently set to default)

Figure 4
Alternative Loss Plan pad switching matrix



Feature operation

No specific operating procedures are required to use this feature.

Alternative Loss Plan for China

Contents

This section contains information on the following topics:

Feature description	191
Operating parameters	192
Feature interactions	192
Feature packaging	192
Feature implementation	192
Feature operation	192

Feature description

This enhancement introduces Alternative Trunk Pad Matrix 4 to be used for China.

At the present time, eight Alternative Trunk Pad Matrix Options are available to satisfy the loss plan requirements of various countries (although only the following five are being used):

- 0 – Standard, for North America
- 1 – Australia
- 2 – United Kingdom
- 3 – United Kingdom
- 4 – China
- 5-7 – Not used

Operating parameters

There are no operating parameters associated with this feature.

Feature interactions

There are no feature interactions associated with this feature.

Feature packaging

This feature is included in base system software.

Feature implementation

LD 15 – Modify Customer Data Block to introduce Alternative Pad Matrix 4 for China.

Prompt	Response	Description
REQ:	NEW CHG	Add, or change.
TYPE:	NET	ISDN and ESN Networking option.
...		
- APAD	(0) 1 4	Alternative Pad Matrix. 0 = None. 1 = Australia. 4 = China.

Feature operation

No specific operating procedures are required to use this feature.

Alternative Routing for DID/DDD

Contents

This section contains information on the following topics:

Feature description	193
Operating parameters	195
Feature interactions	195
Feature packaging	195
Feature implementation	196
Feature operation	196

Feature description

The Alternative Routing for DID/DDD feature provides alternate routing for calls that are recognized as remote Direct Inward Dialing (DID) or Direct Distant Dialing (DDD) Special Numbers (SPN) in a private network. Low cost routing for off-network numbers is also supported.

The Alternative Routing for DID/DDD feature is an enhancement to the Off-net Number Recognition feature.

Refer to *Electronic Switched Network description* (309-3001-100) for further information on the Off-net Number Recognition feature.

For the Alternative Routing for DID/DDD feature, a new type of number is introduced in the SDRR block. It is called the Alternate Routing Remote Number (ARRN). Following each SPN, and only SPNs, a customer can configure ARRNs. For each ARRN, it is also possible to configure an Alternate Route List Index (ARLI).

Call processing follows the same steps as the Off-net Recognition feature follows. The expected digits are compared to the numbers defined in the SDRR Table, and one of the following scenarios applies:

Scenario 1

If a match is found, the following call treatments can occur:

- If the number is recognized as an ARRn, Route Selection with the ARLI defined for the ARRn is performed.
- If the number is in the denied block (such as, SDRR = DENY), standard call blocking takes place.
- If the number is recognized as terminating at the local switch (for instance, SDRR = LDID/LDDD), the call is terminated at the station DN for a DID call, or at the Attendant DN for a DDD call.

Scenario 2

If a match is not found, as in the case of a shorter DN, and the OVLP package is not equipped, timeout handling occurs resulting in call blocking. If timeout handling is not set, call blocking does not occur.

Scenario 3

If a match is not found, as in the case of a shorter DN, and the OVLP package is equipped. The feature then determines if Overlap Sending can be attempted for this call.

- If Overlap Sending is attempted, the timeout handling flag is set to .FALSE (OVLL set to 1).
- If Overlap Sending is not attempted, the timeout handling flag is set to .TRUE (OVLL set to 0)

Note 1: If Overlap Sending is not active the flag can be reset to .FALSE if FNP is equipped and FLEN is a non-zero.

If the number is recognized as terminating at a remote system or Central Office switch (for instance, SDRR = DID/DDD), Route Selection with the RLI that is defined for that SPN is performed.

Route Selection is performed based on the RLI that is found in the table. One RLI corresponds to each SPN. Call processing resumes and the call routes to the Central Office of the terminating Off-net number.

If the route found uses a TIE trunk, then special digit manipulation is applied so that the proper numbers are outpulsed for the call to terminate at the station or attendant.

If the route found does not use a TIE trunk, then the call termination is processed by the current software with digit manipulation, if necessary.

Operating parameters

There are no operating parameters associated with this feature.

Feature interactions

When Special Numbers (SPN) are used in private network calls, all private network features are supported.

Feature packaging

The Alternative Routing for DID/DDD feature requires Flexible Numbering Plan (FNP) package 160, which depends on the following:

- Basic Routing (BRTE) package 14
- Network Class of Service (NCOS) package 32
- New Flexible Code Restriction (NFCR) package 49
- Basic Alternate Route Selection (BARS) package 57
- Network Alternate Route Selection (NARS) package 58
- Coordinated Dialing Plan (CDP) package 59

- Pretranslation (PXLТ) package 92
- Incoming Digit Conversion (IDC) package 113
- Integrated Digital Access (IDA) package 122
- Digital Private Network Signaling System 1 (DPNSS) package 123
- Digital Access Signaling System 2 (DASS2) package 124

Feature implementation

LD 90 – Assign an ARRΝ and ARLI to an SPN.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	SPN	Special code translation data block.
LOC	x...x	Location code (3 digits) or extended LOC (3-7 digits). Enter the location code (xxx) and extended code (xxxx) separated by a space.
- RLI	0-255	Respond to the RLI prompt with the Route List Index number from 0-255 (NARS).
...		
- SDRR	ARRN	Respond to the Supplemental Digit Restriction or Recognition prompt with ARRΝ (Alternate Routing Remote Number).
-- ARRΝ	x x	Respond to the ARRΝ prompt with the Alternate Routing Remote Number (up to five digits).
--- ARLI	0-255	Alternative Route List Index.

Feature operation

No specific operating procedures are required to use this feature.

Application Module

The Application Module (AM), previously known as the Meridian Link Module, is an application processor providing an interface between a host computer and the system providing operations, administration, and maintenance capabilities. It is housed in the Application Equipment Module (AEM). Up to two Application Modules can be put into one AEM chassis in a redundant configuration.

Application Module Link

The Application Module Link (AML) provides supervisory and control functions for the link that allows host computers and other external processors access to Integrated Services Digital Network (ISDN) network services on the system. The tasks performed by the Application Module Link include link activation, fault detection, maintenance, and traffic reporting. The AML provides the association of telephones with one or more DNs with the host computer. This allows a computer to access basic telephone features of the system. Telemarketing, electronic mail, and other features can take full advantage of ISDN services using the AML.

Attendant Administration

Contents

This section contains information on the following topics:

Feature description	201
Operating parameters	203
Feature interactions	204
Feature packaging	207
Feature implementation	207
Feature operation	208

Feature description

Attendant Administration allows the attendant to modify a specific set of features that can be assigned to telephones. The console must have an alphanumeric display, and it must be assigned to the same customer group as the telephones on which the features are to be changed.

Attendant Administration is implemented by assigning a Program key on the flexible feature strip on the attendant console. The Program key and a four-digit password allow the attendant to enter the Program mode in a manner equivalent to logging into the system from a system terminal.

When in the Program mode, the attendant console key/lamp strip functions are changed from normal call processing to the Attendant Administration programming functions. A plastic overlay is placed over the console key/lamp strips to indicate their programming functions.

The attendant inputs the information by pressing the appropriate key or by entering numbers or letters on the dial pad. The alphanumeric display shows the entered information and provides feedback from the system. The feedback includes the current status of the telephone, the prompts requesting input, and the messages indicating an input error.

The following features can be changed by Attendant Administration (any feature not included in the list cannot be modified or changed by the Attendant Administration feature):

- Call Forward (analog (500/2500 type) telephones only)
- Call Forward Busy (all telephones)
- Call Forward No Answer (all telephones)
- Call Pickup (all telephones)
- Call Pickup Group (all telephones)
- Call Transfer (analog (500/2500 type) telephones only)
- Call Waiting (analog (500/2500 type) telephones only)
- Dial Intercom Group (analog (500/2500 type) telephones only)
- Directory Number (analog (500/2500 type) telephones only)
- Hunt Directory Number (all telephones)
- Hunting (all telephones)
- Last Hunt Key (Meridian digital telephones only)
- Message Waiting (all telephones)
- Permanent Hold (analog (500/2500 type) telephones only)
- Ring Again (analog (500/2500 type) telephones only)
- Meridian digital telephone key assignments
- Speed Calling (analog (500/2500 type) telephones only), and
- Stored Number Redial (analog (500/2500 type) telephones only).

For details on how these features operate, refer to the *Attendant Administration User Guide*.

Operating parameters

Calls cannot be initiated or received by the console while it is in the Program mode.

The attendant can only change data for the customer to which the console belongs.

The system generates Customer Service Change (CSC) messages that indicate changes made to individual telephones. These messages may be output on a system terminal or stored in the History File.

Attempting to change a telephone that is busy is not allowed. A busy telephone is defined as a telephone with any active or held calls or with any active features such as Autodial. There are exceptions. A telephone that has Call Forward All Calls or Make Set Busy activated can be modified.

During the time a telephone is undergoing feature changes by the attendant, it is made Maintenance Busy and is therefore inoperative.

If a console remains idle in the Program mode for 20 minutes, the Program mode is terminated and the console returns to Position Busy.

If an attendant console, maintenance telephone, or system terminal tries to log in to the system while another device is logged in, the system displays a message identifying the logged-in device. If a password is then entered, the login is accepted, forcing out the device previously logged in. A console forced out is returned to Position Busy and provided with an output message in the display to indicate what has occurred.

Unlike making service changes at a system terminal, when a Directory Number (DN) is entered for an analog (500/2500 type) telephone that appears elsewhere (as a mixed, Hunt, or Private Line DN), the associated error code (MIX, HUNT, or PVL) is not displayed. If the DN is not valid, an error code is displayed.

The database is automatically dumped during the midnight routine if a transaction has been successfully completed during the previous day. If this datadump fails, the minor alarm lamp on the console will light.

The Attendant Administration password is preserved over an initialization and set to the value on the tape when the system is reloaded.

If the system initializes or reloads while the console is in the Program mode, Attendant Administration is aborted and the console returns to the Position Busy mode. Any service change since the last Prime DN prompt (for initialize) or since the last successful datadump (for system reload) is lost and must be input again.

Feature interactions

Attendant Administration does not support the following features:

- Call Forward, Internal Calls
- Directory Number Delayed Ringing
- Message Registration
- Night Key for Direct Inward Dialing Digit Manipulation
- Period Pulse Metering
- Room Status
- Station Specific Authorization Code
- User Selectable Call Redirection

Attendant Consoles

It is not necessary to have the handset/headset plugged in while in the Program mode. Plugging in the handset/headset while in the Program mode has no effect.

Attendant Position Busy

If a console in the Attendant Administration mode is idle for more than 20 minutes, it automatically reverts to Position Busy. If the system is initialized or reloaded while the console is in Attendant Administration mode, Attendant Administration is aborted and the console is placed in Position Busy.

Attendant Supervisory Console

Attendant Administration mode can be entered directly from the supervisory console from Supervisory or Normal mode by pressing the program (PRG) key. The Supervisory mode does not need to be terminated first.

Automatic Wake Up

The Attendant Administration feature does not support data entry or changes for the Automatic Wake Up feature.

Call Forward No Answer/Flexible Call Forward No Answer

Attendant Administration can assign and change a Flexible Call Forward No Answer DN with the function key on the attendant console.

Call Hold, Deluxe

Deluxe Hold (DHLD) cannot be administered through the Attendant Administration feature.

Console Presentation Group Level Services

Attendants can dial the access code and activate the Administration mode. In this mode, they can modify the configuration of any telephone for this customer.

Controlled Class of Service, Enhanced

Attendant Administration cannot change Controlled Class Service restrictions (CCRS), ECC1 or ECC2, but can assign CLS keys to certain telephones.

Directory Number Delayed Ringing

The Attendant Administration feature is not supported.

End-to-End Signaling

While in the Attendant Administration mode, pressing the Attendant End-to-End Signaling key is ignored.

Hot Line

Use of an attendant console to change the database for Enhanced Hot Line is not supported.

ISDN Calling Line Identification Enhancements

Administration of a Calling Line Identification entry, for a telephone from an attendant console, is not supported.

Multiple Appearance Directory Number Redirection Prime

Multiple Appearance Directory Number Redirection Prime (MARP) TNs cannot be added, moved, or deleted with Attendant Administration. The DN information that displays on the console includes the MARP designation if applicable.

Attendant Administration activities, like changing key assignments or DN appearance, can change MARP TN assignments. If so, the CSC102 message appears on the teletype (TTY) indicating a new default MARP TN, as follows:

```
CSC102 DN nnnn NEW MARP l s c u (c u)
```

where:

nnnn = the DN associated with the MARP TN

l s c u (c u) = the new MARP TN assigned to DN nnnn (c u for Small Systems and CS 100S systems)

Multi-Party Operations

Attendant Administration allows certain station Classes of Service to be altered. The operation of Attendant Administration is modified so that if an attendant tries to alter either XFA or XFD Class of Service, then Three-party Service (TSA) Class of Service is disallowed. The TSA and XFA Classes of Service are mutually exclusive. When XFA is assigned, TSA will be disallowed if it was not configured. XFD is not mutually exclusive with TSA, but TSA will not be automatically assigned if the Class of Service is changed to XFD. TSA Class of Service cannot be assigned through Attendant Administration.

This feature can not be used to setup the Three-party Service TSA Class of Service.

Phantom Terminal Numbers (TNs)

The Attendant Administration feature does not support phantom TNs. Phantom DNs cannot be configured on a non-phantom TN.

Remote Call Forward

Attendant Administration does not support the telephone programming associated with Remote Call Forward.

Speed Call, System

System Speed Call lists can be assigned using Attendant Administration.

Feature packaging

Attendant Administration (AA) package 54 requires Attendant Overflow Position (AOP) package 56.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Assign an Attendant Administration access code.
- 2 LD 12 – Add or change Attendant Administration key.

LD 15 – Assign an Attendant Administration access code.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	PWD	Customer related passwords
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.

- ATAC	xxxx	New or changed Attendant Administration access code (maximum four digits). X preceding the access code removes it.
-- PWD2	xxxx	This password is programmed in LD 17 at the PWD2 prompt.

LD 12 – Add or change Attendant Administration key.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	2250	Attendant console type.
CUST	xx	Customer number, as defined in LD 15
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx PRG	Add an Attendant Administration key.

Feature operation

For details on feature operation, refer to the *Attendant Administration User Guide*.

Attendant Alternative Answering

Contents

This section contains information on the following topics:

Feature description	209
Operating parameters	212
Feature interactions	212
Feature packaging	214
Feature implementation	215
Feature operation	216

Feature description

Attendant Alternative Answering (AAA) allows customers to define a timing threshold for attendant calls. After the predefined time, the unanswered call presented to an idle loop key on an attendant console is forwarded to a predefined DN for alternate answering.

An unanswered call is forwarded to an idle or busy alternate DN. The call is subject to further call modification depending on the database configuration for the alternate DN.

When a call is presented to an idle loop key on the attendant console, the following occurs:

- 1 The system checks the attendant for AAA eligibility by checking for the AAA timer. The AAA timer activates the AAA feature.
- 2 When the timer expires, the unanswered call is forwarded to the Attendant Alternative Answering DN (AAA DN) defined for an individual attendant. Calls forwarded to the AAA DN are subject to the individual telephone's features, independent of the attendant. It is possible that the DN rung is not be the AAA DN.
- 3 After the alternate telephone has been reached, the attendant console releases the call.
- 4 If call termination is unsuccessful at the AAA DN, an error message is generated that explains the problem:
 - If the error is because of an invalid AAA DN or tenant-to-tenant access denied condition, the call remains on the idle loop key for the attendant, and the AAA timer is not started again.
 - For all other errors, the call remains on the attendant loop key and the AAA timer is restarted. The sequence is repeated until the call is answered at the console, disconnected by the caller, or terminated at the AAA DN.

When an Automatic Wake Up (AWU) recall is presented to the AWU key on the attendant console, the following occurs:

- 1 The AWU key buzzes, and the associated indicator fast flashes.
- 2 The attendant presses the AWU key to accept the recall.
- 3 The attendant presses the RLS key to release the call. An AWU recall must be acknowledged before any other calls can be presented to the attendant.
- 4 With AAA, the AWU call is presented to the attendant for the duration of the AAA timer. If an AWU recall is not acknowledged before the timer threshold, the recall is returned to the attendant queue to be presented later. The AWU recall will not be forwarded to the AAA DN.

If the AAA DN does not answer, call treatment is defined by the features allowed for the originally dialed DN. If the originally dialed DN is the attendant, call treatment is defined by the features allowed for the AAA DN.

The order listed below reflects the precedence when one or more call forwarding features is equipped:

- 1** Call Forward All Calls
- 2** Message Center
- 3** Call Forward No Answer
 - Flexible Call Forward No Answer
 - Second Level Call Forward No Answer
 - Call Forward by Call Type
- 4** Automatic Timed Recalls (slow answer)

For an unanswered call presented to a busy AAA DN, treatment is defined by the features enabled for that customer and the AAA DN telephone.

The order listed below reflects the precedence when one or more call forwarding features is equipped on the AAA DN:

- 1** Call Forward All Calls
- 2** Hunting
- 3** Call Waiting
- 4** Message Waiting (Direct Inward Dialing [DID] calls only) (if Message Waiting Forward Busy (MWFB) is enabled in LD 15)
- 5** Call Forward Busy (DID calls only)

If no Call Forwarding feature is defined for the busy AAA DN, the call remains on the attendant console, and the AAA timer is restarted. When the AAA timer expires, the call is again forwarded to the AAA DN.

Operating parameters

Attendant Alternative Answering (AAA) is defined and applicable on a customer basis only, not at the Console Presentation Group (CPG) level. AAA only handles calls presented to the console, not calls in the attendant queue. It is recommended that the AAA DN assigned to an attendant be within the same CPG as the attendant.

Only 63 attendant consoles can be assigned per customer. Only one AAA DN can be assigned per attendant; therefore, this feature is limited to 63 AAA DNs per customer, one for each attendant console.

With Night Service (NSVC) enabled and active, calls are rerouted to the Night Service DN. Calls presented to the NSVC DN are not subject to AAA.

The AAA DN must be a valid DN or ACD DN. If invalid, the call stays on the console.

The AAA DN defined is not subject to pretranslation. The AAA DN must be the actual DN.

This feature allows more than one backup of the attendant to be available, provided the designated alternative DN is defined as a member of a Call Pickup group or as a Multiple Appearance DN.

Feature interactions

Attendant Overflow Position

The Attendant Overflow Position (AOP) DN handles calls from the attendant queue if all attendant consoles are busy or in the Position Busy mode. Calls presented to the AOP DN are not subject to AAA.

Attendant Recall

Under Attendant Recall conditions (ARC), the initiator of the recall rings the destination side of the console, and the third party becomes the source. The AAA timer is applied to the source party. If the AAA timer expires, the destination is dropped, and the source is forwarded to the AAA DN. If the source party disconnects before the destination party, the AAA timer is restarted on the destination party still buzzing the attendant through the ARC key. The AAA timer is dropped if both parties disconnect.

Call Forward All Calls

Call Forward All Calls takes precedence over all other Call Forwarding features for a particular telephone. Calls forwarded by AAA are subject to the Call Forwarding conditions on the AAA DN.

Call Forward Busy

If Call Forward Busy is allowed for the AAA DN (and that DN is busy), a DID call is returned to the attendant and can again be eligible for AAA timing and operation.

Call Forward by Call Type

If Call Forward by Call Type is enabled on the AAA DN, calls are forwarded based on the Call Type of the originator.

Call Forward No Answer

When the AAA DN does not answer, the call can be forwarded by Call Forward No Answer (CFNA) to the DN defined as the CFNA DN for the originally dialed DN. If the originally dialed DN is the attendant, the call is forwarded to the CFNA DN defined for the AAA DN.

Call Pickup

The AAA DN can be assigned to a Call Pickup group to allow members of the same group to answer the call.

Centralized Attendant Service

The AAA timer is not applied to Centralized Attendant Service (CAS) calls routed from the remote CAS location through the Release Link Trunk to the main CAS attendant. All other internal or trunk calls presented to the CAS attendant at the main location are timed by AAA as usual.

If the remote CAS attendant presses the CAS key while a call is being presented, the presented call is subject to AAA timing and is forwarded to the AAA DN at the remote location after the timer expires.

Do Not Disturb

A DN in the Do Not Disturb (DND) mode is free to originate calls but appears busy to incoming calls. Call Forward All Calls takes precedence over DND indication on AAA DNs.

Group Hunt

A Pilot DN can be defined as an alternative DN. Calls forwarded to a Pilot DN as an alternative DN are directed to the next DN in the group.

Hunting

Calls directed to a busy AAA DN with Hunt defined are routed down the Hunt chain as defined for the AAA DN.

A Pilot DN for a hunting group can be defined as an AAA DN. Calls forwarded to a Pilot DN are directed to the next DN in the group.

Manual Line Service

When Attendant Alternative Answering (AAA) is defined, Manual Line Service follows the AAA parameters.

Message Center

If the AAA DN is a Message Center (MWC), then a Message Center call to the attendant and forwarded by AAA is still treated like a Message Center call.

Multi-Tenant Service

Tenant-to-tenant access must be allowed between an internal caller and the AAA DN. If caller-to-AAA access is denied, the call remains on the console until the call is answered or dropped.

Feature packaging

Attendant Alternative Answering (AAA) package 174 has no feature package dependencies; however, this package is mutually exclusive with Attendant Forward No Answer (AFNA) package 134.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Configure the Attendant Alternate Answering feature.
- 2 LD 12 – Define the AAA DN for each attendant console affected.

LD 15 – Configure the Attendant Alternate Answering feature.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	ATT_DATA	Attendant console option.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- ATIM	(0)-126	AAA timer in two-second increments. Odd numbers are rounded down. ATIM = 0 disables the feature

LD 12 – Define the AAA DN for each attendant console affected.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	2250	Attendant console type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.

AADN	c u xxx...x	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit. Attendant Alternative Answering DN.
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Feature operation

No specific operating procedures are required to use this feature.

Attendant and Network-Wide Remote Call Forward

This modification to the Remote Call Forward (RCFW) feature allows a user to program a Call Forward Directory Number from any attendant console or station throughout the network. A new RFW key on the attendant console allows an attendant to view any station's Call Forward status and to activate or deactivate Call Forward for a station.

Attendant Announcement

Contents

This section contains information on the following topics:

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Feature description

The Attendant Announcement (AANN) feature provides announcements for calls terminating on the attendant, attendant queue or night station. Announcements continue to play until the attendant answers the call.

Attendant Announcement is enabled on a route basis at the Attendant Announcement (ATAN) prompt.

An Attendant Announcement can be provided when a call from the Public Network terminates over an MCDN trunk to the attendant or night station. For this functionality, set the ATAN prompt to PSTN in LD 16. An announcement is provided when the incoming call over the network is marked as a PSTN call. Network Attendant Services (NAS) must be enabled for the TIE trunk's D-channel.

Attendant Announcement types

The Attendant Announcement feature provides different announcements based on the state of the call.

Configure the following announcement types in LD 56:

- **Announcement when terminating to the Attendant (ANAT)**
When a call is dialed directly, or intercepted, to the attendant, the caller receives an ANAT announcement.
- **Announcement when Night Service is activated (ANNS)**
When a call is terminated to the night station or the night service queue, the caller receives an ANNS announcement.
- **Announcement when Call Forward No Answer to the Attendant (ANFA)**
When a Call Forward No Answer (CFNA) call is redirected to the attendant, the caller receives an ANFA announcement.
- **Announcement when Call Forward Busy to the Attendant (ANFB)**
When a Call Forward Busy (CFB) or Hunt call is redirected to the attendant, the caller receives an ANFB announcement.
- **Announcement when Slow Answer Recall to the Attendant (ANSR)**
When a call is extended by the attendant and the call is not answered within Recall Timer (RTIM) time, the caller is redirected to the attendant and receives an ANSR announcement.
- **Announcement on Attendant Extended Calls (ANXC)**
When an attendant transfers a trunk call to an extension, the caller receives an ANXC announcement until the requested party goes off hook.
- **Announcement when Overflowed or Forwarded (ANOF)**
If a customer uses the Attendant Overflow Position (AOP) or Attendant Alternative Answer (AAA) features, the call is redirected after a specific time to a predefined telephone. The caller receives an ANOF announcement until the call is answered.

Table 5 summarizes the types of announcements provided to the caller when a call is terminated to the attendant, attendant queue, night station or night queue.

Table 5
Announcement received at termination

Type of call	Call destination	Announcement received
Direct calls or abandoned calls	Attendant or attendant queue	ANAT
Direct calls or abandoned calls	Night station or night queue	ANNS
Call Forward No Answer treatment (CFNA)	Attendant, attendant queue, or night station	ANFA
Call Forward Busy treatment (CFB)	Attendant, attendant queue, or night station	ANFB
Slow Answer Recall	Attendant, attendant queue, or night station	ANSR
Attendant Extended calls	Attendant, attendant queue, or night station	ANXC
Overflowed or Forwarded calls	Attendant, attendant queue, or night station	ANOF

Special options

During normal operations, when a call terminates to the night station, the ANNS announcement is given. This also applies to redirected calls. However, on small systems where the switch is in permanent night mode, call redirection information cannot be used. In this case, Call Forward No Answer calls terminate to the night station and the caller receives an ANNS announcement. If the Night station announcement priority (NIPR) option in the announcement profile is set to “NO”, calls redirected to the night station receive an appropriate greeting.

If an announcement is required only when the call is in the attendant or night service queue, set the Attendant Queue (ANQU) option to “YES”.

Announcement source types

Either of the following external devices provides attendant announcements to the caller:

- Tone interface
- Recorded Announcement (RAN) trunk interface (for example, Nortel Networks Integrated Recorded Announcer)

Tone interface announcements

When announcements are provided through the tone interface, they are treated as tones.

Tone announcements require a digital speech generator connected to the faceplate connector of the Extended Conference (XCT) card or Tone and Digit Switch (TDS) card.

Tone interface announcements are configured in LD 56.

Tone interface announcements play from the beginning of the announcement until the attendant answers the call. No initial greeting can be played.

RAN trunk interface announcements

Attendant announcements can be provided by existing RAN trunks.

To ensure that callers hear the announcements from the beginning, configure the Recorded Announcement with a Delay Dial (DDL) at the Start Arrangement (STRT) prompt in LD 16.

Answer Supervision for RAN trunks

Use the Answer Supervision (ASUP) prompt in LD 16 to return Answer Supervision by RAN to the originator.

Post-RAN post treatment

Existing RAN functionality allows an announcement to repeat up to fifteen times. Post-RAN treatment is followed after the defined number of repetitions. The number of repetitions and Post-RAN treatment are defined in LD 16 at the REP and POST prompts respectively.

For the Attendant Announcement feature, Post-RAN treatment uses RAN Hunting. RAN Hunting allows a new RAN trunk to be connected after the preceding RAN trunk is terminated. This allows a general Recorded Announcement to play once. When this announcement finishes, it then switches to another announcement.

If RAN Hunting is configured to connect to the same route, Hunting does not occur. Therefore, the same Recorded Announcement repeats in a continuous loop. If RAN Hunting is not configured, the current RAN route is used.

Alternative Attendant Announcement treatment

With Alternative Attendant Announcement (AAT) treatment, different announcements are provided to the caller depending on the time and date. For example, a “Good morning!” greeting can be played until noon and then the greeting is switched automatically to “Good afternoon!”.

When you enable AAT in LD 16, you have the following options:

- Alternative Attendant Announcement Time of Day (AATO)
- Alternative Attendant Announcement Day of Week (ADAY)
- Alternative Attendant Announcement Holiday (AHOL)

You can configure up to four different optional times of day and four different optional days of week. Configure these options to select an Alternative Announcement Table (AATB). Only one alternate time and announcement table can be used in the Route Data Block.

If a caller calls within a period specified by one of the Alternative Attendant Announcement options, the Alternative Announcement Table is used.

If the Alternative Attendant Announcement treatment is used with Call Redirection by Time of Day or Call Redirection by Day of Week, the four alternative options must be shared between the two features.

If Integrated Recorded Announcer is used as a RAN source, the Alternative Attendant Announcement option can be disabled, as Integrated Recorded Announcer uses this capability. This helps to reduce the number of RAN ports.

Attendant Alternative Answer

When a call is originated by a trunk, it must be answered in order for the Attendant Announcement to be provided. When Call Answer functionality is activated, the call registers as an answered call.

For Call Answer functionality, you must select one of the following options at the Attendant Alternative Answer Option (AAAO) prompt in LD 16:

- No Call Answer (NO)
- Call Answer on Announcement (CAA)
- Call Answer Forced (CAF)

No Call Answer

No Call Answer is the default operation. With this option, No Call Answer is provided by this feature.

Select this option for trunks where it is not necessary to answer the trunk in order to open the speechpath.

Call Answer on Announcement

When you select this option, a connect message is sent to the originating trunk only when an announcement is provided. An answer is not provided if the incoming call does not terminate to an attendant.

An answer is provided in the following cases:

- a call terminates to the attendant, attendant queue or night station.
- the Call Answer option is enabled
- an external announcement has been configured in LD 56.

Call Answer Forced

Only select this option for cases when tone announcement will be used as the announcement source and an announcement is necessary for all calls terminating to the switch.

When this option is activated, an error message is displayed to indicate that all calls are answered immediately.

With Call Answer Forced, an answer is provided in the following cases:

- a call terminates to the attendant, attendant queue or night station.
- the call answer option is enabled
- an external announcement has been configured in LD 56.

Operating parameters

If a greeting is not defined for one of the announcement types, the caller receives a normal ringback tone. This generates an error message to the maintenance terminal.

After system initialization, calls receiving an announcement are not restored. The calls are dropped and the caller hears silence.

If a caller calls the night station directly, no attendant announcement is provided.

Attendant Announcement is not provided on series calls.

Feature interactions

Attendant Alternative Answering

If the call to the attendant receives an attendant announcement and the call is forwarded to the Attendant Alternative Answering DN, the announcement is removed and an ANOF announcement is provided, if configured.

Attendant Barge-In

A busy tone is provided to the attendant when the operator barges into a trunk that is receiving an attendant announcement.

Attendant Clearing during Night Service

When the attendant goes into night service and a call is in the attendant queue, the call is routed to the night DN and receives the appropriate announcement defined for the night station.

Attendant Forward No Answer

If a call is presented to the attendant, the call receives an announcement, and is forwarded to the night station, the call is requeued. If the call goes to the night station, the caller hears an ANNS announcement, if configured.

Attendant Interpositional Transfer

When an incoming call with Attendant Announcement enabled is transferred to another attendant, no announcement is provided.

Attendant Overflow Position

If a call is presented to the attendant while receiving an announcement and the call is then forwarded to the Attendant Overflow Position DN, the announcement is not removed. The ANOF announcement is provided, if configured.

Attendant Recall

Attendant Announcement does not support the Attendant Recall feature.

Automatic Call Distribution

Automatic Call Distribution (ACD) applies when the night DN is an ACD DN. No announcement is provided when a call terminates to the ACD queue. ACD announcements must be configured instead.

Automatic Timed Reminders

An Automatic Timed Reminders recall receives the appropriate announcements.

Call Detail Recording Time to Answer

Attendant Announcement does not affect Call Detail Recording Time to Answer. A separate CDR for the RAN trunk is generated by the RAN answered calls.

Call Forward All Calls

An Attendant Announcement is provided if the night station activates Call Forward All Calls (CFAC).

An Attendant Announcement is provided when the call terminates to the attendant.

Call Forward No Answer
Call Forward Busy
Slow Answer Recall

Call Forward No Answer (CFNA), Call Forward Busy (CFB) or Slow Answer Recall announcements take precedence over direct calls to the attendant, attendant queue or night station. Announcement when terminating to the Attendant (ANAT) or Announcement when Night Service is active (ANNS) is the standard announcement provided for other calls. Ringback tone is provided to the caller if an announcement is not defined.

Call Redirection by Time of Day
Call Redirection by Day of Week

For Call Redirection by Time of Day and Call Redirection by Day of Week, it is possible to configure up to four options. If Attendant Announcement is configured to use either Call Redirection by Time of Day or Call Redirection by Day of Week, three options remain.

Centralized Attendant Service

Centralized Attendant Service does not support Attendant Announcement.

DPNSS1

The Attendant Announcement feature does not support DPNSS-originated calls.

Direct Inward Dialing Call Forward No Answer Timer

DID Forward No Answer (DFNR) calls receive the Call Forward No Answer announcement when it is terminated to the attendant.

EuroISDN Connected Number

If a call is presented to the attendant, an attendant announcement is provided to the caller. The dialed DN is provided as a connected number.

MCDN-QSIG Gateway

The MCDN-QSIG Gateway is not affected by the Attendant Announcement feature. Attendant Announcement uses existing Network Attendant Services (NAS) information to determine whether an announcement should be given.

Trunk Anti-Tromboning

Trunk-to-trunk connections are optimized when they receive ANSWER treatment. Attendant Announcement answers a trunk call; however, the actual call is not established. The trunk is in an answer state, but it is still present in the attendant queue.

Trunk Anti-Tromboning (TAT) is not triggered during Attendant Announcement. TAT is triggered to optimize the call when the console answers the call.

Recorded Overflow Announcement

Attendant Announcement takes precedence over Recorded Overflow Announcement.

Slow Answer Recall

Slow Answer Recall calls receive ANSR announcement when specified.

Virtual Network Service

Announcements are not provided on internal VNS calls. If ATAN is set to “YES”, no VNS calls receive Attendant Announcement.

Feature packaging

The Attendant Announcement feature introduces Attendant Announcement (AANN) package 384.

This feature also requires the following existing packages:

- Recorded Announcement (RAN) package 7 (if RAN Announcements are used)
- Attendant Overflow Position (AOP) package 56 (if AOP is used)
- Flexible Tones and Cadences (FTC) package 125

- Attendant Forward No Answer (AFNA) package 134 (if AFNA is used)
- Network Attendant Service (NAS) package 159 (if used over MCDN network)
- Message Intercept (MINT) package 163
- Attendant Alternative Answering (AAA) package 174 (if AAA is used)
- Recorded Announcement Broadcast (RANBRD) package 327 (if the broadcast facility of the RAN trunk is used)

Feature implementation

Task summary list

Use the following to configure announcements provided by XCT/TDS tone service:

- 1 LD 56 – Configure the Attendant Announcement table.
- 2 LD 56 – Configure tone announcement for Small Systems and CS 1000S systems.
- 3 LD 56 – Configure tone announcement for Large Systems.
- 4 LD 16 – Enable the Attendant Announcement.

Use the following to configure announcements provided by RAN services:

- 1 LD 16 – Configure RAN routes for Attendant Announcement.
- 2 LD 56 – Configure the Attendant Announcement table for RAN usage.
- 3 LD 16 – Configure Route Data Block for Attendant Announcement.

Announcements provided by XCT/TDS tone service

LD 56 – Configure the Attendant Announcement table.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	AANN	Attendant Announcement data block.
CUST	xx	Customer number, as defined in LD 15
TBL	0-31	Announcement table number.
- NIPR		Nightstation Announcement Priority.
	(NO) YES	ANNS is not provided on each call to the night station ANNS is provided on each call to the night station.
- ANQU	(NO) YES	Announcement is not provided on calls in the attendant queue or night service queue only. Announcement is provided on calls in the attendant queue or night service queue only.
- ANAT	aaa	Announcement when terminating to the Attendant, where: aaa= SRC1 - SRC8 source entry of the appropriate tone table.
- ANNS	aaa	Announcement when terminating to night station, where: aaa = SRC1 - SRC8 source entry of the appropriate tone table.
- ANFA	aaa	Announcement when Call Forward No Answer to Attendant, where: aaa = SRC1 - SRC8 source entry of the appropriate tone table.
- ANFB	aaa	Announcement when Call Forward Busy to Attendant, where: aaa = SRC1 - SRC8 source entry of the appropriate tone table.
- ANSR	aaa	Announcement when Slow Answer Recall, where: aaa = SRC1 - SRC8 source entry of the appropriate tone table.

Prompt	Response	Description
- ANXC	aaa	Announcement on Attendant Extended Calls, where: aaa = SRC1 - SRC8 source entry of the appropriate tone table.
- ANOF	aaa	Announcement on Attendant Overflow Calls, where: aaa = SRC1 - SRC8 source entry of the appropriate tone table.

LD 56 – Configure tone announcement for Small Systems and CS 1000S systems.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	FTC	Flexible Tones and Cadences.
TABL	0-31	Define tone table number.
...		
SRC	YES	Source.
SRC1 - XTON - XCAD	(0)-255 (0)-255	Source that indicates announcement channel of the hardware. XCT (NT8D17 Conference/TDS) Tone code. XCT (NT8D17 Conference/TDS) Cadence number.
SRC2 - XTON - XCAD	(0)-255 (0)-255	Source that indicates announcement channel of the hardware. XCT (NT8D17 Conference/TDS) Tone code. XCT (NT8D17 Conference/TDS) Cadence number.
- SRC3 - XTON - XCAD	(0)-255 (0)-255	Source that indicates announcement channel of the hardware. XCT (NT8D17 Conference/TDS) Tone code. XCT (NT8D17 Conference/TDS) Cadence number.
SRC4 - XTON - XCAD	(0)-255 (0)-255	Source that indicates announcement channel of the hardware. XCT (NT8D17 Conference/TDS) Tone code. XCT (NT8D17 Conference/TDS) Cadence number.

LD 56 – Configure tone announcement for Large Systems.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change new data.
TYPE	FTC	Flexible tone and cadences.
TABL	0-31	Define tone table number.
...		
SRC	YES	Source.
SRC1		Source that indicates announcement channel of the hardware, where: xx = (0)-255.
- TDSH	1 0 0 xx	TDS Hex
- XTON	xx	XCT (NT8D17 Conference/TDS) Tone code.
- XCAD	yy	XCT (NT8D17 Conference/TDS) Cadence number.
SRC2		Source that indicates announcement channel of the hardware, where: xx = (0)-255.
- TDSH	1 0 0 xx	TDS Hex
- XTON	xx	XCT (NT8D17 Conference/TDS) Tone code.
- XCAD	yy	XCT (NT8D17 Conference/TDS) Cadence number.
SRC3		Source that indicates announcement channel of the hardware, where: xx = (0)-255.
- TDSH	1 0 0 xx	TDS Hex
- XTON	xx	XCT (NT8D17 Conference/TDS) Tone code.
- XCAD	yy	XCT (NT8D17 Conference/TDS) Cadence number.
SRC4		Source that indicates announcement channel of the hardware, where: xx = (0)-255.
- TDSH	1 0 0 xx	TDS Hex
- XTON	xx	XCT (NT8D17 Conference/TDS) Tone code.
- XCAD	yy	XCT (NT8D17 Conference/TDS) Cadence number.

LD 16 – Enable the Attendant Announcement.

Prompt	Response	Description
REQ	NEW CHG	Add a new data. Change existing data.
TYPE	RDB	Route Data Block.
...		
TKTP		Trunk Type
	a..a	Attendant Announcement is available on DID, TIE and COT trunks only.
...		
ATAN		Attendant Announcement.
	(NO) YES PSTN	No Attendant Announcement. Enable Attendant Announcement on this route. Enable Attendant Announcement on this route for PSTN calls only (for MCDN trunks only).
- ATBL	xx	Announcement profile table, where: xx = 0-31 This number should correspond with what you set at the AANN prompt to in LD 56.
- AAT		Alternative Attendant Announcement.
	(NO) YES	Disable Alternative Attendant Announcement. Enable Alternative Attendant Announcement.
--AATO	(0) - 3	Alternative Attendant Announcement Time of Day option.
--ADAY	(0) - 3	Alternative Attendant Announcement Day of Week option.
--AHOL	(0) - 3	Alternative Attendant Announcement Holiday option.
--AATB	xx	Announcement Profile Table for Alternative Announcement, where: xx = 0-31 This number should correspond with what you set at the AANN prompt to in LD 56.

Prompt	Response	Description
- AAO	(NO) CAA CAF	Attendant Alternative Answer Option. This option is for Tone Announcements only. No call answer is given Call answer will be given on announcement. Call answer will be given forced.

Announcements provided by RAN services

LD 16 – Configure RAN routes for Attendant Announcement.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	RDB	Route Data Block.
...		
TKTP		Trunk Type.
	RAN	RAN route.
RTYP	MCON	Continuous multichannel.
REP	1-15	Number of repetitions of this RAN.
STRT	DDL	Delay call connection until start of announcement.
BDCT		Broadcast Capability.
	(NO) YES	Deny RAN Broadcast Capability for this route. Allows RAN Broadcast Capability for this route.
WAIT	RGB	Provide ringback tone for calls queuing for RAN trunk.
ASUP		Answer Supervision.
	(NO) YES	Answer Supervision is controlled in the RDB of the incoming trunk route. Return Answer Supervision.

Prompt	Response	Description
RANH		RAN or Music route to use after post treatment.
	0-511	Range for Large System and CS 1000E system.
	0-128	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.

LD 56 – Configure the Attendant Announcement table for RAN usage.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	AANN	Attendant Announcement data block.
CUST	xx	Customer number, as defined in LD 15
TBL	0-31	Announcement table number.
- NIPR		Night station Announcement Priority.
	(NO) YES	ANNS is not provided on each call to the night station. ANNS is provided on each call to the night station.
- ANQU		Attendant Queue.
	(NO) YES	Announcement is not provided on calls in the attendant queue or night service queue only. Announcement is provided on calls in the attendant queue or night service queue only.
- ANAT	aaa	Announcement when terminating to the Attendant, where: aaa = R000 - R511 announcement is provided through the RAN announcement for large system. aaa = R000 - R128 announcement is provided through the RAN announcement for small system.

Prompt	Response	Description
- ANNS	aaa	<p>Announcement when terminating to night station, where:</p> <p>aaa = R000 - R511 announcement is provided through the RAN announcement for large system.</p> <p>aaa = R000 - R128 announcement is provided through the RAN announcement for small system.</p>
- ANFA	aaa	<p>Announcement when Call Forward No Answer to Attendant, where:</p> <p>aaa = R000 - R511 announcement is provided through the RAN announcement for large system.</p> <p>aaa = R000 - R128 announcement is provided through the RAN announcement for small system.</p>
- ANFB	aaa	<p>Announcement when Call Forward Busy to Attendant, where:</p> <p>aaa = R000 - R511 announcement is provided through the RAN announcement for large system.</p> <p>aaa = R000 - R128 announcement is provided through the RAN announcement for small system.</p>
- ANSR	aaa	<p>Announcement when Slow Answer Recall, where:</p> <p>aaa = R000 - R511 announcement is provided through the RAN announcement for large system.</p> <p>aaa = R000 - R128 announcement is provided through the RAN announcement for small system.</p>
- ANXC	aaa	<p>Announcement on Attendant Extended Calls, where:</p> <p>aaa = R000 - R511 announcement is provided through the RAN announcement for large system.</p> <p>aaa = R000 - R128 announcement is provided through the RAN announcement for small system.</p>
- ANOF	aaa	<p>Announcement on Attendant Overflow Calls, where:</p> <p>aaa = R000 - R511 announcement is provided through the RAN announcement for large system.</p> <p>aaa = R000 - R128 announcement is provided through the RAN announcement for small system.</p>

LD 16 – Configure Route Data Block for Attendant Announcement.

Prompt	Response	Description
REQ	NEW CHG	Add a new data. Change existing data.
TYPE	RDB	Route Data Block.
...		
TKTP		Trunk Type.
	a..a	Attendant announcement is available on DID, TIE and COT trunks only.
...		
ATAN		Attendant Announcement.
	(NO)	No Attendant Announcement.
	YES	Enable Attendant Announcement on this route.
	PSTN	Enable Attendant Announcement on this route on PSTN calls only (For MCDN trunks only).
- ATBL	xx	Announcement profile table, where: xx = 0-31 This number should correspond with what you set the AANN prompt to in LD 56.
- AAT		Alternative Attendant Announcement.
	(NO)	Disable Alternative Attendant Announcement.
	YES	Enable Alternative Attendant Announcement.
--AATO	(0) - 3	Alternative Attendant Announcement Time of Day option.
--ADAY	(0) - 3	Alternative Attendant Announcement Day of Week option.
--AHOL	(0) - 3	Alternative Attendant Announcement Holiday option.
--AATB	xx	Announcement Profile Table for Alternative Announcement, where: xx = 0-31 This number should correspond with what you set at the AANN prompt to in LD 56.
- AAO	(NO)	No Call Answer is given (for Tone Announcement only).

Feature operation

No specific operating procedures are required to use this feature.

Attendant Barge-In

Contents

This section contains information on the following topics:

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Feature description

Attendant Barge-In allows the attendant to establish a connection with any trunk in the system to verify that the trunk is in working order. When Barge-In is active, a 256 millisecond burst of tone is sent to the connected parties every six seconds to indicate the presence of the attendant.

Operating parameters

Barge-In can only be used for trunks with Warning Tone Allowed (WTA) Class of Service. All parties connected to the trunk when the attendant attempts to barge in must have WTA Class of Service.

If equipped, the Barge-In key must be assigned to key 1 of the console flexible feature strip.

The system must be equipped with a conference loop.

Feature interactions

Automatic Redial

Attendant Barge In is not allowed to a trunk that is currently used for the Automatic Redial call redialing. This is done to avoid creating a conference when the tone detector is involved.

Call Forward/Hunt Override Via Flexible Feature Code

Using Call Forward/Hunt Override Via FFC after activation of Barge-in, Busy Verify or Break-in is not allowed. Attempts will be canceled and overflow tone will be returned.

Using post-dial Break-in after dialing the Call Forward/Hunt Override FFC is possible after encountering a busy telephone, if Break-in is enabled.

Call Page Network Wide

For external Call Page Network Wide (PAGENET) uncontrolled calls, Attendant Barge-In is blocked at the Paging node, per existing operation. For external PAGENET controlled calls, Attendant Barge In is blocked at both the originating and Paging node.

Charge Account and Calling Party Name

A charge account number cannot be entered when Attendant Barge-In or Attendant Busy Verify is active. Barge-In cannot be used to connect to a trunk after an account number has been entered.

China – Attendant Monitor

When China (CHINA) package 285 is equipped, the normal operation of Barge-In changes slightly. The repeatable tone can be configured with the (TOA)/TOD option.

If an attendant is monitoring a trunk, a second attendant defined at the same customer location is blocked from Barging In to any trunk involved in the monitored call.

If an attendant is Barged-In with a trunk, a second attendant defined at the same customer location will be blocked from monitoring any party involved in the monitored call.

Conference

Conference Control cannot be activated if an attendant has used Barge-In or during a conference that involves a trunk.

End-to-End Signaling

While in the Attendant Barge-In mode, the console cannot enter Attendant End-to-End Signaling mode.

Intercept Computer Dial from Directory - Pre-dial Operations

It is possible for an attendant to Barge-in, in the following manner:

- Press an idle loop key, and press the Barge-in key from the attendant console.
- Dial a Route Access code and Route member from the ICT (which must be configured in such a way that it is possible to dial the Route access code and Route member from the dialing key).

ISDN Semi Permanent Connections for Australia

When an attendant attempts to Barge-In on 2.0 Mbps Primary Rate Interface B-channel used as an ISPC link with the Central Office, a fast busy tone is provided.

Uninterrupted Line Connections

Attendant Barge-In cannot be applied to stations with a Warning Tone Denied Class of Service.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 12 – Add or change a Barge-In key on attendant consoles..
- 2 LD 10 – Allow or deny a warning tone Class of Service for analog (500/2500 type) telephones.
- 3 LD 11 – Allow or deny a warning tone Class of Service for proprietary telephones.
- 4 LD 14 – Allow or deny warning tone Class of Service for trunks.

LD 12 – Add or change a Barge-In key on attendant consoles.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	2250	Attendant console type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	1 BIN	Add a Barge-In key.

LD 10 – Allow or deny a warning tone Class of Service for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.

TN	l s c u	Terminal number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(WTA) WTD	(Allow) deny warning tone.

LD 11 – Allow or deny a warning tone Class of Service for proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(WTA) WTD	(Allow) deny warning tone.

LD 14 – Allow or deny warning tone Class of Service for trunks.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	COT DID FEX RAN TIE WATS	Trunk type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.

CLS	c u (WTA) WTD	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit. (Allow) deny warning tone.
-----	----------------------	--

Feature operation

To establish a connection on a trunk, follow these steps:

- 1 Select an idle loop key.
- 2 Press **Barge-In**.
- 3 Dial the route access code and the trunk member number, followed by the octothorpe (#).

The possible results are the following:

- dial tone (trunk is idle and working)
- conversation (trunk is busy and working)
- modem carrier tone (long distance trunk is working)
- fast busy (trunk is either disabled or has Warning Tone Denied Class of Service)

If you hear fast busy, check the trunk again before reporting a problem.

Attendant Break-In

Contents

This section contains information on the following topics:

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Feature description

The Attendant Break-In (BKI) feature simplifies the process required if an attendant must break in to an established call. When an attendant receives an urgent call and dials the destination DN, that DN may be busy. The attendant may then have to break in to the call. This feature provides a new key on the attendant console: the Break-In key. This feature allows the attendant to extend a call to a busy extension through a simple key operation.

The break-in process involves the following steps:

- 1 Use the Break-In key upon receiving the busy tone. This action establishes a conference between the attendant and the members of the established call (but excludes the incoming call). Parties hear the intrusion tone; secrecy is preserved.
- 2 Announce that an important call is waiting and request that the other parties disconnect from the call.
- 3 Extend the incoming call to the previously busy DN as soon as the other parties disconnect.

By using the Break-In key before dialing the destination DN, the attendant can override features such as Call Forward and Hunting.

Operating parameters

The Attendant Break-In feature is supported on analog (500/2500 type) telephones and proprietary telephones.

A console can have only one Break-In key.

A break-in connection cannot be put on hold.

Only one attendant at a time can break in to a call.

Attendant Break-In does not operate in the following situations:

- A party to the established call has Override Denied or Warning Tone Denied Class of Service
- The established call involves any of the following:
 - An attendant
 - Multi-frequency Compelled (MFC) device type
 - Digitone Receiver (DTR) device type
 - Page trunk
 - Dictation trunk
 - Recorded Announcement trunk

- Integrated Voice and Message System (IVMS)
- The destination DN is on an outgoing trunk call. If the station is involved with an outgoing trunk call, the call is established when End of Dialing (EOD) times out, the number is dialed, or the trunk is answered.

Feature interactions

Attendant Blocking of Directory Number

The Attendant Blocking of DN and the source side Predial Break-in features are mutually exclusive for the same call. If the SACP key lamp is lit when the Break-in key is pressed to start a Predial Break-in attempt, the Break-in key is ignored. On the contrary, if the Break-in key lamp is lit and no call attempt is made on the source side when the SACP key is pressed to start an Attendant Blocking of DN, the SACP key is ignored.

If a Break-in attempt is made for an Attendant Blocking of DN call, the Break-in attempt will be considered to be temporarily denied.

It will be possible to Break-in on the destination side with an Attendant Blocking of DN call on the source side of the attendant console. The same limitations to Break-in will apply as if the source side call is a normal call.

Attendant Break-In to Inquiry Calls

All other interactions are the same as for the Attendant Break-In feature.

Attendant Busy Verify

The attendant can use the Break-In key instead of Busy Verify to break in to an established call. Attendant Break-In simplifies this process.

Automatic Call Distribution

Once the destination DN has established the call with the Automatic Call Distribution (ACD) agent, the attendant can break in to the call. If the destination DN is in the ACD queue, Attendant Break-In is temporarily denied.

Automatic Redial

Attendant Break-In and Attendant Busy Verify are not permitted on a proprietary telephone that is used for an Automatic Redial (ARDL) call. These restrictions avoid creating a conference when the tone detector is involved in the call.

Busy Verify on Calling Party Control Call

Local Attendant Break-In will be temporarily denied if the desired party is already in a toll operator Break-In conference or on a Special Service call, or awaiting the Special Operator signal. Local attendant/toll operator Break-In will be temporarily denied if the desired party is established on an incoming toll call.

Call Forward All Calls

By pressing the Break-In key before dialing the destination DN, the attendant can override call forwarding on the destination DN. The attendant may not apply Camp-On to a telephone with Call Forward active.

Call Forward/Hunt Override Via Flexible Feature Code

The use of Call Forward/Hunt Override Via FFC after activation of Barge-in, Busy Verify or Break-in is not allowed. Attempts will be canceled and overflow tone will be returned.

The use of post-dial Break-in after dialing the Call Forward/Hunt Override FFC is possible after encountering a busy telephone, if Break-in is enabled.

Call Forward, Break-In and Hunt Internal and External Network Wide

If the Internal/External definition in LD 15 is set to YES, a call is treated as internal or external on a network wide basis.

Call Hold, Permanent Call Park

The attendant cannot break in to a call on hold or a parked call.

Call Page Network Wide

For external Call Page Network Wide (PAGENET) uncontrolled calls, Attendant Barge-In is blocked at the Paging node, per existing operation. For external PAGENET controlled calls, Attendant Barge In is blocked at both the originating and Paging node.

Call Transfer

The attendant cannot break in to a call that is being transferred until the transferred call is connected.

Call Waiting Camp-On

If the destination DN has a camped-on incoming trunk call, the attendant cannot extend the urgent incoming call as a Camp-On call.

Camp-on, Forced

Telephones with a toll operator break-in call cannot be camped on to. Overflow tone is returned to telephones attempting Forced Camp-on.

China – Attendant Monitor

If an attendant is monitoring a DN, a second attendant defined at the same customer site will be blocked from Breaking In to any party involved in the monitored call.

If an attendant is in a Break-In situation with a DN, a second attendant defined at the same customer site will be blocked from monitoring any party involved in the monitored call.

China Number 1 Signaling - Called Party Control

Attendant Break-In is not allowed on an outgoing Called Party Control call.

Conference

If the attendant cannot break in to a conference call because the call is supporting the maximum number of callers, busy tone continues and the Break-In key lamp flashes.

Digit Display

During Attendant Break-In, the Attendant Console Digit Display shows the DN of the incoming call and the destination DN until the attendant extends the incoming call to the destination DN and releases the connection.

Digital Private Signaling System #1 (DPNSS1) Executive Intrusion

Executive Intrusion and Break-In are mutually exclusive. Pressing the BKI key will activate Break-In or Executive Intrusion. In addition, intrusion is not allowed into a Break-In conference.

Group Hunt

Attendant Break-in will not be supported when dialing a Pilot DN directly.

Hold

The attendant cannot break in to a call on hold.

Hunting

If the destination DN is in a Hunting chain with some idle DNs, the Break-In request goes to the first idle DN in the chain. To prevent this occurrence, the attendant can press the Break-In key prior to dialing the destination DN.

Intercept Computer Dial from Directory — Post-dial Operation

Attendant Break-in

An attendant can break-in to a call by:

- Dialing an extension DN from the Intercept Computer.
- Pressing the Break-in key on the attendant console.

Make Set Busy Do Not Disturb

For a telephone with Make Set Busy or Do No Disturb in effect, Break-In is temporarily denied to the attendant. The Break-In lamp uses slow flash to indicate this situation. Using the Break-In key prior to dialing the destination DN circumvents this situation. After the Break-In, the telephone returns to its prior status.

If the controlling party goes on hook in a Break-In conference, and is being re-rung by the attendant, the ringing takes precedence over Make Set Busy that may be applied to the telephone.

Meridian 911 Call Abandon

Since an abandoned call does not have a speech path established, the Break-In deny treatment is given to the attendant so that Break-In cannot occur.

Multiple Appearance Directory Number Redirection Prime

The attendant may get a busy tone if all the telephones with the required DN are busy. Break-In permits the attendant to break in to the connection with the least restricted TN. Where more than one TN exists that meets this criterion, Break-In chooses the one at the bottom of the DN block.

Multi-Party Operations – Three-Party Service

Break-In is not allowed to the party receiving the patience tone or the misoperation ringback.

Multi-Party Operations Enhancements

Attendant Break-in is not allowed to a connection in which a party is receiving Patience Tone or recall of misoperation ringback.

On Hold on Loudspeaker

It will not be possible to Break-in into a call on loudspeaker as it is effectively on hold at the telephone.

Override

When one telephone has overridden an existing call to establish a conference call, Break-In is temporarily denied. The attendant is notified by the override tone.

Priority Override

Telephones with a toll operator break-in call cannot be overridden. Overflow tone is returned to telephones attempting Priority Override.

Override, Enhanced

Telephones with a toll operator break-in call cannot be camped on to or overridden. Overflow tone is returned to telephones attempting either Forced Camp-on or Priority Override.

Periodic Camp-on Tone

The Periodic Camp-On Tone has precedence over Break-In intrusion tone.

Semi-Automatic Camp-On

The attendant can Break-In to an established call and apply Semi-automatic Camp-On to the desired party. The attendant may press the SACP key before or after the Break-In.

Source Included when Attendant Dials

The operation of the Break-In feature is not affected, except that the source receives busy tone before the attendant presses the Break-In (BKI) key.

Trunk Barring

Trunk Barring does not result in intercept treatment for Toll Operator Break-In.

Feature packaging

Attendant Break-In (BKI) is package 127.

Feature implementation

LD 12 – Assign the Break-In key on the attendant console.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	2250	Attendant console type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx BKI	Break-In key.

Feature operation

The operator can press the Break-In key either before or after dialing the destination DN. Break-In operates slightly differently in these two situations, as described below.

Post-Dial Break-In

For post-dial break-in

- 1 The attendant answers an incoming external call.
- 2 The attendant dials the destination DN.
- 3 The attendant receives the busy tone (unless the destination DN allows Camp-On or Call Waiting).
- 4 The attendant presses the Break-In key.

- 5 If allowed, the attendant joins the call on the destination DN to announce the incoming call and request that other parties disconnect. (See Table 6 on page 255 for an explanation of console break in states.)
- 6 After the other parties disconnect, the attendant extends the incoming call to the destination DN.

Pre-Dial Break-In

For pre-dial break-in

- 1 The attendant answers an incoming external call.
- 2 The attendant presses the Break-In key.
- 3 The attendant dials the destination DN.
- 4 If the destination DN is busy, the attendant hears the busy tone; processing is the same as for Post-Dial Break-In above.

If the destination DN is not busy, the DEST lamp flashes and the Break-In lamp goes dark. The attendant hears the ringback tone. Pressing the Break-In key a second time causes normal call processing for an idle line.

If the destination DN is invalid, the attendant hears the overflow tone and the Break-In lamp goes off. To return to the source call, the attendant presses the Release Destination key.

Table 6 describes the possible attendant console break in states. These states depend on several factors:

- whether the source call is an external call
- the type of call in effect at the destination DN
- the combination of features allowed at the destination DN
- whether the attendant pressed the Break-In key before or after dialing the destination DN

Table 6
Attendant console break-in states

Console State	Lamp State	Description
ALLOW	Destination = LIT Break-In = LIT Tone = INTRUSION	The attendant can break in to the call and extend the incoming call.
CONSULT ONLY	Destination = FLASH Break-In = LIT Tone = INTRUSION	The attendant can break in to the call but cannot extend the incoming call.
TEMPORARILY DENIED 1	Destination = FLASH Break-In = FLASH Tone = BUSY/ OVERRIDE	The attendant temporarily cannot break in to the call, and may attempt the break in later.
TEMPORARILY DENIED 2	Destination = FAST FLASH Break-In = FLASH Tone = OVERFLOW	The attendant temporarily cannot break in to the call.
DENIED	Destination = FLASH Break-In = DARK Tone = OVERFLOW	The attendant cannot break in to the established call or extend the incoming call.
BREAK-IN IGNORED	Destination = FLASH Break-In = DARK Tone = RING BACK	The attendant cannot break in. The attendant should make a second break in attempt.
INVALID DN	Destination = FLASH Break-In = DARK Tone = OVERFLOW	The attendant attempted to reach an invalid DN. The attendant should dial the correct destination DN.

Attendant Break-In Busy Indication and Prevention

Contents

This section contains information on the following topics:

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Feature operation	259

Feature description

This feature, operating either in a standalone or Integrated Services Digital Network (ISDN) environment, provides enhancements to the Attendant Break-in feature. This feature is described more fully in *ISDN Primary Rate Interface: Features* (553-3001-369).

Break-in Busy Indication

If an attendant, during a break-in operation, dials a busy extension, the attendant console display provides one of the following customer-defined indications:

- three dashes, appended to the end of a digit display (if the busy station is involved in an external call)
- a mode digit, appended to the end of a digit display

In a non-ISDN environment, the mode digit indicates one of the states:

1 = Station is busy on an external call, or station is busy on an off-net call.

2 = Station is busy on an internal call, or station is busy on an on-net call.

3 = Station is busy on a non-established call; for instance, dialing, ringing, or announcement. Or, station is busy on a conference call.

4 = Station is in line lockout.

In an ISDN Primary Rate Interface (PRI) environment, the mode digit indicates one of the following states:

1 = Station is busy on an off-net call, or involved in a conference call.

2 = Station is busy with on-net call, and is not involved in a conference call.

3 = Station is busy on a non-established call; for instance, dialing, ringing, or announcement.

4 = Station is in line lockout.

Break-in Prevention

A Break-in to External Call Denied (BIXD) option is provided to the customer which, if selected, temporarily denies Break-in to a party involved in an external call. This applies to both pre-dial and post-dial Break-in operations.

Operating parameters

The same limitations apply as for the Attendant Break-In and Network Attendant Service (NAS) Break-In features.

Feature interactions

All of the same feature interactions apply as for the Break-in and Network Attendant Service Break-in features.

The appropriate busy indication is given to a Line Lockout Set which has been broken in on.

Feature packaging

Attendant Break-In Busy Indication and Prevention requires Attendant Break-in/Trunk Offer (BKI) package 127.

Feature implementation

LD 15 – Define break-in Indication and Prevention options.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	ATT_DATA	Attendant console options.
...		
- OPT	(BIXA) BIXD (BIND) BBIN EBIN	Break-in to external call (allowed) denied. Break-in Indication (denied), Basic Break-in Indication. Extended Break-in Indication.

Feature operation

For operating procedures, refer to the “Attendant Break-In” on page 245 in this guide.

Attendant Break-In to Inquiry Calls

Contents

This section contains information on the following topics:

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Feature operation	265

Feature description

The Attendant Break-In to Inquiry Calls feature allows an attendant to Break-In to an inquiry call. An inquiry call exists when two stations are established in a simple connection, and one station offers a call transfer to another station. The telephone making the call transfer becomes the controlling party, and the station receiving the call transfer becomes the active party. The other station is placed on hold and becomes the held party.

The attendant can Break-In to either the controlling or active party, in post-dial or pre-dial operation, by pressing the Break-In (BKI) key. After Break-In has occurred, a Break-In conference is established. All parties receive intrusion tone. While in the Break-In conference, the attendant has consultation status only. The attendant cannot extend a call from the source side.

The attendant cannot Break-In to the held call, to an inquiry call that is in the dialing state or ringing state, or to the active or controlling party if either of them has Warning Tone Denied Class of Service.

To release from the Break-In conference, the attendant presses either the RLS SRC key (to release from source) or RLS DEST key (to release from destination). The inquiry call is restored to its previous state.

Operating parameters

Once in the Break-In conference, the operation of the console Release key is ignored. The operation of the Transfer key (TRN) and Add-on Conference key (AO3/AO6) for proprietary telephones is ignored. For analog (500/2500 type) telephones, a switchhook flash, ground button, or recall operation is ignored.

This feature does not allow the attendant to Break-In to a held party, controlling party while dialing, or the active party during ringing.

The attendant will be unable to Break-In on an inquiry call if either the controlling or active parties has a Warning Tone Denied (WTD) Class of Service.

Feature interactions

Attendant Break-In

All other interactions are the same as for the Attendant Break-In feature.

Attendant Break-In with Secrecy

Attendant Break-In with Secrecy interacts with Attendant Break-In to Inquiry Calls (BIEC) when the desired party has gone on-hook leaving an undesired party off-hook and excluded. BIEC has enhanced the existing BKI feature by giving overflow tone to the undesired party if it is a 500 type telephone (irrespective of whether the undesired party was involved in an inquiry call or not). BKIS does not change this operation for non-BKIS calls.

BKIS has a choice of options to be given to the undesired party if the desired party goes on-hook while the undesired party is excluded. These are taken from the AOCS options in the Customer Data Block. These options are not given to the undesired party if the undesired party has a call on hold, this only applies to analog (500/2500 type) telephones. The BIEC treatment of giving overflow tone is done instead so that the undesired party can be reconnected to the held party.

Therefore, it is quite possible for analog (500/2500 type) telephones and trunks to get different treatment depending on the circumstances.

The following is a list of treatments for different circumstances:

- Existing BKI BIEC disconnects undesired parties when the desired party goes on-hook, except for analog (500/2500 type) telephones where overflow is given. Therefore proprietary telephones and trunks are disconnected.
- BKIS will give either overflow, transfer to attendant, or disconnect treatment to analog (500/2500 type) telephones or trunks. Proprietary telephones are disconnected.

Automatic Call Distribution Agent/Supervisory Consultation Calls

A consultation Call from an Automatic Call Distribution (ACD) agent to the supervisor, invoked on the Supervisor key on the agent telephone, is not considered an inquiry call and is not affected by the Break-In to Inquiry Calls feature.

Automatic Hold

A consultation call on a proprietary telephone, using a second DN along with Automatic Hold, is not treated as an inquiry call. The consultation call may be broken-in to, but the call held on the first DN is not involved in the Break-In.

Call Forward All Calls/Call Forward No Answer/Call Forward by Call Type/Do Not Disturb

The operation of these features are overridden on a analog (500/2500 type) telephone that has inadvertently been placed on-hook during a Break-In conference to allow it to be re-rung by the attendant.

Call Forward All Calls/Call Forward No Answer/Make Set Busy/Do Not Disturb

If the controlling party goes on hook in a Break-In conference, and is being re-rung by the attendant, the ringing takes precedence over Call Forward All Calls/Call Forward No Answer/Make Set Busy/Do Not Disturb that may be applied to the telephone.

Digital Private Signaling System #1 (DPNSS1) Executive Intrusion

Executive Intrusion and Break-In are mutually exclusive. Pressing the BKI key will activate Break-In or Executive Intrusion. In addition, intrusion is not allowed into a Break-In conference.

Do Not Disturb

The operation of Do Not Disturb is overridden on an analog (500/2500 type) telephone that has inadvertently been placed on-hook during a Break-In conference to allow it to be re-rung by the attendant.

If the controlling party goes on hook in a Break-In conference, and is being re-rung by the attendant, the ringing takes precedence over Do Not Disturb that may be applied to the telephone.

Held Call Clearing

Held Call Clearing takes precedence over Break-In to Inquiry Calls.

Misoperation During Transfer/Inquiry

Break-In to Inquiry Calls takes precedence over Misoperation During Transfer/Inquiry on a proprietary telephone inadvertently placed on-hook during a Break-In conference, for those cases where the misoperation treatment differs.

Feature packaging

Attendant Break-In to Inquiry Calls requires the Attendant Break-In/Trunk Offer (BKI) package 127.

Feature implementation

LD 12 – Assign Break-In (BKI) to a console key.

Prompt	Response	Description
REQ	CHG	Change.
TYPE	2250	Attendant console type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx BKI	Key number; Break-In.

Feature operation

For operating procedures, refer to the feature module “Attendant Break-In” on page 245 of this guide.

Attendant Break-In to Lockout Set Denied

Contents

This section contains information on the following topics:

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Feature operation	268

Feature description

The Break-In to Lockout Set Denied (BKLS) enhancement provides an option to prevent an attendant from breaking in on a analog (500/2500 type) telephone that is in a line-lockout state. This feature is applied on a customer basis and has precedence over other line-lockout or Break-In functions.

Operating parameters

There are no operating parameters associated with this feature.

Feature interactions

BKLS takes precedence over any other feature dealing with Break-In to a line lockout state.

Feature packaging

Attendant Break-In to Lockout Set Denied requires Attendant Break-In/
Trunk Offer (BKI) package 127.

Feature implementation

LD 15 – Allow or deny the Break-In to Line Lockout Set feature:

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	ATT_DATA	Attendant console Option
...		
- OPT	(BLA) BLD	Break-In to Line Lockout Set (allowed) denied.

Feature operation

For operating procedures, refer to “Attendant Break-In” on page 245 in this guide.

Attendant Break-In with Secrecy

Contents

This section contains information on the following topics:

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Feature description

The Attendant Break-In with Secrecy (BKIS) feature enhances the capabilities of the Attendant Break-In feature. When a Break-In conference (attendant, desired party, and undesired party) is established and intrusion tone is provided, the attendant can press the Break-In (BKI) key again to exclude the undesired party and talk to the desired party without the intrusion tone.

BKIS applies to both pre-dial and post-dial Break-In operations. In a post-dial situation, the attendant dials the desired party before pressing the BKI key. Whereas in a predial case, the attendant presses the BKI key prior to dialing the digits of the desired party.

BKIS operates in a stand-alone environment and within a Meridian Customer Defined Network (MCDN) Integrated Services Digital Network (ISDN) environment.

In an MCDN ISDN environment, BKIS is an enhancement of Network Attendant Service (NAS) Break-In (BKI). Please refer to *ISDN Primary Rate Interface: Features* (553-3001-369) for more information regarding Network Attendant Service Break-In.

Operating parameters

The same feature requirements apply as for the Break-In feature.

Within an ISDN environment

- All conditions for NAS Break-In must be met.
- In order for this feature to operate correctly over the network, all nodes connected to the attendant must have Break-In software equipped.

In all cases, when displays are equipped, the information displayed is consistent with current operation (that is, when connected to only one party, the display shows the number and name, if equipped and configured, of that party, and when connected to more than one party, the display is blank).

Feature interactions

Other than the interactions described below, the feature interactions are the same as for the Break-In and NAS Break-In features.

Break-In to Enquiry Calls

Break-In with Secrecy interacts with Break-In to Enquiry Calls (BIEC) when the desired party has gone on-hook leaving an undesired party off-hook and excluded. BIEC has enhanced the existing BKI feature by giving overflow tone to the undesired party if it is a 500 type telephone (irrespective of whether the undesired party was involved in an enquiry call or not). BKIS does not change this operation for non-BKIS calls.

BKIS has a choice of options to be given to the undesired party if the desired party goes on-hook while the undesired party is excluded. These are taken from the AOCS options in the Customer Data Block. These options are not given to the undesired party if the undesired party has a call on hold. This only applies to analog (500/2500 type) telephones. The BIEC treatment of giving overflow tone is done instead so that the undesired party can be reconnected to the held party.

Therefore, it is possible for analog (500/2500 type) telephones and trunks to get different treatment depending on the circumstances.

The following is a list of treatments for different circumstances:

- Existing BKI BIEC disconnects undesired parties when the desired party goes on-hook, except for analog (500/2500 type) telephones where overflow is given. Therefore proprietary telephones and trunks are disconnected.
- BKIS will give either overflow, transfer to attendant, or disconnect treatment to analog (500/2500 type) telephones or trunks. Proprietary telephones are disconnected.

Digital Private Signaling System #1 (DPNSS1) Executive Intrusion

Executive Intrusion and Break-In are mutually exclusive. Pressing the BKI key will activate Break-In or Executive Intrusion. In addition, intrusion is not allowed into a Break-In conference.

Multi-Party Operation

For Multi-Party Operation (MPO), the operation of features, for example, going on-hook and releasing from a call during the BKIS conference between the attendant and the desired party, takes precedence over MPO operations for those cases where the treatment differs from that defined by the customer.

All network nodes must have MPO software, with identical Multiple-party Operation (MPO) options. Otherwise, MPO options in the desired party's node have precedence.

Pertaining to MPO options, if the undesired party is not located on the same node as the desired party, the undesired party is considered as an external party on the desired party node.

Music

During secrecy, if there is only one undesired party in the conference, music is not provided to this party when excluded. However, intrusion tone is given to this party.

Network Attendant Service (NAS)

The BKIS feature operates in a networking environment with regard to the NAS Break-In feature operations and limitations. Please refer to *ISDN Primary Rate Interface: Features (553-3001-369)* for further information on the Network Attendant Service (NAS) feature.

Secrecy Enhancement

The source and destination parties cannot be joined together on the attendants conference bridge if BKIS is active. This is consistent with the existing Break-In feature.

Feature packaging

Attendant Break-In with Secrecy requires the following packages:

- Attendant Break-In (BKI) package 127.
- In an MCDN ISDN environment, ISDN Basic (ISDN) package 145, ISDN Supplementary Features (ISDNS) package 161, and Network Attendant Service (NAS) package 159 are required.
- Multi-Party Operations (MPO) package 141 is optional. If used in an MCDN ISDN environment, all nodes must be equipped with the MPO package.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 12 – Assign Break-In to a key on the attendant console.
- 2 LD 15 – Modify Multi-Party Operations data if MPO package 141 is equipped.

LD 12 – Assign Break-In to a key on the attendant console.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	2250	Attendant console type.
...		
AADN	...	
KEY	0-19 BKI	Key number assigned to Break-In.
...		

LD 15 – Modify Multi-Party Operations data if MPO package 141 is equipped.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	MPO	Multi-Party Options
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
...		
MPOP	(NO) YES	Multi-Party Operations.
...		
- FMOP	(NO) YES	Flexible Misoperation Options.

-- AOCs ...	xxxyyy AAR AAR ATN(ATN) DAR DAR (DIS) DIS OVF OVF STD STD	All Other Cases, where: xxx is for internal calls and yyy or ATN is for external calls. The transferring station is re-rung. If the transferring station fails to answer, the transferred station is routed to the attendant. Attendant The transferring station is re-rung. If the transferring station fails to answer, the transferred station is disconnected. Disconnect Overflow Standard
--	---	--

Feature operation

Break-In to two-party connection

The following sections describe a post-dial Break-In. For pre-dial Break-In, Break-In is done on the Source of the attendant and there is no party A calling the attendant, but the BKIS operation is identical.

The scenario is the following:

Party A calls the attendant. The attendant calls party B who is talking to party C. The attendant presses the BKI key to intrude into the conversation. At this point, the attendant and both parties B and C are in conversation with intrusion tone provided, while party A is on HOLD (with music if EMUS, package 119, is equipped).

Break-In “Allowed”

This situation will arise when party A is an external call and Camp-on or Call Waiting is possible at the wanted station B. At this point, the BKI, Exclude Source (EXCL SRC) and Exclude Destination (EXCL DEST) indicators are active (lamps are lit or Liquid Crystal Display [LCD] is on), and the following actions can occur:

Request the unwanted party to terminate

The attendant may request the unwanted party to terminate. A positive response will terminate the conference that included the attendant and intrusion tone. This is a current BKI operation.

Request the wanted party to terminate

The attendant may request the wanted party to terminate the call. The party disconnects, terminating the BKI conference. This is a current BKI operation.

Attendant presses Release Destination key

The attendant may press the RLS DEST key to release the call. This action terminates the conference and the original call is reestablished as it was prior to Break-In. The Source party A is connected to the Attendant. This is a current BKI operation.

Attendant presses Exclude Destination key

The attendant may press the EXCL DEST key to return to the incoming call. The intruded parties keep receiving the intrusion tone. This is a current BKI operation.

Attendant presses Release key

The attendant may press the Release (RLS) key to apply Camp-on. This is a current BKI operation.

Attendant presses Break-In key again

The BKIS feature allows the attendant to press the BKI key *again* in order to exclude the undesired party C (who continues to hear intrusion tone) and to talk directly to the desired party B without intrusion tone. The BKI indicator, which was active, flashes at 60 impulses per minute (ipm).

Note: When the attendant presses the BKI key a second time with the Break-In conference excluded, is not activated (that is, if the Break-In conference is on the destination but the attendant is talking on the source, secrecy cannot be activated).

From this point, the following attendant operations can occur:

Attendant actions

Break-In

The attendant presses the flashing BKI key. In this case, party C, which was excluded, is brought back into conversation with the attendant, party B, and intrusion tone. The BKI indicator reverts to an active state. The situation reverts to a normal BKI conference with intrusion tone.

In other words, the lit BKI key can be used to exclude the unwanted party from the BKI conference and the flashing BKI key can be used to reestablish the BKI conference (with intrusion tone).

Exclude Destination

The attendant presses the EXCL DEST key to return to the incoming call. The attendant is connected to the source party. The unwanted party B and the wanted party C are reconnected with intrusion tone. The EXCL SRC indicator is now off and the EXCL DEST lamp and the BKI indicators are active. The operation of the EXCL DEST key has the same effect as for a normal BKI conference situation, as described previously.

Release

The attendant presses the RLS key to apply Camp-on. If Camp-on or Call Waiting is available, parties B and C are reconnected and party A is released and either Camp-on or Call Waiting is applied to the wanted party A. The BKI indicator is off. If Camp-on or Call Waiting is not available, the operation of the RLS key causes secrecy to be turned off and the situation to go back to the Break-In conference with intrusion tone. The loop can only be released by pressing the RLS DEST key, leaving the source connected to the attendant. The operation of the RLS key has the same effect as for a normal BKI conference situation, as described previously.

Release Destination

The attendant presses the RLS DEST key. The BKI, EXCL SRC, and EXCL DEST indicators are off and party A is connected to the attendant. Party B (desired) and party C (excluded party) are reconnected.

Undesired party action

Party C (undesired party) goes on-hook and is disconnected. Then the BKI indicator goes off and the attendant treats the call as a normal two-party connection. The attendant is talking directly to party B (desired party) and can press the RLS key to extend the call.

Desired party action

At this point, if party B (controlling party) goes on-hook, the treatment depends upon the Customer Data Block (LD 15) Multi-party Operations (MPO) Flexible Misoperation Options (FMOP) All Other Cases (AOCS) settings if the undesired party is a trunk or 500-type telephone and MPO package 141 is equipped. If the MPO package is not equipped, internal calls will be disconnected, while external calls will be rerouted to the attendant.

The following shows what happens to 500-type telephones or trunks depending on the AOCS options:

AOCS set to AAR for party C

If AOCS is set to AAR for party C, then party C is routed to the attendant and party B is re-rung by the attendant. BKI indicator goes off and a simple call is set up between attendant and party B when B answers.

AOCS set to ATN for party C

If AOCS is set to ATN for party C, then party C is routed to the attendant while B is re-rung by the attendant. The BKI indicator goes off and the attendant hears ring back and the DEST indicator winks at 30 ipm. The attendant can extend the call as normal.

AOCS set to DAR for party C

If AOCS is set to DAR for party C, then party C is disconnected and party B is re-rung by the attendant. The BKI indicator goes off and when B answers a simple call exists between the attendant and party B.

AOCS set to DIS for party C

If AOCS is set to DIS for party C, then C is disconnected and party B is re-rung by the attendant. The BKI indicator goes off and the attendant hears ringback and the DEST indicator winks at 30 ipm. The attendant can then extend the call as normal.

AOCS set to OVF for party C

If AOCS is set to OVF then overflow tone is given to party C and party B is re-rung by the attendant. The BKI indicator goes off, the attendant hears ringback, and the DEST indicator winks at 30 ipm. The attendant can then extend the call as normal.

AOCS set to STD for party C

If AOCS is set to STD for party C, the treatment is the same as default for the AOCS option. If party C is internal, then DIS option applies to party C, and if party C is external, then ATN option applies to party C.

Break-In 'Consultation Only'

This console state indicates that the attendant has been allowed to Break-In to the desired party's call; however, the attendant will not be able to extend the originating call. This situation will occur under any of the following conditions:

- An internal call is on the source port of the attendant console.
- The attendant originated the call. In this case, the source indicator will be used instead of the destination indicator to provide status information (predial situation).
- An external call is on the source and neither Camp-on nor Call Waiting is possible at the wanted station (that is, Camp-on or Call Waiting not possible or the station already has a call camped on).
- The desired station is busy with Call Forward active and the attendant initiated a predial Break-In.

The BKI and the EXCL SRC indicators are active, the DEST indicator is flashing. At this point, the attendant is not allowed to press the RLS key to extend the originating call, party A. The operation of the RLS key is ignored. This is a current BKI operation.

The attendant may press the BKI key to exclude party C and talk directly to party B, as described under the Attendant actions section. The BKI and DEST indicators are flashing. While in this state, the attendant is not allowed to press the RLS key to extend the originating call, party A. The operation of the RLS key causes the secrecy to be turned off and the situation to revert to a Break-In conference. The other operations described in the Attendant actions section are available.

Break-In to a conference

Party A (either internal or external) calls the attendant, the attendant calls party B who is involved in a conference call with parties C and D. The attendant presses the BKI key to intrude into the conversation. At this point, the attendant, party B and all the original conferees are in conversation with intrusion tone provided, while party A is on HOLD. The BKI and EXCL SRC indicators are active. The DEST indicator is flashing and the BKI status is 'Consultation Only'.

At this point, the attendant may press the BKI key to talk directly to party B without intrusion tone. The Break-In indicator flashes at 60 ipm. The original conference is excluded from party B (the other parties in the conference remain connected without intrusion tone). Party A is still excluded on the attendant loop and the attendant is talking directly to party B without intrusion tone.

While in this state, the following situations can occur:

Attendant actions

Break-In

The attendant may press the flashing BKI key. The original conference is reestablished with intrusion tone. The BKI indicator reverts to active.

Exclude Destination

The attendant may press the EXCL DEST key to return to the incoming call. The original conference is reestablished and party A is connected to the attendant.

Release

The attendant is not allowed to extend the original call to the wanted party B by pressing the RLS key. The operation of the RLS key causes the secrecy to be turned off and the situation reverts to a Break-In conference.

Release Destination

The attendant may press the RLS DEST key. The BKI, EXCL SRC and EXCL DEST indicators are off and party A is reconnected to the attendant. The original conference (B, C, and D) is reestablished.

Undesired party action

All but one of the conferees (C or D) go on-hook. The last undesired party will start getting the intrusion tone once again. The situation reverts to the previously described operation (See “Undesired party action” on page 277).

Desired party action

At this point, if party B goes on-hook, party B is re-rung by the attendant and the conferees are left in conference without party B and without intrusion tone. The BKI indicator goes off, the attendant hears ringback tone, and the DEST indicator winks at 30 ipm. The attendant can extend the call as normal.

Table 7 is a summary of possible Break-In situations and indications.

Table 7
Summary of possible Break-In situations and indications (Part 1 of 2)

State	Operation	SRC or DEST Indicator	Break-In Indicator	Tone
1. Allowed	a) post-dial	ACTIVE	ACTIVE	intrusion
	predial	ACTIVE	ACTIVE	busy
	b) post-dial	ACTIVE	OFF	none
	predial	ACTIVE	ACTIVE->OFF	override
2. Consultation Only	a) post-dial	FLASH	ACTIVE	intrusion

Table 7
Summary of possible Break-In situations and indications (Part 2 of 2)

State	Operation	SRC or DEST Indicator	Break-In Indicator	Tone
	b) predial	FLASH	ACTIVE	busy
3. Temporarily Denied 1		FLASH	FLASH	busy override if override is involved
4. Temporarily Denied 2	a) post-dial only	FLASH	WINK	overflow
	b) predial	FLASH	WINK	busy or ring back
	(then post-dial)	FLASH	WINK	intrusion
5. Denied		FLASH	OFF	overflow
6. Break-In	a) post-dial	WINK	OFF	ringback
Ignored station is rung	b) Predial	WINK	OFF	ringback
7. Invalid	post-dial or predial	OFF	OFF	overflow
8. Break-In with Secrecy	after post-dial or predial, active BKI key is pressed	ACTIVE or FLASH	FLASH	no tone

Table 8 is a summary of possible Break-In situations and actions.

Table 8
Summary of possible Break-In situations and actions

Condition of called DN	Action
1. Established call, Call Waiting or Camp-on allowed, Multiple Appearance DN. Lockout (if not denied).	Break-In allowed, connection established. Connection is made.
2. Attendant dialing on SRC, internal call on SRC, CWT or Camp-on not available, desired party in conference, Call Forward active on telephone.	Connection is made for the attendant only.
3. Tones, ringing, dialing, blocking, Override, Camp-on, Hold, talking to another attendant, Call Transfer, WTD on undesired party.	Release DEST, wait and repeat.
4. Make Set Busy, Do not disturb.	Predialing operation possible.
5. Warning tone denied on desired party, maintenance busy.	Break-In impossible.
6. Station is idle.	Station is rung, station not affected.
7. Invalid numbers.	Break-In impossible.
8. The previous status was "Allowed" or "Consultation Only". SRC or DEST indicator was active ('Allowed') or flashing ('Consultation Only').	Undesired party is excluded and the attendant is talking to the wanted party.

Attendant Busy Verify

Contents

This section contains information on the following topics:

Feature description	283
Operating parameters	284
Feature interactions	284
Feature packaging	286
Feature implementation	286
Feature operation	289

Feature description

Attendant Busy Verify allows the attendant to establish a connection with any apparently busy DN to verify that the DN is actually busy and in working order. This feature can also be used to connect with a busy station if an emergency situation requires call interruption by the attendant.

When Busy Verify is active, a 256 millisecond burst of interrupted tone is sent every six seconds to indicate the presence of the attendant. The attendant can Busy Verify only those stations with Warning Tone Allowed Class of Service.

When a station is involved in a conference, the attendant can verify whether the station is busy even if it has Warning Tone Denied Class of Service.

An attendant can also use either the Release Source or Release Destination key on the console to release one of the parties involved in a Busy Verify conference.

Operating parameters

The system must be equipped with a conference loop.

If equipped, the Busy Verify key must be assigned to key 0 of the console flexible feature strip.

Feature interactions

Attendant Break-In

The attendant can use the Break-In key instead of Busy Verify to break in to an established call. Attendant Break-In simplifies this process.

Automatic Redial

Attendant Break-In and Attendant Busy Verify are not permitted on proprietary telephones that are used for an Automatic Redial (ARDL) call. These restrictions avoid creating a conference when the tone detector is involved in the call.

Call Forward All Calls

If the DN is call forwarded to the attendant console, the attendant will receive a click followed by silence.

Call Forward Busy Hunting

Call Forward Busy and Hunting do not affect Busy Verify.

Call Forward/Hunt Override Via Flexible Feature Code

Using Call Forward/Hunt Override Via FFC after activation of Barge-in, Busy Verify or Break-in is not allowed. Attempts will be canceled and overflow tone will be returned.

Using post-dial Break-in after dialing the Call Forward/Hunt Override FFC is possible after encountering a busy telephone, if Break-in is enabled.

Call Forward, Internal Calls

When the attendant is using this feature to call a telephone that is Internal CFW active, the call will not receive Internal CFW treatment.

Charge Account and Calling Party Number

A charge account number cannot be entered when Attendant Barge-In or Attendant Busy Verify is active. Barge-In cannot be used to connect to a trunk after an account number has been entered.

China – Attendant Monitor

When China (CHINA) package 285 is equipped, the normal operation of Busy Verify changes. The repeatable tone is now configurable with the (TOA)/TOD option.

If an attendant is monitoring a DN, a second attendant defined for the same customer will be blocked from Busy Verifying any party involved in the monitored call.

If an attendant is Busy Verifying a DN, a second attendant defined for the same customer will be blocked from monitoring any party involved in the monitored call.

Conference

Conference Control cannot be activated if an attendant has used Busy Verify during a conference that involves a trunk.

Direct Inward System Access

Attendant Busy Verify applies only to DNs within the system. If an attendant tries to use the feature to enter a Direct Inward System Access DN, overflow tone is returned.

Group Hunt

An attendant is not allowed to busy-verify when dialing a Pilot DN directly.

Intercept Computer Dial from Directory - Pre-dial Operations

It is possible for an attendant to override call forward on a telephone in the following manner:

- Press an idle loop key, and press the Break-in key on the attendant console.
- Dial an extension DN from the Intercept Computer.

Music, Enhanced

When the attendant attempts to Busy Verify a telephone receiving Music, the Music is removed. When the attendant releases, Music is returned.

On Hold on Loudspeaker

It will not be possible to Busy Verify into a call on loudspeaker as it is effectively on hold at the telephone.

Periodic Camp-on Tone

The Periodic Camp-On Tone has precedence over Busy Verify intrusion tone.

Uninterrupted Line Connections

Attendant Busy Verify cannot be applied to stations with a Warning Tone Denied Class of Service.

Feature packaging

Attendant Busy Verify is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 12 – Add/change a Busy Verify key on attendant consoles.
- 2 LD 10 – Allow/deny Warning Tone Class of Service for analog (500/2500 type) telephones.

- 3 LD 11 – Allow/deny Warning Tone Class of Service for proprietary telephones.
- 4 LD 14 – Allow/deny Warning Tone Class of Service for trunks.

LD 12 – Add/change a Busy Verify key on attendant consoles.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	2250	Attendant console type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	0 BVR	Add a Busy Verify key.

LD 10 – Allow/deny Warning Tone Class of Service for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(WTA) WTD	Allow or deny warning tone.

LD 11 – Allow/deny Warning Tone Class of Service for proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(WTA) WTD	Allow or deny warning tone.

LD 14 – Allow/deny Warning Tone Class of Service for trunks.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	COT DID FEX RAN TIE WAT	Trunk type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(WTA) WTD	Allow or deny warning tone.

Feature operation

To verify a busy DN, follow these steps:

- 1 Select an idle loop key.
- 2 Press **Busy Verify**.
- 3 Dial the DN of the station.

If the DN is idle, press **Signal Source** to ring the station.

Possible results are the following:

- silence (DN is idle and working)
- conversation (DN is busy and working)
- fast busy (station is disabled or has Warning Tone Denied Class of Service).

- 4 Press the **Rls** key to disconnect from the call.

An enhancement to the Busy Verify feature offers the following functionality. Party A is on a call with Party B. The attendant

- 1 Selects an idle loop key.
- 2 Presses **Busy Verify**.
- 3 Dials Party A and creates a Busy Verify conference between Party A, Party B, and the attendant.

The use of the **Rls DEST** and **Rls SOURCE** keys are allowed at this point as follows:

- The attendant can press the **Rls DEST** key to release Party A from the Busy Verify conference or
- The attendant can press the **Rls SOURCE** key to release Party B from the Busy Verify conference.

Attendant Call Selection

Contents

This section contains information on the following topics:

Feature description	291
Operating parameters	292
Feature interactions	292
Feature packaging	292
Feature implementation	292
Feature operation	292

Feature description

All calls to the attendant, with the exception of slow-answer recalls, are automatically queued in order of arrival. The attendant can answer a call in two ways:

- Calls can be answered in the order received, regardless of call type, using the Loop key (LPK).
- A particular call type can be answered before other calls in the queue by manually selecting the appropriate Incoming Call Indicator (ICI) key.

The first call presented to an idle console is indicated by the appropriate ICI lamp. All subsequent calls are indicated by the Calls Waiting lamp only until the first call is released. All appropriate ICI lamps will then light, and an attendant may select a specific incoming call type by pressing the appropriate ICI key.

If a customer has multiple consoles, the first call in queue is presented to the first idle console.

Operating parameters

The maximum number of ICI lamps per attendant console is 20. All consoles associated with a customer have the same ICI assignments.

Feature interactions

Attendant Incoming Call Indicators

The ICI feature is used with the Attendant Call Selection feature to recognize, answer, and process incoming calls.

Feature packaging

This feature is included in base system software.

Feature implementation

No change to existing configuration is required for the Attendant Call Selection feature.

Note: To implement ICI, see “Attendant Incoming Call Indicators” on page 331 of this document.

Feature operation

The attendant can answer a call by:

- pressing the Loop key to answer calls in the order received, or
- pressing the appropriate ICI key to answer a call by call type.

Attendant Calls Waiting Indication

Contents

This section contains information on the following topics:

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Feature operation	296

Feature description

Call Waiting on the console gives the attendant an indication of the number of calls in the console queue and the length of time they have been waiting to be answered. Each console is equipped with a Call Waiting indicator. The indicator is dark when no calls are waiting in the queue. The indicator is steadily lit when one or more calls are waiting. The indicator flashes when the number of waiting calls exceeds the customer defined threshold, or when a call has been waiting longer than the specified number of seconds.

The two thresholds that control the lamp states are defined in the Customer Data Block. The time delay threshold can be specified from 0 to 511 seconds in multiples of two seconds. The number of calls threshold can be specified from 0 to 255. If zero is specified, this aspect of the Call Waiting feature is not operational.

An option is also provided to supply a two-second buzz to notify the attendant when the first call enters the queue or when the Call Waiting lamp changes from steadily lit to flashing, or both.

If the threshold has been exceeded and the Call Waiting indicator is flashing, it changes to steadily lit when the threshold is no longer exceeded by either number of calls or time delay.

Operating parameters

If neither the time delay or number of calls thresholds are defined, the Call Waiting lamp state will not change from steadily lit to flashing.

Feature interactions

Call Park on Unsupervised Trunks

If all the attendants are busy and a Call Park Recall occurs, the recall is placed in the calls waiting queue. If the recalled station is busy when the recall occurs, the Disconnect Timer (DCTI) temporarily suspends timing until the recall is presented. After the recall is presented, the Disconnect Timer continues timing for the remainder of the period.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Define Call Waiting thresholds and indications for a customer.
- 2 LD 12 – Add/change a Display Calls Waiting key on an attendant console.

LD 15 – Define Call Waiting thresholds and indications for a customer.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	ATT_DATA	Attendant console options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- CWUP	(NO) YES	Call Waiting Queue Update. (Do not) automatically notify attendant console (M2250) when the number of calls waiting in queue changes.
- CWCL	(0)-255 (0)-255	Call Waiting Call Limit. Lower and upper bound of the threshold for the number of calls waiting (the default is 0).
- CWTM	(0)-511 (0)-511	Call Waiting Time. Lower and upper bound of the threshold for the time calls are waiting (the default is 0).
- CWBZ		Call Waiting Buzz
	(NO) YES	(Disable) enable a buzz to the attendant when either the CWCL or CWTM thresholds are exceeded.
	(NO) YES	(Disable) enable a buzz to the attendant when the first call enters the queue.

LD 12 – Add/change a Display Calls Waiting key on an attendant console.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	2250	Attendant console type.
TN		Terminal Number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.

KEY	c u xx DCW	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit. Add a Display Calls Waiting key. xx = 00-19 for M2250 attendant console.
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Feature operation

If CWUP (notify change in Calls Waiting status) is set to YES in LD 15, the number of calls waiting are displayed on the M2250 console. If CWUP is set to NO, the attendant must press the Display Calls Waiting (DCW) key to display the number of waiting calls.

Attendant Clearing during Night Service

Contents

This section contains information on the following topics:

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Feature packaging	299
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Feature operation	300

Feature description

When an attendant console is placed in Night Service, the Attendant Clearing during Night Service feature causes all active calls or calls being held on Loop keys to be cleared and given a customer-defined treatment. One of the following treatments can be selected:

- internal calls are disconnected, and external calls are routed to the Night Directory Number (DN)
- all calls are routed to the Night DN
- no clearing

An external call is defined as a call involving at least one external party. The definition of a external party is the same as used for the Multi-Party Operations (MPO) feature. Any CO, DID, or TIE trunk (incoming or outgoing) connected to the system is considered an external party, regardless of the way the connection is established.

Operating parameters

Attendant Clearing during Night Service is offered as part of the Multi-Party Operations feature.

Feature interactions

AC15 Recall: Timed Reminder Recall

If Attendant Clearing During Night Service is active and there is a call being extended over an AC15 TIE trunk, when the attendant goes into Night Service, the transfer is completed and the feature is activated.

If there is an AC15 recall presented to the attendant and it goes in Night Service, the recall is put in the attendant queue.

If an AC15 recall has been answered by the attendant and it goes in Night Service, the call is removed from the attendant port and the feature is activated again.

Night Service Enhancements

The Night Service Enhancements features take precedence over Attendant Clearing during Night Service.

Scheduled Access Restriction

Attendant Clearing during Night Service should be equipped with Scheduled Access Restriction (SAR). When Night Service is in effect, the only operations that can be performed from attendant consoles, which are members of a SAR group, are:

- release any existing calls, or
- dial one of the following SAR Flexible Feature Codes:
 - Scheduled Access Disable (SADS)
 - Scheduled Access Enable (SAEN)
 - Scheduled Access Lock (SALK), or
 - Scheduled Access Unlock (SAUN).

Feature packaging

The Attendant Clearing during Night Service feature is packaged as part of the Multi-Party Operations (MPO) package 141.

Feature implementation

Task summary list

The following task is required:

LD 15 – Configure the Attendant Cleaning during Night Service feature at the ACNS prompt.

LD 15 – Configure the Attendant Cleaning during Night Service feature at the ACNS prompt.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Modify existing data.
TYPE:	MPO	Multi-Party Options
...		

MPOP	YES	Multi-Party Operations options.
...		
- FMOP	YES	Flexible Misoperation Parameters.
-- RCY2	...	
-- ACNS	(NO) ALL EXT <CR>	Attendant Clearing during Night Service. Attendant will not be cleared (the default). All calls will be routed to the Night DN. External calls will be routed to the Night DN, while internal calls will be disconnected. Previously defined value not changed, or set to default if response to REQ was NEW.

Note: This overlay is modified to output the Attendant Clearing during Night Service (ACNS) prompt as part of the MPO group of prompts. The ACNS prompt will only appear if the MPO package is equipped and the response to both MPOP and FMOP is YES. The ACNS prompt will accept a response of either NO, ALL, EXT or a carriage return (<CR>).

Feature operation

A customer is put into Night Service manually, by pressing the NITE key on the attendant console or having all attendant consoles activate Position Busy, or automatically, by the Scheduled Access Restrictions (SAR) or Attendant Forward No Answer (AFNA) features. When Night Service is activated, all calls or selected calls associated with the attendant will be given treatment according to the feature option defined in the Customer Data Block (LD 15) as part of the Multi-Party Operations (MPO) options.

The sections following describe the treatments given to different call types.

Established Calls

Single Party Call

Both the incoming or outgoing single party call, (not associated with another call on the attendant) established on the attendant Source (SRC) or Destination (DEST) sides will be routed to the Night DN.

Two Party Call – Ready to Extend

When a call is being extended, a call excluded on the SRC side and an outgoing call established on the DEST side, the call will be extended provided it is allowed as if the Release (RLS) key is pressed. If it is not allowed due to access restriction, the outgoing call on the DEST side will be disconnected and the call on the SRC side will be routed to the Night DN.

Conference Call on Source

If a conference call is established on the attendant SRC, the attendant will be excluded from the conference and disconnected as if the Release Source (RLS SRC) key were pressed.

Conference Call on Destination

If a conference call is established on the attendant DEST (Break-In conference) the attendant will be excluded from the conference and disconnected as if the Release Destination (RLS DEST) key were pressed.

Non-established Calls

Any call in the dialing state on either the SRC or DEST side will be disconnected.

Any call in the ringing state or receiving any tone on either the SRC or DEST side will be dropped or disconnected as if the RLS SRC or DEST key was pressed.

If the call in the ringing, dialing or receiving tone state is on the DEST side, and there is an established call in the EXCLUDE state on the SRC side, the SRC party will be rerouted to the Night DN.

Calls held on the console Loop keys

Any established calls being held on a Loop key will be released and calls extended where possible as described in the Established Calls section, or routed to the Night DN.

When a held call is routed to the Night DN, the held party, which is listening to silence or Music on Hold if available, will receive Ringback Tone. If the Night DN is not idle, the call will be placed in the Call Waiting queue.

Attendant Consoles

Contents

This section contains information on the following topics:

Feature description	303
Operating parameters	310
Feature interactions	310
Feature packaging	310
Feature implementation	310
Feature operation	315

Feature description

Attendant consoles assist in placing and extending calls into and out of the system. The operator of an attendant console is known as the attendant. The consoles provide the attendant with many unique features that increase the speed and ease of call processing.

This feature module provides an overview of attendant consoles and a description of the basic software capabilities and associated service changes. Additional information regarding attendant-related software features can be found in other feature modules in this document.

The M2250 attendant console is a Digital console with a 4-line, 40-character wide alphanumeric Liquid Crystal Display. The console's LCD displays the information presented in Table 9.

Table 9
LCD alphanumeric display information

Line	Display information
1	Displays the time and date.
2	Displays call source information.
3	Displays call destination information.
4	Displays console status information.

Directly below the display screen is a horizontal row of keys that provide the Position Busy, Night Service, Signal Source, and Signal Destination functions.

The M2250 has a digit display at the top of the console and a dial pad below the display. Five vertical keystrips on the console provide access to the functions described in this section.

Vertical keystrip 1

This keystrip at the far left on the console is utilized for Trunk Group Busy (TGB) keys. The attendant can deny stations access to a trunk route by pressing the associated Trunk Group Busy key. Additionally, the lamps associated with Trunk Group Busy keys provide the visual indication of the status of the trunks within the route (See Table 10).

Table 10
Visual Indication of the status of the trunks within the route

Visual Indication	Status of the trunks within the route
Dark	Some of the trunks in the route are idle.
Flashing	All of the trunks in the route are busy.
Steadily lit	The attendant has taken control of the route.

The basic attendant console has 10 Trunk Group Busy keys. If an add-on module is installed, there are 16 Trunk Group Busy keys.

Vertical keystrip 2

This keystrip is used for Incoming Call Indicator keys. The Incoming Call Indicators (ICIs) identify the type of calls in the queue and the status of each particular call type. Three lamp states are associated with each Incoming Call Indicator key (See Table 11).

Table 11
Key lamp states associated with each Incoming Call Indicator key

Lamp state	Status of call type
Dark	No calls of this type are waiting.
Flashing	One call of this type is waiting in queue.
Steadily lit	Two or more calls of this type are queued, or one call has been waiting longer than 20 seconds.

To select a specific type of incoming call, the Incoming Call Indicator key associated with a steadily lit or flashing LED is pressed. The call is removed from the queue and presented to an idle loop key on the attendant console.

The basic attendant console has 10 Incoming Call Indicator keys. If an add-on module is equipped, the console may have 20 Incoming Call Indicator keys. An Incoming Call Indicator key may be assigned to one or more of the call types listed in Table 12.

Table 12
Incoming Call Indicator key assignments

Key	Mnemonic	Meaning
00-19	CAX	Station Category Number (x = 1-7)
00-19	CFB	Call Forward Busy
00-19	CFN	Call Forward No Answer
00-19	DF0	Dial 0 fully restricted
00-19	DL0	Dial 0
00-19	IAT	Inter-attendant call
00-19	INT	Intercept
00-19	LCT	Lockout
00-19	LD0	Listed DN 0
00-19	LD1	Listed DN 1
00-19	LD2	Listed DN 2
00-19	LD3	Listed DN 3
00-19	MWC	Attendant Message Center
00-19	RLL	Recall
00-19	Rxxx	Route number

Vertical keystrip 3

This keystrip includes the following operating keys:

Release – Allows the attendant to release a call from the console. When the release lamp is lit, it indicates that no incoming calls are being presented to the console.

Loop key/lamps – Allows the attendant to answer and originate calls from the console. The first call in the attendant queue is automatically presented to an idle loop key. Subsequent calls are queued and presented to a loop key when the console becomes idle.

Three lamp indicators, positioned on the upper right-hand side of the keystrip, provide the following information:

- **Two Alarm indicators:** When steadily lit, the minor alarm lamp indicates the system has detected a malfunction that does not affect normal call processing. When the major alarm lamp is steadily lit, the system has detected a malfunction that does not permit normal call processing.
- **Call Waiting indicator:** The Call Waiting lamp indicates the number of calls in the attendant queue and the length of time they have been waiting to be answered. The lamp changes from steadily lit to flashing when waiting calls exceed a certain number, or when a call has been waiting longer than a specified time. The number of waiting calls are displayed by pressing the Display Calls Waiting key, if assigned.

Vertical keystrip 4

This keystrip provides the following fixed feature keys:

Hold – Allows the attendant to hold a call at the console.

Conference – Permits the attendant to set up a conference of up to five conferees, plus the attendant.

Release Destination – Allows the attendant to release the called party from a call held at the console, while holding the calling party.

Release Source – Allows the attendant to release the calling party from a call held at the console, while holding the called party.

Signal Source and Destination – Allows the attendant to recall either party to a call held on the console.

Exclude Destination – Excludes the called party from an established call held at the console, allowing the attendant to speak privately with the calling party.

Exclude Source – Excludes the calling party from an established call held at the console, allowing the attendant to speak privately with the called party.

Volume Control – Allows the attendant to change the volume of alerting signals. Each depression of the key changes the volume of the signal by one step in an eight step range.

Vertical keystrip 5

The optional features listed in Table 13 can be defined on this keystrip.

Table 13
Attendant console optional feature key assignments (Part 1 of 2)

Key	Mnemonic	Meaning
00	BVR	Busy Verify
01	BIN	Barge-In
00-09	ADL	Autodial
02-09	AWU	Automatic Wake Up
00-09	CHG	Charge Account
00-09	CPN	Calling Party Number
00-09	DCW	Display Calls Waiting
00-09	DDL	Do-Not-Disturb, Individual
00-09	DDT	Display Date
00-09	DPD	Display Destination
00-09	DPS	Display Source
00-09	DTM	Display Time
02-09	EES	End-to-End Signaling
00-09	GND 0-99	Group Do-Not-Disturb
00-09	MCK	Message cancellation
00-09	MDT	Display/Change Date

Table 13
Attendant console optional feature key assignments (Part 2 of 2)

Key	Mnemonic	Meaning
00-09	MIK	Message indication
00-09	MTM	Display/Change Time
00-09	PAG xxx...x	Paging (xxx...x = route access code)
00-09	PRG	Attendant Administration
00-09	PRK	Call Park
00-09	RDL	Stored Number Redial
00-09	RTC	Routing Control
00-09	SCC xxxx	Speed Call Controller (xxxx = list number)
00-09	SSC xxxx	System Speed Call Controller (xxxx = list number)
00-09	TRC	Malicious Call Trace

The console has a Shift key on the fixed feature key strip that provides access to an Options menu. This menu allows the setting of the display screen contrast, buzz tone, language, time and date format, and calls waiting options. Additional information on the Options menu can be found in *Telephones and Consoles: Description, Installation, and Operation (553-3001-367)*.

The Shift key also allows the M2250 console to have 20 Incoming Call Indicator keys in the regular mode, and 20 Trunk Group Busy keys and an additional ten flexible feature keys in the shift mode. Add-on modules are not required on the console to provide the additional key functions.

Attendant Call Party Name Display (CPND) and the Enhanced Busy Lamp Field/Console Graphics Module capabilities may be equipped with the M2250 console. Please refer to the feature modules in this document for a complete description of these capabilities.

For additional information on attendant consoles and associated hardware, refer to the following Nortel Technical Publications (NTPs):

- *Telephones and Consoles: Description, Installation, and Operation* (553-3001-367)
- *Communication Server 1000M and Meridian 1: Large System Maintenance* (553-3021-500)

Operating parameters

Refer to the preceding Nortel Technical Publications.

Feature interactions

Refer to the preceding Nortel Technical Publications.

Feature packaging

Attendant Console capabilities are included in base system software.

Calling Party Name Display (CPND) package 95 includes Attendant CPND and requires Digit Display (DDSP) package 19.

M2250 Attendant Console (DCON) package 140 requires M2000 Digital Sets (DSET) package 88.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Attendant console-related prompts and responses.
- 2 LD 12 – Add an attendant console.

LD 15 – Attendant console-related prompts and responses.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	LDN	Department Listed Directory Numbers.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- LDN0	xxx...x	Listed Directory Number 0.
- LDA0	xx xx... ALL	Attendant consoles associated with LDN0 (see Note).
- LDN1	xxx...x	Listed Directory Number 1.
- LDA1	xx xx... ALL	Attendant consoles associated with LDN1 (see Note).
- LDN2	xxx...x	Listed Directory Number 2.
- LDA2	xx xx... ALL	Attendant consoles associated with LDN2 (see Note).
- LDN3	xxx...x	Listed Directory Number 3.
- LDA3	xx xx... ALL	Attendant consoles associated with LDN3 (see Note).
TYPE:	NIT	Gate opener.
- NIT1	xxx...x	First Night Service DN.
- TIM1	hh mm	Hour and minute of first Night Service DN.
- NIT2	xxx...x	Second Night Service DN.
- TIM2	hh mm	Hour and minute for second Night Service DN.
- NIT3	xxx...x	Third Night Service DN.
- TIM3	hh mm	Hour and minute for third Night Service DN.
- NIT4	xxx...x	Fourth Night Service DN.

- TIM4	hh mm	Hour and minute for fourth Night Service DN.
TYPE:	ATT_DATA	Attendant console options.
ATDN	(0) xxx...x	Attendant DN.
- NCOS	(0)-99	Attendant Network Class of Service for all consoles.
TYPE:	CAS	Centralized Attendant Service options.
- CAS	(NO) YES	Change Centralized Attendant Service options.
TYPE:	ANI	Automatic Number Identification.
OPT	(IC1) IC2 (XTG) ITG (LOD) LOA (XDP) IDP (XBL) IBL (SYD) SYA	10 or 20 Incoming Call Indicators. Trunk Group Busy keys not equipped/equipped. (Deny) allow Lockout. Digit Display not equipped/equipped. Enhanced Busy Lamp Field not equipped/equipped (Deny) allow Secrecy.
- ANAT	xxx x	Attendant Billing number.
- ANLD	xxx...x	ANI listed DN.
TYPE:	ATT_DATA	Attendant console options.
AATT	xxxx	AIOD attendant identifier.
TYPE:	TIM	Timers.
- RTIM	xxxx yyyy zzzz	Recall timers. xxxx = slow answer (0-378). yyyy = Camp-On (0-510). zzzz = Call Waiting (0-510).
- ATIM	(0)-126	Attendant Alternative Answering timer.

ICI	xx yyy	Incoming Call Indicator key assignment. xx = key number. yyy = mnemonic (see Table 12). Note: Multiple responses can be entered for the same key. To remove an entry, enter xx NUL, then reenter the desired responses. To add an entry, enter the desired response. It will be added to any already existing response.
- AQTT	0-(30)-255	Attendant queue timing threshold in seconds.
TYPE:	ATT_DATA	Attendant console options.
- AODN	xxxx...x	Attendant overflow DN.
TYPE:	PWD	Gate opener.
- ATAC	xxxx	Attendant Administration access code.
TYPE:	ATT_DATA	Attendant console options.
- CWUP	(NO), YES	Call Waiting queue update.
- CWCL	(0)-255 (0)-255	Call Waiting lower and upper thresholds for number of calls in queue.
- CWTM	(0)-511 (0)-511	Call Waiting lower and upper thresholds for time in queue.
- CWBZ	(NO) YES (NO) YES	Buzz when Call Waiting thresholds are exceeded. Buzz when first call enters queue.
- MATT	(NO) YES	Attendant consoles used as Message Center.
- SPVC	0-63	Attendant number for supervisor console.
TYPE:	AWU	Automatic Wake Up options.
- AWU	(NO) YES X	Enable Automatic Wake Up (X erases AWU information).
- ATRC	(NO) YES	Attendant Recall after failed AWU attempts.
<p>Note: Enter one or more attendant numbers (1-63). Enter ALL to enable this listed DN on all attendants. Precede the attendant number with X to remove.</p>		

LD 12 – Add an attendant console.

Prompt	Response	Description
REQ	NEW	Add a console.
TYPE	2250 PWR	Attendant console type. M2250 console. Power TN.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
SETN		Second TN (must be on same loop as primary TN of attendant console).
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
ANUM	1-63	Attendant number (1-63).
SSU	0-4095	System Speed Call user list number.
ICDR	(ICDD) ICDA	(Deny) allow internal call detail.
CPND	(CNDD) CNDA	(Deny) allow Call Party Name Display. Prompted if TYPE is 2250.
DNDI	(DNDD) DNDA	(Deny) allow dialed name display.
EBLF	(BLFD) BLFA	(Deny) allow enhanced busy lamp field. Prompted if TYPE is 2250.

AADN	xxx...x	Attendant Alternative Answering DN.
KEY	xx aaa	Key number and mnemonic for feature assignments (see Table 13).

Feature operation

Refer to the appropriate attendant console user guide for specific operation procedures.

Attendant Delay

Contents

This section contains information on the following topics:

Feature description	317
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Feature interactions	318
Feature packaging	318
Feature implementation	318
Feature operation	319

Feature description

The Attendant Delay feature prevents an attendant from performing the following operations during a customer defined period (0 to 14 seconds inclusive) after a call is presented or recalled to the attendant:

- placing the call on hold
- releasing the call
- parking the call
- extending the call
- performing call splitting
- activating paging
- placing a call, if Secrecy or Enhanced Secrecy applies to the presented call or recall

Operating parameters

If Night Service, Attendant Overflow Position, Position Busy, or Attendant Alternate Answering are active, calls presented or recalled to the attendant are automatically routed to a pre-selected station, and are not subject to Attendant Delay.

Feature interactions

Attendant Console Misoperation

Attendant Delay takes precedence over Attendant Console Misoperation.

Feature packaging

International Supplementary Features (SUPP) package 131.

Feature implementation

LD 15 – Enable Attendant Delay.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data
TYPE:	TIM	Timers
...		
- ADHT	(0)-14	Attendant Delay on Hold Timer Respond to the ADHT prompt with 0 (the default) to leave this feature disabled, or with a value from 1 to 14 seconds for the Attendant Delay timer to enable the feature. This must be done for each customer to be equipped with the feature.

Feature operation

No specific operating procedures are required to use this feature.

Attendant Display of Speed Call or Autodial

Contents

This section contains information on the following topics:

Feature description	321
Operating parameters	321
Feature interactions	322
Feature packaging	322
Feature implementation	322
Feature operation	322

Feature description

With the Attendant Display of Speed Call or Autodial feature, when an attendant uses the Speed Call or Autodial feature to dial a number automatically, the dialed digits are shown on the console display. The speed-call code and the dialed speed-call number are displayed for a speed-call operation. The dialed autodial number is displayed for autodial operation.

Operating parameters

There are no operating parameters associated with this feature.

Feature interactions

There are no feature interactions associated with this feature.

Feature packaging

International Supplementary Features (SUPP) package 131.

Feature implementation

No specific implementation procedures are required to use this feature.

Feature operation

If an attendant presses the **Speed Call** key, the speed-call code and dialed speed call number are shown on the attendant console display.

If an attendant presses the **Autodial** key, the dialed autodial number is shown on the attendant console display.

Attendant Forward No Answer

Contents

This section contains information on the following topics:

Feature description	323
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Feature interactions	325
Feature packaging	327
Feature implementation	328
Feature operation	329

Feature description

The Attendant Forward No Answer (AFNA) feature is comprised of two capabilities. The first allows Direct Inward Dial (DID), Direct Outward Dial (DOD), or Central Office (CO) calls, presented to the attendant and not answered within a customer-defined period of time to be forwarded to another attendant, or, if the customer is in Night Service, to the night DN.

The second capability allows Direct Inward Dial or Central Office calls, presented to a station that is in Night Service, to be disconnected if not answered within the pre-defined ring cycle, or time period. This second capability is called Night Forward No Answer (NFNA).

Two timers are available: the Attendant Forward No Answer timer (AFNT) and the Attendant Forward No Answer Buzz timer (AFBT), both of which are programmed in LD 15.

If the AFBT timer is programmed, when a call is presented to the attendant, the attendant receives a buzz at maximum volume for the duration of the AFBT timer. If the value set for the AFNT timer is higher than that of the AFBT timer, the attendant receives a buzz at normal volume for the duration between when the two timers expire. The AFNT timer can be set between two and 126 seconds. The AFBT timer cannot be set higher than the AFNT timer.

If the attendant does not accept the call before the AFNT timer expires, the attendant is put in Position Busy and the call is relinked to the top of the queue. If all attendants are put in Position Busy, the call can be forwarded using Attendant Overflow Position (AOP) or Night Service if equipped.

When a call is forwarded from the attendant queue to a busy Attendant Overflow Position, the call remains in the queue. If the AOP is idle, the Attendant Forward No Answer timer is started. If the call is not answered before time-out, the AOP is idled. The call is relinked to the top of the queue. If all attendants are in Position Busy, Night Service is activated and the call is transferred to the night DN.

If the night DN is busy, the call is added to the queue, provided the call involves a CO, FEX, WATS, CAS, or CAMA trunk, or was handled by Enhanced Night Service. Other calls, such as TIE or internal calls, are given busy tone.

During Night Service, when a DID or CO trunk call is presented to an idle DN, the Night Forward No Answer (NFNA) ring counter is started. If the call is not answered during the NFNA time cycle, the call is disconnected. Non-DID and non-CO calls ring until the call is answered or the calling party hangs up.

Operating parameters

Attendant Forward No Answer operates in a standalone or networking environment. For networking applications, the transferring and terminating stations can be located on different nodes.

Attendant Forward No Answer does not apply to inter-attendant calls.

Night Forward No Answer (NFNA) and Night Forward No Answer in seconds (NFNS) do not apply to calls waiting in the ACD queue or the Primary Line Directory Number (PLDN) queue.

When Night Forward No Answer times out on an unanswered trunk, the trunk is locked out until the far-end goes on-hook.

The maximum number of ring cycles for Attendant Forward No Answer on an Attendant Overflow Position is 63.

AFNA timing ceases and the volume of the attendant buzzer is set to the original value in the following cases:

- If the attendant answers a call
- If the attendant answers an Automatic Wake-up recall on the AWU key
- If an attendant-extended call is answered on a telephone during a slow answer recall to the attendant
- If a call waiting call is answered at a telephone while the attendant is ringing

If a telephone or trunk disconnects while the attendant is being rung, and the AFNA timing cannot continue on the source or destination side, the volume of the attendant buzzer is set to its original value.

The NFNS timing starts when a DID/DOD/CO call is recalled to the night station, as part of the Recall to Night Station treatment, requeued to the night station as part of the Requeueing of Attendant Presented Calls treatment, or rerouted to the night station as part of the Attendant Clearing During Night Service treatment.

If both the Disconnect Timer (DCTI) of the Periodic Clearing feature and NFNA or NFNS are defined, the first one which expires will disconnect a DID or CO call.

Feature interactions

AC15 Recall: Timed Reminder Recall

If the Attendant Forward No Answer feature is activated and the attendant fails to answer, the attendant is forced into Busy Position and the call goes to the first idle attendant or is put into the attendant queue. If the conditions are also satisfied to put the customer in Night Service and the original call is an external call, the AC15 recall is directed to the Night DN.

Attendant Recall

If an attendant recall is affected through the Attendant Recall key on a proprietary telephone, or through a switchhook flash on an analog (500/2500 type) telephone, the destination side on the console is not dropped before the call is routed to the night DN.

Camp-On to a telephone in Ringback or Dialing

Camp-on recall takes precedence over the Attendant Forward No Answer recall. However, if during the recall the customer goes into Night Service and the recall is not answered by the night DN, the call is disconnected according to the Attendant No Answer feature processing.

DPNSS1 Diversion

If an incoming call is handled for Network Attendant Services routing towards DPNSS1, no diversion signaling is sent back to the calling party.

Multi-party Operations - Recovery of Misoperation during Call Transfer

Multi-Party Operations – Recovery of Misoperation During Call Transfer takes precedence over NFNA and NFNS for DID/DOD/CO calls.

When a DID/DOD/CO call is transferred from one station to another station on the same node, Ring Again No Answer has priority over NFNA and NFNS.

Night Forward No Answer

Call Forward No Answer has priority over Night Forward No Answer and AFNA on the Attendant Overflow Position.

Night Service Enhancements

Any call which has been presented to the Attendant Overflow Position cannot be removed from the telephone and requeued by pressing the Make Set Busy (MSB) key. The call will only be removed if the Attendant Forward No Answer feature is active, and the Attendant Forward No Answer Timer has timed out. In this case, the call is requeued and the Attendant Overflow Position is idled.

Position Busy with Call on Hold

If an attendant with a call on hold does not answer an Attendant Forward No Answer call within a customer-defined time, the console is not placed in Position Busy.

Recall to Same Attendant

If the attendant does not answer a call and the Attendant Forward No Answer feature is equipped, the console is forced into the Position Busy state and the call is routed to the first available idle attendant.

Switchhook Flash

If a switchhook flash is performed on an analog (500/2500 type) telephone, the AFNA timing stops to allow for a valid disconnection. If a valid disconnection is not affected, the AFNA timing cycle begins again.

Feature packaging

Attendant Forward No Answer (AFNA) is package 134; however, this package is mutually exclusive with Attendant Alternate Answering (AAA) package 174.

Within a networking environment, Network Attendant Service (NAS) package 159 is required.

Feature implementation

LD 15 – Modify data for each customer member to be configured.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	ATT_DATA	Attendant console options.
...		
- OPT	(DNCA) DNCS	If DNCA is entered, all DID/CO or DOD calls are disconnected after the number of ring cycles defined by the response to the NFNA prompt while the system is in Night Service. If DNCS is entered, outgoing CO/DOD calls or incoming CO/DID calls in the answered state, and waiting on a telephone are disconnected after the number of seconds defined in response to the NFNS prompt expires.
...		
- AFNT	(0)-2-126	Attendant Forward No Answer Timer. The number of seconds in two-second intervals that the call is presented to the attendant before Attendant Forward No Answer is attempted. Odd entries are rounded down to the next valid entry. If 0 is entered, the call is not forwarded.
- AFBT	(0)-2-x	Attendant Forward Buzz Tone, where: x = the value defined for AFNT. The number of seconds in two-second intervals that the attendant is buzzed at full volume before the Attendant Forward No Answer timer is reached. Odd entries are rounded down to the next valid entry. If 0 is entered, the original volume is in effect.
TYPE:	TIM	Timers.
...		

- NFNA	(0)-63	<p>Night Forward No Answer ring cycles (prompted if OPT = DNCA).</p> <p>The number of times a DID/DOD and CO trunk call will ring a telephone before being disconnected during Night Service.</p> <p>A default value of 0 causes the call not to be disconnected.</p>
- NFNS	(0)-504	<p>Night Forward No Answer in seconds (prompted if OPT = DNCS).</p> <p>If a value is entered for this prompt, all outgoing CO/DOD trunk calls in a waiting state, and all incoming CO/DID calls in the answered state will be disconnected after the time in seconds expires as entered in response to this prompt. The entered value must be a multiple of eight.</p> <p>A default value of 0 causes the call not to be disconnected.</p>

Feature operation

No specific operating procedures are required to use this feature.

Attendant Incoming Call Indicators

Contents

This section contains information on the following topics:

Feature description	331
Operating parameters	332
Feature interactions	332
Feature packaging	333
Feature implementation	333
Feature operation	334

Feature description

Attendant consoles can be equipped with up to 20 Incoming Call Indicator (ICI) key/lamp pairs to identify the type of calls being presented and the call status for each particular call type. The customer can specify which incoming call types are to be assigned a separate ICI key. Possible call types include, but are not limited to, the following:

- Trunk calls (such as FX, WATS, and TIE)
- Listed Directory Number (LDN) calls
- Dial zero calls
- Fully restricted dial zero calls
- Automatic Timed Reminder recalls
- Attendant Interpositional calls

- Attendant Intercept calls
- Call Forward Busy calls
- Call Forward No Answer calls

Three lamp states are associated with each Incoming Call Indicator key (See Table 14).

Table 14
Key lamp states associated with each Incoming Call Indicator key

Lamp state	Status of call type
Dark	No calls of this type are waiting.
Flashing	One call of this type is waiting in queue.
Steadily lit	Two or more calls of this type are queued, or one call has been waiting longer than 20 seconds.

Operating parameters

The ICI feature applies to attendant consoles only.

The number of ICI keys to be assigned (10 or 20) is defined in the Customer Data block. The default is ten.

No more than 20 ICI key/lamp pairs can be assigned to an attendant console. The assignment of call types to ICI key/lamp pairs is flexible. All attendant consoles in the customer group will have the same ICI key assignments.

Feature interactions

Attendant Call Selection Call Waiting

The ICI feature is used with the Attendant Call Selection and Call Waiting features to recognize, answer, and process incoming calls.

DPNSS1 Night Service

When a Night Service call is diverted to an attendant, the Incoming Call Indicator is the number of the incoming route. This is the same as for a NAS MCDN call routed to an attendant.

ISDN Semi Permanent Connections for Australia

Calls using an ISPC link are always presented as calls over TIE trunks.

Feature packaging

This feature is included in base system software.

Feature implementation

LD 15 – Assign ICI keys for attendant consoles.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	ATT_DATA	Attendant console options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.

- OPT	(IC1) IC2	10 or 20 Incoming Call Indicators.
- ICI	0-19 CAx	Station category number. x = category number 1 through 7.
	0-19 CFB	Call Forward Busy.
	0-19 CFN	Call Forward No Answer.
	0-19 DF0	Dial 0 fully restricted.
	0-19 DL0	Dial 0 (attendant).
	0-19 IAT	Inter-attendant call.
	0-19 INT	Call intercept.
	0-19 LCT	Line Lockout Intercept.
	0-19 LD0-3	Listed Directory Number (0 through 3).
	0-19 MWC	Attendant Message Center.
	0-19 RLL	Recall.
	0-19 xxx	Route number.

Feature operation

No specific operating procedures are required to use this feature.

Attendant Interpositional Transfer

Contents

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Feature description

Attendant Interpositional Transfer enables an attendant to call or transfer a call to another attendant in a multiple console group, even when the destination attendant console is busy.

When transferring a call to another attendant whose console is idle, the interpositional call is presented immediately. If the called attendant is busy, the calling attendant hears a busy tone. The attendant then presses the Release key and the transferred call will be the next call presented to the called attendant console.

Operating parameters

A call can be transferred to an attendant console in the Position Busy state; however, the called console does not receive any audible signal. A Call Waiting indication appears on the console display.

Feature interactions

Digital Private Network Signaling System (DPNSS1)/Digital Access Signaling System (DASS2) Uniform Dialing Plan (UDP) Interworking

The Attendant Overflow Position feature is supported in a UDP DPNSS1 network. An attendant can call or transfer a call to another attendant in a multiple-console group, even when the destination attendant console is busy.

Network Attendant Service

An attendant is not able to call a specific attendant on another node by dialing the attendant DN followed by the attendant number. The attendant dials the NARS or CDP or LDN number the same as a telephone dials to reach the attendants at another node.

Night Service Enhancements

The requeuing of interpositional calls is not allowed. Night Service enhancements do not apply to interpositional calls, which remain on the console until answered.

Feature packaging

This feature is included in base system software.

Feature implementation

LD 15 – Add/change an Interpositional Call Incoming Call Indicator (ICI) key on attendant consoles.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	ATT_DATA	Attendant console options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- ICI	0-19 IAT	Add an Inter-attendant Call ICI to all consoles.

Feature operation

To transfer a call to a busy attendant (attendant console):

- Press **Rls**. Your call will be the next call presented to the busy attendant.

To transfer a call to an attendant console in Position Busy mode:

- Dial the Interpositional access code (0) and the desired attendant position number. You receive a busy tone. Press **Rls**.

To answer a call transferred to an attendant console in Position Busy mode, follow these steps:

- 1 The Call Waiting indicator lights; there are no audible tones. Press the **Position Busy** key to take the console out of Position Busy mode.
- 2 The call is presented to the Loop key and you receive an audible tone. Press the **Loop** key.

Attendant Lockout

Contents

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Feature operation	340

Feature description

Attendant Lockout restricts the attendant from entering an established connection completed through and held on the console. Attendant Lockout does not come into effect until the call has been answered.

The attendant can re-enter the call if the source party is a station telephone. Attendant Lockout occurs only if the source party is an external number (trunk), and the destination party is a telephone.

Operating parameters

Busy Verify and Barge-In allow the attendant to override the Attendant Lockout feature.

Feature interactions

Attendant Recall

If one of the stations activates Attendant Recall, the attendant is allowed to re-enter the connection.

Feature packaging

This feature is included in base system software.

Feature implementation

LD 15 – Allow/deny Lockout for attendant consoles.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	ATT_DATA	Attendant console options
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- OPT	(LOD) LOA	(Deny) allow attendant lockout.

Feature operation

No specific operating procedures are required to use this feature.

Attendant Overflow Position

Contents

This section contains information on the following topics:

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Feature operation	351

Feature description

Attendant Overflow Position (AOP) allows certain types of calls to be automatically rerouted to a specified idle Directory Number (AOP DN) when calls waiting to be answered have exceeded a defined threshold, or an attendant is in the Position Busy state, but the system is not in Night Service.

When a call that can be rerouted has been waiting longer than the customer-defined Attendant Queue Timing Threshold (0-255 seconds), it is rerouted to the AOP DN. Calls that can be rerouted to the AOP DN are trunk calls, internal calls and Call Forward Busy, or Call Forward No Answer calls directed to the attendant.

Attendant calls that cannot be rerouted are transfer calls, intercept calls, parked call recalls, automatic or manual recalls, and attendant interposition calls. These calls will not be answered until an attendant becomes available.

When the last attendant console is put into Position Busy or disabled, the system does not go into Night Service if an AOP DN is available. In this case, calls that can be rerouted will be forwarded to the AOP DN. Ineligible calls remain unanswered until the system is put in Night Service or one of the consoles deactivates Position Busy.

Operating parameters

An AOP DN can be a single-appearance, multiple-appearance single-call, or multiple-appearance multiple-call DN. If it is a Multiple Appearance DN, a proprietary telephone can busy out the AOP DN for all appearances.

An analog (500/2500 type) telephone can have an AOP DN. It does not have the ability to busy out the AOP DN and continue to receive calls. If it is a requirement that the analog (500/2500 type) telephone have an AOP DN, the AOP DN must also appear on a proprietary telephone to create a mix of telephones, which negates privacy.

In order to properly identify and greet attendant overflow calls, it is best to have the AOP DN appear on a proprietary telephone's secondary DN.

Proprietary telephones specified as Attendant Overflow Positions can prevent calls from being rerouted by the Attendant Overflow feature. To prevent attendant overflow calls, press the Attendant Overflow Position Busy (AOP Busy) key/lamp pair on the telephone. Activating this key will busy out all appearances of the AOP for either Single Call Ringing or Multiple Call Ringing arrangements. Overflow calls will remain in the attendant queue. Normal incoming calls to the AOP telephone will not be affected.

The following requirements apply to the activation/deactivation of the AOP Busy key:

- A telephone with an AOP Busy key must have an appearance of the AOP DN in order for the key to work.
- Any AOP DN that has an AOP Busy key can activate or deactivate the AOP feature. If the AOP Busy key is activated at one appearance of the AOP DN, attendant calls are not rerouted to any appearance of the AOP DN.
- Activation or deactivation of the AOP Busy key does not affect any call already rerouted to the AOP DN.

- If all consoles are in Position Busy and the system is not in Night Service when an AOP Busy key is activated, the system goes into Night Service.
- If the system is in Night Service when the AOP Busy key is deactivated, the system remains in Night Service.
- Activation or deactivation of the AOP Busy key does not affect the Position Busy status of the attendant console. If all attendant consoles are in Position Busy and the AOP Busy key is activated, the system goes into Night Service.
- The status of the AOP Busy key remains unchanged through a system initialization but is deactivated if a system reload occurs.

The CAS to AOP Interworking feature allows both Centralized Attendant Service-Main (CASM), or Centralized Attendant Service-Remote (CASR), and Attendant Overflow Position packages to be configured and co-exist in a network. In an environment where both packages are configured, CAS takes precedence over AOP.

Each customer may have only one AOP DN. The AOP DN cannot be a private line DN, a trunk DN, a Control DN, a BRI DN, or a SPRE code.

There are no special ringing cadences or lamp operations to indicate that an incoming call to the AOP DN is an Attendant Overflow Position call. It is recommended that the AOP DN be used only for Attendant Overflow Position calls enabling calls to be answered appropriately.

If the AOP DN is busy, calls remain in the attendant queue and are not rerouted through the Attendant Overflow Position feature until the DN is free to receive the next call.

Calls will not be rerouted to the Attendant Overflow Position DN when

- Calls are on an Integrated Services Digital Network (ISDN) or Electronic Switched Network (ESN) network.
- All appearances of the AOP DN are busy.
- The AOP DN is in the Call Forward All Calls mode.
- The call is an interposition call from an attendant.
- The call has been redirected to the attendant by the Call Transfer or Attendant Recall features.

- The call is an intercept call to the attendants.
- The system is in the Power Fail Transfer mode.
- All appearances of the AOP DN have the Make Set Busy feature activated.
- Any appearance of the AOP DN has activated Attendant Overflow Position Busy (AOP Busy).
- An analog (500/2500 type) telephone appearance of the AOP DN goes idle and a Call Waiting call is queued for the telephone. The Call Waiting call rings the telephone and AOP calls are not rerouted to the telephone.
- The AOP DN goes idle with a Camp-On call queued for the telephone. The Camp-On call rings the telephone and AOP calls are not rerouted to the telephone.
- The rerouting of the call violates the access restrictions or Class of Service restrictions on the AOP DN telephone. For example, if the AOP DN is FR2, an external Public Exchange network call will not be rerouted to the AOP DN because it is prohibited by the telephone access restrictions.
- The system is in Night Service.

Feature interactions

AC15 Recall: Timed Reminder Recall

AC15 recalls are not routed to the Attendant Overflow Position. They are directed to the first idle attendant or put in the attendant queue.

Attendant

The Calls Waiting indicator on the attendant console is updated when a call is rerouted to the AOP DN.

Attendant Overflow Position Busy

If the telephone with Attendant Overflow Position (AOP) DN has an Attendant Overflow Position Busy (AOP Busy) key activated, calls will not overflow to any appearance of the AOP DN.

Attendant Recall

An Attendant Overflow Position call answered at an AOP DN may be recalled to the attendant using the Attendant Recall capability (ARC key).

**Attendant Timed Recall
Automatic Timed Reminders**

After an attendant call has been rerouted using the AOP feature, there is no automatic timed recall to the attendant or any other DN.

Automatic Call Distribution

Externally marked trunks will overflow to an Automatic Call Distribution (ACD) DN. The ACD DN may only be an ACD agent configured as a virtual Voice Mail System agent (for example, CallPilot).

Automatic Wake Up

Automatic Wake Up recalls are not redirected to a customer-defined Attendant Overflow Position DN. Failed wake up calls stay in the attendant queue or ring indefinitely on the console.

Call Forward All Calls

If the telephone assigned an Attendant Overflow DN has activated the Call Forward All Calls feature, overflow calls are not rerouted to the telephone. If an analog (500/2500 type) telephone is forwarded, AOP is canceled.

Call Forward, Internal Calls

If Attendant Overflow redirects an internal call to a telephone that is Internal Call Forward active, the call will remain in the attendant queue, and will not receive Internal CFW treatment.

Call Forward No Answer

A call rerouted through Attendant Overflow Position will Call Forward to the forwarding DN only if it is the Prime DN or a single appearance DN on that telephone.

Call Pickup

An Attendant Overflow Position Call presented to the AOP DN can be picked up by any station belonging to the same Call Pickup Group.

Conference

An Attendant Overflow Position call answered on an AOP DN may be conferenced with another DN.

Departmental Listed Directory Number

Listed Directory Number calls that have been waiting in the queue longer than the specified threshold period will be routed to the Attendant Overflow Position.

Digital Private Network Signaling System (DPNSS1)/Digital Access Signaling System (DASS2) Uniform Dialing Plan (UDP) Interworking

The Attendant Overflow Position feature is supported on a UDP DPNSS1 network. If an incoming DPNSS1 UDP call is queued to the attendant, and if the call is not answered within a predefined period of time, the call can be redirected to the Attendant Overflow DN.

Flexible Attendant Call Waiting Thresholds

The Attendant Overflow Position is not counted as an active attendant.

Flexible Line Lockout

A call intercepted to the attendant due to Flexible Line Lockout receives Attendant Overflow Position (AOP) treatment if the feature package is equipped and the AOP Directory Number (DN) is defined.

Group Hunt

A PLDN cannot be configured as an Attendant Overflow DN (AODN).

Line Lockout

If a telephone with an AOP DN is in Line Lockout, it still receives AOP calls.

Make Set Busy

If a telephone that is the only idle AOP DN has MSB activated, calls will not overflow.

If the AOP DN is a multiple appearance DN, the MSB key should be added to all telephones with an AOP DN.

If MSB is activated in a Multiple Call Ringing arrangement, the telephone appears busy. All other appearances of the AOP DN will still receive calls. This allows the user to leave the telephone and prevent callers from overflowing and receiving ringback with no answer.

If the AOP DN is a Multiple Appearance, Single Call arrangement and MSB is activated, the AOP DN of that telephone will flash, but the telephone will not ring (the call can still be answered from that appearance).

Manual Line Service

When Attendant Overflow Position (AOP) is defined, Manual Line Service follows the AOP directions.

Meridian Hospitality Voice Services

Attendant Overflow Position (AOP) allows unanswered calls to the attendant to be forwarded to a customer-defined Directory Number (DN) after a defined time. A call can also be overflowed if all the attendants are in Position Busy State. With AOP equipped, overflowed calls can be directed to CallPilot. The AOP DN must be defined as an Automatic Call Distribution (ACD) Directory Number (DN), and the ACD DN must have an ACD agent assigned as a virtual VMS agent.

Multiple Appearance Directory Number

A multiple appearance, multiple call AOP DN allows as many overflow calls to be in progress as there are appearances of the DN. A multiple appearance, single call AOP DN allows only one overflow call at a time.

Night Key for Direct Inward Dialing Digit Manipulation

When the last attendant activates the POS BUSY key, the system does not go into Night Service if an Attendant Overflow Position Directory Number (DN) is available.

Night Service

A call rerouted through the Attendant Overflow Position feature is not redirected to the Night DN if the system is subsequently put into Night Service. When all attendant consoles are in Position Busy, the system will not go into Night Service until the AOP Busy key is activated.

Deactivating the AOP Busy key after the system has been placed in Night Service does not affect the Night Service feature.

Night Service Enhancements

If a call with a ringing party on the destination side is presented at the last-active attendant console, and there is an active Attendant Overflow Position, the ringing destination will be disconnected when the call is requeued. Likewise, if the call is a Call Waiting recall, Call Waiting will be canceled.

Night Service Enhancements/Network Attendant Service (NAS)

The routing configuration for NAS will apply during Night Service. External calls and recalls may be queued to a remote Night DN, if defined. Internal calls and internal recalls queued during Day Service will be dropped, if the Night DN has been defined on a remote node.

Recall to Same Attendant

Recalls and inter-attendant calls are not routed to the Attendant Overflow Position.

Ring Again

If Ring Again is activated against the AOP DN, notification is given to the originator when the telephone becomes idle. An AOP call, however, takes precedence over Ring Again notification on the AOP DN when the AOP DN becomes free.

Traffic Measurement

Traffic measurements are provided for the Attendant Overflow feature in Traffic Report TFC005. A count of the number of attendant calls rerouted through the feature is printed.

Feature packaging

Attendant Overflow Position (AOP) package 56 has no feature package dependencies. Attendant Overflow Position and Centralized Attendant Service are, however, mutually exclusive.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Assign/change an Attendant Overflow Position DN and queue threshold timing.
- 2 LD 11 – Add/change an AOP DN and AOP Busy key.
- 3 LD 10 – Add/change an Attendant Overflow Position DN on an analog (500/2500 type) telephone.

LD 15 – Assign/change an Attendant Overflow Position DN and queue threshold timing.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	ATT_DATA	Attendant console options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- AQTT	0-(30)-255	Attendant queue timing threshold (AQTT).
- AODN	xxx...x	DN where calls are to be overflowed when they have been in queue the time specified for AQTT.

LD 11 – Add/change an AOP DN and AOP Busy key.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx yyy...y	Attendant Overflow Position DN. xx = key number. yyy...y = DN.
KEY	xx OVB	Attendant Overflow Position Busy key.

LD 10 – Add/change an Attendant Overflow Position DN on an analog (500/2500 type) telephone.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
DN	yyy...y	Attendant Overflow Position DN.

Feature operation

Attendant Overflow Position calls will be rerouted to all appearances of the AOP DN as long as the following conditions are met:

- The system is not in Night Service.
- The Attendant Overflow key (any AOP DN appearance) is not activated.
- At least one appearance of the AOP DN is on a telephone that does not have Make Set Busy activated.

To prevent attendant overflow calls from being rerouted to the AOP DN, do any of the following:

- Activate the Attendant Overflow Position Busy key.
- Activate the Make Set Busy key on all telephones with an appearance of the AOP DN.
- Place the system in Night Service.

To prevent attendant overflow calls from being rerouted to a single telephone with an appearance of the AOP DN (but not others):

- Activate Make Set Busy or
- Activate Call Forward All Calls (analog (500/2500 type) telephone).

Attendant Position Busy

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Feature description

If multiple consoles are defined for a customer, an attendant can remove a console from service by pressing the Position Busy key. Incoming calls are then directed to other consoles in the customer group.

Operating parameters

Position Busy applies to attendant consoles only.

Feature interactions

Attendant Administration

If a console in the Attendant Administration mode is idle for more than 20 minutes, it automatically reverts to Position Busy. If the system is initialized or reloaded while the console is in Attendant Administration mode, Attendant Administration is aborted and the console is placed in Position Busy.

Attendant Supervisory Console

Activation of the Position Busy key on a Supervisory console puts the console in the supervisory mode.

Departmental Listed Directory Number

If all attendant consoles in an LDN group are in a Position Busy state, calls to that LDN will not be automatically presented to any attendant console in the customer group. Other attendants may only answer those LDN calls if the LDN has been assigned to an ICI key.

End-to-End Signaling

Attendant Position Busy works together with Attendant End-to-End Signaling (AEES). However, do not press this feature key while using AEES, or the Dual-tone Multifrequency (DTMF) code signals may be blocked.

Night Service

When the last console operator activates the Position Busy key or the Night key, Night Service is put into effect. Incoming calls receive the customer-specified night treatment.

When all attendants activate the Position Busy key, Night Service is in effect unless the Attendant Overflow Position (AOP) feature is equipped. If AOP is equipped, the Night key must be pressed to invoke Night Service. A call that is rerouted due to AOP is not redirected to the Night DN if the system is subsequently put into Night Service.

Night Service Enhancements

Any call that has been presented to the Attendant Overflow Position cannot be removed from the console and requeued by pressing the Make Set Busy (MSB) key. The call will be removed only if the Attendant Forward No Answer feature is active and the Attendant Forward No Answer Timer has timed out. In this case, the call is requeued and the Attendant Overflow Position is idled.

Recall to Same Attendant

If an attendant console is in maintenance or Position Busy when a Recall to Same Attendant call is recalled to it, the recall is presented to the first available idle attendant. If an attendant goes into Position Busy with a Return to Same Attendant call in Call Waiting, the waiting call is presented to the first available attendant.

Series Call

If the attendant activates Position Busy while a Series Call is active, the recall occurs to the next available attendant.

Feature packaging

This feature is included in base system software.

Feature implementation

There are no specific implementation procedures for this feature.

Feature operation

In a multi-console environment, press the **Position Busy** key on an attendant console to remove it from service.

Attendant Recall

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Feature description

Attendant Recall allows a user to call the attendant directly during an established call by pressing a single key. A three-way connection is established among the user, the attendant, and the third party.

To activate this feature, a separate Attendant Recall key/lamp pair must be equipped on proprietary telephones.

On single-line telephones, a user can recall the attendant during an established call by flashing the switchhook. Attendant Recall is automatic if a Transfer Denied Class of Service (XFD) is specified for the telephone. If a Transfer Allowed Class of Service (XFA) is specified, the user hears a special dial tone following the switchhook flash, and then dials zero (0) to recall the attendant. After a switchhook flash has been used to recall the attendant, it is not possible to return to a two-party connection before the attendant answers.

Operating parameters

In order for the Overflow Position Busy (OVB) key to work, the telephone must have an AOP DN configured.

Feature interactions

Attendant Alternative Answering

Under Attendant Recall conditions, the initiator of the recall rings the destination side of the console, and the third party becomes the source. The AAA timer is applied to the source party. If the AAA timer expires, the destination is dropped, and the source is forwarded to the AAA DN. If the source party disconnects before the destination party, the AAA timer is restarted on the destination party still buzzing the attendant through the ARC key. The AAA timer is dropped if both parties disconnect.

Attendant Forward No Answer

If an attendant recall is affected through the Attendant Recall key on a proprietary telephone, or through a switchhook flash on an analog (500/2500 type) telephone, the destination side on the console is not dropped before the call is routed to the night DN.

Attendant Lockout

If one of the stations activates Attendant Recall, the attendant is allowed to reenter the connection.

Attendant Overflow Position

An Attendant Overflow Position call answered at an AOP DN may be recalled to the attendant using the Attendant Recall capability (ARC key).

Attendant Secrecy

Attendant Secrecy does not apply on an attendant recall or when the attendant reenters a call held on a Loop key. The Exclude Source and Destination keys are used in these cases.

Attendant Splitting

After the attendant and the two parties have been connected, the attendant can use the Attendant Splitting feature to communicate separately with either party.

Automatic Redial

When an Automatic Redial (ARDL) call is not accepted by the calling party, the Attendant Recall (ARC) key is ignored.

Call Party Name Display

Attendant Recall using the Attendant Recall key or a switchhook flash results in both source and destination information being displayed. No redirection reason is displayed, however. In this type of recall, the party that pressed the Attendant Recall key or switchhook is the destination party.

Attendant Recall using Call Transfer or Conference displays the recalling party's DN and CPND information on the attendant's source line. No redirection reason is displayed. If the recall is done with the Transfer key the third party's DN and CPND information are displayed on the source line when the transfer is complete.

Directory Number Delayed Ringing

If a dialed telephone has Directory Number Delayed Ringing (DNDR) defined, and an attendant re-extends a call without releasing it, the DNDR timing is not reset. If the value of the recall timer is less than that of the DNDR timer, the call is recalled to the attendant before audible notification begins.

Direct Inward Dialing Call Forward No Answer Timer

The Direct Inward Dialing Call Forward No Answer Timer does not apply to an answered DID call that is extended to an unanswered station by the attendant – the call is recalled to the attendant using the Attendant Recall feature.

In-Band Automatic Number Identification

If an Automatic Call Distribution Agent is active on an IANI call and activates the Attendant Recall (ARC) key to call the attendant, the agent's display shows the attendant number when the attendant answers the call. The ANI number reappears when the attendant releases.

Incoming Call Indicator Enhancement

If an RDI-intercepted call that is extended by the attendant to the destination party having RDI Class of Service is either transferred back or recalled to the attendant, then the attendant recall ICI lights up and not the RDI-intercept ICI.

ICP Network Screen Activation, Flexible DN, Meridian Mail Interactions

When a call from another node is recalled to the Intercept Computer (ICP) position attendant, it is presented on the ICP terminal.

Multi-Party Operations

Users of analog (500/2500 type) telephones can perform an attendant recall during a two-party connection by performing a switchhook flash and then dialing the attendant DN.

Ring Again on No Answer

A telephone that is recalling the attendant cannot apply Ring Again on No Answer.

Secrecy Enhancement

The source and destination parties cannot be joined together on the attendants conference bridge if Attendant Break-In with Secrecy is active. This is consistent with the existing Break-In feature.

Slow Answer Recall for Transferred External Trunks

Slow Answer Recall Modification (SLAM) has an interaction after the attendant answers the recall. If SLAM is configured, the target telephone is disconnected after the attendant answers the recall. If SLAM is not configured, the target telephone rings until the attendant releases it.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Add/change a Recall Incoming Call Indicator (ICI) key on attendant consoles.
- 2 LD 10 – Implement Attendant Recall for analog (500/2500 type) telephones.
- 3 LD 11 – Add/change an Attendant Recall key for proprietary telephones.

LD 15 – Add/change a Recall Incoming Call Indicator (ICI) key on attendant consoles.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	ATT_DATA	Attendant console options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- ICI	xx RLL	Add a Recall ICI to all consoles.

LD 10 – Implement Attendant Recall for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.

TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(XFD), XFA	(Deny) allow call transfer, which allows automatic Attendant Recall.

LD 11 – Add/change an Attendant Recall key for proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx ARC	Add an Attendant Recall key. xx = key number.

Feature operation

To contact an attendant during a call (Meridian 1 proprietary telephone) , follow these steps:

- 1 Press **Att Recall**.
- 2 Stay on the line until the attendant answers.
- 3 When you hang up, the other party remains connected to the attendant.

To contact an attendant during a call (analog (500/2500 type) telephone with Transfer Allowed Class of Service), follow these steps:

- 1 Flash the switchhook (you hear a special dial tone).
- 2 Dial zero (0).
- 3 When you hang up, the other party remains connected to the attendant.

To contact an attendant during a call (analog (500/2500 type) telephone with Transfer Denied Class of Service), follow these steps:

- 1 Flash the switchhook (the attendant is automatically dialed).
- 2 When you hang up, the other party remains connected to the attendant.

Attendant Recall with Splitting

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Feature description

The Attendant Recall with Splitting feature provides an enhancement to the operation of the attendant console with the following features:

- Attendant Recall
- Call Transfer

This feature allows calls transferred to the attendant by the above features to be presented on the console loop with both the transferring and transferred parties on the console loop, with the transferred party automatically excluded if OPT in LD 15 is set to either SYA (Secrecy Allowed) or EHS (Enhanced Secrecy). Upon answering the call, the attendant then assumes control over both the transferred and transferring parties. The operation will also allow the transferring party to have control over the call as long as the call has not been answered by the attendant (example, the transferring party will be able to cancel the call transfer and return to the transferred party).

It is important to note that this enhancement applies to calls transferred to the attendant using Attendant Recall and Call Transfer only. Calls transferred to the attendant through operation of the Conference key on proprietary telephones, or through the operation of the Interpositional Call Transfers, do not receive splitting.

Operating parameters

This feature applies only to calls which arrive at the attendant by way of Attendant Recall or Call Transfer.

This feature will not function across a network.

This feature requires OPT in LD 15 (Customer Data Block) be set to either SYA or EHS.

Feature interactions

Attendant Secrecy

Secrecy Allowed (SYA)

If Secrecy is allowed at the attendant console, a two-party connection will be made only when the attendant answers the call. The attendant can converse privately with either the source or the destination side (Splitting) until the Loop key is pressed and a three-party connection is reestablished.

Secrecy Denied (SYD)

If Secrecy is denied at the attendant console, a three-way connection will be established between the transferring party, transferred party, and the attendant when the attendant answers the call.

Enhanced Secrecy (EHS)

Same as SYA except that a warning tone is included as part of all conversations involving the attendant and two or more parties to indicate that privacy has been interrupted.

Automatic Call Distribution (ACD)

A recall from an ACD DN to the attendant console will also activate the Attendant Recall with Splitting feature. The call is treated as if it had come from a normal internal DN instead of an ACD agent. The operation is described in “*Normal Operation*” on page 368

Automatic Hold

This feature does not have precedence over Attendant Recall (that is, automatic hold cannot be activated until the attendant answers the recall presented on the console). However, it can be activated even before the attendant answers a call transferred to the console.

Call Detail Recording (CDR) on Multiple Call Transfer

With PPM

Whenever a PPM call is transferred, the pulses accumulated against the current station that is responsible for this segment of the call are added to its terminal meter and a CDR X (an S for the first time) record is printed. When the call is eventually terminated, a CDR E record is printed.

Without PPM

The type and number of CDR records printed will be the same as the case for outgoing PPM call. The only difference is that no accumulated pulses will be included as part of the CDR messages.

Intercept Computer Dial from Directory

If a telephone transfers a call to the attendant, or a Meridian 1 proprietary telephone presses the Attendant Recall (ARC) key and the transferring party has not yet completed the transfer before the attendant answers, it is not possible to dial from the Intercept Computer (since the transferred party is connected to SRC, and the transferring party is connected to DEST).

Call Party Name Display

For the M2250 attendant console, M2317, and Meridian Modular Telephones, the appropriate DN and calling party's name will be correctly shown on the digit display when the attendant presses either the Exclude Source or the Exclude Destination key.

Multi-Party Operations

The Multi-Party Operations (MPO) feature introduces a new Class of Service; Three Parties Service Allowed (TSA), for analog (500/2500 type) telephones. It allows certain keys on these telephones to be programmed for conference, toggle between telephones, and disconnect. However, the toggle function will be disabled if a call is transferred to the attendant because of the Attendant Recall with Splitting feature.

Slow Answer Recall Enhancement

The Call Waiting Recall and Camp-on Waiting Recall enhancements take precedence over Attendant Recall Splitting (ATS), Secrecy (SYA), Enhanced Secrecy (EHS), and Multiple Party Operations.

Transfer Restricted

This feature ignores the use of switchhook flash on analog (500/2500 type) telephones and as a result call transfer, conference, and attendant recall (with or without splitting) will not be allowed on a telephone basis.

Feature packaging

Attendant Recall with Splitting requires International Supplementary Features (SUPP) package 131.

Feature implementation

There are no specific implementation procedures for this feature.

Feature operation

Normal Operation

The following events describe the normal operation whenever a call is transferred to the attendant using the Call Transfer feature at an analog (500/2500 type) telephone, or using the Call Transfer/Attendant Recall feature at a proprietary telephone, or using the operation of a register recall at an analog (500/2500 type) telephone with Transfer Denied Class of Service.

If an attendant console is idle, then the call will be presented to the console as follows:

- The Loop indicator stays off.
- The Recall Incoming Call Identification (ICI) indicator is turned on (with other ICI indicators associated with waiting calls of other types).
- The Source indicator for the loop on which the call is presented is turned on.
- The Destination indicator for the same loop flashes at 120 ipm.
- The console buzzes.
- The attendant console digit display indicates the DN (or name if CPND package is enabled) of the transferring party.
- The transferring party receives ringback tone.
- The transferred party is put on hold.

If no attendant console is idle when the transferring party dials the attendant access code, then the call is placed in the attendant queue, and the transferring party receives ringback tone. When this call moves to the top of the queue and an attendant console becomes idle, then the call will be presented to the console as described in the previous paragraph.

The attendant can then answer this call by pressing the Loop key, or by pressing the Recall ICI key. When the call is answered, the following occurs:

- The Loop indicator is turned on.
- The Recall ICI indicator stays on, and all other ICI indicators are turned off.
- The controlling party is presented at the attendant console as a destination, and the Destination indicator stays on steadily.
- The transferred party is presented at the console as a source, and the Source indicator remains on.
- The source (the transferred party) is automatically excluded from the connection, and the Exclude Source indicator is turned on.

- The destination (the transferring party) is connected to the attendant.
The previous two events only occur when the SYA or EHS option is allowed. If SYD is defined in the Customer Data Block, a three party conference will be set up instead.
- If the call is transferred from a proprietary telephone, the proprietary telephone's Attendant Recall indicator or the Call Transfer indicator is turned off.

If the call is transferred from an M2317 telephone, then the screen on the corresponding telephone will go to the established state.

The attendant then assumes control over both the source and the destination as if both parties have been dialed by the attendant.

However, the transferring party can either return to the transferred party or complete the transfer operation any time before the attendant answers the call (that is, while the call is presented to the console, or placed in the attendant queue).

Cancel Call Transfer

The station user can return to the original party (the transferred party), before the attendant answers the call, as follows:

- The analog (500/2500 type) telephone user: By operating the register recall again, which causes the call to revert back to a two-party call, and the call to the attendant to be canceled.
- The proprietary telephone user: By pressing the DN key (DN indicator flashes at 120 ipm), which causes the call to revert back to a two-party call, the call to the attendant to be canceled, the DN indicator to stop flashing and stay on steadily, and the Call Transfer indicator (or the attendant Recall indicator) to turn off.
- By pressing the Release key or going on-hook, which causes the call to revert back to a two-party call and to be put on hold, the call to the attendant to be canceled, the Call Transfer indicator (or the attendant Recall indicator) to turn off, and the DN indicator to flash at 120 ipm.

- The M2317 telephone user: By pressing the DN key (DN indicator flashes at 120 ipm), which causes the call to revert back to a two-party call, the call to the attendant to be canceled, the DN indicator to turn on steadily.

By pressing the Release key or going on-hook, which causes the call to revert back to a two-party call and to be put on hold, the call to the attendant to be canceled, (the attendant Recall indicator to turn off), and the DN indicator to flash at 120 ipm.

Note: Pressing the DN key or operating the recall after the attendant answers the recall will be ignored.

Complete Call Transfer

While waiting for the attendant to answer the recall (ringback tone is received), the station user can complete the call transfer to the attendant as follows:

- The analog (500/2500 type) telephone user: By going on-hook, which causes the analog (500/2500 type) telephone to become idle and the attendant will ring.
- The proprietary telephone user: By pressing the Call Transfer key (or the attendant Recall key), which causes the DN indicator to turn off, the Call Transfer indicator (or the attendant Recall indicator) to turn off, and the DN to become idle.
- The M2317 telephone user: By pressing the CONNECT soft key (or the attendant Recall key), which causes the DN indicator to turn off, (the attendant Recall indicator to turn off), and the DN to become idle.

If the transfer operation is completed while the call is presented to the console, then the following will occur:

- The Destination indicator turns off.
- The Source indicator stays on steadily.
- The attendant console digit display changes to identify the transferred party.
- The transferred party receives ringback tone.

- The Recall ICI indicator stays on steadily (with other ICI indicators associated with waiting calls of other types).
- The console continues to buzz.

If the transfer operation is completed while the recall is in the attendant queue, then the DN at which the call is transferred becomes idle, the transferred party receives ringback tone, and the call stays in the queue as a recall.

Note: Operation is not allowed after the attendant answers the recall. The transferring party cannot drop from the call in this case until the attendant presses the Release Destination key.

Attendant Secrecy

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Feature description

Attendant Secrecy automatically prevents a voice connection between the source and destination parties of a call being extended by an attendant, until the attendant connects the two parties. This allows the attendant to converse privately with the destination party before completing the connection. Attendant Secrecy is allowed or denied on a customer basis.

Operating parameters

Attendant Secrecy is available on attendant consoles only.

Attendant Secrecy operates only on external calls received from an outside trunk (for example, Central Office or WATS trunks).

Attendant Secrecy is not applicable to Integrated Services Access (ISA) trunks.

Feature interactions

AC15 Recall: Timed Reminder Recall

Secrecy is not activated when AC15 recalls are presented to the attendant.

Attendant Recall

Attendant Secrecy does not apply on an attendant recall or when the attendant reenters a call held on a Loop key. The Exclude Source and Destination keys are used in these cases.

Attendant Recall with Splitting

Secrecy Allowed (SYA)

If Secrecy is allowed at the attendant console, a two-party connection will be made only when the attendant answers the call. The attendant can converse privately with either the source or the destination side (Splitting) until the Loop key is pressed and a three-party connection is reestablished.

Secrecy Denied (SYD)

If Secrecy is denied at the attendant console, a three-way connection will be established between the transferring party, transferred party, and the attendant when the attendant answers the call.

This is the Enhanced Secrecy (EHS)

Same as Secrecy Allowed except that a warning tone is included as part of all conversations involving the attendant and two or more parties to indicate that privacy has been interrupted.

Console Presentation Group Level Services

The Secrecy option specified for a customer applies to all attendants for that customer.

Digital Private Signaling System #1 (DPNSS1) Executive Intrusion

If attendant secrecy is not active when the attendant attempts Executive Intrusion, the source is automatically excluded. If Enhanced Secrecy is equipped, source exclusion includes the removal of the Enhanced Secrecy warning tone when Executive Intrusion is activated.

Music

During secrecy, if there is only one undesired party in the conference, music is not provided to this party when excluded. However, intrusion tone is given to this party.

Feature packaging

This feature is included in base system software.

Feature implementation

LD 15 – Allow/deny Attendant Secrecy for a customer.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	ATT_DATA	Attendant console options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- OPT	(SYD) SYA	(Deny) allow Attendant Secrecy.

Feature operation

No specific operating procedures are required to use this feature.

Attendant Splitting

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Feature description

Attendant Splitting allows the attendant to talk privately to the source or destination side of an existing connection on the console. The Exclude Source (EXCL SRC) key allows the attendant to speak privately with the destination (called) party. The Exclude Destination (EXCL DEST) key allows the attendant to speak privately with the source (calling) party.

Operating parameters

This feature is active only while the attendant is involved in the call.

Attendant Splitting applies to attendant consoles only.

Feature interactions

Attendant Recall

After the attendant and the two parties have been connected, the attendant can use the Attendant Splitting feature to communicate separately with either party.

Feature packaging

This feature is included in base system software.

Feature implementation

There are no specific implementation procedures for this feature.

Feature operation

To speak privately to the source party:

- 1 Press **EXCL DEST**.
- 2 To connect yourself, the caller, and the called party, press the **lpk** key.
- 3 To end your connection in the call, press **Rls**.

To speak privately to the destination party:

- 1 Press **EXCL SCR**.
- 2 To connect yourself, the caller, and the called party, press the **lpk** key.
- 3 To end your connection in the call, press **Rls**.

Attendant Supervisory Console

Contents

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Feature description

The Supervisory Console feature allows one attendant console in a customer group to function in a supervisory capacity when put into the Position Busy state. The elements of the Supervisory Console feature allow any of the following functions.

Attendant Status Display

The supervisor, by monitoring the attendant status display, can determine how many attendant positions are in service and able to receive calls.

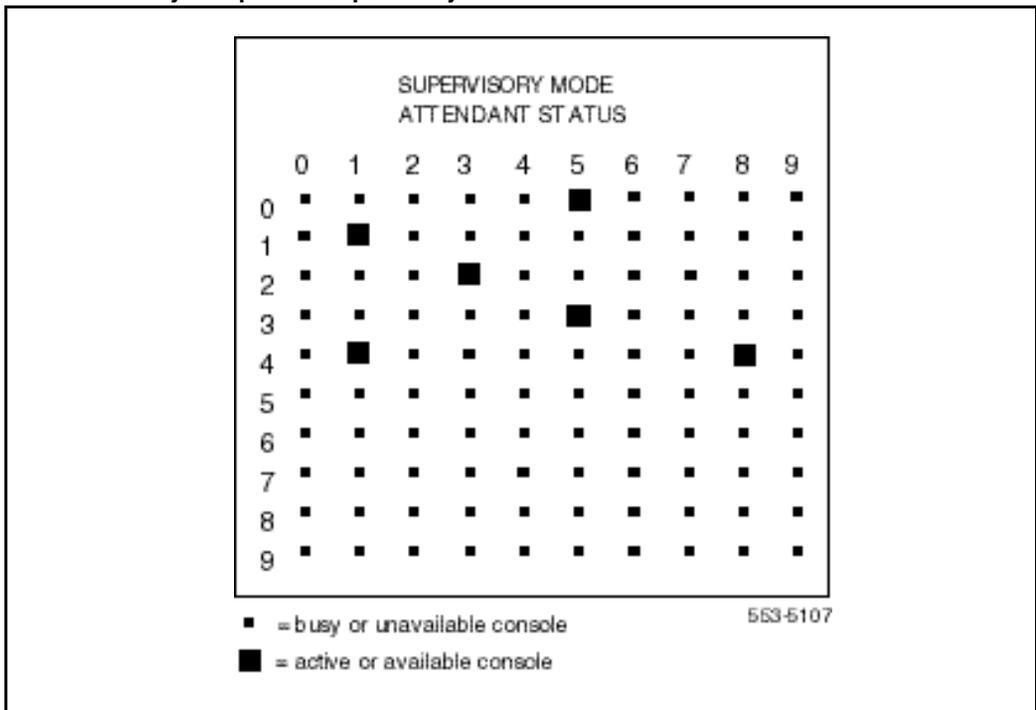
If 1 to 20 attendants are assigned within a customer group, the supervisory console can monitor their status using Trunk Group Busy keys. No add-on module is necessary.

When an indicator on the module associated with a particular attendant is on, the attendant is available to service calls. If the indicator is off, the attendant position is in a Position Busy state. Attendant status indicators are only operable when the supervisory console is in a supervisory mode (Position Busy key operated). When the supervisory attendant is in Position Busy, the LED associated with the supervisor fast flashes at 120 ipm.

Attendant Status using Lamp Field Array

A supervisory console can have up to 49 status indicators when used in the Standard Busy Lamp Field mode. When using Enhanced Busy Lamp Field mode, a supervisory console can display the status of all attendant consoles in the customer group. Figure 5 shows an example of Supervisory monitoring in Enhanced Busy Lamp Field mode on the Busy Lamp Field/Console Graphics Module.

Figure 5
Enhanced Busy Lamp Field Supervisory mode



Visual indication of calls in queue

An attendant call queue holds incoming calls to the system that cannot be immediately answered by attendants. The supervisory console can monitor the call queue for specific types of incoming calls.

A maximum of 20 (ICI) key/lamp pairs can be assigned on an attendant console. Each ICI is assigned to handle a specific type of call (such as station, TIE, or dial 0) to the attendant. When a console is in the supervisory mode, the state of the lamp associated with each ICI provides a visual indication of the number of calls in the attendant queue for each ICI type. Each supervisory console ICI lamp state (dark, flash at 60 ipm, fast flash at 120 ipm, steadily ON) provides the supervisor with a visual indication of the number of calls in the queue for each call type. The ranges (calls in queue) are identified by one of three customer-specified thresholds that are set in service change programs.

Attendant Service Observation

This feature allows the supervisory attendant to monitor (listen only) calls in progress on other attendant loops without being heard. Service Observation requires the assignment of one key/lamp pair on the supervisory console flexible key strip. The key is assigned as Busy Verify through service-change programs. When the console is in Supervisory mode, the key function is Service Observation; when the console is operating as a normal attendant the key function is Busy Verify.

The observed attendant and the connected party or parties are not aware that their conversation is being monitored. The supervisor can release the connection by pressing the Release key. When the attendant is in a Service Observe mode, only the Release key is allowed as a valid input.

Supervisory assistance

An attendant can consult with, or transfer calls to, the supervisor or another attendant using the Interposition call feature. Interposition calls to the supervisor are allowed regardless of the mode of operation (Supervisory or Attendant). The supervisor can use the Interposition call feature to contact any attendant, except those in Position Busy. When the supervisor is conferring with an attendant, subsequent calls to the supervisor receive a busy indication.

If an attendant calls the supervisor who at the time is not in supervisory mode and is handling a call, the supervisory attendant interposition ICI lamp flashes at 60 ipm. As soon as the supervisor is idle, the calling attendant is connected to an idle loop on the supervisory console.

Interposition calls can be made from any attendant in the customer group to any other attendant within the customer group. Only one interposition call can be terminated on a console at a given time.

Supervisor serving as attendant

When the supervisor decides to act as an attendant, the supervisory console is removed from Position Busy. The system presents calls to the supervisory console as if it were a normal attendant console. The supervisory console must be idle to change states from attendant to supervisor or supervisor to attendant.

Operating parameters

The supervisory console and all attendant consoles (except M2250 attendant consoles) in the customer group must be assigned to QPC297 Attendant Console Monitor circuit packs. Their prime TN must be assigned to unit 0 and the secondary TN must be assigned to unit 1. Units 2 and 3 can be used for power; otherwise they must be left unassigned.

Note: M2250 attendant consoles must be a minimum vintage of AD and have the Attendant Supervisory Module (ASM) installed to allow supervision.

The supervisory console must have a Digit Display (DDS).

An M2250 console equipped with a Busy Lamp Field/Console Graphics Module (BLF/CGM) can display the status of all attendant consoles (up to the maximum 63) by using the Enhanced Busy Lamp Field mode. The BLF/CGM must be minimum vintage AD to provide this capability.

One supervisory console can be assigned per customer. Only one attendant console (1 to 63) can be assigned as a supervisory console.

The customer group must be equipped with more than one attendant.

When using the Attendant Supervisory Module (ASM), the console TN must be configured on unit 0, 4, 8, 16, and so on. The secondary TN (SETN) unit must succeed the Primary TN (1, 5, 9, 17, and so on). The ASM TN is then configured with TYPE = PWR. The PWR TN must succeed the SETN (2, 6, 10, 18, and so on).

Feature interactions

Add-on modules

Add-on modules (key/lamp strips and lamp field arrays used to display attendant status) can be used for other purposes defined by the customer when the console is in Normal mode; however if the Busy Lamp Field is assigned to display attendant status, it cannot be used for other functions during any mode of the attendant console.

Attendant Administration

Attendant Administration mode can be entered directly from the supervisory console from Supervisory or Normal mode by pressing the program (PRG) key. The Supervisory mode does not need to be terminated first.

Attendant Position Busy

Activation of the Position Busy key on a Supervisory console puts the console in the supervisory mode.

Controlled Class of Service, Enhanced

When the attendant is in the supervisory mode, Controlled Class of Service programming is prohibited.

Console Presentation Group Level Services

The supervisory console specified for a customer belongs to one Console Presentation Group (CPG). In the Supervisory mode, ICI indicators show only the information for ICIs in that CPG. Thresholds specified in the Customer Data Block apply only to the CPG where that console resides, and do not effect any other CPG.

Departmental Listed Directory Number

The supervisory capabilities extend to all attendant consoles defined within the customer group. The attendant console serving as supervisor should be a member of every Departmental Listed Directory Number group so that it can serve all groups when operating in the Normal mode.

End-to-End Signaling

The supervisor can operate Attendant End-to-End Signaling (AEES) if there is a call on the active loop key. An attendant in AEES mode can be monitored by the supervisor.

Multi-Tenant Service

The supervisory capabilities extend to all attendant consoles defined within the customer group, regardless of tenant partitioning. The attendant console serving as supervisor should be a member of every Call Presentation Group so that it can serve all Tenant groups when operating in the Normal mode.

Source Included when Attendant Dials

While the attendant dials the destination, the source receives intrusion tone.

Feature packaging

Supervisory Console (SUPV) package 93 has no feature package dependencies.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Enable/disable feature for an M2250 console with a Console Graphics Module in the Standard Busy Lamp Field mode.
- 2 LD 15 – Enable/disable feature for an M2250 console with a Console Graphics Module in the Enhanced Busy Lamp Field mode.
- 3 LD 12 – Enable/disable supervisory console Silent Observe.

- 4 LD 12 – Enable/disable supervisory console for M2250 consoles with Enhanced Busy Lamp Field and Silent Observe.
- 5 LD 15 – Enable/disable an M2250 console using Trunk Group Busy keys as status keys.

LD 15 – Enable/disable feature for an M2250 console with a Console Graphics Module in the Standard Busy Lamp Field mode.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	ATT_DATA	Attendant console options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- OPT	(XTG) ITG	Exclude/include Trunk Group Busy Indication.
- SPVC	1-63 0	Attendant number for supervisory console. No supervisory console.
-- SBLF	(NO) YES	Supervisory lamp field array is not or is to be used to monitor other attendant consoles.
- ITH1	1-255	Visual indication threshold 1 (number of calls in queue Š ITH1 but < ITH2).
- ITH2	2-255	Visual indication threshold 2 (number of calls in queue Š ITH2 but < ITH3).
- ITH3	3-255	Visual indication threshold 3 (number of calls in queue Š ITH3).

LD 15 – Enable/disable feature for an M2250 console with a Console Graphics Module in the Enhanced Busy Lamp Field mode.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	ATT_DATA	Attendant console options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- OPT	(XBL) IBL	Exclude/include Busy Lamp Field or Console Graphics Module.
- - SPVC	1-63 0	Attendant number for supervisory console. No supervisory console.
- ITH1	1-255	Visual indication threshold 1 (number of calls in queue Š ITH1 but < ITH2).
- ITH2	2-255	Visual indication threshold 2 (number of calls in queue Š ITH2 but < ITH3).
- ITH3	3-255	Visual indication threshold 3 (number of calls in queue Š ITH3).

LD 12 – Enable/disable supervisory console Silent Observe. (Part 1 of 2)

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	2250	Attendant console type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.

LD 12 – Enable/disable supervisory console Silent Observe. (Part 2 of 2)

Prompt	Response	Description
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	0 BVR	Add Busy Verify key (key 0) for silent observation.

LD 12 – Enable/disable supervisory console for M2250 consoles with Enhanced Busy Lamp Field and Silent Observe.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	2250	Attendant console type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
EBLF	(BLFD) BLFA	(Deny) allow Enhanced Busy Lamp Field.
KEY	0 BVR	Add Busy Verify key (key 0) for silent observation.

LD 15 – Enable/disable an M2250 console using Trunk Group Busy keys as status keys. (Part 1 of 2)

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	ATT_DATA	Attendant console options.

LD 15 – Enable/disable an M2250 console using Trunk Group Busy keys as status keys.
(Part 2 of 2)

Prompt	Response	Description
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- OPT	(XTG) ITG	Exclude/include Trunk Group Busy Indication.
- SPVC	1-63 0	Attendant number for supervisory console. No supervisory console.
- - SBLF	NO	Supervisory lamp field array is not to be used to monitor other attendant consoles.
- ITH1	1-255	Visual indication threshold 1 (number of calls in queue \leq ITH1 but $<$ ITH2).
- ITH2	2-255	Visual indication threshold 2 (number of calls in queue \leq ITH2 but $<$ ITH3).
- ITH3	3-255	Visual indication threshold 3 (number of calls in queue \leq ITH3).

Feature operation

Enable/disable Supervisory mode

To put your console in Supervisory mode, follow these steps:

- 1 Press  when your console is idle (all lpk indicators are off). Your console is now in Position Busy mode, preventing calls from ringing at your console.
- 2 To cancel Supervisory mode, press  again.

Monitor other attendants

In Supervisory mode, you can monitor selected attendant calls without being detected by either the attendant or the caller. To monitor an attendant, follow these steps:

- 1 Once in Position Busy mode, select an idle loop key.
- 2 Press **obs/B. ver.**
- 3 Dial the access code, then the attendant number:
 - a. If the called attendant is talking to a caller, you hear the conversation but you cannot be heard.
 - b. If the called console is idle, the S and D indicators go on.
 - c. If the called console is in Position Busy mode, you hear a fast busy tone, the S and D indicators flash quickly, and the OBS/B. VER indicator goes off.
- 4 Press **RLs** to end the procedure.

Call an attendant

To call an attendant in your group, follow these steps:

- 1 Once in Position Busy mode, select an idle **lpk** key.
- 2 Dial the attendant access code.
- 3 Dial the attendant code.
You hear ringing. The S indicator flashes slowly.
- 4 Press **RLs** to end the call.
The S indicator goes on steadily, and the RLS indicator goes on.

Transfer a call to an attendant

You can transfer a call to an attendant in your group, even if the attendant's console is in Position Busy mode. To transfer a call, follow these steps:

- 1 Dial the attendant access code; then the attendant code.
The EXCL SRC indicator goes on; the caller is automatically placed on hold. The D indicator flashes slowly, the lpk and S indicators are on.
 - a. If you dial an incorrect attendant code or if the called console is in Night Service mode, the transfer cannot be completed. You hear a fast busy tone and the D indicator remains off. Press **Rls**.
 - b. If the called console is busy, you hear a busy tone and the D indicator continues to flash slowly. Press **Rls** and your call is placed in the attendant queue.
- 2 Press the **lpk** key when the attendant answers.
The EXCL SRC indicator goes off and the D indicator lights steadily. You, the caller, and the attendant are connected.
- 3 Press **Rls** to end your connection in the call.

Assist an attendant

Even when your console is in Supervisory mode, an attendant can call you for assistance or transfer a call to you by following these steps:

- 1 You receive a call from an attendant while you are in Supervisory mode. You hear a tone. The S indicator flashes and the INTER POS. C. indicator goes on.
- 2 Press the **lpk** key next to the flashing S indicator.
The tone stops; the lpk and S indicators light steadily. You are connected to the call.

Note: If it is a transferred call, the Call Waiting indicator lights. You must exit Position Busy mode to answer the call.

Attendant Trunk Group Busy Indication

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Feature description

The attendant can control user access to a trunk route by pressing the appropriate Trunk Group Busy key. Station users with a Trunk Group Access Restriction (TGAR) from 0 to 7 accessing the route that has been busied out will be automatically intercepted to the attendant. Station users with a TGAR of 8 to 31 will not be affected and can dial out in the normal manner.

The M2250 attendant console can have up to 20 Trunk Group Busy keys.

Trunk Group Busy Indication is allowed or denied on a customer basis. If allowed, the lamps associated with the Trunk Group Busy keys will provide visual indication of the status of the trunks within the route (See Table 15).

Table 15
Lamp states of Trunk Group Busy keys

Lamp state	Status of trunks
Off	Some of the trunks in the route are idle.
Flashing	All of the trunks in the route are busy.
Steadily lit	The attendant has taken control of the route.

Trunk Routes 0 to 9 are automatically assigned to keys 0 to 9 on the console. On the M2250, Trunk Routes are assigned to keys 0 to 9 and 10 to 19 when the Shift key is activated.

Operating parameters

There are no operating parameters associated with this feature

Feature interactions

Music

A music route that appears on a Trunk Group Busy key on the attendant console cannot be controlled by activation of the Trunk Group Busy key. In addition, the associated lamp will not reflect the status of the music trunks.

Feature packaging

This feature is included in base system software.

Feature implementation

LD 15 – Allow Trunk Group Busy keys.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	ATT_DATA	Attendant console options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- OPT	(IC1) IC2	Allow Trunk Group Busy keys, where: IC1 = 10. IC2 = 20 for M2250.
- OPT	(XTG) ITG	(Exclude) include Trunk Group Busy Indicator keys.

Feature operation

To restrict access to a trunk route (make it busy to users):

- Press the **Trunk Group Busy** key associated with the trunk.
The indicator goes on and remains steady.

To allow access to the trunk route:

- Press the **Trunk Group Busy** key associated with the trunk.
The indicator goes off.

Audible Reminder of Held Calls

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Feature description

Occasionally, a user may forget that a call has been placed on hold. Audible Reminder of Held Calls (ARHC) allows an audible tone to operate as a reminder of a held call. It provides for a ring on analog (500/2500 type) telephones and a tone on proprietary telephones. The cadence and the duration between cadences are programmed per customer. This ability allows the user to differentiate between the cadence for Audible Reminder of Held Calls (ARHC) and the cadences of other existing features.

The station user will hear a ring or tone, which is repeated every 2 to 120 seconds depending on how this feature is programmed, as a reminder that a call is being held. A single-line telephone user must hang up after putting a call on Permanent Hold in order to start the timer.

Operating parameters

For analog (500/2500 type) telephones, Audible Reminder of Held Calls (ARHC) applies only to permanent hold. When using ARHC on a Meridian 1 proprietary telephone, the station user must not be originating, receiving, or active on another call.

Audible Reminder of Held Calls is supported on Multiple Appearance DNs; however, only the appearance initiating Hold will receive the reminder ring.

This feature does not operate on attendant consoles.

Feature interactions

Automatic Line Selection

The Audible Message Waiting signal is given if there is a message waiting on whatever line is selected by Outgoing Line Selection.

Call Hold, Permanent

Permanent Hold must be enabled in LD 10 for the single-line telephone; however, the ARHC timer takes precedence over the Permanent Hold timer.

On Hold on Loudspeaker

This feature works with the On Hold on Loudspeaker (OHOL) feature as for normal calls on hold (that is, gives a reminder there are calls on hold). Therefore, it is not recommended to use this feature with the OHOL feature.

Tones and Cadences

This feature allows for a definable cadence as a reminder of a held call. With an analog (500/2500 type) telephone, the cadence is determined by the customer's Flexible Tones and Cadence (FTC) table for the holding party. Ringing on an analog (500/2500 type) telephone is not affected by definitions for the Incoming Route option. The cadence for the reminder, and the duration between reminder rings, is always defined within the customer's tone table.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Set duration between reminder cadences for Audible Reminder of Held Calls.
- 2 LD 10 – Allow/deny Audible Reminder of Held Calls for analog (500/2500 type) telephones.
- 3 LD 11 – Allow/deny Audible Reminder of Held Calls for proprietary telephones.

LD 15 – Set duration between reminder cadences for Audible Reminder of Held Calls.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	TIM	Timers.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- DBRC	2-(60)-120	Duration between reminder cadences for Audible Reminder of Held Call. An odd numbered entry is rounded up to the next even number.

LD 10 – Allow/deny Audible Reminder of Held Calls for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500 2500	500/2500 telephone type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(XFD) XFA (ARHD) ARHA	(Deny) allow call transfer. (Deny) allow Audible Reminder of Held Calls.
FTR	PHD	Permanent Hold allowed.

LD 11 – Allow/deny Audible Reminder of Held Calls for proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(ARHD) ARHA	(Deny) allow Audible Reminder of Held Calls.

Feature operation

No specific operating procedures are required to use this feature.

Authorization Code Security Enhancement

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Feature description

The Authorization Code Security Enhancement feature enables a user to temporarily override the access restrictions assigned to a station or trunk because of their assigned Network Class of Service (NCOS), Class of Service (COS), and Trunk Group Access Restrictions (TGAR) codes. If a user requires access to system facilities in addition to that allowed on the telephone, the Authcode feature can be used to provide them.

The Authorization Code (Authcode) Security Enhancement feature alerts the technician when an invalid Authcode is entered by generating an Authcode Alarm. The Alarm indicates to the technician that a valid user has inadvertently dialed the wrong digits or some unauthorized person may be trying to use an Authcode to illegally access the switch.

The Authcode Alarm is generated upon detection of violation of all Authcode-related features (that is, Basic, Network, and Station Specific Authorization code), except for calls originated by the attendant.

An additional class of alarm (Security Administration—SECA) lets users distinguish security violations from other types of system messages. Once the system detects an invalid authorization code, it waits until the interdigit timeout passes its limit, at which point the overflow tone is provided and the SECA001 alarm message displays on the TTY. However, if the user releases the call before the interdigit timeout reaches its limit, then the SECA001 alarm message does not display on the TTY. The SECA001 alarm message uses the following format:

- Originated station or trunk Terminal Number
- Calling Line Identification (CLID) when the call is originated from an Integrated Services Digital Network (ISDN) trunk
- The Authorization Code entered

Operating parameters

This feature is enabled through the Authcode data block in LD 88.

The Authcode Alarm feature does not apply to calls originated by an attendant.

All existing operating parameters relating to Authorization Code usage apply to this feature.

All existing operating parameters relating to Fault Management apply to this feature.

For security reasons, the SECA0001 alarm should not be configured in the Exception Filter table.

Feature interactions

Authorization Code Features

A Security Administration (SECA) message will be printed to the configured Maintenance Terminal (MTC), Filtered Alarm Output (FIL) console and/or the configured History File when an invalid Authcode is detected. The following features relate to Authorization Codes and are thus impacted: Basic Authorization Codes; Network Authorization Codes; Authcode Conditionally Last; Direct Inward System Access with Authorization Code; Station Specific Authcode; Speed Call/Autodial with Authorization Codes; Call Forward with Authorization Codes; Scheduled Access Restrictions with Authorization Codes; Network Queuing/Remote Virtual Queuing with Authorization Codes; Coordinated Dialing Plan with Authorization Codes; and Flexible Feature Code with Authorization Codes.

Charge Account, Forced

If the Authorization Code is used to change the Class of Service of the user, the new Class of Service must be TLD, CTD, or CUN. If an Authorization Code entered after FCA has altered the Class of Service to unrestricted (UNR), the change made by the Authorization Code still comes into effect.

If the originator's Network Class of Service (NCOS) has been changed by an Authorization Code prior to an applicable FCA entry, the new NCOS is replaced by the FCA NCOS, provided the new Facility Restriction Level (FRL) is not lower than the existing FRL. Similarly, if the originator's NCOS has been changed by an FCA entry, the NCOS will be changed again by a valid Authorization Code entry.

China - Flexible Feature Codes - Outgoing Call Barring

Digits dialed after an Authorization Code are checked against the active Outgoing Call Barring level.

Direct Private Network Access with Authorization Code Retry

Only when an Authcode retry fails will a SECA message be printed to the configured MTC, FIL console and/or the configured History File.

Last Number Redial

These codes are not stored in Last Number Redial (LNR). To use these features when calling the number stored in LNR, the code must first be dialed manually. When dial tone is returned, LNR can be used to complete the dialing.

New Flexible Code Restriction

If the Class of Service of the authorization code is Toll Denied (TLD), NFCR is applied. If the Class of Service is Conditionally Unrestricted (CUN) or Conditionally Toll Denied (CTD) and the call is not routed through BARS/NARS, CDP or ANI, NFCR is applied.

Pretranslation

The first digit dialed after a valid Authorization Code is sent to the pretranslator.

Scheduled Access Restrictions

Authorization Codes can be used to override Scheduled Access Restrictions. In addition, Authorization Codes are defined for the specific use of SAR FFCs.

Speed Call, System

If the Basic Authorization Code (BAUT) or Network Authorization Code (NAUT) package is equipped, a Network Class of Service (NCOS) is assigned to the System Speed Call list. The NCOS of the System Speed Call list replaces the NCOS of the Authorization code or Forced Charge Account code if it increases the Facility Restriction Level (FRL) of the code.

Station Specific Authorization Code

Users cannot freely enter authorization codes from telephones that have AUTR or AUTD Class of Service.

Stored Number Redial

The Authorization code is not stored. To store a code, dial the code prior to using Stored Number Redial to dial the call.

Feature packaging

This feature is included in base system software.

The following software packages are optional, but may be needed depending upon the application:

- Alarm Filtering (ALRM_FILTER) package 243
- Basic Authorization Code (BAUT) package 25
- Basic Alternate Route Selection (BARS) package 57
- Network Alternate Route Selection (NARS) package 58
- Coordinated Dialing Plan (CDP) package 59
- Direct Private Network Access (DPNA) package 250
- Direct Inward System Access (DISA) package 22
- Network Class of Service (NCOS) package 32
- Network Authorization Code (NAUT) package 63
- Station Specific Authcodes (SSAU) package 229
- Recorded Announcement (RAN) package 7
- Scheduled Access Restrictions (SAR) package 162
- System Speed Call (SSC) package 34, or Network Speed Call (NSC) package 39

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 88 – Configure the Authcode Alarm for each customer.
- 2 LD 117 – Configure the Alarm Filter.

LD 88 – Configure the Authcode Alarm for each customer.

Prompt	Response	Description
REQ	NEW CHG	Configure or change.
TYPE	AUB	Authcode Data Block.
CUST	xx	Customer number, as defined in LD 15
SPWD	xxxx	Secure data password.
ALEN	1-14	Number of digits in Authcode.
ACDR	(NO) YES	(Do not) activate CDR for authcodes.
AUTHCOD_ALARM	(OFF) ON	(Disable) enable Authcode Alarm.
RANR		RAN route number for “Authcode Last” prompt (NAUT)
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
	x	Response for CS 1000M Small System.

LD 117 – Configure the Alarm Filter. (Part 1 of 2)

Command	Description
	<p>NEW EPT aa... a INFO x</p> <p>Assign Information severity to new EPT entry, where:</p> <ul style="list-style-type: none"> • aa... a = an event class with an event number (e.g. BUG1000, ERR0025, SECA0001) • x = optional entry to escalate value of EPT entry from (0)-Suppress value, as defined by default or your CHG SUPPRESS entry. <p>or</p> <p>NEW EPT aa... a EDT x</p> <p>Assign NT-defined severity from EDT to new EPT entry, where:</p> <ul style="list-style-type: none"> • aa... a = an event class with an event number (e.g. BUG1000, ERR0025, SECA0001) • x = optional entry to escalate value of EPT entry from (0)-Suppress value, as defined by default or your CHG SUPPRESS entry. <p>or</p> <p>NEW EPT aa... a MAJOR x</p> <p>Assign Major severity to new EPT entry, where:</p> <ul style="list-style-type: none"> • aa... a = an event class with an event number (e.g. BUG1000, ERR0025, SECA0001) • x = optional entry to escalate value of EPT entry from (0)-Suppress value, as defined by default or your CHG SUPPRESS entry. <p>or</p> <p>NEW EPT aa... a MINOR x</p> <p>Assign Minor severity to new EPT entry, where:</p> <ul style="list-style-type: none"> • aa... a = an event class with an event number (e.g. BUG1000, ERR0025, SECA0001) • x = optional entry to escalate value of EPT entry from (0)-Suppress value, as defined by default or your CHG SUPPRESS entry.

LD 117 – Configure the Alarm Filter. **(Part 2 of 2)**

Command	Description
	or NEW EPT aa... a CRITICAL x Assign Critical severity to new EPT entry, where: <ul style="list-style-type: none">• aa... a = an event class with an event number (e.g. BUG1000, ERR0025, SECA0001)• x = optional entry to escalate value of EPT entry from (0)-Suppress value, as defined by default or your CHG SUPPRESS entry.

Feature operation

No specific operating procedures are required to use this feature.

Autodial

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Feature description

Autodial (ADL) allows users to dial a number by pressing a single key. Proprietary telephones and attendant consoles can be assigned an Autodial key/lamp pair.

The number stored against the Autodial key can be programmed or changed at any time. The maximum number of digits the user is allowed to program can be 4, 8, 12, 16, 20, or 23 digits. Depending on the length allowed, the Autodial number can be another DN or an access code plus further digits. The asterisk (*) can be used as a pause for outpulsing (that is, for outgoing trunks) when required. When the Autodial key is pressed, the stored number is processed as if it had been dialed manually.

Note: The asterisk (*) used to introduce a pause while outpulsing digits is supported on analog and DTI trunks, but not supported on ISDN trunks. On ISDN trunks, if the OPAO feature is enabled, the asterisk (*) is outpulsed as a called party digit.

Speed Call/Autodial with Authorization Code. This enhancement allows an Authorization Code to be included in a Speed Call entry or an Autodial key. Entries can contain any one of the following combinations:

- SPRE code + digit 6 + authorization code
- SPRE code + digit 6 + authorization code + #, or
- SPRE code + digit 6 + authorization code + # + Electronic Switched Network (ESN) access code and dialed number.

Autodial Flexible Feature Codes

A user can define an Autodial DN that is automatically dialed by the system in one of two ways:

- In LD 10, while defining the Autodial DN length under the feature (FTR) ADL.
- Using the Autodial Activate (ATDA) FFC, defined in LD 57. This method requires that the length of the Autodial must first be defined in LD 10. The user goes off hook and dials the ATDA FFC. Upon receiving dial tone, the user enters the desired Autodial DN, and then goes on hook.

If, after going off hook, no digits are entered within a customer-defined period of time (defined in LD 15) under ADLD (Autodial Delay), the Autodial DN is automatically dialed.

Note: In LD 10, the user can define a partial DN as an Autodial DN. The user can enter the remaining digits while making a call – the user goes off hook, waits for the dial tone to time out, and then enters the remaining digits of the desired DN. The call is then dialed out.

To deactivate Autodial, the user dials either the Autodial Deactivate (ATDD) FFC (defined in LD 57) or the general Deactivate (DEAF) FFC (also defined in LD 57).

Operating parameters

Autodial must be assigned to a key/lamp pair. As a result, it is not available on analog (500/2500 type) telephones.

To use Autodial, the Autodial Activate (ATDA) FFC must have been entered previously and an Autodial number must be stored.

An attendant can enter an Authorization Code for other callers provided that the system is equipped with the Network Authorization Code (NAUT) package.

On attendant consoles, pressing the Autodial key, then pressing a Speed Call key is not allowed.

Authorization Code Conditionally Last is not supported by the Autodial feature.

An octothorpe (#) is required as a delimiter after the Authorization Code if an ESN access code and dialed number is stored as part of the Autodial key. If the octothorpe is not entered, the user receives fast busy tone. The octothorpe is not stored in the CDR record.

The Autodial feature allows a maximum of 23 digits including the SPRE code, the digit 6, the Authorization Code, the delimiter (#), the ESN access code, and the dialed number.

If the system initializes before the Authorization Code is recorded by CDR, the record will be lost.

A Meridian 1 proprietary digit display telephone can display up to 16 digits. Additional digits cause the digits to scroll off the display.

On digit display telephones, Authorization Codes cannot be blocked from being displayed.

The Authorization Code is not validated during the storing process. An invalid Authorization Code is detected when the Autodial key is activated.

Network Automatic Route Selection (NARS) and Basic Alternate Route Selection (BARS) does not support the asterisk (*) as a pause when dialing an autodial number.

Feature interactions

AC15 Recall: Transfer from Meridian 1

Autodial and Last Number Redial are supported with the AC15 Recall: Transfer from Meridian 1 on the first transfer, provided that the digits are outpulsed on the trunk after the End-to-End Signaling Delay timer expires. If the far end is not ready, the call will fail because no dial tone detection is performed by the system.

Additional transfers are supported if the stored digits are outpulsed without any treatment. For example, a route is seized and the route access code is outpulsed to the far end and interpreted as a Directory Number. No dial tone detector or timer is started, so the digits are outpulsed immediately without checking the state at the far end.

Automatic Redial

Automatic Redial can be activated on a dialed number using the Autodial (ADL) key.

Call Forward and Busy Status

Party A can use the Busy/Forward Status (BFS) key as an Autodial key to dial party B.

Call Party Name Display

No name information displays during the programming of Autodial numbers.

Calling Party Privacy

An outgoing trunk call initiated by pressing the Autodial key will carry the Privacy Indicator if the Calling Party Privacy (CPP) code followed by the normal dialing sequence is stored against the Autodial key. The CPP code is counted against the maximum number of digits (currently 23) stored against the Autodial key.

A user can also store the CPP code against the Autodial key. An outgoing CPP call can be initiated by pressing the Autodial key, followed by manually dialing the digits.

An outgoing CPP call can also be initiated by dialing the CPP code, followed by pressing the Autodial key against which the normal dialing sequence of digits have been stored.

Charge Account and Calling Party Number

Charge account numbers, including the Charge Account access Special Prefix (SPRE) code, can be stored as Speed Call or Autodial numbers. All current limitations of these features apply, such as a maximum of 23 digits per entry, including the access code. An Autodial number or dialed digits can follow, but not precede, a Speed Call number. The digits generated by an Autodial key during feature operation are accepted as Charge Account digits.

Charge Account, Forced

Forced Charge Account (FCA) numbers (including the Special Prefix [SPRE] code and the Charge Account access code) can be entered in Speed Call lists or stored as Autodial numbers. The digits can also be stored, provided that the account number, regardless of its length, is followed directly by an octothorpe (#).

China – Flexible Feature Codes - Busy Number Redial Enhanced Flexible Feature Codes - Busy Number Redial

Activation of Busy Number Redial (BNR) changes the activation of Autodial. The DN that is autodialed becomes the DN that was busy. When the BNR activation timer expires or the busy DN is redialed when it is idle, the autodial capability is deactivated, but the number saved is not cleared. If Autodial is then activated without entering a DN, the number used is the formerly busy DN.

Activation of Autodial when BNR is active deactivates BNR.

China Number 1 Signaling Enhancements

Delay Digit Outpulsing will be denied when dialing is done by way of Autodial.

Dial Intercom

The Dial Intercom code can be dialed using Autodial or Speed Call.

Direct Private Network Access

If Autodial is programmed with a valid Authcode for Authcode Last component of Direct Private Network Access followed by an octothorpe “#”, the existing Authcode Last operation will reject the Authcode as an invalid Authcode. If Authcode Last Retry is defined, the caller will be prompted for the Authcode again.

Flexible Hot Line Enhanced Hot Line

Flexible Hot Line and/or Enhanced Hot Line are mutually exclusive with the Autodial feature.

Intercept Computer Dial from Directory

It is possible to press the Autodial (ADL) key (in which some digits are stored such as an Electronic Switched Network (ESN) code or Flexible Feature Code (FCC)), and then dial a DN from the Intercept Computer. The DN will then be stored on the ADL key.

Last Number Redial

A number dialed using Autodial will become the Last Number Redial number on all telephones, except the M2317.

Station Specific Authorization Code

The Station Specific Authorization Code (SSAU) feature treats stored autodial numbers as if they were entered at the telephone.

Speed Call Delimiter

An octothorpe (#) is required as a delimiter following an authorization code if an Electronic Switched Network (ESN) and dialed number are stored as part of the speed call or autodial key. If an octothorpe (#) is not entered then the user receives a fast busy tone. If the MSCD = YES, then the end of dial delimiter must be programmed to something other than an octothorpe (#) in LD 15.

Three Wire Analog Trunk – Commonwealth of Independent States (CIS)

Autodial on a E3W trunk will fail for toll calls. The reason is that E3W trunks do not wait for the ANI request from the Public Exchange/Central Office, which is expected to appear after the toll access code is dialed. The Public Exchange then does not accept the call due to failure to receive ANI information.

User Selectable Call Redirection

User Selectable Redirection Allowed (USCR) does not support Autodial; Autodial cannot be used to dial all or part of the digits for USCR programming.

Feature packaging

Optional Features (OPTF) package 1 includes Autodial and has no feature package dependencies.

To implement Autodial with Authorization Code, the following packages are required:

- Charge Account/Authorization Code Base (CAB) package 24, or Basic Authorization Code (BAUT) package 25, or Network Authorization Code (NAUT) package 63.
- Optional Features (OPTF) package 1, or System Speed Call (SSC) package 34, or Network Speed Call (NSC) package 39.

The following packages are required for Autodial FFCs:

- Flexible Feature Codes (FFC) package number 139, and
- Background Terminal Facility (BGD) package 99.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 11 – Assign Autodial key for proprietary telephones.
- 2 LD 12 – Assign Autodial key for M2250 attendant console.
- 3 LD 15 – Define Autodial Delay in the Customer Data Block.

LD 11 – Assign Autodial key for proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx ADL yy zzz...z	xx = assigned key number. yy = the length of the Autodial number (4, 8, 12, 16, 20, or 23 digits; default is 16). zzz...z = the digits to be dialed automatically (optional).

LD 12 – Assign Autodial key for M2250 attendant console.

Prompt	Response	Description
REQ	CHG	Change.
TYPE	2250	Attendant console type.

TN	l s c u	Terminal number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx ADL zzz...z	xx = assigned key number. zzz...z = the digits to be dialed automatically (optional).

LD 15 – Define Autodial Delay in the Customer Data Block.

Prompt	Response	Description
REQ:	NEW CHG	Add, or change.
TYPE:	FFC	Flexible Feature Codes
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
...		
- ADLD	(0)-20	Autodial Delay, in seconds. If 0, then FFC Autodial for 500/2500 telephones is disabled. Only prompted if FFC package (139) is equipped. Inputs are rounded up to the next valid increment of two (that is, input of 11 would be rounded up to 12).

Feature operation

To program Autodial, follow these steps:

- 1 While the handset is on hook, press the **Autodial** key.
The associated lamp flashes.
- 2 Dial the desired number and press the **Autodial** key again.
The lamp goes dark.

To use Autodial, follow these steps:

- 1 Lift the handset off hook, or press the **Handsfree** key if allowed.
- 2 Press the **Autodial** key.
The call is dialed.

The following instructions are for using the Autodial FFCs:

- **Activate and program**
The user must dial the Autodial Activate (ATDA) FFC followed by the number to be stored as the Autodial number.
- **Activate only**
The user must dial the Autodial Activate (ATDA) FFC.
- **Deactivate**
The user must dial the Autodial Deactivate (ATDD) FFC or the Deactivate (DEAF) FFC.
- **Use**
The user goes off hook, if no digits are dialed within the customer defined time period (ADLD), the system then dials the number stored as the Autodial number.

Note: To use Autodial, the Autodial Activate (ATDA) FFC must have been entered previously and an Autodial number must be stored.

Autodial Tandem Transfer

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Feature description

Prior to the introduction of this feature, in order to access the Central Office (CO) transfer feature after a Centrex/Trunk Hook Flash on an established trunk call, the user had to manually dial the digits. This procedure permits call completion, but is slow and requires knowledge of the full telephone number. The Autodial Tandem Transfer (ATX) feature allows the Autodial key to be used after a switchhook flash to out pulse Dual-tone Multifrequency (DTMF) digits while a call is in an established state.

One application for the Autodial Tandem Transfer feature is for use in a 911 environment to transfer an emergency call from a Public Safety Answering Point (PSAP) to the most appropriate participating emergency agency. Manually dialing the digits by the PSAP in order to transfer the 911 call to another PSAP can take time and is subject to misdialing. To avoid this, the ADL key programmed with the special station number can be used to send digits to the tandem/Centrex office to transfer the call. Using the ATX feature, a PSAP can transfer the incoming call by pressing the Trunk Hook Flash (THF) key, waiting for a broken dial tone, and then pressing the ADL key.

Operating parameters

The Centrex/Trunk Switchhook feature only supports voice calls. Subsequently, the ATX feature which uses Centrex/Trunk Hook Flash does not support data calls.

Centrex/Trunk Hook Flash cannot be activated during Conference and No Hold Conference calls. Subsequently, the ATX feature which uses Centrex/Trunk Hook Flash does not support them either. Only two-party calls are supported by the ATX feature.

The following trunk types are supported by the ATX feature: AID, CAA, CAM, COT, TIE (supports ATX, not Trunk Hook Flash), CSA, DID, DOD, WATS, DTI, and DTI2.

The ATX feature is not supported on analog (500/2500 type) telephones, attendant consoles, and BRI telephones.

End-to-End signaling (EES) is not supported for this feature (only Improved End-to-End signaling is supported).

Single CPU machines are not recommended for 911 applications. Meridian 911 hardware may be required for 911 applications.

Feature interactions

Automatic Dial

The ADL key is used by the Automatic Dial feature to send DN digits out during the dialing stage. Some of the digits, such as “#” and “*”, have special meanings. The “*” causes a three-second pause, while the “#” means end of dialing.

Note: The asterisk (*) used to introduce a pause while outputting digits is supported on analog and DTI trunks, but not supported on ISDN trunks. On ISDN trunks, if the OPAO feature is enabled, the asterisk (*) is outputted as a called party digit.

In the ATX feature when the ADL key is used during an established call, the DTMF tones corresponding to the digits programmed in the ADL key are sent out (using End-to-end Signaling to send the digit out). Therefore, the DTMF tones corresponding to “#” and “*” are outputted.

Call Detail Recording

No modifications to this feature are required for the ATX feature.

For 911 applications, most of the calls are incoming calls. The outgoing End-to-End Signaling digits are captured for incoming 911 calls on the incoming CDR records. This only applies to 911 trunks.

Centrex Switchhook Flash

Because Autodial Tandem Transfer uses Centrex Switchhook Flash (THF), it is affected by any modification to the THF enhancement feature.

Conference

The ATX feature is blocked during Conference and No Hold Conference calls.

Digit Display

Digit Display allows the automatic display of information relevant to normal call processing if the telephones have display capability and the Class of Service is ADD or DDS. When the THF key is pressed, the display gets cleared, and pressing the ADL key causes the ADL digits to be displayed. However, no ADL digits will be displayed if no Tone and Digit Switch (TDS)/XCT is available to generate the Dual-tone Multifrequency (DTMF) tones for the ADL digits.

End-to-End Signaling

EES is used to send the Automatic Dialing (ADL) digits to the Public Exchange/Central Office (CO). With Autodial Tandem Transfer (ATX), the 911 agent can use the ADL key or manually dial the digits, or use a combination of both methods, to dial the third party's number. The ADL key can be pre-programmed with a prefix and the remaining digits can be dialed manually to distinguish between different numbers. When you combine manual dialing with the ADL key, if EEST = YES and DTMF = YES in LD 15, you hear the DTMF feedback tone as a result of manual dialing and a single feedback tone as a result of pressing the ADL key. To get uniform feedback tone when using the ADL key along with manual dialing, set the DTMF prompt to NO in LD 15.

Improved End-to-End Signaling is used to send the pre-programmed ADL digits to the CO. With the ATX feature, a 911 Agent can use the ADL key, or manually dialed digits, or a combination of both to dial the third party's number. It is recommended to set the DTMF prompt to NO (EES – LD 15) to get uniform feed back tone (single feed back tone) when using the ADL key along with manual dialing.

Last Number Redial

Normally, when the ADL key is pressed during the dialing stage, the ADL number will replace the Last Number Redial number. In the ATX feature, however, when the ADL key is used during the established stage, the ADL digits will not substitute the Last Number Redial number.

Malicious Call Trace - Enhanced

Enhanced Malicious Call Trace implements the ability to send a call trace request to the CO and provides the possibility to record the call using a recorder. This feature also uses the Centrex/Trunk Switchhook Flash feature; the same enhancement applies to the ATX feature.

Speed Call

The Speed Call key cannot be used after THF or during an established call to send digits out to the far site; it can only be used during the dialing stage.

Feature packaging

Autodial Tandem Transfer (ATX) is package 258.

The following packages are also required:

- End-to-End Signaling (EES) package 10
- Trunk Hook Flash (THF) package 157

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 11 – Define THF and ADL keys for Meridian 1 proprietary telephones.
- 2 LD 14 – Define THF Class of Service THFA for the trunk.

- 3 LD 15 – Define feedback tone when ADL digits are sent out.
- 4 LD 16 – Set the duration for Centrex/Trunk Switchhook Flash.

LD 11 – Define THF and ADL keys for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	...	
KEY	xx THF	Key xx is configured for the Centrex/Trunk Switchhook Flash feature.
	yy ADL ll zz..zz	Key yy is configured for the Autodial key; ll is the length of the autodial number (the default is 16). zz..zz are the digits to be dialed automatically.

LD 14 – Define THF Class of Service THFA for the trunk. (Part 1 of 2)

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	aaa	Trunk type, where: aaa = AID, CAA, CAM, COT, TIE (supports ATX, not Trunk Hook Flash), CSA, DID, DOD, WATS, DTI, and DTI2.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.

LD 14 – Define THF Class of Service THFA for the trunk. (Part 2 of 2)

Prompt	Response	Description
CLS	c u (THFD), THFA	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit. The THF feature is (denied) allowed; the default is THFD.

LD 15 – Define feedback tone when ADL digits are sent out. (Part 1 of 2)

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	CDR	Call Detail Recording.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
...		
CDR	YES	Call Detail Recording.
...		
- ECDR	YES	Include EES digits in CDR record. This will include ADL digits that are outpulsed during an established call.
...		All-digital connection prefix.
TYPE:	FTR	Features and Options.

LD 15 – Define feedback tone when ADL digits are sent out. (Part 2 of 2)

Prompt	Response	Description
EEST	YES NO	End-to-end Signaling feedback tone to originating party.
- DTMF	YES NO	Single feedback tone is provided for the user. Note: With a Yes or No response, single tone feedback is only available.

LD 16 – Set the duration for Centrex/Trunk Switchhook Flash. (Part 1 of 2)

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
TKYP	aaa	Trunk type.
...		

LD 16 – Set the duration for Centrex/Trunk Switchhook Flash. (Part 2 of 2)

Prompt	Response	Description
CNTL	(NO) YES	Change control or timers.
- TIMR	FLH <space> 60- (510)-1536	<p>Flash timer in msec. The range of the Centrex switchhook flash timer is 60-(510)-1536. The FLH value is rounded down to the nearest 10 msec. tick. If the value entered is 128 or 129, then it is set to 130 msec.</p> <p><i>Software controlled flash</i> 60-127 msec. Digit 1 will be sent. 128-1536 msec. software controlled switchhook flash.</p> <p>Note: An FLH timer value of 127 msec. or less is not supported by the XFCOT card. The firmware controlled flash must be used.</p> <p><i>Firmware controlled flash</i> The user can enter any value from 60 to 1536 msec. 90 msec. is the hardcoded firmware flash for an XFCOT card; the technician should enter 90 msec.</p> <p>Note: The FWTM prompt must be set to YES for the trunk associated with this route in LD 14, if firmware timing is to be used.</p>

Feature operation

Normal operation

- 1 An incoming call from a Central Office (CO) terminates to a proprietary telephone.
- 2 The telephone user presses the **THF** key, waits for a broken dial tone from the CO, and then presses the **ADL** key to send a string of digits to the CO (the ADL has been pre-programmed with the number).
- 3 The CO will transfer the call to the third party dialed by telephone A.

Meridian 911 operation

- 1 An incoming 911 trunk call to a tandem/Centrex office terminates to a PSAP on the system.
- 2 The PSAP call taker presses the **THF** key, waits for a broken dial tone, and then presses the **ADL** key to call the proper number (such as a police station).
- 3 The PSAP call taker then disconnects to complete the transfer.

Automatic Answerback

Contents

This section contains information on the following topics:

Feature description	429
Operating parameters	429
Feature interactions	430
Feature packaging	431
Feature implementation	431
Feature operation	433

Feature description

Automatic Answerback (AAB), when assigned to a Meridian 1 proprietary telephone, allows any incoming call to a single appearance Prime Directory Number (PDN) to be answered automatically. An incoming call will ring one time, then the system will turn on Handsfree and establish a speech path. When either party hangs up, the call is automatically disconnected.

Automatic Answerback can be permanently assigned either as a Class of Service, or with an Automatic Answerback key/lamp pair assigned to allow activation/deactivation of the feature. If privacy is desired during a call, handset operation is allowed.

Operating parameters

This feature is available on M2317 and M2616 telephones.

Incoming ground start trunks must provide Answer Supervision. If not, the call is connected to the attendant who provides the necessary supervision.

The Prime DN (PDN) must be a single appearance DN.

Calls presented to DNs other than the PDN, or calls presented to the PDN when active on another DN, will not receive Automatic Answerback treatment.

Automatic Answerback can be provided as a Class of Service or on a key/lamp pair. You cannot assign both in service change.

Feature interactions

Automatic Line Selection

Automatic Answerback operates only on the Prime DN (key zero) and has no interrelation with Incoming Ringing/Non-Ringing Line Selection.

Called Party Disconnect Control

Incoming calls on a trunk with Called Party Disconnect Control Allowed that terminate on a telephone with Handsfree Answerback are answered automatically. They are not disconnected automatically, however, when the calling party goes on-hook.

Collect Call Blocking

The Automatic Answerback (AAB) feature, when assigned to a Meridian 1 proprietary telephone, allows any incoming call to a single-appearance Prime Directory Number (PDN) to be answered automatically. If an incoming DID or CO call terminates on a telephone with the AAB feature enabled, the call is automatically answered after one ring. If the telephone has a CCBA Class of Service, the CCB answer signal is provided in the place of the regular answer signal.

Hot Line

The Automatic Answerback feature is fully compatible with a two-way Hot Line key assigned as the Prime DN.

Message Center

If a telephone is in the Automatic Answerback mode, incoming calls are not routed to the Message Center.

Feature packaging

Automatic Answerback (AAB) package 47 has no feature package dependencies.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 11 – Assign Automatic Answerback as a Class of Service to M2317 or M2616 telephones.
- 2 LD 11 – Assign Automatic Answerback key to M2317 or M2616 telephones.

LD 11 – Assign Automatic Answerback as a Class of Service to M2317 or M2616 telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.

TN	l s c u	Terminal number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(AAD) AAA (HFD) HFA	(Deny) allow Automatic Answerback for all calls. AAA cannot be entered if the AAK key is already programmed. (Deny) Allow Handsfree. Note: HFA is allowed for the M2216 only.

LD 11 – Assign Automatic Answerback key to M2317 or M2616 telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(HFD) HFA (AAD) AAA	(Deny) allow Handsfree. Note: HFA is allowed for the M2216 only. Allow (Deny) Automatic Answerback. Must disable to add the AAK key.
KEY	xx AAK	Add Automatic Answerback key. xx = key number. Note: The M2216 with AAA cannot use key 5 as a feature key. Key 5 is reserved for handsfree.

Feature operation

To activate Automatic Answerback, follow this step:

- Press **Auto Answer**.
Incoming calls to your PDN will ring once, then be answered with Handsfree turned on.

To deactivate Automatic Answerback, follow this step:

- Press **Auto Answer**.
Incoming calls to your PDN will not be answered automatically.

Note: If Automatic Answerback is assigned as a Class of Service instead of a key on your telephone, you cannot deactivate it.

Automatic Call Distribution

Automatic Call Distribution (ACD) is an optional feature. The ACD feature is used when a large number of incoming calls are answered by a group of ACD-assigned telephones. Incoming calls are served on a first-in, first-out basis and are distributed among the available telephones so that the agent position that has been idle the longest is provided with the first call. This guarantees that incoming calls are distributed equally to all agents.

Consult the following NTPs for information regarding the ACD feature:

- *Automatic Call Distribution: Description (553-3001-351)*

Automatic Gain Control Inhibit

Contents

This section contains information on the following topics:

Feature description	437
Operating parameters	437
Feature interactions	438
Feature packaging	438
Feature implementation	438
Feature operation	438

Feature description

The Automatic Gain Control (AGC) function, supported by the A44 chip in Meridian digital telephones, lowers handset sound levels to minimize background noise. The AGC Inhibit enhancement allows a customer to suppress this function, on a system basis.

Whenever a transmission download occurs, which happens following a SYSLOAD or when the telephone line cord is plugged in, the option setting in LD 17 is included in the message. The message is interpreted by telephone's firmware and the appropriate setting is applied.

Operating parameters

There are no operating parameters associated with this feature.

Feature interactions

There are no feature interactions associated with this feature.

Feature packaging

This feature is included in base system software.

Feature implementation

LD 17 – Define the AGC setting.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	ATRN	Aries Transmission.
...		
ATRN	YES	Aries (Meridian Modular telephone) transmission parameter; only prompted if the response to TYPE is CFN.
...		
- AGCD	(NO) YES	Automatic Gain Control Disable.

Feature operation

No specific operating procedures are required to use this feature.

Automatic Guard Detection

Contents

This section contains information on the following topics:

Feature description	439
Operating parameters	439
Feature interactions	440
Feature packaging	440
Feature implementation	440
Feature operation	440

Feature description

This feature verifies the transition from a high-resistance to a low-resistance loop upon correct seizure of an inactive trunk. Incorrect seizure results in the release of the faulty trunk and the attempted seizure of the next trunk in the hunt sequence.

Automatic Guard Detection will prevent the seizure of a trunk if the trunk:

- is an open circuit in tip, ring, or both; or
- has no current present when the trunk is seized

Operating parameters

There are no operating parameters associated with this feature.

Feature interactions

There are no feature interactions associated with this feature.

Feature packaging

This feature requires International Supplementary Features (SUPP) package 131.

Feature implementation

LD 14 –Enable or Disable Automatic Guard Detection for outgoing trunks.

Prompt	Response	Description
REQ TYPE	New CHG a...a	Add, or change Type of truck.
SEIZ	(NO) YES	Automatic Guard Detection for outgoing trunks (disabled) enabled.

Feature operation

No specific operating procedures are required to use this feature.

Automatic Hold

Contents

This section contains information on the following topics:

Feature description	441
Operating parameters	442
Feature interactions	442
Feature packaging	445
Feature implementation	445
Feature operation	446

Feature description

The Automatic Hold feature allows an active call to be put on hold without having to use a separate Hold key. There are three ways to put a call on hold with the Automatic Hold feature:

- Press the active call key. The established call is automatically placed on hold.
- Press an idle Directory Number (DN) key. The established call is automatically placed on hold.
- Press any idle key and the established call is placed on hold.

If a set user is on an established call and wishes to answer an incoming call or initiate an outgoing call, the set user can press any idle DN key to place the call on hold and either initiate or establish a call on the same key. To terminate a call with the Automatic Hold feature, the Release key must be pressed.

This feature requires a new Class of Service implementation (Automatic Hold Class of Service).

Operating parameters

The Automatic Hold feature can be equipped on all multi-line proprietary sets. The functionality to hold a call already exists on the attendant console. The Automatic Hold feature is not applicable on analog (500/2500) type sets.

Feature interactions

Attendant Break-In to Inquiry Calls

A consultation call on proprietary sets, using a second DN along with Automatic Hold, is not treated as an inquiry call. The consultation call may be broken-in to, but the call held on the first DN is not involved in the Break-In.

Attendant Recall with Splitting

Automatic Hold does not have precedence over Attendant Recall (for instance, Automatic Hold cannot be activated until the attendant answers the recall presented on the console). However, it can be activated before the attendant answers a call transferred to the console.

Automatic Answer Back

The Automatic Hold feature is not applicable with the Automatic Answer Back feature.

Automatic Call Distribution Incalls Key

Automatic Call Distribution (ACD) does not override the Incall 5 key. The Incalls key is unique to the Automatic Hold feature. If an Automatic Call Distribution (ACD) agent has an active call on the Independent Directory Number (IDN) key, and a call comes in to an Incalls key, pressing the Incalls key to answer the call puts the active call on the IDN key on hold.

Call Transfer

If a call is established or ringing on the Transfer key, pressing any idle DN key automatically puts the call on hold. To transfer an active call, press the transfer key once to reestablish the call, press a second time to complete the transfer. To release the transfer feature you must press the release key.

Call Waiting

Pressing the Call Waiting key to answer a waiting call, makes that call active while the previous call is put on hold.

Called Party Control on Internal Calls

If Called Party Control on Internal Calls is active, an established call is put on hold regardless of the Automatic Hold Class of Service assigned to the set when a second call is originated or answered.

Conference

If a call is established on the conference key, pressing any DN key puts the Conference call on hold. The user must press the conference key to reestablish the call. Pressing the conference key a second time completes the Conference call.

Digit display

Digit display is the same with automatic hold as it was with manual hold.

Display Overflow on Calling Number Identification

If the number of Calling Number Identification (CNI) digits exceeds the capacity of the digit display, the active DN key can be pressed to show the remaining digits. If the active DN key is pressed again, the established call is placed on hold. The established call can be placed on hold, before the digits are displayed, by pressing any other DN key.

Enhanced Hotline and Hotline No Hold Conference

On proprietary sets pressing a designated Hotline key places an outgoing call to a pre-defined DN. Pressing any idle DN key or pressing the hotline key a second time can place this call on hold. The user can use the same DN key

they used to put the call on hold to make an outgoing call or to answer an incoming call.

On a two-way Hotline key, the incoming call is held if the hotline key is pressed twice or if an idle DN key is pressed. Pressing the Release key while on an active Hotline call terminates the call.

The Conference-Hot Line (CH) key does not support Automatic Hold.

Group Call (GRC)

Only the originator of a Group Call (GRC) can put the Group Call on hold.

Hold Key

A set configuration with Automatic Hold Allowed Class of Service can still place calls on hold using the Hold key.

Individual Hold Enhancement

When a Multiple Appearance Directory Number (MADN) call is put on hold on proprietary sets, the Hold key lamp flashes at this user's set, while a slow flicker is shown at all other appearances of the same DN. With more than one single line MADN (SCR/SCN/HOT/PVR/PVN) active on a conference call, the user is put on hold either by pressing the Hold key, or with Automatic Hold feature enabled, the user can press the active single line MADN. With the Release option disabled, the active call on the single line MADN is put on hold. With the Release option enabled, the active call on the single line MADN is dropped.

Lamp Status

The LED lamp status indications of calls put on automatic hold are identical to those for calls that are put on hold using the Hold key.

Last Number Redial (LNR)

A set with Last Number Redial Allowed (LNA) Class of Service can put an active call on hold by pressing another idle DN key and still activate the Last Number Redial feature to make an outgoing call. Automatic Hold does not override this feature.

Music on Hold

Music on Hold can be applied to calls put on automatic hold.

No Hold Conference

The Automatic Hold feature does not apply in the case of a No Hold Conference call. Automatic Hold does not override the No Hold Conference feature.

Voice Call

If a user presses the Voice Call key while a call is established on the key, the call is placed on hold. If the Voice Call key is pressed while a call is established on another DN, the established call is put on hold.

Feature packaging

This feature is included in base system software.

Feature implementation

LD 11 – Allow or deny the Automatic Hold Class of Service for proprietary sets.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN	l s c u c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit. Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CUST	xx	Customer number, as defined in LD 15.

...	...	
CLS	AHA	AHA = Automatic Hold allowed. (AHD) = Automatic Hold (denied).
...	...	
KEY	xx aaa yyyy	The set type must be configured with two DN keys. Where: xx = key number aaa = DN key type. DN types supported include: ACD, CWT, DIG, GRC, HOT, MCN, MCR, SCR, SCN, or VCC. yyyy = Directory Number for key type. Note: Refer to feature interactions in this chapter when assigning keys to see if feature operation conditions are affected.

Feature operation

Put a call on hold

With Automatic Hold enabled, a call can be placed on hold by pressing the DN on which the call is active or by pressing any other idle DN key.

Make a new call

An active call can automatically be placed on hold, if any idle DN key is pressed. A new call can now be made on the DN key that was pressed or any other DN key.

Answer a call

If the set user is on an active call and a second call is presented on another DN, the user can answer the incoming call which automatically places the first call on hold.

A user of a set having Automatic Hold Class of Service can still place an active call on hold by pressing the Hold key.

Terminate a call

To terminate a call the set user must press the Release key.

Automatic Line Selection

Contents

This section contains information on the following topics:

Feature description	447
Operating parameters	448
Feature interactions	448
Feature packaging	450
Feature implementation	450
Feature operation	450

Feature description

Automatic Line Selection allows manual or automatic selection of incoming and outgoing lines for a given Meridian 1 proprietary telephone on a Class of Service basis. When a user lifts the handset, the telephone automatically selects a preferred line according to its priority. The line preferences are as follows, listed in order of selection priority:

- **Manual Line Selection**
The user manually selects the DN to be used before going off-hook. Dial tone is returned if the line is idle. If the line is ringing, the call is answered and connected to the speaker of the telephone or Handsfree unit.

- **Incoming Ringing Line Selection**
With Incoming Ringing Line Selection enabled, when the user goes off-hook, the telephone automatically scans the DN keys (without the user first manually selecting a DN key). If a line on the telephone is ringing, it is selected and the call is answered.
- **Incoming Non-Ringing Line Selection**
With Incoming Non-Ringing Line Selection enabled, when the user goes off-hook, the telephone scans the DN lines and answers any unanswered incoming calls that appear but do not ring at that telephone.
- **Outgoing Line Selection**
With Outgoing Line Selection enabled, when the user goes off-hook, the telephone scans the DN keys for an idle line. If a line is idle, it is selected and dial tone is returned.
- **Prime Line Selection**
When the handset is lifted, the system processes any manual, incoming, or outgoing line selections. If no line is selected by one of these modes, a designated Prime Line (the DN on key 0) is selected.

Operating parameters

The Automatic Line Selection feature is available on Meridian 1 proprietary telephones only.

The user determines which line is in use by observing lamp state changes.

Feature interactions

Audible Message Waiting

The Audible Message Waiting signal is given if there is a message waiting on whatever line is selected by Outgoing Line Selection.

Automatic Call Distribution (ACD)

An ACD DN is not selected by automatic Incoming Non-Ringing and Outgoing Line Selection. It is selected by Incoming Ringing Line Selection.

Automatic Answerback

Automatic Answerback operates only on the Prime DN (key zero) and has no interrelation with Incoming Ringing/Non-Ringing Line Selection.

Automatic Redial

Manual Line Selection, Outgoing Line Selection or Prime Line Selection is interpreted as accepting the Automatic Redial (ARDL) by the calling party.

Call Waiting

A call on the Call Waiting key is not selected.

Dial Intercom

A Dial Intercom DN is selected by Incoming Ringing Line Selection and Outgoing Line Selection.

Group Call

This feature is not selected for automatic Outgoing Line Selection or Non-Ringing Line Selection. It is selected for Incoming Ringing Line Selection.

Hot Line

Since the Hot Line key acts as a Single Call Ring (SCR) key, incoming ringing line preference can be applied. Outgoing line preference automatically selects a line other than the current Hot Line, so that a Hot Line call is not accidentally activated

Private Line Service

A Private line DN is selected by Incoming Ringing/Non-Ringing Line Selection and Outgoing Line Selection.

Voice Call

This feature is not selected by automatic Outgoing Line Selection. It is selected for Incoming Ringing and Non-Ringing Line Selection.

Feature packaging

Automatic Line Selection (LSEL) package 72 has no feature package dependencies.

Feature implementation

LD 11 – Assign Automatic Line Selection for each Meridian 1 proprietary telephone.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(IRD) IRA (NID) NIA (OLD) OLA	(Deny) allow incoming ringing line preference. (Deny) allow incoming non-ringing line preference. (Deny) allow outgoing line preference.
LPK	xx	Specify the last key to be scanned for line preference (such as 0-7, 10-17, 20-27). Prompted only if CLS = IRA, NIA, or OLA. Note: A value of 0 (zero) for LPK disables this feature.

Feature operation

No specific operating procedures are required to use this feature.

Automatic Number Identification

Contents

This section contains information on the following topics:

Feature description	451
Operating parameters	461
Feature interactions	462
Feature packaging	468
Feature implementation	468
Feature operation	472

Feature description

The Automatic Number Identification (ANI) feature automatically identifies a station originating an outgoing toll call and its destination party and transmits the information to a recording office.

A system with ANI sends information about stations involved in an outgoing toll call, using Multifrequency (MF) signaling, over Central Automatic Message Accounting (CAMA) trunks to toll-switching CAMA, Traffic Operator Position System (TOPS) or Traffic Service Position System (TSPS) offices.

The software portion of ANI performs the following functions:

- identifies an originating outgoing toll call
- determines the calling station identification, and controls the signaling and supervision of the ANI trunk circuit

- connects the MF sender and the ANI trunk circuit
- loads up to 16 digits that are to be MF outpulsed over the ANI trunk into the MF sender
- orders initiation of the outpulsing
- removes the connection between the trunk and the MF sender and establishes the speech path to the trunk

Note: With the E.164/ESN Numbering Plan Expansion, the MF sender card can send 32 digits to the XCT card. This allows an International Number to be sent in one ANI message, instead of two ANI messages.

ANI signaling

E&M, DX or loop signaling sends ANI information to the Central Office. ANI supports three basic methods: Bell, NT400 and NT500.

- The Bell method interfaces the system to
 - Bell system TOPS, TSPS or CAMA offices
 - Strowger Automatic Toll Ticketing (SATT) systems types 57, 59, 62, and 70A. These systems accept 1+ and 0+ calls from the system using MF pulsing through customer-provided adapter circuits
 - Stromberg Carlson Ticketing Systems
- The NT400 method (Modes A and B) is an interface to the Nortel NT400 ticketing system. Mode A repeats the toll access code (0 or 1) in the called number, whereas Mode B does not.
- The NT500 method (Modes A, B and C) interfaces to Nortel NT500 ticketing systems.
 - Mode A repeats the Access Code (0 or 1) in the called number format for Central Offices that use MF outpulsing and combined trunk groups.
 - Mode B does not repeat the access code.
 - Mode C is used in Central Offices with MF outpulsing and trunk groups dedicated only to 1+ or 0+ calls.

The Bell and the NT400/500 methods have different supervisory signals and different number formatting, as illustrated in Figure 6 on page 454 and Figure 7 on page 459. Additionally, there are formatting differences between the NT400 and NT500 method. Tables 16 through 19 summarize the possible combinations of trunk types and ANI signaling methods.

The MF sender cable allows the system to independently outpulse up to 16 digits (including starting and ending digits, called KP and ST respectively) in each of the 30 possible network loop time slots. With the E.164/ESN Numbering Plan Expansion feature, the MF sender can send up to 32 digits. Therefore, an International Number can be sent in one ANI message, instead of two ANI messages.

Figure 6
Supervisory signals (Bell method)

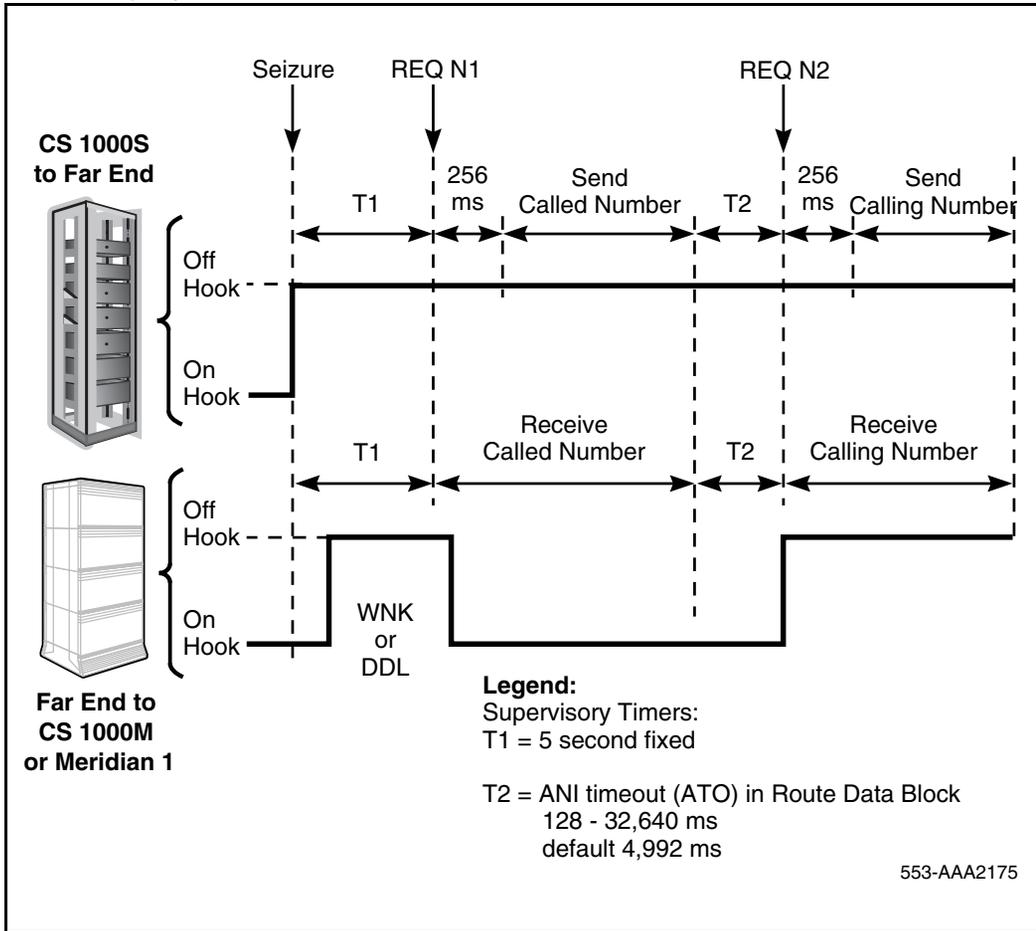


Table 16
Called and calling number information format (Bell method)

Dial Pulse (DP) sending of called numbers			
Call type	Called number	Calling number	
		Regular trunk group	Supervisory trunk group
0	seizure no digits	KP+ID+7D+STP	KP+ID+ST3P
0+7/10D	7/10D	KP+ID+7D+STP	KP+ID+7D+STP
1+7/10D	7/10D	KP+ID+7D+ST	KP+ID+7D+ST2P
011+CC+NN	11+CC+NN	KP+ID+7D+ST	KP+ID+7D+ST2P
01+CC+NN	1+CC+NN	KP+ID+7D+STP	KP+ID+7D+ST3P
010	10	KP+ID+7D+STP	KP+ID+7D+ST3P
Modified Bell Multifrequency sending mode (M2B)			
Call type	Called number		Calling number
	Regular trunk group	Super trunk group	
0	KP+STP	KP+ST3P	KP+ID+7D+ST
0+7/10D	KP+7/10D+STP	KP+7/10D+ST3P	KP+ID+7D+ST
00	KP+0+STP	KP+0+ST3P	KP+ID+7D+ST
00+7/10D	KP+0+7/10D+STP	KP+0+7/10DST3P	KP+ID+7D+ST
1+7/10D	KP+7/10D+ST	KP+7/10D+ST2P	KP+ID+7D+ST
011+CC+NN	KP+1+CC+NN+ST	KP+1+CC+NN+ST2P	KP+ID+7D+ST
01+CC+NN	KP+1+CC+NN+STP	KP+1+CC+NN+ST3P	KP+ID+7D+ST
010	KP+1+STP or KP+10+STP	KP+1+ST3 or KP+10+ST3P	KP+ID+7D+ST or KP+ID+7D+ST
Legend:			
0+	= Operator-assisted call, more digits dialed		
0-	= Operator-assisted call, no other digits dialed		
00+	= Toll operator assisted call, and any other digits dialed		
00-	= Toll operator assisted call, no other digits dialed		
1+	= DDD call		
CC	= Country code		
NN	= National number		
ID	= Information digit		
KP	= Prepare for digits signal		
ST	= End of pulsing		
STP	= Premium		
ST2P	= Identifier error		

Table 17
Called and calling number information format (NT400 method)

Mode	Call type	Called number	Calling number
A	0+	KP+0+7/10D+ST	KP+CAT+7D+ST ¹
	0-	KP+0+ST	KP+CAT+7D+ST ¹
	1+	KP+1+7/10D+ST	KP+CAT+7D+ST ¹
B	1+	KP+7/10D+ST	KP+CM+CAT+7D+ST ¹
	0-	KP+ST	KP+CM+CAT+7D+ST ¹
	1+	KP+7/10D+ST	KP+CM+CAT+7D+ST ¹

Legend:

- CM = 1 (for 1+ calls)
- = STP (for 0± calls)
- CAT = XX (category digits)
- X = 0, 1, ..., 9, and XX is customer-defined data defining the type of long-distance call
- ST¹ = ST (normal)
- = ST2P (identifier failure)
- ST² = ST2P (identifier error)
- = KP (station-to-station 1+)
- = STP (premium 0±)

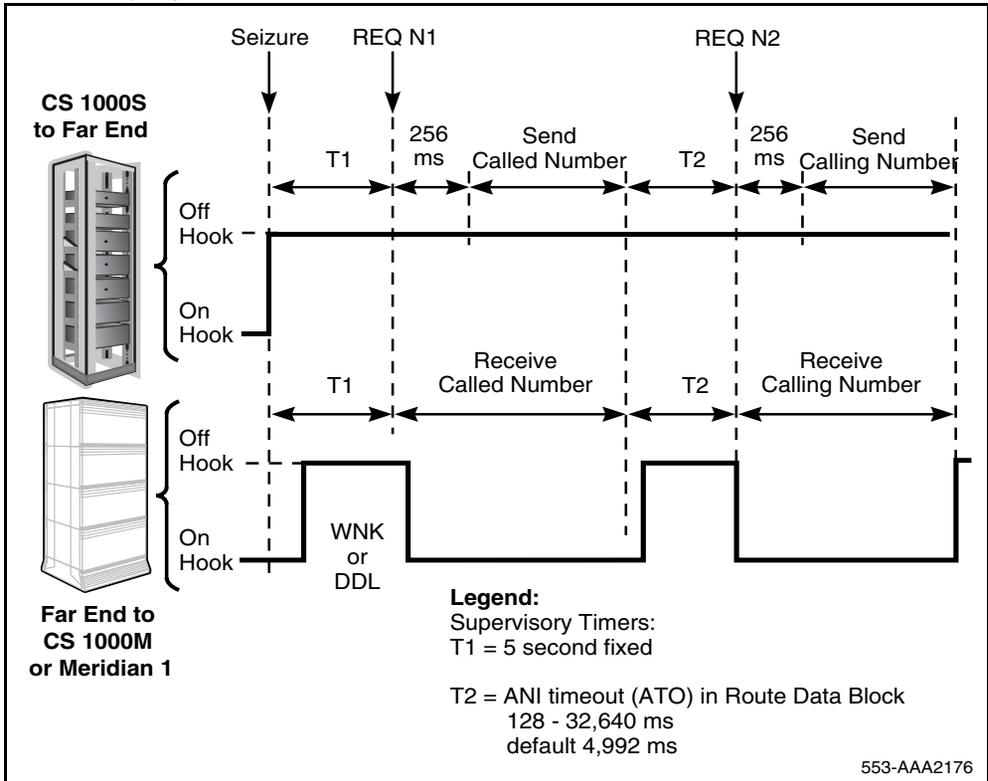
Table 18
Called and calling number information format (NT500 method)

Mode	Call type	Called number		Calling number
		Dial Pulse (DP) sending	Multifrequency sending	
A	0+	0+7/10D	KP+0+7/10D+ST	KP+CAT+7D+ST ¹
	0-	0	KP+0+ST	KP+CAT+7D+ST ¹
	1+	1+7/10D	KP+1+7/10D+ST	KP+CAT+7D+ST ¹
B	0+	not applicable	KP+7/10D+ST	KP+CAT+7D+ST ²
	0-	not applicable	KP+ST	KP+CAT+7D+ST ²
	1+	not applicable	KP+7/10D+ST	KP+CAT+7D+ST ²
C	0+	not applicable	KP+7/10D+ST	KP+CAT+7D+ST ¹
	0-	not applicable	KP+ST	KP+CAT+7D+ST ¹
	1+	not applicable	KP+7/10D+ST	KP+CAT+7D+ST ¹
Legend:				
CM	=	1 (for 1+ calls)		
	=	STP (for 0± calls)		
X	=	0, 1, ..., 9, and XX is customer-defined data defining the type of long-distance call		
ST ¹	=	ST (normal)		
	=	ST2P (identifier failure)		
ST ²	=	ST2P (identifier error)		
	=	KP (station-to-station 1+)		
	=	STP (premium 0±)		

Table 19
Possible combinations of trunk types and ANI methods

Trunk type	Bell	NT400 A	NT400 B	NT500 A	NT500 B	NT500 C
CAMA-MF	A	A	A	A	A	A
CAMA-DP	A	N	N	A	N	N
CCSA-MF	A	A	A	A	A	A
Legend: A = Allowed N = Not allowed						

Figure 7
Supervisory signals (NT400/500 method)



Calling and called number information

The called number information always includes the Directory Number (DN) dialed (typically seven or ten digits). The information can also include the toll access code (typically 0 or 1). Multifrequency (MF) sending includes additional control signals such as KP (preparatory digits) or ST (end of pulsing).

The calling number information is always sent in MF. It consists of a calling Directory Number (always seven digits), the preparatory and end-of-pulsing signals and other auxiliary signals. For example, an information digit with the Bell method and class mark and category digits with the NT methods.

Each customer system is assigned a three-, four-, or five-digit Automatic Number Identification (ANI) Listed Directory Number that identifies the customer to the toll office. The calling number for ANI is obtained by combining the ANI LDN with one of the following:

- Analog (500/2500 type) telephone: Directory Number (DN) of the telephone
- Meridian 1 proprietary telephone: primary DN of the telephone
- Attendant: ANI attendant number specified on a “per customer” basis
- TIE trunk: ANI trunk number specified on a “per trunk group” basis.

The Directory Number Expansion (DNXP) package allows an internal DN to have up to seven digits. If the system is equipped with this package, all DN types listed can be expanded to seven digits maximum. Their combined length with the ANI LDN must remain at seven digits.

The ANI Listed Directory Number is based on the customer’s dialing plan. Otherwise, only the leading digits of a DN (station, attendant or TIE trunk) are retained in the ANI calling number. The full seven digits of a DN can be used as the ANI calling number, provided that no ANI Listed Directory Number is configured.

The calling number information is obtained immediately before being sent. Calls that are modified (For example, calls that are attendant extended or transferred) are billed against the party that initiated the trunk call. (This publication is consistent with Automatic Identification of Outward Dialing).

Automatic Number Identification (ANI)/Central Automatic Message Accounting (CAMA) Enhancement

Two call types allow the ANI Bell method to handle 00- and 00+ calls. Customers dialing 00 can transmit KP + 0 + STP to access toll operator assistance. When 0 is dialed, customers can transmit KP + STP to access local operator assistance. Table 20 on page 461 shows the actions taken by calling 00 and other combinations starting with 0.

Table 20
Actions taken with 00- and 00+ calls

Called number	Bell MF M1A action taken	Bell MF M2B action taken
0	KP + STP	KP + STP
0 + 7/10D	KP + 7/10D + STP	KP + 7/10D + ST3P
00	Overflow	KP + 0 + ST3P
00 + 7/10D	Overflow	KP + 0 + 7/10DST3P

After an ANI/CAMA route has been accessed, the system receive digits representing the called number. Table 20 identifies the actions taken.

Note: M1A represents the current Bell MF signaling mode. M2B represents the modified Bell MF signaling mode.

Automatic Number Identification/Central Automatic Message Accounting

CAMA routes using Bell MF signaling Mode B outpulse KP + 0 + ..., + START and allow 00- and 00+ calls. 00- and 00+ calls are denied for routes using a different signaling mode.

Controlled Class of Service Allowed (CCSA)

CCSA routes do not support ANI/CAMA.

Route Selection (RS)-Automatic Number Identification

Route Selection for ANI does not support 00- and 00+ dialing. Calls made using 00+ or 00- are treated as 0+ calls. The RS-ANI Data Block determines the 0+ call routing.

Operating parameters

Automatic Number Identification (ANI)/Digital Trunk Interface (DTI) supports CAMA trunks. CCSA-ANI trunks are not supported.

ANI/CAMA operates on a route basis and applies to CAMA routes using the Bell MF signaling method only.

All route members must have a Multifrequency Route (MFR) Class of Service (CLS).

ANI/CAMA is not supported over Dial Pulse trunks. When activating this feature, do not use mixed trunk members.

If 1 or 0 is not dialed following the Trunk Access Code, the system intercepts all outgoing calls over CAMA trunks. This restriction does not apply to outgoing calls over CCSA-ANI trunks.

For E&M or DX signaling, use the QPC71 E&M/DX/Paging trunk circuit card. This card does not have to be modified for ANI. For a complete description of this trunk circuit card.

For loop signaling, the QPC72 loop signaling trunk circuit card is used.

Note: The two trunk cards mentioned above provide compatibility with the signaling and supervision requirements of CAMA trunks. They also provide a path for the eventual analog transmission of the MF tones and for speech transmission.

Feature interactions

Directory Number Expansion

If the DN Expansion package is equipped, the ANI billing number (ANAT) can have up to seven digits. The total number of digits for ANAT and ANI listed DN (ANLD) cannot exceed seven.

INIT ACD Queue Call Restore

Restored calls do not retain ANI information, unless the call was an incoming call on an M911 trunk.

M911

The Meridian 911 permits special treatment for emergency calls. This feature requires the QPC916 MF receiver card. For more information about this card, see Feature Group D description and operation.

Valid Automatic Number Identification combinations

When the system receives a call from a 911 trunk, the trunk receives the ANI information through MF signaling from the Central Office. A valid ANI, received through 911, includes a 1-digit NPD or ID digit followed by a 7-digit calling number. The NPD or identification digit can be displayed directly on the answering telephone display or can be translated to a Numbering Plan Area (NPA) using the Numbering Plan Identification (NPID) translation table in LD 16.

The following are valid ANI digit combinations:

- KP A NXX-XXX ST (where A= the NPD, which can be 0–9);
- KP I NXX XXX ST (where I = an information digit, which can be 0–9);
- KP I ST (where I = the information digit for ANI failure or Operator Number Identification (ONI). ANI failure is usually designated by a 2 and ONI by a 1); and
- KP A ST (where A denotes maintenance testing, typically the digit 8).

If only one digit is received and that digit is defined in the NPID table as TEST or FAIL, the call is treated as a test case or a call with ANI failure.

Table 21 shows an example of an NPID table. The last two fields, ANI Failure and Test Calls, are mutually exclusive. If the NPD/ID digit 0 is interpreted as ANI failure, it cannot also be interpreted as a test call.

Table 21
Interpreting NPD/ID numbers (Part 1 of 2)

NPI/Info Digit	NPA	ANI Failure	Test Call
0	408	No	No
1	415	No	No
2	NONE	No	No
3	NONE	No	No
4	NONE	No	No
5	NONE	No	No

Table 21
Interpreting NPD/ID numbers (Part 2 of 2)

NPI/Info Digit	NPA	ANI Failure	Test Call
6	NONE	No	No
7	NONE	Yes	No
8	NONE	No	Yes
9	NONE	No	No

If the NPA is not specified (NPA = NONE), the NPD/ID digit appears on the telephone. Otherwise, the NPA appears on the telephone for calls with a valid ANI.

Seven zeros indicate a failure (for example, MF receive fault, garbled tones or a timeout). After all ANI digits are received or a timeout occurs, the system processes the call.

A test call has no display.

Trunk route assignments

The 911 trunk must auto-terminate to a Controlled Directory Number (CDN) defined in LD 23. The start arrangement must be WINK and the Class of Service must be defined as Priority Trunk (APY) and Multifrequency Receiver (MFR).

ANI failure

If ANI information is incorrectly delivered, the call may not have a valid ANI, as indicated by the seven zeros in the display.

ANI failure affects the incoming call's Application Module Link (AML) message, which informs the application with a special DN type value. The 911 caller's DN type Information Element (IE) contains one of these types: ANI with NPD, ANI with ID or ANI failure.

Some Central Offices indicate ANI failure with an 8-digit string consisting of NPD followed by 911-0YYY, where YYY denotes the problem. The ANI string 911-0YYY is not treated as a failure so that the digits appear on the screen rather than being overwritten by seven zeros.

Redundancy and call loss requirements are very precise. If the AML terminal display is unavailable (for example, if the host computer is down), the ANI information still appears on the telephone display.

CDR for 911 ANI calls

If CLID is set to YES in LD 17, 911 ANI information is included in CDR Q records (connection records). CDR records affected are Normal Records, Start/End Records, Authorization Code Records, Connection Records (Q, R, F) and Charge Account Records.

The CDR Q record option is not recommended, since the Meridian 911 application does not need Connection Records and they consume valuable CPU real time. The CDRQ record can nonetheless be configured to include ANI.

Route Selection (RS-ANI)

The optional Route Selection (RS-ANI) is provided with ANI. RS-ANI routes toll calls automatically through specified trunks to toll offices and routes local calls through CO trunks to local switching offices.

To place an outgoing CO call, the station user dials the RS-ANI Access Code (typically 9), followed by a CO Directory Number. If the user dials 0 or 1 after the Access Code, the call routes through a toll trunk group; otherwise, the call routes through a CO trunk group.

Operation

After receiving the RS-ANI Access Code, the system sends the user the second dial tone. The user has 30 seconds to dial a digit or digits. Following this time frame, the system removes the dial tone and provides overflow tone for an additional 15 seconds. The second dial tone is removed after the first digit or digits are dialed. Table 22 shows the system action that corresponds to the digit dialed.

Although it does provide an overflow tone if the user presses the octothorpe key (#), the system ignores the asterisk (*) key. If 0# is dialed, the system activates a 4-second timer and times out.

Table 22
RS-ANI operation

Digit dialed	System action taken
0	A four second timer starts to monitor the next digit dialed. Routing is based on this digit, as follows:
none	The timer times out and the call (0-) routes through the trunk group specified for 0- calls.
1	The timer cancels, and the call (IDD) routes through the trunk group specified for 1+ of IDD calls.
2-9	The timer cancels, and the call (0+) routes through the trunk group specified for 0+ calls.

Trunk types

TIE trunks access RS-ANI as stations do, but all other trunks are intercepted. Any type of trunk can be used for RS-ANI, with the exception of special-purpose trunks such as Paging, Dictation or Recorded Announcement. Normally, the trunk routes shown in Table 23 are used.

Table 23
Trunk route types

Call type	Trunk type
0±	Central Automatic Message Accounting (CAMA)
1+, 011+, 01+, 010-	Central Automatic Message Accounting (CAMA)
other	Central Office (CO)

Class of Service options

Conditionally Unrestricted station Class of Service places non-ARS-handled toll calls through ANI. Refer to *Software Input/Output: Administration (553-3001-311)* to implement this option. See Table 24 for RS-ANI Class of Service options.

Table 24
RS-ANI Class of Service options

Option	Explanation
UNR	Allowed to receive calls from and originate calls to the exchange network (CO, FX, WATS). This includes toll calls.
CUN	UNR for calls placed through ARS and for calls placed through ANI TLD for all other calls
CTD	UNR for calls placed through ARS TLD for all other calls
TLD	Allowed to receive calls from the exchange network; allowed dial access to local exchange network; allowed access to toll network by means of system attendant only; denied access to exchange operator
Legend	
UNR = Unrestricted CUN = Conditionally Unrestricted CTD = Conditionally Toll Denied TLD = Toll Restricted Service	

New Flexible Code Restriction

Calls from Toll Denied (TLD) stations routed by Automatic Number Identification (ANI) are subject to NFCR. Calls placed by Conditionally Toll Denied (CTD) and Conditionally Unrestricted (CUN) Class of Service stations subject to ANI are treated as unrestricted calls.

Trunk Optimization

ANI trunks allow the Trunk Optimization (TRO) feature to be used whenever calls are routed over PRI and ISL trunks. For additional information on this feature, refer to *ISDN Basic Rate Interface: Features (553-3001-380)*.

Feature packaging

Automatic Number Identification (ANI) is package 12. The following packages are also required:

- ANI Route Selection (ANIR) package 13, which requires:
 - Automatic Number Identification (ANI) package 12

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Configure the ANI customer data.
- 2 LD 16 – Configure the Centralized Automatic Message Accounting (CAMA) route data.
- 3 LD 14 – Configure the Centralized Automatic Message Accounting (CAMA) trunk data.
- 4 LD 28 – Configure the Route selection data for ANI calls.
- 5 LD 16 – Configure the Centralized Automatic Message Accounting (CAMA) route data.

LD 15 – Configure the ANI customer data.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	ANI	Automatic Number Identification.

CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
ANAT	xxx...x	ANI billing number for attendants making ANI calls. (The total number of digits in ANAT and ANLD cannot exceed seven digits.)
ANLD	xxx...x	ANI listed DN for billing purposes (0-5 digits). (The total number of digits in ANAT and ANLD cannot exceed seven digits.)

LD 16 – Configure the Centralized Automatic Message Accounting (CAMA) route data.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
TKTP	CAM CAA	SIGL = Bel, NT4, or NT5. SIGL = Bel.
SIGL	BEL NT4 NT5	Bell method signaling. ITT-North NT400 signaling (only if TKTP = CAM). ITT-North NT500 signaling (only if TKTP = CAM).

FORM	M1A M2B M3C	For BEL, NT4, or NT5 (NT4 and NT5 not applicable if TKTP = CAA). For BEL, NT4, or NT5 (NT4 and NT5 not applicable if TKTP = CAA). For NT5 (only if TKTP = CAM).
ICOG	OGT	Outgoing.
ACOD	xxxx	Access Code.
ID	0-9	Identification digit for CAMA routes (for BEL).
CAT	00-99	Category digits for CAMA routes (only if TKTP = CAM). For NT4 and NT5.
STRK	(NO) YES	(Disable) enable super trunk group feature (Bell method signaling only).
SPTO	(NO) YES	7- to 10-digit, or 3-digit outpulsing for ANI calls.
ANKP	(NO) YES	(Do not) suppress KP signal on ANI calls.
CNTL	(NO) YES	(Do not) allow changes to timers.
- TIMR	ATO 128–65,408	ANI timeout timer in milliseconds (default is 4,992).
- ANDT	(NO) YES	(Do not) provide ANI dial tone.

LD 14 – Configure the Centralized Automatic Message Accounting (CAMA) trunk data.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	CAM CAA	CAMA trunk. CAMA-ANI trunk (SIGL = BEL in LD 16).
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.

	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
XTRK	XUT XEM EXUT	Extended Universal Trunk card. Extended E & M trunk card. Enhanced Extended Universal Trunk.
...		
CUST	xx	Customer number, as defined in LD 15
...		
RTMB		Route number and Member Number
	0-511 1-4000	Range for Large System and CS 1000E system.
	0-127 1-4000	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
...		
SIGL	DPN DAS	Digital Private Network Signaling System Number 1. Digital Access Signaling System Number 2.
...		
SUPN	(NO) YES	Answer and disconnect supervision required.
...		
CLS	aaa	Class of Service options.

LD 28 – Configure the Route selection data for ANI calls.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	RSA	Route selection for ANI.

RASC	xxxx	RS-ANI access code digits.
0-RT	xxxx	Route access code for 0- calls.
0+RT	xxxx	Route access code for 0+ calls.
1RT	xxxx	Route access code for 1+ or IDDD calls.
CORT	xxxx	Route access code for local calls.

LD 16 – Configure the Centralized Automatic Message Accounting (CAMA) route data.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
TKTP	TIE CCSA	Trunk type.
ANTK	xxxx	Billing number for TIE or CCSA trunks that are allowed a tandem connection to ANI.

Feature operation

No specific operating procedures are required to use this feature.

Automatic Number Identification on DTI

Contents

This section contains information on the following topics:

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Operating parameters	473
Feature interactions	474
Feature packaging	474
Feature implementation	474
Feature operation	475

Feature description

Automatic Number Identification (ANI) on Digital Trunk Interface (DTI) extends the ANI feature to digital Central Office (DCO) and Digital Toll Office (DTO) trunks. In addition, the ANI capability is extended to Primary Rate Access (PRA) trunk routes through the Primary Rate Interface.

For further information, refer to the Automatic Number Identification feature module in this guide.

Operating parameters

The QPC189F or NT817 (all vintages) are required to support this feature.

DTI interfaces externally with a digital trunk carrier facility at the DS-1 rate. MF signals pass across this interface in a digitally encoded format.

Supervisory signaling through DTI is accomplished by A&B bit signaling. A&B bit signaling can emulate E&M or loop signaling.

Address (called number) signaling through DTI can be dial pulse or MF. Immediate start or wink start may be used.

Calling number information signaling is done using the MF signaling method.

This enhancement supports the three basic signaling methods for ANI. These are Bell, NT400, and NT500.

Feature interactions

There are no feature interactions associated with this feature.

Feature packaging

This enhancement is included in Automatic Number Identification (ANI) package 12.

Feature implementation

LD 16 – Define Central Office or Toll Office port types.

Prompt	Response	Description
REQ	NEW CHG	Add, or change
TYPE	RBD	Route Data Block.
...		
DTRK	(NO) YES	Digital trunk route.
DGTP	DTI	Digital trunk type.
PTYP	(DCO) DTO	CO or Toll Office port type (default DCO).

Feature operation

No specific operating procedures are required to use this feature.

Automatic Preselection of Prime Directory Number

Contents

This section contains information on the following topics:

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Feature operation	479

Feature description

Automatic Preselection allows a user to select the Directory Number (DN) assigned to key zero by lifting the handset. It is not necessary to operate the DN key to get dial tone or to answer an incoming call. The DN assigned to key zero is referred to as the Prime Directory Number (PDN) for that telephone.

Operating parameters

The Automatic Preselection feature does not apply to single-line telephones.

Feature interactions

Automatic Redial

If a call is processed on key 0 and the calling party lifts the handset and selects the Prime Directory Number (PDN), this is interpreted as accepting a redialed call.

Feature packaging

This feature is included in base system software.

Feature implementation

LD 11 – Assign PDN to key 0 on proprietary telephone.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
...		
CLS	CLS	Class of Service options
	(PDN)	Primary Directory Number
...		

KEY	xx aaa yyyy (cccc or D) zz..z	<p>Telephone function key assignments</p> <p>The following key assignments determine calling options and features available to a telephone. Note that KEY is prompted until just a carriage return <cr> is entered.</p> <p>Where:</p> <p>xx = key number 0</p> <p>aaa = SCR, Single Call Ringing</p> <p>yyyy = PDN, Primary Directory Number</p> <p>zz..z = additional information required for the key aaa.</p> <p>The cccc or D entry deals specifically with the Calling Line identification feature. Where:</p> <p>cccc = CLID table entry of (0)-N, where N = the value entered at the SIZE prompt in LD 15 minus 1.</p> <p>D = the character "D". When the character "D" is entered, the system searches the DN keys from key 0 and up, to find a DN key with CLID table entry. The CLID associated with the found DN key will then be used.</p>
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Feature operation

With this feature enabled, lifting the handset automatically selects the DN assigned to key zero to receive dial tone or answer an incoming call on that key.

Automatic Redial

Contents

This section contains information on the following topics:

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Feature operation	491

Feature description

Automatic Redial (ARDL) extends the redialing capabilities of the Ring Again and Network Ring Again features. The redialing capabilities of this feature reside at the system level. The system generates redialing attempts that allow the calling party to redial a busy public network subscriber using analog or digital trunks.

This feature is applicable when a calling party dials a public network subscriber number and receives a busy indication. Instead of attempting repeated redial efforts, the calling party can activate ARDL by pressing the Ring Again (RGA) key.

Once activated, the ARDL feature requests the system to automatically redial the attempted dialed number until a successful call termination is completed or until the configured number of redial attempts is reached. A successful call termination is determined when one of the following occurs: a tone detector attached to the call detects a ringback tone, an answer signal is received or an ISDN signaling trunk indicates call termination.

When a successful call termination is detected from the far end, the calling party hears the called party through the telephone's loudspeaker. The calling party must accept the redialed call within a specified time limit. If not, the redialed call is dropped and not redialed.

Multi-Automatic Redial permits simultaneous activation of the Automatic Redial feature on several RGA keys. This allows more than one number to be redialed in succession. Each Automatic Redial call is attempted once and then another number is attempted. Multi-ARDL numbers are dialed in order of activation.

One set of ARDL calls can be associated with one DN key. Another set of ARDL calls can be associated with a different DN key. This option facilitates the use of the ARDL feature by a secretary who works for several managers. Each manager's DN could be on the secretary's telephone. A secretary activates the ARDL feature to call different calling groups on both DNs. After a successful call termination, the accepted call is easily accessed by the appropriate manager.

All ARDL requests are associated with the calling party's DN key. Therefore, when the called party is being redialed the calling party's DN key is busy. If the calling party is busy on another DN, the ARDL attempts are redialed on hold. When a successful call termination is completed, the system alerts the calling party by buzzing the telephone. While ARDL is activated, the calling party's telephone can be used for incoming/outgoing calls.

ARDL can be activated on a call that has originated from a Single Call Ringing (SCR), Single Call Non Ringing (SCN), Multiple Call Ringing (MCR), Multiple Call Non Ringing (MCN), Private Line key or Hot Line key. The ARDL request is associated with the key from which the call was made. If this key is free, the system attempts to dial the number until a successful call termination is detected and provided a free trunk is available.

Operating parameters

The Ring Again feature must be enabled to operate the ARDL feature.

This feature is only supported on Central Office (CO) and TIE trunks.

The ARDL is supported on proprietary telephones, excluding M2317 telephones. It is recommended that telephones be equipped with display, handsfree and loudspeaker. Analog (500/2500) type telephones do not support this feature.

The ARDL feature cannot be activated on data calls.

ARDL can only redial if the Directory Number (DN) key on the calling party's telephone is idle. For this feature application, only a single external number can be stored against the Ring Again key.

Network Ring Again features do not interfere with the ARDL feature. ARDL is only activated after all Network Ring Again attempts have failed. When ARDL is activated, redial attempts continue with the ARDL feature. ARDL does not support the failure of a DPNSS1 call attempt.

The ARDL feature does not impact the operation of the Ring Again feature on internal calls.

The tone detector is not allocated to detect non-busy tones for off network trunks that have on-board busy tone detectors such as an Extended Flexible Central Office Trunk (XFCOT). Only a busy tone is detected. Accordingly, an Automatic Redial call is considered a successful call even though an overflow tone is sent from the far end.

With the exception of trunks that have on-board busy detectors or an end-to-end Integrated Services Digital Network (ISDN) call, a tone detector is required for all ARDL calls.

If a trunk is not equipped with answer supervision, an ARDL call is redialed once only and then the redial request is cancelled.

The busy tone detector capability is limited to the current tone detector hardware.

This feature introduces the following three timers that control the operation of ARDL:

- The Automatic Redial Acceptance Timer is the maximum allotted time that the calling party has to respond to an ARDL call.

- The Automatic Redial Retry Timer controls the time between successive ARDL retries.
- The Tone Detector Response Timer controls the tone detector response and is defined in LD 16.

Feature interactions

Access Restrictions

Trunk Group Access Restrictions

The Access Restriction/Trunk Group Access Restrictions of an ARDL redialed call are those restrictions that were applied when the call was initiated. These initial restrictions are not changed.

Attendant Barge-In

Attendant Barge In is not allowed to a trunk that is currently used for the ARDL call redialing. This is done to avoid creating a conference when the tone detector is involved.

Attendant Break-In

Attendant Busy Verify

Attendant Break-In and Attendant Busy Verify are not permitted on a proprietary telephone that is used for an ARDL call. These restrictions avoid creating a conference when the tone detector is involved in the call.

Attendant Blocking of Directory Number

An ARDL redialed call is blocked from the calling party if an attendant uses the Attendant Blocking of Directory Number feature on the calling party's DN.

**Attendant Recall
Call Park
Call Transfer
Conference****No Hold Conference
Privacy Release**

When an Automatic Redial (ARDL) call is not accepted by the calling party, the following keys are ignored if pressed: Attendant Recall (ARC), Call Park (PRK), Call Transfer (TRN), Conference (A03 or A06), No Hold Conference (NHC) and Privacy Release (PRS).

Autodial

ARDL can be activated on a dialed number using the Autodial (ADL) key.

Automatic Line Selection

Manual Line Selection, Outgoing Line Selection or Prime Line Selection is interpreted as accepting the ARDL by the calling party.

Automatic Preselection of Prime Directory Number

If a call is processed on key 0 and the calling party lifts the handset and selects the Prime Directory Number (PDN), this is interpreted as accepting a redialed call.

Automatic Set Relocation

If the calling party's telephone is relocated, the ARDL request is cancelled.

Call Detail Recording

The calling party's DN is charged even though a call is not accepted. This occurs because the resources are booked for ARDL attempts.

If Call Detail Recording (CDR) is configured on external calls, additional CDR records are produced. This occurs because each redial attempt produces a CDR record.

Calling Party Privacy

The calling party and called party have the same Calling Party Privacy considerations.

Digit Display

Dialed numbers are displayed when the ARDL feature is activated. The calling party can dial digits even though a busy tone indication is given.

Digits dialed while on hold are not displayed. When the calling party accepts a redialed call, the dialed numbers are displayed. If the Display (DSP) key and appropriate RGA key are pressed while a call is on hold, the number redialed is displayed.

Directory Number - Multiple Appearance

An ARDL call from a Single Call Ringing (SCR) or Single Call Non Ringing (SCN) is only redialed when all telephones that have the same DN are free.

An ARDL call from a Multiple Call Ringing (MCR) or Multiple Call Non Ringing (MCN) is only redialed when the originating key is free.

Enhanced Hot Line

An ARDL call can be activated from an Enhanced Hot Line key. However, the call is only redialed when the calling party's HOT key is free.

Last Number Redial

An ARDL call can be activated on a number dialed using the Last Number Redial (LNK) key or by pressing the DN key twice. The ARDL number is saved as the last number redialed.

Line Load Control

ARDL attempts are controlled and restricted by Line Load Control.

Network Alternate Route Selection Network Speed Call

ARDL can be activated on a Network Alternate Route Selection DN or Network Speed Call.

New Flexible Code Restriction

ARDL calls must pass New Flexible Code Restriction (NFCR) checks. If the redialed number is restricted, the ARDL request is cancelled.

Override

An ARDL call cannot be overridden. This is done to avoid creating a conference when a tone detector is involved.

Pretranslation

ARDL can be activated on a number that has passed the Pretranslation process. However, on an ARDL call the Pretranslation process is not used.

Privacy

If the ARDL call is redialed on a number that is shared with any single line telephone, the ARDL call is accepted when the single line telephone goes off-hook.

Privacy Override

When the Privacy Override feature is activated on the MADN key and the one telephone activates ARDL, this call can be accepted by other telephones.

Private Line Service

An ARDL call can be activated on a Private Line Service key. The call can only be redialed when the calling party's PVR or PVN key is free.

R2 Multifrequency Compelled Signaling

A successful ARDL call dialed through a R2 Multifrequency Compelled Signaling (MFC) trunk is determined by the tone detector (TDET) and MFC. If MFC signaling detects that the call has failed, the ARDL call is cancelled in the same manner as a TDET. If R2 MFC does not detect a call failure a TDET is connected to the call as a regular ARDL call.

Scheduled Access Restrictions

The Scheduled Access Restrictions (SAR) on ARDL redialed calls are set when the call is initiated. If restrictions are changed later, the prior restrictions still apply.

Speed Call
System Speed Call
Stored Number Redial

The Automatic Redial (ARDL) feature can be activated on a call using Speed Call (SCL), System Speed Call (SSU/SSC) or Stored Number Redial (RDL) keys.

Speed Call on Private Lines

The ARDL feature is activated on a number dialed using the Private Line (PVR/PVN) key and then making a speed call by pressing the Speed Call (SCL) key.

Feature packaging

Automatic Redial (ARDL) requires the following packages:

- Automatic Redial (ARDL) package 304
- Ring Again (RGA) package 1
- Tone Detector (TDET) package 65

Outpulsing of Asterisk and Octothorpe (OPAO) package 104 and Automatic Redial (ARDL) package 304 are mutually exclusive. The ARDL package is turned off automatically if both packages are equipped.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 13 – Define Tone Detector Units.
- 2 LD 15 – Define Automatic Redial.
- 3 LD 16 – Define Automatic Redial Tone Detector Response Timer.
- 4 LD 87– Define Automatic Redial Network Route Selection.
- 5 LD 11 – Assign Automatic Redial Class of Service and Key.

LD 13 – Define Tone Detector Units.

Prompt	Response	Description
REQ	NEW	Add new data.
TYPE	TDET	Tone Detector data block.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.

LD 15 – Define Automatic Redial.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	FTR	Change features and options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
...		
- ARDL_ATTEMPT	1-(30)-60	Number of Automatic Redial attempts.
REQ:	CHG	Change.
TYPE:	TIM	Change Timers.
CUST		Customer number
	0-99	For Large Systems
	0-31	For Small Systems and CS 1000S systems

...		
- ARDL_ACCEPT	0-(20)-60	Automatic Redial Acceptance Timer in seconds. Odd number entries are rounded up to the next even number and echoed back with a message.
- ARDL_RETRY	10-(30)-60	Automatic Redial Retry Timer in seconds. Odd number entries are rounded up to the next even number and echoed back with a message.

LD 16 – Define Automatic Redial Tone Detector Response Timer.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
...		
CNTL	YES	Changes to controls or timers.
TIMR	RTD 0-(12)-60	Tone Detector Response Timer in seconds. Odd number entries are rounded up to the next even number.

LD 87– Define Automatic Redial Network Route Selection.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.

CUST	xx	Customer number, as defined in LD 15
FEAT	NCTL	Network Control Feature.
...		
NCOS	(0) - 99	Network Class of Service group number.
- ARDL	(A) I	A = Automatic Redial network route selection allowed from all route sets (initial and extended). I = Automatic Redial network route selection allowed from initial set of routes only.

LD 11 – Assign Automatic Redial Class of Service and Key.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
...		
CLS	RDLA	Automatic Redial allowed (default). RDLD = Automatic Redial denied.
KEY	xx RGA	Ring Again key assignment.
KEY	xx RGA	Ring Again key assignment for Multi-Automatic Redial capability.

Feature operation

Enable Automatic Redial

- 1 Press an idle DN key, handsfree key or go off-hook. Dial desired public network number. The DN lamp is lit.
- 2 The calling party hears busy, overflow, ringback tone, etc.
- 3 Press the Ring Again (RGA) key.

- For a non-ISDN call, the RGA key lamps lights, the tone stops and the DN lamp goes dark.
- For ISDN call, the RGA key lamps initially flashes while the system attempts to activate the Network Ring Again features. If these features cannot be activated, the RGA lamp is steadily lit and the ARDL feature is activated.

Automatic Redialing - External number

After ARDL is activated the following possibilities can occur:

- 1 The call is answered by the called party and accepted by the calling party. In this case, both parties are connected.
- 2 The call is answered by the called party, but the calling party does not accept the call within the predefined time limit. The call is dropped and not redialed again.
- 3 The called party's number is occupied. The call is dropped and redialed later according to the timer configuration.
- 4 The call is blocked for some reason such as trunks or network congestion. The call is dropped and redialed later according to the timer configuration.

If the calling party presses another DN key while ARDL is activated, the ARDL attempt continues redialed on hold. If the Release (RLS) key is pressed when an ARDL call is attempted and is the active call, the redial attempt is dropped and redialed later after the predefined allotted time.

Automatic Redial - Originating telephone is idle on another number

- 1 The calling party's DN is idle.
- 2 The RGA key lamp winks. The DN lamp is lit and the called number appears on the telephone's display. A connection is made to the loudspeaker of the calling party's telephone.
- 3 One of the following occurs:

- If the called party's number is busy, the call is dropped when a busy tone is detected. The DN goes dark, the RGA lamp is steadily lit and the loudspeaker is deactivated.
 - Otherwise, the calling party hears ringback or answer through the loudspeaker.
- 4** If the calling party accepts the call by going off-hook, pressing the DN key, or pressing the handsfree, both parties are connected and the RGA lamp goes dark.
 - 5** If the calling party does not accept the call within the predefined time limit, the DN key goes dark and one of the following occurs:
 - If the called party answers the call, the following occurs: the RGA key goes dark, the redial call is disconnected and the ARDL request is cancelled. The display returns to an idle state.
 - If the called party does not answer the call, the following occurs: the call is disconnected and the RGA lamp is steadily lit. The ARDL request is not cancelled and is ready for another redial attempt. The display returns to an idle state.

Accept an Automatic Redial call

To accept an ARDL call, the calling party performs one of the following:

- 1** If the ARDL call is the active call on the telephone, then the calling party must lift handset, press handsfree or press the key on which the ARDL call is active.
- 2** If the ARDL call is dialed on hold the calling party must press the associated DN key.

Cancel Automatic Redial

Automatic Recall is canceled in the following cases:

- The calling party presses the lit or winking RGA key (the cancellation request can be activated between ARDL attempts or during a redial attempt).
- The calling party accepts the ARDL call.

- The ARDL call is redialed the predefined number of call retries.
- The calling party does not accept a successful ARDL call within the predefined time limit.

At cancellation of the ARDL request, the RGA key lamp goes dark.

Automatic Set Relocation

Contents

This section contains information on the following topics:

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Feature description

Automatic Set Relocation (ASR) and Modular Telephone Relocation (MTR) move a telephone to another location without the intervention of a craftsperson. MTR reduces the number of steps required to relocate the Meridian Modular Terminals.

With ASR, Directory Numbers (DNs) and features assigned to the telephone are maintained. Up to 32 telephones can be relocated at any one time. The following access codes are associated with this feature:

- Special Prefix code (SPRE) relocation code 81
SPRE codes are system codes enabling analog (500/2500 type) telephones to utilize additional telephone features. Refer to the Telephones feature module in this guide.

- Flexible Feature Code (FFC) relocation number
FFCs are user programmable codes that enable analog (500/2500 type) telephones to access certain telephone features. Refer to the Flexible Feature Code feature module in this guide.
- Security code
You must enter the security code before a telephone can be moved.
- Identification code
The identification code is user selectable, and can be any four-digit number (excluding the symbols * and #). (MTR does not require this code.)

This feature is also used to install and enable line cards to make unused telephone locations available for telephone relocation. Adding the first telephone on a line card by using the Service Change overlay enables that card (if it is not already enabled). Removing the last telephone from a line card leaves that card enabled; it does not disable the card.

Automatic Set Relocation (ASR) requires the circuit units on digital line cards used for supplementary power to be specified as power units in LD 12. This allows the system to disable signaling to these units, while leaving unequipped units enabled for telephone relocation. If power units are not specified, they generate erroneous messages and may disable the entire card.

After putting a telephone back into service, the craftsperson should wait at least 20 seconds before using the telephone.

Modular Telephone Relocation

Modular Telephone Relocation enhances ASR to make relocating Meridian Modular Telephones simpler and faster (by omitting the requirement for an identification code). The following telephones support Modular Terminal Relocation:

- M2006
- M2008
- M2016S
- M2216
- M2616

When a telephone is relocated out, a relocation block is automatically built to store the relocation information in the protected data area. The relocation block includes the old Terminal Number (TN), the terminal ID information, the serial number of the telephone, and feature information. If a data dump occurs, the relocation block is not copied to the disk.

Modular Telephone Relocation uses the unique serial number and terminal ID of the Meridian Modular Telephones (instead of the identification code) to identify the one being relocated. This reduces the number of steps needed for relocation.

A telephone's successful relocation is indicated by a 180-millisecond buzz through the telephone's loudspeaker, not a tone through the handset. The buzz occurs after the telephone is plugged into the new location, and the parameter download to the Meridian Modular Terminal is complete.

Modify the relocation table

The relocation table contains information regarding the telephone's serial number, Terminal Number, and terminal identification. When a telephone is relocated OUT, the table maintains the necessary telephone information. When the telephone is relocated IN, the system searches the table for that telephone's information. When the information is found, the data is moved to the new location. The telephone data is then removed from the relocation table.

Through LD 50, the serial number or any terminal ID information may be modified while the telephone is relocated out (before it has been relocated back in). For example, use LD 50 when replacing a telephone with another one of the same type with a different serial number or terminal ID, but the same key configuration.

LD 21 prints information about telephones that have been relocated out.

The IDU (ID for Unit) command in LD 32 determines the telephone's serial number and ID information.

Operating parameters

A single-line telephone must be relocated to a vacant position on an analog (500/2500 type) Line Card.

A digital telephone must be relocated to a vacant position on a Digital Line Card (DLC) or Integrated Services Digital Line Card (ISDLC) in the switch.

Moving a telephone from an off-premise to on-premise location or vice versa is not recommended, as incorrect pad values on connections may result.

A Manual Line telephone cannot be relocated using the Automatic Set Relocation feature.

The relocation table allows a maximum of 32 telephones to be relocated out at one time.

A relocated out telephone cannot be relocated in to an already defined TN. A telephone being relocated in must be plugged into a TN location that currently has no assigned telephone information.

Automatic Call Distribution (ACD) agent telephones with an associated supervisor and the ACD supervisor telephones cannot be relocated.

If a data dump occurs while a telephone is relocated out, a SYSLOAD returns the telephone to its original TN location. If a telephone was in the relocated out state when the last data dump occurred, and has since relocated in, another data dump is necessary. The second data dump prevents a SYSLOAD from returning the telephone to its previous TN location.

When Modular Telephone Relocation is used and the overflow tone is returned during relocation out, the relocation attempt is abandoned. Try the relocation again.

When Modular Telephone Relocation is used, there is a slight delay between the time the telephone is plugged in and the buzz. The buzz occurs after the telephone is relocated in, enabled, and downloaded. This delay is traffic dependent. If no buzz is received, the relocation is unsuccessful.

When Modular Telephone Relocation is used and a telephone is relocated out, a Customer Service Change (CSC) message containing the old TN number, serial number, and terminal ID is displayed on the TTY. When a telephone is relocated in, a CSC message containing the old TN and new TN is displayed. These messages are placed in the History File.

When Modular Telephone Relocation is used and a SYSLOAD occurs before a data dump completes, the data for all telephones relocated in or out is lost. Return the telephones to their original location and repeat the relocation process.

Feature interactions

Automatic Redial

If the calling party's telephone is relocated, the Automatic Redial request is cancelled.

Busy Forward Status

BFS is not compatible with Automatic Set Relocation.

Call Forward No Answer Hunting

Calls will not hunt or forward no answer to a telephone that is being relocated.

Call Forward Ring Again

If Call Forward, or Ring Again is active when a telephone is relocated, the feature is deactivated.

China – Flexible Feature Codes - Busy Number Redial

Enhanced Flexible Feature Codes - Busy Number Redial

Busy Number Redial is deactivated when a telephone is relocated.

Hunting

Calls will not hunt to a telephone that is being relocated

Make Set Busy

If Make Set Busy is active when the telephone is relocated, Make Set Busy remains active.

Meridian Mail Voice Mailbox Administration

Relocating a user with an associated VMB to a new TN will not affect the VMB. The VMB remains logged in and continues to receive incoming voice messages while the telephone is being relocated.

A telephone that is relocated out but not relocated back in can still have an active VMB. A relocated telephone must be deleted manually on the system before its associated VMB is removed.

Multiple Appearance DN Redirection Prime

The original Multiple Appearance Directory Number Redirection Prime (MARF) TN is restored when the telephone relocates.

When Automatic Set Relocation or Meridian Modular Terminal is used to move a telephone, the telephone's MARF designations are maintained. If the TN is a MARF for one or more DNs, the system maintains the MARF TN. A system message indicates the telephone relocation.

When a telephone leaves the system due to Automatic Set Relocation, the following CSC message appears:

```
CSC010 x y
x = old TN (l s c u) for the telephone
y = ID code entered
```

While the telephone is being relocated, a temporary MARF TN is assigned. The following SCH message appears for each DN associated to the removed MARF TN.

```
SCH5524 DN nnnn NEW MARF l s c u
nnnn = the DN associated with the MARF TN
l s c u = the new default MARF for DN nnnn
```

The same message given through Attendant Administration displays on the attendant console when a MARF is assigned for a DN. The History File can be configured to store these messages until a printout is requested.

When a telephone reenters the system, the following message appears:

```
CSC011 x y
x = old TN (l s c u) for the telephone
y = new TN (l s c u) for the telephone
```

The following message appears again for *each* changed TN:

```
SCH5524 DN nnnn NEW MARF l s c u
nnnn = the DN associated with the MARF TN
l s c u = the new MARF TN assigned to DN nnnn
```

Night Key for Direct Inward Dialing Digit Manipulation

Delete the DRC key from a telephone before performing Automatic Set Relocation. If this is not done, the DRC lamp is activated on the wrong telephone.

Power Fail Transfer

Since Power Fail Transfer is hardwired to certain Terminal Numbers, this feature is not maintained by a telephone when it is relocated.

Feature packaging

Automatic Set Relocation (ASR) package 53 has no feature package dependencies.

Modular Telephone Relocation requires the following:

- Automatic Set Relocation (ASR) package 53
- Meridian Modular Terminals (ARIE) package 170
- Digital telephones (DSET) package 88

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Assign the Automatic Set Relocation security code.
- 2 LD 10 – Enable/disable line circuits for Automatic Set Relocation.
- 3 LD 11 – Enable/disable line circuits for Automatic Set Relocation.
- 4 LD 12 – Gather data for each line circuit to be used as a supplementary power source.
- 5 LD 17 – Allow ASR messages to be printed at a system terminal or stored in the History File.
- 6 LD 17 – Allow Automatic Set Relocation messages to be printed at a system terminal or stored in the History File.

- 7 LD 32 – Query information regarding a terminal’s type, NT code, color, release number, and unique serial number. This command works only for Meridian Modular Terminals.
- 8 LD 50 – Remove an entry in the relocation table.
- 9 LD 21 – Print information in the relocation table.

LD 15 – Assign the Automatic Set Relocation security code.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	FTR	Features and options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- SRCD	xxxx <CR> X	Automatic Set Relocation security code; default is 0000; X removes security code.

LD 10 – Enable/disable line circuits for Automatic Set Relocation.

Prompt	Response	Description
REQ:	new out	Configure Automatic Set Relocation.
TYPE:	cardslt	500/2500 line circuit for Automatic Set Relocation.
TN		Terminal Number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.

LD 11 – Enable/disable line circuits for Automatic Set Relocation.

Prompt	Response	Description
REQ:	new	Add new data.
TYPE:	cardmt	Digital line circuit for Automatic Set Relocation.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.

LD 12 – Gather data for each line circuit to be used as a supplementary power source.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	PWR	Digital line circuit for supplementary power.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.

LD 17 – Allow ASR messages to be printed at a system terminal or stored in the History File.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	ADAN	Action Device and Number.
IOTB	(NO) YES	(Do not) change input/output terminals or devices.

HIST	(0)-65534	History File buffer length.
- ADAN	NEW CHG aaa x	System terminal device number for Automatic Set Relocation messages. aaa and x = HST. PRT 0-15. TTY 0-15.
- USER	CSC	Customer service change (Automatic Set Relocation) messages.

LD 17 – Allow Automatic Set Relocation messages to be printed at a system terminal or stored in the History File.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	ADAN	Action Device and Number.
- ADAN	NEW CHG aaa x	System terminal device number for Automatic Set Relocation messages. aaa and x = HST. PRT 0-15. TTY 0-15.
- CTYP	aaaa	Card type, where: aaaa = DCHI, MSDL, MSPS, SDI, SDI2, SDI4, or XSDI.
- DNUM	(0-15)	Device number printed automatically (same as ADAN number).
- USER	CSC	Customer service change (Automatic Set Relocation) messages.
CUST	xx	Customer number, as defined in LD 15

LD 32 – Query information regarding a terminal’s type, NT code, color, release number, and unique serial number. This command works only for Meridian Modular Terminals.

IDU s c u		Prints telephone’s information.
-------------	--	---------------------------------

LD 50 – Remove an entry in the relocation table.

Prompt	Response	Description
REQ	OUT CHG	Remove, or change an entry in the relocation table.
TYPE	MTRT	Modular Telephone Relocation Table.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
SER	xxxxxx	Serial number (prompted for changes only).
NTCD	xxxxxxx	NT code (for changes only).
COLR	xx	Color (prompted for changes only).
RLS	xx	Release (prompted for changes only).

LD 21 – Print information in the relocation table.

Prompt	Response	Description
REQ:	PRT	Print.
TYPE:	SRDT	Set relocation data.

Feature operation

To use Automatic Set Relocation:

- 1 Lift the handset.
- 2 Enter the relocation code (either SPRE 81 or the Flexible Feature Code).
- 3 Enter the security code. The default is 0000.

- 4 Enter the four-digit code to identify your telephone. A tone confirms the telephone is ready to be moved.
- 5 Unplug the telephone and install it at the new location.
- 6 Wait 30 seconds after plugging the telephone into the new location, lift the handset, and dial the four-digit identifier. A tone confirms the telephone has been moved successfully.

Modular Telephone Relocation

To relocate a telephone using Modular Telephone Relocation:

- 1 Lift the handset or activate handsfree.
- 2 Enter the relocation code (either SPRE 81 or the Flexible Feature Code).
- 3 Enter the security code. The default is 0000.
- 4 A two-second tone burst confirms that the telephone is relocated out.
- 5 Unplug the telephone and install it at the new location.
- 6 The confirmation buzz through the telephone's loudspeaker indicates the telephone is in service.

Note: All calls associated with the telephone receive force disconnect while it is relocated out. The telephone information automatically moves to the relocation table.

Automatic Timed Reminders

Contents

This section contains information on the following topics:

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Feature description

Automatic Timed Reminders alert the attendant when a call extended to a station by the attendant console has not been answered within a predefined period of time. Recall timers for different conditions can be specified by the customer as follows:

- Slow Answer (set in increments of six seconds)
- Camp-On (set in increments of two seconds)
- Call Waiting (set in increments of two seconds)

If no entry is made, the default is 30 seconds in each case.

Operating parameters

There are no operating parameters associated with this feature.

Feature interactions

Attendant Overflow Position

After an attendant call has been rerouted using the Attendant Overflow Position feature, there is no automatic timed recall to the attendant or any other DN.

Call Forward by Call Type

Calls eligible for Flexible Call Forward No Answer treatment, and handled by Call Forward by Call Type, use the Call Forward No Answer timer in the Customer Data Block as the recall timer for attendant extended calls. Irrespective of the relative timeout for Automatic Timed Recall, the ringing continues as long as allowed by the Call Forward No Answer Timer.

Call Forward No Answer Call Forward No Answer Second Level

When Call Forward No Answer is activated on a telephone, the slow answer timer begins only after the call reaches its final destination.

Call Park

A Call Park recall to an attendant appears on the Recall Incoming Call Indicator.

Call Waiting Redirection

When Call Forward No Answer (CFNA) is active, the Slow Answer Recall timer begins only after the call reaches its final destination. CFNA has precedence over Attendant Recall for attendant-extended calls. Irrespective of the relative time-out intervals for each feature, ringing continues as long as allowed by CFNA for telephones with CFNA enabled.

Since the Call Waiting Redirection feature applies CFNA treatment to a Call Waiting call, the Call Waiting Redirection feature also takes precedence over the Call Waiting recall timer.

Directory Number Delayed Ringing (DNDR)

If a dialed telephone has DNDR defined, and an attendant re-extends a call without releasing it, the DNDR timing is not reset. If the value of the recall timer is less than that of the DNDR timer, the call is recalled to the attendant before audible notification begins.

Feature packaging

This feature is included in base system software.

Feature implementation

LD 15 – Define Recall timers and add/change a Recall Incoming Call Indicator key on attendant consoles.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	TIM	Timers.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- RTIM	xxxx yyyy zzzz	Recall timers. xxxx = slow answer, 0-3,066, in six-second increments (default 30 seconds). yyyy = Camp-on, 0-1,022, in two-second increments (default 30 seconds). zzzz = Call Waiting, 0-1,022, in two-second (increments (default 30 seconds).
TYPE	ATT_DATA	Attendant console options.
- ICI	0-19 RLL	Add RECALL ICI to all consoles.

Feature operation

One optional Recall Incoming Call Indicator (ICI) key is provided on the attendant console for operator-extended recalls.

Automatic Wake Up

Contents

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Feature description

Automatic Wake Up (AWU) provides an efficient wake up service for hospitality and health care environments. It relieves the attendant from having to make wake up calls by providing this service automatically. At the requested time, the system automatically rings the room or extension and connects the called party upon answer to music followed by a recorded wake up announcement.

If the wake up call is answered within a customer-specified number of rings (two to five rings), the system recognizes a completed call and presents the predefined wake up treatment. The system disconnects the AWU call when the called party releases, or when the recording cycle is completed.

The wake up message runs continuously. Upon answering a wake up call, the called party hears music until the message begins again. If the message is 15 seconds long, and the wake up call is answered on the 14th second of the message, the calling party hears one second of music before the message. If the call is answered on the third second of the message, the calling party hears 12 seconds of music first.

The system allows for an alternate recording that can be used for evening wake up calls or when the primary recording is being updated. The secondary recording can also replace the primary recording at a customer-specified time period.

Answer the wake up call

The Wake Up indicator goes dark after the guest answers the wake up call. Customers can set the attendant recall option if the call is unanswered after a specified number of tries (from one to three).

Answering the wake up call for multiple appearance DN telephones is similar to single appearance DN telephones: after the call is answered, the Wake Up indicator goes dark.

The system balances the wake up load over five-minute intervals, generating a maximum of 100 wake up calls per five-minute period. The system processes one wake up call every two seconds during peak periods, and one wake up call every four seconds during lighter periods. A light load is defined as anything less than 60 wake up call requests per five-minute interval.

A wake up request is rejected by the system under the following conditions:

- The wake up request (in units of five-minute intervals) is less than one interval ahead of the current time interval (see Note below).
- The wake up request (in units of five-minute intervals) is less than five intervals before the current time interval. In other words, the wake up request is more than 23 hours and eight intervals in advance.
- The interval requested contains 500 calls already.

Note: The time interval = (hour x 12) + (minute / 5). Always round down to the nearest five-minute interval.

If the interval requested for a wake-up call already contains the maximum number of calls, the system searches for the next available time interval in the following sequence:

- the five-minute interval before the requested time
- the five-minute interval after the requested time
- the next available five-minute interval within three hours before the requested time

You can also use a Background Terminal (BGD) to enter Automatic Wake Up information. The Background Terminal lets you monitor system operation. One or more terminals can be assigned to access AWU data. You can have data displayed or printed at a preselected time of day.

500 Wake Up calls

The number of Automatic Wake Up calls available per five-minute period is 500 calls.

You can define the number of rings for the call from two to five. If there is no answer after the specified number of rings, the AWU call overflows to the next five-minute interval. The system tries three times to terminate the call before it is recalled to the attendant. You can define the number of wake up attempts, from one to three.

No more than 25 analog (500/2500 type) telephones should be ringing at any one time. To ensure this, set the Number of Rings for Wake Up (NRWU) prompt in LD 15 according to the recommendations listed in Table 25 on page 514. The NRWU is two to five, with a default of five.

Table 25
Recommended number of rings per Automatic Wake Up call

Time on (seconds)	Time off (seconds)	Maximum number of rings
2*	4*	5*
3	3	2
2	1	5
1	2	5
* North American standards.		

Only 500 AWU calls can be defined for the system, but up to 750 calls can actually be placed. Up to half of the programmed AWU calls unanswered can be carried over to the next five-minute interval. The carry-over from one block to the next is important in limiting the number of calls in the original programmed interval.

For a complete description on programming AWU with the Background Terminal, please refer to *Hospitality Features: Description and Operation* (553-3001-353).

Guest Entry of Auto Wake Up (GEWU) Calls

GEWU provides entry of a wake up call from a room telephone. By using the Wake Up key (WUK) on the telephone, guests can program, query (with display), or cancel their own wake up calls based on a 24-hour time format.

Requests must be made on a daily basis since the wake up time is automatically canceled after each use.

GEWU does not alter the operation of AWU, but adds a new option to AWU programming. Unless otherwise specified, operating GEWU is the same regardless of whether the telephone has a display. The distinction is that with a display, guests can check their wake up call requests. A dash (–) indicates that no time has been programmed. In addition, when programming a wake up call, the system will search for and display the next available time if the time interval chosen for the wake up call is full. Without a display, the guest can still program and cancel a wake up call.

Note: For Multiple Appearance DN telephones, the wake up time for secondary DNs cannot be queried.

Multi-Language Wake Up (MLWU) Calls

MLWU provides Automatic Wake Up calls in any of up to six languages. You can use any language as long as you have a recording of it available on a Recorded Announcement (RAN) trunk.

At check-in, each guest can choose the language for wake up calls. If no language is assigned, the default language, Language 0, is used.

You can assign a language to a room's telephone at any time by using the Background Terminal (BGD) or Property Management System (PMS). A room DN is valid if it has at least one appearance as a Prime DN (key 0) on a telephone and Controlled Class of Service Allowed (CCSA). Multiple appearance telephones with the same Prime DN may be assigned different languages through Service Change.

You can also assign the language on a TN basis, allowing the language option to be employed outside the hospitality industry without requiring a BGD terminal or the PMS. Refer to LD 10 and LD 11 in *ISDN Basic Rate Interface: Installation and Configuration* (553-3001-218) for the "LANG" prompt.

The language remains unchanged until the next language assignment. An AWU language cannot be changed on a call-by-call basis. The customer may, however, optionally clear the language either at check-in or check-out times, using the Background Terminal.

If Automatic Wake Up is enabled, up to six pairs of language-specific RAN routes (both a.m. and p.m. for each language), called Automatic Wake Up routes (AWR), can be configured. The languages, 0-5, correspond to the AWR routes RAN1/RAN2 (for Language 0), LA11/LA12 (for Language 1), up to LA51/LA52 (for Language 5) in the Customer Data Block (LD 15). The only requirement is that the default language routes RAN1 and RAN2 for Language 0 must be defined. If a specific language AWR is not accessible at wake up time, the corresponding primary or secondary default language routes (RAN1 and RAN2) are used.

On a Background Terminal, a customer can define a two-character language identifier to reference the languages. For example, the customer may define Language 0 as EN (English), Language 1 as SP (Spanish), and Language 2 as GR (German). For details on implementing BGD terminal commands, refer to *Hospitality Features: Description and Operation (553-3001-353)*.

Unanswered Automatic Wake Up calls recall to the attendant if the attendant recall option is on. Upon a recall, the room's language identifier is displayed after the Call Party Name Display (CPND) fields on the attendant console.

Multiple Wake Up Flexible Feature Codes

Multiple Wake Up allows up to four wake-up calls to be entered using a Flexible Feature Code (FFC), and allows those calls to be repeated daily, if desired, by entering a separate FFC. The time is in a four-digit 24-hour format (H1 H2 M1 M2). To activate Repeat Multiple Wake Up, the user dials "MWRA H1 H2 M1 M2".

Note: If a wake-up time has already been entered using the standard Automatic Wake Up Activate (AWUA) FFC, only three other multiple wake-up times may be entered.

To deactivate a single wake-up time, the user enters "MWUD H1 H2 M1 M2", where MWUD is the Multiple Wake Up Deactivate FFC. To deactivate all wake-up times, the user enters "MWUD#". The general Deactivate (DEAF) FFC does not apply to Multiple Wake Up.

If the MWUD FFC is entered again after all wake-up times have been deactivated, confirmation tone is given. If the MWUD FFC is entered again to deactivate a wake-up time that has been already deactivated, overflow tone is given. If an attempt is made to enter an existing wake-up time, confirmation tone is given. If an attempt is made to enter an existing wake-up time as a repeat wake-up time, then that time is activated as a repeat wake-up time. If an attempt is made to enter an existing repeat wake-up time as a single wake-up time, then that time is activated as a single wake-up time. In both cases, confirmation tone is given.

To verify a Multiple Wake Up time, the user dials "AWUV H1 H2 M1 M2" (where AWUV is the existing Verify Automatic Wake Up FFC).

Operating parameters

To operate AWU, a system must have a Background Terminal or attendant console with AWU key, room telephones with Controlled Class of Service Allowed (CCSA), and Recorded Announcement (RAN) trunks.

This feature requires a Background Terminal (BGD).

Each Automatic Wake route requires a minimum of two trunks.

The following hardware is required for the AWU feature:

- QPC74 RAN trunk interface card or NT8D14AH universal trunk card
- a continuous announcement (RAN) machine, such as the Audichron HQ-1 112

Note: A dedicated conference loop is no longer required for the network-enhanced machines.

For the call to utilize both music and a wake up announcement, an AWR route must be installed and the route must be programmed at the RANF prompt in LD 15. The music source can be wired into the audio pairs of the RAN trunk, or music can be recorded on the RAN device.

Automatic Wake Up is only allowed on a telephone's Prime Directory Number (PDN). For telephones in a multiple-appearance arrangement, all telephones are rung; however, only one wake up time can be assigned against the PDN. The system tries the wake up call a customer-defined number of times (from one to three), and then treats it as any other unanswered wake up call. In a single-call arrangement, if any appearance of the DN is busy when the wake up call is made, the wake up call is not presented. In a multiple-call arrangement, the wake up call is presented to all idle appearances.

A wake up key cannot be configured on a data station (a telephone with DTA Class of Service).

There can only be one wake up key per telephone.

Only attendant consoles can have an AWU key. The AWU time to be programmed on digital telephones (using GEWU and a Wake Up key).

Automatic Wake Up and Centralized Attendant Services (CAS) are mutually exclusive.

If the wake up call goes unanswered, or the guest hangs up before the AWU two-second hold time, the system tries the wake up call again in the next five-minute interval. If Attendant recall is enabled, the call transfers to the attendant following the last unsuccessful wake up call attempt.

Maintenance technicians can access any AWU RAN trunk or music trunk with the RAN trunk access code.

For Multiple Wake Up, the FFCs selected must be unique numbers up to seven digits long. They cannot conflict with any DN already in the dialing plan.

The following are not supported for Multiple Wake Up:

- The attendant query for the Multiple Wake Up time
- Multiple Wake Up from attendant administration
- The Background Terminal, Background Terminal Display for Multiple Wake Up
- Traffic for Multiple Wake Up

The Deactivate (DEAF) FFC is not supported for Multiple Wake Up.

Multiple Wake Up is supported only on analog (500/2500 type) telephones.

The Automatic Wake Up feature can be active at the same time as Multiple Wake Up.

If one Automatic Wake Up time has been set using the Automatic Wake Up Activate (AWUA) FFC, only three more Multiple Wake Up calls can be entered using the MWUA FFC.

Feature interactions

Attendant Administration

The Attendant Administration feature does not support data entry or changes for the AWU feature.

Attendant Overflow Position

AWU recalls are not redirected to a customer-defined Attendant Overflow Position DN. Failed wake up calls stay in the attendant queue or ring indefinitely on the console.

Call Party Name Display

All display information associated with Automatic Wake Up (AWU) programming is directed to line three of the display. Names are appended to DNs appearing on line three if they are different from those on line two, or if no DN appears on line two. There is no DN information on line two if the attendant has initiated the AWU process while not on an active call. No DES information is appended, since AWU operates on a DN basis.

Coordinated Dialing Plan

AWU supports Coordinated Dialing Plan as long as an internal DN is used.

Directory Number Delayed Ringing

The Directory Number Delayed Ringing feature is not supported.

Do Not Disturb

When a telephone is configured for Do Not Disturb, a wake up call can still be presented.

Flexible Feature Codes Enhancement

Telephones can activate Automatic Wake Up (AWU) features for their own station with Common Controlled Switching Arrangement Class of Service.

The Automatic Wake Up feature can be active at the same time as Multiple Wake Up.

The attendant query function is not supported for Multiple Wake Up.

Multiple Wake Up from attendant consoles is not supported.

The Background Terminal (BGT) is not supported for Multiple Wake Up.

If one Automatic Wake Up time has been set using the Automatic Wake Up Activate (AWUA) FFC, only three additional Multiple Wake Up calls can be entered using the Multiple Wake Up Activate (MWUA) FFC.

Intercept Computer Dial from Directory - Post-dial Operation

This feature can be requested as follows:

- Press the Wake-up key on the attendant console.
- Dial a DN from the Intercept Computer.

Dial an octothorpe sign “#”, and terminate by dialing the requested wake-up time from the attendant console

Manual Line Service

Manual Line or Private Line Services

AWU does not support these features; an AWU call cannot be programmed against a manual line or private line DN.

Multiple Appearance DN

All Multiple Appearance DNs are rung, including both primary and secondary DNs. Programming the wake up request using the Wake Up key applies only to telephones with the primary DN on key 0, and the Wake Up indicator operates as described only on the telephone that is currently programming the wake up request.

In addition, if two or more Multiple Appearance Primary DN telephones program a wake up request at the same time, the last telephone to finish overrides. In other words, all telephones with the same primary DN get the same request time of the last telephone to program a request. If the last telephone cancels the request, all requests are canceled.

When the wake up programming sequence is finished, all Wake Up indicators on Multiple Appearance Prime DNs are updated unless a telephone is in the middle of Wake Up programming.

If the AWU Recall option is chosen, the recall is presented to any idle attendant console in the same Console Presentation Group (CPG) equipped with the AWU key.

Night Service

Unanswered AWU calls going through Attendant Recall are discarded if the attendant console is in the Night Service mode. AWU may still be programmed when the attendant console is in Night Service.

Pretranslation

When the Pretranslation feature is equipped with AWU, the actual DN, not the pretranslation DN, should be used when programming the AWU call request.

Room Status

Room Status and Automatic Wake Up both use the Background Terminal (BGD). If the WAKE option is selected for the check-in/check-out operation, the wake-up call for that room is canceled after a check-in or check-out operation.

When a guest checks in or out, the room status changes. If an AWU request is still active, it is canceled if it is included as part of the Check In/Out option.

Feature packaging

Automatic Wake Up (AWU) package 102 requires:

- Recorded Announcement (RAN) package 7
- Controlled Class of Service (CCOS) package 81
- Background Terminal Facility (BGD) package 99

Guest Entry of Auto Wake Up is included as part of Automatic Wake Up (AWU) package 102.

Multi-Language Wake Up (MLWU) package 206 requires Automatic Wake Up (AWU) package 102.

Multiple Wake Up FFCs require Flexible Feature Codes (FFC) package number 139.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 16 – Define the RANF route.
- 2 LD 16 – Define the RAN1 route.
- 3 LD 16 – Define the RAN2 route.
- 4 LD 14 – Define the trunk for RANF.
- 5 LD 14 – Define the trunk for RAN1.
- 6 LD 14 – Define the trunk for RAN2.
- 7 LD 15 – Enable Automatic Wake Up in Customer Data Block.
- 8 LD 10 – Set language and CCOS for analog (500/2500 type) telephones (on a per TN basis).
- 9 LD 11 – Set language and CCOS for Meridian 1 proprietary telephones (on a per TN basis).
- 10 LD 12 – Allow access to AWU from attendant consoles.

LD 16 – Define the RANF route.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.

TKTP	AWR	AWU RAN route.
RTYP	AUD	Audichron recorder.
- GRD	PLAY IDLE	Ground Start Arrangement where: PLAY = RAN machine sends a ground signal when playing. IDLE = RAN machine sends a ground signal when idle. If the United Kingdom (UK) package 190 is equipped the default response is PLAY, if this package is not equipped the default response is IDLE.
ACOD	xxxx	Trunk route access code. Must be different from RANF ACOD.

LD 16 – Define the RAN1 route.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
TKTP	AWR	AWU RAN route.
RTYP	AUD	Audichron recorder.

- GRD	PLAY IDLE	Ground Start Arrangement where: PLAY = RAN machine sends a ground signal when playing. IDLE = RAN machine sends a ground signal when idle. If the United Kingdom (UK) package 190 is equipped the default response is PLAY, if this package is not equipped the default response is IDLE.
ACOD	xxxx	Trunk route access code. Must be different from RANF and RAN1 ACODs.

LD 16 – Define the RAN2 route.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number. Must be different from RANF and RAN1.
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
TKTP	AWR	AWU RAN route.
RTYP	AUD	Audichron recorder.

- GRD	PLAY IDLE	Ground Start Arrangement where: PLAY = RAN machine sends a ground signal when playing. IDLE = RAN machine sends a ground signal when idle. If the United Kingdom (UK) package 190 is equipped the default response is PLAY, if this package is not equipped the default response is IDLE.
ACOD	xxxx	Trunk route access code.

LD 14 – Define the trunk for RANF.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	AWR	AWU RAN trunk.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CUST	xx	Customer number, as defined in LD 15
RTMB		Route number and Member Number
	0-511 1-4000	Range for Large System and CS 1000E system.
	0-127 1-4000	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.

LD 14 – Define the trunk for RAN1.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	AWR	AWU RAN trunk.
TN	l s c u	Terminal Number. Must be a different TN from RANF. Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CUST	xx	Customer number, as defined in LD 15
RTMB		Route number and Member Number
	0-511 1-4000	Range for Large System and CS 1000E system.
	0-127 1-4000	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.

LD 14 – Define the trunk for RAN2.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	AWR	AWU RAN trunk.
TN	l s c u	Terminal Number. Must be a different TN from RANF and RAN1. Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.

	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CUST	xx	Customer number, as defined in LD 15
RTMB		Route number and Member number. Must be different from RANF and RAN1.
	0-511 1-4000	Range for Large System and CS 1000E system.
	0-127 1-4000	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.

LD 15 – Enable Automatic Wake Up in Customer Data Block.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	AWU	Automatic Wake Up options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- AWU	YES	Activate AWU for a customer.
- ATRC	(NO) YES	(Deny) allow attendant recall.
CONF	0-159	Conference loop number.
- RANF	0-511	Music RAN route number.
- RAN1	0-511	Primary AWR route number.
- RAN2	0-511 <CR>	Secondary AWR route number.
- LA11	X 0-511	Language 1, RAN route 1. X = remove language RAN route definition.

- LA12	0-511	Language 1, AWR route 2.
- LA21	0-511	Language 2, AWR route 1.
- LA22	0-511	Language 2, AWR route 2.
- LA31	0-511	Language 3, AWR route 1.
- LA32	0-511	Language 3, AWR route 2.
- LA41	0-511	Language 4, AWR route 1.
- LA42	0-511	Language 4, AWR route 2.
- LA51	0-511	Language 5, AWR route 1.
- LA52	0-511	Language 5, AWR route 2.
- R2BN	hhmm	RAN2 start time.
- R2ED	hhmm	RAN2 end time.
- NRWU	2-(5)	Number of rings for a wake up call
- TAWU	1-(3)	Number of wake up tries for an unanswered AWU call

Note 1: AWR route number ranges from 0-511 apply to Large Systems only. Range is 0-127 for all other options. Enter "X" to remove a route.

LD 10 – Set language and CCOS for analog (500/2500 type) telephones (on a per TN basis).

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500 2500	Telephone type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.

	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
LANG	(0)-5	Language number. To remove entry, precede with X.
CLS	CCSA	Controlled Class of Service allowed.

LD 11 – Set language and CCOS for Meridian 1 proprietary telephones (on a per TN basis).

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	CCSA	Allow Controlled Class of Service.
LANG	(0)-5	Language number. To remove entry, precede with X.
KEY	xx WUK	Assign a wake up key on a telephone. Must be a key/lamp pair.
Note: To assign a language on a per DN basis, use a Background Terminal.		

LD 12 – Allow access to AWU from attendant consoles.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	2250	Attendant console type.

Display telephones If the time interval chosen for the wake up call is full, the system searches for and displays the next available time. If the system cannot find another time, the display shows four dashes (----), and the Wake Up indicator remains flashing. If the system finds another time, the guest has three options:

- To accept the new wake up time, press **Wake Up**.
- To reject the new wake up time and enter another one, dial the new wake up time and press **Wake Up** to validate the new time.
- To abort the wake up time, press **Rls** or the **Prime DN** key (PDN).

To cancel a wake up request, follow these steps:

- 1 Press Wake Up.**
The indicator flashes.
- 2 Dial the octothorpe (#).**
- 3 Press Wake Up.**
The indicator goes off.

To check a wake up request on a telephone with display, follow these steps:

- 1 Press Wake Up.**
The indicator flashes and the current wake up time appears on the display. If no wake up time is programmed, the display shows a dash (-).
- 2 Press Wake Up.**
The indicator lights if a wake up time is set.

Note: In each scenario, the Wake Up indicator lights and the display clears, except when the wake up time is aborted and no wake up time was programmed before the abort. In this case, the Wake Up indicator stays off. If a time was programmed before aborting, the previous wake up time is restored, and the indicator is on.

From an attendant console

To program a wake up call from an attendant console, follow these steps:

- 1 Press **A. Wake Up**.

The A. Wake Up, ICI, lpk, and S indicators light.

Note: If the displayed number is not the number requiring the wake up call, dial the proper number.

- 2 Press the **octothorpe (#)**.

If the A. Wake Up indicator remains on steadily, the dialed number is valid. If it flashes, the number is invalid.

- 3 Dial the requested wake up time using a 24-hour format. Press

A. Wake Up again.

If the A. Wake Up indicator remains on without flashing, the requested wake up time is acceptable; if it flashes, the time is not acceptable. Enter the new time; if it is acceptable, the indicator goes on without flashing.

- 4 Press **Rls** to end the procedure.

To cancel a wake up call from an attendant console, follow these steps:

- 1 Press **A. Wake Up**.

The A. Wake Up indicator lights.

Note: If the displayed number is not the number requiring cancellation of the wake up call, dial the proper number.

- 2 Press the **octothorpe (#)**, then press **A. Wake Up** again.

The A. Wake Up indicator goes off and the wake up request is canceled.

Note: If the indicator flashes quickly, no wake up call was found for the dialed number. Press **A. Wake Up** again.

- 3 Press **Rls** to end the procedure.

If a guest has not responded after three wake up call attempts, you'll hear a continuous buzz. The indicator will flash quickly. The extension number of the room that has failed to respond will be displayed. Follow these steps:

- 1 Press **A. Wake Up** to cancel the notification.

- 2 Press **Rls** to end the procedure.

To Use Multiple Wake Up FFCs

Activate single

The user must dial the Multiple Wake Up Activate (MWUA) FFC followed by the hour of the wake-up, in 24-hour format, followed by the hour of the next wake-up, in 24-hour format, followed by the minute of the first hour entered followed by the minute of the next hour entered:

MWUA H1 H2 M1 M2

Activate repeat (daily)

The user must dial the Multiple Wake Up Repeat Activate (MWRA) FFC followed by the hour of the wake-up, in 24-hour format, followed by the hour of the next wake-up, in 24-hour format, followed by the minute of the first hour entered followed by the minute of the next hour entered:

MWRA H1 H2 M1 M2

Deactivate single

The user must dial the Multiple Wake Up Deactivate (MWUD) FFC followed by the hour of the wake-up, in 24-hour format, followed by the hour of the next wake-up, in 24-hour format, followed by the minute of the first hour entered followed by the minute of the next hour entered:

MWUD H1 H2 M1 M2

Deactivate all

The user must dial the Multiple Wake Up Deactivate (MWUD) FFC:

MWUD H1 H2 M1 M2

Verify

The user must dial the Automatic Wake Up Verify (AWUV) FFC followed by the hour of the wake-up, in 24-hour format, followed by the hour of the next wake-up, in 24-hour format, followed by the minute of the first hour entered followed by the minute of the next hour entered:

AWUV H1 H2 M1 M2

Automatic Wake Up FFC Delimiter

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Feature description

The Automatic Wake Up Flexible Feature Code Delimiter modifies the user programming interface of the Automatic Wake Up feature, including variations such as Multiple and Repeat Multiple Automatic Wake Up. This modification provides two options for the user: optional delimiter at the end of time entry and optional standard time entry. These options are only applicable to proprietary and analog 2500 telephones.

The optional delimiter at the end of time entry during the activation, deactivation or verification of Automatic Wake Up is an octothorpe (#).

The standard time entry allows a customer to enter standard time when activating Multiple Automatic Wake Up. When activated, a customer can eliminate the leading zero when entering a time. For example, the time seven am can be entered as 700 rather than 0700. The time can still be entered with four digits even if the standard time entry option is selected by the customer.

When activated, this feature provides the user with a response from the system. The response is silence or confirmation by means of a tone or a recorded announcement.

Operating parameters

The feature is applicable to all systems.

If the user enables the delimiter option without enabling the standard time entry option, all four digits (H1H2M1M2) and an octothorpe (#) must be entered for a valid entry.

An octothorpe (#) is the only delimiter accepted to indicate the end of time entry. This delimiter is not programmable.

Feature interactions

Background Terminal

When changes to the wake up timer are initiated by the Background Terminal or user, the wake up time previously entered last is overridden. An octothorpe (#) is not required when entering the Wake up time from a background terminal.

Call Detail Recording

No Call Detail Recording report is generated for Automatic Wake Up calls.

Directory Numbers - Multiple Appearance

For Multiple Appearance Directory Numbers, wake up information is stored, deleted and queried from a DN's first primary appearance terminal number.

Directory Number - Prime Release Key

Pressing the Prime Directory Number or Release key, when programming a Wake up request, cancels the programming sequence. If an invalid timer is entered, the user hears an error tone. If another feature key is pressed during programming, it is ignored by the system.

Room Status

When a guest has either checked in or out, the room status changes. If an AWU request is still active, it is canceled if it is included as part of the Check In/Out option.

Feature packaging

Automatic Wake Up FFC Delimiter requires Flexible Feature Codes (FFC) package 139. The following packages are also required:

- Recorded Announcement (RAN) package 7
- Controlled Class of Service (CCOS) package 81
- Background Terminal (BGD) package 99
- Automatic Wake Up (AWU) package 102

Flexible Tone and Cadences (FTC) package 125 is required if a special error tone rather than overflow is desired for Automatic Wake Up. FTC and Message Intercept (MINT) package 163 is required if a recorded announcement is desired as confirmation from the system after wake up timer has been entered. International Supplementary Features (SUPP) package 131 is required if values other than the default are desired for the inter-digit timer.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Enable Automatic Wake Up in the Customer Data Block.
- 2 LD 57 – Configure Flexible Feature Codes for Automatic Call Wake Up.
- 3 LD 56 – Set Automatic Wake Up special error tone and configuration tone.

LD 15 – Enable Automatic Wake Up in the Customer Data Block.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	AWU	Change Automatic Wake Up options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- AWU	YES	Enable Automatic Wake Up data.
...		
WUD	YES	Wake Up Delimiter. IF WUD = YES then time entry is valid only if user enters octothorpe (#) at end of time digits.
STE	YES	Standard Time Entry prompted only if WUD = YES. This prompt permits three or four digit time entry.

LD 57 – Configure Flexible Feature Codes for Automatic Call Wake Up.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	FFC	Flexible Feature Codes data block.
CUST	xx	Customer number, as defined in LD 15
FFCT	(NO) YES	Flexible Feature Confirmation Tone.
...		
CODE	AWUA	Auto Wake Up activation code.

- AWUA	xxxx	Auto Wake Up activation code for proprietary and Analog (500/2500 type) telephones. AWUA is prompted until <CR> is entered.
...		
CODE	AWUD	Auto Wake Up deactivation code.
- AWUD	xxxx	Auto Wake Up deactivation code for proprietary and Analog (500/2500 type) telephones. AWUD is prompted until <CR> is entered.
CODE	AWUV	Auto Wake Up verification code
- AWUV	xxxx	Auto Wake Up verification code for proprietary and Analog (500/2500 type) telephones. AWUV is prompted until <CR> is entered.
CODE	MWUA	Multiple Wake Up activation.
- MWUA	xxxx	Multiple Wake Up activation code for Analog (500/2500 type) telephones. MWUA is prompted until <CR> is entered.
CODE	MWRA	Repeat Multiple Wake Up activation.
- MWRA	xxxx	Repeat Multiple Wake Up activation code Analog (500/2500 type) telephones. MWRA is prompted until <CR> is entered.
CODE	MWUD	Multiple Wake Up deactivation.
- MWUD	xxxx	Multiple Wake Up deactivation code Analog (500/2500 type) telephones. MWUD is prompted until <CR> is entered.

LD 56 – Set Automatic Wake Up special error tone and configuration tone.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	FTC	Flexible Tones and Cadences data block.

TABL	0-31	Flexible Tones and Cadences (FTC) Table Number. To associate a FTC table with trunk route, enter the table number in response to the TTBL prompt in LD 16.
...		
HCCT	YES	Hardware Controlled Cadences and Tone modification of the hardware controlled cadence tone definitions allowed.
...		
- FFCT		Flexible Tone and Cadence.
-- XTON	xxx	Flexible Tone and Cadence confirmation tone. China xxx = 211 North America xxx = 004
-- XCAD	xxx	Cadence code for Firmware Cadence Table (FCAD) as entered at Cadence Number (WCAD) prompt. China xxx = 110 North America xxx = 000
- AWUT		Automatic Wake Up.
-- XTON	xxx	Automatic Wake Up special error tone. China xxx = 214 North America xxx = 007
-- XCAD	xxx	Cadence code for Firmware Cadence Table (FCAD) as entered at Cadence Number (WCAD) prompt. China xxx = 100 North American xxx = 017

Feature operation

The following feature operations occur if the WUD prompt (Wake Up Delimiter) and STE prompt (Standard Time Entry) are set to YES in LD 15. If WUD = YES and STE = NO, then the user must dial all four standard time digits and an octothorpe for a valid entry. If WUD = NO then the STE prompt will not appear. In this case, the prior operation exists and the user is not expected to enter the delimiter (#) at the end of time entry. However, all four time digits must be entered for a valid entry. Table 26 shows the Flexible Feature Codes used in the AWU FFC Delimiter feature.

Table 26
Flexible Feature Codes used in AWU FFC Delimiter feature

Feature	Activation Flexible Feature Code	Deactivation Flexible Feature Code	Verification Flexible Feature Code
Automatic Wake Up (AWU)	AWUA	AWUD	AWUV
Multiple Automatic Wake Up (MAWU)	MWUA	MWUD	AWUV
Repeat Multiple Automatic Wake Up	MWRA	MWUD	AWUV

Flexible Feature Code Automatic Wake Up Activation

To activate Automatic Wake Up from an analog 2500 or a Meridian 1 proprietary telephone:

- 1** Go off-hook. Listen for dial tone.
- 2** Dial “AWUA FFC” H1M1M2# or H1H2M1M2#. Get response and go on-hook.

To activate Automatic Wake Up from an analog 500 telephone:

- 1** Go off-hook. Listen for dial tone.
- 2** Dial “AWUA FFC” H1H2M1M2. Get response and go on-hook.

Flexible Feature Code Automatic Wake Up Deactivation

To deactivate Automatic Wake Up from an analog (500/2500) or a Meridian1 proprietary telephone:

- 1** Go off-hook. Listen for dial tone.
- 2** Dial “AWUD FFC”. Get response and go on-hook.

Flexible Feature Code Multiple Automatic Wake Up Activation

To activate Multiple Automatic Wake Up from an analog 2500 telephone:

- 1 Go off-hook. Listen for dial tone.
- 2 Dial "MWUA FFC" H1M1M2#. Get response and go on-hook.
- 3 Repeat for up to four wake up times maximum per day.

To activate Multiple Automatic Wake Up time from an Analog 500 telephone:

- 1 Go off-hook. Listen for dial tone.
- 2 Dial "MWAU FFC" H1H2M1M2. Get response and go on-hook.

Flexible Feature Code Multiple Automatic Wake Up Deactivation

To deactivate single wake up time from an analog 2500 telephone:

- 1 Go off-hook. Listen for dial tone.
- 2 Dial "MWUD FFC" H1M1M2# or H1H2M1M2#. Get response and go on-hook.
- 3 Repeat for other wake up times as necessary.

To deactivate a single wake up time from an analog 500 telephone:

- 1 Go off-hook. Listen for dial tone.
- 2 Dial "MWUD FFC" H1H2M1M2. Get response and go on-hook.
- 3 Repeat for other wake up times as necessary.

To deactivate all wake up times from an analog 2500 telephone:

- 1 Go off-hook. Listen for dial tone.
- 2 Dial "MWUD FFC" #. Get response and go on-hook.

To deactivate all wake up times from an analog 500 telephone:

- 1 Go off-hook. Listen for dial tone.
- 2 Dial "MWUD FFC" and go on-hook.

Flexible Feature Code Automatic/Multiple Automatic Wake Up Verification

To verify Automatic/Multiple Automatic Wake Up from an analog 2500 telephone:

- 1 Go off-hook. Listen for dial tone.
- 2 Dial “AWUV FFC” H1M1M2# or H1H2M1M2. Get response and go on-hook.
- 3 Repeat for other wake up times as necessary.

To verify Automatic/Multiple Automatic Wake Up from an analog 500 telephone:

- 1 Go off-hook. Listen for dial tone.
- 2 Dial “AWUV FFC” H1H2M1M2. Get response and go on-hook.

Auxiliary Processor Link

Contents

This section contains information on the following topics:

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Feature description

The Auxiliary Processor Link (APL) is a full-duplex asynchronous data link capable of accommodating up to a 4800 baud rate. It is connected to the system through a Serial Data Interface (SDI) port.

This feature is currently used in conjunction with the Integrated Messaging System package and the Automatic Call Distribution (ACD) Dialed Number Identification Service (DNIS) package.

Operating parameters

There are no operating parameters associated with this feature.

Feature interactions

DNIS Length Flexibility

Expanded DNIS (more than four DNIS digits) is not supported on the APL.

Feature packaging

Auxiliary Processor Link (APL) package 109 has no feature package dependencies.

Feature implementation

To implement this feature, refer to *Automatic Call Distribution: Description* (553-3001-351).

Feature operation

No specific operating procedures are required to use this feature.

Auxiliary Signaling

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This section contains information on the following topics:

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Feature description

In some situations, customers require special auxiliary devices such as bells, buzzers, or lights to be connected through the system. These devices are activated through a regular 500/2500 Line Card and its associated data block.

Operating parameters

A C4A ringer, or any other special signaling device that can be activated by a 20 Hz ringing signal, can be equipped through the 500/2500 Line Card.

A maximum of five C4A ringers or equivalent devices can be configured on one Terminal Number. This limit depends on the device's impedance to the 20 Hz ringing.

Feature interactions

Mixed DNs

If the DN associated with the signaling device appears on analog (500/2500 type) or Meridian 1 proprietary telephones, the telephone can answer or connect into an active call.

Feature packaging

This feature is included in base system software.

Feature implementation

LD 10 – Add new 500 telephone data block.

Prompt	Response	Comment
REQ:	NEW	Add new data block.
TYPE:	500	Analog (500/2500 type) telephone
...		
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
...		

Feature operation

No specific operating procedures are required to use this feature.

B34 Codec Static Loss Plan Downloading

Contents

This section contains information on the following topics:

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Feature description

This feature provides software support for Static Loss Plan Downloading to the B34 codec. A codec is a device on an Intelligent Peripheral Equipment (IPE) card which encodes incoming transmission data from analog to digital, and decodes outgoing transmission data from digital to analog.

The B34 codec is a four-channel codec providing 32 programmable loss values in 0.5 dB steps in both the transmit and receive directions. The B34 allows transmission parameters, which can be downloaded to the IPE unit, to be changed by software. Since the loss and level requirements differ from country to country, this allows system compliance to the different transmission plans used in the world markets using a single codec.

The selected coded levels are downloaded to each unit based on the unit's port type classification at initialization, configuration, or enable time. This is referred to as static downloading. These levels will be used for all call connections involving that unit. The B34 Codec Static Loss Plan Downloading feature is used on systems where a single loss setting is sufficient for all types of call connections.

Some markets, however, require adjustments on the loss setting depending on the call connection. This is referred to as Dynamic Pad Switching, or Dynamic Loss Switching, and is addressed by the Dynamic Loss Switching feature, which is described elsewhere in this publication. The B34 Codec Static Loss Plan Downloading feature provides the basis for the Dynamic Loss Switching feature; if Dynamic Loss Switching is enabled for a system, Static Loss Plan Downloading is suppressed on that same system.

The transmission plan for each country follows the European Telecommunications Standards Institute (ETSI) standard of loss values (referred to as "new values"), or existing values (loss values currently provided by existing cards in ETSI countries). New IPE cards must be capable of accepting these existing values for use in existing systems, so as to maintain port-to-port loss integrity.

Typically, existing (pre-Phase 8B) systems do not require flexible B34 equipped IPE cards unless their loss plans change; these systems use the existing loss plans. New systems installed with Phase 8B software contain only flexible B34 equipped IPE cards, and can use either existing loss plans or the ETSI loss plans. Systems equipped with both flexible B34 equipped IPE cards and non-B34 equipped IPE cards require type approval to be secured under existing loss plan values.

The Static Loss Plan Download feature allows the selection of a loss plan table which is either compliant with the old or the new loss plan for various countries. The feature is supported on international IPE analog trunk cards (XCOT, XFCOT, XDID, XCO/XDID, XFEM, or any trunk configured with XTRK type of XCOT, XDID, or XFEM) with the right firmware support. In special situations and with the right authorization, a customized table may be defined.

When selecting a loss plan table, it is important to verify whether the existing or ESTI mode is to be exhibited by the system (the “Feature implementation” section explains how to install a loss plan table using LD 97). A Service Change interface allows an existing or ETSI table to be selected by specifying a loss plan table number. If the loss plan needs to be upgraded in the field or if a newly defined loss plan has to be installed, a service change may be performed by an authorized craftsperson to enter a table of customized loss plan values for each port type, or to customize a pre-defined table by changing the table values. The table can then be downloaded upon any of the following conditions:

- at system initialization for all units
- when a trunk or line card, or trunk or line unit is enabled
- when the XPEC is enabled
- when the IPE shelf is enabled
- when a configured card is reset
- after a trunk unit has undergone a “NEW”, “CHANGE”, or “MOVE” operation using LD 14 or LD 10

There is no mechanism to indicate whether or not an IPE card is equipped with the B34 codec. Loss plan messages are downloaded to all IPE cards in hybrid systems, whether or not they are equipped with the B34 codec. Typically, there are three vintages of firmware used in the field:

- non-B34 codec equipped cards
- hardcoded B34 equipped cards
- flexible B34 equipped cards

There are two versions of the flexible B34 equipped cards, a flexible 7C software compatible B34 equipped card and a flexible 8B software compatible B34 equipped card. The hardcoded and 7C software compatible versions of the B34 equipped cards have country-unique loss value defaults. The flexible 8B software compatible B34 equipped card have universal B34 default loss values, which do not meet any country-specific requirements.

The flexible 7C software compatible B34 equipped card and the flexible 8B software compatible B34 equipped card both recognize the new B34 (type 12) messages, as well as the old static pad switching (type 5) messages; the type 12 messages take precedence. The hardcoded B34 cards only recognize the type 5 messages.

The flexible 7C B34 equipped cards are forward compatible with the new software; the hardcoded B34 cards are not. The flexible 8B B34 equipped cards are not backwards compatible to systems running older versions of software.

Operating parameters

A system must be configured with one or more IPE cards equipped with a B34 codec and firmware supporting software downloading. It is the responsibility of the installer to verify that the IPE cards used are compliant with the download messages used by this feature.

XFALC (flexible analog line card) is compatible with the download messages supporting Static Loss Plan Download.

Since the flexible 8B B34 equipped cards are not backwards compatible to systems running older versions of software, the following upgrade strategy should be followed:

- Systems running software Phase 7C or earlier, and upgrading to Phase 8B software, do not require the new flexible B34 IPE cards if the transmission plan remains the same. These systems may be equipped with a mix of hardcoded B34 IPE cards and new flexible B34 IPE cards; if changing to the new ETSI loss plan, all hardcoded B34 IPE cards must be retrofitted with the new flexible B34 IPE cards.
- Systems changing to a new ETSI loss plan must use the new flexible B34 IPE cards as well as Phase 8B static parameter download software; a hardware retrofit and a software upgrade are also necessary.
- Newly installed systems will use the new flexible B34 IPE cards.

New flexible B34 equipped XFALC (flexible analog line cards) support Static Loss Plan Downloading using B34 messages. New flexible B34 equipped XFALCs installed in a Phase 7C software environment do not receive download messages, but use the firmware-defined default.

A distinction must be made between long and short lines on ALC units, and to download loss plan values based on this setting.

Feature interactions

Alternative Loss Plan

The alternative loss plan tables must be enlarged as the default table is enlarged.

B34 Dynamic Loss Switching

B34 Codec Static Loss Download is a prerequisite for B34 Dynamic Loss Switching. Both features share the same definition of port types and use the same base-level table.

When B34 Dynamic Loss Switching is enabled, the Static Download messages to the analog trunk cards are suppressed. Static download to analog line cards continues.

B34 codec static loss download. Since the B34 Dynamic Loss Switching is dependent on B34 Codec Static Loss Download, B34 Codec Static Loss Download must be enabled when B34 Dynamic Loss Switching is enabled. The port types defined for B34 Dynamic Loss Switching are a subset of the port types defined for B34 Codec Static Loss Download.

Also, the base level table used by B34 Codec Static Loss Download is also used by B34 Dynamic Loss Switching. Since B34 Codec Static Loss Download is a prerequisite for B34 Dynamic Loss Switching, B34 Codec Static Loss Download is enabled when B34 Dynamic Loss Switching is enabled. When B34 Dynamic Loss Switching is enabled, the following operations concerning trunk cards are suppressed:

- During initialization, B34 Codec Static Loss Downloading to trunk cards is suppressed, so that loss levels do not change in case there are active calls. Downloading continues to analog line cards.
- In LDs 32 and 36, B34 Codec Static Loss Download is suppressed on enabling the trunk card or unit, so that loss levels do not change in case there are active calls. Downloading continues to analog line cards.
- When reseating the cards, B34 Codec Static Loss Download is suppressed. Downloading continues to analog line cards.

- In LD 14, B34 Codec Static Loss Download is suppressed.
- In LD 10, B34 Codec Static Loss Download is suppressed.

When B34 Dynamic Loss Switching is disabled, all B34 Codec Static Loss Downloads to trunks are suppressed. This introduces the danger of having some cards in the system which are not set with the proper loss levels, since the system has been changed from a dynamic mode to a static mode without activating the download of the static messages. To highlight this change, a SCH5842 error message is generated, indicating to the craftsperson that B34 Dynamic Loss Switching is disabled, and that B34 Static Loss Downloading is now in effect and that a download should be activated by system initialization or SYSLOAD.

When B34 Dynamic Loss Switching is enabled, all B34 Codec Static Loss Download audit messages to trunk cards are suppressed.

Conference

When a conference connection is established, no pads are switched in on the trunk side; any extra loss that is required is provided by the conference circuit based on an algorithm which takes into account the number of lines and trunks.

Digital Trunk Interface (DTI) Pad Switching

Pad switching for DTI applications is done dynamically, based on the far end's port type. On the DTI side, a loss value is switched on the receive and transmit side, depending on the far end's port type. If the far end is analog, a pad is switched in or out; if the far end is digital, a zero loss is switched in, so that the relative loss is taken care of only on one side. Connection between DTI/PRI and XDID, XFCOT, and XFEM trunks is not supported, since DTI pad switching does not take care of these trunk types.

DTI2 Pad Switching

Pad switching for DTI2 applications is done dynamically, based on the far end's port type. On the DTI side, a loss value is switched on the receive and transmit side, depending on the far end's port type. The far end side is handled by the normal operation for the trunk type. That is, if the far end is DTI, it is handled according to the DTI pad switching. If it is otherwise, it is handled by the configured matrices. No messages are sent for XDID, XFCOT, and XFEM trunk types. For XUT and XEM trunk types, the loss equivalent to pad out is switched in. For XDID, XFCOT, and XFEM trunks, the base level (static) value is switched in when connected to the DTI2 trunk types.

GEC Plessy hardware

No losses are sent to XCOT, XDID, and XFEM trunk cards when these cards are connected to GEC hardware, since there is no dynamic switching done for them. On the GEC hardware side of such a connection, the pads are switched in according to the type of trunk (near end) as opposed to what it is connected (far end); therefore, the loss is switched in regardless of whether the connection is to XCOT, XDID, and XFEM trunk cards or other types of cards.

Intelligent Peripheral Equipment Completion

Whenever a TIE/LDR trunk is configured on an XIDID card, for Static Loss Plan Download (SLPD)/Dynamic Loss Switching (DLS), loss/level is downloaded/switched to an XDID card with the type 12 message. Depending on the Class of Service configured, Non-Transmission Compensated (NTC), Transmission Compensated (TRC), or Via Net Loss (VNL), the TIE unit will be mapped to the following B34 port types: B34 T2WN, B34 T2WT, or B34 T2WV.

ISDN Basic Rate Interface

It is possible to switch in loss on the ISDN BRI side, based on port types.

MFE/MFC Pads

The Alternative Loss Plan feature allows trunks to be configured so as to have pads switched in when an MFS sender/receiver is equipped. For such a configuration, the following occurs for B34 port types:

- Pads are switched in for outgoing calls (the trunk is the originator).
- Pads are switched in, if in the dialing state, for incoming calls (the trunk is the terminator).

Feature packaging

B34 Codec Static Loss Plan Downloading requires Intelligent Peripheral Equipment (XPE) package 203.

Feature implementation

The loss level tables are configured in LD 97. The craftsperson must have an authorized password to configure the loss tables, but printing of the tables can be performed without the password.

LD 97 – Configure a loss plan table.

Prompt	Response	Description
TYPE	LOSP	The type branch for the system loss plan table.
STYP	(PRED) CSTM DISL	The type of B34 static loss plan table to be used to download B34 programmable loss codes. Enter PRED if a numbered pre-defined static loss plan is to be used. Enter CSTM to customize an existing static loss plan table by modifying one or more existing entries, or to create a new table by entering new values to all entries. Enter DISL to disable static loss plan downloading.

PWD2	xxxx	Enter the level 2 administrator password. Note that this is prompted only when STYP=DISL or STYP=CSTM. If STYP=DISL, and the proper password is entered, then the next prompt is REQ. If STYP=CSTM, and the proper password is entered, then the next prompts are the PORTTYPES (for example, COTS, COTL). If the password entered is incorrect, an existing error message, SCH523, SCH525, SCH526 will be issued and PWD2 will be re-prompted.
TNUM	1-25	Prompted only if PRED was entered in response to the STYP prompt above. Enter the number for the required pre-defined static loss plan.
COTS	Rx Tx	Prompted only if the response to the STYP prompt above was CSTM. COT short line. Enter the coded input/output relative levels in the receive (Rx) direction and in the transmit (Tx) direction, for this port type. The input range of Rx and Tx for port types associated with trunks is 8-39 and 0-31 respectively; the input range of Rx and Tx for port types associated with analog lines is 0-31 and 8-39 respectively.
COTL	Rx Tx	COT long line. The same definition applies as for COTS.
DIDS	Rx Tx	DID/DOD short line. The same definition applies as for COTS.
DIDL	Rx Tx	DID/DOD long line. The same definition applies as for COTS.
T2WT	Rx Tx	TIE, 2 wire, Class of Service TRC. The same definition applies as for COTS.
T2WN	Rx Tx	TIE, 2 wire, Class of Service NTC. The same definition applies as for COTS.
T2WV	Rx Tx	TIE, 2 wire, Class of Service VNL. The same definition applies as for COTS.
T4WT	Rx Tx	TIE, 4 wire, Class of Service TRC. The same definition applies as for COTS.
T4WN	Rx Tx	TIE, 4 wire, Class of Service TRC. The same definition applies as for COTS.

T4WV	Rx Tx	TIE, 4 wire, Class of Service VNL. The same definition applies as for COTS.
PAGT	Tx	TIE, E&M 2 paging trunk. The same definition for Tx applies as for COTS. Note that there is no loss value associated with this trunk type in the receive (Rx) direction.
RANR	Rx	Recorded Announcement Route. The same definition for Rx applies as for COTS. Note that there is no loss value associated with this trunk type in the transmit (Tx) direction. Enter the Coded Receive (A/D) Input/Output level, where Rx = 8-39.
ALUS	Rx Tx	ALC unit short line (SHL) Class of Service. Enter the coded input/output relative levels in the receive (Rx) direction and in the transmit (Tx) direction, for this port type. The input range of Rx and Tx for port types associated with analog lines is 0-31 and 8-39 respectively.
ALUL	Rx Tx	ALC unit long line (LOL) Class of Service. Enter the coded input/output relative levels in the receive (Rx) direction and in the transmit (Tx) direction, for this port type. The input range of Rx and Tx for port types associated with analog lines is 0-31 and 8-39 respectively.

Feature operation

No specific operating procedures are required to use this feature.

B34 Dynamic Loss Switching

Contents

This section contains information on the following topics:

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Feature description

A codec is a device on an Intelligent Peripheral Equipment (IPE) card which encodes incoming transmission data from analog to digital, and decodes outgoing transmission data from digital to analog. The B34 codec is a four-channel codec providing 32 programmable loss values in 0.5 dB steps in both the transmit and receive directions. The B34 allows transmission parameters, which have been downloaded to the IPE unit, to be changed by software. Since the loss and level requirements differ from country to country, this allows system compliance to the different transmission plans used in the world markets using a single codec. The selected coded levels are downloaded to each unit based on the unit's port type classification. This is referred to as static downloading. These levels will be used for all call connections involving that unit. The B34 Codec Static Loss Plan Downloading feature is, therefore, used on systems where a single loss setting

is sufficient for all types of call connections (this feature is described elsewhere in this publication).

The Dynamic Loss Switching feature provides loss switching on international IPE analog trunks cards (XCOT, XFCOT, XDID, XCO/XDID, XFEM, or any trunk configured with XTRK type of XCOT, XDID, or XFEM).

Typically, there are different vintages of firmware in the field:

- hard-coded B34 firmware, which is hardcoded with country-specific defaults, ignores B34 type 12 messages, and accepts (where applicable) Short Line/Long Line configuration type 5 messages
- flexible B34 firmware with country-specific defaults, which is firmware that is coded with country-specific defaults, accepts (where applicable) Short Line/Long Line configuration type 5 messages, and accepts B34 type 12 messages which override any accepted Short Line/Long Line configuration type 5 messages
- flexible B34 firmware with universal defaults, which is firmware that is coded with a universal B34 loss value default, may or may not ignore Short Line/Long Line configuration type 5 messages, and accepts B34 type 12 messages which override any accepted Short Line/Long Line configuration type 5 messages

To obtain the full functionality of B34 Dynamic Loss Switching, only the two flexible vintages of firmware can be used.

Every time a new connection is established, the following process is followed to determine if and how to adjust the loss involved in the connection:

- the port type of the originator and terminator is determined, based on the configurations of the originator and terminator, respectively
- this port type is used as a row index (originator) and column index (terminator) into a connection matrix, to determine the following:
 - whether to switch the pad in or out for the originator receive direction
 - whether to switch the pad in or out for the originator transmit direction
 - whether to switch the pad in or out for the terminator receive direction

- whether to switch the pad in or out for the terminator transmit direction
- a message conveying this information is then sent to the originator and terminator, if they are affected port types.

The B34 Dynamic Loss Switching feature, configured on a system basis, introduces flexibility in the loss values to be switched. Where previously the loss values were hardcoded on the analog trunk cards, they are now software-configurable on a per-system basis. The loss switching is still controlled by a connection matrix defined for specific markets. This matrix cannot be changed. The loss levels to be used are configured in a base-level table and alternative-level table in LD 97. The base level table is the same as the one implemented and used by the B34 Static Loss Plan Downloading feature; the alternative level table is a parallel table configured for the B34 Dynamic Loss Switching feature.

These new port types reside on the international IPE cards with flexible B34 firmware and the B34 codec. They have to be distinguished from existing port types because of the different manner in which they are informed of the base level/alternative level information.

Operating parameters

A system must be configured with one or more IPE card equipped with a B34 codec and firmware supporting software downloading. It is the responsibility of the installer to verify that the IPE cards used are compliant with the download messages used by this feature.

The B34 Codec Static Loss Plan Downloading feature must be equipped, since the B34 Dynamic Loss Switching feature uses its base level table.

Since the flexible 8B B34 equipped cards are not backwards compatible to systems running older versions of software, the following upgrade strategy should be followed:

- Systems running software Phase 7C or earlier, and upgrading to Phase 8B software, do not require the new flexible B34 IPE cards if the transmission plan remains the same. These systems may be equipped with a mix of hardcoded B34 IPE cards and new flexible B34 IPE cards; if changing to the new European Telecommunications Standards Institute (ETSI) loss plan, all hardcoded B34 IPE cards must be retrofitted with the new flexible B34 IPE cards.
- Systems changing to a new ETSI loss plan must use the new flexible B34 IPE cards as well as Phase 8B static parameter download software; a hardware retrofit and a software upgrade are also necessary.
- Newly installed systems will use the new flexible B34 IPE cards.

XFALC (Flexible Analog Line Card) is compatible with the download messages supporting Static Loss Plan Downloading. XFALC is not supported in Dynamic Loss Switching.

Connection matrixes are supported for Australia, New Zealand, and Italy. No other countries are supported with this feature.

New flexible B34 equipped XFALC (flexible analog line cards) support Static Loss Plan Downloading using B34 messages. New flexible B34 equipped XFALCs installed in a Phase 7C software environment do not receive download messages, but use the firmware-defined default.

A distinction must be made between long and short lines on Analog Line Cards (ALC), and to download loss plan values based on this setting.

Feature interactions

Alternative Loss Plan

The alternative loss plan tables must be enlarged as the default table is enlarged.

B34 Codec Static Loss Download

B34 Codec Static Loss Download is a prerequisite for B34 Dynamic Loss Switching. Both features share the same definition of port types and use the same base-level table.

When B34 Dynamic Loss Switching is enabled, the Static Download messages to the analog trunk cards are suppressed. Static download to analog line cards continues.

B34 codec static loss download. Since the B34 Dynamic Loss Switching is dependent on B34 Codec Static Loss Download, B34 Codec Static Loss Download must be enabled when B34 Dynamic Loss Switching is enabled. The port types defined for B34 Dynamic Loss Switching are a subset of the port types defined for B34 Codec Static Loss Download.

Also, the base level table used by B34 Codec Static Loss Download is also used by B34 Dynamic Loss Switching. Since B34 Codec Static Loss Download is a prerequisite for B34 Dynamic Loss Switching, B34 Codec Static Loss Download is enabled when B34 Dynamic Loss Switching is enabled. When B34 Dynamic Loss Switching is enabled, the following operations concerning trunk cards are suppressed:

- During initialization, B34 Codec Static Loss Downloading to trunk cards is suppressed, so that loss levels do not change in case there are active calls. Downloading continues to analog line cards.
- In LDs 32 and 36, B34 Codec Static Loss Download is suppressed on enabling the trunk card or unit, so that loss levels do not change in case there are active calls. Downloading continues to analog line cards.
- When reseating the cards, B34 Codec Static Loss Download is suppressed. Downloading continues to analog line cards.
- In LD 14, B34 Codec Static Loss Download is suppressed.
- In LD 10, B34 Codec Static Loss Download is suppressed.

When B34 Dynamic Loss Switching is disabled, all B34 Codec Static Loss Downloads to trunks are suppressed. This introduces the danger of having some cards in the system which are not set with the proper loss levels, since the system has been changed from a dynamic mode to a static mode without activating the download of the static messages. To highlight this change, a SCH5842 error message is generated, indicating to the craftsperson that B34 Dynamic Loss Switching is disabled, and that B34 Static Loss Downloading is now in effect and that a download should be activated by system initialization or SYSLOAD.

When B34 Dynamic Loss Switching is enabled, all B34 Codec Static Loss Download audit messages to trunk cards are suppressed.

Conference

When a conference connection is established, no pads are switched in on the trunk side; any extra loss that is required is provided by the conference circuit, based on an algorithm which takes into account the number of lines and trunks.

Digital telephone transmission parameters

The following static parameters, which do not change on a connection basis, can be changed using LD 17:

- sidetone objective loudness rating
- receive objective loudness rating
- transmit objective loudness rating
- handsfree receive objective loudness rating
- handsfree transmit objective loudness rating
- handsfree receive objective loudness rating

Digital Trunk Interface (DTI) Pad Switching

Pad switching for DTI applications is done dynamically, based on the far end's port type. On the DTI side, a loss value is switched on the receive and transmit side, depending on the far end's port type. If the far end is analog, a pad is switched in or out; if the far end is digital, a zero loss is switched in, so that the loss is taken care of only on one side. Connection between DTI/PRI and XDID, XFCOT, and XFEM trunks is not supported, since DTI pad switching does not take care of these trunk types.

The far end side is handled by the normal operation for the trunk type: that is, if the far end is DTI, it is handled according to the DTI pad switching, if it is otherwise, it is handled by the configured matrices. No messages are sent for XDID, XFCOT, and XFEM trunk types. For XUT and XEM trunk types, the loss equivalent to pad out is switched in. For XDID, XFCOT, and XFEM trunks, the base level (static) value is switched in when connected to the DTI2 trunk types.

Echo Suppression

When the echo suppresser is turned on for XEM and XFEM trunks, the pad is switched to out. For XEM and XFEM trunks with B34 port types, the base loss level for the affected port type is switched in to match the operation of switching out the pad.

GEC Plessey Hardware

No losses are sent to XCOT, XDID, and XFEM trunk cards when these cards are connected to GEC hardware, since there is no dynamic switching done for them. On the GEC hardware side of such a connection, the pads are switched in according to the type of trunk (near end) as opposed to what it is connected (far end); therefore, the loss is switched in regardless of whether the connection is to XCOT, XDID, and XFEM trunk cards or other types of cards.

ISDN Basic Rate Interface

It is possible to switch in loss on the ISDN BRI side, based on port types.

MFE/MFC Pads

The Alternative Loss Plan feature allows trunks to be configured so as have pads switched in when an MFC sender/receiver is equipped. For such a configuration, the following occurs for B34 port types:

- pads are switched in for outgoing calls (the trunk is the originator), or
- pads are switched in, if in the dialing state, for incoming calls (the trunk is the terminator).

Off Premise Extension Pad Switching

Pads can be switched on an Off Premise Extension card depending on the type of connection.

XCOT, XFEM, and XDID Cards

XCOT, XFEM, and XDID cards are the suite of international IPE cards which are configured under the XTRK prompt in LD 14. The cards in this suite include XDID/DOD, XFCOT, XFEM, XDID, and XCOT. When B34 Dynamic Loss Switching is enabled, these cards receive B34 messages. Since certain markets do not desire this functionality, B34 Dynamic Loss Switching should not be enabled.

During lamp audit for active calls on XCOT, XFEM, and XDID cards, a type 5 message for pad switching is sent to these cards, based on their configuration. When B34 Dynamic Loss Switching is enabled, the type 5 message is not sent; instead, a B34 message is sent, based on the last loss switching message sent for that call.

XEM and XUT Cards

XEM and XUT cards are the suite of North American IPE cards which are configured under the XTRK prompt in LD 14. The cards in this suite include XUTJ, XUT Hong Kong, XEM, and XUT. When B34 Dynamic Loss Switching is not enabled, there is no change in the operation of pad switching on these cards. When B34 Dynamic Loss Switching is enabled, the expanded portion of the connection matrix is used to determine the processing on the XEM/XUT side of the call and on the B34 port type side of the call. When a decision is made, it is communicated using a B34 message.

Feature packaging

B34 Dynamic Loss Switching requires the following packages:

- International Supplementary Features (SUPP) package 131
- Limited Access to Overlays (LAPW) package 164
- Intelligent Peripheral Equipment (XPE) package 203

Feature implementation

The base and alternate tables are configured in LD 97. The connection matrix is selected in LD 15. The craftsperson must have an authorized password to configure the loss tables. Printing of the tables can be performed without the password.

Note: The system must be configured with the Limited Access to Overlays (LAPW) package, and the craftsperson must have an authorized password.

LD 97 – Configure a loss plan table.

Prompt	Response	Description
REQ	CHG	Change loss plan table.
TYPE	LOSP	The type branch for the system loss plan table. Enter LOSP.
...		

Feature operation

No specific operating procedures are required to use this feature.

Background Terminal

Hospitality and health care personnel use Background Terminal (BGD) to enter, retrieve, and modify data associated with the following features:

- Automatic Wake Up (AWU)
- Room Status (RMS)
- Message Registration (MR)
- Call Party Name Display (CPND)

BGD helps monitor system operations by providing a visual display of information changes, hard-copy backup, and traffic statistics.

For complete information on this feature, refer to *Hospitality Features: Description and Operation* (553-3001-353).

Backup and restore

Contents

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Introduction

The backup rules feature provides a mechanism for transferring the backup files produced by an Automatic Equipment Data Dump (EDD) operation to another location, such as an external File Transfer Protocol (FTP) server.

The backup rules group of commands was introduced in CS 1000 Release 4.0 with the single rule type: Secondary Call Server (SCS).

The backup rules feature applies to both CP PII and CP PIV system configurations, unless otherwise noted.

Note: This feature does not actually perform an EDD, which must be initiated through an appropriate command in LD 43.

Backup rules

The backup rule types are as follows:

- **FTP** — an external FTP server is accessed for storing or retrieving backup data.
- **FMD** — fixed media device for storing backup data in a special directory on the /u partition. A CP PII system stores the data on a local hard drive, while a CP PIV uses an on-board CF card.
- **RMD** — removable media device for storing backup data. The RMD rule type is available only on a CP PIV system.
- **SCS** — backup to the Secondary Call Server, the only backup rule type which can be referenced from Geographic Redundancy Database Replication Control (GRDRC) block.

FTP rule type

The FTP rule type provides the ability to store backup files on an FTP server. This rule type defines the following six parameters:

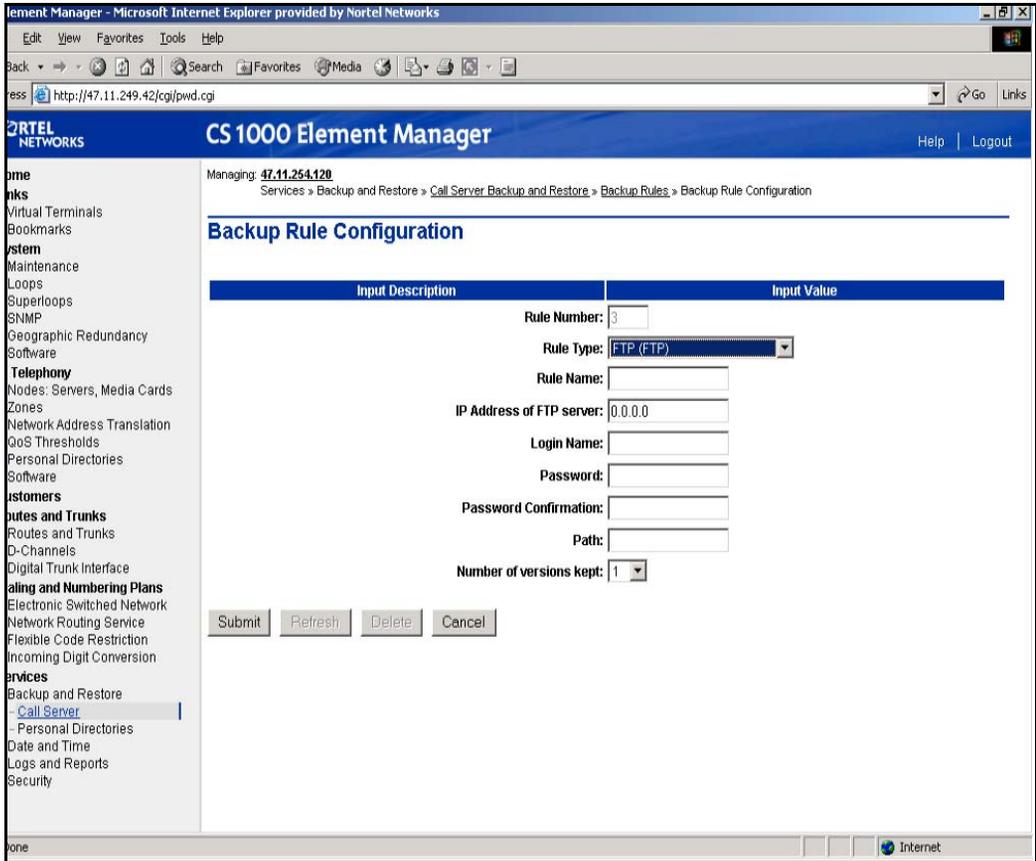
- **Name** — ranges in length from 0 to 30 characters. All characters are supported with the exception of white space. Names do not have to be unique.

- **IP address** — specifies the FTP server IP address.
- **Login name** — specifies the FTP server login name. Ranges in length from 1 to 32 characters. All characters are supported with the exception of white space.
- **Password** — specifies the FTP server password. Ranges in length from 1 to 32 characters. All characters are supported with the exception of white space.
- **Path** — specifies the location of the file on the FTP server. Ranges in length from 1 to 64 characters. All characters are supported with the exception of white space.
- **Number of versions** — number of incremental backup versions preserved on the FTP server. Ranges from 1 to 10, with one as the default value. Note that this range differs from the SCS rule type, which is 2 to 10.

Note: White space characters are not supported in backup rule parameters.

The Element Manager backup rule configuration page specific to the FTP rule type is shown in Figure 1 on [page 574](#).

Figure 1
FTP rule type in Element Manager



The **backup rule number** control is static and cannot be changed by the user. Asterisk characters replace the actual password characters in the **password** and **password confirmation** controls.

The **Rule Name**, **Login name**, **Password**, **Password confirmation**, and **Path** controls restrict the maximum length of characters entered. An alert box appears when an invalid character (such as white space) is entered.

The text is as follows:

The input data contains one or more white space characters. White space characters are not supported for this parameter.

Element Manager performs validation to ensure the content of the **Password** and **Password confirmation** controls boxes is identical. If it is not, these controls are cleared and an alert box appears with the following text:

The entered passwords do not match. Please try again.

The FTP rule type cannot be associated with a Geographic Redundancy Database Replication Control Block. All FTP backup rules must be excluded from the list of configured backup rules presented on the Element Manager **Database replication control** page.

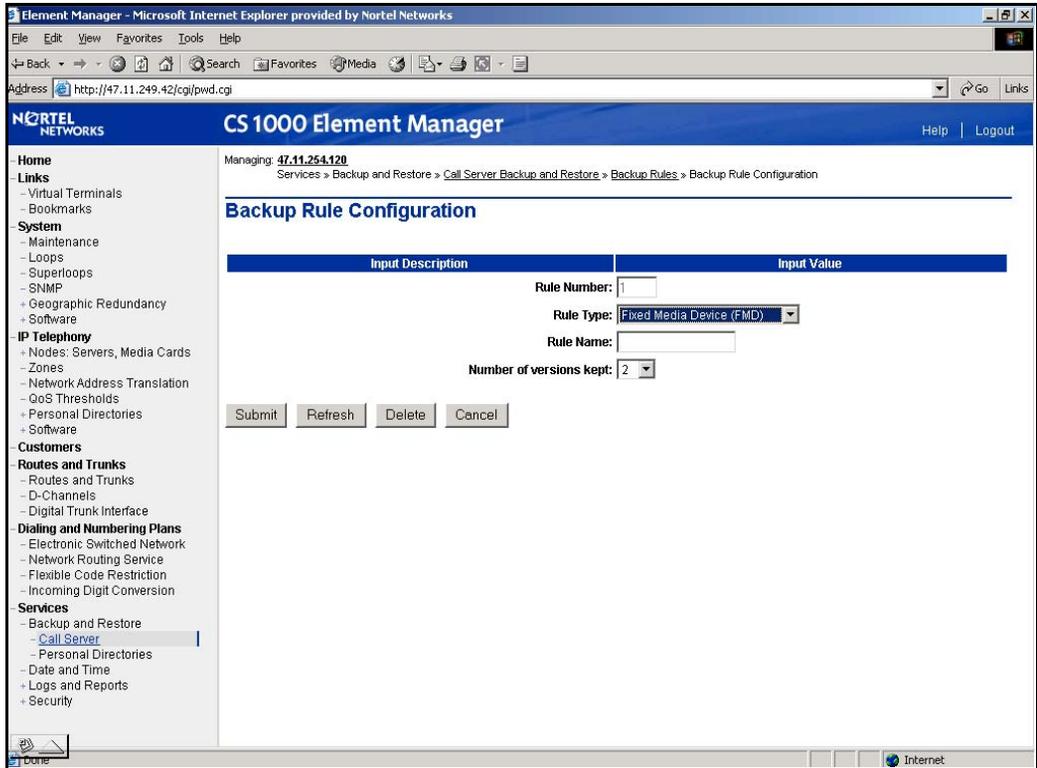
FMD rule type

The FMD rule type provides the ability to store backup files on the local fixed media device (FMD). FMD is defined as the local hard drive on a CP PII system, and the onboard Compact Flash (CF) card on a CP PIV system. The FMD rule type defines the following two parameters:

- **Name** — ranges in length from 0 to 30 characters. All characters are supported with the exception of white space. Backup rule names do not have to be unique.
- **Number of versions** — number of incremental backup versions preserved on the fixed media device. The range is from one to ten, with one as the default value. Note that this range differs from the SCS rule type, which is two to ten.

The Element Manager backup rule configuration page specific to the FMD rule type is shown in Figure 2 on [page 576](#). The backup rule number control is static and cannot be changed by the user.

Figure 2
FMD rule type in Element Manager



The **rule name** control restricts the maximum length of characters entered, and also ensures no white space characters are used. An alert box is presented when an invalid character is entered.

The FMD rule type cannot be associated with a Geographic Redundancy Database Replication Control Block. All FMD backup rules must be excluded from the list of configured backup rules presented on the Element Manager **Database replication control** page.

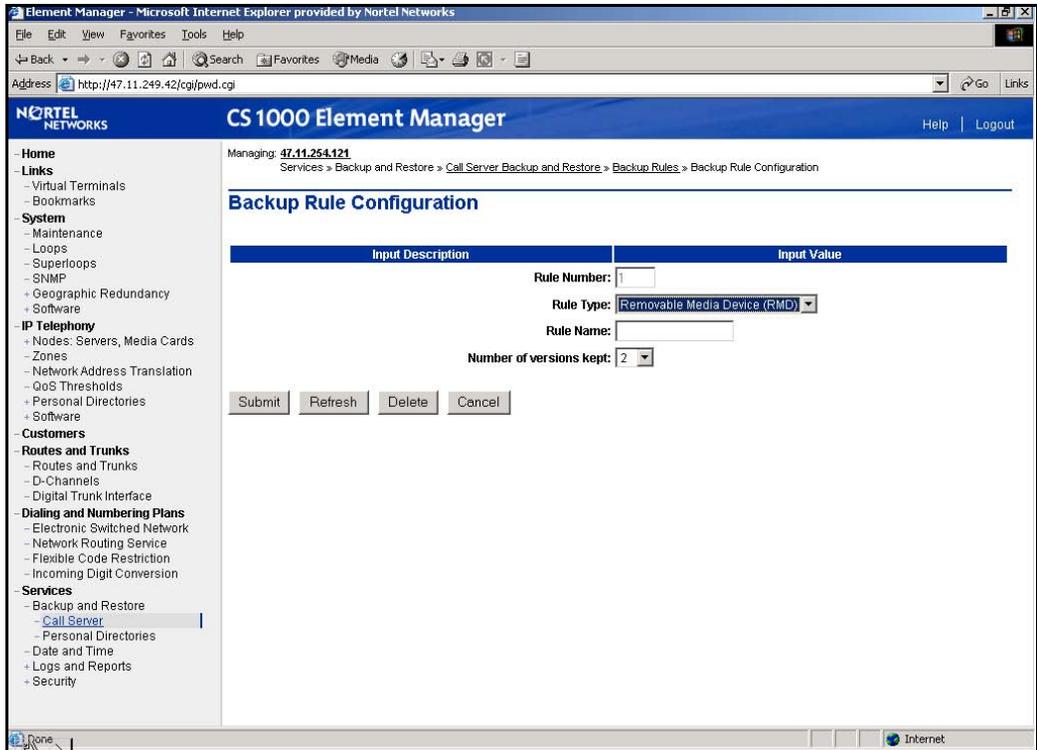
RMD rule type

The RMD rule type provides the ability to store backup files on the local RMD (faceplate CF card). The RMD rule type defines the following two parameters:

- **Name** — ranges in length from 0 to 30 characters. All characters are supported with the exception of white space. Backup rule names do not have to be unique.
- **Number of versions** — number of incremental backup versions preserved on the removable media device. The range is from one to ten, with one as the default value. Note that this range differs from the SCS rule type, which is two to ten.

The Element Manager backup rule configuration page specific to the RMD rule type is shown in Figure 3 on [page 578](#). The **backup rule number** control is static and cannot be changed by the user.

Figure 3
RMD rule type in Element Manager



The **rule name** control restricts the maximum length of characters entered, and also ensures no white space characters are used. An alert box is presented when an invalid character is entered.

The RMD rule type cannot be associated with a Geographic Redundancy Database Replication Control Block. All RMD backup rules must be excluded from the list of configured backup rules presented on the Element Manager **Database replication control** page.

Note: The RMD rule type cannot be configured on a CP PII call server.

SCS rule type

CS 1000M Large Systems (CPP) and CS 1000E systems both provide redundancy using dual processors. This allows a system to remain operational following a local component failure.

Geographic Redundancy further increases the reliability of CS 1000M Large Systems (CPP) and CS 1000E systems by providing a remote system to serve as a backup for a local system. The remote backup ensures continued service for all IP Phones in case of a catastrophic failure (for example, as a result of floods or fire)

The secondary system database is replicated from the primary system database. As a result, the secondary system must be the same type of system as the primary system. That is, a CS 1000M Large System can be backed up only by another CS 1000M Large System and a CS 1000E system can be backed up only by another CS 1000E system.

To perform the database-replication process, an SCS backup rule must be defined on the primary system. The backup rule identifies the destination ELAN network interface IP address on the secondary system for the database replication. It also defines the number of versions of the database that are kept on the secondary system.

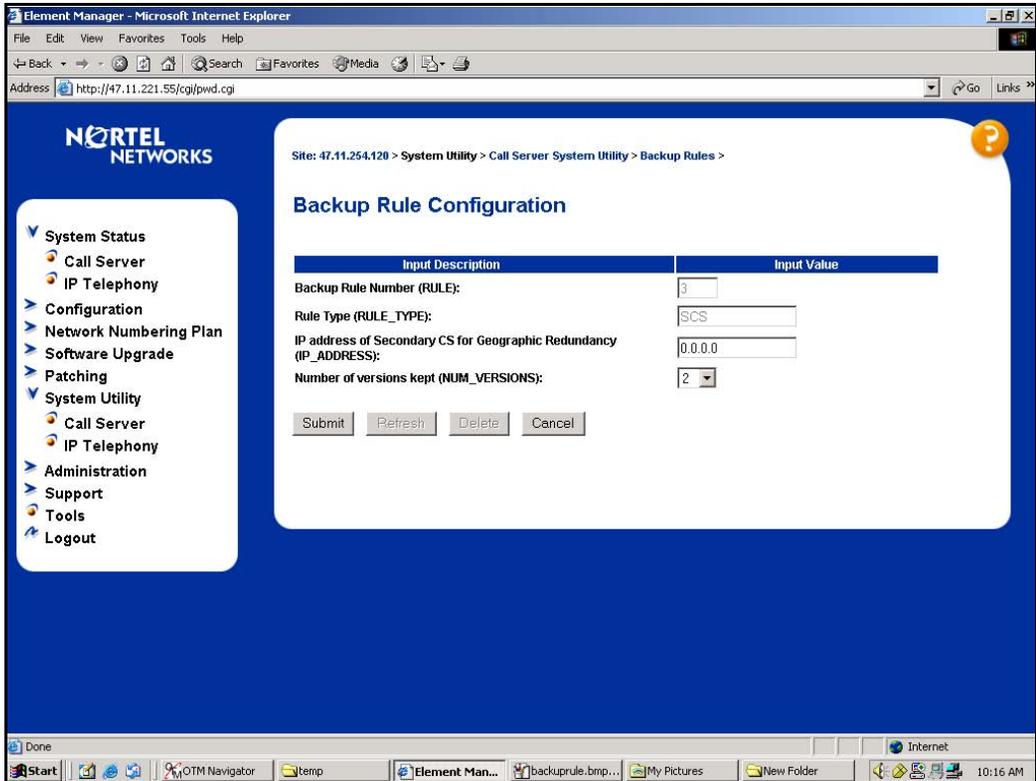
To complete the database replication successfully, the Backup Rule must be referenced in the Database Replication Control Block. See *Communication Server 1000: System Redundancy* (553-3001-307) for details.

The secondary system also uses the Backup Rule during the database-restore operation to identify the appropriate database to restore.

A backup rule can also be defined on the secondary system to provide replication to the primary system after a long-term failure. For details, refer to *Communication Server 1000: System Redundancy* (553-3001-307).

The Element Manager backup rule configuration page specific to the SCS rule type is shown in Figure 4. The **backup rule number** control is static and cannot be changed by the user.

Figure 4
SCS rule type in Element Manager



Backup schedules

Backup schedules provide the user with the ability to schedule backup operations associated with a specified backup rule. Each backup schedule defines a total of five associated parameters, as follows:

- **Schedule number** — up to ten backup schedules can be defined, numbered from one to ten.
- **Rule for BKUP** — specifies the backup rule number associated with this backup schedule. The backup rule number must be previously configured.

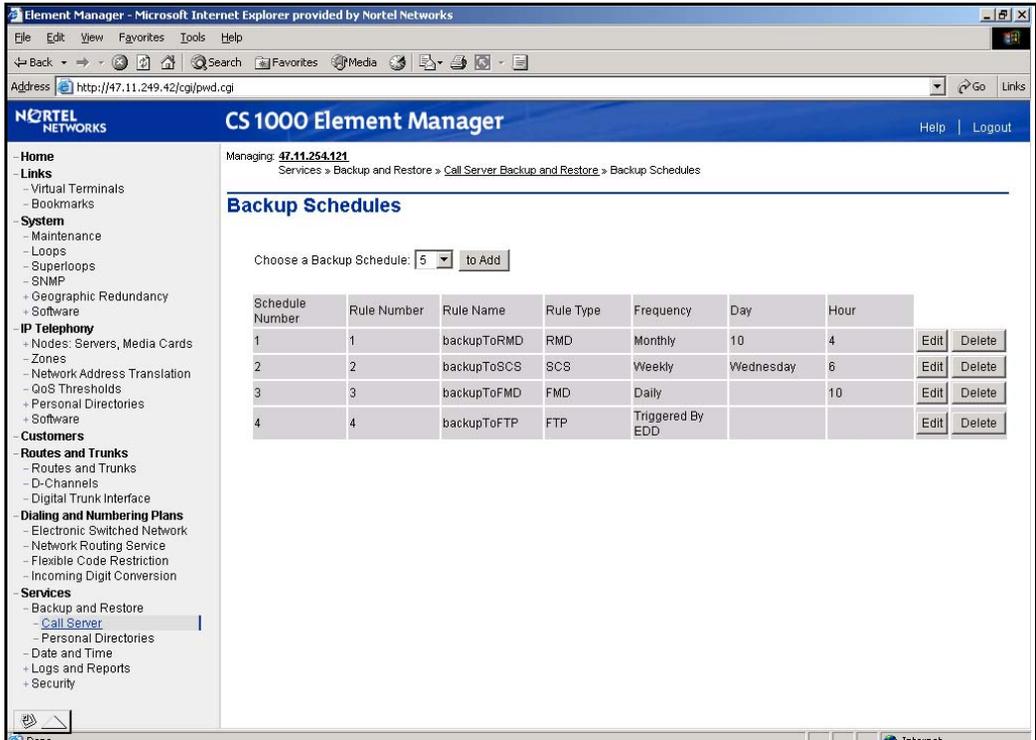
- **FREQ** — defines how often the scheduled backup operation occurs. The default is D. Not more than one backup schedule can be defined with FREQ set to the value A. Options are:
 - M (monthly)
 - W (weekly)
 - D (daily)
 - A (automatic — immediately after every EDD).
- **DAY** — specifies the day on which the backup occurs, with a default value of SU. When FREQ is M, the range is 1 to 31 with a default value of 1. This parameter does not apply when FREQ is set to either of the values D or A. When FREQ is W, the range is the days of the week as follows:
 - SU
 - MO
 - TU
 - WE
 - TH
 - FR
 - SA
- **HOURL** — specifies the hour in the day at which the backup occurs. The range is 0 to 23, with a default of 3. This parameter does not apply when FREQ is set to the value A.

Backup schedules are only supported on CP PII and CP PIV systems. A backup schedule can be created, modified, deleted, and printed by the respective command options NEW, CHG, OUT, and PRT.

Element Manager backup schedules page

The Element Manager backup schedules page allows the user to edit or delete all currently configured schedules or add a new backup schedule. Element Manager ensures all schedule information is kept current by querying the call server for all configured backup schedules and backup rules. The backup schedules page is illustrated in Figure 5 on [page 582](#).

Figure 5
Backup schedules in Element Manager



When the user selects a backup schedule to add and selects **Add**, or alternatively selects one of the **Edit** buttons, the Element Manager returns to the backup schedule configuration page.

The drop-down list specifying which backup schedule number to add only lists those backup schedules which were not previously configured on the call server.

If one or more backup rules are defined, then the backup schedules page continues to load. If no backup rules are defined, the user is presented with a confirmation box containing OK and Cancel buttons along with the following text:

At least one Backup Rule must be defined prior to using this option.

Click the OK button to begin creating one.

Selecting **OK** redirects Element Manager to the backup rules page. Selecting **Cancel** returns the browser to the backup and restore page.

Each listed backup schedule's **Delete** button provides the ability to delete the corresponding backup schedule without accessing the corresponding backup schedule configuration page. To confirm the delete, click OK. (If the confirmation is declined, the user is returned to the backup schedules page).

Click OK to confirm delete.

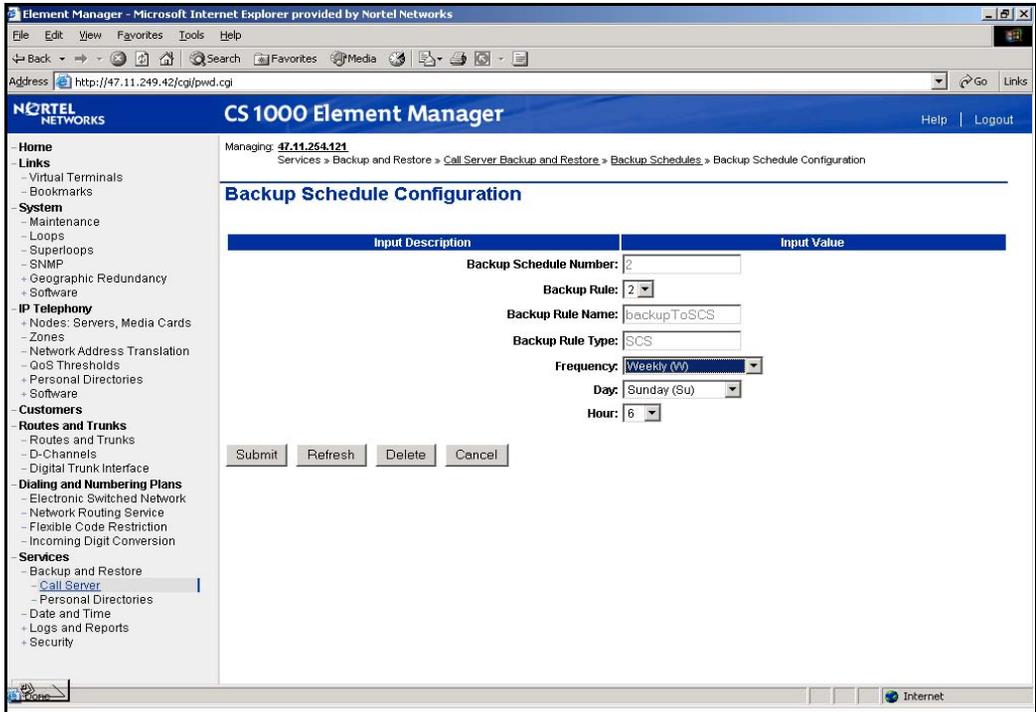
Element Manager sends a request to the call server to delete the specified backup schedule. Upon successful completion of a delete operation, the Element Manager browser reloads the backup schedules page. The deleted schedule is no longer displayed. If the delete operation cannot be completed due to an error, an alert box appears, followed by a return to the backup schedules page.

Element Manager backup schedule configuration page

The Element Manager backup schedule configuration page provides the ability to specify the settings of a particular backup schedule.

The Element Manager backup schedule configuration page is illustrated in Figure 6 on [page 584](#).

Figure 6
Backup schedule configuration in Element Manager



The backup schedule number control is static and is set based on the selections made in the backup schedules page. Possible values are one through ten.

The backup rule selection control is dynamically updated with the list of configured backup rules on the call server, with possible values being 1 through 100. The default, when adding a new backup schedule, is the lowest numbered configured backup rule. The backup rule name and backup rule type controls are read-only and are dynamically filled in, based on the selection of the backup rule number selection control.

The frequency selection control contains the selection options of:

- Monthly

- Weekly
- Daily
- Triggered by EDD

Note that the Triggered by EDD option corresponds to the overlay option *Automatic*.

The option list for the day selection control is dynamically set based on the selected value for the frequency selection control. When frequency is set to **Monthly**, then the day option list consists of the range of numbers 1 to 31, with a default of 1. When frequency is set to **Weekly**, then the day option list consists of the days of the week as follows:

- Sunday
- Monday
- Tuesday
- Wednesday
- Thursday
- Friday
- Saturday

The default is **Sunday**. When frequency is set to daily or **Triggered by EDD**, then the setting of the day selection control does not apply and is disabled.

When the user attempts to select the **Triggered by EDD** option for frequency, Element Manager ensures there are no other backup schedules which have this parameter set to **Triggered by EDD**. If this is detected, the frequency selection control is returned to its previous setting and an alert box containing the following text appears:

No more than one Backup Schedule can have a Frequency selection of "Triggered by EDD". Please select another option.

The hour selection control contains the options 0 through 23. When frequency is set to **Triggered by EDD**, the setting of the hour selection control does not apply and is disabled.

Selecting the **Submit** button initiates transfer of the backup schedule configuration to the call server.

Upon successful completion of a submit operation, the Element Manager browser returns to the backup schedules page. If the operation cannot be completed due to an error, an alert box appears, followed by a return to the backup schedules page.

Selecting the **Refresh** button causes Element Manager to reload the backup schedule configuration page with the latest data from the call server for the backup schedule. Upon successful completion of a refresh operation, the Element Manager browser returns to the backup schedules page. If the operation cannot be completed due to an error, an alert box appears, followed by a return to the backup schedules page.

Selecting the **Delete** button opens a confirmation box with the following text:
Click OK to confirm delete.

If the delete is confirmed, Element Manager sends a request to the call server to delete the specified backup schedule. Upon successful completion of a delete operation, the Element Manager browser returns to the backup schedules page. If the operation cannot be completed due to an error, an alert box appears, followed by a return to the backup schedules page.

If the user declines the confirmation, the Element Manager browser returns to the backup schedules page.

Note that when the backup schedules configuration page is loaded as a result of the user selecting the **Add** button on the backup schedules page, both the **Refresh** and **Delete** buttons are disabled.

Element Manager ensures the information in this page is kept current by querying the call server for the requested backup schedule data and the currently configured backup rules.

Backup scheduler

Backup operations can be scheduled to run automatically at user-defined intervals to user-defined destinations (such as external FTP servers or removable CF cards). This is done by defining Backup Schedules in LD 117.

The following conditions apply:

- For each schedule, the frequency (monthly, weekly, daily or automatically after every EDD) must be defined along with the day and time of the activation. A maximum of ten schedules can be defined.
- For each schedule, a backup rule must be used. It can be any rule type: FTP, FMD, RMD, or SCS.

Note: This feature is not applicable to the Secondary Call Server of the Geographic Redundancy feature.

Backup and restore maintenance

Corrupted backup data

Backup data is protected in the following ways:

- Traditional protection in the form of an archive.dat file, including the list and checksum of the files backed up.
- The new backup operation, which “envelopes” the backup data by using tar and gzip utilities to provide additional checksum protection.

If backup data is corrupted, the restore operation is aborted and the proper alarm report is generated.

FTP data transfer failure

The FTP client facility is used to access a remote FTP server for the following operations:

- manual or scheduled backup

- restore according to backup rule (manual activation only)
- viewing the backup data versions according to backup rule (manual activation only)

Manual operation

FTP connection failure on a manual operation causes generation of the proper SRPT system, providing the details of the failure (FTP server unreachable, login name/password rejected, requested directory path not found, or data transfer failed). The operation is aborted.

Automatic operation

FTP connection failure on automatic operation is automatically attempted again for a hard-coded number of times (five) with a hard-coded delay (ten seconds) between attempts.

An automatic operation FTP session occurs in sequential steps, such as copying the file to the remote site, deleting and renaming operations for the multi-version support, and so on. Any attempt to connect continues from the step that failed during the previous attempt to connect. If connection attempts exceed five, the proper SRPT system alarm report is generated and the backup operation is aborted.

Defining backup schedules

- In LD 117, define a new backup rule (or rules) by using `NEW/CHG/OUT/PRT BKPR` commands.
- In LD 43, verify the newly defined backup rules by performing manual backup (`BKR R`), printing backup data versions (`DAT R`, `DAT R V`), and manual restore (`RSR R`).
- In LD 117, define a new backup schedule (or schedules) with reference to the newly defined and verified backup rules (`NEW/CHG/OUT/PRT BKPS`).
- Wait for the scheduled time to occur.

Backup operations performed manually by entering the `BKR` command in LD 43 (or configured in backup scheduler) provide multiple versions of the

backup data preserved on the storage device. These multiple versions use incremental numbering.

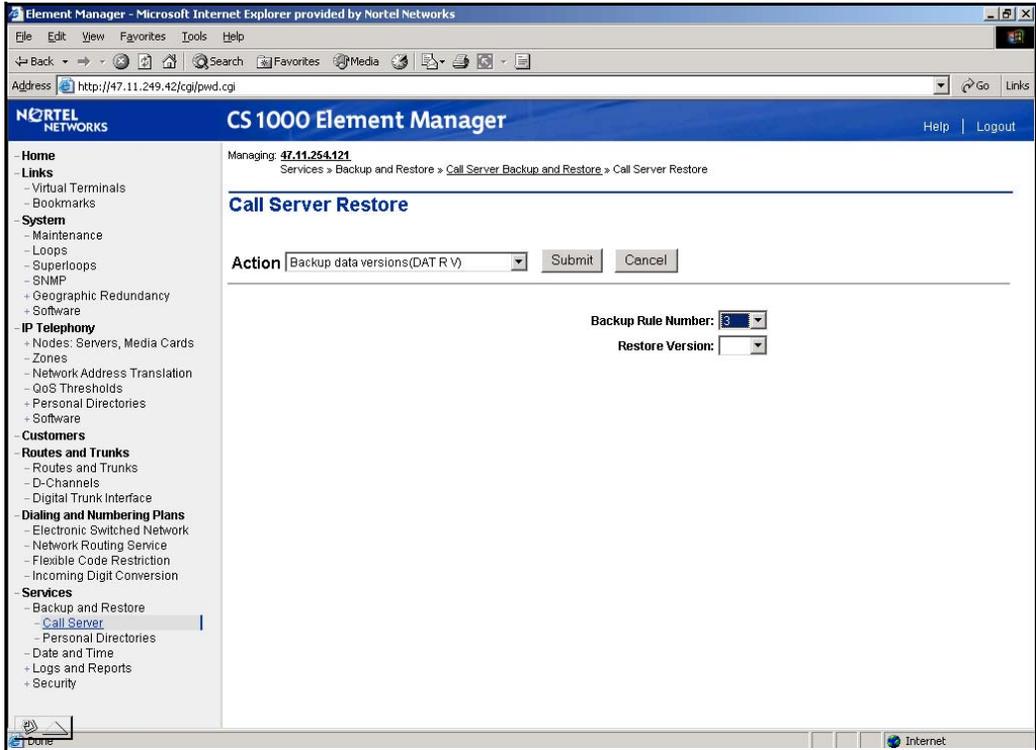
When performing a manual restore by entering the `RSR` command in LD 43, the version of the backup data must be entered as a parameter. In most cases, the latest version is chosen as version number one, but under certain conditions, information about all stored backup versions may be required. This query is provided by the enhanced `DAT` (data versions) command in LD 43.

The `DAT` command provides two possible outputs:

- A list of backup versions including incremental version numbers and date and time stamps of each version created. The `DAT` command must be entered with the backup rule number specified.
- Detailed info for a specified incremental backup version that includes the software issue, size in records, and sequential number of the `DUMP` operation. The `DAT` command must be entered with the backup rule number and incremental backup version number specified.

The modified Element Manager call server restore page is shown in Figure 7 on [page 590](#). The new backup data versions option `DAT [R [V]]` is appended to the existing list of options in the action control. This option is displayed only for CP PII and CP PIV call servers.

Figure 7
Modified call server restore page in Element Manager



When the backup data versions (**DAT [R [V]]**) option is selected, two additional drop-down list controls are displayed to query the user for the backup rule number, and optionally the backup version associated with the selected backup rule number.

The **backup rule number** control provides a dynamic list of all currently configured backup rules. The default setting is the lowest number backup rule configured. This functionality is exactly the same as the **backup rule number** control associated with the restore according to rule (**RSR X Y**) option in the action control.

The **backup data versions** control provides a list of backup data versions associated with the selected backup rule number. The option list is based on the value of the versions kept parameter of the currently selected backup rule number. This functionality is the same as the **restore version** control associated with the restore according to rule (RSR X Y) option in the action control with the exception that the additional selection option not specified is included, since this parameter is optional. The default for this control is the not specified option.

Selecting the **Submit** button results in the command being submitted to the call server for processing. The response from the call server is displayed verbatim in the call server restore page.

If no backup rules are configured, Element Manager displays an alert box with the following text.

```
There are no Backup Rules currently configured. At least one Backup Rule must be configured in order to use this option.
```

Selecting the **OK** button restores the action control to the previously selected setting.

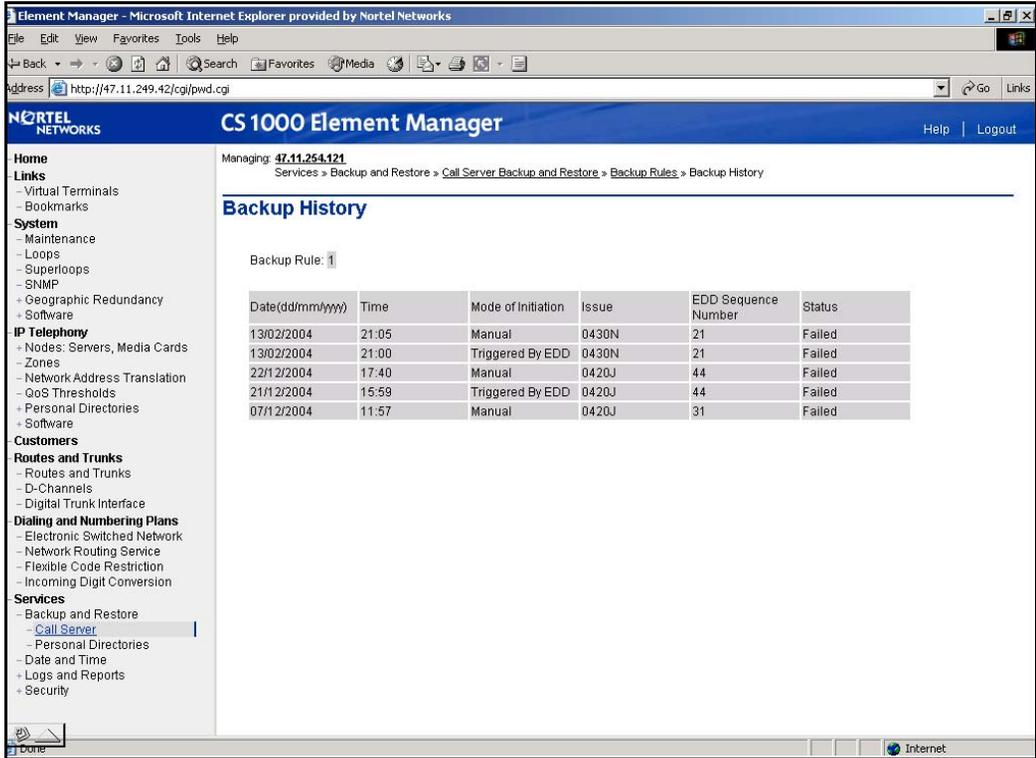
Backup history

The Backup History (BKH) command in LD 43 provides a history of attempts at archiving backup data using configured backup rules. The call server stores up to 100 previous attempts spanning all configured backup rules. The backup history command provides the following options:

- List backup attempts spanning all configured backup rules. The command provides the option to limit the number displayed, up to a maximum of 100.
- List backup attempts associated with a specific backup rule. The command provides the option to limit the number displayed, up to a maximum of 100.

Access to the data provided by the BKH command is incorporated into Element Manager on the backup rules page. The **Backup History** button is next to the **Edit** button for each backup rule, as shown in Figure 8.

Figure 8
Backup history page in Element Manager



Clicking the **Backup History** button redirects Element Manager to the backup history page, which lists all recorded backup attempts (potentially up to 100) for the specified backup rule, in reverse chronological order.

Backup history on the Element Manager Home page

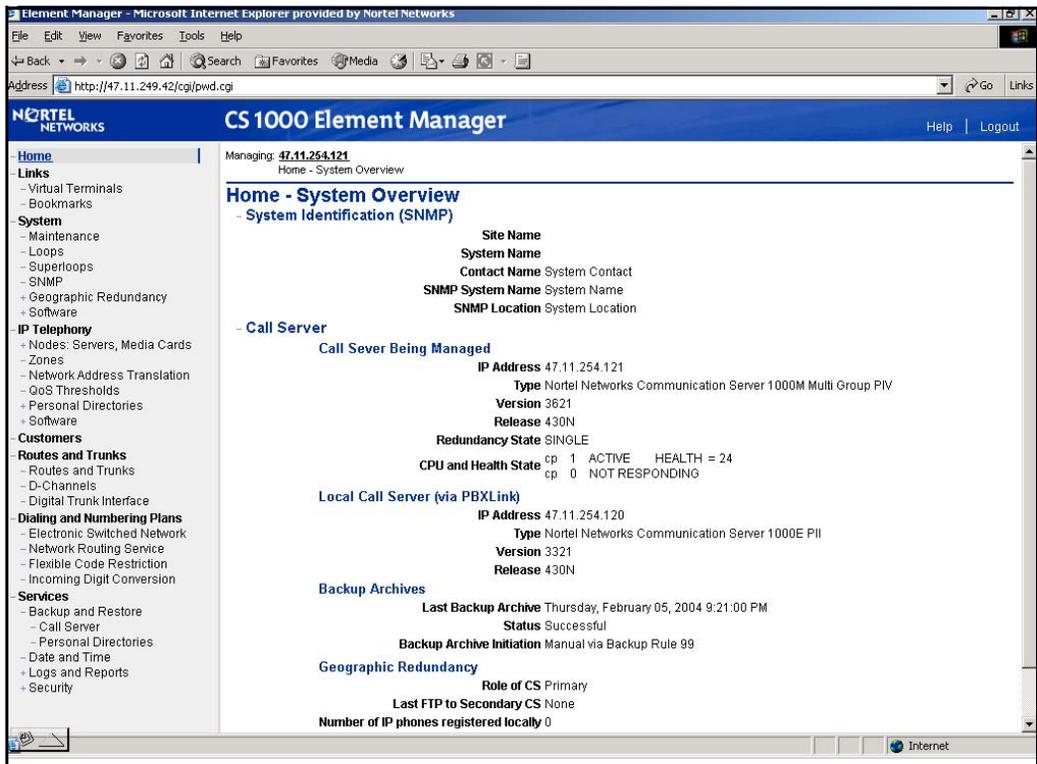
The Element Manager Home page provides a brief summary of the status of backup data archives, as shown in Figure 9. This summary is only applicable to CP PII and CP PIV systems.

The information required to populate this section of the Element Manager Home page is retrieved from the call server using the `BKH` command. Element Manager must parse the retrieved information to determine the details of the last successful backup archive.

The **Last Successful Backup Archive** field and the corresponding **Backup Archive Initiation** field are displayed only when the value of the **Status** field is **Failed**.

If that information is not available for the last backup archive and/or the last successful backup archive, the corresponding fields are assigned the text `Not Available`.

Figure 9
Backup history on the Element Manager Home page



The reliability of data displayed on the Element Manager Home page is dependent on the time at which the user logged in to Element Manager. If information changes following login, it is not reflected on the Element Manager Home page during the current Element Manager login session. To redisplay the most current information, the user must open a new Element Manager login session, either by logging out of the current session and logging back in, or by logging in using another User ID.

Overlay administration

Backup to an external FTP server (FTP backup rule)

During a backup operation, the backup data files are grouped into one file using the tar utility, compressed using the gzip utility, and copied to the local hard disk.

During a restore operation, the specified version of the backup data file is copied from the local hard disk, de-grouped using the tar utility, and decompressed using the gzip utility.

LD 117 Ethernet and Alarm Management (Part 1 of 2)

Command	Description
NEW/CHG BKPR <rule number 1-100> FTP <IP addr> <login> <pwd> <path> [<N of versions 1-10>] [<name>]	<p>Add or change a backup rule, where:</p> <p>rule number = 1-100. Up to 100 rules can be defined. Each rule is a pattern that can be further used. These rules can be used by the GRDRC block, defined in LD 117, by the backup schedules, or for manual backup and restore operation (BKR/RSR commands activated from LD 43).</p> <p>FTP = mnemonic for this rule type</p> <p>IP addr = IP address of the FTP server to be accessed for storing (Backup) or retrieving (Restore) backup data</p> <p>login = login name to access the FTP server, up to 32 characters</p> <p>pwd = login password to access the FTP server, up to 32 characters</p> <p>path = path on the FTP server where the backup data file (or files for incremental versions) is located, up to 64 characters</p>

LD 117 Ethernet and Alarm Management (Part 2 of 2)

Command	Description
	<p>N of versions = (1)-10 number of incremental backup data versions preserved on the FTP server</p> <p>name = rule name - text without white spaces, up to 30 characters</p> <p>Note 1: The only backup rule type that can be referenced from GRDRC is SCS.</p> <p>Note 2: The <name> parameter is also added as optional when defining a new backup rule with SCS type (introduced in CS 1000 Release 4.5 Geographic Redundancy).</p>

Backup to FMD (FMD backup rule)

During a backup operation, the backup data files are grouped into one file using the tar utility, compressed using the gzip utility, and copied to the FMD.

During a restore operation, the specified version of the backup data file is copied from the FMD, de-grouped using the tar utility, and decompressed using the gzip utility.

LD 117 Ethernet and Alarm Management (Part 1 of 2)

Command	Description
NEW/CHG BKPR <rule number 1-100> FMD [<N of versions>] [<name>]	<p>Add or change a backup rule, where:</p> <p>rule number = 1 - 100. Up to 100 rules can be defined. Each rule is a pattern that can be further used. RMD rules can be used by the backup schedules or for manual backup and restore operation (BKR/RSR commands activated from LD 43).</p> <p>FMD = mnemonic for this rule type</p>

LD 117 Ethernet and Alarm Management (Part 2 of 2)

Command	Description
	<p>N of versions = (1)-10 number of incremental backup data versions preserved on the local hard disk</p> <p>name = rule name - text without white spaces, up to 30 characters</p> <p>Note: The <name> parameter is also added as optional when defining a new backup rule with SCS type (introduced in CS 1000 Release 4.5 Geographic Redundancy).</p>

Backup to RMD (RMD backup rule)

During a backup operation, the backup data files are grouped into one file using the tar utility, compressed using the gzip utility, and copied to the local RMD.

During a restore operation, the specified version of the backup data file is copied from the local RMD, de-grouped using the tar utility, and decompressed using the gzip utility

LD 117 Ethernet and Alarm Management (Part 1 of 2)

Command	Description
<p>NEW/CHG BKPR <rule number 1-100> RMD [<N of versions>] [<name>]</p>	<p>Add or change a backup rule, where:</p> <p>rule number = 1 - 100. Up to 100 rules can be defined. Each rule is a pattern that can be further used. RMD rules can be used by the backup schedules or for manual backup and restore operation (BKR/RSR commands activated from LD 43).</p> <p>RMD = mnemonic for this rule type</p>

LD 117 Ethernet and Alarm Management (Part 2 of 2)

Command	Description
	N of versions = (1)-10 number of incremental backup data versions preserved on the local removable media device name = rule name - text without white spaces, up to 30 characters
Note: The <name> parameter is also added as optional when defining a new backup rule with SCS type (introduced in CS 1000 Release 4.5 Geographic Redundancy).	

Backup to SCS (SCS backup rule)

During a backup operation, the backup data files are grouped into one file using the tar utility, compressed using the gzip utility, and copied to the FMD (CP PIV) or MMDU hard drive (CP PII).

During a restore operation, the specified version of the backup data file is copied from the FMD (CP PIV) or MMDU hard drive (CP PII), de-grouped using the tar utility, and decompressed using the gzip utility

LD 117 – Ethernet and Alarm Management

Command	Description
NEW BKPR xxx aaa b...b yy	Add a new Backup Rule, where: <ul style="list-style-type: none">• xxx = Backup Rule number ID = 1-100.• aaa = rule type = SCS. Currently, this is the only rule type that exists: it allows direct replication to another system.• b...b = ELAN network interface IP address of the destination system.• yy = the number of database versions to save on the destination system = (2)-10.
CHG BKPR xxx aaa b...b yy	Change a Backup Rule, where: <ul style="list-style-type: none">• xxx = Backup Rule number ID = 1-100.• aaa = rule type = SCS. Currently, this is the only rule type that exists: it allows direct replication to another system.• b...b = ELAN network interface IP address of the destination system.• yy = the number of database versions to save on the destination system = (2)-10.
OUT BKPR xxx	Remove backup rule, where: <ul style="list-style-type: none">• xxx = Backup Rule number ID = 1-100
PRT BKPR xxx	Print backup rule, where: <ul style="list-style-type: none">• xxx = Backup Rule number ID = 1-100 If no rule number is entered, then all Backup Rules are printed.

Removing a backup rule

LD 117 Ethernet and Alarm Management

Command	Description
---------	-------------

OUT BKPR <rule number 1-100> Remove a backup rule

Note: Backup rules must be entered one per command line. Entering multiple backup rules on one command line is not supported.

Printing a backup rule

LD 117 Ethernet and Alarm Management

Command	Description
---------	-------------

PRT BKPR <rule number 1-100> (ALL) Print a backup rule

number of Backup Rules defined = 4

NN	Dest	Parameters	N of V	Name
1	SCS	111.22.133.44	10	1+1_GR_DB_dup
2	FTP	55.166.77.188 guest switch1/backup	3	
3	FMD		2	
4	RMD		4	To_CF_4_vers

Note: For security reasons the FTP password is not printed.

Adding or changing a backup schedule

LD 117 Ethernet and Alarm Management

Command	Description
NEW/CHG BKPS <schedule number 1-10> <Rule for BKUP> <FREQ> <DAY> <HOUR>	<p>Add or change a backup schedule, where:</p> <p>Rule for BKUP = number of the backup rule for the scheduled backup operation</p> <p>FREQ = M/W/(D)/A - defines how often the scheduled backup should take place:</p> <p>M - monthly</p> <p>W - weekly</p> <p>D - daily</p> <p>A - automatically immediately after every EDD operation activated. There cannot be more than 1 schedule defined with FREQ = A</p> <p>DAY = day of the week (SU) / MO / TU / WE / TH / FR / SA if FREQ = W or date of the month (1) - 31 if FREQ = M</p> <p>If FREQ = M and the day specified is greater than the number of days in the current month, the backup will take place on the last day of the current month</p> <p>If FREQ = D, the next parameter will be HOUR and not DAY</p> <p>HOUR = 0- (3) -23 - hour of the day</p>

Note: This rule type is not allowed if the GRPRIM/GRSEC package is equipped and the rule is used in GRDRC.

Removing a backup schedule

LD 117 Ethernet and Alarm Management

Command	Description
OUT BKPS <schedule number 1-10>	Remove a backup schedule

Printing a backup schedule

LD 117 Ethernet and Alarm Management

Command	Description
PRT BKPS <schedule number 1-10> /ALL	Print a backup schedule

number of Backup Schedules defined = 3

NN	Backup_Rule	Frequency	Day	Hour
1	2	Monthly	1	3
2	3	Weekly	Su	5
3	4	Auto		

Boss/Secretary Filtering Enhancement

Contents

This section contains information on the following topics:

Feature description	603
Operating parameters	604
Feature interactions	605
Feature packaging	606
Feature implementation	607
Feature operation	610

Feature description

The Boss/Secretary Filtering Enhancement (BSFE) feature is designed for a boss/secretary environment.

Prior to the introduction of the BSFE feature, a boss could forward incoming calls to secretary/secretaries for screening.

With the BSFE feature, incoming calls are forwarded from the boss to a designated secretary using the Call Forward and Busy Status (BFS) key. A maximum of 16 BFS keys can be configured on the boss telephone. A corresponding BFS key is configured on each secretary telephone. The following enhancements are also introduced by this feature:

- Display capabilities: If the Display key is pressed during an incoming filtered call, the calling party's name and number appear on the telephone display.

- Transfer capabilities: If a secretary presses the BFS key once, listens for the boss to pickup and presses the BFS key a second time, the incoming filtered call is transferred back to the boss.
- New Classes of Service: The Boss Secretary Filtering Enhancement Class of Service Allowed (BFEA) or Denied and the Recall to Boss Allowed (RCBA) or Denied (RCBD).
- Key Lamp status: The BSFE feature allows configuration of the LCD indicator for the BFS key. It is possible to configure the same LCD lamp status to
 - Dark (key lamp is off)
 - Lit (key lamp is steadily lit)
 - Wink
 - Flash (continual flash of light, 60 ipm)

The BSFE feature is configured on the boss telephone, with a defined BFS key for each secretary that the boss may select to filter the boss' incoming calls. The telephone will also have a designated key matching the boss key. The BFS key must be a single appearance DN for the boss and the secretary telephones. The BFS keys for the boss/secretary telephones are configured in pairs and are on the same node.

Operating parameters

Proprietary telephones with display support the BSFE feature. The BSFE feature cannot be configured for analog (500/2500) telephones or Integrated Services Digital Network (ISDN) BRI telephones. The ringing appearance of the DN can be on an analog (500/2500) telephone but not for a private line.

The BSFE feature cannot be activated simultaneously with the following features:

- Call Forward and Busy Status
- Call Forward All Calls
- Remote Call Forward
- Flexible Feature Code Boss Secretarial Filtering

The BSFE feature supports a maximum of 16 secretary telephones associated with the boss telephone.

With the BSFE feature, the BFS key of the boss is generally non-ringing with key lamp indication notification; the secretary telephone is set up as ringing.

The BSFE feature cannot be activated if the DN of either telephone is configured as an Automated Call Distribution (ACD) key.

Feature interactions

Hold

If the BSFE feature is active, the secretary answers the incoming boss call by pressing the SCR key or by pressing the BFS key. If the call is answered on the BFS key, pressing the key a second time will automatically put the call on hold and autodial the DN of the boss. If the class of service of the telephone is Auto Hold Allowed (AHA) and the call is on the BFS key, pressing the SCR key a second time puts the call on hold. If the class of service of the telephone is Auto Hold Denied (AHD) and the call is on the BFS key, pressing the SCR key again releases the call.

Hotline

Hotline takes precedence over BSFE. Hotline calls to the boss telephone are not filtered, even if the BSFE feature is active. The hotline calls are directed to the boss telephone.

Voice Call

If the Voice Call key/lamp is configured as the boss DN on a third party's telephone, the call is not filtered by the BSFE feature and the call terminates on the boss telephone.

Voice Mail

If a call is unanswered, whether the BSFE feature is active or deactivated, the voice mail message is sent directly to the voice mail box of the boss.

The BSFE feature takes precedence over the following features:

- **Camp On**
If the BSFE feature is active on the boss telephone, the incoming calls are not camped on this DN but are sent directly to the secretary telephone.
- **Call Waiting**
If a call comes in while the boss is on a call and the BSFE feature is active, the call is sent directly to the secretary telephone.
- **Call Forward and Hunt Override**
If a secretary calls the boss without using the Call Forward and Busy Status (BFS) key, the call goes back to the secretary. If the secretary uses the BFS key when calling the boss, the call goes to the primary DN of the boss.
- **Do Not Disturb**
If the BSFE feature is active on the boss telephone, the Do Not Disturb (DND) is overridden and the call is sent directly to the secretary.
- **Hunting**
If the boss has Hunt configured and the BSFE feature is active, an incoming call is forwarded to the secretary, not sent through the hunt chain. If the secretary telephone is busy, the call follows the secretary hunt list.
- **Make Set Busy**
If the BSFE feature and the MSB key is active, the incoming call is sent directly to the secretary; the caller does not receive a busy tone.
- **Private Line**
Private Line calls are filtered by the secretary if the BSFE feature is active.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Configure the lamp status for the Boss/Secretary Filtering Enhancement feature.
- 2 LD 15 – Configure Offhook Alarm Security.
- 3 LD 11 – Configure the Boss/Secretary Filtering Enhancement feature for Meridian proprietary telephones.

Note: The technician must be aware of the various configurations allowed for the LCD lamp notification states (dark, lit, wink, and flash) to avoid user confusion. The default lamp status states are shown below.

Boss telephone	Boss telephone with BFS deactivated	Boss telephone with BFS activated
Idle	Dark ▷	Wink ▷
Busy	Lit ▶	Flash ▶▶

LD 15 – Configure the lamp status for the Boss/Secretary Filtering Enhancement feature.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	FTR	Features and Options data.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
...	...	

BSFE	YES	YES = Allow Boss/Secretary Filtering Enhancement feature. (NO) = Deny Boss/Secretary Filtering Enhancement feature.
- ACT_IDLE	(WINK) FLSH LIT DARK	Boss's Lamp status when BSFE is active and telephone is idle. LCD Lamp flash rate is 60 impulses per minute. LCD Lamp flash rate is 30 impulses per minute. LCD Lamp is on. LCD Lamp is dark.
- ACT_BUSY	(FLSH) WINK LIT DARK	Boss's Lamp status when BSFE is active and telephone is busy. LCD Lamp flash rate is 30 impulses per minute. LCD Lamp flash rate is 60 impulses per minute. LCD Lamp is on. LCD Lamp is dark.
- DACT_IDLE	(DARK) WINK LIT FLSH	Boss's Lamp status when BSFE is disabled and telephone is idle. LCD Lamp is dark. LCD Lamp flash rate is 60 impulses per minute. LCD Lamp is on. LCD Lamp flash rate is 30 impulses per minute.
- DACT_BUSY	(LIT) WINK FLSH DARK	Boss's Lamp status when BSFE is disabled and telephone is busy. LCD Lamp is on. LCD Lamp flash rate is 60 impulses per minute. LCD Lamp flash rate is 30 impulses per minute. LCD Lamp is dark.
...	...	

LD 15 – Configure Offhook Alarm Security.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	OAS	Off-Hook Alarm Security options.

CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
ODN0	xxxx	Offhook Alarm Security for zone 0

LD 11 – Configure the Boss/Secretary Filtering Enhancement feature for Meridian proprietary telephones.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	a...a	Telephone type, as defined in LD 11.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
DES	x..x	Office Data Administration System Designator
CUST	xx	Customer number, as defined in LD 15
...	...	
CLS	BFEA	BFEA = Allow Boss/Secretary Filtering Enhancement for telephone. (BFED) = Deny Boss/Secretary Filtering Enhancement for telephone.
CLS	RCBA	RCBA = Allow Recall to boss on telephone basis. (RCBD) = Deny Recall to boss on telephone basis. Note: This class of service forwards unanswered calls back to the boss after a specified number of rings.

<p>...</p> <p>KEY</p>	<p>...</p> <p>xx BFS l s c u xx BFS c u</p>	<p>Call Forward and Busy Status (BFS) key. xx = key number. l = loop, s = shelf, c = card, u = unit for Large Systems. c = card, u = unit for Small Systems and CS 1000S systems.</p> <p>The TN can be the same telephone or any other digital telephone in the same node. Configure the TN of the same telephone against the BFS key only if the Class Of Service is BFEA.</p>
-----------------------	---	---

Feature operation

To control the BSFE feature from the boss telephone:

Activate:

- 1 Press the BFS boss key once. The display shows:
PRESS BFS KEY OF SEC.
- 2 Press the specific BFS secretary key to designate the secretary to filter the calls. The designated secretary's BFS key lamp winks on all telephones with the default lamp status.

Note: The display clears on the boss telephone. To refresh the display, press the release key.

Deactivate:

- 1 Press the BFS boss key once. The display shows:
CANCEL FILTERING?
- 2 Press the BFS boss key for the second time. The feature is deactivated. The designated boss BFS key lamp turns DARK on all telephones with the default lamp status.

To control the BSFE feature from the secretary telephone:**Activate:**

- 1 Press the BFS boss key once The display shows
ACTIVATE FILTERING?
- 2 Press BFS boss key for the second time. This telephone becomes the secretary telephone. The display is cleared. The designated boss BFS key lamp WINKS on all telephones with the default lamp status.

Deactivate:

- 1 Press BFS boss key for once. The display shows:
CANCEL FILTERING?
- 2 Press the BFS boss key second time. The feature is deactivated. The display is cleared. The designated boss BFS key lamp turns DARK on all telephones with the default lamp status.

To modify the BSFE from another secretary telephone:

- 1 Press the boss BFS key from another secretary telephone once. The display shows:
MODIFY FILTERING?
- 2 Press the boss BFS key from the same telephone the second time. This secretary telephone becomes the new secretary filtering the calls of the boss telephone. The display is cleared.

Accept incoming call by boss:

- 1 Go offhook; press the SCR key.
- 2 Press the BFS boss key.

To transfer an incoming call from the secretary to the boss telephone:

- 1 Go off hook/press the SCR key to answer the ringing call.
- 2 Press the BFS boss key for the first time. The boss telephone rings.

- 3 The boss telephone answers the call.
- 4 Press the BFS boss key for the second time; this moves the call from the secretary telephone to the boss telephone.

The display - boss and secretary:

- 1 Press the Display key.
- 2 Press the BFS key. The telephone display shows the DN number of telephone filtering the boss calls.
- 3 The name and number of calls being filtered is displayed on the boss telephone.

Note: When the BSFE feature is activated on the boss telephone, the BFS key flashes on all secretary telephones associated with the boss telephone. This indicates the boss calls are being filtered. Each secretary can press the BFS key to display on their telephone. The secretary telephone filters the calls.

Bridging

Contents

This section contains information on the following topics:

Feature description	613
Operating parameters	613
Feature interactions	614
Feature packaging	614
Feature implementation	614
Feature operation	614

Feature description

With Bridging, the same DN can appear on up to eight single-line telephones. A maximum of five of these telephones can be equipped with ringers.

Incoming calls ring all telephones with a ringer connected and can be answered at any of the single-line telephones.

Operating parameters

A maximum of five C4A ringers are allowed on one parallel loop.

Feature interactions

Privacy

Privacy is lost when telephones are bridged. Any appearance of the DN can enter the call by going off-hook.

Feature packaging

This feature is included in base system software.

Feature implementation

There are no specific implementation procedures for this feature.

Feature operation

No specific operating procedures are required to use this feature.

Busy Lamp Field

Contents

This section contains information on the following topics:

Feature description	615
Operating parameters	619
Feature interactions	619
Feature packaging	620
Feature implementation	620
Feature operation	623

Feature description

When a DN is blocked due to the Attendant Blocking of Directory Number feature, the Busy Lamp Field/Enhanced Busy Lamp Field lamp corresponding to this DN displays the busy status of the DN as for ringing calls.

Busy Lamp Field/Console Graphics Module

The Busy Lamp Field/Console Graphics Module (BLF/CGM) is an add-on module for the M2250 attendant console. It can be configured to display the status of a specified 150 consecutive DNs (Standard Busy Lamp Field (SBLF)), or all DNs, 100 at a time (Enhanced Busy Lamp Field [EBLF]). By monitoring the status, an attendant can tell a caller if the DN is busy prior to extending the call.

Enhanced Busy Lamp Field (EBLF) Array, displays the status of all DN's for a customer. The BLF/CGM displays the status of 100 DN's at a time on up to 63 M2250 attendant consoles. Each of the Console Graphics Modules can display a different hundreds group, while up to 20 CGMs can display the same hundreds group simultaneously.

When the attendant extends a call, a hundreds group is displayed after enough digits have been entered to determine the group. After a group has been established, the BLF/CGM shows the status for each DN in that group. Figure 3 shows an example of the EBLF on the BLF/CGM.

The EBLF continues to display the status of the hundreds group until another group is determined or until the module is cleared. The display is updated whenever the status of a DN in that group changes. The BLF is cleared when the attendant dials a new series of digits or releases the call.

Figure 3 shows the Standard Busy Lamp Field (SBLF) display on the CGM. The first and last DN's in the displayed group are listed as START EXT and END EXT. The START and END EXT DN's show the hundreds group displayed. The top row on the CGM designates the tens group. The left side shows the ones group. Figure 3 shows the busy DN's to be 3403, 3408, 3410, 3421, 3482, 3488, 3494, 3500, 3543, and 3549.

Figure 4 shows a system monitored by the EBLF. Each telephone represents a busy DN, listed beneath the telephone icon. The display screen at the top of the module defines the hundreds group as 35. The CGM displays the busy DN's within that group. The larger squares represent busy telephones within the group, and the smaller squares represent idle DN's. The attendant can quickly see which telephones are busy and which are idle.

Figure 3
Standard Busy Lamp Field on the BLF/CGM

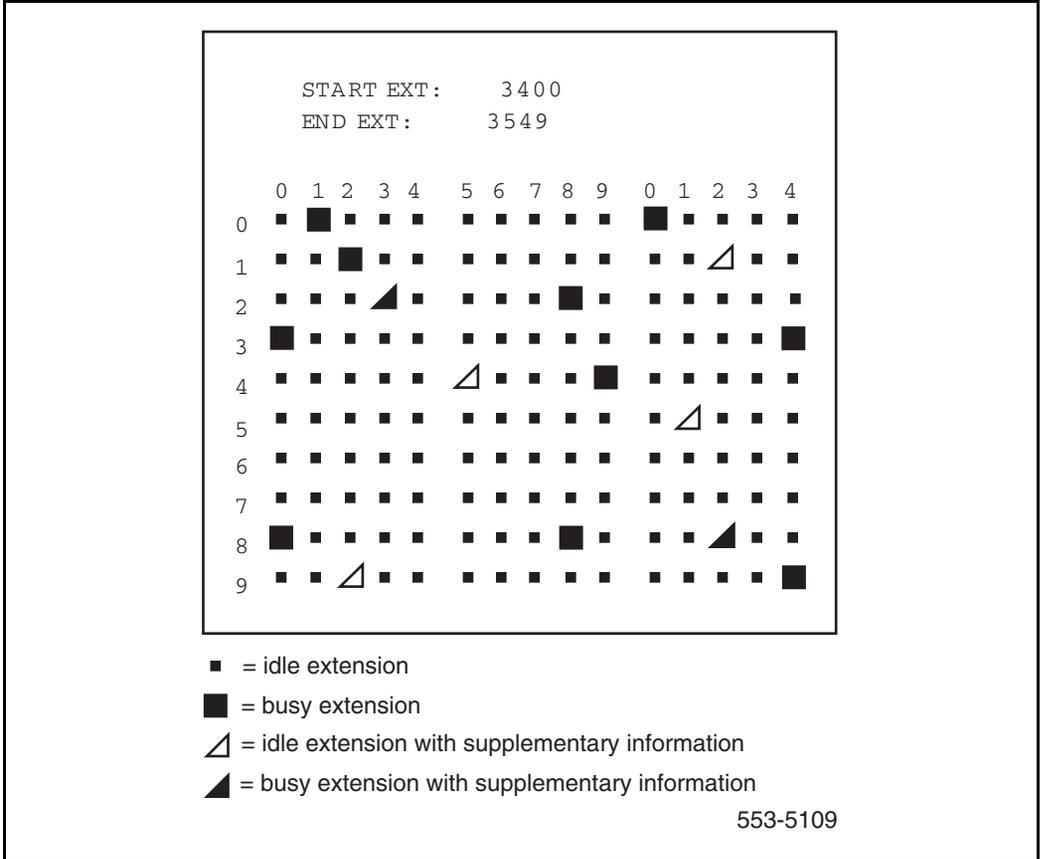
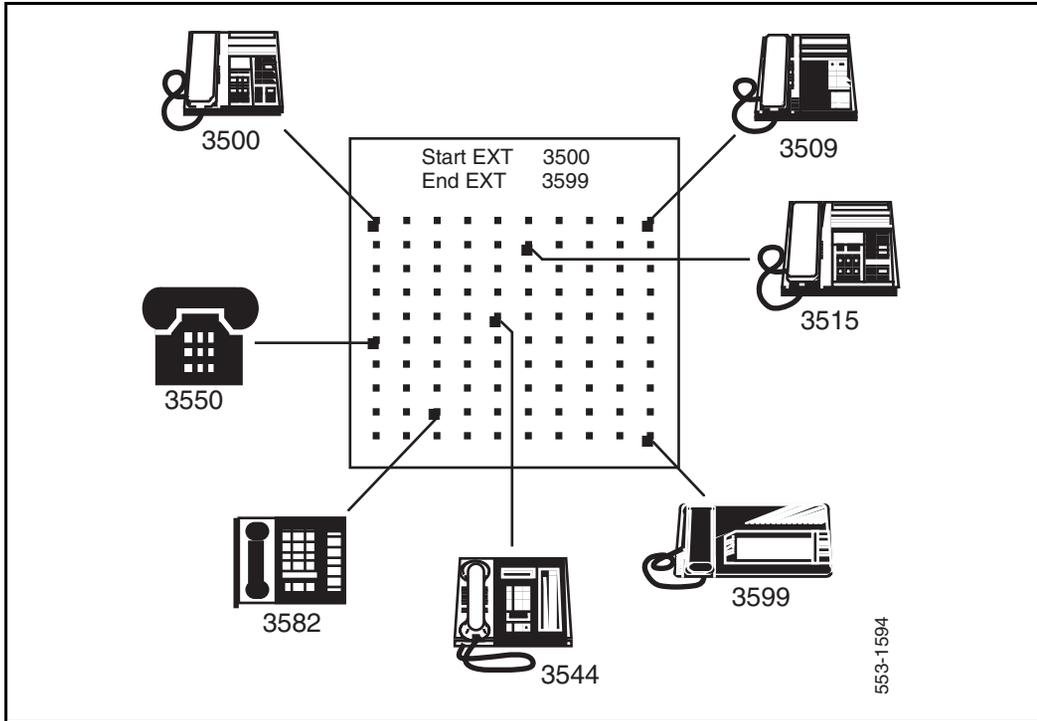


Figure 4
Enhanced Busy Lamp Field monitoring (example)



Operating parameters

Enough hundreds groups must be defined to support the maximum number of telephones to be monitored. The maximum number of hundreds is 99.

The EBLF requires an M2250 attendant console equipped with a BLF/CGM.

The SBLF and the EBLF are incompatible.

The EBLF supports mixed dialing plans (4, 5, 6, or 7 digits), but each hundreds group defined must be unique. For example, DNs 25XX and 25XXX cannot be configured in the same system. Any other DN group must begin with something other than 25 because, in this case, the CGM would be updated for DNs 2500 through 2599.

Only 20 attendant consoles can be updated for the same hundreds group simultaneously. If more than 20 consoles are monitoring the status of a single hundreds group, only the first 20 are updated. The remaining consoles display the earlier status, and an error message is output at this occurrence. (An unlimited number of consoles can be updated when they display different hundreds groups.)

When the Make Set Busy key is activated or deactivated, BLF updates only the first DN it finds on the attendant console. Lamp audit updates the status of subsequent DNs on the BLF.

Feature interactions

Attendant Blocking of Directory Number

When a DN is blocked due to the Attendant Blocking of DN feature, the Busy Lamp Field/Enhanced Busy Lamp Field lamp corresponding to this DN displays the busy status of the DN as for ringing calls.

Call Park

A busy lamp field can be equipped to display the status of System Park DNs.

Idle Extension Notification

When an extension that is being supervised for an Idle Extension Notification to the attendant becomes idle, it is kept busy from receiving any incoming calls. The lamp on the attendant console for that DN will display a busy status, according to the parameters of the Busy Lamp Field/Enhanced Busy Lamp Field feature.

It is not possible to request Idle Extension Notification if the Busy Verify feature has been activated after the Busy Verify key is pressed.

Make Set Busy

When a Make Set Busy key is activated, the Busy Lamp Field array will indicate that the first DN only on that telephone is busy.

Feature packaging

- Busy Lamp Field Array (BLFA) is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Define the Busy Lamp Field/Console Graphics Module options in the Customer Data Block.
- 2 LD 12 – Identify which attendant consoles have Enhanced Busy Lamp Field on the BLF/CGM.
- 3 LD 10 – Activate DN hundreds groups for EBLF for each DN within each hundreds group.
- 4 LD 11 – Activate DN hundreds groups for EBLF for each DN within each hundreds group.

LD 15 – Define the Busy Lamp Field/Console Graphics Module options in the Customer Data Block.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	ATT_DATA	Attendant console options
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- OPT	(XBL) IBL	(Exclude) include Enhanced Busy Lamp Field.

LD 12 – Identify which attendant consoles have Enhanced Busy Lamp Field on the BLF/CGM.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	2250	Attendant console type.
TN		Terminal Number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
EBLF	(BLFD) BLFA	(Deny) allow Enhanced Busy Lamp Field.

Note: When the BLF is configured before the telephones are programmed, the procedures in LD 10 and LD 11 are not required. As an alternative to reentering data when the BLF is configured after the telephones, a SYSLOAD associates the DN with the Hundreds Group (HGRP).

LD 10 – Activate DN hundreds groups for EBLF for each DN within each hundreds group.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
DN	xxx...x	Reenter Directory Number (no change necessary).

LD 11 – Activate DN hundreds groups for EBLF for each DN within each hundreds group.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx aaa yyy...y	Reassign Directory Number (no change necessary), where: xx = key number aaa = DN type, and yyy...y = Directory Number.

Feature operation

To display the status of extensions on the BLF/CGM (attendant), follow these steps:

- 1** Press the **SHIFT** key, then the conf. 6/BLF key.
The console is in the BLF mode.
- 2** Press the **Mode** key .
The BLF/CGM screen displays the main menu.
- 3** Dial 0 (zero).
The BLF/CGM displays the SBLF or the EBLF, depending on which option is configured in the system software.

Busy Tone Detection for Asia Pacific and CALA

Contents

This section contains information on the following topics:

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Feature description

The Busy Tone Detection feature for Asia Pacific and CALA uses the Digital Signaling Processor Universal Trunk (DXUT) card. This card is based on the Extended Universal Trunk card (EXUT) and allows for the following two capabilities:

- Flexible Busy Tone Detection
- Automatic Balance Impedance (AUTO_BIMP in Overlay 14)

The Flexible Busy Tone Detection functionality of this trunk card allows the system to recognize busy tones sent from a Public Exchange/Central Office. Busy Tone Detection permits disconnect supervision for Loop Start Central Office (CO) trunks. The Central Office provides busy tone to the last party involved in a call. The system detects this busy tone and disconnects the call.

Busy Tone Detection features are utilized in countries where tone detection is the only method for the system to detect far end disconnection.

The Busy Tone Detection feature for Asia Pacific and CALA uses the NT5D31 Digital Signaling Processor (DSP) Universal Trunk (DXUT) card. This card is based on the Extended Universal Trunk card (EXUT) and is configured in software as an EXUT card. However, the DXUT card has flexible busy tone detection provided by a Digital Signal Processor (DSP). The DXUT card also has tone detection intelligence that allows it to accurately differentiate between different disconnect tones sent by a Public Exchange/Central Office.

The DXUT card has programmable Busy Tone Detection characteristics which include:

- Cadence
- Incoming or Incoming and Outgoing call direction
- Tone Frequencies
- Tone Bandwidth
- Tone Levels

Tones are detected according to the parameters configured in Overlay 97.

When a trunk card does not support the Busy Tone Detection feature, it can still be configured in software; although, the hardware does not recognize the new Busy Tone messages. The DXUT messages are ignored by the old hardware. The existing hardware is still operational since the Busy Tone feature still supports the older hardware. Old messages are sent for backwards compatibility but are not resent to define frequency criteria.

The Automatic Balance Impedance (AUTO_BIMP) functionalities of the DXUT card enhance the Transhybrid Loss matching capability. The automatic balancing is performed by the Digital Signal Processor (DSP) when checking the reflections from the transmission line. When the software sends an AUTO_BIMP message to the DXUT card, the DSP generates a test tone and measures the amount of signal being reflected. The DSP then internally adjusts the balance network, in the codec, for the best Transhybrid loss.

Operating parameters

The Busy Tone Detection feature for Asia Pacific and CALA requires the DXUT card. The DXUT card requires busy tone detection data to be downloaded prior to activating this feature.

The AUTO_BIMP functionalities of this feature are not supported in the Digital Signaling Processor Universal Trunk (DXUT) card NT5D31 hardware.

Direct Inward Dialing (DID) trunks do not require busy tone supervision, since the Public Exchange/Central Office seizes the system trunk by closing the transmission loop. Far end trunk release is accomplished when the Public Exchange/Central Office opens the circuit.

Japan trunk cards, the Extended Universal Trunk card for Japan (XUTJ) and the Enhanced Extended Universal Trunk card for Japan (EXUTJ), do not support this feature. The DXUT card is not supported in Japan.

The system disconnects a call when a busy tone is detected on an incoming trunk. If the caller on the far end causes a busy tone to be generated, the call is disconnected, regardless of whether or not disconnection was intended. As an example, when a caller connected to a Public Exchange/Central Office attempts to conference in a busy party, the system picks up this busy tone and the call is disconnected.

If any other types of tones (other than busy tone) are detected with the same cadence, frequency and level, the call is disconnected.

The Busy Tone Detection feature for Asia Pacific and CALA may not operate on conference bridges. In the scenario of Busy Tone Detection operating with a conference bridge, all of the trunks are incoming and an incoming Public Exchange/Central Office trunk disconnects from a conference. In this scenario, the disconnected trunk sends a busy tone signal to the conference bridge, and all trunks may be disconnected simultaneously.

In the event that an incoming call is connected to an external conference and two different Public Exchanges/Central Offices are sending busy tone signals at the same time, a stalemate condition may exist. When this occurs, the cadence of both busy tones may not be the same, and the resulted combination cadences may not be detected.

The DXUT card is based on the EXUT card design and is intended to operate in an EXUT-compatible Loss Planning environment. These EXUT compatible Loss Planning environments include the North American Loss Planning environment and Dynamic Loss Switching environments in certain countries.

Busy Tone characteristics are downloaded on a card basis. The Busy Tone Detection table assigned to the card is downloaded to the card when: the first trunk is configured, the card is disabled and enabled, the card is unplugged and reset, and during initialization after sysload, and when the Intelligent Peripheral Equipment package 203 is enabled.

Feature interactions

European XFCOT Support

When the XFCOT Busy Tone ID (BTID) is configured in Overlay 14 only the BTID is downloaded to the XFCOT card. The BTID is downloaded to the EXUT card when the Busy Tone Detection (BTD) package 294 is equipped.

Trunk to Trunk Connection

When the Trunk to Trunk Connection feature interacts with Busy Tone Detection for Asia Pacific and CALA, whichever feature occurs first takes precedence.

Timed Forced Disconnect

When Timed Forced Disconnect interacts with Busy Tone Detection for Asia Pacific and CALA, whichever feature occurs first takes precedence.

Feature packaging

Busy Tone Detection for Asia Pacific and CALA requires Busy Tone Detection (BTD) package 294.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 97 – Configure Busy Tone Detection (BTD) table parameters.
- 2 LD 16 – Configure trunk units and trunk timers in the Route Data Block.
- 3 LD 14 – Configure Busy Tone Supervision for a new Central Office Trunk.

Note: Once the BTD table is configured, the new trunks can be entered and the required BTD table is assigned on a card basis. The BTD table number can only be entered in for the first unit programmed on the card.

LD 97 – Configure Busy Tone Detection (BTD) table parameters.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	BTD	Busy Tone Detection.
BTDT	(0) - 7	Busy Tone Detection Table.
BCAD	(350) (350) 500 500	Busy Tone Cadence (in milliseconds). (ON cycle) (OFF cycle) (default) For Japan. The values for each cycle are 0 to 1.5 seconds (1500 ms) and are entered in milliseconds. Input values are rounded to the nearest multiple of 25 ms. If zero (0) is entered for both phases, then a continuous tone occurs.
BTDD	(BOTH) INC	Busy Tone Detection Direction: Both Incoming and outgoing calls (default). Incoming calls only.
FREQ_0	350 - 655	Frequency of Busy Tone for Frequency 0 of a dual Busy Tone Detection to be detected in Hz. Valid entries are in multiples of 5Hz.

FREQ_1	350 - 655	<p>Frequency of Busy Tone for Frequency 1 of a dual Busy Tone Detection to be detected in Hz. Valid entries are in multiples of 5Hz.</p> <p>For a single busy tone FREQ_1 must be set the same as FREQ_0.</p>
FDLT	10 - 315	<p>Frequency Delta. FDLT gives the tolerance of the tone to be detected in +/- hertz. Valid entries are in multiples of 5Hz.</p> <p>For dual Busy Tone Detection on the NT5D31 card, the same maximum and minimum levels apply to both tones.</p>
FLVL_MAX	0 - 15	<p>Maximum Frequency Tone level to be detected. Valid entries are in multiples of 5dBm.</p> <p>For dual Busy Tone Detection on the NT5D31 card, the same level applies to both tones.</p>
FLVL_MIN	20 - 35	<p>Minimum Frequency Tone level to be detected. Valid entries are in multiples of 5dBm.</p> <p>For dual Busy Tone Detection on the NT5D31 card, the same level applies to both tones.</p>

LD 16 – Configure trunk units and trunk timers in the Route Data Block.

Prompt	Response	Description
REQ	NEW	Add a new data block to the system.
TYPE	RDB	Define a new Route Data Block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
TKTP	COT	Define trunk type as Central Office.
ICOG	IAO	Incoming and Outgoing trunk.

CNTL	YES	Changes to controls or timers.
NEDC	ETH	Either end control.
FEDC	ETH	Either end control.

LD 14 – Configure Busy Tone Supervision for a new Central Office Trunk.

Prompt	Response	Description
REQ	NEW	Add new data.
TYPE	COT	Central Office trunk.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
XTRK	EXUT	Type is IPE EXUT. This includes the DXUT. (This prompt is required only for the first unit defined on each card.)
CUST	xx	Customer number, as defined in LD 15
RTMB		Route number and Member Number
	0-511 1-4000	Range for Large System and CS 1000E system.
	0-127 1-4000	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
SIGL	LOP	Loop start level 3 signaling.
TIMP	(600) 900	Termination Impedance.

BIMP	(3COM) 3CM2 600 900	Balance Impedance. In the case of AUTO_BIMP, this BIMP value is used as a default value if an optimum AUTO_BIMP is not found or if the AUTO_BIMP test is not complete.
AUTO_BIMP	YES	Automatic Balance Impedance is set according to transmission line parameters. NO = default for new trunks.
SUPN	YES	Answer and disconnect supervision required.
-STYP	PIP BTS PIP BTS	Supervision Type. Polarity Insensitive Pack. Busy Tone Supervision. Both options.
BTDI	(0)-7	Busy Tone Detection Table number configured in LD 97. (This prompt is required only for the first unit defined on each card.)
CLS	(DIP) DTN	Dial Pulse. Digitone.

Feature operation

No specific operating procedures are required to use this feature.

Busy Tone Detection for Japan

Contents

This section contains information on the following topics:

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Feature description

In many countries, Central Office loop start trunks are not supervised. This can lead to difficulties for incoming calls to the system that require disconnect supervision to operate properly. Through a modification to the tone detector, this feature allows the system to perform disconnect supervision through the recognition of a busy tone sent by the Public Exchange/Central Office.

Busy Tone Detection for Japan allows a technician to enter the characteristics of the busy tone tables in LD 97. When these characteristics are programmed, the information is downloaded to the system during call processing. When a busy tone is detected, the trunk sends a message to the system software to disconnect the call and free the trunk for other uses.

This feature provides Japan Central Office (JCO) and Japan Direct Inward Dialing (JDID) trunks with Busy Tone Detection (BTD) capability through trunk supervision.

Operating parameters

The feature is applicable to all systems.

Busy Tone Detection for Japan requires the Enhanced Extended Universal Trunk Card for Japan (EXUTJ).

This feature requires a busy tone from the Public Exchange/Central Office.

The system disconnects any call if a busy tone is detected on the incoming trunk. If called party causes a busy tone to be generated, the call disconnects whether intended or not. As an example, this may happen if a Central Office user tries to conference in a busy party. The busy tone is detected by the circuit switched network trunk and the call disconnects.

If another tone is configured similar to the Busy Tone (frequency + or - 30 Hz and cadence within + or - 100 ms), the busy tone detector is interpreted as a busy tone and the call is disconnected. Therefore, tones should be configured so they can be interpreted correctly.

The busy tone detection characteristics are downloaded on a card basis only. All units on the trunk card must go to the Central Office that produces the same Busy Tone cadence.

To modify the busy tone detection table assigned to a trunk card, all trunks on that card must be removed initially from the software (LD 14). It is recommended that all Central Office loop start trunk units be on the same card and configured in the same route.

500/2500 Line Disconnect Supervision is supported by this feature.

If the trunk card is not designed to support the Busy Tone Detection (BTD) feature, BTD can still be configured in the software. However, no feedback is given to the technician that a discrepancy exists between the software and hardware configuration.

Feature interactions

Timed Forced Disconnect

Busy Tone Detection for Japan activates a timer to start once a Central Office (as well as other types of trunks) has been seized. After this timer expires, the trunk is forced to disconnect. BTD does not impact this timer; however, whichever timer occurs first will prevail.

Trunk to Trunk Connection

Busy Tone Detection for Japan does not impact the Trunk to Trunk Connection feature. However, which ever occurs first prevails.

Feature packaging

Busy Tone Detection for Japan is Busy Tone Detection (BTD) package 294.

The following packages are also required:

- Japan Central Office Trunk (JPN) package 97
- Intelligent Peripheral Equipment (XPE) package 203

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 97 – Assign Tone Characteristics to Busy Tone Detection Tables.
- 2 LD 14 – Assign Busy Tone Detection to Central Office (CO), Foreign Exchange (FEX) and WATS Trunks.
- 3 LD 14 – Assign Busy Tone Detection to Direct Inward Dialing (DID) Trunks.

LD 97 – Assign Tone Characteristics to Busy Tone Detection Tables.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	BTD	Busy Tone Detection data block.
BTDT	(0)-7 X1-X7	Busy Tone Detection table. Table 0 can be changed but cannot be removed. Table 0 should always exist (when the BTD package is equipped) and is initialized to the default value for Japan. When creating alternate tables, table 0's values are used to fill the table and these can be changed. Enter X in front of the table number to remove the table.
BCAD	500 500 (ph1 ph2)	Busy Tone Cadence (on and off phase length during the cycle can be entered). ph1 is the ON cycle and ph2 is the OFF cycle. The values for each phase can be 0 to 1.5 seconds (1500 ms) and are entered as ms. The input values are rounded to the nearest multiple of 25 ms. Entering all 0s indicates continuous tone. A tone is deemed continuous if it lasts for at least 3.2 seconds. The smallest cadence is 50 ms even though 25 ms can be entered.
BTDD	(BOTH) INC	Busy Tone Detection Direction. BOTH = both incoming and outgoing calls INC = incoming calls only

LD 14 – Assign Busy Tone Detection to Central Office (CO), Foreign Exchange (FEX) and WATS Trunks.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	COT	Central Office Trunk.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
XTRK	XUT	Enhanced Extended Universal Trunk.
...		
SIGL	LOP	Loop start signaling.
...		
SUPN	YES	Answer and disconnect supervision required. If SUPN = YES, then the values stored in supervision type (STYP prompt) are initialized and only the current entered values are saved. Therefore, complete supervision is required every time through this branch.
- STYP	xxx	Trunk supervision type where xxx is: PIP = Polarity Insensitive JCO = Japan Central Office BTS = Busy Tone Supervision
...		
BTDT	(0)-7	Busy Tone Detection Table. This table must be defined in LD 97.

LD 14 – Assign Busy Tone Detection to Direct Inward Dialing (DID) Trunks.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	DID	Direct Inward Dialing Trunk.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
XTRK	XUT	Enhanced Extended Universal Trunk.
...		
SIGL	LOP	Loop start signaling.
...		
SUPN	YES	Supervision. This response is automatically prompted YES for DID LOP.
- STYP	xxxx	Trunk supervision type where xxxx is: JDID = Japan DID. When XTRK = XUT and <CR> is entered STYP default to JDID. JDID BTS = Busy Tone Supervision and JDID (XUT only). When XTRK = XUT and BTS is entered STYP defaults to JDID BTS.
...		
BTDT	(0)-7	Busy Tone Detection Table. This table must be defined in LD 97.

Feature operation

No specific operating procedures are required to use this feature.

Busy Verify on Calling Party Control Calls

Contents

This section contains information on the following topics:

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Feature description

This enhancement to the Busy Verify feature changes the way in which a local attendant and toll attendant, and Network Attendant Service attendant are able to Busy Verify, Barge-In, and Break-In to a station that is connected to a trunk on a route that has Calling Party Control (CGPC) set to YES.

Table 1
Busy verify on calling party control calls operation for a local call

	Busy Verify	Barge-In	Break-In
Local attendant	Yes	Yes	Yes
Toll attendant	–	–	Yes
NAS attendant	–	–	Yes

Table 2

Title: Busy verify on calling party control calls operation for a toll call

	Busy Verify	Barge-In	Break-In
Local attendant	No	No	No
Toll attendant	–	–	No
NAS attendant	–	–	No

Operating parameters

There are no operating parameters associated with this feature.

Feature interactions

Attendant Break-In

Local Attendant Break-In will be temporarily denied if the desired party is already in a toll operator Break-In conference or on a Special Service call, or awaiting the Special Operator signal. Local attendant/toll operator Break-In will be temporarily denied if the desired party is established on an incoming toll call.

Network Attendant Services (NAS)

A NAS attendant is not allowed to Busy Verify to a station on a different node, or Barge-In to a trunk on a different node. A NAS attendant is allowed to Break-In to a station on a different node, if the incoming trunk on the route is not a toll call. NAS attendant Break-In will be temporarily denied if the desired party is already on a toll call, a toll operator Break-In conference, or a Special Service call, or awaiting the Special Operator signal.

Feature packaging

Busy Verify on Calling Party Control Calls requires Operator Call Back (OPCB) package 126.

Feature implementation

No change to existing configuration is required for the Busy Verify on Calling Party Control Calls feature.

Feature operation

See the following feature descriptions contained within this document.

- “Attendant Busy Verify” on page 283
- “Attendant Barge-In” on page 239
- “Attendant Break-In” on page 245

Call Detail Recording

Call Detail Recording (CDR) records information about selected calls for accounting purposes. For each call, CDR identifies the calling and called parties and notes the time and duration of the call. A record describing the complete call is output by the system when the call is terminated. The following five recording options are available and can be specified by the customer in any combination for each trunk route:

- all outgoing calls
- all outgoing toll calls
- outgoing answered calls
- outgoing answered toll calls
- all incoming calls

For outgoing calls, all calls seizing a trunk in that route are recorded from the time of trunk seizure, no matter how long or short the call is. If answer supervision is allowed on the system, calls placed over tandem TIE trunks are billed from the time the call is answered. The caller is not charged the time it takes for dialing, digit outpulsing, or ringing.

For incoming calls, all calls answered by a telephone or attendant console are recorded.

Three output options are available:

- System terminal: CDR system terminal (CTY)
Information is output in ASCII serial format suitable for a system terminal or equivalent device.

- Magnetic tape: CDR Data Link (CLNK)
Information is output in binary format to a QCA11 CDR machine for downstream processing.
- Both system terminal and magnetic tape.

The system provides access to as many as 16 input/output ports, which can include any combination of designated CDR system terminal (CTY) or CDR Data Link (CLNK) ports. Because each customer on a system can access multiple CDR ports, system terminal and magnetic tape CDR recording machines can be used at the same time for the same customer.

For further information on CDR, please refer to *Call Detail Recording: Description and Formats* (553-3001-350).

Call Forward All Calls

Contents

This section contains information on the following topics:

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Feature description

Call Forward All Calls (CFW) automatically forwards incoming calls to another destination, within or outside the system. Only calls to the Prime DN or any single-appearance DN on the telephone are forwarded. Outgoing calls can still be placed from the telephone when Call Forward is active.

Call Forward All Calls can be selectively activated depending on the source of the originating party. With the Internal Call Forward (ICF) feature, the user can cause only internal calls to be forwarded. The Call Forward Reminder Tone (CFRT) presents special dial tones on analog (500/2500 type) telephones with CFW active. One tone indicates that CFW is active; a second indicates that there is a message waiting for the telephone with CFW active.

Call Forward All Calls, as well as Internal Call Forward, is assigned on a per-telephone basis. Meridian 1 proprietary telephones must be equipped with separate key/lamp pairs to allow the activation and deactivation of each feature. Customers can specify the length of the destination number in LD 11. Options are 4, 8, 12, 16, 20, or 23 digits. If you enter another number for the length, the system rounds to the nearest acceptable choice. The default is 16 digits.

When you use Multiple Appearance DNs (MADNs), call redirection is determined based on the Terminal Number (TN) order in your DN block. To determine the TN order, print the DN block from LD 20 or LD 22 (TYPE = DNB). When a call comes in to an MADN, the system begins a search to determine how the call will be handled. Using the TN list you printed, the system performs the following search, beginning at the bottom of the TN list, and working up.

- 1 Searches for the first Prime DN appearance of the MADN with Call Forward All Calls activated.
- 2 If there are no Prime DN appearances, the Call Forward All Calls cannot be activated.

Note: The search does not necessarily determine the lowest numerical TN. The search starts at the bottom of the TN list.

Operating parameters

The forwarding of a call depends on the access restrictions assigned to the telephones and the trunks involved in the call. If call forwarding results in a connection that is not permitted by the assigned access restrictions, the incoming call is not forwarded.

The customer can specify which telephone determines the successful completion of the call: the originating telephone or the forwarding telephone.

Internal Call Forward requires a programmable feature key. Therefore, Internal Call Forward is not supported on BRI telephones.

LD 17 CFWS allows telephones to have their CFW status saved as part of the data dump routine and then reinstated following a SYSLOAD. For more information, refer to the Call Forward Save feature RL.

Call Forward Reminder Tone does not apply to telephones that have a visual indication of active CFW status.

The Reciprocal Call Forward All Calls option prevents the situation whereby an infinite loop is caused in a network-wide Call Forward configuration resulting from telephone A being call forwarded (all calls) to telephone B at another node, which in turn has been call forwarded back to telephone A. A check is provided using the Flexible Orbiting Prevention Timer (FOPT), which prohibits any telephone from call forwarding more than one call off node for a period of 14 seconds.

The Flexible Orbiting Prevention Timer, previously fixed at 14 seconds, can be set during Service Change from 0 to 30 seconds (even numbers only). If a value of 0 is defined, then Orbit Prevention is disabled and call forwarding is not inhibited in any way.

The Orbit Prevention protection, however, does not extend to all potential orbiting situations. Improperly engineered networking or multiple switching arrangements can produce orbiting.

Feature interactions

Advice of Charge for EuroISDN

Calls charged with Advice of Charge that are either transferred, extended or redirected to another telephone using Call Forward All Calls are charged against the last telephone that answers the call and the controlling telephone releases. Additionally, the last party that transfers or forwards a call to an ISDN Central Office trunk is charged for both connections.

Attendant Alternative Answering

Call Forward All Calls takes precedence over all other Call Forwarding features for a particular telephone. Calls forwarded by Attendant Alternative Answering (AAA) are subject to the Call Forwarding conditions on the AAA DN.

Attendant Blocking of Directory Number

The Attendant Blocking of DN feature will override Call Forward All Calls. If the dialed DN of the telephone is idle, the DN can be blocked; if the DN is busy, busy tone will be heard.

Attendant Break-In

The attendant can override call forwarding on a destination DN by pressing the Break-In key before dialing the destination DN. The attendant may not apply Camp-On to a telephone with Call Forward active.

Attendant Break-In to Inquiry Calls

The operation of Call Forward All Calls is overridden on a analog (500/2500 type) telephone that has inadvertently been placed on-hook during a Break-In conference to allow it to be re-rung by the attendant.

If the controlling party goes on hook in a Break-In conference, and is being re-rung by the attendant, the ringing takes precedence over Call Forward All Calls that may be applied to the telephone.

Attendant Busy Verify

If the DN is call forwarded to the attendant console, the attendant will receive a click followed by silence.

Attendant Overflow Position

If the telephone assigned an Attendant Overflow DN has activated the Call Forward All Calls feature, overflow calls are not rerouted to the telephone. If a analog (500/2500 type) telephone is forwarded, AOP is canceled.

Call Detail Recording on Redirected Incoming Calls

The Call Detail Recording on Redirected Incoming Calls feature does not affect how the Call Forward All Calls feature operates; however, it does provide information about the answering party in the Call Detail Recording ID field if incoming calls have been redirected by any one of these features.

Call Forward and Busy Status

Call Forward All Calls must be assigned to Party A's telephone to enable the Call Forward Status function, which allows party B to monitor and alter the Call Forward state of party A's telephone.

Call Forward by Call Type

If a call is unanswered at the forwarded DN, the telephone that has Call Forward All Calls activated is checked for the Class of Service and the call forward DN. If a chain of call forwarding occurs, the Class of Service and the forward DN for Call Forward No Answer are obtained from the first telephone in the chain. This applies when FDN and HNT have been specified for Call Forward No Answer at the customer level.

Call Forward Destination Deactivation

If the Call Forward All Calls (CFW) DN of telephone A is the DN of telephone B and telephone A dials the CFW FFC to activate Call Forward All Calls, then telephone A's calls are forwarded to telephone B. Telephone B can deactivate CFW on telephone A by dialing the Call Forward Destination Deactivation (CFDD) FFC.

Call Forward External Deny

This feature overrides other Call Forward All Calls parameters. For example, if Call Forward to Trunk Access Code (CFTA) is allowed for the customer, but Call Forward External Deny (CFXD) is enabled for the telephone, CFXD takes precedence and call forwarding to a trunk access code is denied.

Call Forward/Hunt Override Via Flexible Feature Code

The Call Forward All Calls feature is overridden by the Call Forward/Hunt Override Via FFC feature, but there are no changes to the feature itself.

Call Forward, Internal Calls

If Call Forward Reminder Tone Allowed (CFRA) is in effect, whenever an analog (500/2500 type) telephone with Internal Call Forward active goes off hook to originate a call, the telephone sounds the reminder tone. The reminder tone is either Call Forward Dial Tone (CFDT) or Call Forward/Message Waiting Dial Tone (CFMW).

Call Forward No Answer

Call Forward All Calls may result in the presentation of a call to a telephone that is different from the dialed DN. In this case, if the call is eligible for Flexible Call Forward No Answer, it is forwarded to the DN specified for the dialed DN, not the ringing DN.

Suppose that party A calls party B, and party B has programmed Call Forward All Calls to party C. Flexible Call Forward No Answer forwards a No Answer call at party C to the FDN associated with party B, the dialed DN.

After the call is forwarded, the MARP TN for the dialed DN controls the call redirection for Flexible Call Forward No Answer.

Call Forward No Answer, Second Level

Second Level Call Forward No Answer uses the final (ringing) telephone in the chain to obtain Class of Service and forwarding DN information.

First level treatment operates in the following manner. Suppose that Party A calls Party B, and Party B has programmed Call Forward All Calls to Party C. Flexible Call Forward No Answer will forward a No Answer call at Party C to the forwarding directory number associated with Party B, the dialed DN.

Call Forward Save on SYSLOAD

The Call Forward status of each telephone can be saved as part of the data dump routine and reinstated following a SYSLOAD operation.

Call Page Network Wide

Call Page Network Wide (PAGENET) does not block a telephone from being programmed to Call Forward All Calls to an external Paging trunk. At call termination time, calls that are forwarded to an external PAGENET uncontrolled trunk are not blocked. However, calls forwarded to an external PAGENET controlled trunk are given access denied intercept treatment at the Paging node.

Call Redirection by Time of Day

Call Forward All Calls has precedence over Call Redirection by Time of Day.

Calling Party Name Display Denied

During a Call Forward or Call Transfer, the calling party digits and forwarding/transferring party digits are displayed on the terminating telephone. This display is allowed or denied depending on the Class of Service of the calling telephone and the forwarding/transferring telephone. The name of the forwarding/transferring telephone is not displayed on the calling and terminating telephone.

Calling Party Privacy

When an incoming trunk call with the Privacy Indicator is forwarded, the Privacy Indicator will be tandemmed to the far end to inhibit the display of the Calling Party Name or Number provided that the tandem node also has Calling Party Privacy (CCP) provisioned.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator will be outpulsed to the terminating node to inhibit the number of the forwarding telephone (i.e., at the tandem node) from being displayed on the terminating telephone. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).

Call Forward Busy

Call Waiting

Call Waiting Redirection

Camp-On

Camp-On, Station

Call Forward All Calls has precedence over Call Forward Busy, Call Waiting, Call Waiting Redirection, Camp-On and Station Camp-On.

China – Attendant Monitor

If an attendant attempts to monitor a DN which is Call Forwarded and is idle, idle DN treatment is given.

China – Flexible Feature Codes - Customer Call Forward

Enhanced Flexible Feature Codes - Customer Call Forward

When Customer Call Forward (CCFW) is active CFWAC cannot be activated by Flexible Feature Code, but can be activated by SPRE. When CFWAC is active, CCFW cannot be activated.

CCFW can be deactivated by deactivating CFWAC. CFWAC can only be deactivated by the CCFD FFC if the current CFW DN is the same as the current CCFW DN.

China – Flexible Feature Codes - Outgoing Call Barring

Enhanced Flexible Feature - Outgoing Call Barring

When a telephone with Outgoing Call Barring active activates CFWAC with a new CFW DN, the CFW DN is tested against the current barring level. If the DN is not allowed to be dialed, it can also not be used as a Call Forward DN. This is to prevent a telephone from forwarding to a barred DN and then dialing its own DN to bypass the restrictions.

China – Toll Call Loss Plan

Toll pad switching is also provided after call forwarding has been completed. When the toll call is diverted, the diverted party's pad level is switched back to its original value (unless it is an OPS station using dynamic switching). The Toll Loss Plan is applied again for the new call as if it is a direct call. For Call Transfer, it is provided after the transferring party completes the transfer and drops out. For Call Forward or Hunting, it is provided when the forwarding or hunting call is answered.

Conference

On analog (500/2500 type) telephones, Call Forward All Calls can be activated or canceled during a conference call.

Display of Calling Party Denied

When a telephone activates any of the call forwarding features, the displays given on the calling telephone and the terminating telephone are in accordance with the Class of Service of the telephones involved in the call.

If the terminating telephone has Dialed Name Display Denied (DNDD), the display on the terminating telephone reflects the name and number of the calling party and the name and the number of the forwarding telephone.

If the terminating telephone has Dialed Name Display Allowed (DNDA), the display on the terminating telephone reflects the number of the calling party and the name and number of the forwarding telephone. In both cases, the terminating telephone's display is in accordance with the DPD Class of Service options of the calling and forwarding telephones.

For a MCDN ISDN call, the calling party's Calling Line Identification (CLID) is replaced with the ISDN route access code (ACOD) and the route member number, and the calling party's name is replaced by a string of four Xs (X X X X).

The display given on the calling telephone of an internal call, which has been forwarded to a telephone within the same switch, includes the name and number of the terminating telephone along with the number of the forwarding telephone. If the DPD Class of Service options, which are specified for the terminating telephone, indicate that the display of the name and number of the terminating telephone be denied, then on the calling telephone, the name of the terminating telephone is replaced by a string of four Xs (X X X X). The number is replaced by dashes (- - -). If the number of the terminating telephone is blocked from being displayed on the calling telephone, the number of the forwarding telephone is also blocked from being displayed on the calling telephone, regardless of the DPD Class of Service options of the forwarding telephone. Conversely, if the display of the terminating telephone's number is allowed in the calling telephone, then the number of the forwarding telephone is also displayed on the calling telephone, irrespective of the DPD Class of Service options of the forwarding telephone.

Do Not Disturb

If activated, Call Forward All Calls will take precedence over Do Not Disturb busy indication.

DPNSS1 Diversion

Call Forward All Calls on unanswered calls are activated in the following order: Call Forward All Calls, Message Waiting, Call Forward No Answer, Slow Answer Recall. For busy telephones the order is: Call Forward All Calls, Hunting, Calling Waiting/Camp On, Message Waiting Busy Forward, Call Forward Busy.

Electronic Lock Network Wide/Electronic Lock on Private Lines

For Call Forwarding, the COS and NCOS used for the forwarding call can be taken from either the forwarding telephone or from the forwarded telephone, depending on the option defined in the Customer Data Block.

For example, telephone B call forwards all calls to an external trunk. Telephone A calls telephone B. If OPT = CFF in LD 15 (Call Forward forwarded to party's COS and NCOS), the COS and NCOS of telephone B are used for forwarding the call to the trunk. If OPT = CFO (Call Forward originating party's COS and NCOS), the COS and NCOS of telephone A are used for forwarding the call to the trunk.

Flexible Feature Code Boss Secretarial Filtering

Although Call Forward All Calls and Flexible Feature Code Boss Secretarial Filtering can be equipped on the same telephone, they cannot both be active at the same time. There is no precedence of one over the other; it is not possible to activate one if the other is active on the telephone.

Flexible Feature Codes

When Flexible Feature Codes (FFC) are configured for a customer, #1 automatically becomes the FFC DN for both Call Forward Activate (CFWA) and Call Forward Deactivate (CFWD). When the same DN is used for both CFWA and CFWD, FFC toggles the call forward activated/deactivated state of the telephone. When call forward is activated for a telephone, entering #1 automatically deactivates call forward, no matter what follows #1. When call forward is deactivated for a telephone, the result of entering #1 depends on what follows #1:

- If the telephone goes on hook immediately, Call Forward is activated for the telephone to its previous Call Forward number.
- If a valid DN is entered after #1, Call Forward is activated for the telephone to that valid DN.
- If an invalid DN is entered after #1, Call Forward remains deactivated for the telephone.

Flexible Voice/Data Terminal Number

Voice calls directed to a dynamic voice/data Terminal Number are forwarded, if either of these features are enabled. Data calls, to a dynamic voice/data TN, are not forwarded.

Group Call

A Group Call to a telephone with Call Forward active is forwarded one step only. The Call Forward number must be a valid DN.

Group Hunt

When Group Hunting attempts to terminate on a DN which has CFW All Calls active, it will continue with the next DN in the group if the attempted DN is busy, or if the DN is idle and the response to the Call Forward Ignore (CFWI) prompt in LD 57 is “NO”. If the attempted DN is idle and the response to the CFWI prompt in LD 57 is “YES”, then Group Hunting will terminate and the stations associated with the DN will be rung.

Hunting

Call Forward All Calls takes precedence over Hunting.

ICP Network Screen Activation, Flexible DN, Meridian Mail Interactions

When a call redirected by Call Forward All Calls, Call Forward No Answer, Call Forward Busy, or Hunt terminates on an Intercept Computer (ICP) position, a redirected message identification “50” is sent to the ICP computer, when the call is answered.

Idle Extension Notification

When an extension that is being supervised for Idle Extension Notification becomes idle, it has the ability to make outgoing calls. If Call Forward All Calls or Intercept Call Forward are activated at the extension before the attendant presses the SACP key to ring that extension, the attendant’s call will be forwarded to the Call Forward destination. The attendant display will show both the call forward DN, as well as the original extension’s DN.

If the Call Forward DN is busy, SACP can be activated towards the Call Forward DN, if all the requirements for allowing Idle Extension Notification are met by this DN.

Incoming Call Indicator Enhancement

When a Direct Inward Dialing (DID) call to station that is unrestricted from receiving DID calls (UDI Class of Service) is forwarded to a UDI station due to Call Forward All Calls or Call Forward Busy, the call is RDI-intercepted to the attendant. The attendant display shows the DN of the dialed party.

If the call has been forwarded to the attendant, the Call Forward All Calls/Call Forward Busy ICI lights up, and not the RDI-intercept ICI.

ISDN QSIG Call Completion

When the Call Forward feature is activated on a local basis and an incoming Call Completion request is received, the Call Completion request is registered against the forwarded DN.

ISDN QSIG Name Display

When an incoming QSIG call, with name display presentation allowed Name Display, is forwarded locally, the calling party's name information is displayed on the forwarding telephone. With presentation restriction, the calling party's name information is not displayed to the destination telephone.

Make Set Busy

Call Forward All Calls takes precedence over Make Set Busy.

Message Registration

The party that originates a call is charged. The charge cannot be moved to another party using Call Forward All Calls.

Multi-Party Operations

A telephone which has activated Call Forward All Calls can still initiate calls and become the controlling party of a consultation connection. In this case, if the telephone mis-operates, then Multi-Party operations while re-ringing the controlling party as a part of misoperation recovery ignores the Call Forward All Calls indication present on the controlling party.

Multiple Appearance Directory Number Redirection Prime

Multiple Appearance Directory Number Redirection Prime (MARP) affects how call redirection operation is defined. Refer to the MARP module in this document for details.

Network Intercom (Hot Type D and Hot Type 1 Enhancements)

Hot Type I calls respect or override all kinds of Call Forward features (Busy, No Answer, All Calls, Internal, etc.) according to per-set definitions. If Call Forward is respected, the call becomes a normally dialed call and the originator will receive the appropriate indication on their display.

Network Individual Do Not Disturb

Call Forward All Calls takes precedence over Do Not Disturb Individual (DNDI) treatment.

Night Service Enhancements

Any call which has been presented to the Attendant Overflow Position cannot be removed from the console and requeued by pressing the Make Set Busy (MSB) key. The call will only be removed if the Attendant Forward No Answer feature is active, and the Attendant Forward No Answer Timer has timed out. In this case, the call is requeued and the Attendant Overflow Position is idled.

Paging

Calls that originate on a TIE trunk to a telephone that is redirected to a paging route are blocked.

Periodic Pulse Metering

Metered calls transferred or extended from one station to another using the Call Forward All Calls feature are charged against the last station at which the call is answered as the controlling station releases. The last party to forward a call onto a metered Periodic Pulse Metering trunk is charged.

Phantom Terminal Numbers (TNs)

Call Forward All Calls is used in conjunction with Remote Call Forward (RCFW) to redirect incoming calls from a phantom TN/DN to a valid DN.

Call Forward cannot be overridden on phantom TNs. Overflow tone occurs if an override is attempted.

Recorded Announcement for Calls Diverted to External Trunks

If a call is forwarded to an outgoing external Central Office (CO) route with the Recorded Announcement for Calls Diverted to External Trunks (RANX) flag set, RANX is activated.

Recovery on Misoperation of Attendant Console

Call Forward takes precedence over the Misoperation feature.

Ring Again on No Answer

If an unanswered call is forwarded to another station by Call Forward All Calls, Ring Again on No Answer is applied to the originally dialed station.

Special prefix SPRE access codes

SPRE access codes cannot be used as CFW DN. If an attempt is made to program SPRE access code as a CFW DN, the overflow tone is given at the time of CFW activation.

Total Redirection Count

Call Forward All Calls redirection is limited to the value defined in the Total Redirection Count limit (if greater than 0). If this limit is exceeded, intercept treatment is given.

Trunk Access Codes

There is an option in LD 15 to allow or disallow telephones to program Call Forward All Calls to a Trunk Access Code. See “Call Forward External Deny” on page 701.

If an Originating Trunk Connection is forwarded to a barred route, it receives the intercept treatment specified in the Customer Data Block.

User Selectable Call Redirection

When CFW redirects a call from telephone A to telephone B, and telephone B does not answer, the Ringing Cycle Options of telephone B determines how long it rings. After the designated number of rings, the Flexible Call Forward No Answer of telephone A redirects the call.

Feature packaging

Internal Call Forward requires the 500 Set Dial Access to Features (SS5) package 73 for analog (500/2500 type) telephones, and the Flexible Feature Codes (FFC) package 139. Call Forward Reminder Tone is packaged with the Call Forward All Calls feature.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Define Class of Service for Call Forward All Calls.
- 2 LD 10 – Add/change Call Forward All Calls and Internal Call Forward for analog (500/2500 type) telephones.
- 3 LD 11 – Add/change Call Forward All Calls and Internal Call Forward for Meridian 1 proprietary telephones.
- 4 LD 57 – Add/change Flexible Feature Codes for Internal Call Forward.

On an analog (500/2500 type) telephone, the user accesses the Call Forward All Calls and Internal Call Forward features by dialing either the SPRE plus the feature code, or the appropriate Flexible Feature Codes (FFCs). On a digital telephone, the user accesses each feature using its feature key.

LD 15 – Define Class of Service for Call Forward All Calls.

Prompt	Response	Description
REQ:	CHG	Change existing data.

TYPE:	RDR	Call Redirection
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- OPT	(CFO) CFF	(CFO) = Calling party Class of Service is active during Call Forward All Calls. CFF = Forwarding party Class of Service is active during Call Forward All Calls.
	(PVCA) PVCD	Prevention of reciprocal Call Forward (allowed) or denied.
- CFTA	(NO) YES	(Deny) allow telephones to Call Forward All Calls to a Trunk Access Code.
- OPT	(CFRD) CFRA	Call Forward Reminder Tone (denied) allowed for analog (500/2500 type) telephones.

Note: In LD 56, the XCT Tone Code (XCAD) default value is set to 0. If the XCAD prompt is not changed in LD 56, an Analog 500-type telephone will not receive Call Forward Reminder Tone (CFRT) even if it has been enabled in LD 15 (OPT = CRFA).

LD 10 – Add/change Call Forward All Calls and Internal Call Forward for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.

FTR	<p>c u</p> <p>CFW xx yyyy...y</p>	<p>Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.</p> <p>Allow Call Forward All Calls, where:</p> <p>xx = maximum number of digits in the CFW DN. Valid entries are any integer in the range of (4)-31. yyyy = number where calls are forwarded.</p> <p>Note: YYYY cannot be entered from the maintenance terminal. When the telephone information is printed in LD 20, yyyy shows the call forward number.</p>
FTR	ICF xx	<p>Allow Internal Call Forward, where:</p> <p>xx = maximum number of digits in the Forward DN. Valid entries are any integer in the range of (4)-31.</p>

LD 11 – Add/change Call Forward All Calls and Internal Call Forward for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx CFW yy zzzz...z	Define Call Forward All Calls, where: xx = key number; M2317 must use key 22 yy = maximum number of digits in the CFW DN. Valid entries for M2317 telephones are any integer in the range of (4)-23. For all other Meridian 1 proprietary type telephones, valid entries are any integer in the range of (4)-31. zzzz = number where calls are forwarded.
KEY	xx ICF yy zzzz	Define Internal Call Forward, where: xx = key number yy = maximum number of digits in the Forward DN. Valid entries are any integer in the range of (4)-31. zzzz = number where calls are forwarded.

LD 57 – Add/change Flexible Feature Codes for Internal Call Forward.

Prompt	Response	Description
REQ	NEW CHG OUT	Add, change, or remove an FFC table.
TYPE	FFC	Flexible Feature Code.

CODE	ICFA ICFD ICFV	Access code for Internal CFW Activate. Access code for Internal CFW Deactivate. Access code for Internal CFW Verify.
ICFA	xxxx	Internal CFW Activate Code (ICFD and ICFA may share the same code).
ICFD	xxxx	Internal CFW Deactivate Code (ICFD and ICFA may share the same code).
ICFV	xxxx	Internal CFW Verify Code.

Feature operation

To forward all calls from a Meridian 1 proprietary telephone:

- 1 Press **Forward**.
- 2 Dial the number where calls are to be forwarded.
- 3 Press **Forward**.

To forward internal calls only from a Meridian 1 proprietary telephone:

- 1 Press **Internal Call Forward**.
- 2 Dial the number where calls are to be forwarded.
- 3 Press **Internal Call Forward**.

To cancel Call Forward All Calls:

- Press **Forward**.

To cancel Internal Call Forward:

- Press **Internal Call Forward**.

To forward calls from an analog (500/2500 type) telephone:

- 1 Lift the handset and dial SPRE 74
or lift the handset and dial #1 (2500 telephone)
or lift the handset and dial the Call Forward Allowed FFC.
- 2 Dial the number where calls are to be forwarded.
- 3 Hang up.

Note: If you deactivate Call Forward, then reactivate without changing the number, calls will be forwarded to the previously established CFW DN.

To forward internal calls from an analog (500/2500 type) telephone:

- 1 Lift the handset and dial SPRE 9914
or lift the handset and dial the Internal Call Forward FFC.
- 2 Dial the number where calls are to be forwarded.
- 3 Hang up.

To cancel Call Forward All Calls:

- Lift the handset and dial SPRE 74
or lift the handset and dial #1 (2500 telephone)
or lift the handset and dial the Call Forward Deny FFC.

To cancel Internal Call Forward:

- Lift the handset and dial SPRE 9914
or lift the handset and dial the Internal Call Forward Deny FFC.

Call Forward and Busy Status

Contents

The following are topics in this section:

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Feature description

The Call Forward and Busy Status feature was designed for an environment where Party A forwards calls to Party B for screening.

When equipped with a Busy/Forward Status (BFS) key-lamp or key-Liquid Crystal Display (LCD) pair, Party B can perform the following:

- monitor, activate, or deactivate Call Forward for Party A
- override Call Forward of Party A, in order to place a call to Party A or
- determine whether Party A is busy on a call

The BFS key-lamp or key-LCD pair serves a dual purpose. The Busy Status function indicates to Party B, using lamp or LCD state, whether Party A is busy or not. The Call Forward Status function allows Party B to monitor and alter the Call Forward state of Party A.

However, to allow Party B to alter the Call Forward state of Party A, you must set the Busy Forward Status Call Forward (BFS_CFW) prompt in the LD 15 overlay to 'YES'. If you set the BFS_CFW prompt to 'NO', then Party B cannot change the Call Forward state of Party A. For more information on setting the BFS_CFW prompt, refer to "LD 15 – Activate the Call Forward and Busy Status mode of operation" on page 670.

Therefore, the BFS lamp or LCD state of Party B may indicate that Party A is in any one of the following four possible states:

- Call Forward activated and not busy
- Call Forward activated and busy
- Call Forward deactivated and not busy or
- Call Forward deactivated and busy

The BFS key also acts as an Autodial (ADL) key. To use the BFS key as an ADL key to call Party A, Party B goes off-hook and presses the BFS key for Party A.

Busy Status

The Busy Status portion of the feature indicates if Party A is busy for any of the following reasons:

- call active on a Directory Number (DN) key (SCR, SCN, MCR, or MCN)
- has Make Set Busy (MSB) activated
- has Do Not Disturb (DND) activated
- call active on a Group Call (GRC) key
- call active on a Private-line non-ringing (PVN) or Private-line Ringing (PVR) key
- Party A ringing

- if Party A is a Meridian 1 proprietary telephones and has call on Hold
- if Party A is an analog (500/2500 type) telephone and has a call on permanent Hold

Call Forward Status

The Call Forward portion allows Party B to monitor and alter the Call Forward state of Party A. Party A may be either an analog (500/2500 type) telephone or Meridian 1 proprietary telephone and must have Call Forward All Calls equipped. The Call Forward and Busy Status feature introduces a modification to the Call Forward All Calls feature functionality. The modification is activated or deactivated on a customer-wide basis by the response to OPT in LD 15. The OPT responses are “FKD” (Forward Key Denied) and the default setting “FKA” (Forward Key Allowed).

Operating parameters

Party B must be using a Meridian Modular telephone. Party A may have an Meridian Modular or 500/2500-type telephone, with Call Forward All Calls (CFAC) equipped. The operating parameters are the same as for CFAC.

A station may be monitored by a maximum of 16 other stations using the BFS key.

The monitored and monitoring stations must all belong to the same customer.

Feature interactions

Attendant and Network-Wide Remote Call Forward

When the call forward status of a BFS station is changed from a telephone or attendant-based Remote Call Forward feature, the BFS lamp(s) associated with that station are updated accordingly.

Attendant Blocking of Directory Number

The Attendant Blocking of DN feature will override these Call Forward and Busy Status. If the dialed DN of the telephone is idle, the DN can be blocked; if the DN is busy, busy tone will be heard.

Autodial

Party A can use the Busy/Forward Status key as an Autodial key to dial Party B.

Call Forward All Calls

Call Forward All Calls must be assigned to Party A's telephone to enable the Call Forward Status function, which allows Party B to monitor and alter the Call Forward state of Party A's telephone.

Call Forward/Hunt Override Via Flexible Feature Code

Call Forward and Busy Status is overridden by the Call Forward/Hunt Override Via FFC feature, but there are no changes to the feature itself.

Call Forward, Remote (Attendant and Network-Wide)

When the call forward status of a BFS station is changed from a telephone or attendant-based Remote Call Forward feature, the BFS lamp(s) associated with that station are updated accordingly.

Calling Party Privacy

If an incoming ISDN trunk call with the Privacy Indicator is forwarded, the Privacy Indicator will be tandemmed to the far end to inhibit the display of the Calling Party Name or Number provided that the outgoing trunk route on the tandem node also has CCP provisioned.

If an incoming non-ISDN trunk call is forwarded to a trunk, the outgoing trunk call from the tandem node will carry the Privacy Indicator if the outgoing trunk route on the tandem node has the TCPP option set.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator will be outpulsed to the terminating node to inhibit the number of the forwarding telephone (that is, at the tandem node) from being displayed on the terminating telephone. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).

Flexible Feature Code Boss Secretarial Filtering

If the secretary telephone is a Meridian 1 proprietary telephone, or a compact digital telephone, it may be equipped with a Call Forward and Busy Status (BFS) key/lamp pair, to perform the following:

- monitor the status of the Call Forward feature on a boss telephone
- activate/deactivate the Call Forward feature on a boss telephone
- monitor whether or not a boss telephone is busy on a call, and
- override the Call Forward All Calls feature on a boss telephone, in order to place a call to the boss telephone.

The above functions, however, can only be performed by the secretary telephone while it is in an unattended state, since BFS and Flexible Feature Code Boss Secretarial Filtering cannot be active simultaneously.

However, to activate or deactivate the Call Forward feature on the boss telephone from the secretary telephone, you must set the BFS_CFW prompt in the LD 15 overlay to “YES”.

Network Intercom

In a Secretarial filtering scenario, the secretary’s Busy/Forward Status (BFS) lamp also will reflect that the boss’s telephone is busy if the boss is on a Hot Type I call.

Phantom Terminal Numbers (TNs)

When a user attempts to define a BFS key for a phantom TN, the system generates the following error message: “An invalid TN has been entered for the Busy/Forward Status (BFS) key.”

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Activate the Call Forward and Busy Status mode of operation
- 2 LD 11 – Assign a Busy/Forward Status (BFS) key.

LD 15 – Activate the Call Forward and Busy Status mode of operation

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	RDR	Call Redirection
CUST	xx	Customer number as defined in LD 15
...		
NCOS	...	Network Class of Service
BFS_CFW	YES	Busy Forward Status Call Forward—press the BFS key on the secretary telephone to activate Call Forward on the boss telephone.
- OPT	(FKA) FKD	Forward Key (Allowed) Denied—determines whether Call Forward keys on telephones for this customer are operational.

LD 11 – Assign a Busy/Forward Status (BFS) key. (Part 1 of 2)

Prompt	Response	Description
REQ:	CHG NEW	Request: Modify or create data block.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
...		

LD 11 – Assign a Busy/Forward Status (BFS) key. (Part 2 of 2)

LANG	...	
KEY	0-69 BFS l s c u 0-69 BFS c u	Key number (0-69), Busy/Forward Status (BFS), Terminal Number (TN) of telephone to be monitored. For Large Systems For Small Systems and CS 1000S systems

Feature operation**Call Forward Status**

With FKA, the default, selected Party A's Call Forward (CFW) key-lamp or key-LCD pair operation is unaffected and depressing Party B's BFS key will result in one of the following:

- If Party A does not currently have Call Forward activated, Party A has Call Forward activated to Party B's DN and Party A's CFW lamp or LCD is activated.
- If Party A already has Call Forward activated to Party B's DN, Party A has Call Forward deactivated and Party A's CFW lamp or LCD is deactivated.
- If Party A already has Call Forward activated to a DN other than Party B's, Call Forward is left as is.

With FKD selected Party A's CFW key-lamp or key-LCD pair operation is modified so that the pair is usable as an indicator only, the key is disabled, and depressing Party B's BFS key will result in one of the following:

- If Party A has Call Forward active to the DN of a BFS key equipped telephone other than Party B, Call Forward is left as is.
- If Party A has Call Forward active to a remote DN and Call Forward was activated by a remote FFC, the existing Call Forward DN is overridden and all new calls are forwarded to Party B's DN.

- If Party A has Call Forward active to Party B's DN, Party A's Call Forward is deactivated and Party A's CFW lamp or LCD is deactivated.
- If Party A does not have Call Forward active, Call Forward is activated to Party B's DN and Party A's CFW lamp or LCD is activated.

Note: When the Boss telephone is call forwarded to one of the secretary DNs, then calling the Boss telephone from the secretary by using the BFS key overrides the call forward. If the secretary calls the Boss, and Boss telephone has been call forwarded to a DN which is not a secretary DN, then the call is forwarded.

BFS lamp or LCD states

Party B's BFS lamp or LCD reflects the status of Party A's telephone in terms of both the Busy or Idle and the Call Forward states. The following table gives the possible BFS lamp or LCD states for the various states Party A can be in:

Party A's telephone	Party A's Call Forward	
	Deactivated	Activated
Idle	Dark	Wink = Fast Flash
Busy	Lit	Flash

Note: Dark indicates lamp or LCD is off.
Wink indicates lamp or LCD is winking at 60 impulses per minute (ipm) (0.875 seconds on, 0.125 seconds off).
Lit indicates lamp or LCD is on
Flash indicates lamp or LCD is flashing at 30 ipm (0.5 seconds on, 0.5 seconds off).

Call Forward Busy

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Feature description

Call Forward Busy (CFB) automatically routes incoming Direct Inward Dialing (DID) calls to the attendant console when a telephone is busy. This capability is allowed or denied in the Class of Service (FBA/FBD) of the telephone.

Operating parameters

On incoming DID calls, Hunting takes precedence, followed by Call Waiting, then Call Forward Busy. In busy situations, the call hunts if the telephone has Hunting specified.

Feature interactions

Attendant Alternative Answering

If Call Forward Busy is allowed for the Attendant Alternative Answering (AAA) DN (and that DN is busy), a DID call is returned to the attendant and can again be eligible for AAA timing and operation.

Attendant Busy Verify

Attendant Busy Verify does not affect Call Forward Busy.

Call Detail Recording on Redirected Incoming Calls

The Call Detail Recording on Redirected Incoming Calls feature does not affect how the Call Forward Busy feature operates; however, it does provide information about the answering party in the CDR ID field if incoming calls have been redirected by any one of these features.

Call Forward All Calls

Call Forward All Calls takes precedence over Call Forward Busy.

Calling Party Privacy

When an incoming trunk call with the Privacy Indicator is forwarded, the Privacy Indicator will be tandemmed to the far end to inhibit the display of the Calling Party Name or Number provided that the tandem node also has Calling Party Privacy (CCP) provisioned.

If an incoming non-ISDN trunk call is forwarded to a trunk, the outgoing trunk call from the tandem node will carry the Privacy Indicator if the outgoing trunk route on the tandem node has the TCPP option set.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator will be outpulsed to the terminating node to inhibit the number of the forwarding telephone (i.e., at the tandem node) from being displayed on the terminating telephone. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).

Call Waiting for Meridian 1 proprietary telephones

If Class of Service allows CFB and Call Waiting Allowed, and the telephone has a Call Waiting key, calls do not forward to the attendant when the telephone is busy and another call is waiting.

Call Waiting for analog (500/2500 type) telephones

If a telephone has CFB and Call Waiting Allowed Class of Service, calls are forwarded to the attendant when the telephone is busy and has another call waiting.

Camp-On, Station

For DID calls only, Call Forward Busy takes precedence over Camp-On, Station.

China – Attendant Monitor

If an attendant attempts to monitor a DN which is Call Forwarded and is idle, idle DN treatment is given.

China – Toll Call Loss Plan

Toll pad switching is also provided after call forwarding has been completed. When the toll call is diverted, the diverted party's pad level is switched back to its original value (unless it is an OPS station using dynamic switching). The Toll Loss Plan is applied again for the new call as if it is a direct call. For Call Transfer, it is provided after the transferring party completes the transfer and drops out. For Call Forward or Hunting, it is provided when the forwarding or hunting call is answered.

Departmental Listed Directory Number

Call Forward Busy operates like Call Forward to 0, and are routed to any idle attendant console in the customer group.

Dial Access to Group Calls

Call Forward Busy cannot be applied to a Group Call.

Call Forward Busy

Calls modified by Call Forward Busy are not given Distinctive Ringing as they terminate on the attendant console.

Dial Access to Group Calls Group Call

Call Forward Busy cannot be applied to Dial Access to Group Calls or Group Call.

Flexible Feature Code Boss Secretarial Filtering

Call Forward Busy to a boss telephone with filtering active is routed to the secretary telephone.

Flexible Voice/Data Terminal Number

Voice calls directed to a call processing busy dynamic voice/data TN are redirected using Call Forward Busy provided this feature is configured for the TN. Data calls to dynamic voice/data TNs are not redirected.

Group Hunt

Group Hunting has priority over the Call Forward Busy feature.

If the DN attempted for termination has FBA (Forward Busy Allowed) Class of Service, and if it is busy, then Group Hunting continues with the next DN in the group

Hot Line

Any Hot Line telephone can be assigned Call Forward Busy but it applies only to the two-way Hot Line capability.

Hunting

When a telephone is busy, an incoming call hunts only if Hunting is allowed for that telephone. If all the steps in the hunt group are busy, and Call Waiting is not allowed, the call forwards to the attendant console.

ICP Network Screen Activation, Flexible DN, Meridian Mail Interactions

When a call redirected by Call Forward All Calls, Call Forward No Answer, Call Forward Busy, or Hunt terminates on an Intercept Computer (ICP) position, a redirected message identification “50” is sent to the ICP computer, when the call is answered.

Incoming Call Indicator Enhancement

When a DID call to station that is unrestricted from receiving DID calls (UDI Class of Service) is forwarded to a UDI station due to Call Forward All Calls or Call Forward Busy, the call is RDI-intercepted to the attendant. The attendant display shows the DN of the dialed party.

If the call has been forwarded to the attendant, the Call Forward All Calls/Call Forward Busy ICI lights up, and not the RDI-intercept ICI.

Lockout, DID Second Degree Busy, and MFE Signaling Treatments

Call Forward Busy takes precedence over lockout and second degree busy.

Network Intercom

Hot Type I calls respect or override all kinds of Call Forward features (Busy, No Answer, All Calls, Internal, etc.) according to per-set definitions. If Call Forward is respected, the call becomes a normally dialed call and the originator will receive the appropriate indication on their display.

Night Service

When the system is in Night Service, DID calls forwarded by Call Forward Busy are routed to the specified night number. If the night telephone is busy, subsequent calls receive busy tone.

Recorded Announcement for Call Diverted to External Trunks

Recorded Announcement for Calls Diverted to External Trunks (RANX) is activated if the call is forwarded to an outgoing external CO trunk with the RANX feature active.

Recovery on Misoperation of Attendant Console

Call Forward takes precedence over the Misoperation feature.

Total Redirection Count

Call Forward Busy redirections is limited to the value defined in the Total Redirection Count limit (if greater than 0). If this limit is exceeded, intercept treatment is given.

Trunk Barring

If an Originating Trunk Connection is forwarded to a barred route, it receives the intercept treatment specified in the Customer Data Block.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Add/change a Call Forward Busy Incoming Call Indicator (ICI) on attendant consoles.
- 2 LD 10 – Allow/deny Call Forward Busy on analog (500/2500 type) telephones.
- 3 LD 11 – Allow/deny Call Forward Busy on Meridian 1 proprietary telephones.

LD 15 – Add/change a Call Forward Busy Incoming Call Indicator (ICI) on attendant consoles.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	ATT_DATA	Attendant console options

CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- ICI	xx CFB	Add a Call Forward Busy ICI key; xx = 0-19.

LD 10 – Allow/deny Call Forward Busy on analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(FBD) FBA	(Deny) allow Call Forward Busy.

LD 11 – Allow/deny Call Forward Busy on Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN	l s c u	Terminal Number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.

CLS	c u (FBD) FBA	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit. (Deny) allow Call Forward Busy.
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Feature operation

No specific operating procedures are required to use this feature.

Call Forward by Call Type

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Feature description

Call Forward by Call Type (CFCT) routes calls receiving a no answer or busy signal to separately defined DN's based on the type of incoming call. The two types of incoming calls are internal and external.

An internal call is defined as a station-to-station call, a Direct Inward System Access (DISA) call, or an incoming call over a trunk route class marked as internal. An external call is an incoming call over a trunk route class marked as external. The trunk route data block (LD 16) allows routes to be defined as internal or external for this feature.

Four options are available at the customer level for Call Forward No Answer: Flexible Call Forward No Answer DN (FDN), Attendant Recall (ATT), Call Forward denied for all telephones (NO), and Hunting (HNT). Call Forward by Call Type (CFCT) is enabled only when the FDN and HNT options are chosen.

In LD 15 Call Forward No Answer is defined by FNAT for external non-DID calls and by FNAL for internal calls. FNAD continues to define Call Forward No Answer for Direct Inward Dialing (DID) trunk calls.

CFCT is allowed or denied for each telephone in LD 10 or LD 11 with Class of Service (CFTA/CFTD). If CFCT is allowed (CFTA), the forwarding destination is also defined in LD 10 or LD 11.

Once enabled, CFCT requires no intervention. How the system initiates Call Forward by Call Type is described below.

When a call is presented to a telephone, the telephone is checked for the appropriate Class of Service (Hunting Allowed (HTA), Call Forward No Answer (FNA), Call Forward by Call Type (CFTA)). The incoming call is then checked to determine if it is a telephone, DISA, or trunk call. If it is a trunk call, the trunk route is checked to determine whether the call should be treated as an internal or external call. After these checks, internal calls are forwarded to the FDN or Hunt DN of the telephone. External calls are forwarded to the External Flexible DN (EFD) or External Hunt (EHT) DN of the telephone.

The order in which the system handles no answer and busy calls is an important consideration when implementing this feature. The order of precedence is listed below.

Calls to telephones that do not answer:

- Call Forward All Calls
- Message Waiting
- Call Forward No Answer
- Attendant Recall

Calls to busy telephones:

- Call Forward All Calls
- Hunting
- Call Waiting or Camp-On
- Message Waiting Forward Busy
- Call Forward Busy

Operating parameters

Attendant Administration does not support the entry of the new EFD and EHT Class of Service required for Call Forward by Call Type.

The following trunk routes can be defined as internal or external call types for CFCT: CO, DID, FX, ATVN, CCA, TIE, WATS, and CSA.

Incoming DISA calls are always treated as internal calls irrespective of the trunk route class mark defined for the incoming trunk.

If an incoming call has been modified by Call Forward All Calls or Hunting, the Class of Service and forwarding DN are obtained from the dialed DN. This applies when Call Forward No Answer specified at the customer level is HNT or FDN.

Feature interactions

Attendant

An attendant-extended call is classified internal or external by the originating telephone or class mark of the trunk type. This is the case whether or not the attendant has released before forwarding occurs.

Attendant Alternative Answering

If Call Forward by Call Type is enabled on the Attendant Alternative Answering (AAA) DN, calls are forwarded based on the Call Type of the originator.

Attendant Break-In to Inquiry Calls

The operation of Call Forward by Call Type is overridden on a analog (500/2500 type) telephone that has inadvertently been placed on-hook during a Break-In conference to allow it to be re-rung by the attendant.

Automatic Timed Recall

Calls eligible for Flexible Call Forward No Answer treatment, and handled by Call Forward by Call Type, use the Call Forward No Answer timer in the Customer Data Block as the recall timer for attendant extended calls. Irrespective of the relative timeout for Automatic Timed Recall, the ringing continues as long as allowed by the Call Forward No Answer Timer.

Call Forward All Calls

If a call is unanswered at the forwarded DN, the telephone that has Call Forward All Calls activated is checked for the Class of Service and the call forward DN. If a chain of call forwarding occurs, the Class of Service and the forward DN for Call Forward No Answer are obtained from the first telephone in the chain. This applies when FDN and HNT have been specified for Call Forward No Answer at the customer level.

Call Forward No Answer

The sequence for forwarding unanswered calls is Call Forward All Calls, Message Waiting, Call Forward No Answer, then Attendant Recall (if the call is attendant-extended). The same sequence is used when Call Forward by Call Type is active for the customer.

Call Forward No Answer, Second Level

To implement CFCT for Second Level Call Forward No Answer eligible calls, the originating party's call type is checked. If it is internal, the call is forwarded to the Flexible Call Forward No Answer DN (FDN). If it is external, the call is forwarded to the External Flexible DN (EFD).

Call Forward Save on SYSLOAD

The Call Forward status of each telephone can be saved as part of the data dump routine and reinstated following a SYSLOAD operation.

Call Forward, Break-In and Hunt Internal/External Network Wide

If the Internal/External definition in LD 15 is set to YES, a call is treated as internal or external on a network wide basis.

Call Redirection by Time of Day

Call Forward by Call Type (CFCT) takes precedence over Call Redirection by Time of Day.

If Call Forward by Call Type (CFCT) is enabled with Call Forward No Answer (CFNA) and Call Redirection by Time of Day (CRTOD), unanswered internal calls receiving CFNA are routed to the Flexible CFNA DN, Hunt DN, Alternate Flexible CFNA DN or Alternate Hunt DN's. External calls are routed in the same manner.

If CFNA is enabled with Hunting by Call Type and Call Redirection by Time of Day (CRTOD), unanswered internal calls are redirected to the Hunt DN or Alternate Hunt DN during the alternative time. External calls are routed in the same manner. The alternate time is defined on the called DN's data block.

Calling Party Name Display Denied

During a Call Forward or Call Transfer, the calling party digits and forwarding/transferring party digits are displayed on the terminating telephone. This display is allowed or denied depending on the Class of Service of the calling telephone and the forwarding/transferring telephone. The name of the forwarding/transferring telephone is not displayed on the calling and terminating telephone.

Calling Party Privacy

When an incoming trunk call with the Privacy Indicator is forwarded, the Privacy Indicator will be tandemmed to the far end to inhibit the display of the Calling Party Name or Number provided that the tandem node also has Calling Party Privacy (CCP) provisioned.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator will be outpulsed to the terminating node to inhibit the number of the forwarding telephone (i.e., at the tandem node) from being displayed on the terminating telephone. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).

Call Transfer

Network Call Transfer

Calls modified by Call Transfer and Network Call Transfer receive CFCT treatment. If party A (telephone or trunk) calls party B, and B transfers to party C, the forwarding DN and Class of Service are obtained from party C.

Call Waiting Redirection

If Call Forward and Hunt by Call Type (CFCT) is enabled with Call Forward No Answer and Call Waiting Redirection, “no answer” internal calls receiving Call Waiting treatment are routed for CFNA treatment to the Flexible CFNA DN (FDN) or Hunt DN, and “no answer” external calls are routed for CFNA treatment to the External Flexible CFNA DN (EFD) or External Hunt DN (EHT).

Conference

Calls modified by Conference receive CFCT treatment for the conferenced telephone. If party A calls party B, and B tries to conference in party C, the forwarding DN and Class of Service are that of C. For example, Joan and Bob are in conversation, and they try to conference in Mack. Mack is not at his desk, so the attempted conference call is sent to the destination associated with Mack’s telephone.

Direct Inward Dialing (DID)

Eligibility of a DID call for Call Forward by Call Type is determined by allowing or denying the type of call in the Customer Data Block (FNAD prompt). The decision to treat a DID call as internal or external is made on a trunk route basis.

Group Hunting Queuing Limitation Enhancement

An external call is made to the PLDN. An idle group hunt list member station is rung but does not answer. If the member station has Call Forward No Answer (FNA) or Call Forward by Call Type Allowed (CFTA) Class of Service, then the call is transferred to the attendant after the number of ring cycles defined for Call Forward No Answer has been reached. If the call is an internal call, then the system searches for another idle group hunt list member.

ISDN Semi Permanent Connections for Australia

ISPC calls are handled according to the configuration of the route associated to the phantom trunk TN. This configuration is independent of the route associated to the real TN.

Message Center

Message Center uses the Flexible Call Forward No Answer DN (FDN) of the called telephone to route no answer calls. If CFCT is enabled, unanswered internal calls use the FDN to route a call. Unanswered external calls use the External Flexible DN (EFD) to route a call.

Multiple Appearance Directory Numbers

Call redirection parameters like Call Forward No Answer are derived from the TN data block of the prime appearance of the called Multiple Appearance Directory Number. If there is more than one prime appearance, the parameters are selected from the last TN in the DN block.

If more than one prime appearance of a MADN exists, the following information must be considered prior to configuring call redirection parameters for MADNs.

The DN Block organizes MADN information in numerical TN order. The TN with the highest numerical value (000-0-06-03) is placed at the beginning of the list. The list then continues in descending order with the lowest numerical TN (000-0-03-01) at the end of the list. Service change activity affects the organization of the DN list as described in the following paragraphs.

- If a telephone undergoes Service Change, its TN is moved to the beginning of the DN list, irrespective of the numerical value. This telephone remains at the beginning of the list until another service change or a SYSLOAD.

- If a DN appears on analog (500/2500 type) telephones, and Meridian 1 proprietary telephones, the analog (500/2500 type) telephones are listed in numerical TN order at the top of the list. Meridian 1 proprietary telephones are listed in numerical TN order at the bottom of the list. A Service Change to an analog (500/2500 type) telephone moves its TN to the beginning of the list. A Service Change to a Meridian 1 proprietary telephone moves its TN to the end of the list.
- A SYSLOAD restructures the list back to numerical TN order, with analog (500/2500 type) telephones at the top and Meridian 1 proprietary telephones at the bottom. Call redirection parameters continue to be derived as described in the preceding paragraphs.

Recovery on Misoperation of Attendant Console

Call Forward takes precedence over the Misoperation feature.

Trunk Barring

If an Originating Trunk Connection is forwarded to a barred route, it receives the intercept treatment specified in the Customer Data Block.

Feature packaging

Call Forward by Call Type is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Enable Call Forward by Call Type for a customer.
- 2 LD 16 – Define a trunk route as internal or external for Call Forward by Call Type.
- 3 LD 10 – Enable Call Forward by Call Type for analog (500/2500 type) telephones.
- 4 LD 11 – Enable Call Forward by Call Type for Meridian 1 proprietary telephones.

LD 15 – Enable Call Forward by Call Type for a customer.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	RDR	Call Redirection
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- FNAD	(HNT) ATT NO FDN	Treatment for incoming DID calls.
- FNAT	(HNT) ATT NO FDN	Treatment for incoming external calls.
- FNAL	(HNT) ATT NO FDN	Treatment for incoming internal calls.
- CFNA	1-(4)-15	Number of ringing cycles for CFNA.

LD 16 – Define a trunk route as internal or external for Call Forward by Call Type.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	CDB	Customer Data Block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number

	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
RCLS	(EXT) INT	Route class marked as (external) or internal.

LD 10 – Enable Call Forward by Call Type for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
HUNT	xxxx	Hunt DN for internal calls.
CLS	(CFTD) CFTA	(Deny) allow Call Forward by Call Type Telephone. Must have Hunting (HTA) and Call Forward No Answer (FNA) allowed.
FTR	EFD xxxx EHT xxxx FDN xxxx	Flexible Call Forward No Answer DN for external calls. Hunt DN for external calls. Flexible Call Forward No Answer DN for internal calls.

LD 11 – Enable Call Forward by Call Type for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.

TN	l s c u	Terminal number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
FDN	xxxx	Flexible Call Forward No Answer DN for internal calls.
CLS	(CFTD) CFTA	(Deny) allow Call Forward by Call Type Telephone. Must have Hunting (HTA) and Call Forward No Answer (FNA) allowed.
EFD	xxxx	Flexible Call Forward No Answer DN for external calls.
HUNT	xxxx 000	Hunt DN for internal calls. Short Hunt for internal calls.
EHT	xxxx 000	Hunt DN for external calls. Short Hunt for external calls.
LHK	xx	Last hunt key number for internal and external calls

Feature operation

No specific operating procedures are required to use this feature.

Call Forward Destination Deactivation

Contents

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Feature description

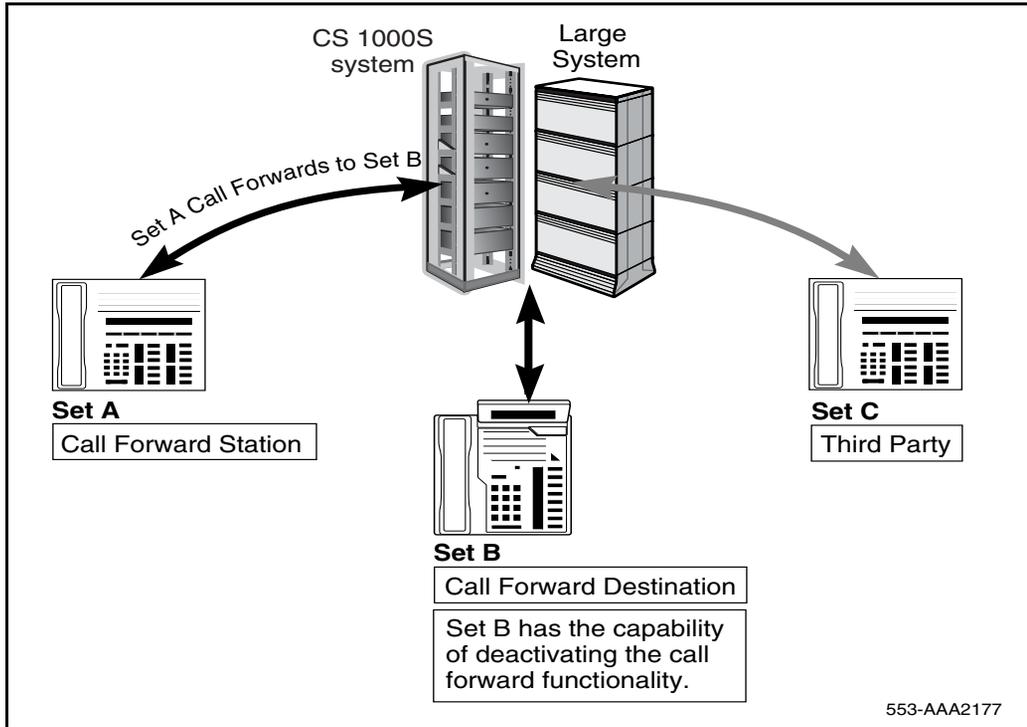
The existing Call Forward All Calls feature allows users to divert incoming calls from a telephone. The activation/deactivation of Call Forward All Calls must occur from the originating telephone. The Flexible Feature Codes and Remote Call Forward features allowed users the extended flexibility to activate/deactivate Call Forward All Calls from within the system, or outside the local network using Direct Inward System Access.

Call Forward Destination Deactivation (CFDD) permits the call forwarded destination to deactivate the Call Forward All Calls functionality on the call forward station. As illustrated in Figure 5, if telephone A is call forwarded to telephone B, then telephone B can deactivate call forward.

This feature also allows a user to deactivate call forward by using Remote Call Forward deactivate Flexible Feature Code.

In China, the Call Forward Destination Deactivation feature requires an octothorpe (#) as an end of dial delimiter when entering FFC's to deactivate.

Figure 5
Call Forward Destination Deactivation Capability



Operating parameters

The feature is applicable to all systems.

Call Forward Destination Deactivation is only supported on Call Forward.
This feature is not supported on Internal Call Forward.

The existing Call Forward All Calls feature allows users to program a call forward station within a system switch or Public Switching Telephone Network. The Call Forward Destination Deactivation feature is designed for stand alone application only. Therefore, both the destination and originator must belong to the same customer on the system.

The call forwarded destination can deactivate the Call Forward All Calls functionality. However, the call forwarded destination cannot activate the call forward functionality from the originating telephone unless using the RCFA FFC.

CFDD can be activated on proprietary, ISDN Basic Rate Interface and Analog (500/2500 type) telephones by dialing the CFDD FFC. 16-button Dual-Tone Multi-Frequency telephones can use one of the A,B,C or D function keys, configured as CFDD, or they can also dial CFDD FFC to use this feature.

CFDD can be activated on Meridian proprietary, ISDN Basic Rate interface and Analog (500/2500 type) telephones by dialing the CFDD FFC. An analog 500-type telephone with a dial pulse Class of Service cannot dial an octothorpe (#) as the end of dial delimiter. To activate CFDD, the call forwarded destination of an analog 500-type telephone has to dial the string of digits (as defined in LD 15) for the end of dial delimiter.

An analog 500-type telephone with a dial pulse Class of Service cannot dial an octothorpe (#) as the end of dial delimiter. To activate CFDD on an analog 500-type telephone, the dial string digits (the STRG prompt in LD 15) must be configured for the end of dial delimiter.

If the string to indicate end of dialing (STRG prompt in LD 15) is defined, then analog (500/2500 type), 16-button DTMF, ISDN BRI and proprietary telephones must dial string digits as an end of dial delimiter to activate CFDD.

In China, to activate CFDD a user must dial an octothorpe (#) as an end of dial delimiter. In this market, an analog 500-type telephone does not support this feature.

An Automatic Call Distribution (ACD) agent can only activate this feature from their personal Directory Number key. This feature cannot be activated on the ACD in calls key.

If the call forward station has a Prime DN and Secondary DN defined, then the Call Forward Destination Deactivation feature only considers the Prime DN to forward a call. Therefore, during the feature operation, the call forwarded destination's dialed DN of telephone A is compared with the call forward station's Prime DN.

Feature interactions

Call Forward All Calls

If a user's call forwarded Directory Number (DN) is defined as DN of telephone B and telephone A dials the CFW FFC to activate call forward, then telephone A gets forwarded to telephone B. Telephone B can deactivate CFW on telephone A by dialing the CFDD FFC.

Call Forward, Remote

Remote Call Forward (RCFW) and Call Forward Destination Deactivation (CFDD) provide the same functionality but are activated differently. CFDD does not require the call forward station's control password to deactivate the call forward functionality on the call forward station.

The call forwarded destination can use the Remote Call Forward deactivation FFC as well as CFDD to deactivate the Call Forward All Calls functionality on the call forward station.

Meridian Mail

Meridian Mail cannot deactivate the CFW functionality on the call forward station by using CFDD FFC.

Feature packaging

Call Forward Destination Deactivation (CFDD) requires Flexible Feature Code (FFC)/China Flexible Feature Code (CHFFC) package 139.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Configure Dial String in Customer Data Block.
- 2 LD 57 – Configure Flexible Feature Codes for Call Forward Destination Deactivation.
- 3 LD 18 – Configure Call Forward Destination Deactivation FFC on 16-button DTMF telephone.

The Call Forward All Calls feature is configured in LD 10 for Analog (500/2500 type) telephones and LD 11 for proprietary telephones.

LD 15 – Configure Dial String in Customer Data Block.

Prompt	Response	Description
REQ:	CHG	Change existing data block.
TYPE:	FFC	Flexible Feature Code gate opener.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
...		
- FFCS	YES	Change end of dialing digits.

-- STRL	1-3	Number of digits to indicate end of dialing.
-- STRG	xxx	String to indicate end of dialing. Outpulsing of Asterisk (*) and Octothorpe (#) (OPAO) package 104 is required to outpulse (*) and (#) in the string. Note: The asterisk (*) used to introduce a pause while outpulsing digits is supported on analog and DTI trunks, but not supported on ISDN trunks. On ISDN trunks, if the OPAO feature is enabled, the asterisk (*) is outpulsed as a called party digit.

LD 57 – Configure Flexible Feature Codes for Call Forward Destination Deactivation.

Prompt	Response	Description
REQ	CHG	Change.
TYPE	FFC	Flexible Feature Codes data block.
CUST	xx	Customer number, as defined in LD 15
FFCT	(NO) YES	Flexible Feature Confirmation Tone. YES = confirmation tone is required.
CODE	DEAF	Deactivate Feature.
- DEAF	xxxx	Enter Flexible Feature Code on a telephone.
CODE	CFWA	Call Forward All Calls Activate Code.
- CFWA	xxxx	Enter Flexible Feature Code to activate.
CODE	CFWD	Call Forward All Calls Deactivation Code.
- CFWD	xxxx	Enter Flexible Feature Code to deactivate.
CODE	CFWV	Call Forward All Calls Verify Code.
- CFWV	xxxx	Enter Flexible Feature Code to verify.
CODE	CFDD	Call Forward All Calls Destination Deactivation Code.
- CFDD	xxxx	Enter Flexible Feature Code.

LD 18 – Configure Call Forward Destination Deactivation FFC on 16-button DTMF telephone.

Prompt	Response	Description
REQ	NEW CHG	Add, or Change 16-button data block.
TYPE	ABCD	16-button data block.
TBNO	1-254	Number of ABCD Table to be added or changed.
DFLT	1-254	Number of default function table.
PRED	YES	Function table is changed for predial. NO = default mnemonics are used.
- A	CFDD	Call Forward Destination Deactivation FFC assignment of key.
- B	CFWA	Call Forward All Call Activation FFC assignment of key.
...		

Note: Call Forward Destination Deactivation FFC function can be assigned to any A, B, C or D key of the 16-button DTMF telephone.

ISDN BRI telephones can deactivate the Call Forward All Call feature. To set up the digital subscriber loop and terminal service profile for a BRI telephone refer to Overlay 27.

Feature operation

To enable the Call Forward Destination Deactivation feature, complete the following:

- 1 Go off-hook on the “call forward to” Directory Number of the call forwarded telephone and listen for dial tone.
- 2 Dial the CFDD FFC followed by DN of the call forward originator and end of dial delimiter.
- 3 Response provided.

The following responses are provided to the user of the call forwarded destination.

- 1 If originator's call forward DN is the same as active DN of destination then the call forward feature on originator is deactivated. If the confirmation tone in LD 57 is enabled, then a confirmation tone or speech is provided to the destination telephone. Otherwise, silence is provided.
- 2 If the originator's call forward DN does not match the active DN of the destination, then an overflow tone is provided to the destination telephone.
- 3 If the Call Forward All Calls functionality on the originator telephone is already deactivated, then an overflow tone is provided to the destination telephone.
- 4 If the originator does not have call forward all calls defined, then an overflow tone is provided to the destination telephone.

16-Button DTMF telephone

To activate CFDD on this telephone, the user must press one of the ABCD function keys that is defined as CFDD FFC, followed by DN of call forward telephone and end of dial delimiter.

Deactivating Multiple Appearance DN

The Call Forward Destination Deactivation feature operation remains the same. However, if the call forward station is a Multiple Appearance DN (MADN) telephone, then the station's Prime DN is considered to find the Call Forward All Calls functionality for deactivation.

If more than one MADN call forward stations have Call Forward All Calls defined and the call forward DN on one or more MADN call forward stations matches the active DN of telephone B, then the call forward functionality on one or more MADN call forward stations is deactivated.

Any one of MADN call forwarded destination station is allowed to deactivate the call forward function on the call forward station by using the CFDD FFC.

Call Forward External Deny

Contents

This section contains information on the following topics:

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Feature operation	705

Feature description

This enhancement provides the option to restrict, on a per-telephone basis, the DN that can be programmed for Call Forward All Calls to internal DNs only. Internal DNs are defined as:

- DNs that terminate on an analog (500/2500 type) telephone
- DNs that terminate on a Meridian 1 proprietary telephone
- DNs that terminate on a data terminal defined in LD 10 or LD 11
- Attendant DNs or Centralized Attendant Service (CAS) local attendant DNs
- Listed DNs (LDNs)
- Message Center DNs as defined in LD 23

External DN's include (but are not limited to) trunk access codes, Coordinated Dialing Plan (CDP) steering codes, Basic and Network Alternate Route Selection (BARS/NARS) access codes, Electronic Switched Network (ESN) Location Codes, non-message center Automatic Call Distribution (ACD) numbers, Call Park numbers, and Direct Inward Services Access numbers.

When Call Forward External Deny is enabled for a telephone:

- A user trying to forward calls from an analog (500/2500 type) telephone to an external DN receives overflow tone. The telephone is not call forwarded.
- A user trying to forward calls from a Meridian 1 proprietary telephone to an external DN receives overflow tone and the lamp associated with the Call Forward key of the telephone flashes. The telephone is not call forwarded.
- A user trying to forward calls from a Meridian digital or a display telephone to an external DN receives overflow tone. The telephone is not call forwarded and the following message is displayed on M2317 telephones:
 - **Release and try again**
- A user trying to forward calls from a data module to an external DN does not receive overflow tone. Calls are not forwarded and the following message is displayed on M2317 telephones:
 - **Invalid data forward number**

Operating parameters

External DN's cannot be used with Call Forward All Calls if Call Forward External Deny is enabled for the telephone.

Both ESN access codes and CDP steering codes are considered external DN's, and cannot be used as a Call Forward All Calls DN if Call Forward External is denied for the telephone.

The number of digits specified in LD 10 or LD 11 for the Call Forward DN must be equal to or greater than the number of digits of any other internal DN.

Attendant Administration cannot change Call Forward External Deny Class of Service.

Feature interactions

Automatic Call Distribution (ACD)

If Call Forward External Deny (CFXD) is enabled, Call Forward to an ACD DN is allowed only if the ACD DN is a message center.

Call Forward All Calls

This feature overrides other Call Forward All Calls parameters. For example, if Call Forward to Trunk Access Code (CFTA) is allowed for the customer, but Call Forward External Deny (CFXD) is enabled for the telephone, CFXD takes precedence and call forwarding to a trunk access code is denied.

Calling Party Privacy

If an incoming ISDN trunk call with the Privacy Indicator is forwarded, the Privacy Indicator will be tandemmed to the far end to inhibit the display of the Calling Party Name or Number provided that the outgoing trunk route on the tandem node also has CCP provisioned.

If an incoming non-ISDN trunk call is forwarded to a trunk, the outgoing trunk call from the tandem node will carry the Privacy Indicator if the outgoing trunk route on the tandem node has the TCPP option set.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator will be outpulsed to the terminating node to inhibit the number of the forwarding telephone (that is, at the tandem node) from being displayed on the terminating telephone. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).

Network Call Forward

Call Forward External Deny restricts a telephone from being forwarded unconditionally to a number that is not on the home switch. Therefore, Call Forward External Deny and the Integrated Services Digital Network Primary Rate Interface (ISDN PRI) feature Network Call Forward are mutually exclusive.

Recovery on Misoperation of Attendant Console

Call Forward takes precedence over the Misoperation feature.

Trunk Barring

If an Originating Trunk Connection is forwarded to a barred route, it receives the intercept treatment specified in the Customer Data Block.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 10 – Allow/deny Call Forward External Deny for analog (500/2500 type) telephones.
- 2 LD 11 – Allow/deny Call Forward External Deny for Meridian 1 proprietary telephones.

LD 10 – Allow/deny Call Forward External Deny for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	CFXA	Allow Call Forward to an external DN CFXD = Deny Call Forward to an external DN (default).

LD 11 – Allow/deny Call Forward External Deny for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	CFXA	Allow Call Forward to an external DN. CFXD = Deny Call Forward to an external DN (default).

Feature operation

No specific operating procedures are required to use this feature.

Call Forward No Answer, Second Level

Contents

This section contains information on the following topics:

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Feature description

Second Level Call Forward No Answer enhances Flexible Call Forward No Answer by forwarding unanswered calls twice. The following example best illustrates this enhancement.

Party A places a call to extension 5000, which does not answer. Extension 5000 has Call Forward No Answer (CFNA) allowed and extension 6000 defined as its CFNA number. The call forwards to extension 6000. This is the first level CFNA.

Extension 6000 also does not answer the call. This telephone has a Call Forward No Answer and Second Level Call Forward No Answer allowed Class of Service (FNA and SFA). As it has a CFNA number of 7000, it forwards there. This is the second level of Call Forward No Answer. Note that the forwarding DN is always obtained from the currently ringing telephone.

If extension 7000 does not answer the call, one of two things may occur:

- If the original call is a Direct Inward Dialing (DID) or internal call, the forwarded call continues to ring until answered or the calling party disconnects.
- If the original call is extended by the attendant console, Attendant Recall occurs.

Second Level Call Forward No Answer uses the same customer-level timer as Flexible Call Forward No Answer to determine the number of rings before forwarding a call.

Telephones with a message waiting allowed (MWA) Class of Service should have the Message Center DN defined as their FDN. Calls to these telephones forward to the Message Center and are not eligible for Second Level Call Forward No Answer.

Call Forward No Answer Second Level for Message Waiting Allowed Telephones, enables an SFA Class of Service to be defined on telephones with a Message Waiting Allowed (MWA) Class of Service. Thus, a message waiting indication can be activated at the originally dialed DN for Second Level CFNA calls terminating at a message center.

Requirements at the dialed DN for first-level CFNA are as follows:

- Flexible Call Forward No Answer or Hunting is allowed at the customer level for the incoming call type (DID, non-DID, or internal).
- The telephone has an FNA Class of Service.
- The terminating call has rung for the number of rings specified for CFNA or DFNA in the Customer Data Block (LD 15).
- The forwarding DN (Flexible Call Forward No Answer DN [FDN], Coordinated Dialing Plan DN [CDP DN], External Flexible DN [EFD], Hunting [HNT], or External Hunt [EHT]) must be distinct from the ringing DN and be a valid number within the system.

Requirements at the originally called telephone DN for Second Level Call Forward No Answer are as follows:

- Flexible Call Forward No Answer or Hunting is allowed at the customer level for the incoming call type (DID, non-DID, or internal).
- The telephone has SFA and FNA Class of Service.
- Call Forward No Answer has occurred only once prior to ringing this telephone.
- The forwarding DN (FDN, EFD, Hunt, or EHT) must be distinct from the ringing DN and must be a valid number within the system.

The order of precedence for activation of first level Call Forward No Answer is as follows:

- Call Forward All Calls
- Message Waiting
- Call Forward No Answer, and
- Attendant Recall.

The order of precedence for activation of Second Level Call Forward No Answer is as follows:

- Call Forward All Calls
- Second Call Forward No Answer (CFNA calls only)
- Attendant Recall

Operating parameters

A maximum of two levels of Call Forward No Answer are allowed for an unanswered call.

Calls directed to an attendant or Automatic Call Distribution (ACD) Message Center cannot have Second Level Call Forward No Answer.

Attendant Administration cannot change the SFA/SFD Class of Service. Error messages are generated if changes made to the Forward No Answer or Hunt Class of Service conflict with the SFA/SFD Class of Service.

Feature interactions

Automatic Timed Reminders

When Call Forward No Answer is activated on a telephone, the slow answer timer begins only after the call reaches its final destination.

Call Detail Recording on Redirected Incoming Calls

The Call Detail Recording on Redirected Incoming Calls feature does not affect how these features operate; however, it does provide information about the answering party in the CDR ID field if incoming calls have been redirected by any one of these features.

Call Forward All Calls

Second Level Call Forward No Answer uses the final (ringing) telephone in the chain to obtain Class of Service and forwarding DN information.

First level treatment operates in the following manner. Suppose that Party A calls Party B, and Party B has programmed Call Forward All Calls to Party C. Flexible Call Forward No Answer will forward a No Answer call at Party C to the forwarding directory number associated with Party B, the dialed DN.

Call Forward by Call Type

To implement Call Forward by Call Type for Second Level Call Forward No Answer eligible calls, the originating party's call type is checked. If it is internal, the call is forwarded to the Flexible Call Forward No Answer DN (FDN). If it is external, the call is forwarded to the External Flexible DN (EFD).

Call Forward No Answer

Second Level Call Forward No Answer applies to the Hunt and Flexible Call Forward No Answer options. This is implemented by defining the FNAD, FNAT, or FNAL prompts in LD 15 as FDN or HNT. If the attendant option is defined, an unanswered call goes to the attendant queue and is not eligible for Second Level Call Forward No Answer.

Call Redirection by Time of Day

Existing Second Level CFNA allows unanswered calls to receive Call Forward No Answer treatment twice. Call Redirection by Time of Day (CRTOD) parameters are obtained from the last rung Directory Number. A maximum of two levels of CFNA is allowed for an unanswered call.

Call Waiting Redirection

The existing Second Level CFNA treatment is applicable to Call Waiting calls redirected by CFNA (first level) with the Call Waiting Redirection feature which are still not answered at the last rung DN.

Calling Party Privacy

When an incoming trunk call with the Privacy Indicator is forwarded, the Privacy Indicator will be tandemmed to the far end to inhibit the display of the Calling Party Name or Number provided that the tandem node also has Calling Party Privacy (CCP) provisioned.

If an incoming non-ISDN trunk call is forwarded to a trunk, the outgoing trunk call from the tandem node will carry the Privacy Indicator if the outgoing trunk route on the tandem node has the TCPP option set.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator will be outpulsed to the terminating node to inhibit the number of the forwarding telephone (i.e., at the tandem node) from being displayed on the terminating telephone. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).

Directory Number Delayed Ringing

The Directory Number Delayed Ringer (DNDR) feature allows the SCN/MCN (non ringing keys) to actually ring after a definable period of time (DNDR prompt in LD 11). If the time before CFNA takes effect is less than the DNDR time for a particular telephone, CFNA will forward this call before any SCN/MCN keys can ring on this telephone. Note that CFNA is defined in the number of rings and DNDR is defined in seconds.

If the Forward DN telephone is busy or invalid when the call is forwarded, the call will return to the originally called telephone. However, the DNDR delay timer will be reapplied to the called telephone if DNDR is defined.

If a call is forwarded, as per existing operation, this call will be treated as a new incoming call to the forward DN. For example, if the forward DN has a DNDR value defined, a new timer will begin timing according to the forward DN's DNDR delay.

Distinctive/New Distinctive Ringing

The ringing cadence for all telephones in a chain of call redirections remains the same as for the original DN called.

Flexible Call Forward No Answer

If Second Level Call Forward No Answer is disabled, Flexible Call Forward No Answer operates as described.

Group Hunt

Second Level Call Forward No Answer will not be applied to calls that are Group Hunting.

Hunting

A forwarded call may be modified by Hunting if the Call Forward No Answer DN is busy. This call is eligible for Second Level Call Forward No Answer if the SFA Class of Service is allowed and a Call Forward No Answer DN has been defined for the last rung DN.

If Group Hunting is active, Second Level CFNA is not applied.

Message Centers

There are three types of Message Centers:

- **Automatic Call Distribution (ACD)**
Calls forwarded to an ACD Message Center are queued, so that no CFNA timeout occurs.
- **Attendant**
Calls forwarded to an Attendant Message Center are queued, so no CFNA timeout occurs.
- **DN**
An indirect call forwarded to a DN Message Center and not answered by an operator is forwarded to a second level if SFA for DN-MC.

Note: It is recommended that DN Message Center stations be denied CFNA, Call Forward Busy (CFB), Call Forwarding (CFW), and Call Hunting (HUNT).

Multiple Appearance Directory Numbers

Call redirection parameters like Hunt and Call Forward No Answer are derived from the TN data block (LD 20 TNB) of the prime appearance of the called Multiple Appearance Directory Number (MADN). If there is more than one prime appearance, the parameters are selected from the last TN in the DN block for the DN (LD 22 DNB).

If more than one prime appearance of a MADN exists, the following information must be considered prior to configuring call redirection parameters for MADNs.

The DN Block organizes MADN information in numerical TN order. The TN with the highest numerical value (000-0-06-03) is placed at the beginning of the list. The list then continues in descending order with the lowest numerical TN (000-0-03-01) at the end of the list. Service change activity affects the organization of the DN list as described in the following paragraphs:

- If a telephone undergoes Service Change, its TN is moved to the beginning of the DN list, irrespective of the numerical value. This telephone remains at the beginning of the list until another Service Change or a SYSLOAD.
- If a DN is assigned as a Prime DN on a telephone and as a secondary DN on one or more telephones, the DN list is still organized as described in the preceding paragraphs. If only one prime appearance of a DN exists, however, call redirection parameters are derived from the TN of the prime appearance telephone, even though it may not be at the end of the list. A prime appearance is always the first TN used when the system looks for call redirection instructions.

- If a DN appears on analog (500/2500 type) telephones, and Meridian 1 proprietary telephones, the analog (500/2500 type) telephones are listed in numerical TN order at the top of the list. Meridian 1 proprietary telephones are listed in numerical TN order at the bottom of the list. A service change to an analog (500/2500 type) telephone moves its TN to the beginning of the list. A Service Change to a Meridian 1 proprietary telephone moves its TN to the end of the list.
- A SYSLOAD restructures the list with analog (500/2500 type) telephones at the top and Meridian 1 proprietary telephones at the bottom. Call redirection parameters continue to be derived as described in the preceding paragraphs.

Recovery on Misoperation of Attendant Console

Call Forward takes precedence over the Misoperation feature.

Slow Answer Recall

When a Call Forward No Answer call is unanswered at a telephone eligible for Second Level Call Forward No Answer, and the call was extended by an attendant, Second Level Call Forward No Answer takes precedence over Slow Answer Recall. If the telephone has a Second Level Call Forward No Answer Denied Class of Service, the system performs Slow Answer Recall for the unanswered call.

Total Redirection Count

If a call has attempted Call Forward No Answer and was extended by the attendant, the call will not be intercepted when the Total Redirection Count limit has been exceeded. The call will continue to ring the telephone until recalled to the attendant.

If Overflow (OVF), Busy (BSY), or Source (SRCx) is configured as Intercept Treatments, a call attempting Call Forward No Answer, that exceeds the Total Redirection Count limit, will not be intercepted. Further redirections are prohibited and the call continues to ring the current telephone.

Trunk Barring

If an Originating Trunk Connection is forwarded to a barred route, it receives the intercept treatment specified in the Customer Data Block.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1** LD 15 – Assign Message Center to allow the Message Waiting indication.
- 2** LD 10 – Add/change Second Level Call Forward No Answer for analog (500/2500 type) telephones.
- 3** LD 11 – Add/change Second Level Call Forward No Answer for Meridian 1 proprietary telephones.

LD 15 – Assign Message Center to allow the Message Waiting indication.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	FTR	Features and options
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- OPT	(MCX) MCI	(Exclude) include Message Center.

LD 10 – Add/change Second Level Call Forward No Answer for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(FND) FNA (MWD) MWA (SFD) SFA	(Deny) allow Forward No Answer. (Deny) allow Message Waiting. (Deny) allow second level CFNA SFA can be implemented with an MWA Class of Service.
FTR	FDN xxxx...x	Flexible Call Forward No Answer DN.

LD 11 – Add/change Second Level Call Forward No Answer for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
FDN	xxx...x	Flexible Call Forward No Answer DN.
CLS	(FND) FNA (MWD) MWA (SFD) SFA	(Deny) allow Forward No Answer. (Deny) allow Message Waiting. (Deny) allow Second Level CFNA SFA can be implemented with an MWA Class of Service.

Feature operation

No specific operating procedures are required to use this feature.

Call Forward No Answer/Flexible Call Forward No Answer

Contents

This section contains information on the following topics:

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Feature description

Call Forward No Answer automatically forwards unanswered calls to another DN. The customer can specify the number of rings (1 to 15) before the system invokes Call Forward No Answer. The default is four rings.

Four options are available at the customer level for Call Forward No Answer:

- deny for all telephones
- route all unanswered calls to the attendant
- route all unanswered calls to the Hunt number defined for the telephone
- route all unanswered calls to the Flexible Call Forward No Answer DN defined for the telephone

Flexible Call Forward No Answer allows the customer to specify, on a per-telephone basis, where an unanswered call should be routed. This is independent of the Hunt number assigned to the telephone. This capability is implemented on a per-customer basis and can be specified for Direct Inward Dialing (DID) and non-DID call types. When activated, a call to a telephone that does not answer within the specified number of ring cycles is forwarded to the Flexible Call Forward No Answer DN (FDN) associated with that telephone.

The Flexible Call Forward No Answer operation applies only to individual DN calls of analog (500/2500 type) telephones, and not to Automatic Call Distribution (ACD) calls.

A call is forwarded under the following conditions:

- The Class of Service of the dialed telephone is Forward No Answer allowed.
- Flexible Call Forward No Answer is enabled at the customer level.
- The call has rung the specified number of times.
- The Call Forward No Answer DN (FDN) is valid and has been assigned.

System or telephone features such as Hunting and Call Forward All Calls may result in the presentation of a call to a telephone that is different from the dialed DN. In these cases, if the call is eligible for Flexible Call Forward No Answer, it is forwarded to the DN specified for the dialed DN, not the ringing DN.

When you use Multiple Appearance DN (MADNs), call redirection is determined based on the Terminal Number (TN) order in your DN block. To determine the TN order, print the DN block from LD 20 or LD 22 (TYPE = DNB). When a call comes in to a MADN, the system begins a search to determine how the call will be handled. Using the TN list you printed, the system performs the following search, beginning at the bottom of the TN list and working up.

- 1 Search for the first Prime DN appearance of the MADN with Call Forward All Calls activated.
- 2 If there are no Prime DN appearances, the TN at the bottom of the list controls call redirection.

Note: The search does not necessarily determine the highest or lowest numerical TN.

Operating parameters

Calls are forwarded one step only. For Call Forward No Answer enhancements, refer to the Call Forward, Second Level module.

Incoming calls on private lines with the Restricted Call Modification option enabled are not forwarded.

Flexible Call Forward No Answer DN (FDN) can be assigned to telephones with Message Waiting Allowed Class of Service. This is irrespective of the telephone's Class of Service and how forward no answer is specified in the Customer Data Block. Message Center always uses the FDN associated with the telephone to route unanswered calls.

Feature interactions

Advice of Charge for EuroISDN

Calls charged with Advice of Charge that are either transferred, extended or redirected to another telephone using Call Forward No Answer are charged against the last telephone that answers the call and the controlling telephone releases.

Attendant Administration

Attendant Administration can assign and change a Flexible Call Forward No Answer DN with the function key on the attendant console.

Attendant Alternative Answering

When Attendant Alternative Answering (AAA) DN does not answer, the call can be forwarded by CFNA to the DN defined as the CFNA DN for the originally dialed DN. If the originally dialed DN is the attendant, the call is forwarded to the CFNA DN defined for the AAA DN.

Attendant Blocking of Directory Number

The Attendant Blocking of DN feature will override the Call Forward No Answer feature. If the blocked DN of the telephone has the Call Forward No Answer feature active when the SACP key is pressed to ring the DN, the DN will ring until answered or disconnected. No Call Forward No Answer will be done for the Attendant Blocking of DN call.

Attendant Break-In to Inquiry Calls

The operation of Call Forward No Answer is overridden on a analog (500/2500 type) telephone that has inadvertently been placed on-hook during a Break-In conference to allow it to be re-rung by the attendant.

If the controlling party goes on hook in a Break-In conference, and is being re-rung by the attendant, the ringing takes precedence over Call Forward No Answer that may be applied to the telephone.

Attendant Overflow Position

A call rerouted through Attendant Overflow Position will Call Forward to the forwarding DN only if it is the Prime DN or a single appearance DN on that telephone.

Automatic Call Distribution

The Flexible Call Forward No Answer operation does not apply to Automatic Call Distribution (ACD) calls.

Automatic Set Relocation

Calls will not forward no answer to a telephone that is being relocated

Automatic Timed Recall

Flexible Call Forward No Answer timing takes precedence over Automatic Timed Recall timing. Irrespective of the relative time-out intervals for each feature, ringing continues as long as allowed by Call Forward No Answer.

Automatic Timed Reminders

When Call Forward No Answer is activated on a telephone, the slow answer timer begins only after the call reaches its final destination.

Call Detail Recording on Redirected Incoming Calls

The Call Detail Recording on Redirected Incoming Calls feature does not affect how the Call Forward No Answer feature operates; however, it does provide information about the answering party in the CDR ID field if incoming calls have been redirected by any one of these features.

Call Forward All Calls

Call Forward All Calls may result in the presentation of a call to a telephone that is different from the dialed DN. In this case, if the call is eligible for Flexible Call Forward No Answer, it is forwarded to the DN specified for the dialed DN, not the ringing DN.

Suppose that party A calls party B, and party B has programmed Call Forward All Calls to party C. Flexible Call Forward No Answer forwards a No Answer call at party C to the FDN associated with party B, the dialed DN.

After the call is forwarded, the MARP TN for the dialed DN controls the call redirection for Flexible Call Forward No Answer.

Call Forward by Call Type

The sequence for forwarding unanswered calls is Call Forward All Calls, Message Waiting, Call Forward No Answer, then Attendant Recall (if the call is attendant-extended). The same sequence is used when Call Forward by Call Type is active for the customer.

Call Forward/Hunt Override Via Flexible Feature Code

Call Forward No Answer is overridden by the Call Forward/Hunt Override Via FFC feature, but there are no changes to the feature itself.

Call Forward No Answer, Second Level

Second Level Call Forward No Answer applies to the Hunt and Flexible Call Forward No Answer options. This is implemented by defining the FNAD, FNAT, or FNAL prompts in LD 15 as FDN or HNT. If the attendant option is defined, an unanswered call goes to the attendant queue and is not eligible for Second Level Call Forward No Answer.

Call Page Network Wide

Call Page Network Wide (PAGENET) does not block a telephone from being programmed to Call Forward No Answer to an external Paging trunk. At call termination time, calls that are forwarded to an external PAGENET uncontrolled trunk are not blocked. However, calls forwarded to an external PAGENET controlled trunk are given access denied intercept treatment at the Paging node.

Call Redirection by Time of Day

Call redirection parameters for Call Forward No Answer are obtained from the originally dialed Directory Number. When Call Redirection by Time of Day (CRTOD) is activated, unanswered calls given CRTOD treatment are forwarded with CFNA according to the time of day. No changes are made to the existing CFNA feature.

Call Waiting

If a call to a telephone gets CFNA treatment to another telephone that is busy, Call Waiting and Camp-On do not apply. The call will attempt to terminate on the original DN again.

Call Waiting Redirection

Per existing Call Forward No Answer feature operation, the call redirection parameters for CFNA are obtained from the originally dialed DN for redirected calls.

Existing Network CFNA treatment is applied to calls receiving Call Waiting treatment on telephones with CFNA and the Call Waiting Redirection feature enabled if the Call Waiting call is not answered before the expiration of the CFNA timer and the CFNA DN is on another node.

Calling Party Privacy

When an incoming trunk call with the Privacy Indicator is forwarded, the Privacy Indicator will be tandemed to the far end to inhibit the display of the Calling Party Name or Number provided that the tandem node also has Calling Party Privacy (CCP) provisioned.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator will be outpulsed to the terminating node to inhibit the number of the forwarding telephone (i.e., at the tandem node) from being displayed on the terminating telephone. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).

Camp-On

When the Call Forward No Answer timer expires for a ringing camped-on call, the call is given Attendant Recall treatment instead of Call Forward No Answer treatment.

China – Attendant Monitor

If an attendant attempts to monitor a DN which is Call Forwarded and is idle, idle DN treatment is given.

China – Toll Call Loss Plan

Toll pad switching is also provided after call forwarding has been completed. When the toll call is diverted, the diverted party's pad level is switched back to its original value (unless it is an OPS station using dynamic switching). The Toll Loss Plan is applied again for the new call as if it is a direct call. For Call Transfer, it is provided after the transferring party completes the transfer and drops out. For Call Forward or Hunting, it is provided when the forwarding or hunting call is answered.

Dial Access to Group Calls

Call Forward No Answer cannot be applied to a Group Call.

Departmental Listed Directory Number

Call Forward No Answer to the attendant operates like Call Forward to 0, and are routed to any idle attendant console in the customer group.

Directory Number Delayed Ringing

The Directory Number Delayed Ringing (DNDR) feature allows the SCN/MCN (non ringing keys) to actually ring after a definable period of time (DNDR prompt in LD 11). If the time before CFNA takes effect is less than the DNDR time for a particular telephone, CFNA will forward this call before any SCN/MCN keys can ring on this telephone. Note that CFNA is defined in the number of rings and DNDR is defined in seconds.

If the Forward DN telephone is busy or invalid when the call is forwarded, the call will return to the originally called telephone. However, the DNDR delay timer will be reapplied to the called telephone if DNDR is defined.

If a call is forwarded, as per existing operation, this call will be treated as a new incoming call to the forward DN. For example, if the forward DN has a DNDR value defined, a new timer will begin timing according to the forward DN's DNDR delay.

Direct Inward Dialing Call Forward No Answer Timer

Call Forward No Answer takes precedence over the Message Center feature.

Electronic Lock Network Wide/Electronic Lock on Private Lines

For Call Forwarding, the COS and NCOS used for the forwarding call can be taken from either the forwarding telephone or from the forwarded telephone, depending on the option defined in the Customer Data Block.

For example, telephone B call forwards all calls to an external trunk. Telephone A calls telephone B. If OPT = CFF in LD 15 (Call Forward forwarded to party's COS and NCOS), the COS and NCOS of telephone B are used for forwarding the call to the trunk. If OPT = CFO (Call Forward originating party's COS and NCOS), the COS and NCOS of telephone A are used for forwarding the call to the trunk.

Group Call

Group Call cannot be applied to Call Forward No Answer.

Group Hunt

Call Forward No Answer (CFNA) can optionally be configured to use a Pilot DN. This option is available when the HUNT DN or the FDN is defined as a Pilot DN.

If an idle station attempted for termination has CFNA defined, then the station will be rung. If the station does not answer within the customer specified number of ring cycles, then group hunting will continue with the next DN in the group. The calling party will continue to hear ring back tone until one of the termination conditions mentioned in the “Group Hunt” feature description (the last condition is not applicable in this case) is met, or until they releases the call.

Group Hunting Queuing Limitation Enhancement

An external call is made to the PLDN. An idle group hunt list member station is rung but does not answer. If the member station has Call Forward No Answer (FNA) or Call Forward by Call Type Allowed (CFTA) Class of Service, then the call is transferred to the attendant after the number of ring cycles defined for Call Forward No Answer has been reached. If the call is an internal call, then the system searches for another idle group hunt list member.

Hot Line

Any Hot Line telephone can be assigned Call Forward No Answer but it applies only to the two-way Hot Line capability.

Hunting

Hunting may result in the presentation of a call to a telephone that is different from the dialed DN. In this case, if the call is eligible for Flexible Call Forward No Answer, it is forwarded to the DN specified for the dialed DN, not the ringing DN.

Suppose that party A calls to busy party B, and party B has programmed Hunting to party C. Flexible Call Forward No Answer forwards a No Answer call at party C to the FDN associated with party B, the dialed DN.

After the call is forwarded, the MARP TN for the dialed DN controls the call redirection for Flexible Call Forward No Answer.

ICP Network Screen Activation, Flexible DN, Meridian Mail Interactions

When a call redirected by Call Forward All Calls, Call Forward No Answer, Call Forward Busy, or Hunt terminates on an Intercept Computer (ICP) position, a redirected message identification “50” is sent to the ICP computer, when the call is answered.

Incoming Call Indicator Enhancement

When a DID call to a station that is unrestricted from receiving DID calls (UDI Class of Service) is forwarded to a UDI station due to Call Forward No Answer, the call is not RDI-intercepted to the attendant. The dialed party continues to ring. If the call has been forwarded to the attendant, the Call Forward No Answer ICI lights up, and not the RDI-intercept ICI.

Listed Directory Numbers, Network Wide

A Listed Directory Number (LDN) that is assigned to an Incoming Call Indicator (ICI) has a higher priority than a CFNA ICI. When a call is forwarded to an LDN through Flexible DN, the call is presented on an LDN ICI.

Meridian Mail Operator Revert

The Called Party ID can be passed along from the ACD Message Center when Operator Revert is activated. The attendant can now activate the Message Waiting key for the Called Party while active on the redirected call by pressing the Message Indicator key.

For example, Party A calls Party B, which Call Forward No Answers to Meridian Mail. Party A dials 0 and is transferred to a message center with “live” agents. The agent receiving the call sees information for Party B along with the information for Party A, the calling party.

Multi-Party Operations

For Call Transfer with Ring No Answer (RGNA) if the user has selected an option other than Standard, the optional treatment has priority over the CFNA option selected in the LD 15. If the user has chosen the standard option for RGNA, the call will be treated as a normal CFNA call, and handled according to the options selected for CFNA in LD 15. Once the call is routed to a Night DN during recovery of misoperation and the Night DN does not answer, the call is treated according to the NFNA and FDN options chosen for the Night DN. The Night DN can use flexible CFNA DN in two levels. MPO misoperation does not change the operation of the DNFD timer if one has been configured in LD 15.

Multiple Appearance Directory Number Redirection Prime

The MARP TN always controls the call redirection for Call Forward No Answer.

- If a DN is assigned as a Prime DN on a telephone and as a secondary DN on one or more telephones, the DN list is still organized as described in the preceding paragraphs. If only one prime appearance of a DN exists, however, call redirection parameters are derived from the TN of the prime appearance telephone, even though it may not be at the end of the list. A prime appearance is always the first TN used when the system looks for call redirection instructions.
- If a DN appears on analog (500/2500 type) telephones, and Meridian 1 proprietary telephones, the analog (500/2500 type) telephones are listed in numerical TN order at the top of the list. Meridian 1 proprietary telephones are listed in numerical TN order at the bottom of the list. A service change to an analog (500/2500 type) telephone moves its TN to the beginning of the list. A service change to a Meridian 1 proprietary telephone moves its TN to the end of the list.
- A SYSLOAD restructures the list back to numerical TN order with analog (500/2500 type) telephones at the top and Meridian 1 proprietary telephones at the bottom. Call redirection parameters continue to be derived as described in the preceding paragraphs.

Network Intercom

Hot Type I calls respect or override all kinds of Call Forward features (Busy, No Answer, All Calls, Internal, etc.) according to per-set definitions. If Call Forward is respected, the call becomes a normally dialed call and the originator will receive the appropriate indication on their display.

Network-Wide Listed Directory Number

A Listed Directory Number (LDN) ICI has a higher priority than a Call Forward No Answer ICI. When a call is forwarded to an LDN through Flexible DN, the call is presented on an LDN ICI.

Night Service enhancements

Any call which has been presented to the Attendant Overflow Position cannot be removed from the console and requeued by pressing the Make Set Busy (MSB) key. The call will only be removed if the Attendant Forward No Answer feature is active, and the Attendant Forward No Answer Timer has timed out. In this case, the call is requeued and the Attendant Overflow Position is idled.

Periodic Pulse Metering

Metered calls transferred or extended from one station to another using the Call Forward No Answer are charged against the last station at which the call is answered as the controlling station releases. The last party to forward a call onto a metered Periodic Pulse Metering trunk is charged.

Recall to Same Attendant

If the attendant does not answer a call and the Attendant Forward No Answer feature is equipped, the console is forced into the Position Busy state and the call routed to the first available idle attendant.

Recorded Announcement for Calls Diverted to External Trunks

Recorded Announcement for Calls Diverted to External Trunks (RANX) is activated if the call is forwarded to an outgoing external CO trunk with the RANX feature active.

Recovery on Misoperation of Attendant Console

Call Forward No Answer takes precedence over the Misoperation feature.

Ring Again on No Answer

If an unanswered call is forwarded to another station by Call Forward No Answer, Ring Again on No Answer is applied to the originally dialed station.

Slow Answer Recall for Transferred External Trunks

If the ringing station to which the call has been transferred has Call Forward No Answer active, the call will be transferred to the call forward DN after the specified number of ring cycles.

Total Redirection Count

If a call has attempted Call Forward No Answer and was extended by the attendant, the call will not be intercepted when the Total Redirection Count limit has been exceeded. The call will continue to ring the telephone until recalled to the attendant.

If Overflow (OVF), Busy (BSY), or Source (SRCx) is configured as Intercept Treatments, a call attempting Call Forward No Answer, that exceeds the Total Redirection Count limit, will not be intercepted. Further redirections are prohibited and the call continues to ring the current telephone.

Trunk Barring

If an Originating Trunk Connection is forwarded to a barred route, it receives the intercept treatment specified in the Customer Data Block.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Define Call Forward No Answer for a customer.
- 2 LD 10 – Add/change Flexible Call Forward No Answer for analog (500/2500 type) telephones.
- 3 LD 11 – Add/change Flexible Call Forward No Answer for Meridian 1 proprietary telephones.
- 4 LD 10 – Implement Call Forward No Answer to the Hunt DN on analog (500/2500 type) telephones.
- 5 LD 11 – Implement Call Forward No Answer to the Hunt DN on Meridian 1 proprietary telephones.

LD 15 – Define Call Forward No Answer for a customer.

Prompt	Response	Description
REQ:	CHG	Change.
TYPE:	ATT_DATA	Attendant console options
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- ICI	xx CFN	Attendant Incoming Call Indicator for Call Forward No Answer, where: xx = key number (00-19).
TYPE	RDR	

- FNAD	(HNT) ATT FDN NO	Forward No Answer DID calls to the Hunt number. Forward No Answer DID calls to the attendant. Forward No Answer DID calls to the Flexible CFNA DN. No Answer DID calls are not forwarded.
- FNAT	(HNT) ATT FDN NO	Forward No Answer external calls to the Hunt number. Forward No Answer external calls to the attendant. Forward No Answer external calls to the Flexible CFNA DN. No answer external calls are not forwarded.
- FNAL	(HNT) ATT FDN NO	Forward No Answer local calls to the Hunt number. Forward No Answer local calls to the attendant. Forward No Answer local calls to the Flexible CFNA DN. No Answer local calls are not forwarded.
- CFNA	1-(4)-15	Number of ringing cycles before No Answer calls are forwarded (default is 4).
- CFN0	1-(4)-15	Number of normal rings for CFNA, Option 0. Note: CFNA has three ringing cycle options. Refer to the User Selectable Call Redirection feature in this NTP for more information.
- CFN1	1-(4)-15	Number of normal rings for CFNA, Option 1.
- CFN2	1-(4)-15	Number of normal rings for CFNA, Option 2.

LD 10 – Add/change Flexible Call Forward No Answer for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.

CLS	(FND) FNA	(Deny) allow Call Forward No Answer.
FTR	FDN xxxx...x	Flexible Call Forward No Answer DN (if the DN Expansion package is equipped, the DN can have up to 13 digits).

LD 11 – Add/change Flexible Call Forward No Answer for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
FDN	xxx...x	Flexible Call Forward No Answer DN (if the DN Expansion package is equipped, the DN can have up to seven digits).
CLS	(FND) FNA	(Deny) allow Call Forward No Answer.

LD 10 – Implement Call Forward No Answer to the Hunt DN on analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.

TN	l s c u	Terminal number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
HUNT	xxxx	Hunt DN where a No Answer call is to be routed (if the DN Expansion package is equipped, the DN can have up to 10 digits).
CLS	(FND) FNA	(Deny) allow CFNA.

LD 11 – Implement Call Forward No Answer to the Hunt DN on Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(FND) FNA	(Deny) allow CFNA.
HUNT	xxxx	Hunt DN where a No Answer call is to be routed (if the DN Expansion package is equipped, the DN can have up to 10 digits).

Feature operation

No specific operating procedures are required to use this feature.

Call Forward Save on SYSLOAD

Contents

This section contains information on the following topics:

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Feature interactions	738
Feature packaging	738
Feature implementation	738
Feature operation	738

Feature description

This feature enables telephones to have their Call Forward (CFW) status saved as part of the data dump routine, thereby allowing the telephone to have its CFW status reinstated following a SYSLOAD. Whether a telephone has Call Forward activated following a SYSLOAD is dependant on the response to the Call Forward Save (CFWS) prompt in LD 17, and the status of the CFW as of the last successful data dump:

- If CFWS is set to NO (the default), no sets will have their CFW saved and all sets will have CFW set to the default (deactivated) following a SYSLOAD; or
- If CFWS is set to YES, all sets will have their CFW status saved and set to the state they were in as of the last successful data dump following a SYSLOAD.

Operating parameters

There are no operating parameters associated with this feature.

Feature interactions

Call Forward All Calls Call Forward by Call Type

The Call Forward status of each telephone can be saved as part of the data dump routine and reinstated following a SYSLOAD operation.

Feature packaging

This feature is included in base system software.

Feature implementation

LD 17 – Add or change Call Forward Save on data dump.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	PARM	Systems Parameters
...		
MSCL	...	
- CFWS	(NO) YES	Call Forward Save on SYSLOAD.

Feature operation

If CFWS = YES, the Call Forward status of every set is saved at data dump. Should a SYSLOAD occur, all sets are returned to the Call Forward state that they were in as of the last successful data dump.

Call Forward to Trunk Restriction

Contents

This section contains information on the following topics:

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Feature packaging	740
Feature implementation	740
Feature operation	740

Feature description

The Call Forward to Trunk Restriction feature prevents stations from forwarding calls from their station to a Public Switched Telephone Network (PSTN) trunk. This conforms with the regulatory requirements of certain countries.

A second option of this feature allows calls to be forwarded to a PSTN trunk, as in previous operation, while recording the internal DN of the originating station (rather than the forwarding station) in the Call Detail Recording (CDR) record.

Operating parameters

The CDR option can only be applied to calls originated by internal telephones. Only the true originator's DN is recorded.

Feature interactions

There are no feature interactions associated with this feature.

Feature packaging

International Supplementary Features (SUPP) package 131.

Feature implementation

LD 16 – Create or modify the data blocks for trunk routes.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	RDB	Route Data Block.
...		
CFWR	(NO) YES	Call Forward Restriction (does not) does apply to the trunk route. If NO is the response, the IDOP prompt follows.
- IDOP	(NO) YES	Identify Originating Party. Responding YES modifies the trunk CDR for internal calls to identify the originating party instead of the forwarding station. If NO is the response, CDR is allowed to proceed as usual.

Feature operation

No specific operating procedures are required to use this feature.

Call Forward, Internal Calls

Contents

This section contains information on the following topics:

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Operating parameters	742
Feature interactions	743
Feature packaging	747
Feature implementation	747
Feature operation	749

Feature description

The Internal Call Forward (Internal CFW) feature allows you to selectively forward only internal calls to the Internal CFW DN.

Internal CFW is activated/deactivated on a per-telephone basis and is user programmable when Internal CFW is activated. On a Meridian 1 proprietary telephone, the Internal CFW feature (ICF) key is the only access method. On an analog (500/2500 type) telephone, Internal CFW can be accessed by either dialing SPRE and the Internal CFW feature code (9914), or by the appropriate Flexible Feature Codes (FFCs).

All internal calls terminating on the primary (or any single appearance) DN of an Internal CFW active telephone are automatically forwarded to the programmed Internal CFW DN (refer to the Operating parameters section for information on primary and secondary, and single and multiple appearance DNs).

An internal call is defined by the Internal CFW feature as one of the following:

- an extension-to-extension call
- a Direct Inward System Access (DISA) call
- an attendant-originated call
- a conference call
- a Group Call feature initiated call
- an incoming trunk call over a trunk route classified as internal (LD 16 where RCLS = INT), and
- an incoming Integrated Services Digital Network (ISDN) trunk call using private numbering.

Non-internal calls are not affected by the Internal CFW feature.

Operating parameters

Call Forward All Calls takes precedence over Internal CFW, but is not a prerequisite for the Internal CFW feature. For example, if a telephone is already CFW All Calls active, it will not be allowed to activate Internal CFW at the same time. Internal CFW can only be activated if CFW All Calls is explicitly deactivated.

Also, if Internal CFW is active when trying to activate CFW All Calls, Internal CFW will automatically be deactivated.

Internal CFW operation is consistent with the CFW All Calls feature. Therefore, when a Meridian 1 proprietary telephone activates Internal CFW, the following DNs will become Internal CFW activated:

- the primary DN (key 0), regardless of whether the DN is multiple appearance or not, and
- all secondary DNs that are single appearance.

Consequently, if all the appearances of a multiple appearance DN are on non-primary Meridian 1 proprietary telephone keys, calls to these DNs will never receive Internal CFW treatment.

When an analog (500/2500 type) telephone activates Internal CFW, regardless of whether the DN is multiple appearance or not, Internal CFW becomes activated.

Internal CFW supports only the voice line on digital telephones that have both voice and data options.

On 2317 telephones, the CFW programming screen (invoked by pressing the CFW softkey) is not displayed when the ICF key is pressed. Instead, the screen displays the previously programmed ICF number.

If an Internal CFW call is rejected, a display message is given if the telephone is digital and has a digit display module (this display message is the same as that given to a failed CFW All Calls activation request). Otherwise, overflow tone is given.

Internal CFW is not maintained through a SYSLOAD.

Internal CFW is not supported on Basic Rate Interface (BRI) telephones.

Feature interactions

Attendant Administration

This feature does not support Internal CFW.

Attendant Blocking of Directory Number

The Attendant Blocking of DN feature will override Internal CFW. If the dialed DN of the set is idle, the DN can be blocked; if the DN is busy, busy tone will be heard.

Attendant Busy Verify

When the attendant is using this feature to call a telephone that is Internal CFW active, the call will not receive Internal CFW treatment.

Attendant-Extended Calls

When the attendant extends a call on its SRC key to a telephone that is Internal CFW active, the call on the SRC key will only receive Internal CFW treatment if it is an internal call.

Attendant Night Service

When a call to the attendant is redirected to the Attendant Night DN that is defined on an Internal CFW active telephone, the call will only receive Internal CFW treatment if it is an internal call.

Attendant Overflow

If Attendant Overflow redirects an internal call to a telephone that is Internal CFW active, the call will remain in the attendant queue, and will not receive Internal CFW treatment.

Call Forward All Calls

Call Forward Reminder Tone

If Call Forward Reminder Tone Allowed (CFRA) is in effect, whenever an analog (500/2500 type) telephone with Internal CFW active goes off hook to originate a call, the telephone sounds the reminder tone. The reminder tone is either Call Forward Dial Tone (CFDT) or Call Forward/Message Waiting Dial Tone (CFMW).

If the customer option is set to Call Forward Reminder Tone Denied (CFRD), whenever an analog (500/2500 type) telephone with internal CFW active goes off hook to originate a call, the telephone sounds either the normal dial tone (DIAL) or the Message Waiting Dial Tone (MWDT).

Call Forward, Break-In and Hunt Internal/External Network Wide

If a treated call is a transfer call and the transferring call is on the treating node, the transferred party will be considered. However, when the transferring party is not on the treating node, the transferring party will determine the treatment given.

Call Forward/Hunt Override Via Flexible Feature Code

Call Forward, Internal Calls is overridden by the Call Forward/Hunt Override Via FFC feature, but there are no changes to the feature itself.

Call Redirection by Time of Day

Call Forward Internal Calls takes precedence over Call Redirection by Time of Day.

Call Waiting Call Waiting Redirection

Internal CFW takes precedence over Call Waiting and Call Waiting Redirection.

Calling Party Privacy

When an incoming trunk call with the Privacy Indicator is forwarded, the Privacy Indicator will be tandemmed to the far end to inhibit the display of the Calling Party Name or Number provided that the tandem node also has Calling Party Privacy (CCP) provisioned.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator will be outpulsed to the terminating node to inhibit the number of the forwarding set (i.e, at the tandem node) from being displayed on the terminating set. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).

If an incoming ISDN trunk call with the Privacy Indicator is forwarded, the Privacy Indicator will be tandemmed to the far end to inhibit the display of the Calling Party Name or Number provided that the outgoing trunk route on the tandem node also has CCP provisioned.

If an incoming non-ISDN trunk call is forwarded to a trunk, the outgoing trunk call from the tandem node will carry the Privacy Indicator if the outgoing trunk route on the tandem node has the TCPP option set.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator will be outpulsed to the terminating node to inhibit the number of the forwarding set (i.e, at the tandem node) from being displayed on the terminating set. In this case, the forwarding station must include the CPP in the forwarding DN (such as *67 + ACOD + the DN on the terminating node).

Camp-On

Internal CFW takes precedence over Camp-On.

China – Attendant Monitor

If an attendant attempts to monitor a DN which is Call Forwarded and is idle, idle DN treatment is given.

China – Toll Call Loss Plan

Toll pad switching is also provided after call forwarding has been completed. When the toll call is diverted, the diverted party's pad level is switched back to its original value (unless it is an OPS station using dynamic switching). The Toll Loss Plan is applied again for the new call as if it is a direct call. For Call Transfer, it is provided after the transferring party completes the transfer and drops out. For Call Forward or Hunting, it is provided when the forwarding or hunting call is answered.

Do Not Disturb Hunting

Internal Call Forward take precedence over Do Not Disturb and Hunting.

Flexible Voice/Data Terminal Number

Voice calls directed to a dynamic voice/data Terminal Number are forwarded, if either of these features are enabled. Data calls, to a dynamic voice/data TN, are not forwarded.

Network Intercom

Hot Type I calls respect or override all kinds of Call Forward features (Busy, No Answer, All Calls, Internal, etc.) according to per-set definitions. If Call Forward is respected, the call becomes a normally dialed call and the originator will receive the appropriate indication on their display.

Phantom Terminal Numbers (TNs)

Internal CFW cannot be enabled on a phantom TN.

Recorded Announcement for Calls Diverted to External Trunks

Recorded Announcement for Calls Diverted to External Trunks (RANX) feature supports call forward to an outgoing external Central Office (CO) trunk if the trunk has the RANX flag set and is located in a node with a RAN trunk.

Recovery on Misoperation of Attendant Console

Call Forward takes precedence over the Misoperation feature.

Remote Call Forward

Remote CFW Activate (RCFA), Remote CFW Deactivate (RCFD), and Remote CFW Verify (RCFV) FFCs can be used only to access CFW All Calls; they cannot be used to access Internal CFW.

Trunk Barring

If an Originating Trunk Connection is forwarded to a barred route, it receives the intercept treatment specified in the Customer Data Block.

Feature packaging

Internal CFW requires the following packages:

- Basic Call Processing (BASIC) package 1 (CFW package required but does not have to be enabled)
- 500 Set Dial Access to Features (SS5) package 73 for access to analog (500/2500 type) telephones
- Flexible Feature Codes (FFC) package 139 to implement FFC

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 10 – Add/change Internal CFW for analog (500/2500 type) telephones.
- 2 LD 11 – Add/change CFW Internal Calls for Meridian 1 proprietary telephones.
- 3 LD 57 – Add/change Internal CFW for analog (500/2500 type) telephones using a Flexible Feature Code.

LD 10 – Add/change Internal CFW for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	500	Telephone type.
FTR	ICF 4-(16)-23 XICF	Allow Internal CFW for the specified telephone and the maximum forward DN length. Remove Internal CFW from the telephone.

LD 11 – Add/change CFW Internal Calls for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
KEY	xx ICF 4-(16)-23 <nnnn> xx null	Define an Internal CFW feature key for the telephone. The command consists of: xx = key number. ICF = feature mnemonic. 4-23 = the maximum forward DN length. nnnn = forward DN. Remove function/feature from a key.

LD 57 – Add/change Internal CFW for analog (500/2500 type) telephones using a Flexible Feature Code.

Prompt	Response	Description
REQ	NEW CHG OUT	Add, change, or remove data.
TYPE	FFC	Flexible Feature Code.
CODE	ICFA ICFD ICFV	Access Code for Internal CFW Activate. Access Code for Internal CFW Deactivate. Access Code for Internal CFW Verify.
ICFA	xxxx	Internal CFW Activate code.
ICFD	xxxx	Internal CFW Deactivate code.
ICFV	xxxx	Internal CFW Verify code.

Feature operation

Meridian 1 proprietary telephone

To forward internal calls from a Meridian 1 proprietary telephone:

- 1 Press the ICF key.
- 2 Dial the number where calls are to be forwarded.
- 3 Press the ICF key.

To cancel Internal CFW from a Meridian 1 proprietary telephone:

- Press the ICF key.

Analog (500/2500 type) telephone

To forward internal calls from an analog (500/2500 type) telephone:

- 1** Lift the handset and dial SPRE 9914 (Internal CFW feature code)

– *or* –

Lift the handset and dial the Internal CFW Activate (ICFA) FFC.

- 2** Dial the number where calls are to be forwarded.

To cancel Internal CFW from an analog (500/2500 type) telephone:

- Lift the handset and dial SPRE 9914 (Internal CFW feature code)

– *or* –

Lift the handset and dial the Internal CFW Deactivate (ICFD) FFC.

Call Forward, Remote (Attendant and Network Wide)

Contents

This section contains information on the following topics:

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Feature description

Call Forward Remote (Attendant and Network wide) introduces the RCFW feature across the Meridian Customer Defined Network (MCDN), while also providing the attendant with RCFW capabilities. New ISDN FACILITY messages are used to facilitate the RCFW feature operation in an MCDN.

The feature capabilities of the set-based (Flexible Feature Code activated) network wide application of the RCFW feature match those of the current standalone RCFW feature.

The attendant RCFW functionality is controlled by a new flexible Attendant key (RFW). The attendant has the capability to view the current call forward number and determine the call forward status of any station. It is also possible for an attendant to activate or deactivate call forward for a particular station. This functionality is applicable both local within the system and network wide.

A new optional customer-based password is introduced for attendant RCFW operation. This password is configured in LD 15 and is the only password required for attendant RCFW operation. The station control password previously used by the Flexible Feature Code (FFC) set-based RCFW is not required when the attendant activates RCFW by pressing the RFW key.

Operating parameters

The network wide application of this feature is only applicable to nodes in an MCDN environment. The nodes in the network must be system switches. No other Central Office (CO) or circuit switched network type is supported for this feature operation.

For set-based network operation of the Remote Call Forward feature, the Station Control Password Length (SCPL) must be configured to be the same length for all nodes in the network. Attempts to operate RCFW with different SCPLs will result in overflow tone being presented to the user.

For network operation of the RCFW feature, the Private Network Identifier (PNI) must be configured consistently for all nodes in the network.

The Attendant and Network Wide RCFW features use the existing RCFW code to activate or deactivate call forward on stations. As such, all limitations applicable to the local RCFW feature are applicable to the network and attendant operation of the feature.

No new hardware is required for this feature.

Feature interactions

Basic Rate Interface (BRI)

Since ISDN BRI sets do not support Flexible Feature Codes, Remote Call Forward cannot be activated from a BRI set.

Call Forward Activation from any Feature Call Forward and Busy Status

There are no direct conflicts with either of these features and the RCFW feature.

Call Forward Destination Deactivation

Remote Call Forward (RCFW) and Call Forward Destination Deactivation (CFDD) provide the same functionality but are activated differently. CFDD does not require the call forward station's control password to deactivate the call forward functionality on the call forward station.

The call forwarded destination can use the Remote Call Forward deactivation FFC as well as CFDD to deactivate the Call Forward All Calls functionality on the call forward station.

Calling Party Privacy

When an incoming trunk call with the Privacy Indicator is forwarded, the Privacy Indicator will be tandemmed to the far end to inhibit the display of the Calling Party Name or Number provided that the tandem node also has Calling Party Privacy (CCP) provisioned.

The CCP code can also be stored on the forwarding DN. If the CPP is requested on the forwarding DN, the Privacy Indicator will be outpulsed to the terminating node to inhibit the number of the forwarding set (that is, at the tandem node) from being displayed on the terminating set. In this case, the forwarding station must include the CPP in the forwarding DN (such, as *67 + ACOD + the DN on the terminating node).

Multiple Appearance Directory Numbers

The RCFW feature only applies to the primary appearances of Multiple Appearance DNs, and it is recommended that only one appearance of a Multiple Appearance DN be configured as the prime DN.

For the case of multiple stations with the same prime DN and SCPW, the RCFW operation will apply to the station that has the Multiple Appearance Redirection Prime (MARP) assigned to it.

If none of the stations having the DN and SCPW assigned are configured as the MARP TN for that DN, the RCFA and RCFD will apply to all stations matching the DN and SCPW.

The attendant-based RCFW feature will only apply remote call forward operation to the prime DN with MARP status. If the DN is not the prime DN or does not have MARP status, overflow tone will be received by the user.

Outpulsing of Asterisk and Octothorpe (OPAO)

If the OPAO package is equipped, the “#” will be treated as any other dialed digit and will not be used to signal end of dialing. The end of dialing digits to be used are defined in LD 15.

Phantom Terminal Numbers (TNs)

A phantom TN does not physically exist. It is configured with no hardware associated with it (that is, no telephones or line cards); however, all required data blocks are configured.

The Phantom TN feature uses the RCFW feature to configure and activate/deactivate the CFW DN on the phantom TNs.

As the data blocks associated with phantom TNs match those of standard analog (500/2500 type) telephones configured within the system, the operation of the RCFA and RCFD features on phantom TNs is applicable to the RCFW feature. As such, the set-based local and network RCFW features can be used to configure and activate/deactivate the CFW DN of phantom TNs.

The Phantom TN feature uses a Default Call Forward (DCFW) DN. If call forward is not active on the phantom TN, all calls to the phantom TN DN are routed to the DCFW DN.

The phantom TN feature modifies the set-based RCFW feature so that if CFW is not active on the phantom TN, and the CFW DN entered in the RCFV operation matches the DCFW DN, confirmation tone is returned to the RCFV user; if the CFW DN entered does not match the DCFW DN, overflow is returned.

This change to the set-based RCFV operation is applicable to the network RCFV operation. The operation of this feature network wide requires no changes to the ISDN message passing for the set-based network RCFV operation.

There is no Attendant RCFW operation which interacts with the DCFW DN of phantom TNs.

Preventing Reciprocal Call Forward

When Preventing Reciprocal Call Forward Allowed (PVCA) is defined in LD 15, a set within the same customer configuration cannot be call forwarded to a set that is call forwarded back to it. Thus, CFW loops are prevented.

This feature applies when the CFW DN is changed by Remote Call Forward. For network operation of the set- and attendant-based RCFW features, entering an invalid CFW DN (under the rules of the PRCF feature) results in overflow tone being returned and the CFW DN being ignored.

Traffic Measurements

The peg count, for the attendant RFW key, will be generated on the first RFW key press of the RCFW operation. While the RFW key may be pressed multiple times during a single RCFW function, the peg count will only be implemented once.

The RFW key peg count will be included in the TFC005 feature key usage traffic report.

Feature packaging

The Attendant Remote Call Forward (ARFW) package 253 must be provisioned to activate the Attendant-based RCFW feature.

For network operation the following software packages are required:

- Integrated Services Digital Network (ISDN) package 145
- Network Alternate Route Selection (NARS) package 58
- Any other trunk or dialing plan packages, as required by the customer's configuration

The following are prerequisites for set-based RCFW:

- Optional Features (OPFT) package 1
- Flexible Feature Codes (FCC) package 139
- Controlled Class of Service (CCOS) package 81

The following are prerequisites for implementation on analog (500/2500 type) telephones:

- Special Service for 2500 Sets (SS25) package 18
- 500 Set Dial Access to Features (SS5) package 73

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Set the Station Control Password Length.
- 2 LD 15 – Configure a Special Prefix Number (SPRE) for the customer.
- 3 LD 57 – Define Remote Call Forward FFCs and set FFCT.
- 4 LD 10 – Set the Station Control Password and allow Call Forward.
- 5 LD 11 – Set the Station Control Password and allow Call Forward.
- 6 LD 12 – Configure the attendant console RFW key.
- 7 LD 15 – Configure the Attendant RCFW password.

Set-based configuration

LD 15 – Set the Station Control Password Length.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	FFC	Flexible Feature Code
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.

- SCPL	0-8	Station Control Password Length (must be consistent network wide).
- FFCS	YES	Change end of dialing digits in FFC.
-- STRL	1-3	Number of digits to indicate FFC end of feature activation.
-- STRG	(#) xxx	One to three digits to indicate FFC end of a feature activation.

LD 15 – Configure a Special Prefix Number (SPRE) for the customer.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	FTR	Features and options
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- SPRE	xxx	Special Prefix Number.

LD 57 – Define Remote Call Forward FFCs and set FFCT.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	FFC	Flexible Feature Codes.
CUST	xx	Customer number, as defined in LD 15
FFCT	(NO) YES	Confirmation tone is (is not) to be given after an FFC.
CODE	RCFA	Remote Call Forward Activate.
RCFA	xx	xx = RCFA code.

CODE	RCFD	Remote Call Forward Deactivate.
RCFD	xx	xx = RCFD code.
CODE	RCFV	Remote Call Forward Verify.
RCFV	xx	xx = RCFV code.

LD 10 – Set the Station Control Password and allow Call Forward.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
...		
FTR	CFW 4-(16)-23	Allow Call Forwarding and set the forwarding DN length.

LD 11 – Set the Station Control Password and allow Call Forward.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.

<p>TN</p>	<p>l s c u</p> <p>c u</p>	<p>Terminal number</p> <p>Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.</p> <p>Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.</p>
<p>SCPW</p>	<p>xxxxxxx</p>	<p>Station Control Password (0 to 8 digits, defined in LD 15).</p>
<p>KEY</p>	<p>xx CFW 4-(16)-23</p>	<p>Assign Call Forward key (xx) and set the forwarding DN length.</p>

Attendant-based configuration

A new Flexible Attendant feature key, RFW, has been added to this overlay. Configuration of the key on the attendant console is required to allow attendant access to the RCFW feature. Configuration of the RFW key is only allowed if the ARFW package is equipped.

LD 12 – Configure the attendant console RFW key.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	2250	Attendant console type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
...		
KEY	xx RFW	Key number assigned as Attendant Remote Call Forward key.

LD 15 – Configure the Attendant RCFW password.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	ATT_DATA	Attendant console options

CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
...		
- IRFR	(NO) YES	Internal Remote Call Forward Password required. Note: An internal password is the password required to perform an attendant RCFW operation within the same customer as the attendant.
- - IRFP	xxxxxxx	Internal RCFW Password (only prompted if the response to IRFR is YES). The password length is one to eight digits; the password is numeric only.
- XRFR	(NO) YES	External Remote Call Forward Password required. Note: An external password is the password required to perform an attendant RCFW operation on a different customer than the attendant.
- XRFP	xxxxxxx	External RCFW password (only prompted if the response to XRFR is YES). The password length is one to eight digits; the password is numeric only.

Feature operation

Network Wide Set-based Remote Call Forward

From the remote set dial:

- 1 FCC RCFA code.
- 2 SCPW for the set to be forwarded.
- 3 The complete DN of the set to be forwarded. This DN is the full DN required to call the set to be forwarded from the user's present location.

Expected Result: Confirmation tone is delivered to the user.

From the remote set continue dialing:

- 4 The CFW DN to be activated followed by the end of dial indicator (#).

Expected Result: Confirmation tone is delivered to the user.

Error Condition: If an error should occur during set-based RCFW, the user will be presented with an Overflow tone. To remove the error condition, the user must release from the operation and begin again.

Attendant-based Remote Call Forward

From the attendant console, perform the following:

- 1 Press an idle loop key followed by the RFW key.

Expected Result: The RFW key is flashing and the Loop key is steady lit.

- 2 Dial the DN of the set to be forwarded.

Expected Result: If a password is required, the RFW key is winking, and the console display shows “PWD –”. If the console does not support alpha characters, the display will be blank.

If a password is not required, the console display will show the DN of the set to be forwarded followed by the CFW DN stored on that set. The RFW key lamp will display the status of the CFW DN. If the RFW lamp is flashing, CFW is not active; if the RFW lamp is steady lit, CFW is active. Proceed to Step 4.

- 3 Dial the password followed by #.

Expected Result: The console display will show the DN of the set to be forwarded followed by the CFW DN stored on that set. The RFW key lamp will display the status of the CFW DN. If the RFW lamp is flashing, CFW is not active; if the RFW lamp is steady lit, CFW is active.

- 4 The user can now enter a new CFW DN or press the RFW key to activate or deactivate the stored CFW DN.

Expected Result: The console display will show the DN of the set to be forwarded followed by the CFW DN. If the RFW lamp is flashing, CFW is not active; if the RFW lamp is steady lit, CFW is active.

- 5 When RCFW operation is in this state, the user has the following three options:

- Press the Release or Release Source key to terminate RCFW operation.
- Press the RFW key to reverse the CFW status.
- Enter a new CFW DN to begin the task of changing the CFW DN programmed. The new CFW DN is not active until the RFW key is pressed again.

Error Condition: If an error should occur during the attendant-based RCFW, the user will be presented with an Overflow tone. To remove the error condition, the user must release from the operation and begin again.

Call Forward/Hunt Override Via Flexible Feature Code

Contents

The following are topics in this section:

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Feature description

Call Forward Override provides all telephone users (having a specific Class of Service) and attendants with the ability to override Intercept Computer Call Forward (ICP-CFW), Call Forward All Calls, Call Forward No Answer, Hunting and Make Set Busy by entering a Flexible Feature Code. In order to use this feature, the originating set must have Call Forward Hunt Allowed (CFHA) Class of Service. When this feature is enabled if override is attempted, and the called party is idle, the set is rung regardless of any diversion. If the dialed set is busy and has Hunt active, the calling party will terminate on the wanted set and receive a busy indication. Sets without Call Forward/Hunt Override denied (CFHD) Class of Service will not be able to use the Call Forward/Hunt Override (CFHO) Via Flexible Feature Code (FFC) feature.

Call Forward/Hunt Override Via FFC works in network environments with system nodes and Meridian Customer Defined Network (MCDN) links.

Operating parameters

The Call Forward/Hunt Override FFC can only be used in predial mode from a set (for instance, it must be dialed before dialing the DN that has Call Forward All Calls, Intercept Call Forward, Call Forward No Answer, Internal Call Forward, Hunt, or Make Set Busy active).

The Call Forward/Hunt Override FFC can only be dialed from its own node (that is, it must be dialed before any trunk access code).

On an ABCD set the Call Forward/Hunt Override FFC can only be configured as a predial FFC (ABCD sets are a type of German telephone).

Call Forward/Hunt Override FFC can only be used against extensions with one of the following type: HOT/MCN/MCR/SCN/SCR/Basic Rate Interface (BRI) DNs and analog (500/2500 type) telephones.

It is not possible for BRI extensions to dial a Call/Forward Hunt Override FFC.

The Call Forward/Hunt Override Via FFC feature can only be used in standalone and MCDN environments. If no MCDN links are involved, no information about Call Forward/Hunt Override will be passed on to other nodes.

To get the functionality of Call Forward/Hunt Override Via FFC in an MCDN environment these enhancements must be integrated in the originating node, terminating node and any intermediate nodes.

Feature interactions

Attendant Blocking of DN

Using Call Forward/Hunt Override FFC after activation of ABDN is not allowed. Any attempt will be canceled and overflow tone will be returned.

Automatic Call Distribution

Automatic Call Distribution (ACD) DNs are not overridden by Call Forward/Hunt Override Via FFC. Any attempt will be canceled and access denied treatment will be returned. Individual DNs on an ACD set are overridden by Call Forward/Hunt Override Via FFC with the same limitations as for other sets.

**Attendant Barge-in
Attendant Busy Verify
Attendant Break-in**

Using Call Forward/Hunt Override Via FFC after activation of Barge-in, Busy Verify or Break-in is not allowed. Attempts will be canceled and overflow tone will be returned.

Using post-dial Break-in after dialing the Call Forward/Hunt Override FFC is possible after encountering a busy set, if Break-in is enabled.

Basic Rate Interface (BRI)

BRI sets are not supported; any attempt to dial Call Forward/Hunt Override from a BRI set will be ignored and access denied treatment will be returned.

BRIT

BRI TIE trunks in a Meridian Customer Defined Network (MCDN) are supported.

**Call Forward All Calls
Call Forward No Answer
Call Forward and Busy Status
Call Forward, Internal Calls
Call Forward No Answer/Flexible Call Forward No Answer
Make Set Busy
Secretarial Filtering**

These features are overridden by the Call Forward/Hunt Override Via FFC feature, but there are no changes to the features themselves.

Call Redirection by Time of Day

Call Forward/Hunt Override Via FFC has precedence over Call Redirection by Time of Day.

Call Transfer

A set can activate Call Forward/Hunt Override Via FFC when initiating a transfer. If the transfer is completed while ringing, the Call Forward/Hunt Override will still be active and passed on to the transferred party.

Call Waiting

Call Waiting can be used even if the Call Forward/Hunt Override Via FFC feature has been activated. When a busy set with Call Waiting configured is encountered, it will terminate on Call Waiting.

Call Waiting Redirection

There is no interaction with the Call Waiting treatment component of the Call Waiting Redirection feature. However, Call Forward/Hunt Override Via Flexible Feature Code does override CFNA, and thus the CFNA treatment given to unanswered Call Waiting calls by the Call Waiting Redirection feature is overridden by the CFHO feature. The incoming call will continue to be given Call Waiting treatment as if the Call Waiting Redirection feature is disabled when the CFHO feature is enabled by the calling party.

Camp-on

When a busy set is encountered, it is possible to Camp-on to the set, even if Call Forward/Hunt Override Via FFC has been activated.

Digital Private Network Signaling System One (DPNSS1)

DPNSS1 is only supported as an incoming trunk transferred to a MCDN environment using Call Forward/Hunt Override Via FFC.

Direct Inward System Access

Direct Inward System Access is not supported. Any attempt to dial the Call Forward/Hunt Override FFC will be ignored and access denied treatment will be returned.

Do Not Disturb

Do Not Disturb is not overridden by the Call Forward/Hunt Override Via FFC feature.

Flexible DN External Flexible DN

It is not possible to store the Call Forward/Hunt Override FFC as a Flexible Directory Number or External Flexible Directory Number.

Group Call

It is not possible to use the Call Forward/Hunt Override FFC as a Group Call DN.

Group Hunt

Primary Line Directory Numbers (PLDNs) are not overridden by the Call Forward/Hunt Override Via FFC feature. Any attempt will be ignored and access denied treatment will result.

Hunt

This feature is overridden by the Call Forward/Hunt Override Via FFC feature. If a set activating Call Forward/Hunt Override Via FFC encounters a busy set no hunt steps will be performed; the call will terminate on the DN and busy tone will be returned.

Hunt DN/External Hunt DN

It is not possible to store the Call Forward/Hunt Override FFC as a Hunt or External Hunt DN.

Idle Extension Notification

This feature can be used even if the Call Forward/Hunt Override Via FFC feature is activated. When a busy set is encountered, it is possible to place an Idle Extension Notification request against the set.

Intercept Computer Call Forward

This feature is overridden by the Call Forward/Hunt Override Via FFC feature. The Call Forward/Hunt Override FFC replaces the Intercept Computer Override FFC.

Intercept Computer Dial from Directory - Pre-dial Operations

Call Forward Hunt Override Via Flexible Feature Code can be dialed prior to dialing the DN from the Intercept Computer.

Last Number Redial

The Call Forward/Hunt Override FFC and the dialed DN are stored under Last Number Redial.

Multiple Appearance Multiple Call Arrangements (MCAs) Multiple Appearance Single Call Arrangements (SCAs)

If the Call Forward/Hunt Override FFC is used against an MCA (MCR/MCN) or SCA (SCR/SCN) DN it will override any active forward and terminate on all idle appearances. If all appearances are busy, busy treatment will be returned.

Primary Line Directory Number (PLDN)

It is not possible to store the Call Forward/Hunt Override FFC as a PLDN.

Phantom TN

If Call Forward/Hunt Override Via FFC is used against a phantom TN, the attempt is canceled and overflow tone is given.

Priority Override

It is possible to use Priority Override after using the Call Forward/Hunt Override FFC and encountering a busy set.

Radio Paging

If Radio Paging is activated in a call where Call Forward/Hunt Override has been used, the Call Forward/Hunt Override feature will be deactivated.

Ring Again
Network Ring Again

Using the Ring Again feature is possible after using the Call Forward/Hunt Override FFC and encountering a busy signal. Ring Again can be placed against the set for which the Call Forward/Hunt Override FFC was used (that is, the set with CFW active should be rung by the Ring Again feature).

Ring Again No Answer
Network Ring Again No Answer

Using the Ring Again No Answer feature is possible after using the Call Forward/Hunt Override FFC and encountering an idle set that does not answer. Ring Again No Answer can be placed against the set for which the Call Forward/Hunt Override FFC was used (that is, the set should be rung by the Ring Again No Answer feature).

Single Digit Access

It is not possible to store Call Forward/Hunt Override FFCs in a Single Digit Access list.

Semi-automatic Camp-On

This feature can be used even if the Call Forward/Hunt Override Via FFC feature is activated. When encountering a busy set, it is possible to activate Semi-automatic Camp-On, if it is applicable.

Speed Call

The Call Forward/Hunt Override FFC cannot be stored in a speed call list.

Feature packaging

In a standalone environment, the Flexible Feature Codes (FFC) software package 139 must be provisioned to activate this feature.

For network environments, Network Attendant Service (NAS) package 159 must also be provisioned. Attendant Overflow Position (AOP) package 56 must be restricted, as it is mutually exclusive with Network Attendant Service.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 57 – Define FFC for Call Forward/Hunt Override.
- 2 LD 10 – Set Class of Service for the Forward/Hunt Override Via FFC feature for analog (500/2500 type) telephones.
- 3 LD 11 – Set Class of Service for the Forward/Hunt Override Via FFC feature for Meridian 1 proprietary telephones.
- 4 LD 18 – Configure ABCD key for the Forward/Hunt Override Via FFC feature.

LD 57 – Define FFC for Call Forward/Hunt Override.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	FFC	Flexible Feature Code.
...		
CODE	CFHO	Call Forward/Hunt Override Via FFC.
CFHO	nnnn	Call Forward/Hunt Override FFC.

LD 10 – Set Class of Service for the Forward/Hunt Override Via FFC feature for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	500	Type of telephone.
...		
CLS	(CFHD) CFHA	Call Forward/Hunt Override Via FFC is (denied) or allowed.

LD 11 – Set Class of Service for the Forward/Hunt Override Via FFC feature for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
...		
CLS	(CFHD) CFHA	Call Forward/Hunt Override Via FFC is (denied) or allowed.

LD 18 – Configure ABCD key for the Forward/Hunt Override Via FFC feature.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	ABCD	Modifying 16-button DTMF.
...		
PRED	YES	Function table for pre-dial.
A	CFHO	CFHO is assigned to key A.

B	CFHO	CFHO is assigned to key B.
C	CFHO	CFHO is assigned to key C.
D	CFHO	CFHO is assigned to key D.

Feature operation

Standalone

To activate the Call Forward/Hunt Override feature, the user dials the FFC for Call Forward/Hunt Override and the DN of the wanted party. If the set is idle, the set is rung regardless of any diversion (for example, Call Forward All Calls, Intercept Call Forward, Call Forward No Answer, or Hunt) or Make Set Busy on the set.

If the set(s) have displays, the display(s) are updated. If the display on the originating set is updated when the call is answered, the Call Forward/Hunt Override FFC will no longer be displayed.

If the dialed set is busy and Hunt is active, the calling party will terminate on the wanted set and will receive busy indication.

If the dialed set is idle, but does not answer within the defined number of ringing cycles for CFNA, the call is not forwarded (that is, it continues to ring).

If the dialed set is busy, the attendant can activate Camp-on, if Camp-on is applicable. In addition, Ring Again can be placed against a set for which Call Forward/Hunt Override was used and a busy set was encountered.

Network

The user gets the same functionality in a Meridian Customer Defined Network (MCDN) as in standalone environments. The Call Forward/Hunt Override information is transmitted from the originating node to the terminating node using the Network Attendant Service (NAS) feature.

Activation of the service is call dependent; network-wide Call Forward/Hunt Override is part of the NAS feature.

Call Hold, Deluxe

Contents

This section contains information on the following topics:

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Feature description

Deluxe Call Hold (DHLD) offers two options: Individual Hold and Exclusive Hold.

Individual Hold indicates only those calls placed on hold on Meridian 1 proprietary telephones in a multiple appearance, single call arrangement. When a user puts a call on hold, normal hold (winking) is indicated at the user's telephone only. A slow flicker is shown at all other telephones with the multiple appearance.

With Exclusive Hold Class of Service, multiple appearances of a line remain exclusive to the user's telephone, even when the call is put on hold. While hold (winking) is indicated at the telephone holding the call, the Directory Number (DN) lamp is steadily lit on all other appearances of the held call. The Privacy Release key must be used for access by other appearances of the DN. Telephones with the Exclusive Hold capability can be held at any single-line or Meridian digital telephone with an appearance.

Operating parameters

Exclusive Hold has priority over Individual Hold. If a telephone is equipped with Exclusive Hold, the other telephones receive the Exclusive, not Individual, Hold indication.

Feature interactions

Attendant Administration

Deluxe Hold (DHLD) cannot be administered through the Attendant Administration feature.

Attendant Break-In

The attendant cannot break in to a call on hold.

Camp-On, Forced Override, Enhanced Override, Priority

Neither held calls nor telephones with calls on hold can be camped on or overridden. Overflow (fast busy) tone is returned to telephones attempting either Forced Camp-on or Priority Override.

Call Hold, Deluxe

When a call is retrieved from hold, the calling and called parties' displays reflect their individual DPD Class of Service options.

Call Park on Unsupervised Trunks

A Disconnect Timer applies to held calls on all trunks on the route. All answered calls in the held state will be disconnected if left in that state for an extended period.

Call Party Name Display

When a call is put on hold, the holding telephone's display clears. The held telephone's display does not change. When the telephone reestablishes the call, the display returns the original DN and name.

Call Transfer

A consultation call can be placed on Hold.

Called Party Control on Internal Calls

The calling party and called party can put either party on hold. However, the calling party cannot release the call while the called party is on hold. The called party is permitted to release the call.

Calling Party Privacy

When a user takes an incoming trunk call with the Privacy Indicator off of hold, no Calling Party Number or Name will be displayed on the set.

Digital Private Signaling System #1 (DPNSS1) Executive Intrusion

Executive Intrusion is denied if the requested party is put on hold by another station at the same node. This restriction also applies to the unrequested party if the unrequested party is located at the same node as the requested party (standalone) or if the requested party and the unrequested party are linked using DPNSS1.

Mixed DNs

If a call is put on Exclusive Hold in a mixed Directory Number (DN) group, other telephones with an appearance of the DN that go off hook are not included in the call, nor do they receive any tone. Privacy Release cannot be used with exclusively held calls in a mixed-appearance DN group.

Multiple Appearance Directory Number

If two or more proprietary sets of the same Directory Number are in conference due to privacy release or privacy override, then only one set can hold the call at a given time.

Music, Enhanced

A caller placed on Hold by a member of a multiple appearance group receives Music regardless of whether the call is on Hold or Exclusive Hold.

Predictive Dialing

If an established call is put on hold by the set initiating the Fast Transfer, the switch will not be able to transfer the call. The switch can only transfer a call if it is in the established state.

Feature packaging

Deluxe Hold (DHLD) package 71 has no feature package dependencies.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Enable/disable Individual Hold for the customer.
- 2 LD 10 – Enable/disable Exclusive Hold for analog (500/2500 type) telephones.
- 3 LD 11 – Enable/disable Exclusive Hold for Meridian 1 proprietary telephones.

LD 15 – Enable/disable Individual Hold for the customer.

Prompt	Response	Description
REQ:	CHG	Change existing data.

TYPE:	FTR	Features and options
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- OPT	(IHD) IHA	(Disable) enable Individual Hold.

LD 10 – Enable/disable Exclusive Hold for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(XHD) XHA	(Disable) enable Exclusive Hold.

LD 11 – Enable/disable Exclusive Hold for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.

TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(XHD) XHA	(Disable) enable Exclusive Hold.

Feature operation

No specific operating procedures are required to use this feature.

Call Hold, Individual Hold Enhancement

Contents

This section contains information on the following topics:

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Feature description

Individual Hold Enhancement (IHE) expands the functionality of the Individual Hold feature. This enhancement is part of Deluxe Call Hold. Individual Hold Enhancement provides, in a single line Multiple Appearance Directory Number (MADN) environment, the following options:

- Lamp Option
- Release Option

With the Lamp Option allowed (HLP A), if one of the single line MADNs is on hold, all other appearances of the same single line MADN now remain steadily lit.

With the Lamp Option denied (HLP D), the existing Individual Hold functionality is retained.

With the Release Option allowed (HRLA), if the user presses the Hold key while another member of the same single line MADN is still active on the call, the set that put the call on hold is now disconnected from the call.

With the Release Option allowed (HRLA), if the user is the only active member of the single line MADN on the call, pressing the hold key puts the call on hold as per the existing operation.

With the Release Option denied (HRLD), the existing Individual Hold functionality is retained.

Table 3 shows the lamp status of a single line MADN when the Lamp (HLP/HLPA/HLPD) and Release (HRLA/HRLD) Options are configured in LD 15.

Table 3
Lamp Status of a single line MADN with Lamp (HLP/HLPA/HLPD) and Release (HRLA/HRLD) Options configured

OPT in LD 15	Held or Disconnected Appearance	Other Appearances
IHA, HLPD, HRLD (See Note 1)	wink (held appearance)	flicker
IHA, HLP/HLPA, HRLD	wink (held appearance)	steadily lit
IHA, HLPD, HRLA (See Note 2)	steadily lit (disconnected appearance)	steadily lit
IHA, HLPD, HRLA (See Note 3)	wink (held appearance)	flicker
IHA, HLP/HLPA, HRLA (See Note 2)	steadily lit (disconnected appearance)	steadily lit
IHA, HLP/HLPA, HRLA (See Note 3)	wink (held appearance)	steadily lit
<p>Note 1: In this situation, the existing functionality of Individual Hold is retained.</p> <p>Note 2: In this situation, a single line MADN member is disconnected from the active call. Another member of the same single line MADN remains active on the call.</p> <p>Note 3: In this situation, a single line MADN member places a call on hold. No other member of the same single line MADN is active on the call.</p>		

Operating parameters

For Individual Hold Enhancement to be activated, Individual Hold Allowed (IHA) and the Lamp (HLP/A/HLPD) and Release (HRLA/HRLD) Options must be defined in the Customer Data Block. Also, a single line MADN must be defined for the sets.

The Lamp Option applies to Meridian 1 proprietary sets with a call on hold and to analog (500/2500 type) sets which perform the Permanent Hold operation.

If the single line MADN member is an analog (500/2500 type) set, the lamp option only applies when Permanent Hold is initiated from that set.

The Release Option only applies when two or more parties with the same single line MADN are active in a conference call.

The Release Option (HRLA/HRLD) only applies to Meridian 1 proprietary sets with a Hold key or to Meridian 1 proprietary sets with Automatic Hold enabled (CLS = AHA) in LD 11.

For Meridian 1 proprietary sets with the Release Option allowed (HRLA), the Conference (A03/A06) and Transfer (TRN) keys are ignored if more than one single line MADN is active on a Conference call.

For analog (500/2500 type) sets, Transfer, Conference, and Permanent Hold work as per the existing operation.

Feature interactions

Automatic Call Distribution

When an Individual Directory Number (IDN) on an Automatic Call Distribution (ACD) set is configured as a single line MADN, both the Lamp and Release Options of the Individual Hold Enhancement feature are applicable to that IDN.

Automatic Hold

When a proprietary set has Automatic Hold allowed and more than one single line MADN (SCR/SCN/HOT/PVR/PVN) is active on a conference call, if the user presses the hold key or presses the active single line MADN, the following occurs:

- Without the Release Option enabled, the active call on the single line MADN is put on hold. That is, the lamp on the single line MADN flashes as per the existing operation.
- With the Release Option allowed (HRLA), the active call on the single line MADN is disconnected.

If only one single line MADN is active on a conference call, the existing operation is retained.

Multi-Party Operations

Call Join

If a conference is set up using Call Join, Individual Hold Enhancement still functions.

When the Lamp Option is allowed (HLPa) and the user presses the Hold key on an active single line MADN in Call Join operation, the lamps of all other appearances of the same single line MADN are steadily lit.

When the Release Option is allowed (HRLA) and the user presses the Hold key on an active single line MADN in order to enlarge a conference using the Call Join feature, the following occurs:

- The call is disconnected if another member of the same single line MADN is still active on the call.
- The call is placed on hold if the active single line MADN is the only active member of the single line MADN on the call.

Conference (A03/A06, C6A)

With the Release Option allowed (HRLA), the Conference key is ignored on the Meridian 1 proprietary set, when more than one Multiple Appearance Directory Number (MADN) is active in the conference.

Exclusive Hold

The Exclusive Hold feature takes precedence over the Lamp Option of the Individual Hold Enhancement feature. The lamps on all other single line appearances of the MADN are steadily lit while the call is held on one of the single line MADNs. When the Lamp Option is enabled (HLPa), the existing Exclusive Hold functionality is retained.

With the Release Option allowed (HRLA) and more than one single line MADN active in a conference, the call is disconnected when the hold key is pressed.

Permanent Hold on an analog (500/2500 type) set

When an analog (500/2500 type) set puts a call on Permanent Hold, the lamp status remains steadily lit on all other members of the same single line MADN if the customer has the Lamp Option allowed.

With the Release Option configured, if an analog (500/2500 type) set with the same single line MADN initiates Permanent Hold, the call is not dropped even if other appearances are active on this call. This is as per the existing functionality.

Switch Hook Flash

When a single line MADN member uses Switch Hook Flash to place a call on hold, all other appearances of the same single line MADN remain lit as per the existing operation.

When an analog (500/2500 type) set with the same single line MADN initiates hold by Switch Hook Flash, the existing functionality is retained.

Transfer (TRN)

For Meridian 1 proprietary sets with the Release Option allowed (HRLA), the transfer feature is disabled on the single line MADN, while more than one appearance is active in the conference.

For analog (500/2500 type) sets, transfers work as per the existing operation.

Feature packaging

Individual Hold Enhancement requires Deluxe Call Hold (DHLD) package 71.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Configure Individual Hold Allowed, the Individual Hold Lamp Option and the Individual Hold Release Option in the Customer Data Block.
- 2 LD 10 – Enable Call Transfer Allowed (XFA), Enhanced Hot Line Denied (EHTD), Exclusive Hold Denied (XHD), and Permanent Hold (PHD) for analog telephones.
- 3 LD 11 – Enable Privacy Override Allowed (POA) and Exclusive Hold Denied (XHD) for Meridian proprietary telephones.

LD 15 – Configure Individual Hold Allowed, the Individual Hold Lamp Option and the Individual Hold Release Option in the Customer Data Block.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	FTR	Features and options data.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
OPT	IHA	Individual Hold Allowed.
	HLPA	Individual Hold Lamp Option Allowed. HLPD = Individual Hold Lamp Option Denied (default).
	HRLA	Individual Hold Release Option Allowed. HRLD = Individual Hold Release Option Denied (default).
...		

LD 10 – Enable Call Transfer Allowed (XFA), Enhanced Hot Line Denied (EHTD), Exclusive Hold Denied (XHD), and Permanent Hold (PHD) for analog telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Analog (500/2500 type) set data block.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
...		
CLS	XFA EHTD XHD	Call Transfer Allowed. Enhanced Hot Line Denied. Exclusive Hold Denied.
...		
FTR	PHD	Permanent Hold.
...		

LD 11 – Enable Privacy Override Allowed (POA) and Exclusive Hold Denied (XHD) for Meridian proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.

TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
...		
CLS	POA XHD	Privacy Override Allowed. Exclusive Hold Denied.
...		
KEY	xx SCR yyyy	Single Call Ringing key, where: xx = key number SCR = Single Call Ringing yyyy = DN KEY may also be defined as HOT (Two-way), PVN, PVR, or SCN.

Feature operation

With the Release Option allowed (HRLA), the user of a single line MADN disconnects from an active call by

- pressing the release key; or
- pressing the hold key to disconnect from the active call while another member of the same single line MADN is still active on the call.

However, if a user is the only active member of the single line MADN on the call with the Release Option allowed (HRLA), pressing the hold key puts the call on hold as per the existing operation.

With the Release Option denied (HRLD), the existing functionality is retained. Therefore, the user must press the release key to disconnect from the active call. When the hold key is pressed, the call is not released.

Call Hold, Permanent

Contents

This section contains information on the following topics:

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Feature description

Permanent Hold holds an active call on a 2500 telephone without attendant assistance. Calls cannot be originated or received while in the Permanent Hold mode. Incoming calls receive a busy signal if Hunting is not defined for the called telephone.

If the telephone user goes on-hook after activating Permanent Hold, the telephone periodically receives a one-second ring burst as a reminder that the call is on hold. This interval is defined at the customer level.

Operating parameters

Permanent Hold is allowed only when a call is active, and if the Class of Service allows transfer.

If Busy Verify is attempted on a telephone with a call on Permanent Hold, busy tone is received.

Override cannot be used on a telephone with a call on Permanent Hold.

Permanent Hold cannot be activated during a Conference call.

Two parties, connected trunk-to-trunk, can activate Permanent Hold at the same time if they both have the feature defined. After being placed on Permanent Hold, the second party can flash the switchhook and dial #4 to hold the call. After flashing the switchhook, any dialing sequence other than the access code results in overflow tone.

Permanent Hold is not supported on station-to-station calls.

If the telephone activating Permanent Hold is part of a mixed arrangement with another 2500, or Meridian 1 proprietary telephone, the following events occur:

- If a different telephone with the same DN goes off hook, that telephone connects to the held party.
- When Permanent Hold is activated, the DN lamp on the Meridian 1 proprietary telephone remains steadily lit.

If the telephone activating Permanent Hold goes off hook, it is automatically reconnected to the held call.

If the held party disconnects, the hold reminder ring stops.

Feature interactions

Attendant Break-In

The attendant cannot break in to a call on hold.

Audible Reminder of Held Call (ARCH)

If Audible Reminder of Held Call (ARCH) is enabled in LD 15, the Audible Reminder of Held Call (ARCH) timer takes precedence over the Permanent Hold timer.

AC15 Recall: Timed Reminder Recall

Call Hold Permanent is activated when the attendant presses the HOLD key, then the Release (RLS) key, when extending a call; then the call will be held permanently on the Loop key. If the attendant retrieves the original call on hold by pressing the Loop key, the recall timer is stopped. If the attendant then presses the RLS key, the call is extended, and the recall timer is restarted.

Call Park on Unsupervised Trunks

A Disconnect Timer applies to held calls on all trunks on the route. All answered calls in the held state are disconnected if left in that state for an extended period.

Calling Party Privacy

When a user answers a held incoming trunk call with the Privacy Indicator, no Calling Party Number or Name are displayed on the telephone.

Camp-On, Forced Override, Enhanced Override, Priority

Neither held calls nor telephones with calls on hold can be camped on or overridden. Overflow (fast busy) tone is returned to telephones attempting either Forced Camp-on or Priority Override.

China – Attendant Monitor

Monitoring is not affected if any caller involved in the monitor's call activates hold, except for the case of a simple call. For a monitored simple call, activating hold deactivates monitoring. In all cases, activation of music on hold deactivates monitoring.

An attendant monitoring a call cannot put the monitored DN on hold. The attendant pressing the hold key has no effect while monitoring is enabled.

DECT and DCS telephones

With CS 1000 Release 4.5 and later, you cannot activate Permanent Hold (PHD) from DECT and DCS telephones. Users hear overflow tone if they attempt to activate the feature.

You cannot configure the PHD feature on these telephones as of CS 1000 Release 4.5 in LD 10.

Digital Private Signaling System #1 (DPNSS1) Executive Intrusion

Executive Intrusion is denied if the requested party is put on hold by another station at the same node. This restriction also applies to the unrequested party, if the unrequested party is located at the same node as the requested party (standalone), or if the requested party and the unrequested party are linked using DPNSS1.

Predictive Dialing

If an established call is put on hold by the set initiating the Fast Transfer, the switch cannot transfer the call. The switch can only transfer a call if the call is in the established state.

Privacy

A call placed on Permanent Hold no longer has Privacy. Privacy is reinstated when the call is removed from Permanent Hold.

Feature packaging

Special Service for 2500 Sets (SS25) package 18 includes Permanent Hold, and has no feature package dependencies.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Enable/disable Permanent Hold reminder ring timer for the customer.
- 2 LD 10 – Enable/disable Permanent Hold for 2500 telephones.

LD 15 – Enable/disable Permanent Hold reminder ring timer for the customer.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	TIM	Timers.
CUST		Customer number.
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- PHDT	1-(30)-63	Permanent Hold reminder ring timing in two-second increments (that is, 30 = 60 seconds).

LD 10 – Enable/disable Permanent Hold for 2500 telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.

TN		Terminal number.
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	XFA	Allow transfer.
FTR	PHD	Enable Permanent Hold.

Feature operation

To place a call on hold, follow these steps:

- While on an active call, flash the switchhook, or press the Link key.
- Dial #4, or the Flexible Feature Code (FFC), if enabled.
- Hang up.
The Permanent Hold timer begins.

To retrieve a held call, lift the handset.

Call Park

Contents

This section contains information on the following topics:

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Feature description

Call Park (CPRK) places a call in a parked state, similar to hold, where it can be retrieved by any attendant console or telephone. A parked call must have an access ID, also known as a Park DN. This is done by parking the call on a System Park DN or on any telephone Directory Number (DN) in the system. A parked call does not occupy a DN, nor is there a lamp to indicate its presence.

Up to 50 System Park DNs are available per customer. There is no limit to the number of DNs that can be used as a Call Park access ID. However, only one call at a time can be parked against any particular telephone or System Park DN.

In addition, the system can offer a default access ID. If System Call Park is defined, the default access ID for attendant consoles and Meridian Digital Telephones is the next available System Park DN.

If System Park DN's are not defined for the customer, the default access ID is the DN of the telephone where the call was parked. An attendant must press the Park key and enter a DN if System Park DN's are not defined.

Park the call, then page the person called. The person called then picks up the call directly or through the attendant. Call Park also enables the telephone that originally receives the call to park it so that another telephone can retrieve it later. The telephone placing the call in Park is free to make or answer other calls.

Calls can be parked from telephones or attendant consoles with the Park key/lamp pair or Special Prefix (SPRE) code. Parked calls not retrieved within a specified time (30 to 240 seconds) are recalled to the telephone that parked it. Music for parked calls can be provided if Music (MUS) package 44 is installed.

If a call is parked on a System Park DN, it is recalled to the attendant who parked it if the parking attendant is idle. If the parking attendant is busy, the call is presented to any idle attendant.

If a call is parked on a telephone DN, the recall is placed in the attendant queue and presented to any available attendant. In all cases, parked calls recalled to the attendant appear on the Recall Incoming Call Identification (ICI) key, if defined.

The Park DN of the most recently parked call can be redisplayed on Meridian 1 proprietary telephones equipped with displays, a Park key, and a Display key. This is done by pressing the Display key, then the Park key. The attendant can display the last call parked by pressing the Park key when no loop key is active.

Operating parameters

Call Park is not available for calls on Dial Intercom keys or for calls on analog (500/2500 type) telephones designated as Dial Intercom telephones.

Call Park is not permitted when Privacy Release or Conference is active.

Calls parked from Meridian 1 proprietary telephones and analog (500/2500 type) telephones are recalled to the telephone that parked the call.

When a Multiple Appearance Single Call telephone mix (the same DN appears on Meridian 1 proprietary telephones, and single-line telephones) is parked, other appearances are not automatically bridged to the parked call when going off hook. The call can be retrieved by another Multiple Appearance DN (MADN) telephone only by dialing the Call Park retrieval code and the DN.

Remote access (for example, Centralized Attendant Service or Direct Inward System Access) for parked parties is not permitted.

Private lines, attendant DNs, Automatic Call Distribution (ACD), and Direct Inward System Access (DISA) DNs are not valid park numbers.

Trunks without disconnect supervision cannot be parked.

Parked calls are not retained during initialization or SYSLOAD.

Parked calls cannot be accessed with the Automatic Call Distribution (ACD) In-calls key. If parked access from Automatic Call Distribution (ACD) positions is required, a DN key must be provided.

A parked call recall cannot be placed on hold by the attendant.

A call transferred to the attendant by the Conference key on a Meridian 1 proprietary telephone cannot be parked by the attendant. A call transferred to the attendant by the Transfer key on a Meridian 1 proprietary telephone can be parked by the attendant.

Feature interactions

AC15 Recall: Transfer from Meridian 1

If Party Z parks the call initiated by Party X (an external caller), then the AC15 Recall: Transfer cannot be used to call Party Y. Party Z can neither park, selectively, one member of a split trunk nor park a whole split trunk. This avoids a recall to an attendant on the recall originating node that would not be able to send a recall to toggle from one party to another.

AC15 Recall: Transfer from Norstar

Remote access to call park from AC15 TIE trunks is not permitted. It is not possible to park an AC15 trunk if it has a call on hold. When an AC15 trunk is parked, it is not allowed to initiate a consultation call.

Access Restrictions

A call can be parked on any DN, regardless of its Class of Service. Access to a parked call is governed by the same Class of Service restrictions for normal trunk-to-telephone call processing. Table 4 details the restrictions. These restrictions can be overridden with the Authorization Code.

**Table 4
Accessing telephone Class of Service**

Parked call type	Accessing telephone Class of Service		
	FRE	FR1	FR2
Telephone	allowed	allowed	allowed
CO/FX/WATS	denied	denied	denied
DID Trunk	denied	denied	denied
TIE trunk	allowed	allowed	denied

Advice of Charge for EuroISDN

When a set parks a call charged with Advice of Charge, the calling party continues to be charged until the call is answered by another set.

Attendant Blocking of Directory Number

It is not possible to park an Attendant Blocking of DN call. If a Call Park call recalls to a blocked DN, the recall will be treated as if the DN is in a ringing state.

Attendant Break-In

The attendant cannot break in to a parked call.

Automatic Call Distribution

Calls parked by Automatic Call Distribution (ACD) agents are recalled to the ACD DN queue and presented to any available agent.

Automatic Redial

When an Automatic Redial (ARDL) call is not accepted by the calling party, the Call Park (PRK) key is ignored.

Attendant Consoles

The Call Park access code and the Park DN are displayed on the M2250 attendant console for parked call recalls.

Autodial Speed Call

Autodial and Speed Calls can be programmed to park calls or access parked calls.

Automatic Timed Reminders

A Call Park recall to an attendant appears on the Recall Incoming Call Indicator.

Busy Lamp Field

A Busy Lamp Field can be equipped to display the status of System Park DN's.

Call Detail Recording (CDR)

Call Detail Recording (CDR) records for Call Park are similar to the start and end records generated when a call is transferred or terminated. When a call is parked, a Call Detail Recording (CDR) start record is generated if one has not already been generated by another feature. A CDR record is not generated when the parked call is accessed. A CDR end record is generated when the trunk call is terminated or when a parked call disconnects.

Call Detail Recording on Redirected Incoming Calls

There is no interaction with Call Detail Recording on Redirected Incoming Calls, as there is no "N" record generated in a Call Park scenario.

Call Forward

A recalled parked call to telephones with Call Forward, Call Forward Busy, or Call Forward No Answer (CFNA) is not forwarded.

Call Page Network Wide

A station set or attendant console that parks an external Call Page Network Wide (PAGENET) uncontrolled call is not blocked. However, an external PAGENET controlled call is blocked.

Call Park on Unsupervised Trunks

A 14-second Disconnect Timer applies to parked calls on all trunks on the route. All answered calls in the parked state will be disconnected if left in that state for an extended period.

Call Party Name Display

Upon valid operation of the Park key, or dial-access if used, Call Party Name Display (CPND) shows the SPRE code and the Park Access ID. Because the Park Access Code is displayed, no CPND name is displayed. The only time that the digit display shows the actual DN of the parked party is when the parked party has been retrieved, put on hold, and then retrieved from hold.

Call Pickup

An analog (500/2500 type) telephone user on a call can pick up a call by parking the existing call, then activating the Call Pickup feature.

Call Pickup Network Wide

The Call Pickup Network Wide feature cannot be used to pick up parked calls. A recall of a parked call can be picked up, in which case the call is unparked and answered by the requesting party.

Call Transfer Conference

A parked call can be accessed after Call Transfer or Conference is activated.

Call Waiting

A recall of a parked call is not presented in the Call Waiting mode. If an internal telephone is in the parked state, Call Waiting to that telephone is not provided.

Centralized Attendant Service

Call Park is limited to the local system for systems equipped with Centralized Attendant Service. Call Park cannot be accessed from release-link trunks.

China – Attendant Monitor

If a DN being monitored becomes parked by another party, the Attendant Monitor feature is deactivated.

Conference

A parked call can be accessed after Conference is activated

Console Presentation Group Level Services

If the attendant who parked a call on the System Park DN is busy when that call is recalled and the parking attendant does not belong to the same Console Presentation Group (CPG) specified for the tenant of the calling station, the parked call is presented to an idle attendant in the same CPG specified for the calling station. If no attendant in that CPG is available to receive the recall, the parked call is queued until one of the attendants in the CPG becomes idle.

Tenant access checking between the set (A) who picks up a parked call and the party (B) who parked the call, is enforced as follows:

- If B is a set, tenant-to-tenant access must be allowed between A and B.
- If B is an attendant, A and B must belong to the same CPG for tenant-to-tenant access.
- If access is denied, set A (who intends to pick up the access-denied parked call) receives a blocking tone.

Digital Private Signaling System #1 (DPNSS1) Executive Intrusion

Attempts to intrude into a parked call receive Executive Intrusion Denied treatment.

Display of Calling Party Denied

When the Call Park timer expires on a parked call, a set's display reflects the Directory Number the call is parked against. The display does not include the name and DN of the calling party. When a parked call is retrieved by another set, display information is based on the DPD Class of Service of the individual sets.

Do Not Disturb

Calls can be parked on telephone DNs that are in the Do Not Disturb mode (DND). Telephones in the DND mode can park a call or access a parked call. Recall of a parked call to a DND telephone is recalled to the attendant.

Generic XFCOT Software Support

Call Park feature allows an attendant or telephone user to place a call in parked state (connected to a parked DN) where it can be retrieved by any attendant console or station set. If the call is not retrieved after a customer-defined time, the call is recalled to the telephone user who parked it.

Call Park is allowed on disconnect-supervised or unsupervised IPE loopstart Central Office trunks. If a caller on an unsupervised loopstart trunk disconnects while the call is in parked state is detected when the parked call is recalled or answered.

Caller disconnection during park state is detected by a disconnect supervised loopstart trunk on an XFCOT card. The disconnected caller is then dropped from the parked DN.

Group Call

Call Park cannot be applied on a Group Call.

Held Call Clearing

A call put on hold during a Call Park is not cleared by an on-hook action on that set.

Hot Line

Analog (500/2500 type) Hot Line telephones with EHTA and XFA Class of Service are allowed to park calls using the established Call Park procedures. Once a call is parked on an analog (500/2500 type) Hot Line telephone and the telephone is placed on hook, it cannot be unparked. Parked calls will recall to the parking telephone after the Call Park timeout. Two-way Meridian 1 proprietary telephone Hot Line stations that are equipped with a Call Park key/lamp pair are allowed to park calls in the normal fashion. As with analog (500/2500 type) telephones, a call parked from a Hot Line key cannot be picked up using the same key.

In-Band Automatic Number Identification

If an agent parks an In-Band ANI call and it times out and recalls the agent, the ANI number is not displayed.

INIT ACD Queue Call Restore

Parked calls are restored by ACDR as new incoming calls to the ACD DN.

Intercept Computer Dial from Directory - Pre-dial Operation

An attendant can park a call in the following manner:

- Press the Call Park key on the attendant console.
- Dial a DN from the Intercept Computer.

Terminate Call Park operation by pressing the Release key.

Make Set Busy

Recall of a parked call to a telephone in the Make Set Busy mode is intercepted by the attendant.

Multi-Tenant Service

If the attendant who parked a call on the System Park DN is busy when that call is recalled and the parking attendant does not belong to the same Console Presentation Group (CPG) specified for the tenant of the calling station, the parked call is presented to an idle attendant in the same CPG specified for the calling station. If no attendant in that CPG is available to receive the recall, the parked call is queued until one of the attendants in the CPG becomes idle.

Tenant access checking between the set (A) who picks up a parked call and the party (B) who parked the call, is enforced as follows:

- If B is a set, tenant-to-tenant access must be allowed between A and B.
- If B is an attendant, A and B must belong to the same CPG for tenant-to-tenant access.
- If access is denied, set A (who intends to pick up the access-denied parked call) receives a blocking tone.

Music

When a call is parked, music is not heard. When a trunk is parked, music plays if music is enabled for the route.

Network Intercom Private Line Service

Hot Type I and Private Line Service calls cannot be parked.

Periodic Pulse Metering

When a metered call is parked from one station to another, the controlling station is charged until the call is answered.

Privacy Override

Calls in a Privacy Override conference state cannot be parked.

Privacy Release

When a call from a Meridian 1 proprietary telephone is parked, that telephone cannot activate Privacy Release. For example, Party A calls Party B. Party B parks the call. Party A cannot activate Privacy Release.

Recall After Parking

This enhancement to Call Park causes a parked call to be recalled to the attendant or night DN if the attendant is in Night Service, rather than to the parking telephone, if not answered within a customer-defined period of time (two-minute maximum). The call may be external or internal.

The recall to the attendant appears on the Recall ICI key. If the attendant is in Night Service, the recall occurs to the night DN. If the night DN is busy, the call is queued if it is an external call.

Traffic measurements

TFC007 is included for Call Park. It provides traffic measurements for the following:

- system park usage
- system park overflow
- telephone park usage
- park access
- park recall
- average waiting time

Feature packaging

Call Park (CPRK) is package 33 and has no feature package dependencies.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1** LD 15 – Enable or disable Call Park.
- 2** LD 50 – Add/change or print Call Park. This overlay must be defined for Call Park operation.
- 3** LD 10 – Allow or deny access to Call Park for analog (500/2500 type) telephones.
- 4** LD 11 – Add or change a Call Park key on Meridian 1 proprietary telephones.
- 5** LD 12 – Add or change a Call Park key on attendant consoles.

LD 15 – Enable or disable Call Park.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	FTR	Features and options
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- OPT	CPA	Enable Call Park.

LD 50 – Add/change or print Call Park. This overlay must be defined for Call Park operation.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	CPK	Call Park data block.
CUST	xx	Customer number, as defined in LD 15
CPTM	30-(45)-240 30-(45)-480	Call Park Timer (in seconds). Call Park recall time (in seconds) if CPRK package 33 is equipped. The amount of time a call is held in the parked state before recalling the parking set or the attendant.
SPDN	(0)-50 xxxx	Number of contiguous System Park DNs and the first System Park DN. The default 0 (zero) disables System Park DN capability, but allows Telephone Park DNs. If the DN Expansion package is equipped, the System Park DN can have up to seven digits.
MURT	0-511 0-127	Music route number for parked calls. For Large Systems For Small Systems and CS 1000S systems

LD 10 – Allow or deny access to Call Park for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	XFA	Allow access to Call Park.

LD 11 – Add or change a Call Park key on Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx PRK	Add a Call Park key (key number must be 17 for the M2317).

LD 12 – Add or change a Call Park key on attendant consoles.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	2250	Attendant console type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx PRK	Add a Call Park key (key number can be 00-19 on the M2250).

Feature operation

To park a call with the Park key:

- 1 Press **Park** twice.
If there is a System Park extension, the call is parked on it. Otherwise, it is parked on your extension.

To park a call on an extension other than the System Park extension, follow these steps:

- 1 Press **Park**.
- 2 Enter the extension number.
- 3 Press **Park** again.

To park a call using SPRE codes, follow these steps:

- 1 Press **Transfer** or **Conference**.
- 2 Dial SPRE 71.
You can dial an extension number to park the call, or you can use the System Park extension, chosen automatically. It shows on your telephone's display, if equipped.
- 3 Press **Transfer** or **Conference** again.

To retrieve a parked call, follow these steps:

- 1 Select a free extension.
- 2 Dial SPRE 72.
- 3 Dial the extension where the call is parked.

Call Park on Unsupervised Trunks

Contents

This section contains information on the following topics:

Feature description	811
Operating parameters	812
Feature interactions	812
Feature packaging	813
Feature implementation	813
Feature operation	813

Feature description

This enhancement to the Call Park feature allows Central Office (CO), FEX, and Wide Area Telephone Service (WATS) trunks, without disconnect supervision, to be call-parked. All other trunk types without disconnect supervision cannot be parked. The Disconnect Timer (DCTI) is used to prevent phantom calls from ringing beyond the set time. Answered calls in the held, parked, camped-on, or ringing state are disconnected when the DCTI times-out.

This enhancement also allows Direct Inward System Access (DISA) on CO, FEX, and WATS trunks without disconnect supervision. DISA on unsupervised trunks does not intercept to the attendant, but is subject to Timed Forced Disconnect Timer, which prevents the CO trunk from being seized if the far end hangs up.

Operating parameters

The Disconnect Timer applies not only to Call Park but also to all trunks on the route. All answered calls in the held, parked, ringing, or Camp-On states will be disconnected if left in that state for an extended period (this even applies to calls in a call waiting queue type).

Feature interactions

Attendant Calls Waiting Indication

If all the attendants are busy and a Call Park Recall occurs, the recall is placed in the calls waiting queue. If the recalled station is busy when the recall occurs, the Disconnect Timer (DCTI) temporarily suspends timing until the recall is presented. After the recall is presented, the Disconnect Timer continues timing for the remainder of the period.

Automatic Call Distribution (ACD)

If all the ACD agents are busy and a Call Park Recall occurs, the recall is placed in the ACD DN queue.

Call Hold, Deluxe Call Hold, Permanent

A Disconnect Timer applies to held calls on all trunks on the route. All answered calls in the held state will be disconnected if left in that state for an extended period.

Call Park

A 14-second Disconnect Timer applies to parked calls on all trunks on the route. All answered calls in the parked state will be disconnected if left in that state for an extended period.

Camp-On

A Disconnect Timer applies to camped-on calls on all trunks on the route. All answered calls in the camped-on state will be disconnected if left in that state for an extended period.

Feature packaging

Call Park on Unsupervised Trunks is included in Direct Inward System Access (DISA) package 22.

Feature implementation

LD 16 – Set the disconnect timer.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	RDB	Route Data Block.
...		
DCTI	(0)-511	Time, in seconds, that an extension is allowed to ring or be on hold or Call Park before the trunk is disconnected. 0, the default, or <CR> means that the condition goes on indefinitely. Respond with a value equal to the number of seconds a set is to ring after recall, plus the value of the Call Park Recall Timer (which is defined in LD 50 in response to the CPTM prompt). The value stored, which will be the closest lower multiple of four, is echoed back upon entry.

Feature operation

Feature operation for Call Park on Unsupervised Trunks is the same as that for Call Park.

Call Party Name Display

Contents

This section contains information on the following topics:

Feature description	815
Operating parameters	819
Feature interactions	819
Feature packaging	825
Feature implementation	826
Feature operation	832

Feature description

Call Party Name Display (CPND) identifies the calling or called number in addition to the DN. The identifier (for example, the name) associated with a DN on telephones with an alphanumeric display is defined in LD 95.

Whenever the calling party's DN displays on the terminating telephone, the calling party's name also appears. Likewise, on an internal call, the called party's name is appended to the displayed DN on the originator's telephone, as soon as a valid DN is completely dialed.

CPND displays the DN and name of the originally dialed party for redirected calls. A Class of Service, DNDA/DNDD (Dialed Name Display Allowed or Denied), is assigned on a per-telephone basis. The terminating telephone must have DNDA to display the name of the originally dialed party.

The M2250 attendant console can extend a call to a DN requested by a calling party.

Multi-Language CPND displays the party's name in Roman/English or Katakana (Japanese alphabet) characters on Meridian modular telephones. The names are stored in the database under each character set and the language is specified with the Meridian modular program keys.

Two languages can be stored in the database for any given name. For this enhancement to work fully, both telephones involved must have the same name in the same languages. (For example, John Smith calls Anne Jones. Both John and Anne must have Katakana in their database for the name to appear in Katakana characters. If John has Katakana enabled, but Anne does not, Anne sees the English version.)

Entering Katakana, or any other non-ASCII Roman characters, requires a system terminal that supports eight-bit, no-parity Input/Output.

The maintenance terminal must support ISO 8859-1 Latin 1 for the Roman character mode.

Call Party Name Display assignment

A CPND name string can be assigned to internal DNs associated with any of the following:

- analog (500/2500 type) telephones
- Trunk access codes
- Attendant DNs
- Automatic Call Distribution (ACD) DNs
- Dial Intercom Group member numbers

As a customer option for multiple appearance DNs (MADNs), the assigned CPND name can be linked with its member telephone's designator (DES field in the TN block) to further identify the party of a shared DN.

Call Party Name Display composition

A CPND name is the name used to identify a DN, entered in ASCII alphanumeric character format. The maximum CPND length is the smaller of two values: the maximum length configured in LD 95 or 27 characters, including spaces and special characters.

The ASCII characters supported are A-Z, 0-9, space, Hex 20-127, and the following special characters:

" () - # ,

The NAME prompt in LDs 10, 11, and 95 accepts first name, a comma as a separator, and last name (such as Mary,Smith). CPND also supports names using a space separator (such as Mary Smith), treating the entire name string as the first name. See Table 5 for examples.

Table 5
Response formats for CPND NAME prompt

Entered Data	Displayed Result
Sue Smith <CR>	Sue Smith
Sue,Smith <CR>	Sue Smith
Sue <CR> Sue, <CR>	Sue (Trailing comma is ignored.)
Sue,Smith, Dept. 410 <CR>	Sue Smith, Dept. 410
Sue Smith, Joe Brown <CR>	Sue Smith, Joe Brown

The default is to accept the names as entered, replacing the comma with a space. Hence, a value entered as Mary,Smith displays as Mary Smith.

Note: Do not enter leading spaces. LD 95 ignores them. When CPND information is printed (using LD 10/11 or LD 20), the printout reflects what is in the database, not what appears on the telephone display.

In addition to the caller's name, a reason field can be provided to indicate the cause of a redirection. This is a customer option and the actual mnemonics are service changeable. The following call redirections have a reason displayed:

- Call Forward All Calls
- Call Forward No Answer
- Hunting/Call Forward Busy
- Call Transfer with Network Call Redirection

- Attendant Alternative Answering
- Call Pickup

Display Devices and Capabilities

The M2317 has a display line of 40 characters, 33 available for displaying DN-related information.

If there are more characters than the telephone's display allows, the system deletes letters to make the name fit.

The M2250 attendant console is equipped with four lines of LCD alphanumeric display. Each line has 40 characters, and lines 2 and 3 are used to display DN-related information. If the number of characters displayed is more than 40, an arrow appears in the upper right corner of the display. The arrow alerts the user that more information can be retrieved using the scrolling keys. For complete information, refer to the *M1250/M2250 Attendant Console User Guide*

The call type, originating or terminating telephone, and the Class of Service all affect the display and CPND information. Three Classes of Service are associated with the display function. CPND conforms to whichever Class of Service is configured for the telephone.

- Automatic Digit Display (ADD)
- Digit Display Selection (DDS)
- Touchphone Digit Display (TDD)

No user interaction is required to display information on the call. On the M2317 telephone, however, the user can press the SAVE # softkey to save the name and number of the calling party. This applies to all outgoing and answered incoming calls.

Operating parameters

CPND is not displayed if a live call is not involved (for example, while programming a Speed Call key).

Attendant Administration does not support the entry of CPND class marks for digital telephones.

CPND is not displayed on the calling telephone while making an outgoing trunk call.

CPND is not supported on data calls.

CPND applies only to redirected calls on M2008, M2016, M2216, M2616, and M2317 telephones.

For M2008, M2016, M2216, M2616, and M2317 telephones, CPND is provided on a per-telephone basis, depending on the Class of Service.

DNDA (Dialed Name Display Allowed) and NDD (No Digit Display) Class of Service are mutually exclusive.

Multi-Language CPND operates on Meridian modular telephones only.

An individual DN can have Roman/English, or Katakana, or both programmed in the database if MLIO is equipped.

If the call destination is a trunk or a telephone type other than Meridian modular, the name is translated into the ASCII equivalent.

Multi-Language CPND applies to DNs on local switches only. CPND for Integrated Services Digital Network (ISDN) calls is displayed in English only.

The CPND feature uses JIS X 0201-1976, the RCode for Information Interchanges, also known as JIS-Roman, which specifies the upper- and lower- case letters, numbers, punctuation and symbols, and Katakana.

Feature interactions

AC15 Recall: Timed Reminder Recall

When the AC15 recall is presented to an attendant or a set with a display, the source and destination names are shown beside the DNs or the ACODs.

ACD Routing by DNIS

When an incoming trunk call from a route with Routing by DNIS is presented to a display telephone, the identification digits follow the regular trunk access code and member number. It precedes the CPND name for the DNIS DN.

Attendant Recall

Attendant Recall using the Attendant Recall key or a switchhook flash results in both source and destination information being displayed. No redirection reason is displayed, however. In this type of recall, the party that pressed the Attendant Recall key or switchhook is the destination party.

Attendant Recall using Call Transfer or Conference displays the recalling party's DN and CPND information on the attendant's source line. No redirection reason is displayed. If the recall is done with the Transfer key the third party's DN and CPND information are displayed on the source line when the transfer is complete.

Attendant Recall with Splitting

For the M2250 attendant console, M2317, and Meridian Modular sets, the appropriate DN and calling party's name will be correctly shown on the digit display when the attendant presses either the Exclude Source or the Exclude Destination key.

Autodial Speed Call

No name information displays during the programming of Autodial and Speed Call numbers.

Automatic Call Distribution (ACD) Dialed Number Identification Services (DNIS)

If an incoming trunk call from a route with DNIS is presented to a display telephone, the identification digits follow the regular trunk access code and member number. It precedes the CPND name for the DNIS incoming trunk group.

Automatic Wake Up

All display information associated with Automatic Wake Up (AWU) programming is directed to line three of the display. Names are appended to DNs appearing on line three if they are different from those on line two, or if no DN appears on line two. There is no DN information on line two if the attendant has initiated the AWU process while not on an active call. No DES information is appended, since AWU operates on a DN basis.

Call Hold, Deluxe

When a call is put on hold, the holding telephone's display clears. The held telephone's display does not change. When the telephone reestablishes the call, the display returns the original DN and name.

Call Park

Upon valid operation of the Park key, or dial-access if used, CPND shows the SPRE code and the Park Access ID. Because the Park Access Code is displayed, no CPND name is displayed. The only time that the digit display shows the actual DN of the parked party is when the parked party has been retrieved, put on hold, and then retrieved from hold.

Call Pickup

For Call Pickup, CPND applies when the call is answered.

Call Pickup Network Wide

Network Call Party Name Display information will be exchanged during Call Pickup Network Wide calls if the sets involved in the call would normally exchange the information for calls over the routes that have been used for the original call and the call pickup. Conversely, if Network Called Party Name Display would not operate for a normal call from the originating party to the terminating party, the service will not be supported when Call Pickup Network Wide is involved.

Call Transfer

When the Transfer key is pressed during an active call, the display clears. The call is in a held state. The DN and name of the transferred telephone appear on the display when the DN is dialed. When the transfer is complete, the transferring telephone's display clears because the telephone is now disconnected. The transferred telephone's display changes to show the name of the newly connected party.

Calling Party Privacy

In current operations, if the International Supplementary Features (SUPP) package 131 is not equipped in the system, an incoming ISDN call with the Call Party Name Display (CPND) Indicator field set to "Presentation Denied" still displays the Calling Party Name. If package 131 is equipped in the system, the current operations will inhibit the Calling Party Name for an incoming ISDN call with the CPND Indicator field set to "Presentation Denied".

The CPP feature will inhibit the display of the Calling Party Name for an incoming ISDN call with the CPND Indicator field set to "Presentation Denied" if package 131 is not equipped.

Centralized Attendant Service (CAS)

When an attendant in the CAS mode extends a call to a remote station, the display shows only the source line.

Conference

When pressed during an active call, or to set up a conference, the Conference, Connect, or Join Parties key clears the display. The telephones involved in the conference have blank displays. If the conference returns to a two-way only call, each telephone displays the DN and name of the other telephone.

Dial Intercom

The display on telephones connected by Dial Intercom shows the group member's DIG number plus CPND information.

Dialed Number Identification Service

If an incoming trunk call from a route with Dialed Number Identification Service (DNIS) is presented to a display telephone, the identification digits follow the regular trunk access code and member number. It precedes the CPND name for the DNIS incoming trunk group.

Digital Private Network Signaling System (DPNSS1)/Digital Access Signaling System (DASS2) Uniform Dialing Plan (UDP) Interworking

The Call Party Name Display feature is supported in a DPNSS1 UDP network. Names can be associated with the access codes of the DPNSS1 UDP routes defined in LD 95.

Display Key

When pressed during a call, the Display key clears the display until pressed again. The original display reappears. When the telephone is inactive and the DSP key is pressed, followed by a function key like Autodial, no CPND information is displayed.

End-to-End Signaling

When entered after a call is answered, EES digits are displayed immediately following the CPND name of the connected party. Leading DN digits and name characters may be shifted out of the display window.

ISDN

On incoming ISDN calls, the Calling Line ID number can be displayed instead of a DN on the source party line. CPND applies to telephones configured for ISDN when redirection is supported. CPND allows calls to redirect across a network with Network Call Redirection. The CPND is maintained through the redirection.

ISDN QSIG Name Display

Call Party Name Display and Calling Party Name Display Denied interact with ISDN QSIG Name Display, depending on the Name Display configuration in LD 16 for BRI or LD 17 for PRI. When a QSIG network is interacting with an MCDN network providing network capability ND3, both the MCDN and QSIG Name Display feature function on the same level.

Listed Directory Number

CPND is not supported for LDNs. If the LDN is an incoming trunk route, the CPND assigned to the route access code is displayed.

Manual Signaling (Buzz)

If the Signal key is pressed to buzz another telephone, no digit or name display appears on the telephone.

Meridian Hospitality Voice Services

The maximum length of a CPND name sent from the PMSI/Background Terminal (BGD) is 27 characters. When the full 27-character length is used, part of the CPND name may scroll off the screen. To avoid this problem, the PMSI/Background Terminal (BGD) software has been updated to strip from the screen all trailing blanks from the CPND name.

Meridian Mail Voice Mailbox Administration

There is significant interaction between the Meridian 1 Call Party Name Display (CPND) database and the Meridian Mail VMB database. These interactions are further described in the “Meridian Mail Voice Mailbox Administration” description in *Features and Services* (553-3001-306), Book 2.

Meridian 911

The Call Party Name Display feature can be used to configure and display the incoming 911 route name.

Network Intercom

Hot Type I calls display names the same as a normal call.

Hot Type I calls that become a normal call indicate on the originating station’s display that the call is no longer a Hot Line call.

Override

When Overriding an established call, the displays of the other telephones show the DN and name of the overriding party.

Slow Answer Recall

Slow Answer Recall results in displays showing source and destination information. If a redirection occurs, the reason is displayed.

Voice Call

The telephone originating a Voice Call displays the called DN's CPND. The called telephone shows the caller's DN and name on its display.

Feature packaging

Call Party Name Display (CPND) package 95 requires:

- Digit Display (DDSP) package 19
- M2000 Digital Sets (DSET) package 88
- M3000 Digital Sets (TSET) package 89 or
- M2317 Digital Sets (DLT2) package 91
- Aries Digital Sets (ARIE) package 170

Multi-Language CPND requires Multi-Language TTY Input/Output (MLIO) package 211.

If the designator field is to be used for multiple-appearance DNs, CPND requires:

- Office Data Administration System (ODAS) package 20

For Hotel/Motel applications configuring CPND, CPND requires:

- Background Terminal Facility (BGD) package 99
- Multi-Language TTY Input/Output (MLIO) package 211 to support eight-bit, no-parity system terminals

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 95 – Create the CPND data block.
- 2 LD 95 – Add names to the CPND data block.
- 3 LD 10 – Allow names to be assigned to analog (500/2500 type) telephones.
- 4 LD 11 – Allow names to display on Meridian 1 proprietary telephones.
- 5 LD 12 – Allow names to display on attendant consoles.
- 6 LD 95 – Open the CPND data block to change or remove entries.
- 7 LD 95 – Print information associated with entries in the CPND data block.
- 8 LD 10/11 – Add or change CPND name.

Note: Before name strings can be assigned to various telephones, the CPND data block must be created in LD 95. The number and size of CPND name strings is limited by available space in the Protected Data Store, so it is recommended that you initially use a small number for the maximum character length.

Enable CPND and add names to the CPND data block

LD 95 – Create the CPND data block.

Prompt	Response	Description
REQ	NEW	Create CPND database (or open existing database).
TYPE	CPND	CPND data block.
CUST	xx	Customer number, as defined in LD 15
CNFG	<CR>	Standalone memory.

MXLN	5-(17)-27	Maximum number of characters allowed in each name string. Once defined, this value can be changed only by removing the CPND data block and recreating it.
STAL	(NO) YES	Static allocation of name storage. Must be YES if Background Terminal is equipped, or whenever name strings change frequently.
- DFLN	5-MXLN	Average default character string length. Suggested default is 13 or the maximum length given to MXLN, whichever is less. Prompted if STAL = YES.
DES	(NO) YES	(Do not) allow designator for MADNs.
RESN	(NO) YES	(Do not) allow display of reason for redirecting calls.
- CFWD	aaaa (F)	Mnemonic for Call Forward All Calls display.
- CFNA	aaaa (N)	Mnemonic for Call Forward No Answer display.
- HUNT	aaaa (B)	Mnemonic for Hunt/Call Forward Busy display.
- PKUP	aaaa (P)	Mnemonic for Call Pickup display.
- XFER	xxxx (T)	Mnemonic for Call Transfer display for NCRD.
- AAA	aaaa (A)	Mnemonic for Attendant Alternative Answering.

LD 95 – Add names to the CPND data block.

Prompt	Response	Description
REQ	NEW	Open CPND data block to add new entries.
TYPE	NAME	Create a new name string.
LANG	(ROM) KAT <CR>	Store the name in Roman or Katakana. <CR> stores the name in English.
CUST	xx	Customer number, as defined in LD 15
DIG	0-2045 0-99	Dial Intercom Group number and member number. Each time a name string is assigned to a Dial Intercom Group member, the DIG prompt repeats, until a carriage return is entered to go to the DN prompt.
	<CR>	Bypass Dial Intercom Group and go to the DN prompt to assign names on a DN basis.
- NAME	aaaa bbbb	CPND name string; maximum of 27 characters.

- XPLN	xx	Expected Length. Range must be between the Input Name length and the MXLN, or it defaults to DFLN.
	<CR>	Set XPLN to average default character string length (DFLN) or the actual length (NAME), whichever is longer.
DN	xxx...x	DN to which name string is linked.
- NAME	aaaa bbbb	CPND name string; maximum of 27 characters.
- XPLN	xx	Expected Length. Range must be between the Input Name length and the MXLN, or it defaults to DFLN.
	<CR>	Set XPLN to average default character string length (DFLN) or the actual length (NAME), whichever is longer.
DCNO	xxx	IDC conversion table number (0-254).
IDC	nnn	Existing complete or partial IDC number. Prompted only when DCNO is valid.
NAME	aaaa bbbb	CPND name string; maximum of 27 characters.

LD 10 – Allow names to be assigned to analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
FTR	CPND	Allow CPND name assignment on this telephone.

LD 11 – Allow names to display on Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(CNDD) CNDA (DNDD) DNDA	(Deny) allow display of CPND entries. (Deny) allow display of CPND originally dialed entries.

LD 12 – Allow names to display on attendant consoles.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	2250	Attendant console type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CPND	(CNDD) CNDA	(Deny) allow CPND name assignment.
DNDI	(DNDD) DNDA	(Deny) allow display of originally dialed CPND entries.

Change or remove names in the CPND data block

LD 95 – Open the CPND data block to change or remove entries.

Prompt	Response	Description
REQ	CHG OUT	Change, or remove an existing entry.
TYPE	NAME	Change, or remove an existing CPND name string.
CUST	xx	Customer number, as defined in LD 15
LANG	ROM KAT ALL	Change or remove the name in Roman or Katakana. ALL is used to remove all names stored for the DIG.
DIG	0-2045 0-99 ALL <CR>	Dial Intercom Group number and member number. Each time a name string is assigned to or removed from a Dial Intercom Group member, the DIG prompt repeats, until a carriage return is entered to go to the DN prompt. ALL removes all entries for that DIG. <CR> bypasses DIG and goes to the DN.
- NAME	aaaa bbbb <CR>	CPND name string for this DIG; maximum of 27 characters. Leave this entry unchanged.
DN	xxx...x ALL <CR>	DN of name string being changed or removed. Remove all DN-defined entries. Return to REQ prompt.
- NAME	aaaa bbbb	CPND name string; maximum of 27 characters.
DCNO	xxx	IDC conversion table number (0-254).
- IDC	nnn	Existing complete or partial IDC number. Prompted only when DCNO is valid.
NAME	aaaa bbbb	CPND name string; maximum of 27 characters.

Print entries from the CPND data block

LD 95 – Print information associated with entries in the CPND data block.

Prompt	Response	Description
REQ	PRT	Print entries in the CPND data block.
TYPE	NAME	CPND name strings.
CUST	xx	Customer number, as defined in LD 15
LANG	ROM KAT	Print names in Roman or Katakana.
PAGE	(NO) YES	Page headers and page numbers for multiple DNs and DIGs.
DIG	ALL	Print information on all entries defined by Dial Intercom Groups.
	0-2045 0-99	Dial Intercom Group and member number. The DIG prompt repeats until a carriage return is entered.
	<CR>	Bypass Dial Intercom Group and go to the DN prompt to print information on a DN basis.
DN	ALL	Print information on all DN entries.
	xxxx	DN to print information from. DN prompt repeats until a carriage return is entered.
	<CR>	Return to REQ prompt.
DCNO	xxx	IDC conversion table number (0-254).
- IDC	nnn	Existing complete or partial IDC number. Prompted only when DCNO is valid.
	ALL	All names defined are printed.
SHRT		Short form.
	(NO) YES	Prints one IDC per single line. Prints several IDCs on single line.

Add or change CPND name entry for a telephone

LD 10/11 – Add or change CPND name.

Prompt	Response	Description
REQ:	NEW CHG	Add or change CPND name information.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CUST	xx	Customer number, as defined in LD 15
CPND	NEW CHG OUT	Add, change, or remove the CPND information.
CPND_LANG	(ROM) KAT	Use Roman or Katakana characters.
NAME	aaaa bbbb	CPND name; maximum of 27 characters.
XPLN	xx	Expected name length.
DISPLAY_FMT	(FIRST) LAST	First name; Last name (John Doe). Last name; First name (Doe John).

Feature operation

No specific operating procedures are required to use this feature.

Call Pickup

Contents

This section contains information on the following topics:

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Feature description

Call Pickup allows telephones to be arranged in groups consisting of any combination of analog (500/2500 type) telephones, and Meridian 1 proprietary telephones.

Telephones can be specified as Call Pickup allowed or Call Pickup denied. If the telephone's Class of Service is Call Pickup allowed, the user can answer calls made to any telephone within the Call Pickup group. If the telephone's Class of Service is Call Pickup denied, but the telephone is assigned to a Call Pickup group, the user cannot answer calls directed to other telephones. Calls to the denied telephone, however, can be answered by other members of the group.

Meridian 1 proprietary telephones can dial-access this feature, or be equipped with a Call Pickup key. An associated lamp is not required.

Central Office (CO) Trunk Priority, provides CO trunk calls priority over other calls within the distinctive ringing and normal ringing queues. If the CO Trunk Priority is implemented, calls are answered in the following order:

- Distinctive Ringing Queue CO call (Priority 1)
- Distinctive Ringing Queue non-CO call (Priority 3)
- Normal Ringing Queue CO call (Priority 2)
- Normal Ringing Queue non-CO call (Priority 4)

Operating parameters

The number of Call Pickup groups is 4095. The number of members assigned to each group is unlimited, depending on available system memory.

Feature interactions

Advice of Charge for EuroISDN

Calls charged with Advice of Charge that are either transferred, extended or redirected to another set using Call Pickup are charged against the last set that answers the call and the controlling set releases.

Attendant Alternative Answering

The Attendant Alternative Answering (AAA) DN can be assigned to a Call Pickup group to allow members of the same group to answer the call.

Attendant Overflow Position

An Attendant Overflow Position Call presented to the AOP DN can be picked up by any station belonging to the same Call Pickup Group.

Automatic Call Distribution

Automatic Call Distribution (ACD) DNs are not supported by Call Pickup.

Call Park

An analog (500/2500 type) telephone user on a call can pick up a call by parking the existing call, then activating the Call Pickup feature.

Calling Party Privacy

If an incoming trunk call with the Privacy Indicator is picked up locally, the display of the calling Party Number and Name are not displayed on the terminating set.

Call Detail Recording on Redirected Incoming Calls

When an incoming call is picked up, the answering set is identified in the Terminating ID. This operation remains the same.

Call Pickup, Directed

Call Pickup can be assigned to a telephone independent of Directed Call Pickup (DCP).

Conference

This feature cannot be activated during a conference call. Meridian 1 proprietary telephones can activate Call Pickup if an idle Directory Number (DN) key is available. The conference call must be put on hold before pressing the idle DN key to pick up the call.

Dial Intercom

Call Pickup may be used by Meridian 1 proprietary telephones if the telephones are all in the same Dial Intercom Group (DIG) and Call Pickup Group and the ring option is specified for the DIG

Digital Private Network Signaling System (DPNSS1)/Digital Access Signaling System (DASS2) Uniform Dialing Plan (UDP) Interworking

Call Pickup is supported in a DPNSS1 UDP network.

Display of Calling Party Denied

When a call is picked up from another set, the terminating set's display is in accordance with the Class of Service of the dialed and calling sets. The calling party's display includes the dialed DN, the terminating DN and the name of the terminated set. However, if the terminating set has Digit Display Denied (DDGD), then both the dialed and terminating sets' DNs are blocked from the calling party's display. The same occurs when Digit Display

Allowed (DDGA) is configured on the terminating set. Both the dialed and terminating sets' DNs are displayed on the calling party's set, regardless of the Class of Service of the dialed set.

Flexible Feature Codes

Flexible Feature Codes are not supported on a Meridian 1 proprietary telephone during an attempt to pick up a Dial Intercom ringing call.

Group Call

This feature can be used to answer a Group Call if it is activated by a valid telephone in the same Call Pickup group, or by using Directory Number (DN) Pickup or Group Pickup.

Hot Line

Telephones with two-way Hot Line keys, and analog (500/2500 type) Hot Line telephones, can be assigned to pickup groups. Incoming Hot Line calls may be picked up by group members. To prevent someone from picking up a Hot Line call, do not put the Hot Line user into a Call Pickup group.

ISDN QSIG Name Display

An incoming QSIG call with name display presentation allowed has name information displayed on the set that picks up the call. If the incoming QSIG call has presentation denied, the calling party's name is not displayed on the set picking up the incoming call.

Multi-Party Operations

Analog (500/2500 type) telephones with PUA and TSA Class of Service can pick up a call only if they are not involved in another call. After picking up a call, the user can form a Consultation connection and dial Programmable Control Digits as normal.

Network Intercom

Hot Type I calls cannot be picked up. An attempt to pick up a Hot Type I call results in an overflow tone.

Periodic Pulse Metering

Metered calls transferred or extended from one station and answered at another station using the Call Pickup feature are charged against the station where the call is picked up as the controlling party disconnects.

M3900 (Single Site) Virtual Office

The Call Pickup feature is not supported for virtual set TNs. A virtual set cannot be a member of a call pickup group since the DPU and GPU keys cannot be configured.

The RNPG prompt is blocked in LD 11. Dialing a SPRE code for Call Pickup from a logged in Host Telephone results in overflow tone.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Implement CO Trunk Priority in the Customer Data Block.
- 2 LD 10 – Define Call Pickup group and Class of Service for analog (500/2500 type) telephones.
- 3 LD 11 – Define Call Pickup group, Class of Service, and Call Pickup key for Meridian 1 proprietary telephones.

LD 15 – Implement CO Trunk Priority in the Customer Data Block.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	FTR	Features and options

CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- OPT	(COX) COP	CO Trunk Priority for the Call Pickup feature. COX is no Priority.

LD 10 – Define Call Pickup group and Class of Service for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
RNPG	0-4095	Call Pickup group number.
CLS	PUA	Allow Call Pickup.

LD 11 – Define Call Pickup group, Class of Service, and Call Pickup key for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.

TN	l s c u	Terminal number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
RNPG	0-4095	Call Pickup group number.
CLS	PUA	Allow Call Pickup.
KEY	xx RNP	Add a Call Pickup key.

Feature operation

To answer a call in your Call Pickup group from a Meridian 1 proprietary telephone, follow these steps:

- 1 Lift the handset, or press a DN key.
- 2 Press **Call Pickup** or dial SPRE + 3.

To answer a call in your Call Pickup group from an analog (500/2500 type) telephone, follow these steps:

- 1 Lift the handset.
- 2 Dial SPRE 3 or PURN FFC.
You are connected to the caller.

Note: If you are on a call when another call comes in for someone in your Call Pickup group, you must end, park, or transfer the existing call before you can answer the new call.

Call Pickup, Directed

Contents

This section contains information on the following topics:

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Feature description

Directed Call Pickup (DCP) allows a caller from one Call Pickup group to pick up a ringing call in another Call Pickup group. The ringing call is picked up by dialing either its Call Pickup Group number or the DN on which it is ringing.

Directed Call Pickup adds two new methods of Call Pickup to the existing Call Pickup feature:

- Group Pickup (GPU), and
- DN Pickup (DPU).

Group Pickup lets you pick up any ringing call in your own pickup group, or any pickup group in the system.

DN Pickup allows pickup of a call ringing on a specified DN. If a DN is not assigned to any group, it defaults to Group Zero (0). This prevents any other group from picking up that DN.

Both GPU and DPU can be activated using programmable keys or Special Prefix (SPRE) code dialing. Each pickup method can be assigned to a telephone independent of the others.

The dialed digits (DN or group number) are displayed on the Digit Display as dialed. Like the Call Pickup feature, the lamp is optional for the Call Pickup and Group Call Pickup keys. No second dial tone is given after the key is pressed, nor is it given after the SPRE code is dialed.

Operating parameters

Group 0 (zero) is not a valid group number. A telephone that is not part of any group is assigned by default to group 0 (zero).

Feature interactions

Automatic Call Distribution

Automatic Call Distribution DNs are not supported by Directed Call Pickup.

Call Pickup

Call Pickup can be assigned to a telephone independent of Directed Call Pickup (DCP).

Flexible Feature Code

Flexible Feature Codes are not supported on a Meridian 1 proprietary telephone during an attempt to pick up a Dial Intercom ringing call.

Multi-Party Operations – Three-Party Service

Users of analog (500/2500 type) telephones involved in a Three-Party Service call cannot pick up another call by dialing the SPRE code.

Feature packaging

Directed Call Pickup (DCP) is package 115 and has no feature package requirements.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Define the number of digits dialed for Call Pickup groups.
- 2 LD 10 – Configure analog (500/2500 type) telephones to allow DCP Class of Service.
- 3 LD 11 – Configure Meridian 1 proprietary telephones to allow Directed Call Pickup Class of Service.

LD 15 – Define the number of digits dialed for Call Pickup groups.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	FTR	Features and options
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- OPT		Options.
	(COX) COP	Central Office call No Priority for Ringing (default). Central Office call Priority for Ringing.
- PKND	(1)-4	Number of digits dialed for Group Pickup. Prompted only if DCP is equipped.

LD 10 – Configure analog (500/2500 type) telephones to allow DCP Class of Service.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
RNPG	(0)-4095	Ringing Number Pickup Group. 0 = no pickup group.
CLS	(GPUD) GPU A (DPUD) DPU A	(Deny) allow Group Pickup. (Deny) allow DN Pickup.

LD 11 – Configure Meridian 1 proprietary telephones to allow Directed Call Pickup Class of Service.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.

RNPG	0-4095	Call Pickup Group. 0 = no pickup group.
CLS	(GPUD) GPU (DPUD) DPU	(Deny) allow Group Pickup. (Deny) allow DN Pickup.
KEY	xx GPU xx DPU	Group Pickup key. DN Pickup key.

Feature operation

To answer a call in another Call Pickup group from a Meridian 1 proprietary telephone, follow these steps:

- 1 Lift the handset.
- 2 Press **GRP Pickup** or dial SPRE + 94 or PUGR FFC.
- 3 Dial the pickup group number.

To answer a call on a specified DN from a Meridian 1 proprietary telephone:

- 1 Lift the handset.
- 2 Press **DN Pickup** or dial SPRE + 95 or PUDN FFC.
- 3 Dial the extension number.

To answer a call in another Call Pickup group from an analog (500/2500 type) telephone, follow these steps:

- 1 Lift the handset and dial SPRE + 94 or PUGR FFC.
- 2 Dial the pickup group number.

To answer a call on a specified DN from an analog (500/2500 type) telephone:

- 1 Lift the handset and dial SPRE + 95 or PUDN FFC.
- 2 Dial the extension number.

Call Redirection by Day

Contents

This section contains information on the following topics:

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Feature implementation	851
Feature operation	855

Feature description

Call Redirection by Day (CRDAY) is an enhancement of the feature Call Redirection by Time of Day (CRTOD). Use the CRDAY feature to automatically redirect incoming calls on specified days of the week and/or holidays. You can define both the number of rings required before a call is redirected, as well as the Directory Number (DN) to which the call is redirected.

Existing parameters that apply to the operation and redirection of DNs in the Call Forward No Answer (CFNA) and Hunting features also apply to CRDAY. CRDAY uses the alternate DNs introduced by CRTOD .

You can configure up to four alternate day lists (DAY0 – DAY3) for each customer. Each day list can contain one or more days of the week. You can also configure up to four holiday lists (HOLIDAY0 – HOLIDAY3) for each customer. Each holiday list can contain up to 20 dates.

You can assign one alternate day list and/or one alternate holiday list for each telephone. The maximum value of the year in a holiday date is 2104.

There is a class of service (CLS) for each of the CRTOD, CRDAY, and Call Redirection by Holiday (CRHOL) features. Each CLS can be enabled or disabled separately and are independent of each other.

At the CRDAY prompt, answering “YES” or “NO” does not fully enable or disable the feature. To enable the feature, you must define at least one of the alternate day lists (DAY0 - DAY3)—call redirection to the alternate DN then takes place, even if you enter “NO” at the CRDAY prompt. Similarly, to disable the feature, all alternate day lists must remain undefined—call redirection does not take place, even if you enter “YES” at the CRDAY prompt.

Operating parameters

CRDAY is not supported on Integrated Services Digital Network (ISDN) Basic Rate Interface (BRI) sets.

Feature interactions

Call Redirection by Time of Day

The CRTOD and CRDAY features can work together or separately. If all three classes of service are enabled, CRHOL takes precedence over CRDAY and CRTOD. When the CRDAY and CRTOD classes of service are enabled, CRDAY takes precedence.

When incoming calls require redirection, the order of precedence for which the system handles no answer and busy calls, is listed below:

Calls to Idle Stations:

- Call Forward All Calls
- Message Waiting
- Call Forward No Answer
- Attendant Recall

Calls to Busy Stations:

- Call Forward All Calls
- Hunting
- Call Waiting or Camp-On
- Message Waiting Forward Busy
- Call Forward Busy
- Call Forward, Internal
- Call Forward/Hunt Override Via FFC

Call Forward No Answer

When Call Redirection by Day (CRDAY) is activated, calls unanswered after a specified number of rings are sent to Call Forward No Answer feature (CFNA) and forwarded to the alternate DN based on the alternative days/holidays configured for the set.

Call Forward All Calls

All unanswered incoming calls are sent to the Call Forward All Calls feature if there is no answer then the call is sent to the alternate CRDAY DN specified for that day/holiday.

Call Waiting Redirection

When Call Forward No Answer (CFNA) occurs on a waiting call, the Call Waiting Redirection (CWTR) feature redirects the call to a specified DN based upon the alternate days and/or holidays configured for the set. If the current day matches one of the busy set's alternate days or holidays, then the call is redirected to the CRDAY alternate DN.

Hunting

Hunting allows a call encountering a busy DN to route automatically to another DN. When CRDAY is enabled and an incoming call reaches a busy DN, the current day is checked against the alternate days and holidays specified for that set. If the current day matches one of the alternate days, the call begins the hunting route using the alternate redirection DNs defined for the set.

Hunting by Call Type

The Hunt by Call Type redirects an incoming call to a HUNT DN. With CRDAY enabled on the called DN, the incoming calls on specified Alternate Days and Holidays are redirected to the assigned alternate HUNT DN.

Group Hunting

The Group Hunting feature provides a method of hunting DNs in a group. The group is associated with a Pilot DN, that is, a DN with no associated Terminal Number (TN). The hunting is done in the order of entry of DNs in the group. If a set's list of alternate days and/or holidays program matches the current day, incoming calls are directed to Group Hunt. This feature allows an incoming DID call to be redirected to a Hunt DN or External Hunt (EHT) if Call Forward by Call Type (CFCT) is enabled. To activate this feature, the called DN must have the following class of service Hunting Denied HTD with Hunting By Call Type Allowed (HBTA), and package 131 enabled.

Multiple Appearance DN, Multiple Appearance Redirection Prime

When a call redirection feature is activated for a Multiple Appearance DN (MADN), the TN information is required. Call redirection always refers to the Multiple Appearance Redirection Prime (MARP) TN to determine the feature operation. The CRDAY feature also uses the MARP TN to get the alternate call redirection DNs.

Second Level Call Forward No Answer

The Second Level Call Forward No Answer (SFNA) allows unanswered calls to receive Call Forward No Answer (CFNA) treatment twice. The CFNA timer is configured in the customer data block (CDB) for the number of rings before a call is redirected. If SFNA is allowed on the last DN rung, then the incoming call is redirected based on the list of alternate days and/or holidays configured for the set (day/holiday class of service).

User Selectable Call Redirection

The CRDAY feature does not support User Selectable Call Redirection (USCR). Only the following redirection DNs can be changed from a set:

- CFNA DN (FDN)
- External CFNA DN (EDN)

- Hunt DN (HUNT)
- External Hunt DN (EHT)

The alternate redirection DNs cannot be changed with USCR.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Configure alternate days/holidays.
- 2 LD 10 – Enable call redirection by day/holiday for analog (500/2500-type) telephones.
- 3 LD 11 – Enable call redirection by day/holiday for a digital sets.

LD 15 – Configure alternate days/holidays.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	RDR	Redirection data
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
...		

CRDAY	YES	<p>Call Redirection by Day. DAY0 is prompted if "YES" is entered. (NO) = default.</p> <p>If you enter "NO" or <CR> at this prompt, then subsequent alternate day list prompts (DAYx) are skipped.</p>
- DAY0	x x...x	<p>List of alternate days in list 0. Where x = 1...7 Sunday = 1 Monday = 2 Tuesday = 3 Wednesday = 4 Thursday = 5 Friday = 6 Saturday = 7 To remove a day value precede the day number with an X.</p>
- DAY1	x x...x	List of alternate days in list one.
- DAY2	x x...x	List of alternate days in list two.
- DAY3	x x...x	List of alternate days in list three.
CRHOL	<p>NEW CHG OUT OUT ALL</p>	<p>Call Redirection by Holiday.</p> <p>Add new data. Change existing data. Remove existing data. Delete all holidays in the list. There are a maximum of 20 holidays allowed. The four holiday options lists are created from these original 20 holidays.</p>
- DATE	dd mm yyyy	<p>Enter holiday date. dd = day. mm = month. yyyy = year (optional, with maximum year value of 2104). If the year is not entered, the holiday is repeated every year.</p>
--HOL_OPT	<p>n n n n</p> <p>ALL</p>	<p>Holiday Option List to which entered date applies.</p> <p>Where: n = 0, 1, 2, or 3.</p> <p>Select all four holiday option lists. Precede the holiday list with X to remove.</p>

- DATE	dd mm yyyy	Continue to input holidays to maximum of 20.
	<CR>	Stop adding holidays and continue administration.
--HOL_OPT	n n n n	Holiday Option List to which entered date applies. Where: n = 0, 1, 2, or 3. Select all four holiday option lists. Precede the holiday list with X to remove.

LD 10 – Enable call redirection by day/holiday for analog (500/2500-type) telephones.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	500 2500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CUST	xx	Customer number, as defined in LD 15
...		
CLS	FNA FBA RBDA RBHA	Call Forward No Answer Allowed. Call Forward Busy Allowed. Redirection By Day Allowed. Redirection By Holiday Allowed.
...		

ADAY	(0) - 3	Alternate days in DAY list 0-3 are selected for the set. Enter the list of alternate days listed in the Customer Data Block.
AHOL	(0) - 3	Enter the list of alternate redirection holidays in Holiday list 0-3 as selected for the set defined in the Customer Data Block.
...		
FTR	AFD x...x	Alternate forward DN to which all internal calls on an alternate day and/or holiday are redirected upon no answer.
	AHNT x...x	Alternate hunt DN to which all internal calls on an alternate day and/or holiday are redirected when set is busy or no answer. (CFNA to HUNT).
	AEFD x...x	Alternate external forward DN to which all external calls on an alternate day and/or holiday are redirected upon no answer.
	AEHT x...x	Alternate external hunt DN to which all external calls on an alternate day and/or holiday are redirected when set is busy or no answer (CFNA to HUNT).

LD 11 – Enable call redirection by day/holiday for a digital sets.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.

CUST	xx	Customer number, as defined in LD 15
...		
CLS	FNA FBA RBDA RBHA	Call Forward No Answer Allowed. Call Forward Busy Allowed. Redirection By Day Allowed. Redirection By Holiday Allowed.
...		
ADAY	(0) - 3	Alternate days in DAY list 0 - 3 are selected for the DN.
AHOL	(0) - 3	Enter the list of alternate redirection holidays in Holiday list 0-3 as selected for sets defined in the Customer Data Block.
...		
AFD	x...x	Alternate forward DN to which all internal call forward DN's on alternate days/and all holidays are redirected upon no answer.
AHNT	x...x	When the DN is busy all incoming calls in the HOLIDAY list are redirected to the alternate hunt DN.
AEFD	x...x	Alternate external forward DN to which incoming calls are redirected on alternate days.
AEHT	x...x	When the DN is busy, all incoming calls for the specified holiday are redirected to the alternate external hunt DN.

Feature operation

No specific operating procedures are required to use this feature.

Call Redirection by Time of Day

Contents

This section contains information on the following topics:

Feature description	857
Operating parameters	858
Feature interactions	858
Feature packaging	860
Feature implementation	860
Feature operation	864

Feature description

Call Redirection by Time of Day (CRTOD) adds flexibility to the existing operations of Call Forward No Answer, Hunting and Call Forward by Call Type by allowing incoming calls to be automatically redirected to a predefined Directory Number at a specified time of day.

When the Call Redirection by Time of Day (CRTOD) feature is activated, incoming calls are automatically redirected to a Directory Number through Hunting, Flexible Call Forward No Answer, External Hunt or External Call Forward No Answer. Depending on the time of day, an incoming call can also be redirected to an alternate Directory Number using the Hunting, Call Forward No Answer and Call Forward by Call Type operations.

This feature only changes which redirection Directory Number or alternative Directory Number is used to redirect a call when possible.

At the CRTOD prompt, answering “YES” or “NO” does not fully enable or disable the feature. To enable the feature, you must define at least one of the four possible alternate time options (CRT0 - CRT3). Also, the defined CRTx start time must not equal the defined end time. If you define one or more CRTx options (at least one with an unequal start and end time), then call redirection to the alternate DN takes place, even when you enter “NO” at the CRTOD prompt. Similarly, to disable the feature, all alternate time options (CRT0 - CRT3) must remain undefined (or, if defined, the CRTx start time must equal the defined end time). If you leave all CRTx options undefined (or with equal start and end times), then call redirection does not take place, even when you enter “YES” at the CRTOD prompt.

Operating parameters

All existing limitations that apply to the operation and redirection of Directory Numbers of Call Forward No Answer and Hunting also apply to this feature.

Only one alternate time option is allowed per telephone at a given time.

This feature is not supported on Basic Rate Interface (BRI) terminals.

Feature interactions

When incoming calls require redirection, the order of precedence for which the system handles no answer and busy calls, is listed below:

Calls to Idle Stations:

- 1 Call Forward All Calls
- 2 Message Waiting
- 3 Call Forward No Answer
- 4 Attendant Recall

Calls to Busy Stations:

- 1 Call Forward All Calls
- 2 Hunting

- 3 Call Waiting or Camp-On
- 4 Message Waiting Forward Busy
- 5 Call Forward Busy

Call Forward All Calls Call Forward, Internal Call Forward/Hunt Override Via FFC

These features take precedence over Call Redirection by Time of Day (CRTOD).

Call Forward by Call Type Hunting by Call Type

If Call Forward by Call Type (CFCT) is enabled with Call Forward No Answer (CFNA) and Call Redirection by Time of Day (CRTOD), unanswered internal calls receiving CFNA are routed to the Flexible CFNA DN, Hunt DN, Alternate Flexible CFNA DN or Alternate Hunt DN's. External calls are routed in the same manner.

If CFNA is enabled with Hunting by Call Type and Call Redirection by Time of Day (CRTOD), unanswered internal calls are redirected to the Hunt DN or Alternate Hunt DN during the alternative time. External calls are routed in the same manner. The alternate time is defined on the called DN's data block.

Call Forward No Answer

Call redirection parameters for Call Forward No Answer are obtained from the originally dialed Directory Number. When CRTOD is activated, unanswered calls given CRTOD treatment are forwarded with CFNA according to the time of day. No changes are made to the existing CFNA feature.

Call Forward No Answer, Second Level

Existing Second Level CFNA allows unanswered calls to receive Call Forward No Answer treatment twice. CRTOD parameters are obtained from the last rung Directory Number. A maximum of two levels of CFNA is allowed for an unanswered call.

Call Waiting Redirection

When Call Forward No Answer occurs on a waiting call, the redirected Directory Number used depends on the time of day if CRTOD is activated.

Multiple Appearance DN Redirection Prime

When CRTOD and Multiple Appearance DN Redirection Prime (MARP) are activated, Call Forward or Hunt are dependent on the time of day and follows the MARP feature for Call Forward No Answer or Hunt treatment.

Hunting

When CRTOD is enabled and an incoming call reaches a busy Directory Number, the time is checked against the Alternate Redirection Time Option range defined on the telephone.

User Selectable Call Redirection

User Selectable Call Redirection is not supported.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 - Configure Alternative Redirection Time.
- 2 LD 10 - Configure Terminal Number Block for analog (500/2500 type) telephones.
- 3 LD 11 - Configure Terminal Number Block for proprietary telephones

LD 15 - Configure Alternative Redirection Time.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	RDR	Change Call Redirection.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
...		
- CRTOD	YES	Call Redirection by Time of Day. Alternate time option prompts are skipped if (NO) or <CR> is entered
-- CRT0	SH SM EH EM	Alternate time option 0, where: SH = starttime in hours, SM = starttime in minutes, EH = endtime in hours and EM = endtime in minutes in international time format (hour from 00-23 and minute 00-59). Enter "X" to remove current value and reset both the start time and end time equal to 0.
-- CRT1	SH SM EH EM	Alternate time option 1, where: SH = starttime in hours, SM = starttime in minutes, EH = endtime in hours and EM = endtime in minutes in international time format (hour from 00-23 and minute 00-59). Enter "X" to remove current value and reset both the start time and end time equal to 0.

-- CRT2	SH SM EH EM	<p>Alternate time option 2, where: SH = starttime in hours, SM = starttime in minutes, EH = endtime in hours and EM = endtime in minutes in international time format (hour from 00-23 and minute 00-59).</p> <p>Enter "X" to remove current value and reset both the start time and end time equal to 0.</p>
-- CRT3	SH SM EH EM	<p>Alternate time option 3, where: SH = starttime in hours, SM = starttime in minutes, EH = endtime in hours and EM = endtime in minutes in international time format (hour from 00-23 and minute 00-59).</p> <p>Enter "X" to remove current value and reset both the start time and end time equal to 0.</p>

LD 10 - Configure Terminal Number Block for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	NEW CHG	Analog telephone can be defined or modified.
TYPE:	500	Analog (500/2500 type) telephone data block.
...		
CLS	RTDA	<p>Call Redirection by the Time of Day allowed.</p> <p>If CLS = RTDD (denied) then RTDA, AEFD, AEHT, AFDN, AHNT will be removed and ARTO prompt will be reset to 0.</p>
...		
ARTO	(0)-3	<p>Alternate Redirection Time Option for call redirection defined in the Customer Data Block. Only prompted if CLS = RTDA.</p> <p>Default value 0 is entered if request is new. The value is not changed if request is CHG.</p> <p><CR> to enter CLS and ARTO data.</p>
FTR	xxxx yyyy	Enter Feature Name and Related Data.
	AFD	<p>Alternate Call Forward No Answer DN up to 13 digits.</p> <p>Remove by setting CLS = RTDD.</p>

	AHNT	Alternate Hunt DN up to 13 digits. Remove by setting CLS = RTDD.
	AEFD	Alternate External Call Forward No Answer DN up to 13 digits. Remove by setting CLS = CFTD or RTDD.
	AEHT	Alternate External Hunt up to 13 digits. Remove by setting CLS = CFTD or RTDD.

LD 11 - Configure Terminal Number Block for proprietary telephones

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
...		
CLS	RTDA	Call Redirection by the Time of Day allowed.
...		
ARTO	(0)-3	Alternate Redirection Time Option for call redirection defined in the Customer Data Block. Only prompted if CLS = RTDA. Default value 0 is entered if request is new. The value is not changed if the request = CHG. <CR> to enter CLS and ARTO data.
AFD	xxxx	Alternate Call Forward No Answer DN up to 13 digits. Remove by setting CLS = RTDD.
AHNT	xxxx	Alternate Hunt DN up to 13 digits. Remove by setting CLS = RTDD.

AEFD	xxxx	Alternate External Call Forward No Answer DN up to 13 digits. Remove by setting CLS = CFTD or RTDD. Requires Call Forward by Call Type Allowed (CFTA) Class of Service.
AEHT	xxxx	Alternate External Hunt up to 13 digits. Remove by setting CLS = CFTD or RTDD. Requires Call Forward by Call Type Allowed (CFTA) Class of Service.

Feature operation

No specific operating procedures are required to use this feature.

Call Transfer

Contents

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Feature description

The Three-Party Service Allowed Class of Service, part of the Multi-Party Operations feature, cannot be used together with the XFR Class of Service.

With the Restricted Call Transfer feature enabled, users of analog (500/2500 type) telephones cannot transfer calls. Attempted call transfers are not routed to the attendant.

Call Transfer allows a telephone user on any two-party call to hold the existing call and originate another call to a third party. The user may consult privately or transfer the original call to the third party. A call is transferred by pressing a dedicated key on Meridian 1 proprietary telephones or by flashing the switchhook on analog (500/2500 type) telephones.

Restricted Call Transfer

The Restricted Call Transfer feature provides the Call Transfer Restricted (XFR) Class of Service for analog (500/2500 type) telephones. By assigning XFR Class of Service in LD 10, a call transfer attempt will not result in action. This is different from the Call Transfer Denied (XFD) Class of Service, which will route the call to the attendant when a transfer is attempted.

Operating parameters

A separate Call Transfer key/lamp pair must be assigned to Meridian 1 proprietary telephones.

A transfer allowed Class of Service must be specified for analog (500/2500 type) telephones to access this feature.

If trunks are involved, successful completion of a transfer depends on the access restrictions assigned to the stations and trunks.

While the originating side of a call is linked to a transfer or conference key (that is, the originator of a transfer/conference call has not yet completed the transfer/conference), the terminating side cannot initiate a transfer or conference. Conference calls cannot be transferred.

Feature interactions

Advice of Charge for EuroISDN

When a set is connected to an ISDN CO trunk conveying AOC charging information, the received call charging information is stored against this set.

If the user transfers the call while the dialed set is still ringing, call charging information is stored against the transferring set until the call is either answered or abandoned by the external party. If the user consults with the dialed transfer set, charging information is stored against the transferring set until the call is either answered or abandoned. If the transferred call is redirected by a call redirection feature, the call is charged against the transferring set until the call transfer is completed and the call is answered. In all instances, if the call is answered, new call charging information is stored against the set receiving the transferred call.

AC15 Recall: Transfer from Norstar

A party involved in a consultation call (an active or held party) cannot initiate a consultation call for preventing call chaining. This principle is maintained in the following cases:

- the party is an AC15 trunk (if it attempts to initiate a consultation call, the recall signal is ignored), and
- the party is a local set, but the consultation call is made by an AC15 trunk.

Attendant Break-In

Until a transferred call is connected, the attendant cannot break in to a call that is being transferred.

Automatic Redial

When an Automatic Redial (ARDL) call is not accepted by the calling party, the Call Transfer (TRN) key is ignored.

Call Forward by Call Type

Calls modified by Call Transfer receive Call Forward by Call Type treatment. If party A (telephone or trunk) calls party B, and B transfers to party C, the forwarding DN and Class of Service are obtained from party C

Call Forward, Break-In and Hunt Internal/External Network Wide

The treatment of a call following a call transfer (Call Forward/Hunt by Call Type) is based on the transferring set and the call originator's set. The set display on network call modification or redirection does not change.

Call Forward/Hunt Override Via Flexible Feature Code

A set can activate Call Forward/Hunt Override Via FFC when initiating a transfer. If the transfer is completed while ringing, the Call Forward/Hunt Override will still be active and passed on to the transferred party.

Call Hold, Deluxe

A consultation call can be placed on Hold.

Call Page Network Wide

A station set or attendant console that transfers an external Call Page Network Wide (PAGENET) uncontrolled call is not blocked. However, an external PAGENET controlled call is blocked.

Call Party Name Display

When the Transfer key is pressed during an active call, the display clears. The call is in a held state. The DN and name of the transferred telephone appear on the display when the DN is dialed. When the transfer is complete, the transferring telephone's display clears because the telephone is now disconnected. The transferred telephone's display changes to show the name of the newly connected party.

Call Pickup Network Wide

A call may be picked up before or after the transferring party has completed the transfer.

For pickup before transfer completion, the transferring party is displayed updated information by the Call Pickup Network Wide feature when the call is picked up. Then, when the transfer is completed, normal call transfer information is exchanged by each party involved in the final call.

For pickup after call transfer completion, everything happens as if the call had been made directly from calling to ringing party. After pickup is performed, displays are updated as for normal Call Pickup.

Call Transfer

Call Completion notification is only presented to the Call Completion originating set. This notification cannot be transferred to another station. Once the second call is completed, the call can be transferred.

If a user encounters a busy or no answer situation during a transfer operation, Call Completion can be activated.

Calling Party Name Display Denied

During a Call Forward or Call Transfer, the calling party digits and forwarding/transferring party digits are displayed on the terminating set. This display is allowed or denied depending on the Class of Service of the calling set and the forwarding/transferring set. The name of the forwarding/transferring set is not displayed on the calling and terminating set.

Calling Party Privacy

If an incoming non-ISDN call is being transferred or an incoming ISDN call is transferred to a non-ISDN trunk, the Calling Party Name and Number will not be passed on to the terminating set. The CPP feature will not change this operation.

For cases where an incoming call with the Privacy Indicator is transferred over an MCDN trunk, or to a local station, the name and/or number of the originating party will not be displayed on the set of the final terminating party.

Charge Account and Calling Party Number

A Call Transfer call produces two records: a Call Detail Recording(CDR) start record and a CDR end record.

Charge Account, Forced

If an FCA code is entered at the beginning of a call, the new unrestricted Class of Service remains in effect for any transfer or conference made during the call. If all FCA criteria are met, an account number entered after activating the Conference key, Call Transfer key, or a switchhook flash is interpreted as an FCA code.

China – Attendant Monitor

If any party at the customer location involved in a monitored call attempts to activate call transfer, monitoring is immediately deactivated.

China – Toll Call Loss Plan

Toll pad switching is also provided after call transfer has been completed. When the toll call is diverted, the diverted party's pad level is switched back to its original value (unless it is an OPS station using dynamic switching). The Toll Loss Plan is applied again for the new call as if it is a direct call. For Call Transfer, it is provided after the transferring party completes the transfer and drops out. For Call Forward or Hunting, it is provided when the forwarding or hunting call is answered.

Conference

Conference can be used to transfer calls, eliminating the need for a separate Call Transfer key/lamp pair on Meridian 1 proprietary telephones. Calls in the ringing state cannot be transferred with Conference. The third party must answer before the transfer can be completed.

A conference can also be established after initiating a Call Transfer operation. After the third party answers, pressing the Conference key establishes a three-way conference.

When a switchhook flash transfers calls on analog (500/2500 type) telephones with three-party conference (C6A) Class of Service, the transferring party goes on hook, leaving the other two parties established. Telephones with a C6A Class of Service involved in a conference having more than three parties must add the last party to the conference, then flash the switchhook and go on hook to complete the transfer.

Dial Intercom

When using Conference or Transfer, the voice option is not provided if the call is terminated before the conference or transfer is completed. If an analog (500/2500 type) telephone is part of a Dial Intercom Group (DIG), the user of the telephone can conference only with another user whose telephone is within the same Dial Intercom Group (DIG).

Display Calling Party Denied

When a set transfers a call, display information is updated according to the Class of Service of the respective sets. This occurs for both internal and ISDN network calls.

If an unsupervised call transfer occurs on an internal call, the DN of the terminating set is displayed to the calling party regardless of the DPD Class of Service options that are configured on the terminating set.

Dial Access to Group Calls

Group Call

Call Transfer cannot be applied to Dial Access to Group Calls or Group Call.

Group Hunt

Any call may be transferred to a Group Hunt Pilot DN. If there are no idle sets available for the call transfer, the call is queued to the Pilot DN and the caller receives ring back tone. If the call cannot be queued because the queue threshold has been reached, the caller receives busy tone.

Group Hunting Queuing Limitation Enhancement

If a call is transferred to the PLDN, and all Group Hunt list members are busy, the call is queued to the PLDN, if the number of queued calls is less than the Group Hunt Threshold limit. If the number of queued calls has reached the Group Hunt Threshold limit, the call is not queued and busy tone is returned to the transferring party.

Held Call Clearing

Active Call Transfer calls are cleared by either an on-hook or Release key action. Held Call Transfer calls are cleared only by an on-hook action, and not by a Release key action.

Hold

A consultation call can be placed on Hold.

In-Band Automatic Number Identification

If an agent transfers an In-Band Automatic Number Identification (IANI) call to another Automatic Call Distribution DN, the ANI number is displayed on the terminating set's display.

ISDN QSIG/EuroISDN Call Completion

Call Completion notification is only presented to the Call Completion originating set. This notification cannot be transferred to another station. Once the second call is completed, the call can be transferred.

If a user encounters a busy or no answer situation during a transfer operation, Call Completion can be activated.

ISDN QSIG Name Display

After the completion of a call transfer, an incoming QSIG call with name display presentation allowed has name information displayed on the destination set. If the incoming QSIG call has presentation denied, name information is not displayed to the destination set.

Loop Start Supervisory Trunks

If an internal station user transfers an answered outgoing call to another station in the ringing state, then any disconnect signal received from the far end causes the trunk to be released and ringing of the internal set to stop. This operation eliminates the problem of holding trunks and extensions due to lack of supervision on Loop Start trunks.

Meridian 911

Trunk priority associated with an incoming 911 call is only preserved if blind transfer is used.

Meridian 911 - Call Abandon

M911 abandoned calls cannot be transferred.

Message Registration

The party that originates a call is charged. The charge cannot be moved to another party using Call Transfer.

Multi-Party Operations

Analog (500/2500 type) telephones with TSA Class of Service can Call Transfer by going on-hook after establishing a conference. This differs from operation with XFA Class of service, where transfer can be achieved by going on-hook during Consultation connection.

If an analog (500/2500 type) telephone with TSA Class of Service goes on-hook during consultation connection, it is treated as misoperation of All Other Cases and the recovery actions are done based on the CCDO and AOCS options selected in LD 15. If CDOC = NO, an analog (500/2500 type) telephone can achieve a transfer by going on-hook after establishing a conference.

During the Consultation connection, the non-controlling parties are restricted from using Call Transfer, Conference and Three-party Service features.

Multi-Party Operations Enhancements

A party receiving Patience Tone or recall of misoperation ringback is not able to Call Transfer.

Music, Enhanced

The held party receives Music when the other party presses the Call Transfer key. The Music connection remains until the Call Transfer key or the DN key is pressed, ending the Consultation Hold state.

Network Intercom

Hot Type I calls may be transferred to another Hot Line key or to a normal DN key; likewise calls on a normal DN key may be transferred to a Hot Line key.

Off-Hook Alarm Security

A telephone receives the Off-Hook Alarm Security treatment if the telephone has ASCA Class of Service and attempts to transfer a call and the ASTM expires.

On Hold on Loudspeaker

It will not be possible to transfer the loudspeaker call to another party.

Periodic Pulse Metering

If the user of a station which is connected to a metered trunk transfers an internal call to another internal station while the dialed station is still ringing, the Periodic Pulse Metering (PPM) pulse count is accumulated against the transferring station until the call is answered by the dialed party, or abandoned by the dialing party. When the call is answered, the pulses are counted against the station to which the call has been transferred. If the station user transfers the call after consulting with the dialed station user, then the PPM pulses are counted against the controlling station until the call is transferred. When the call is transferred, the PPM pulses are counted against the station to which the call has been transferred. If the transferred call is redirected using any of the call redirection features such as Call Forward or Hunting, the call is charged against the transferring station until the call is transferred. The pulses are then counted against the answering station. This method ensures that PPM meters are charged in a manner consistent with the printing of CDR records.

Predictive Dialing

The application sends the Fast Transfer request on behalf of a Meridian 1 proprietary telephone, and then the switch initiates and completes the transfer immediately which is similar to a normal call transfer from a Meridian 1 proprietary telephone.

In a Predictive Dialing scenario where the autodialer (origination DN) is a Meridian 1 proprietary telephone, the Make Call message sent by the application to the switch to make a call on behalf of the Meridian 1 proprietary telephone, and then the call transfer call, will interact with the Meridian 1 proprietary telephone Call Transfer feature. The autodialer is configured with Class of Service TRN so that the switch can transfer the call to the target destination.

The application sends the Fast Transfer request on behalf of an analog (500/2500 type) telephone. The switch will then initiate and complete the transfer in one step.

In a predictive dialing scenario, the application will send the Make Call request on behalf of the autodialer (analog (500/2500 type) telephone) to have the switch make the call, and then transfer the call when the switch receives the Fast Transfer message. The autodialer needs to be configured with Classes of Service Dial Pulse (DIP) and Transfer Allowed (XFA) for 500 sets, or with Classes of Service Digitone (DTN) and XFA for 2500 sets.

Privacy Override

Calls in a Privacy Override conference state cannot be transferred.

Station Activity Records

A Station Activity Record is generated when a set with Class of Service Call Detail Monitoring Allowed (CDMA) transfers a trunk call. CDR “X” record generation is not affected by this development. The set to which the call is transferred also produces a Station Activity Record if it has Class of Service CDMA and answers the call. When the second “D” record is produced (by the set to which the call is transferred), the digits field of the “D” record shows the digits dialed by the transferring set.

Supervised Analog Lines

China-Supervised Analog Lines

If more than one active call is extended to an analog line, the call type associated with an analog line is determined by the first active call. The call type is assumed to be incoming and hook flash supervision applies if a terminal device answers an incoming call from an idle state. If the terminal device performs a switch hook flash to put the first party on hold and initiates a consultation call, the Battery Reversal feature is not supported; no battery reversal answer signal is extended to the terminal device when the second party answers.

If the first party disconnects while the terminal device is connected to the second party, no disconnect supervision is extended to the terminal device. However, hook flash disconnect supervision is extended to the terminal device when the second party disconnects (that is, a disconnect supervision signal is sent only when the last party connected to the terminal disconnects).

If a terminal device originates an outgoing call, battery reversal answer supervision is extended when the called party answers. The polarity of the line remains reversed polarity when the terminal device performs a switch hook flash and then initiates a consultation call to a second party. The analog line is reverted to normal polarity when the terminal device completes the transfer and drops out or when the last of either the held party or the consultation party disconnects.

Three-Party Service

The party receiving the patience tone or the Misoperation ringback is not able to make a call transfer.

Trunk Barring

The originator of a call transfer, unless otherwise restricted, is able to connect to a denied party on a consultation basis. Operating the Transfer key on a Meridian 1 proprietary telephone or going on hook on an analog (500/2500 type) telephone does not result in a call transfer if the Originating Trunk Connection is barred. The user of a Meridian 1 proprietary telephone remains connected to the denied party until releasing the connection and returning to the held Originating Trunk Connection. The user of an analog (500/2500 type) telephone is re-rung by the Originating Trunk Connection when transfer is attempted and denied.

Trunk to Trunk Connection

To transfer an external trunk on ringing across a supervised analog network TIE trunk, the external trunk and internal TIE line must have both answer and disconnect supervision, and the external call must be established. To transfer one outgoing external trunk to another, both external trunks must have answer and disconnect supervision, and both external calls must be established.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 10 – Configure Call Transfer for analog (500/2500 type) telephones.
- 2 LD 11 – Add a Call Transfer key for Meridian 1 proprietary telephones.
- 3 LD 10 – Restricted Call Transfer for an analog (500/2500 type) telephone.

LD 10 – Configure Call Transfer for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(XFD) XFA	(Deny) allow Call Transfer.

LD 11 – Add a Call Transfer key for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.

TN	l s c u	Terminal number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx TRN	Add a Call Transfer key (the M2317 must use key 26).

LD 10 – Restricted Call Transfer for an analog (500/2500 type) telephone.

Prompt	Response	Description
TYPE:	NEW CHG	Add new data. Change existing data.
REQ:	500	Telephone type.
...		
CLS	XFR	Restrict call transfers and do not recall to attendant.

Feature operation

To transfer an active call on a Meridian 1 proprietary telephone, follow these steps:

- 1 Press **Transfer**.
The call is on hold.
- 2 Dial the number where you want to transfer the call.
- 3 Press **Transfer** when you hear ringing or after your call is answered.
When your call is answered, you may speak privately with the new party before completing the transfer.

Note: To cancel an incomplete transfer, press the key beside the fast flashing indicator and you return to the call you tried to transfer. To conference all three parties, press the Conference key, if equipped.

To transfer an active call on an analog (500/2500 type) telephone, follow these steps:

- 1** Flash the switchhook.
The call is on hold.
- 2** Dial the number where you want to transfer the call.
- 3** Flash the switchhook when you hear ringing or after your call is answered.

When your call is answered, you may speak privately with the new party before completing the transfer.

Note: To cancel an incomplete transfer, hang up, then lift the handset and flash the switchhook to return to the call.

Call Waiting Redirection

Contents

This section contains information on the following topics:

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Feature description

Previously, Call Waiting notified an active set that a second call was waiting to be answered on that Directory Number (DN). For non-attendant extended calls, the incoming call received Call Waiting treatment until the call was answered by the called party or the calling party disconnected. For attendant-extended calls, the incoming call received Call Waiting treatment until the Call Waiting Recall timer timed out, at which time the call was recalled to the attendant. The attendant had to then extend the call to a message center or voice mail. However, since the attendant was given no indication as the reason for the recall (called party busy or not answering), it was difficult for the attendant to redirect the call properly.

The Call Waiting Redirection feature follows the Call Forward No Answer (CFNA) treatment defined for the DN. No modifications have been made; all existing Call Forward No Answer functionalities will apply to redirected calls.

Operating parameters

The existing Call Waiting and Call Forward No Answer limitations apply to the Call Waiting Redirection feature. The Call Forward No Answer feature is used by the Call Waiting Redirection feature to redirect “no answer” calls given Call Waiting treatment.

Although the Call Waiting treatment is applied to a busy DN, the CFNA call redirection treatment given by the Call Waiting Redirection feature is for a “no answer” presentation. The unanswered Call Waiting call is treated as a call presented to an idle “no answered” DN. Calls redirected to messaging services or sets with displays are provided with the “no answer” call redirection reason.

The existing implementation of Call Forward No Answer is used to select the TN with the CFNA DN for the “no answer” Call Waiting call. Calls are redirected according to the call type (internal or external) as defined at the designated call redirection TN chosen by CFNA.

Feature interactions

Automatic Timed Reminders Automatic Timed Recalls

When CFNA is active, the Slow Answer Recall timer begins only after the call reaches its final destination. CFNA has precedence over Attendant Recall for attendant-extended calls. Irrespective of the relative time-out intervals for each feature, ringing continues as long as allowed by CFNA for sets with CFNA enabled.

Since the Call Waiting Redirection feature applies CFNA treatment to a Call Waiting call, the Call Waiting Redirection feature also has precedence over the Call Waiting recall timer.

Basic Rate Interface

The Call Waiting Redirection feature is not applicable to Basic Rate Interface (BRI) terminals. However, an ISDN BRI terminal may redirect a call using hunting or CFNA.

Call Forward All Calls Call Forward, Internal

Call Forward All Calls and Internal Call Forward both have precedence over Call Waiting and the Call Waiting Redirection feature.

Call Forward and Hunt by Call Type

If Call Forward and Hunt by Call Type (CFCT) is enabled with Call Forward No Answer and Call Waiting Redirection, “no answer” internal calls receiving Call Waiting treatment are routed for CFNA treatment to the Flexible CFNA DN (FDN) or Hunt DN, and “no answer” external calls are routed for CFNA treatment to the External Flexible CFNA DN (EFD) or External Hunt DN (EHT).

Call Forward/Hunt Override via Flexible Feature Code

There is no interaction with the Call Waiting treatment component of the Call Waiting Redirection feature. However, Call Forward/Hunt Override via Flexible Feature Code does override CFNA, and thus the CFNA treatment given to unanswered Call Waiting calls by the Call Waiting Redirection feature is overridden by the Call Forward/Hunt Override via Flexible Feature Code (CFHO) feature. The incoming call will continue to be given Call Waiting treatment as if the Call Waiting Redirection feature is disabled when the CFHO feature is enabled by the calling party.

Call Forward No Answer

Per existing Call Forward No Answer (CFNA) feature operation, the call redirection parameters for CFNA are obtained from the originally dialed DN for redirected calls.

Existing Network CFNA treatment is applied to calls receiving Call Waiting treatment on sets with CFNA and the Call Waiting Redirection feature enabled if the Call Waiting call is not answered before the expiration of the CFNA timer and the CFNA DN is on another node.

Call Forward No Answer, Second Level

The existing Second Level Call Forward No Answer treatment is applicable to Call Waiting calls redirected by CFNA (first level) with the Call Waiting Redirection feature which are still not answered at the last rung DN.

Call Redirection by Time of Day

When Call Forward No Answer occurs on a waiting call, the redirected Directory Number used depends on the time of day if Call Redirection by Time of Day (CRTOD) is activated.

Call Pickup Network Wide

A call that is redirected by the Call Waiting Redirection feature to the active set's Call Forward No Answer DN may be picked up.

Call Waiting

The option selected for Call Waiting Redirection treatment also applies to calls given Internal Call Waiting treatment.

Camp-On

There is no interaction as Call Waiting and Camp-On are mutually exclusive.

Direct Inward Dialing Call Forward No Answer Timer

The Direct Inward Dialing Call Forward No Answer Timer timer is applied after the last stage of CFNA or SFNA treatment resulting from the Call Waiting Redirection feature for DID Call Waiting calls.

Distinctive Ringing/New Distinctive Ringing Call Forward No Answer

The existing Distinctive Ringing Call Forward No Answer feature is applied to calls from a Distinctive Ringing enabled trunk. If such an incoming call is receiving Call Waiting treatment on sets with Distinctive Ringing, Call Forward No Answer (CFNA), and the Call Waiting Redirection feature enabled, the DFNA timer is applied to the call instead of the CFNA timer. The Call Waiting warning tone, if enabled, is not changed by Distinctive Ringing. If that call is not answered before the expiration of the DFNA timer, CFNA treatment is given using the Call Waiting Redirection feature.

Forward No Answer Call Waiting Direct Inward Dialing

With the Call Waiting Redirection feature also enabled, the Call Waiting Redirection feature takes precedence over Forward No Answer Call Waiting Direct Inward Dialing (FCWD). The existing CFNA also takes precedence over the existing Attendant Recall of Call Waiting calls. Since the Call Waiting Redirection feature applies CFNA treatment to a Call Waiting call while the FCWD feature applies an attendant recall timer, the Call Waiting Redirection feature also has precedence over the FCWD timer.

Hunting

If Call Forward and Hunt by Call Type (CFCT) is enabled with Call Forward No Answer and Call Waiting Redirection, “no answer” internal calls receiving Call Waiting treatment are routed for CFNA treatment to the Flexible CFNA DN (FDN) or Hunt DN, and “no answer” external calls are routed for CFNA treatment to the External Flexible CFNA DN (EFD) or External Hunt DN (EHT).

Internal or Station-to-Station Call Waiting

The option selected for Call Waiting Redirection treatment also applies to calls given Internal Call Waiting treatment.

Meridian Mail Voice Mailbox Administration

Unanswered calls given Call Waiting treatment may now be allowed to forward to Voice Mail through the activation of the Call Waiting Redirection feature. The greeting given to the caller is for a “no answer” condition.

Message Center

Unanswered calls given Call Waiting treatment may now be allowed by the Call Waiting Redirection feature to be forwarded to a CFNA DN which may be a Message Center. The call redirection reason is “no answer”.

Message Waiting

Message Waiting has precedence over CFNA and Attendant Recall for attendant-extended calls. Unanswered calls given Call Waiting treatment are forwarded to the Flexible CFNA DN by the Call Waiting Redirection feature.

Multi-Party Operations

Recovery on Misoperation of Call Transfer – Call Transfer with Ring No Answer (RGNA)

If the transferring party goes on-hook to complete the Call Transfer (that is, blind transfer) before the “transferred to” or called party answers the Call Waiting call, an RGNA Misoperation of Call Transfer is detected by Multi-Party Operations (MPO).

With the Call Waiting Redirection feature enabled, if the blind transfer completes after the CFNA timer applied by Call Waiting Redirection has expired, there is no interaction as the Call Waiting Redirection feature is done and has already redirected the unanswered Call Waiting call to the CFNA DN.

If the blind transfer completes before the Call Waiting Redirection CFNA timer expires and the RGNA option is defined to be:

- 1 Standard (STD, that is, operation as it was prior to introduction of MPO), there is no interaction, as Call Waiting Redirection will redirect the unanswered Call Waiting call when the CFNA timer expires.
- 2 Non-STD (that is, ATN, DIS, OVF, AAR, or DAR), the RGNA option has precedence over CFNA and thus has priority over Call Waiting Redirection’s CFNA treatment.

Recovery on Misoperation of Call Transfer – Misoperation of Call Transfer for All Other Cases

This type of misoperation occurs when the transferring party attempts to complete the transfer in several other non-RGNA scenarios. There is no interaction with these Multi-Party Operations scenarios and the Call Waiting Redirection feature.

Multiple Appearance Directory Number

The Call Waiting Redirection feature applies to unanswered Call Waiting calls which apply to single appearance DNs and primary appearance DNs of Multiple Appearance.

Multiple Appearance Directory Number Redirection Prime

If the Multiple Appearance Directory Number Redirection Prime (MARP) feature is activated, the Call Forward No Answer (CFNA) treatment given by Call Waiting Redirection for an unanswered Call Waiting call follows the MARP feature for CFNA treatment of calls to an idle DN.

Network Call Forward No Answer

Existing Network CFNA treatment is applied to calls receiving Call Waiting treatment on sets with CFNA and the Call Waiting Redirection feature enabled if the Call Waiting call is not answered before the expiration of the CFNA timer and the CFNA DN is on another node.

Network Call Redirection

Incoming calls receiving Call Waiting Redirection treatment can be redirected over the network only if the trunk-to-trunk connection is already supported per the existing Network Call Redirection feature.

Night Restriction Classes of Service

The Call Waiting Redirection feature applies to unanswered calls given Call Waiting treatment when the Night Restriction Classes of Service feature allows Call Waiting.

Night Service Night Service Enhancements

Night Service has the same interaction with the Call Waiting Redirection feature as attendant-extended calls. Since the Call Waiting Redirection feature applies CFNA treatment to a Call Waiting call, the Call Waiting Redirection feature also has precedence over the Call Waiting recall timer.

Voice Mail

Unanswered calls given Call Waiting treatment may now be allowed to forward to Voice Mail through the activation of the Call Waiting Redirection feature. The greeting given to the caller is for a “no answer” condition.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Configure the CFNA treatment, the number of ringing cycles for CFNA, and the Call Waiting Redirection option.
- 2 LD 10 – Configure Call Waiting and Call Forward No Answer for analog (500/2500 type) telephones.
- 3 LD 11 – Configure Call Waiting, and Call Forward No Answer for Meridian 1 proprietary telephones.

LD 15 – Configure the CFNA treatment, the number of ringing cycles for CFNA, and the Call Waiting Redirection option.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	RDR	Call Redirection
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- OPT	CWRA	Call Waiting Redirection Allowed. Allow Call Forward No Answer treatment for unanswered Call Waiting calls on a DN.
...		

FNAD	(HNT) ATT NO FDN	CFNA treatment for DID calls.
FNAT	(HNT) ATT NO FDN	CFNA treatment for internal non-Direct Inward Dialing calls.
FNAL	(HNT) ATT NO FDN	CFNA treatment for calls when Call Waiting Redirection is enabled.
...		
CFN0 CFN1 CFN2	1-(4)-15 1-(4)-15 1-(4)-15	CFNA timers; number of normal ringing cycles for CFNA Options 0, 1, and 2.
DFN0 DFN1 DFN2	1-(4)-15 1-(4)-15 1-(4)-15	Distinctive Ringing CFNA timers; number of distinctive ringing cycles for CFNA Options 0, 1, and 2.

LD 10 – Configure Call Waiting and Call Forward No Answer for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
HUNT	xxx..x	Hunt DN. If the Call Forward No Answer treatments set up in LD 15 are set to HNT, the Hunt DN should be configured.
CLS	(CWD) CWA	Call Waiting external (denied) allowed.

RCO	(SWD) SWA	Internal (Station-to-Station) Call Waiting (denied) allowed. If SWA is defined, CWA must also be defined.
	(WTA) WTD	Warning tone (allowed) denied.
	(FND) FNA	Call Forward No Answer (denied) allowed.
	FBA	Call Forward Busy Allowed. For customers with the United Kingdom (UK) package 190 configured, CLS must be set to FBA for calls over DASS/DPNSS trunks.
	(0)-2	Ring cycle option for Call Forward No Answer. Prompted when CLS = FNA, or MWA (or both). RCO must be set to a value other than 0 for Call Waiting Redirection to operate.
FTR	aaaa FDN xxx..x	Enter the feature and related data. Flexible CFNA DN. If the CFNA treatments set up in LD 15 are set to FDN, the Flexible CFNA DN should be configured.

LD 11 – Configure Call Waiting, and Call Forward No Answer for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
FDN	xxx..x	Flexible CFNA DN. If the Call Forward No Answer treatments set up in LD 15 are set to FDN, the Flexible CFNA DN should be configured.

CLS	(SWD) SWA	Internal (Station-to-Station) Call Waiting (denied) allowed. SWA does not need to exist to have external Call Waiting.
	(WTA) WTD	Warning tone (allowed) denied.
	(FND) FNA	Call Forward No Answer (denied) allowed.
	FBA	Call Forward Busy Allowed. For customers with the United Kingdom (UK) package 190 configured, CLS must be set to FBA for calls over DASS/DPNSS trunks.
RCO	(0)-2	Ringling cycle option for Call Forward No Answer. Prompted when CLS = FNA, or MWA (or both). RCO must be set to a value other than 0 for Call Waiting Redirection to operate.
HUNT	xxx..x	Hunt DN. If the Call Forward No Answer treatments set up in LD 15 are set to HNT, the Hunt DN should be configured.
KEY	xx CWT	xx = key number. Add a Call Waiting key.

Feature operation

No specific operating procedures are required to use this feature.

Call Waiting/Internal Call Waiting

Contents

This section contains information on the following topics:

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Feature description

Call Waiting notifies a telephone user on an established call (internal or external) that an external call is waiting to be answered. Meridian 1 proprietary telephones must have a Call Waiting key/lamp pair assigned and a Class of Service that allows a warning tone. Call Waiting is applicable to the Prime DN or any single appearance DN on the telephone. When an external call comes into a Meridian 1 proprietary telephone and the telephone user is on a call, the Call Waiting lamp flashes and a buzz sounds through the telephone's speaker.

To use Call Waiting, analog (500/2500 type) telephones must have a Class of Service that allows Call Waiting and a warning tone. Two tone bursts are received through the handset to advise an analog (500/2500 type) telephone user of a waiting call. Note that the two calls cannot be conferenced together.

Call Waiting applies to Direct Inward Dialing (DID), Central Office (CO), Foreign Exchange (FX), and Wide Area Telephone Service (WATS) trunk calls extended to a busy telephone by the attendant. Call Waiting also applies to calls on TIE and Common Control Switching Arrangement (CCSA) trunks.

Internal Call Waiting

This feature provides Call Waiting for internal calls. This option, defined on a per-telephone basis, allows Call Waiting for calls from other telephones within the customer group. These calls include the following:

- direct telephone-to-telephone calls
- attendant-extended internal calls
- telephone-to-telephone call transfer of all trunk and internal calls

Call Waiting Flexible Feature Codes

A user may activate Call Waiting from an analog (500/2500 type) telephone with Call Waiting Class of Service by dialing the Call Waiting Activate (CWGA) FFC (defined in LD 57). To deactivate Call Waiting, the user dials either the Call Waiting Deactivate (CWGD) FFC (defined in LD 57) or the general Deactivate (DEAF) FFC (also defined in LD 57).

If Call Waiting is deactivated using FFCs, then station-to-station call waiting is also deactivated at the telephone.

If the Class of Service is CWA, ACTIV or DEACT will be printed in brackets when CWT is activated or deactivated.

The CWT FFCs do not affect Precedence Call Waiting.

Operating parameters

A Meridian 1 proprietary telephone can have only one working Call Waiting key/lamp pair.

Telephones with internal telephone-to-telephone Call Waiting must also have external Call Waiting (CWA) Class of Service.

A Call Waiting indication is not presented to a single-line telephone in the transfer or conference mode.

An analog (500/2500 type) telephone user receiving a second call can connect alternately to the original call and the Call Waiting call by a switchhook flash. The user cannot transfer or conference either call.

When a second call goes to a telephone that already has a Call Waiting call, the second call is recalled to the attendant if it is not answered by the number of rings defined in the Customer Data Block (RTIM prompt, field zz).

An analog (500/2500 type) telephone user who has received a Call Waiting call routed from the attendant cannot reconnect to the original call until it has been released from the console.

Attendant Administration does not support the Internal Call Waiting feature.

If a call is waiting and Call Waiting is deactivated using the Call Waiting Deactivate (CWGD) FFC, the call that is waiting is allowed to continue waiting while any new calls will not be allowed to wait.

Feature interactions

Advice of Charge for EuroISDN

When an Advice of Charge call is transferred to a busy set with Call Waiting Allowed, the transferring station is charged until the call is answered.

Attendant Blocking of Directory Number

If a set that has the Station-to-station Call Waiting feature active (CLS SWA and a Call Waiting (CWT) key for digital sets) is idle when an Attendant Blocking of DN attempt is made, the Attendant Blocking of DN attempt will be allowed and processed as normal. If the DN is idle and there is an active call on the Call Waiting key, the Attendant Blocking of DN attempt will be allowed.

If a set has the Station-to-station Call Waiting feature active and the DN to be blocked is busy when an Attendant Blocking of DN attempt is made, the Attendant Blocking of DN attempt will be canceled and busy tone will be returned.

For a set that has the Call Waiting (or Station-to-station Call Waiting) feature active and a DN is blocked due to the Attendant Blocking of DN feature, any incoming call to the blocked DN will receive busy tone.

Attendant Break-In

If the destination DN has a camped-on incoming trunk call, the attendant cannot extend the urgent incoming call as a Camp-On call.

Attendant Incoming Call Indicators

The ICI feature is used with the Call Waiting feature to recognize, answer, and process incoming calls.

Attendant Queuing

Call Waiting options do not apply to calls queued to a specified attendant. The exception to this is the display call waiting key, which shows the number of calls in the overall attendant queue and the calls in the queue for a specified attendant.

Automatic Line Selection

A call on the Call Waiting key is not selected.

Call Forward All Calls

Call Forward All Calls takes precedence over Call Waiting.

Call Forward Busy - proprietary telephones

If Class of Service allows Call Forward Busy and Call Waiting Allowed, and the proprietary telephone has a Call Waiting key, calls do not forward to the attendant when the telephone is busy and another call is waiting.

Call Forward Busy - Analog (500/2500 type) telephones

If a telephone has Call Forward Busy and Call Waiting Allowed Class of Service, calls are forwarded to the attendant when the telephone is busy and has another call waiting.

Call Forward/Hunt Override Via Flexible Feature Code

Call Waiting can be used even if the Call Forward/Hunt Override Via FFC feature has been activated. When a busy set with Call Waiting configured is encountered, it will terminate on Call Waiting.

Call Forward, Internal Calls

Internal Call Forward takes precedence over Call Waiting.

Call Forward No Answer

If a call to a telephone gets Call Forward No Answer treatment to another telephone which is busy, Call Waiting and Camp-On do not apply. The call will attempt to terminate on the original DN again.

Call Park

A recall of a parked call is not presented in the Call Waiting mode. If an internal telephone is in the parked state, Call Waiting to that telephone is not provided.

Call Pickup Network Wide

Call Waiting calls cannot be picked up.

Call Waiting Redirection

The option selected for Call Waiting Redirection treatment also applies to calls given Internal Call Waiting treatment.

Camp-On

Call Waiting and Camp-On are mutually exclusive. If a Call Waiting Class of Service or key is defined, Camp-On cannot be provided.

Camp-on, Station

Call Waiting takes precedence over Station Camp-On.

China Number 1 Signaling - Called Party Control

An attendant cannot apply Call Waiting on an outgoing call that follows Called Party Control.

Dial Intercom

Call Waiting does not apply to a Dial Intercom appearance.

Digital Private Signaling System #1 (DPNSS1) Executive Intrusion

Executive Intrusion is permitted (consult-only state) into a requested party having call waiting.

Directory Number Delayed Ringing

Call Waiting tones apply to SCN/MCN keys as per existing operation. The Directory Number Delayed Ringing does not apply, and the user is informed of the incoming call immediately.

Flexible Feature Code Boss Secretarial Filtering

Call Waiting to a boss set with filtering active is routed to the secretary set.

Flexible Feature Code enhancement

The Call Waiting Deactivate (CWGD) FFC may be used to deactivate Call Waiting. If a call is waiting when Call Waiting is deactivated, the call is allowed to continue waiting while any new calls will not be allowed to wait.

Flexible Voice/Data Terminal Number

Call Waiting is not supported on data calls to a dynamic voice/ data TN. Call Waiting is supported for voice calls to dynamic voice/ data TN.

Group Hunt

Call Waiting to a Pilot DN will not be supported.

Hunting

If a call comes into a busy DN, it begins the hunting route defined from the called DN. If there are idle DNs on the hunting route, the call becomes a Call Waiting call on the called DN.

Idle Extension Notification

This feature can be used even if the Call Forward/Hunt Override Via FFC feature is activated. When a busy set is encountered, it is possible to place an IEN request against the set.

ISDN Night Service

If a call is diverted to a third-party operator Night DN that is busy, Call Waiting may be activated (if equipped). The call to the third-party operator circuit switched network is released.

ISDN QSIG/EuroISDN Call Completion

On an Analog (500/2500 type) set, Call Completion notification waits until the set has finished an active call. If Call Waiting is configured on a set, notification is presented after the Call Waiting call. If an additional call is queued while Ring Again free notification is waiting on a set, the waiting call takes precedence over the Call Completion notification. An established Call Completion call is also queued if a set has Call Waiting feature equipped and is occupied on another call.

Message Center

Call Waiting calls are not forwarded to a Message Center.

Multi-Party Operations

A user of an analog (500/2500 type) telephone can answer a Call Waiting call, thereby establishing a consultation connection. The user can dial control digits, as normal. To toggle the calls, the toggle control digit must be used rather than a switchhook flash.

Multi-Party Operations

An analog (500/2500 type) telephone may be assigned both CWA and TSA Classes of Service. The user can establish a Consultation connection by answering Call Waiting during an active established call. If this is done, Control Digit features (CNFD, TGLD, and DISD) are available. Note that Programmable Control Digit TGLD, rather than a switchhook flash, is used to toggle the calls. Operation with XFA Class of Service is unchanged.

The Three-party Service feature changes the operation of Call Waiting for all analog (500/2500 type) telephones as follows (regardless of whether the sets have TSA Class of Service. If an analog (500/2500 type) telephone user activates Waiting during an active call so as to establish a Consultation connection, and if the user goes on-hook during the Consultation connection, the operation is treated as an AOCS misoperation. This recovery of misoperation will take place even if the MPO package is not equipped. In this case, the controlling party will be re-rung by the held party regardless of the CCDO and the recovery of misoperation options.

If an analog (500/2500 type) telephone user attempts to set up a Consultation connection by dialing a busy DN and if the Call Waiting conditions are satisfied, the controlling party will hear ringback tone and the active party will hear Call Waiting tone. If the controlling party goes on-hook before the active party has answered, the held call is disconnected regardless of the MPO options and Call Waiting tone is removed from the active party.

Multi-Party Operations – Three-Party Service

An analog (500/2500 type) telephone cannot have Call Waiting during the patience tone.

An analog (500/2500 type) telephone may be assigned both CWA and TSA Classes of Service. The user can establish a Consultation connection by answering Call Waiting during an active established call. If this is done, Control Digit features (CNFD, TGLD, and DISD) are available. Note that Programmable Control Digit TGLD, rather than a switchhook flash, is used to toggle the calls. Operation with XFA Class of Service is unchanged.

The Three-party Service feature changes the operation of Call Waiting for all analog (500/2500 type) telephones as follows (regardless of whether the sets have TSA Class of Service. If an analog (500/2500 type) telephone user activates Waiting during an active call so as to establish a Consultation connection, and if the user goes on-hook during the Consultation connection, the operation is treated as an AOCS misoperation. This recovery of misoperation will take place even if the MPO package is not equipped. In this case, the controlling party will be re-rung by the held party regardless of the CCDO and the recovery of misoperation options.

If an analog (500/2500 type) telephone user attempts to set up a Consultation connection by dialing a busy DN and if the Call Waiting conditions are satisfied, the controlling party will hear ringback tone and the active party will hear Call Waiting tone. If the controlling party goes on-hook before the active party has answered, the held call is disconnected regardless of the MPO options and Call Waiting tone is removed from the active party.

Night Restriction Classes of Service

If Call Waiting and Night Restriction for Call Waiting Class of Service (NRWA) are assigned, Call Waiting will be operational for the set only when Night Service is in effect.

Night Service Enhancements

This feature will terminate incoming Night calls to busy DNs by applying Call Waiting. This will be done even if the Night DN is an analog (500/2500 type) telephone with Call Waiting Denied (CWD) Class of Service, or if the Night DN is a Meridian 1 proprietary telephone without a Call Waiting (CWT) key assigned.

All telephones (analog (500/2500 type) and Meridian 1 proprietary) will be given Night Call Waiting tone, if the NWT prompt in LD 15 was responded to with “YES”, regardless of the Warning Tone (WTA,WTD) Class of Service setting of the set. Meridian 1 proprietary telephones will be given Night Call Waiting tone in the handset instead of the speaker buzz for Call Waiting.

On Hold on Loudspeaker

Call Waiting can be applied to a busy loudspeaker DN.

Ring Again

The user is notified that a previously busy line is free only when both the original call and the waiting call have disconnected.

Station Camp-on

Call Waiting takes precedence over Station Camp-On.

Feature packaging

Call Waiting/Internal Call Waiting is included in base system software.

For Call Waiting FFCs, the following packages are required:

- Background Terminal Facility (BGD) package 99
- Flexible Feature Codes (FFC) package 139

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 10 – Allow Call Waiting for analog (500/2500 type) telephones.
- 2 LD 11 – Allow Call Waiting for Meridian 1 proprietary telephones.

LD 10 – Allow Call Waiting for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(CWD) CWA (SWD) SWA (WTA) WTD	(Deny) allow Call Waiting. (Deny) allow internal Call Waiting (if SWA is defined, CWA must also be defined). (Allow) deny warning tone.

LD 11 – Allow Call Waiting for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	SWA WTD	allow internal Call Waiting. deny warning tone.
KEY	xx CWT	Add a Call Waiting key.

Feature operation

To answer a Call Waiting call on Meridian 1 proprietary telephones, follow these steps:

- 1 Press **Hold** when you hear a tone during a telephone call.
- 2 Press **Call Wait** to answer the waiting call.

To return to your first call, follow these steps:

- 1 Press **Hold** if you want to put your second call on Hold.
- 2 Press the extension key that has the first call on it.

To answer a Call Waiting call on analog (500/2500 type) telephones, follow these steps:

- Flash the switchhook when you hear a beep during a telephone call. Your current call is on Hold and you are connected to the waiting call.

To return to your first call:

- Flash the switchhook.

The following instructions are for using Call Waiting FFCs:

- Allow – The user must dial the Call Waiting Activate (CWGA) FFC.
- Disallow – The user must dial the Call Waiting Deactivate (ATDD) FFC or the Deactivate (DEAF) FFC.
- Use prerequisites – To set Call Waiting, the telephone must have Call Waiting Allowed (CWA) Class of Service.

Called Party Control on Internal Calls

Contents

This section contains information on the following topics:

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Feature description

The Called Party Control on Internal Calls (CPCI) feature allows the called party with Class of Service Malicious Call Trace Allowed to activate Malicious Call Trace (MCT) even after the calling party goes on-hook. When enabled, the calling party is prevented from releasing a call until the called party has initially released. If the calling party goes on hook, the call is put on hold and both parties are given call hold treatment. When the called party activates the call trace request, the calling party's information is printed in the call trace record.

This feature builds on the capabilities of the existing Called Party Disconnect Control (CPDC) and Malicious Call Trace (MCT) features. Called Party Control on Internal Calls is applicable on set to set calls and can be activated during or after a malicious call has occurred.

Operating parameters

The feature is applicable to all systems.

This feature is designed for stand alone application only and is not supported across a network. On a set to set call, the calling and the called party must belong to the same customer on the same system.

Called Party Control on Internal Calls (CPCI) is not supported on ISDN BRI sets.

If an attendant console is the calling party and involved in a call with a set, the CPCI feature functionality is not provided to the call.

The CPCI feature is not supported with features such as Attendant Recall, Override, Call Park and Privacy Release.

If the system initializes during an established call, the call remains established. Following initialization, the calling party can successfully release from a connected call prior to the called party releasing.

For this feature, the called party must have a Malicious Call Trace Allowed (MCTA) Class of Service configured in the Customer Data Block (LD 15).

The existing limitations of Malicious Call Trace apply to this feature. When MCT is requested, the information is printed in the call trace record.

If the called party does not release the connection, then the calling party remains established until the called party releases.

Feature interactions

Automatic Hold

If Called Party Control on Internal Calls is active, an established call is put on hold regardless of the Automatic Hold Class of Service assigned to the set when a second call is originated or answered.

Call Hold, Deluxe

The calling party and called party can put either party on hold. However, the calling party cannot release the call while the called party is on hold. The called party is permitted to release the call.

Held Call Clearing

With Called Party Control on Internal Call enabled, a call on hold is not cleared when the calling party releases. This occurs whether or not the Held Call Clearing feature has been activated.

Feature packaging

Called Party Control on Internal Calls requires the new package Called Party Control on Internal Calls (CPCI) package 310 and also requires Malicious Call Trace (MCT) package 107.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Configure Called Party Control on Internal Calls in the Customer Data Block.
- 2 LD 57 – Configure Malicious Call Trace Flexible Feature Code.
- 3 LD 10 – Enable Malicious Call Trace on Analog (500/2500 type) sets.
- 4 LD 11 – Enable Malicious Call Trace on Meridian 1 proprietary sets.

LD 15 – Configure Called Party Control on Internal Calls in the Customer Data Block.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	FTR	Change Features and options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.

...		
- MCDC	YES	Malicious Call DN/CLID printing allowed.
CPCI	YES	Called Party Control on Internal Calls allowed. NO = Called Party Control on Internal Calls denied.

LD 57 – Configure Malicious Call Trace Flexible Feature Code.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	FFC	Flexible Feature Code data block.
CUST	xx	Customer number, as defined in LD 15
CODE	MTRC	Malicious Call Trace Flexible Feature Code.
MTRC	xxxx	Enter Flexible Feature Code.

LD 10 – Enable Malicious Call Trace on Analog (500/2500 type) sets.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	500	Analog Set Type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CUST	xx	Customer number, as defined in LD 15

...		
CLS	MCTA	Malicious Call Trace allowed. MCTD = Malicious Call Trace denied.

LD 11 – Enable Malicious Call Trace on Meridian 1 proprietary sets.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CUST	xx	Customer number, as defined in LD 15
...		
CLS	MCTA	Malicious Call Trace allowed. MCTD = Malicious Call Trace denied.
KEY	xxx TRC	Key Number, Malicious Call Trace.

Note: For information on the implementation of the Malicious Call Trace feature, refer to the Malicious Call Trace feature description in *Features and Services* (553-3001-306), Book 2.

Feature operation

Feature operation is described in the following scenarios.

Simple Call - Meridian 1 Proprietary Sets

Set A, the calling party, initiates a call to Set B, the called party. Set B has Class of Service Malicious Call Trace Allowed (MCTA) configured. With Called Party Control on Internal Calls (CPCI) activated, Set B can activate Malicious Call Trace even after Set A has gone on-hook. This operation is possible because Set A is not idled until Set B has gone on-hook. Depending on the type of telephone, CPCI activation is done by completing the following:

- 1 Enter the SPRE code and “83” access code;
- 2 Dial the Malicious Call Trace (MCT) Flexible Feature Code (FFC); or
- 3 Activate the Call Trace key.

With Called Party Control on Internal Calls, Set B can activate the Malicious Call Trace feature during an active call between Set A and Set B as well as after Set A has gone on-hook. Set A is not idled until Set B goes on-hook.

Simple Call - Analog (500/2500 type) Sets

- 1 Flash the switchhook. A special dial tone is heard that signifies the call is on hold.
- 2 Enter the SPRE code and “83” access code.
- 3 Dial the Malicious Call Trace Flexible Feature Code.
- 4 Go on-hook.

Conference Call

When the calling party and the called party both are involved in a conference call then the following operation is observed:

- 1 A party that called a set with CLS MCTA is only allowed to release if the called party has gone on hook and no other conferee has CLS MCTA or all remaining conferees were originators of a CPCI call.
- 2 In a three party conference between the called party, calling party and the recorder then the recorder is not considered as a conferee. The recorder is treated as a simple call for called party control on internal calls feature.

- 3 In a set to set call, if the called party establishes a conference with a trunk then the called party control on internal calls feature functionality is provided as long as the last called party (with CLS configured as MCTA) which goes on hook is a set rather than a trunk.

Transfer Call

If calling party and the called party are both involved in a simple call and either party tries to transfer the call to another set then the following operation is observed:

- 1 If the called party in a CPCI call attempts to transfer the call to a set with CLS MCTA, it is not allowed to complete its transfer.
- 2 If the called party transfers the call across the network then the called party is allowed to complete its transfer across the network and the transferred to party does not have any control on the calling party.
- 3 If the calling party in a CPCI call attempts to transfer the call to another set, it is not allowed to complete its transfer regardless of that set's Class of Service.

Call on Hold

If calling party and the called party both are involved in a simple call and either party tries to put the call on hold then the following operation is observed:

- 1 If the calling party tries to release the call then the calling party is not allowed to release from the call.
- 2 If the called party tries to release the call then the called party is allowed to release from the call.

Called Party Disconnect Control

Content

This section contains information on the following topics:

Feature description	913
Operating parameters	914
Feature interactions	914
Feature packaging	915
Feature implementation	916
Feature operation	916

Feature description

Called Party Disconnect Control allows the system to control the disconnecting of calls on Central Office (CO), Foreign Exchange (FX), Common Control Switching Arrangement (CCSA), Direct Inward Dialing (DID), TIE, Wide Area telephone Service (WATS), modem, and Centralized Automatic Message Accounting (CAMA) trunks. The trunk route data block has been modified so that a route can be specified for Called Party Disconnect Control.

With Called Party Disconnect Control, an incoming trunk call answered within the system is not disconnected until the system end goes on-hook. If the calling party goes on-hook, the connection is held, allowing the call to be traced in emergency situations. If the calling party goes off-hook again, the call is not reestablished.

Operating parameters

An incoming call on a trunk route with Called Party Disconnect Control allowed can be transferred to another telephone within the system, but cannot be transferred to a trunk.

An incoming call with Called Party Disconnect Control can be forwarded to another telephone, but not to another trunk.

Tandem trunk connections are not allowed on incoming calls on trunks with Called Party Disconnect Control allowed.

If Barge-In or Busy Verify is applied to trunks with Called Party Disconnect allowed, the trunk is disconnected.

Force disconnect, through service change and maintenance, overrides Called Party Disconnect Control.

Feature interactions

Automatic Answerback

Incoming calls on a trunk with Called Party Disconnect Control allowed that terminate on a telephone with Handsfree Answerback are answered automatically. They are not disconnected automatically, however, when the calling party goes on-hook.

Conference

Trunks with Called Party Disconnect Control allowed are treated as trunks without disconnect supervision when conferenced.

Digital Trunk Interface (DTI) – Commonwealth of Independent States (CIS)

Called Party Disconnect Control may not be used in the CIS market because of its signaling requirements.

Malicious Call Traced - Enhanced

Prior to this feature, the Called Party Control (CDPC) option was not supported for conference calls. The CDPC option is now supported if the conference contains exactly one recording trunk, one MCT activating party and one other trunk. This is done to make the recorder transparent to the user. The CDPC option remains unsupported for all other conference calls.

Meridian 911

The Called Party Disconnect (CPDC) feature is used to retain a 911 trunk when a 911 call is disconnected by the caller. No modification to the feature is required for Meridian 911, except lifting the CPDC and Automatic Call Distribution (ACD) NCFW limitation. 911 Calls, arriving through trunks with CPDC defined, will be allowed to NCFW, unlike non-911 ACD calls.

Meridian 911 - Call Abandon

There is no interaction with M911 Call Abandon and Called Party Disconnect Control.

Periodic Clearing Enhancement

Called Party Disconnect Control can exist on the same system and function on the same route, but is not to be used in conjunction with Periodic Clearing.

Periodic Clearing on RAN, Meridian Mail, ACD and Music

This feature enhancement is not supported if used together with Toll Operator Break-In.

Feature packaging

This feature is included in base system software.

Feature implementation

LD 16 – Define Called Party Disconnect Control for a trunk route.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	CDB	Customer Data Block.
CUST	xx	Customer number, as defined in LD 15
CNTL	(NO) YES	(Do not) change the controls or timers.
...		
CPDC	(NO) YES	(Deny) allow Called Party Disconnect Control for the trunk route.

Feature operation

No specific operating procedures are required to use this feature.

Calling Party Name Display Denied

Content

This section contains information on the following topics:

Feature description	917
Operating parameters	919
Feature interactions	920
Feature packaging	921
Feature implementation	922
Feature operation	923

Feature description

This enhancement to the Calling Party Name Display feature allows a customer to define, on an originating set, whether or not to allow the display of the calling and called party name and/or digits on the terminating set. This option can be defined individually for each customer set, and applies to all Meridian telephone types. The display of digits is controlled by “digit display allowed on other set” (DIGA) or “digit display denied on other set” (DIGD) Class of Service. The name display is controlled by the “name display allowed on other set” (NAMA) or “name display denied on other set” (NAMD) Class of Service.

The following scenarios are possible, where set A is the originating set and set B is the terminating set. DIGA “Allowed” and “Denied” indicates whether or not the called party digits display are allowed or denied on the set. If the display of digits is denied, the digits are replaced by four dashes (for an internal call) or seven dashes (for an external call). If the name display is denied (that is, NAMD), the name is replaced by “XXXX”.

In the following example, originating set A has DIGA and NAMA Class of Service, and terminating set B also has DIGA and NAMA Class of Service. During an established call, the respective displays would be as follows:

Figure 6
Display of Calling Party Denied example

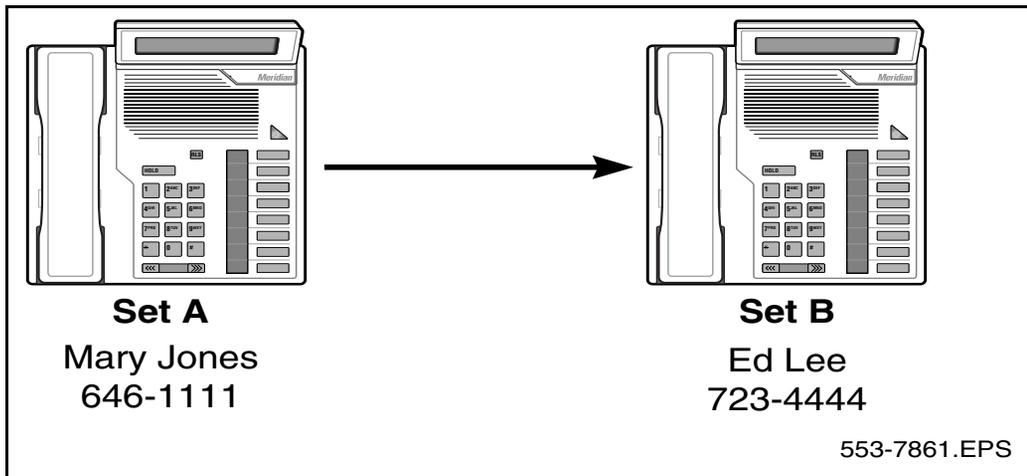
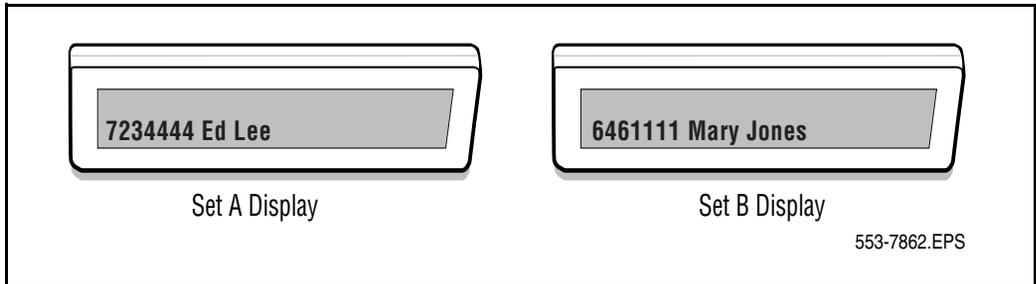
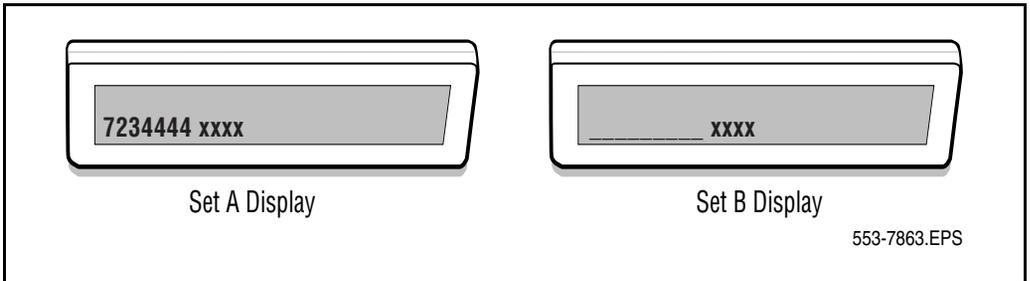


Figure 7
Example of displays when the originating and terminating sets both have Class of Service set to DIGA and NAMA



If set A has DIGD and NAMD Class of Service, and set B also has DIGD and NAMD Class of Service, the displays would be as follows (keep in mind that set A displays the dialed digits even though set B has DIGD Class of Service):

Figure 8
Example of displays when the originating and terminating sets both have Class of Service set to DIGD and NAMD



Operating parameters

This enhancement pertains to both standalone and network environments.

The called party digits are displayed on the originating set, regardless of the Class of Service of the terminating set.

Feature interactions

Attendant Consoles

The Calling Party Name Display Denied enhancement cannot be applied to attendant consoles.

Call Forward Call Transfer

During a Call Forward or Call Transfer, the calling party digits and forwarding/transferring party digits are displayed on the terminating set. This display is allowed or denied depending on the Class of Service of the calling set and the forwarding/transferring set. The name of the forwarding/transferring set is not displayed on the calling and terminating set.

Calling Party Privacy

For outgoing calls, if the Calling Party Privacy (CPP) package is equipped, the CPP feature will take precedence over the Calling Party Name Display Denied feature for restricting the Calling Party Name and Number. For example, if an outgoing ISDN call is marked as a CPP call, the outgoing SETUP message will include the Calling Party Number IE with the Presentation Indicator set to “Presentation Restricted” and the Display IE with the CPND Indicator set to “Presentation Denied”, to inhibit both the Calling Party Number and Name being displayed on the terminating set, regardless of whether or not the Calling Party Name Display Denied feature allows the display of the Calling Party Name and/or Number.

The Calling Party Name Display Denied feature takes precedence over the CPP feature for displaying an incoming ISDN call. If International Supplementary Features (SUPP) package 131 is equipped, an incoming ISDN call with the Presentation Indicator set to “Presentation Restricted” in the Calling Party Number IE or the CPND Indicator set to “Presentation Denied” in the Display IE will be marked as a CPP call, and will display “ACOD + Member” or “XXXX” as for the Calling Party Name Display Denied feature.

Conference

Calling Party Name Display Denied does not apply to conference calls.

ISDN QSIG Name Display

Call Party Name Display and Calling Party Name Display Denied interact with ISDN Q Interface Signaling Protocol (QSIG) Name Display, depending on the Name Display configuration in LD 16 for BRI or LD 17 for PRI. When a QSIG network is interacting with an Meridian Customer Defined Network (MCDN) network providing network capability ND3, both the MCDN and QSIG Name Display feature function on the same level.

Multiple Appearance Directory Numbers

For a ringing call to a Multiple Appearance Directory Number (DN), the name on the calling set display can be suppressed by configuring any of the Terminal Numbers with NAMD Class of Service. The digit display on the calling set cannot be suppressed—the called digits are displayed even though the Class of Service on any of the Terminal Numbers is DIGD. The called set display is subject to the Class of Service of the calling party. For an established call to a Multiple Appearance Directory Number (DN), the calling set display is subject to the Class of Service configured for the answering set. The answering set display only is subject to the Class of Service of the calling party—the displays of the other sets in the Multiple-appearance group are blank.

Office Data Administration System (ODAS)

Depending on the Class of Service of the originating set, the ODAS designator is displayed or replaced by Xs, up to the maximum number of characters that the designator may have.

Feature packaging

Calling Party Name Display Denied requires International Supplementary Features (SUPP) package 131.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 10 – Configure the Calling Party Name Denied Class of Service for analog (500/2500 type) telephones.
- 2 LD 11 – Configure the Calling Party Name Display Denied Class of Service for proprietary telephones.

LD 10 – Configure the Calling Party Name Denied Class of Service for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	500	Telephone type.
...		
CLS	(DDGA) DDGD (NAMA) NAMD	(Allow) deny DN to be displayed on other set. (Allow) deny name to displayed on other set.

LD 11 – Configure the Calling Party Name Display Denied Class of Service for proprietary telephones.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
...		
CLS	(DDGA) DDGD (NAMA) NAMD	(Allow) deny DN to be displayed on other set. (Allow) deny name to be displayed on other set.

Feature operation

No specific operating procedures are required to use this feature.

Calling Party Privacy

The Calling Party Privacy (CPP) feature enables the system to support the blocking of a Calling Party's Number and Name from being displayed at the terminating set on an individual call basis. Users can dial a Calling Party Privacy code (for example, *67 from a proprietary set or 1167 from an analog (500/2500 type) set) to prevent their telephone number and name from being displayed on a receiving telephone across the Public Switched Telephone Network (PSTN). Internal calls within the system have originating numbers or names displayed, even though the originating call has requested privacy.

This feature also allows a per-line blocking Class of Service to be programmed for station sets for public network calls. This relieves the user from having to dial the Flexible Feature Code (FFC) for every call, but in every other way is equivalent to the per-call blocking.

Please refer to *ISDN Primary Rate Interface: Features* (553-3001-369) for complete information.

Calling Party Privacy Override

Content

This section contains information on the following topics:

Feature description	927
Operating parameters	930
Feature interactions	932
Feature packaging	943
Feature implementation	943
Feature operation	947

Feature description

Calling Party Privacy Override (CPPO) enhances the functionality of the Calling Party Privacy (CPP) feature. With Calling Party Privacy Override, calling party information can be selectively unblocked on a per-call basis.

With the Calling Party Privacy Override feature, a circuit switched network user can selectively unblock calling party information on a per-call basis when Class of Service is set to CLBA. The user unblocks the calling party information by dialing a Calling Party Privacy Override Flexible Feature Code prior to dialing the destination number. When the CPPO Flexible Feature Code is dialed before the destination number, the user's calling party information is displayed on the terminating set. The default for the Calling Party Privacy Override Flexible Feature Code is "*82" for proprietary sets and "1182" for analog (500/2500 type) sets. The Calling Party Privacy Override Flexible Feature Code is defined in Overlay 57.

CPPO is provisioned on a trunk route basis. Any trunk type that can support an outgoing call can request the CPPO feature (see “Operating parameters” on page 930 for more information).

When the CPPO Flexible Feature Code is dialed prior to the normal dialing sequence, the call is marked as a CPPO call. The CPPO Flexible Feature Code is then removed from the dialed digits stored in the call register. If the outgoing trunk route provisions CPPO, then the Privacy Override Indicator is sent to the far end, and the Calling Party Number and Name information is displayed on the receiving telephone. If the outgoing trunk route does not provision CPPO, the call does not carry the Privacy Override Indicator.

The following example illustrates Calling Party Privacy Override functionality:

- 1 Set A, a Meridian 1 proprietary set with Class of Service set to CLBA, goes off-hook.
- 2 Set A dials the Calling Party Privacy Override Flexible Feature Code, defined in Overlay 57. Calling Party Privacy Override is initiated.
- 3 Set A dials the destination number for Set B.
- 4 The call rings on Set B.
- 5 The calling party information of Set A is presented on the display screen of Set B.

Outgoing calls

For an outgoing non-ISDN trunk call, the Privacy Override Indicator is defined on the outgoing trunk route. The CPPO Flexible Feature Code is outpulsed to the far end provided that the outgoing trunk route provisions CPPO. If CPPO is not provisioned on the trunk route, then the call does not carry the Privacy Override Indicator.

For an outgoing ISDN call from one system to another, the Privacy Override Indicator is represented when the Presentation Indicator field is set to “Presentation Allowed” in the Calling Party Number Information Element (IE) and the Call Party Name Display (CPND) Indicator field is set to “Presentation Allowed” in the Display IE.

For an outgoing ISDN call to the Central Office, the Privacy Override Indicator is represented when the Presentation Indicator field is set to “Presentation Allowed” in the Calling Party Number IE and when the CPND information is included in the Display IE.

Incoming calls

An incoming ISDN call is recognized as a CPPO call (that is, it carries the Privacy Override Indicator) if the Presentation Indicator field is set to “Presentation Allowed” in the Calling Party Number IE and if the CPND Indicator is set to “Presentation Allowed” in the Display IE (if it exists).

When an incoming call is on a non-ISDN route, the system does not receive the Privacy Override Indicator.

Tandem Calls

Incoming ISDN calls

ISDN to ISDN tandem

For an incoming call tandeming through the system, any incoming Privacy Override Indicator is only repeated to the outgoing trunk route that also has CPPO provisioned.

When an incoming ISDN trunk call is tandemed through an ISDN trunk to a system, the Presentation Indicator or the CPND Indicator, received from the incoming ISDN trunk, is tandemed to the outgoing ISDN trunk.

When an incoming ISDN trunk call is tandemed through an ISDN trunk to a CO, the Presentation Indicator received from the incoming ISDN trunk is tandemed to the outgoing ISDN trunk. If the Display IE with the CPND Indicator set to “Presentation Allowed” is received from an incoming ISDN trunk, the Display IE, containing the Call Party Name, is sent across in the SETUP message tandemed to the outgoing ISDN trunk.

ISDN to non-ISDN tandem

When an incoming ISDN trunk call is tandemed to a non-ISDN trunk, the incoming call is treated as a CPPO call only if both the CLID and CPND Indicators are set to “Allowed”. Otherwise, the call is treated as a CPP call.

Incoming non-ISDN calls

For incoming non-ISDN calls, the system does not receive the Privacy Override Indicator.

When a call on an incoming non-ISDN route is tandemed on the system, the call is tandemed based on how the CPP flag (TCPP) prompt is defined in the Route Data Block for the outgoing route.

When TCPP is set to YES, an incoming non-ISDN call tandemed to this route is treated as a CPP call.

When TCPP is set to NO, an incoming non-ISDN call tandemed to this route is treated as a CPPO call.

Non-ISDN to ISDN tandem

Even though a Privacy Override Indicator is not provided for an incoming non-ISDN trunk call, if the outgoing route has TCPP set to NO, the Presentation Indicator field in the Calling Party IE is set to "Presentation Allowed".

Non-ISDN to non-ISDN tandem

A Privacy Override Indicator is not provided for an incoming non-ISDN trunk call. If the outgoing route has TCPP set to NO, the Privacy Override Indicator defined for that route is outputted, provided that the outgoing route provisions CPPO.

Operating parameters

Central Office Trunks (COT), Foreign Exchange (FEX), Wide Area Telephone Service (WATS), and Direct Inward Dial (DID) are the only trunk route types (including ISA service routes) that can output the Privacy Override Indicator for an outgoing non-ISDN call. All ISDN trunk routes provision the CPPO feature.

A non-ISDN trunk route does not provision the CPPO feature if the Output Asterisk and Octothorpe (OPAO) package (package 104) is configured. During SYSLOAD, the CPPO database is removed from the non-ISDN trunk routes if the OPAO package is configured.

The Privacy Override Indicator, defined for a non-ISDN trunk route (dial-pulse or digitone), consists of any four arbitrary digits from 0-9. The asterisk (*) or octothorpe (#) cannot be part of the Privacy Override Indicator for dial-pulse trunks. For digitone trunks, the asterisk (*) can only be the first digit of the Privacy Override Indicator Flexible Feature Code.

The asterisk and octothorpe are not outpulsed if the OPAO package is configured. The asterisk signals a 3-second pause and the octothorpe indicates end-of-dialing. The octothorpe cannot be used in a Privacy Override Indicator.

Note: The asterisk (*) used to introduce a pause while outpulsing digits is supported on analog and DTI trunks, but not supported on ISDN trunks. On ISDN trunks, if the OPAO feature is enabled, the asterisk (*) is outpulsed as a called party digit.

Privacy Override Indicators are not received from the CO or non-ISDN DID trunks.

The CPPO Flexible Feature Code cannot conflict with any internal DN, including the Special Prefix (SPRE) code.

When a user dials the Flexible Feature Code defined for the CPPO feature and if CPPO is not provisioned on the outgoing trunk route, the call proceeds without carrying the Privacy Override Indicator.

The CPPO feature does not affect whether or not the Calling Party Number and Name information is displayed for internal calls within the system, even if the originator requests CPPO.

All incoming non-ISDN calls with the Privacy Override Indicator terminate on the system. If the Privacy Override Indicator is not defined in the Flexible Feature Code for CPPO, an overflow tone (unrecognized digits) is provided to the user.

If the Stored Number Redial (SNR)/Last Number Redial (LNR) feature is used by the originator of a CPPO call to store the dialed digits, the CPPO Flexible Feature Code is stored against the SNR/LNR database. If the user removes that CPPO Flexible Feature Code and then the SNR/LNR feature is used to re-initiate the call, overflow tone is returned to the user.

ISDN implementation for this feature includes DMS100/250, SL-100, AT&T4, AT&T5, TR-1268 (NI-2), Meridian Customer Defined Network (MCDN) Private Networks, EuroISDN, QSIG, and BRI trunks.

The CPPO feature is supported on the following International PRI (IPRI) connectivities: Ericsson AXE-10 CO Connectivity (Australia), Ericsson AXE10-CO Connectivity (Sweden), French Numeris CO Connectivity, Japan D70 CO Connectivity, Swissnet 2 CO Connectivity, SYS-12 CO Connectivity, 1TR6 CO Connectivity (Germany), and Asia Pacific ISDN Phase 2.

The CPPO feature supports the following North American connectivities: DMS100/250, S1100, Lucent #4 ESS (ESS4), Lucent #5 EES (ESS5), and TR-1268 (NI-2).

CPPO does not support R2MFC signaling.

Feature interactions

Attendant Consoles

A CPPO call can be originated from any Meridian 1 attendant console. Attendant consoles request CPPO by preceding the normal dialing sequence with the Flexible Feature Code for CPPO.

Attendant consoles can also initiate a CPPO call using the Autoline key. An outgoing trunk call, initiated by pressing the Autoline key, carries the Privacy Override Indicator if the CPPO Flexible Feature Code, followed by the normal dialing sequence, is stored against the Autoline key. The CPPO Flexible Feature Code is counted against the maximum number of digits (currently 31) stored against the Autoline key.

The CPPO Flexible Feature Code can also be stored against the Autoline key. An outgoing CPPO call can then be initiated by pressing the Autoline key followed by manually dialing the destination number.

An outgoing CPPO call can also be initiated by dialing the CPPO Flexible Feature Code followed by pressing the Autoline key, on which the normal dialing sequence of digits for the destination number is stored.

Autodial

An outgoing trunk call, initiated by pressing the Autodial key, carries the Privacy Override Indicator if the CPPO Flexible Feature Code followed by the normal dialing sequence is stored against the Autodial key. The CPPO Flexible Feature Code is counted against the maximum number of digits (currently 31) stored against the Autodial key.

The CPPO Flexible Feature Code can be stored against the Autodial key. In this case, an outgoing CPPO call can be initiated by pressing the Autodial key followed by manually dialing the normal sequence of digits for the destination number.

An outgoing CPPO call can also be initiated by dialing the CPPO Flexible Feature Code followed by pressing the Autodial key on which the normal dialing sequence of digits for the destination number is stored.

Automatic Call Distribution

Calls placed by means of Enhanced Automatic Call Distribution (ACD) Routing, Enhanced Interflow, Enhanced Night Call Forward, Enhanced Network Routing, and Network ACD recognize the originator's CPPO request.

Automatic Call Distribution MAX

If the CPP package is equipped, ACD MAX reports include the Calling Line Identification (CLID) for incoming ISDN calls that have the CLID Presentation Indicator set to "Allowed".

Basic Rate Interface

Although Basic Rate Interface (BRI) networking is not supported in North America, CPPO treats BRI trunk calls in the same manner as an ISDN trunk call.

Call Detail Recording

Call Detail Recording (CDR) records continue to include the Calling Party Number even if the caller has requested CPPO. When the CDR record is generated, the CPPO Flexible Feature Code dialed by the originator is included in the DIGIT field (if it displays the dialed digits).

The CPPO Flexible Feature Code dialed by the originator is not included in the DIGIT field if it displays the outpulsed digits. The Privacy Override Indicator, outpulsed by an outgoing non-ISDN trunk route that provisions CPPO, is included in the outpulsed digits.

Call Pickup Network Wide

When an incoming trunk call with the Privacy Override Indicator is picked up by a remote set (the requesting party), the Calling Party Number and Name is displayed on the requesting set.

Call Hold

When an incoming trunk call with the Privacy Override Indicator is taken off hold, the Calling Party Number and Name information is displayed on the set.

Call Forward All Types

Hunt

Network Hunt

The existing call redirection functionality is not changed by this feature.

When an incoming ISDN trunk call with the Privacy Override Indicator is forwarded into the public or private networks, the Privacy Override Indicator is tandemed to the far end to allow the display of the Calling Party Number and Name, provided that the outgoing trunk route on the tandem node has CPPO provisioned.

When an incoming ISDN call with Calling Party Number and Name set to “Presentation Allowed” is forwarded to a set within the same node, the Calling Party Number and Name is displayed on the terminating set.

When an incoming non-ISDN trunk call is forwarded onto a trunk, the outgoing trunk call from the tandem node carries the Privacy Override Indicator, provided that the outgoing trunk route on the tandem node has CPPO provisioned. Also, the TCPP prompt in the Route Data Block must be set to NO.

The CPPO Flexible Feature Code can be stored on the forwarding Directory Number (DN), including the forwarding DN for Call Forward All Calls, Hunt DN and Flexible Call Forward No Answer DN (FDN).

If CPPO is requested on the forwarding DN and the call is forwarded across an ISDN link, the outgoing SETUP message includes the Redirecting Number IE (if it exists) with the Presentation Indicator set to “Presentation Allowed”.

If CPPO is requested on the forwarding DN and the call is forwarded across a non-ISDN link, no Privacy Override Indicator is outpulsed to the terminating node if the originating set did not request CPPO. This is because no Redirecting Number information is sent across a non-ISDN link.

When an internal call is forwarded into the public or private networks, if the originator requests CPPO and the outgoing trunk route provisions CPPO, the Privacy Override Indicator is sent to the far end to allow the display of the Calling Party Number and Name.

Call Pickup

With CPPO activated, when an incoming trunk call with the Privacy Override Indicator is picked up locally, the Calling Party Number and Name information is displayed on the terminating set.

Call Transfer

As per existing operation, if an incoming non-ISDN call is transferred or an incoming ISDN call is transferred to a non-ISDN trunk, the Connect Party Number and Name information is not passed to the terminating node. The CPPO feature does not change this operation.

When an incoming call with the Privacy Override Indicator is transferred across the MCDN network or to a local set, the originator’s calling party information is displayed on the final terminating set.

Calling Line Identification Restriction

Basic Rate Interface (BRI) sets do not support the Flexible Feature Code (FFC) feature. CPPO can only be requested by applying the existing Calling Line Identification Restriction (CLIR) Service option. This is done by setting the soft key “ID PRES” (if it exists) to “Allowed” or the Presentation of CLID to far end on outgoing calls (PRES) prompt to YES in Overlay 27. Then an outgoing ISDN/non-ISDN trunk call carries the Privacy Override Indicator if the outgoing trunk route provisions CPPO. However, if the Calling Party Number Information Element (IE) with the Presentation Indicator set to “Presentation Denied” is included in the SETUP message generated by the Basic Rate Interface (BRI) terminal, then the BRI terminal does not allow CPPO. This is because the Presentation Indicator, generated by the BRI terminal, always overwrites the Calling Line Identification Restriction (CLIR) service option.

Calling Party Privacy

If the user requests both Calling Party Privacy and Calling Party Privacy Override, then the feature last requested takes precedence. The Flexible Feature Code dialed last determines the type of call.

If a set with Class of Service set to CLBA requests CPPO by dialing the CPPO Flexible Feature Code, then the call is treated as a CPPO call. If a set with Class of Service set to CLBD requests CPP by dialing the CPP Flexible Feature Code, then the call is treated as a CPP call.

If a user dials the Flexible Feature Code for CPPO followed by the Flexible Feature Code for CPP, then the call is treated as a CPP call. If a user dials the Flexible Feature Code for CPP followed by the Flexible Feature Code for CPPO, then the call is treated as a CPPO call.

Calling Party Privacy and Call Forward

Set A, requesting CPPO, calls Set B. Set B Call Forwards All Calls to Set C. The CPP Flexible Feature Code is part of the forwarding DN. Set A’s number and name is displayed on Set C as the Calling Party Number and Name; although, no redirecting number is displayed on Set C. The tandem node sends the Display IE with the Presentation Indicator set to “Allowed” and the Redirecting Number IE with the Presentation Indicator set to “Restricted”.

Set A, requesting CPP, calls Set B. Set B Call Forwards All Calls to Set C. The CPPO Flexible Feature Code is part of the forwarding DN. Set B's number is displayed on Set C as the Redirecting Number; although, no Calling Party Number and Name is displayed on Set C. The tandem node sends the display IE with the Presentation Indicator set to "Restricted" and the Redirecting Number IE with the Presentation Indicator set to "Allowed".

Calling Party Privacy and Call Transfer

Set A, requesting CPPO, calls Set B. Set B answers the call, requests CPP, and initiates a transfer to Set D. After the transfer is complete, Set A's Calling Party Number and Name is displayed on Set D. The request made by the connected party takes precedence over the transferring party while displaying the Connect Party Number and Name.

Set A, requesting CPP, calls Set B. Set B answers the call, requests CPPO, and initiates a transfer to Set D. After the transfer is complete, Set A's Calling Party Number and Name is not displayed on Set D. The request made by the connected party takes precedence over the transferring party while displaying the Connect Party Number and Name.

Conference

The CPPO feature passes the Privacy Override Indicator to the terminating set in order to display the Calling Party Number and Name, if the Conference feature is used for the purpose of performing a transfer.

Display of Calling Party Denied

When the CPP package is equipped, the CPPO feature takes precedence over the Display of Calling Party Denied (DPD) feature for allowing the Calling Party Number and Name to be displayed. For example, when an outgoing ISDN call is marked as a CPPO call, then the outgoing SETUP message includes the Calling Party Number IE with the Presentation Indicator set to "Presentation Allowed" and the Display IE with the CPND Indicator set to "Presentation Allowed". This enables both the Calling Party Number and Name to be displayed on the terminating set, regardless of whether the DPD feature allows or denies the display of the Calling Party Number and/or Name.

E.164 ESN Numbering Plan Enhancement

CPPO can be requested for ESN calls by preceding the dialing sequence with the Flexible Feature Code defined for the CPPO feature. The CPPO Flexible Feature Code is counted against the maximum number of digits (currently 31) allowed for the destination DN.

Feature Group D

When an incoming Feature Group D (FGD) call terminates at a system locally, the received 10-digit Automatic Number Identification (ANI) is displayed on the terminating set if the Show ANI Digits on Terminal Displays (SHAN) field is set to YES in the FGD data block that is associated with the incoming trunk route. If the originator requests CPPO, the end office sends the 10-digit ANI to the circuit switched network.

If an incoming FGD call is routed to another switch through ISDN Primary Rate Interface (PRI) or ISDN Signaling Link (ISL), the outgoing SETUP message includes the 10-digit ANI (if it exists) as the Calling Party Number (CLID) with the Presentation Indicator set to "Presentation Allowed". This occurs if the incoming call requests CPPO. CPPO takes precedence over the SHAN field that is defined in the FGD data block and is associated with the incoming trunk route to allow the 10-digit ANI display.

Hot Line

Hot line calls carry the Privacy Override Indicator if the CPPO Flexible Feature Code followed by the normal dialing sequence is stored in the Hot Line DN. The CPPO Flexible Feature Code is counted against the maximum number of digits (currently 31) allowed for the Hot Line DN.

Last Number Redial

The Last Number Redial (LNR) feature stores the CPPO Flexible Feature Code in the LNR database if the CPPO Flexible Feature Code was included in the last number dialed by the user. The outgoing redialed calls also send the Privacy Override Indicator to the far end.

Incoming Trunk Programmable Calling Line Identification

When the incoming trunk route is a non-ISDN route, the billing number (CLID) assigned by the incoming trunk route is passed to the CO with the Presentation Indicator field set to “Presentation Allowed”, if the outgoing ISDN trunk route has the TCPP prompt set to NO.

When the incoming trunk route is an ISDN route, the “Allowed” Presentation Indicator is tandemed to the outgoing trunk route. If the Presentation Indicator is set to “Presentation Allowed” or no Calling Party Number IE is received on the incoming trunk route, the billing number assigned by the incoming trunk route is passed to the CO with the Presentation Indicator field set to “Presentation Allowed”, if the incoming trunk route has the Billing Number Display (BDSP) prompt set to YES or NO.

ISDN Signaling Link

CPPO treats an ISDN Signaling Link (ISL) call in the same manner as an ISDN trunk call.

Malicious Call Trace

An incoming call to a set with the Malicious Call Trace (MCT) feature activated includes the Terminal Number (TN) of the calling party in the MCT record, whether or not the caller has requested CPPO.

Meridian 911

An incoming 911 call with Automatic Number Identification (ANI) information always displays the ANI digits on the terminating set or passes the ANI information to the Meridian 911.

Meridian Interactive Voice Response

An incoming ISDN call with the CLID Presentation Indicator set to “Allowed” sends the CLID to the Meridian Interactive Voice Response (IVR) if the CPP package is equipped.

Meridian Link

If the CPP package is equipped, an incoming ISDN call with the CLID Presentation Indicator set to “Allowed” includes the CLID in the Application Module Link (AML) messages sent to the Meridian Link module.

Meridian Mail

When an incoming ISDN call with the CLID Presentation Indicator set to “Allowed” terminates on Meridian Mail, the CLID passed to Meridian Mail is recorded. The call is treated by Meridian Mail as an external call.

Calls placed by means of Through Dial can request Calling Party Privacy Override. These calls involve the person accessing Meridian Mail (mailbox user or incoming caller) dialing 0 followed by any telephone number. The caller is able to dial a CPPO Flexible Feature Code plus the normal dialing sequence, following the 0. The asterisk (*) or octothorpe (#), as part of the CPPO Flexible Feature Code, are rejected by Meridian Mail. Therefore, the CPPO Flexible Feature Code can only consist of seven digits (0-9).

Meridian MAX

If the CPP package is equipped, an incoming ISDN call with the CLID Presentation Indicator set to “Allowed” sends the CLID to Meridian MAX.

Network Call Redirection

If a set receives a call and is then redirected to the public network on an ISDN trunk that supports call redirection, then the redirecting IE in the outgoing SETUP message has the Presentation Indicator set accordingly. For instance, if the call that had requested CPPO is redirected, the outgoing SETUP message has the Presentation Indicator set to “Allowed”.

Network Message Center

An incoming trunk call with the Privacy Override Indicator displays the Calling Party Number and Name on the Message Center operator’s terminal.

Network Ring Again

A call placed by means of the Network Ring Again feature recognizes the CPPO request from when the call was originally dialed.

Nortel Symposium Call Center

As per existing operation, an incoming CPPO call routed to Nortel Symposium Call Center contains the CLID.

Private Line Service

The Private Line Service feature outpulses the Privacy Override Indicator only if it is dialed by the originator. The asterisk (*) is outpulsed to the far end only if it is an Outpulse Asterisk and Octothorpe (OPAO) call. Otherwise, the asterisk (*) signals a three-second pause.

Note: The asterisk (*) used to introduce a pause while outpulsing digits is supported on analog and DTI trunks, but not supported on ISDN trunks. On ISDN trunks, if the OPAO feature is enabled, the asterisk (*) is outpulsed as a called party digit.

Remote Virtual Queuing

The Remote Virtual Queuing feature has automatic re-try capabilities that are used when congestion is encountered within the network. The same Calling Party Privacy Override considerations are provided to the “re-tries” as were provided to the originally dialed call.

Ring Again – Busy Trunk

A call that is automatically redialed by the Ring Again - Busy Trunk feature recognizes the CPPO requested when the call is originally dialed.

Speed Call System Speed Call

When an outgoing trunk call is initiated by dialing a Speed Call code, the Speed Call code carries the Privacy Override Indicator if the CPPO Flexible Feature Code followed by the normal dialing sequence is stored in the Speed Call Entry represented by the Speed Call code. The CPPO Flexible Feature Code is counted against the maximum number of digits (currently 31) allowed per Speed Call list entry.

The user can also store the CPPO Flexible Feature Code in the Speed Call Entry (or Speed Call key). An outgoing CPPO call can be initiated by dialing the Speed Call code (or pressing the Speed Call key), followed by manually dialing the digits.

Stored Number Redial

In the Stored Number Redial (SNR) programming mode, the user can store the CPPO Flexible Feature Code, followed by the normal dialing sequence in the SNR database. The outgoing calls originated by the Stored Number Redial feature send the Privacy Override Indicator to the far end. The CPPO Flexible Feature Code is counted against the maximum number of digits (currently 31) allowed by the SNR feature.

During an active call on a Meridian 1 proprietary set, the Stored Number Redial feature stores the CPPO Flexible Feature Code in the SNR database if the CPPO Flexible Feature Code is included in the number dialed by the originator. The outgoing redialed calls also send the Privacy Override Indicator to the far end.

Trunk Anti-Tromboning

When trunks are removed, due to the Trunk Anti-Tromboning (TAT) operation, an ISDN call recognizes the CPPO/CPD requested by the originator.

Trunk Optimization Before Answer

An optimized call, due to Trunk Optimization Before Answer (TRO) operation, recognizes the CPPO/CPD requested by the originator.

Virtual Network Services

CPPO treats Virtual Network Services (VNS) trunk calls in the same manner as ISDN trunk calls. For instance, CPPO does not affect the existing VNS operation. If CPPO was requested when originating a call, the Presentation Indicator field of CLID is set to "Presentation Allowed".

VISIT

The VISIT which connects to a set receives the Calling Party Number or Name, since an incoming CPPO call sends the Calling Party Number or Name to the set for display.

Feature packaging

The Calling Party Privacy Override feature requires the following package:

- Calling Party Privacy (CPP) package 301, which has the following dependency:
 - Flexible Feature Codes (FFC) package 139.

For Calling Party Name Display, Calling Party Name Display (CPND) package 95 is required. ISDN package 145 is required for ISDN routes.

Note: Non-ISDN trunks must restrict the Outpulse Asterisk and Octothorpe (OPAO) package 104 to provision the Calling Party Privacy Override feature.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 16 – Configure Privacy Override Indicators for a Non-ISDN route. Configuration procedures require that the following conditions are met:
- 2 LD 16 – For an ISDN trunk route, set the TCPP flag in RDB to tandem non-ISDN calls on to this route. Configuration procedures require that the following conditions are met:
- 3 LD 57 – Define the Flexible Feature Code for the Calling Party Privacy Override feature.
- 4 LD 10/11 – Activate Calling Party Number and Name per-line blocking.

LD 16 – Configure Privacy Override Indicators for a Non-ISDN route. Configuration procedures require that the following conditions are met:

- CPPO is configurable on COT, DID, FEX, WAT and ISA routes.

- OAPO package 104 is restricted or unequipped.
- Route is either OGT (outgoing) or IAO (incoming and outgoing).

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
...		
CPP	YES	Calling Party Privacy/Privacy Override (CPP/CPPO) flag. Enable CPP/CPPO feature and configure parameters. (NO) = CPP/CPPO feature is disabled is the default.
- TCPP	(NO) YES	CPP/CPPO flag treatment for an incoming non-ISDN trunk call tandemmed to this trunk route. Outgoing call will carry the Privacy Override Indicator (default). Outgoing call will carry the Privacy Indicator.
- DTPI	(*67) nnnn	Digitone Trunk Privacy Indicator nnnn = 0-9999, an asterisk (*) can be entered as the first digit.
- DPPI	0-(1167)-9999	Dial-pulse Trunk Privacy Indicator
- DTPO	(*82) nnnn	Digitone Trunk Privacy Indicator nnnn = 0-9999, an asterisk (*) can be entered as the first digit.
- DPPO	0-(1182)-9999	Dial-pulse Trunk Privacy Indicator

LD 16 – For an ISDN trunk route, set the TCPP flag in RDB to tandem non-ISDN calls on to this route. Configuration procedures require that the following conditions are met:

- The CPP package 301 is equipped.
- Route is either OGT (outgoing) or IAO (incoming and outgoing).

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T. Note: All ISDN trunk routes are CPPO configurable.
...		
CPP	YES	Calling Party Privacy/Privacy Override (CPP/CPPO) flag. Enable CPP/CPPO feature and configure parameters. (NO) = CPP/CPPO feature is disabled is the default.
- TCPP	(NO) YES	CPP/CPPO flag treatment for an incoming non-ISDN trunk call tandemed to this trunk route. Outgoing call will carry the Privacy Override Indicator (default). Outgoing call will carry the Privacy Indicator.

LD 57 – Define the Flexible Feature Code for the Calling Party Privacy Override feature.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	FFC	Flexible Feature Code.
CUST	xx	Customer number, as defined in LD 15.

FFCT	(NO) YES	Flexible Feature Confirmation Tone denied. Flexible Feature Confirmation Tone allowed.
...		
CODE	CPP	CPP Flexible Feature Code
- CPP	xxxx	Calling Party Privacy code xxxx = 0-9999, an asterisk (*) can be entered as the first digit. The Flexible Feature Code may be up to 4 digits, or up to 7 digits with the Directory Number Expansion (DNXP) package (150).
- CPP	xxxx	Change the CPP code or enter a <CR> to accept.
CODE	CPPO	CPPO Flexible Feature Code
- CPPO	xxxx	Calling Party Privacy Override code xxxx = 0-9999, an asterisk (*) can be entered as the first digit. The Flexible Feature Code may be up to 4 digits, or up to 7 digits with the Directory Number Expansion (DNXP) package (150).
- CPPO	xxxx	Change the CPPO code or enter a <CR> to accept.

LD 10/11 – Activate Calling Party Number and Name per-line blocking.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.

DES	d...d	Designator The response d...d represents an Office Data Administration System (ODAS) Station Designator of 1-6 alphanumeric characters.
CUST	xx	Customer number, as defined in LD 15
...		
CLS	CLBA	Activate Calling Party Number and Name per-line blocking. CLBD = Deactivate Calling Party Number and Name per-line blocking (default).

Feature operation

For a user to override the Calling Party Number and Name per-line blocking allowed (CLBA) Class of Service, the following steps must be performed.

- 1 The user goes off hook.
- 2 The user initiates a call by dialing the Calling Party Privacy Override Flexible Feature Code, defined in LD 57.
- 3 The user dials the destination number.

Camp-On

Content

This section contains information on the following topics:

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Feature description

The Camp-On feature routes one additional external call to a busy Directory Number (DN). When the attendant extends a call to a busy DN, the external call is camped-on to the telephone. If the Class of Service allows a warning tone, the user hears a tone indicating that a call is camped on. If the user frees the line within a specified time, the camped-on call rings the telephone automatically. If not, the call returns to the attendant as a recall.

Camp-On Tone is allowed or denied on a per-customer basis. The time a camped-on call waits is defined in LD 15 from 0 to 510 seconds, in multiples of two seconds. The default is 30 seconds.

Operating parameters

Camp-On applies to attendant-extended calls only. If the attendant hears a busy tone, another call has already been camped on to the busy telephone.

Feature interactions

Attendant Blocking of Directory Number

Camp-on will be denied for a DN that is blocked due to the Attendant Blocking of DN feature.

Attendant Break-In

If the destination DN has a camped-on incoming trunk call, the attendant cannot extend the urgent incoming call as a Camp-On call.

Call Forward All Calls Call Forward, Internal Call

Call Forward All Calls and Internal Call Forward take precedence over Camp-On.

Call Forward/Hunt Override Via Flexible Feature Code

When a busy set is encountered, it is possible to Camp-on to the set, even if Call Forward/Hunt Override Via Flexible Feature Code has been activated

Call Forward No Answer

When the Call Forward No Answer timer expires for a ringing camped-on call, the call is given Attendant Recall treatment instead of Call Forward No Answer treatment.

Call Park Network Wide

When an attendant attempts to extend a call to a busy station across the network and the busy station returns a Camp-On allow signal, an attendant has the option of camping on a call or continuing with Network Call Park.

Call Park on Unsupervised Trunks

A Disconnect Timer applies to camped-on calls on all trunks on the route. All answered calls in the camped-on state will be disconnected if left in that state for an extended period.

Call Waiting Call Waiting Redirection

If a Call Waiting Class of Service or key is defined, Camp-On cannot be provided.

Camp-On, Station

With Station Camp-On, any internal station can camp an external call on to another internal station that is busy. Prior to the introduction of this feature, attendants were the only parties that could camp calls on to busy internal stations. The term internal station includes stations on other nodes within a Meridian Customer Defined Network (MCDN). For more information, see the Camp-On, Station feature description.

China Number 1 Signaling - Called Party Control

A local attendant cannot Camp-on a call to an analog (500/2500 type) set that is on an outgoing trunk call that follows Called Party Control.

Enhanced Override Forced Camp-On Priority Override

Station-to-Station Camp-On and Attendant Camp-On are not affected by Forced Camp-On or Priority Override. The new Classes of Service (Camp-On From Another Telephone Allowed [CPFA], Camp-On From Another Telephone Denied [CPFD], Camp-On To Another Telephone Allowed [CPTA], and Camp-On To Another Telephone Denied [CPTD]) affect only Forced Camp-On. The Station Camp-On (SCMP) package (121) is required to return busy tone instead of ringback tone to the party camping on.

Flexible Feature Code Boss Secretarial Filtering

When an attendant is attempting to Camp-on a call to a boss set with filtering active, the call is routed to the secretary set, if the filtering is active for all calls. If filtering is active for external calls only, the call is routed to the secretary set if the call is an external call.

Flexible Voice/Data Terminal Number

Camp-On is not supported on data calls to a dynamic voice/ data TN.

Camp On is supported for voice calls to dynamic voice/data TN. However, no tone is inserted during a Camp On attempt if the Terminal Number is in a busy data mode.

Generic XFCOT Software Support

The Camp-On feature allows an attendant to route one additional call to a busy DN so it can be rung when it becomes free. If the busy DN is not free after a customer-defined time, the call is recalled to the attendant.

A call from a loopstart disconnect supervised or unsupervised loopstart trunk can be camped on. If a caller on an unsupervised loopstart trunk disconnects while the call is camped on, it is detected when the call is recalled or answered.

Caller disconnection during Camp-On operation is detected by a disconnect-supervised loopstart trunk on an XFCOT card and the camped on call is dropped.

Group Hunt

Camping an incoming call on to a Pilot DN is not be supported

Group Hunting Queuing Limitation

No Camp-on tone is provided for Group Hunting Queuing Limitation.

Hunting

Hunting takes precedence over Camp-On.

Idle Extension Notification

When an extension is blocked for receiving calls due to the Idle Extension Notification feature, Camp-on is not possible.

Multi-Party Operations

Camp-on to a controlling party DN which is involved in a Consultation connection is not permitted. However, Camp-on is allowed at non-controlling parties DN's which are involved in the Consultation connection.

Multi-Party Operations Enhancements

Camp-on is allowed on a party receiving Patience Tone. Camp-on tone and is not applied to the party during Patience tone. However, Camp-on tone and is applied when the speechpath has been reestablished

Multi-Party Operations – Three-Party Service

While Camp-On is allowed to the party receiving the patience tone, the Camp-On tone is not applied to the party during the patience tone. The Camp-On tone is applied, however, when the speech path has been reestablished.

On Hold on Loudspeaker

Camp-On can be applied to a busy loudspeaker DN.

Override - Forced Camp-On and Priority Override Override, Enhanced

Station-to-Station Camp-On and Attendant Camp-On are not affected by Forced Camp-On or Priority Override. The new Classes of Service (Camp-On From Another Telephone Allowed [CPFA], Camp-On From Another Telephone Denied [CPFD], Camp-On To Another Telephone Allowed [CPTA], and Camp-On To Another Telephone Denied [CPTD]) affect only Forced Camp-On. The Station Camp-On (SCMP) package (121) is required to return busy tone instead of ringback tone to the party camping on.

Periodic Pulse Metering

Metered calls camped-on to a busy station by an attendant are charged against the attendant until the call is answered and the attendant releases.

Source Included when Attendant Dials

The source remains included while the attendant dials the destination.

Uninterrupted Line Connections

Warning Tone

Class of Service with warning tone denied allows a call to be camped on, but with no warning tone.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Enable Camp-On tone for a customer.
- 2 LD 10 – Allow warning tone Class of Service for analog (500/2500 type) telephones.
- 3 LD 11 – Allow warning tone Class of Service for Meridian 1 proprietary telephones.

LD 15 – Enable Camp-On tone for a customer.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	FTR	Features and options data block.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- OPT	CTA	Enable Camp-On tone for the customer.
TYPE	TIM	Configure timers data block.
- RTIM	xx yy zz	Set recall timers. yy = Camp-On recall timer, response is 0-(30)-510.
...		

TYPE	FTR	Features and options
- STCB	(NO) YES	Station Camp-On Busy allowed.
- NSCP	(NO) YES	Network Station Camp-On to sets on this node allowed.

LD 10 – Allow warning tone Class of Service for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal Number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	WTA	Allow warning tone.

LD 11 – Allow warning tone Class of Service for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal Number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.

CLS	WTA	Allow warning tone.
-----	-----	---------------------

Feature operation

To camp on an external call to a busy destination:

- Press **Rls**.
The call is camped on to the extension. If you hear a busy tone, a call is already camped on the extension.

If the call is not answered within a specified time, it recalls to the attendant. Both the Source and Destination indicators flash until the recall is answered. The call can be camped on again or released.

To answer a camped-on call, follows these steps:

- 1 When you hear a short beep indicating a camped-on call, hang up or press **Rls**.
- 2 When the telephone rings, lift the handset.
You are connected to the camped-on call.

Camp-On to a Set in Ringback or Dialing

Contents

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Feature description

This feature allows a station or attendant to Camp-on an external trunk call to another station that is in a ringback or dialing state. If the station on which the call is camped on becomes idle without going into established state, the camped-on call rings the station automatically.

This capability applies to standalone and networking environments. Within a networking environment, the station affecting the Camp-on and the desired party can be anywhere in the network.

If the Flexible Tones and Cadences package is equipped and periodic Camp-on tones and cadences are defined, periodic Camp-on tone is given to the desired station when it goes into established state indicating that a call is camped on. For analog sets, this is in the form of a tone. For digital sets, it is a periodic buzz. The Camp-on tone lasts for the duration of the Camp-on. The desired station receives periodic Camp-on tone, if the station has Warning Tone Allowed class of service and the customer has the Camp-on Tone Allowed option. Music is provided to the camped-on station, if the Music package is equipped and defined for the customer.

During Camp-on, as soon as the attendant releases the call or the station completes the transfer, recall timing begins (the Recall Timer is configured in LD 15). If the timer times out, the Camp-on is recalled to the attendant. If the attendant is busy, the recall is queued against the attendant. The call can no longer be camped on to the desired station without affecting another Camp-on. If the attendant is in Night Service, the Camp-on receives night treatment.

If the desired party is on a different node, and Network Attendant Service (NAS) is equipped, the Camp-on is routed according to the NAS routing table. If the Camp-on is recalled to the local attendant, and the local attendant is busy, the recall is queued to the attendant. During this time, the call may still be answered by the desired station (the call remains camped on until the attendant answers the recall). This capability is that of the Slow Camp-on Recall.

Operating parameters

Only one call at a time can be camped on to a station in dialing or ringback state.

The cadence for Periodic Camp-on can be defined in LD 56. Periodic Camp-on can be allowed or denied on a customer and set basis.

Feature interactions

Attendant Forward No Answer

Camp-on recall takes precedence over the Attendant Forward No Answer recall. However, if during the recall the customer goes into Night Service and the recall is not answered by the night DN, the call is disconnected according to the Attendant No Answer feature processing.

Call Forward All Calls Call Waiting

Call Waiting and Call Forward All Calls take precedence over Camp-on.

First-Second Degree Busy

If the First-Second Degree Busy Indication is equipped, and the attendant attempts to Camp-on a call to a station in the ringing or dialing state, the attendant receives first degree busy indication. If the attendant attempts to Camp-on a call to a station that is second degree busy, Camp-on is not allowed. The attendant receives second degree busy indication.

Slow Answer Recall Modification

Slow Answer Recall Modification (SLAM) has an interaction after the attendant answers the recall. If SLAM is configured, then the target set is disconnected after the attendant answers the recall. The call is no longer camped on.

Feature packaging

Camp-On to a Set in Ringback or Dialing requires Camp-on French Type Approval (FRTA) package 197.

For network routing, the Network Attendant Service (NAS) package 159 is required.

If periodic Camp-on tone is desired, the Flexible Tones and Cadences (FTC) package 125 is required.

If music to the camped-on station is desired, the Music (MUS) package 44 is required.

For a station to Camp-on a trunk, the Station Camp-on (SCMP) package 121 is required.

Feature implementation

No change to existing configuration is required for the Camp-On to a Set in Ringback or Dialing feature.

Feature operation

See the Camp-On feature description contained within this document.

Camp-On to Multiple Appearance Directory Number

Contents

This section contains information on the following topics:

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Feature description

The Camp-On to Multiple Appearance DN enhancement allows a call camped on to an Multiple Call Ringing (MCR) or Multiple Call Non-ringing (MCN) Directory Number (DN) to be camped on to all sets with that DN. That is, any set with that MCR or MCN DN can receive the call when it idles. The camped call will Camp-On to each set as allowed for by the existing Camp-On feature. Also, each set with the MCR or MCN DN will receive Camp-On tone as long the camped call is in the Camp-On Queue. Prior to the introduction of the Camp-On to Multiple Appearance DN enhancement Camp-On was applied to the first set in the TN list.

This enhancement applies to Station Camp-On and Network Camp-On (regardless of where in the network the Camp-On originated).

An example of the sequence for multiple Camp-Ons to a single DN follows:

- 1 Sets A, B, and C are Meridian 1 proprietary telephones with the same MCR or MCN DN. All three sets are busy.
- 2 The attendant extends an external call to the busy DN and releases. Sets A, B, and C hear Camp-On tone.
- 3 A goes on-hook and camped call is presented to set A. Camp-On tone is removed from B and C.
- 4 If B went on-hook in step 3, the call is presented to set B and Camp-On tone is removed from sets A and C.
- 5 Similar operations as in step 4 if set C goes on-hook.

Operating parameters

The same feature requirements apply as for the Camp-On feature.

This Camp-On enhancement applies to Multiple-appearance Multiple-call Ringing (MCR) or Non-ringing (MCN) DNs; it does not apply to Multiple-appearance Single-call Ringing (SCR) or Non-ringing (SCN) DNs.

Feature interactions

Attendant Break-in

Camp-On will not be allowed on a set involved in an Attendant Break-in.

Centralized Multiline

This feature allows analog (500/2500 type) telephones to appear as MCR DNs. This enhancement should apply to these sets.

Make Set Busy

Camp-On will not be allowed on a set with Make Set Busy active.

Network Camp-On

The Camp-On enhancement applies to all Camp-On attempts regardless of where the Camp-On was originated.

Operator Call Back

Camp-On is not allowed on a set waiting for an Operator Recall signal.

Single Call Ringing and Non-ringing

Multiple-appearance Single Call Ringing and Non-ringing (SCR and SCN) DNs are not affected by the Camp-On enhancement.

Station Camp-On

The Camp-On enhancement applies to Station Camp-On.

Feature packaging

Camp-On to Multiple Appearance Directory Number requires International Supplementary Features (SUPP) package 131.

Feature implementation

There are no specific implementation procedures for this feature.

Feature operation

For operating procedures, see the “Camp-On” feature description on page 949.

Camp-On, Forced

Content

This section contains information on the following topics:

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Feature operation	973

Feature description

Forced Camp-On differs from normal Camp-On in that both internal and external calls can be camped on, rather than just external calls as with the Camp-On feature. The Forced Camp-On can be automatic or manual. The manual operation requires the use of the Enhanced Override (EOVR) key or Flexible Feature Code (FFC).

Forced Camp-On can be used as a feature by itself or in conjunction with Priority Override. The combination of the two features is referred to as Enhanced Override (EOVR).

For manual Forced Camp-On, an analog (500/2500 type) telephone user has to dial the EOVR Flexible Feature Code (FFC), while a Meridian 1 proprietary telephone user has to use the EOVR key.

A second operation of the EOVR key or FFC executes Enhanced Override.

Forced Camp-On is similar to station-to-station Camp-On except that Forced Camp-On can be done with either no call on hold or an external or internal call on hold. It can be done automatically or manually; whether it is automatic or manual is determined by the response to the Automatic Forced Camp-On (AFCO) prompt in LD 15.

For manual operation, once a busy telephone has been reached, the first depression of the EOVR key or the first dialing of the EOVR FFC attempts Forced Camp-On. If successful, Forced Camp-On introduces Camp-On tone into the connection. If unsuccessful, overflow (fast busy) tone is returned to the party attempting the Forced Camp-On.

For Forced Camp-On to be attempted, all other methods of call termination must have been tried, the last of which was Camp-On. If station-to-station Camp-On or automatic Forced Camp-On has occurred, or Forced Camp-On has been excluded by the new telephone options, then the first depression of the EOVR key or dialing of the EOVR FFC executes Enhanced Override. If, however, Forced Camp-On is denied due to existing Camp-On restrictions, Enhanced Override is also denied.

Operating parameters

The Flexible Feature Codes (FFC) package (139) must be equipped for Forced Camp-On and Priority Override to be available from analog (500/2500 type) telephones.

For analog (500/2500 type) telephone activation, the Multi-Party Operations (MPO) package (141) must be equipped, with “YES” as the response to the RALL prompt in LD 15 to ensure register recalls are required before dialing control digits. The EOVR FFC defined must not start with the same digit as one of the control digits. The control digits are defined in LD 15 and are printed as part of the Customer Data Block (LD 21).

Telephones or trunks involved in any of the following cannot be camped on to:

- Non established call
- Conference call
- Attendant call

- Attendant call using Centralized Attendant Service (CAS), Primary Rate Interface (PRI), or Integrated Services Digital Network (ISDN) trunk
- Make Set Busy
- Do Not Disturb
- Automatic Call Distribution (ACD) call
- Operator Call Back
- Hold
- Data call
- Release Link call, and
- Parked call.

Call Forward and Hunting take precedence over Call Waiting. If Call Waiting is allowed, Camp-On is not attempted. If Call Waiting is not allowed, station-to-station Camp-On is automatically attempted. If this succeeds, Enhanced Override can still follow. If Camp-On fails because there is no external call, Forced Camp-On and Enhanced Override may still work. However, if Camp-On fails due to other limitations, Forced Camp-On and Enhanced Override will also not work.

Even though Camp-On will still function when Warning Tone Denied (WTD) Class of Service is defined, Forced Camp-On requires Warning Tone Allowed (WTA) Class of Service.

Camp-On requires an external call on hold. Forced Camp-On can be done without a call on hold, or with both internal and external calls on hold.

Camp-On Classes of Service (Camp-On From another telephone Allowed [CPFA], Camp-On From another telephone Denied [CPFD], Camp-On To another telephone Allowed [CPTA], and Camp-On To another telephone Denied [CPTD]) apply to Forced Camp-On and automatic Forced Camp-On (AFCO) only. They do not apply to Station or attendant Camp-On.

If a telephone is denied Forced Camp-On by Class of Service, Enhanced Override may still be attempted.

Feature interactions

Attendant Break-In

Telephones with a toll operator break-in call cannot be camped on to. Overflow tone is returned to telephones attempting Forced Camp-on.

Attendant Calls

Telephones involved in attendant calls cannot be camped on to. Overflow (fast busy) tone is returned to telephones on which Forced Camp-On is attempted.

Automatic Call Distribution

Telephones involved in Automatic Call Distribution calls cannot be camped on to. Overflow (fast busy) tone is returned to telephones attempting Forced Camp-On.

Call Hold, Deluxe Call Hold, Permanent Hold

Neither held calls nor telephones with calls on hold can be camped on to with Forced Camp-On. Overflow tone is returned to telephones attempting Forced Camp-On.

Camp-On

Station-to-Station Camp-On and attendant Camp-On are not affected by Forced Camp-On. The Classes of Service (Camp-On From another telephone Allowed [CPFA], Camp-On From another telephone Denied [CPFD], Camp-On To another telephone Allowed [CPTA], and Camp-On To another telephone Denied [CPTD]) affect only Forced Camp-On. The Station Camp-On (SCMP) package (121) is required to return busy tone instead of ringback tone to the party camping on.

Conference calls

Telephones involved in Conference calls cannot be camped on to. Overflow tone is returned to telephones attempting Forced Camp-On.

Data calls

Data calls have Warning Tone Denied (WTD) Class of Service and therefore cannot be camped on to. Overflow tone is returned to telephones attempting Forced Camp-On.

Do Not Disturb

Telephones with Do Not Disturb enabled cannot be camped on to with Forced Camp-On. Overflow tone is returned to telephones attempting Forced Camp-On.

Make Set Busy

Telephones with Make Set Busy active cannot be camped on to with Forced Camp-On. Overflow tone is returned to telephones attempting Forced Camp-On. Voice Call is blocked by Make Set Busy.

Multi-Party Operations

With Multi-Party Operations (MPO), when a consultation call is made on a set equipped with Priority Override, a control digit has to be dialed from the set to perform a recall and return the call on hold.

Night Restriction Classes of Service

If Forced Camp-on and Night Restriction for Forced Camp-on Class of Service (NRCA) are assigned, Forced Camp-on will be operational for the set only when Night Service is in effect.

Operator Call Back

Telephones involved in an Operator Call Back call or Toll Operator Break-In cannot be camped on to with Forced Camp-On. Overflow tone is returned to telephones attempting Forced Camp-On.

Override

When Priority Override is activated, it replaces normal override. Once Priority Override has been performed on a set, its Digit Display shows the DN of the overriding set.

Feature packaging

Forced Camp-On requires the following packages to function as described in this document:

- Station Camp-On (SCMP) package 121
- Flexible Feature Codes (FFC) package 139
- Priority Override/Forced Camp-On (POVR) package 186

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Configure the customer for Automatic Forced Camp-On and Station Camp-On tone.
- 2 LD 57 – Configure Enhanced Override Flexible Feature Codes (FFC).
- 3 LD 10 – Configure analog (500/2500 type) telephones for Forced Camp-On.
- 4 LD 11 – Configure Meridian 1 proprietary telephones for Forced Camp-On.
- 5 LD 14 – Configure trunks for Forced Camp-On.

LD 15 – Configure the customer for Automatic Forced Camp-On and Station Camp-On tone.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	MPO	Multi-Party Options
...		

- AFCO	(NO) YES	Automatic Forced Camp-On. Enter YES if Forced Camp-On is to be applied automatically. Enter NO if Forced Camp-On is to be applied manually.
...		
TYPE:	FTR	Features and options
- STCB	(NO) YES	Station Camp-On Busy tone. Enter NO if Busy Tone is not to be given to the transferring (controlling) party when the desired station is busy. Enter YES if Busy Tone is to be given to the transferring (controlling) party when the desired station is busy.

LD 57 – Configure Enhanced Override Flexible Feature Codes (FFC).

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	FFC	Flexible Feature Codes.
...		
CODE	EOVR	Enhanced Override (programmable only when the Priority Override package 186 is equipped).
EOVR	y...y	y...y is a one- to seven-character input that the user must dial to use the FFC. Valid inputs are digits 0 through 9, asterisk (*), and octothorpe (#).

LD 10 – Configure analog (500/2500 type) telephones for Forced Camp-On.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	500	Telephone type.

CLS	(CPFA) CPFD (CPTA) CPTD WTA	Forced Camp-On from another telephone to this telephone (Allowed) Denied. Forced Camp-On to another telephone from this telephone (Allowed) Denied. Warning Tone Allowed.
-----	-----------------------------------	---

LD 11 – Configure Meridian 1 proprietary telephones for Forced Camp-On.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal Number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(CPFA) CPFD (CPTA) CPTD WTA	Forced Camp-On from another telephone to this telephone (Allowed) Denied. Forced Camp-On to another telephone from this telephone (Allowed) Denied. Warning Tone Allowed.
...		
KEY	xx EOVR	Add an Enhanced Override key, where; xx = the key number (allowed to be programmed only if Priority Override package 186 is equipped).

LD 14 – Configure trunks for Forced Camp-On.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.

...	CLS	WTA	Warning Tone Allowed.
-----	-----	-----	-----------------------

Feature operation

Forced Camp-On can be used when making either a simple or consultation call (that is, having a call on hold while calling another party). The following feature operation descriptions use telephone A (an analog (500/2500 type) telephone) or telephone E (a Meridian 1 proprietary telephone) to call telephone B, which is connected to party C.

The telephones are configured as follows:

- 1 Telephone A is an analog (500/2500 type) telephone with Warning Tone Allowed (WTA) Class of Service.
- 2 Telephone B has Warning Tone Allowed (WTA) Class of Service.
- 3 Party C has Warning Tone Allowed (WTA) Class of Service and can be any telephone type or a Direct Inward Dial (DID), TIE, or Central Office (Public Exchange) (COT) trunk.
- 4 Telephone E is a Meridian 1 proprietary telephone with Warning Tone Allowed (WTA) Class of Service and an Enhanced Override (EOVR) key equipped.

For the following examples:

- 1 Telephones A and E both have Camp-On From another telephone Allowed (CPFA) Class of Service.
- 2 Both telephone B and telephone C are involved in a simple call, not a conference call.
- 3 Telephone B has Camp-On To another telephone Allowed (CPTA) Class of Service.
- 4 Call Forward, Hunting, and Call Waiting are not in use.

In the following feature operation descriptions, the term “recall” refers to performing a register recall, which can be performed in a number of different ways. Some typical examples are:

- Flash the switchhook. (This is the equivalent of hanging up the handset and picking it back up. This on hook, off hook is performed in a time period that is less than what the system would consider to be a valid disconnect.)
- Press the flash or LINK button if equipped.

The Camp-On tone is always provided for Forced Camp-On since Warning Tone Allowed (WTA) Class of Service is a prerequisite. This tone can be a buzz for Meridian 1 proprietary telephones or a single burst of tone for analog (500/2500 type) telephones if the customer (LD 15) option Periodic Camp-On Tone Denied (CTD) is selected. If the customer (LD 15) option Periodic Camp-On Tone Allowed (CTA) is selected, the Camp-On Tone as defined in the Flexible Tones and Cadences (FTC) (LD 56) in response to the CAMP prompt will be used.

While camping on, the party attempting the Camp-On, either telephone A or E, receives ringback if the Station Camp-On (SCMP) package (121) is not equipped, or either ringback or busy tone, as defined by the response to the Station Camp-On Busy tone (STCB) prompt in LD 15, if the SCMP package is equipped.

Forced Camp-On with an analog (500/2500 type) telephone

With automatic Forced Camp-On turned off; response to AFCO in LD 15 was "NO":

	ACTION	RESPONSE
1	B and C are connected in a simple call.	
2	A dials B.	A receives busy tone.
3	A performs a recall.	A receives special dial tone (SDT).
4	A dials EOVR FFC to attempt Forced Camp-On.	If telephone B or C has disconnected, telephone A receives overflow (fast busy) tone. Otherwise B receives Camp-On tone and A receives ringback or busy tone depending on the options equipped. A is manually Forced Camp-On to B.
5	B disconnects from the call.	Telephone A rings telephone B.

With automatic Forced Camp-On turned on; response to AFCO in LD 15 was "YES":

	ACTION	RESPONSE
1	B and C are connected in a simple call.	
2	A dials B.	A attempts Forced Camp-On to B.
3	If Forced Camp-On was successful.	A receives ringback or busy tone depending on the options equipped. A is automatically Forced Camp-On to B.
4	B disconnects.	A rings B.

Forced Camp-On with a Meridian 1 proprietary telephone

With automatic Forced Camp-On turned off; response to AFCO in LD 15 was “NO”:

	ACTION	RESPONSE
1	B and C are connected in a simple call.	
2	E dials B.	E receives busy tone.
3	E presses EOVR key to attempt Forced Camp-On.	If telephone B or C has disconnected, telephone E receives overflow (fast busy) tone. Otherwise B receives Camp-On tone and E receives ringback or busy tone depending on the options equipped. E is manually Forced Camp-On to B.
4	B disconnects from the call.	Telephone E rings telephone B.

With automatic Forced Camp-On turned on; response to AFCO in LD 15 was “YES”:

	ACTION	RESPONSE
1	B and C are connected in a simple call.	
2	E dials B.	E attempts Forced Camp-On to B.
3	If Forced Camp-On was successful.	E receives ringback or busy tone depending on the options equipped. E is automatically Forced Camp-On to B.
4	B disconnects.	E rings B.

Camp-On, Station

Contents

This section contains information on the following topics:

Feature description	977
Operating parameters	978
Feature interactions	979
Feature packaging	979
Feature implementation	980
Feature operation	980

Feature description

With this feature, any internal station can camp an external call on to another internal station that is busy. Prior to the introduction of this feature attendants were the only parties that could camp calls on to busy internal stations. The term internal station includes stations on other nodes within a Meridian Customer Defined Network (MCDN).

When a transferring party reaches a busy internal party, the transferring telephone will receive Ringback tone (providing certain conditions are met). When the transferring party completes the transfer, the external (calling) party will Camp-On to the desired party and the external party (an external party is any CO, DID, FEX, or WATS call) will receive ringback tone or music.

This feature applies to both standalone and network environments.

Within a network environment, the transferring and camped on to stations may be on the same or different nodes, as long as all nodes are configured with Network Station Camp-On.

Operating parameters

The restrictions that currently apply to the operation of the Camp-On feature from an attendant console also apply to Station Camp-On.

These restrictions are:

- Camp-On is not permitted if the desired station is in a state other than established (that is, ringing, dialing).
- Only one call at a time can Camp-On to a busy station.
- Calls cannot Camp-On to a station with the Call Waiting feature configured.
- The station camped on to will be given Warning tone only if the customer has Camp-On Tone Allowed (CTA) in the Customer Data Block (LD 15) and the station has Warning Tone Allowed (WTA) Class of Service assigned. If the station has Warning Tone Denied (WTD) Class of Service assigned, the Camp-On will take effect without giving any Camp-On tone to the camped on to (desired) party.
- The transferring station will receive Busy tone only if the response to the STCB prompt in the Customer Data Block (LD 15) of the camped on to (desired) telephone is YES. Otherwise, the transferring station will receive Ringback tone.

Camp-On indication

When a call is extended from an attendant to a busy station there is a specific combination of tones and indicator states to identify the Camp-On state.

When an inquiry call is made from a station, there is only one way for the user to distinguish between a busy telephone and an idle ringing telephone. That way is to ensure that the response to the STCB prompt in the Customer Data Block (LD 15) of the camped on to (desired) telephone is YES. Otherwise, Ringback tone is provided in both cases.

Feature interactions

Call Forward All Calls
Call Forward Busy
Call Waiting
Hunting

Call Waiting, Call Forward Busy (for DID calls only), Call Forward All Calls, Call Waiting and Hunting all take precedence over Station Camp-On.

Camp-On

With Station Camp-On, any internal station can camp an external call on to another internal station that is busy. Prior to the introduction of this feature, attendants were the only parties that could camp calls on to busy internal stations. The term internal station includes stations on other nodes within a Meridian Customer Defined Network (MCDN). For more information, see the Camp-On, Station feature description.

Dial Impulse Set

A Dial Impulse (DIP Class of Service) station must have TSA Class of Service to perform a Station Camp-On.

Network Attendant Service

For network-wide Station Camp-On, NAS must be equipped at each node of the network.

Feature packaging

For standalone environments, the Station Camp-On (SCMP) package 121 is required.

For network environments, the Station Camp-On (SCMP) package 121 and the Network Attendant Service (NAS) package 159 are required.

For Music (MUS), package 44 is required.

Feature implementation

LD 15 – Configure Station Camp-On for both standalone and network environments.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	FTR	Features and options
...		
- STCB	(NO) YES	Station Camp-On Busy tone. Enter NO if Busy tone is not to be given to the transferring (controlling) party when the desired station is busy. Enter YES if Busy tone is to be given to the transferring (controlling) party when the desired station is busy.
- NSCP	(NO) YES	Network Station Camp-On. Enter NO if telephones on this node are not allowed to have calls camped on by telephones in other nodes. Enter YES if telephones on this node are allowed to have calls camped on by telephones in other nodes.

Feature operation

Standalone case

Any station, not necessarily the Night DN, attempting to transfer an external call may, during the associated inquiry call, camp the trunk on to a busy station.

The Camp-On will take effect from the moment the transferring station has completed the transfer to the desired DN.

The transferring station will hear Ringback tone or Busy tone depending on the option entered in response to the STCB prompt in the Customer Data Block (LD 15). This prompt applies to any telephone, not just the Night DN. By default (STCB is set to NO), the transferring party will hear Ringback tone.

The desired station will hear Camp-On tone if it has WTA Class of Service assigned. Otherwise, if it has WTD Class of Service, the Camp-On will take effect without the desired party being informed a call is camped on.

When the transfer is completed, the external party is camped on to the desired station and receives either Ringback tone or an announcement.

Network case

Any station, not necessarily the Night DN, attempting to transfer an external call across an MCDN network may, during the associated inquiry call, Camp-On the trunk to a busy station.

The location of the transferring party has no effect on the Station Camp-On capability.

The Camp-On will take effect from the moment the transferring station has completed the transfer to the desired DN.

The transferring station will hear Ringback tone or Busy tone depending on the option entered in response to the STCB prompt in the Customer Data Block (LD 15). This prompt applies to any telephone, not just the Night DN. By default (STCB is set to NO), the transferring party will hear Ringback tone. The tone given, either ringback tone or Busy tone, is determined by the node in which the desired (camped on to) party resides.

The desired station will hear Camp-On tone if it has WTA Class of Service assigned. If it has WTD Class of Service, the Camp-On will take effect without the desired party being informed a call is camped on.

When the transfer is completed, the external party is camped on to the desired station and receives either Ringback tone or an announcement.

Recall timing on Camp-On calls

When any station extends an external call, recall timing will be initiated if the call is camped on to a busy station.

The recall timing will start from the moment that the extending station “releases” the call. The value of the recall timer is set by the prompt RTIM in the Customer Data Block (LD 15).

At the recall, the camped on call will be routed to the attendant. If the attendant is in Night Service, Night treatment is given; if NAS routing is active, the call will be routed according to the NAS configuration.

Standalone case

When the recall to the attendant occurs, the Camp-On is canceled. If the attendant is busy during the recall, the recall will be queued.

Network case

When the recall occurs and the attendant has answered the recall, the call will still be camped on to the desired party. If during the recall the attendant is busy, the recall will be queued.

Card LED Status

Contents

This section contains information on the following topics:

Feature description	983
Operating parameters	984
Feature interactions	984
Feature packaging	984
Feature implementation	984
Feature operation	985

Feature description

This feature allows the use of Swedish Televerket (TVT) Intelligent Peripheral Equipment on the system. This is accomplished by defining individual terminal loops as TVT type in LD 17. The system software is modified to allow the status (on/off) of the LED on the faceplate of the TVT cards to be opposite of the LED on NT cards. The TVT peripheral cards (standard extension line, off-premises extension and Multi Frequency Receiver (MFR)) are equivalent to the NT 500-type line card and Digitone Receiver (DTR). Since the TVT off-premises extension line card must be treated as a local extension by the system, the OPX Class of Service is prohibited for this card in LD 10.

Operating parameters

The system software supports the following TVT cards:

- single-density standard extension line card (TPC60)
- dual-density extension line card (TPC451)
- two-wire Off-premise Extension (OPX) line card (TPC22)
- four-wire Off-premise Extension (OPX) line card (TPC23), and
- multi-frequency receiver (MFR) card (TPC15).

Feature interactions

Card LED Status does not interact with other features.

Feature packaging

Card LED Status requires International Supplementary Features (SUPP) package 131.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 17 – Configure the system hardware and software parameters.
- 2 LD 10 – Create or modify data blocks for analog (500/2500 type) telephones.

LD 17 – Configure the system hardware and software parameters.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	CEQU	Common Equipment parameters
...		
CEQU	(NO) YES	Change CE parameters.
TERM	T0-T159	TVT single density local terminal loops.

LD 10 – Create or modify data blocks for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	500	Telephone type.
...		
CLS	OPN	Allows Swedish TVT off-premise line card to be treated as a local extension by the system.

Feature operation

No specific operating procedures are required to use this feature.

Centralized Multiple Line Emulation

Contents

This section contains information on the following topics:

Feature description	987
Operating parameters	988
Feature interactions	988
Feature packaging	988
Feature implementation	989
Feature operation	990

Feature description

The Centralized Multiple Line Emulation (CML) feature allows a mixed group of telephones (analog (500/2500 type) telephones, or Meridian 1 proprietary telephones) to answer calls ringing at a central DN (referred to as the CML DN). This function is provided by using the Automatic Call Distribution (ACD) and Multiple Appearance Directory Number (MADN) features, and making modifications to the Call Pick-up feature.

Large queues to the CML DN (up to 15 calls) are handled by the ACD feature, which distributes the calls to members of the CML group.

Small queues to the CML DN (one or two calls) are handled using MADNs configured on a Meridian 1 proprietary telephone.

Operating parameters

The Centralized Multiple Line Emulation feature is not supported by Attendant Administration.

Call Pick-up groups assigned at the key level cannot be given a group number containing ACD DNs, since calls ringing in an ACD queue cannot be picked up.

Calls cannot be picked up from a station having direct-termination-denied Class of Service.

Normal tenant-service calling restrictions apply. If a station cannot receive a ringing call, then the call cannot be picked up for that station. A station that cannot direct dial another station cannot pick up a call from that station.

Calls ringing on the CML priority station are picked up before ringing Central Office trunk calls in the same Call Pick-up group.

Feature interactions

Digit Display

The digit display of the station picking up a parked call recall shows the parked call's access code followed by the parked call's access-identification code. If the picked-up call is a group member call, the display shows the group number of the picked-up station.

Feature packaging

Centralized Multiple Line Emulation requires International Supplementary Features (SUPP) package 131.

The following packages are also required:

- Basic Automatic Call Distribution (BACD) package 40
- Network Priority Queuing (PQUE) package 60

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 10 – Configure the Required Classes of Service.
- 2 LD 11 – Assign ringing number pickup groups to keys.

LD 10 – Configure the Required Classes of Service.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	500	Telephone type.
...		
CLS	(PRSD) PRSA (CRD) CRA (MCRD) MCRA	Priority Call Pick-up station (denied) allowed. Continuous Ringing (denied) allowed. Multiple Call Arrangement (denied) allowed.

LD 11 – Assign ringing number pickup groups to keys.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
...		
RNPG	(0)-4095	Ringling Number Pick-up Group. Respond with the number of the Ringling Number Pick-up group for which the set is to be assigned. To remove a telephone from a group, enter 0 in response to the RNPG prompt.

...		
CLS	(PRSD) PRSA	Priority Call Pick-up station (denied) allowed.
...		
KEY	xx RNP yyyy	<p>xx = Key number RNP = Ringing Number Pick-up yyyy = Ringing Number Pick-up group number (optional).</p> <p>If the group number is not entered, the key will pick-up the group number assigned to the station. If the group number is entered, the key will pick-up calls in the specified group yyyy.</p>

Feature operation

The ability to notify a large group that a CML is ringing is provided through modification of the Call Pick-up feature. A ringer, centrally mounted on a wall, rings whenever a call comes into the CML DN, and continues to ring until the call is answered. The ringer is configured as a priority 500-type set, which ensures that a call ringing on the CML DN is answered before any other station ringing in the Call Pick-up group.

- 1 To answer a CML call using a Meridian 1 proprietary telephone, press the **RNP** key.

To answer a call in your Call Pickup group from an analog (500/2500 type) telephone, follow these steps:

- 1 Lift the handset.
- 2 Dial the PURN FCC.

Centrex Switchhook Flash

Contents

This section contains information on the following topics:

Feature description	991
Operating parameters	992
Feature interactions	993
Feature packaging	994
Feature implementation	995
Feature operation	999

Feature description

Centrex Switchhook Flash (THF) permits the user to signal the Central Office (CO)/Public Exchange during an established CO call, requesting activation of a Central Office based service. Such services can include Call Transfer, Three-way Calling, Malicious Call Trace, Conference, or Autodial Tandem Transfer. For more information on these services, please refer to the feature descriptions contained within this document.

The feature is useful when Centrex is the backbone of the service network. Centrex Switchhook Flash (THF) is supported by the following trunk types:

- Automatic Identification of Outward Dialing (AIOD)
- Common Control Switching Arrangement, Automatic Number Identification (CCSA ANI)
- Centralized Automatic Message Accounting (CAMA)

- Central Office (CO)
- Common Control Switching Arrangement (CCSA)
- Direct Inward Dial (DID)
- Foreign Exchange (FX)
- Wide Area Telephone Service (WATS)
- CO trunks located at a remote node connected via ISDN Meridian Customer Defined Network (MCDN) TIE trunks, and
- Analog, Digital Trunk Interface (DTI), and DT12 CO trunks.

Whenever Centrex Switchhook Flash (THF) is invoked, the system checks for the following:

- With analog (500/2500 type) telephones, that the Class of Service supports THF. With Meridian 1 proprietary telephones, the feature cannot be activated if a corresponding key is not equipped.
- That the telephone is on an active two-way trunk call.
- That THF is enabled in the trunk's Class of Service.

If any of the above checks fails, the user hears an overflow tone. After the tone times out, the original connection resumes.

Operating parameters

This feature is not supported on Basic Rate Interface (BRI) telephones.

THF is not supported on Primary Rate Interface (PRI) or BRI Central Office trunks.

On Meridian 1 proprietary telephones, once the THF key has been pressed, all other function keys are blocked. While waiting for the Centrex connection, only the RLS key or on-hook connection is operative. Pressing the RLS key or hanging up terminates the original connection as well as the THF message.

For the analog (500/2500 type) telephones, another switchhook flash is not allowed once THF has been invoked. A second switchhook flash is treated as an on hook disconnection.

Only voice calls are supported on THF.

In Italy the DTI2 register recall signal is currently only supported for Type Approval and is not commercially available.

The 1.5 or 2 Mbit Digital Trunks Interface pack is required.

Because the software cannot recognize which type of Intelligent Peripheral Equipment (IPE) CO line card (for example, XCOT, or XFCOT) is in use, CO trunks belonging to different card types should not coexist on the same Route Data Block (RDB).

- The minimum value of the range for the Flash-length (FLH) timer for a Centrex Switchhook Flash, defined in LD 16 in response to the TIMR prompt, is 60-1536 milliseconds.
- Attendant consoles can activate the feature.
- The THF feature can be activated on DTI2 Central Office trunks and Intelligent Peripheral Equipment (IPE) Central Office trunks.
- The Centrex Switchhook timing on the Extended Flexible Universal Trunk (EXUT) is performed using firmware, offering a significant improvement in trunk timing accuracy.

Feature interactions

Autodial Tandem Transfer

Because Autodial Tandem Transfer uses Centrex Switchhook Flash (THF), it is affected by any modification to the THF enhancement feature.

China – Attendant Monitor

If any set at the customer location involved in the monitored call switchhook flashes or performs a Centrex switchhook flash, Attendant Monitor is immediately deactivated.

Collect Call Blocking

A Centrex Switchhook Flash cannot be invoked by another feature while the Collect Call Blocking answer signal is being sent.

Conference

THF allows conference calls through the CO. It can be invoked only if there is an established call connected to an outside trunk. If the telephone is engaged in internal conference calls, THF cannot be used.

Digital Private Signaling System #1 (DPNSS1) Executive Intrusion

If an analog (500/2500 type) telephone is part of an Executive Intrusion conference, any Switchhook Flash is ignored.

Malicious Call Trace - Enhanced

Interaction with the Centrex switchhook flash results because the flash range is changed for this feature. Communication to the CO (trunk hook flash) is performed by using the Centrex switchhook flash feature base code. The enhanced range is available for the Centrex switchhook flash.

Periodic Clearing on RAN, Meridian Mail, ACD and Music

This feature enhancement is not supported if used together with Centrex Switchhook flash.

Secrecy

If secrecy is not allowed in LD 15 (OPT = SYD), the attendant must use the EXCL DEST or EXCL SRC keys to select the Central Office trunk on which the THF has to be sent. The THF is not activated when both SRC and DEST are included.

Feature packaging

This feature is included in base system software. Centrex Switchhook Flash (THF) package 157 has no package dependencies. The End-to-End Signaling (EES) package 10 is recommended for users with Meridian 1 proprietary telephones, and attendant consoles.

NOTE: If both THF and the 2 Mbit Digital Trunk Interface (DTI2) package 129 are present, this feature can also be applied to digital Central Office trunk connections.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 10 – Enable Centrex Switchhook flash for analog (500/2500 type) telephones..
- 2 LD 11 – Enable Centrex Switchhook Flash for Meridian 1 proprietary telephones.
- 3 LD 12 – Enable Centrex Switchhook Flash for attendant consoles.
- 4 LD 14 – Enable Centrex Switchhook Flash for each trunk.
- 5 LD 16 – Enable Centrex Switchhook Flash for each trunk route.
- 6 LD 73 – Activate the THF on digital trunks for incoming and outgoing calls.

LD 10 – Enable Centrex Switchhook flash for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	THFA THFD	Allow Centrex Switchhook Flash. THFD = Default

LD 11 – Enable Centrex Switchhook Flash for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx THF	Add a Centrex Switchhook Flash key; xx is the key number.

LD 12 – Enable Centrex Switchhook Flash for attendant consoles.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	2250	Attendant console type.
...		
KEY	xx THF	Add a Centrex Switchhook Flash key; xx is the key number.

LD 14 – Enable Centrex Switchhook Flash for each trunk.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	AID	Automatic Identification of Outward Dialing (AIOD) trunk data block.
	CAA	Common Control Switching Arrangement Automatic Number Identification (CCSA ANI) trunk data block.

CLS	CAM	Centralized Automatic Message Accounting (CAMA) trunk data block.
	COT	Central Office (CO) trunk data block.
	CSA	Common Control Switching Arrangement access line data block.
	DID	Direct Inward Dialing (DID) trunk data block.
	FEX	Foreign Exchange trunk data block.
	WAT	Wide Area Telephone Service trunk data block.
	THFA THFD	Allow Centrex Switchhook Flash. THFD = Default

LD 16 – Enable Centrex Switchhook Flash for each trunk route.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	RDB	Route Data Block.
CNTL	YES	Change controls or timers

<p>- TIMR</p>	<p>FLH <space> 60- (510)-1536</p>	<p>Flash timer in msec. The range of the Centrex switchhook flash timer is 60-(510)-1536. The FLH value is rounded down to the nearest 10 msec. tick. If the value entered is 128 or 129, then it is set to 130 msec.</p> <p><i>Software controlled flash</i> 60-127 msec. Digit 1 will be sent. 128-1536 msec. software controlled switchhook flash.</p> <p>Note: A FLH timer value of 127 msec. or less is not supported by the XFCOT card. The firmware controlled flash must be used.</p> <p><i>Firmware controlled flash</i> The user can enter any value from 60 to 1536 msec. 90 msec. is the hardcoded firmware flash for an XFCOT card; the technician should enter 90 msec.</p> <p>Note: the FWTM prompt must be set to YES for the trunk associated with this route in LD 14, if firmware timing is to be used.</p>
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LD 73 – Activate the THF on digital trunks for incoming and outgoing calls.

Prompt	Response	Description
REQ	NEW CHG	New Change
TYPE	DTI2	2 Mbits DTI
FEAT	ABCD	Digital signaling category.
SICA	XX	Signaling category table.
...		
...		
P RRC(S)	ABCD	Register Recall signal.
TIME	10-(100)-630	Duration of RRC Pulse in msec.

Feature operation

Analog (500/2500 type) telephones

To use Centrex Switchhook Flash (THF) from an analog (500/2500 type) telephone, follow these steps:

- 1 Flash the switchhook to receive a special dial tone.
- 2 Enter the Special Prefix (SPRE) code, then the THF feature access code (96). Alternatively, the appropriate Flexible Feature Code (FFC) should be used.

To reestablish a connection before the overflow tone ends, flash the switchhook.

Meridian 1 proprietary telephones

To use Centrex Switchhook Flash (THF) from a Meridian 1 proprietary telephone, press the key configured for THF.

To reestablish a connection before the overflow tone ends, press the DN key or the key establishing the original call.

Attendant Consoles

Attendant consoles must use the THF key. Dial access is not supported on these consoles.

To reestablish a connection before the overflow tone ends, press the DN key or the key establishing the original call.

Charge Account and Calling Party Number

Contents

This section contains information on the following topics:

Feature description	1001
Operating parameters	1003
Feature interactions	1003
Feature packaging	1005
Feature implementation	1006
Feature operation	1009

Feature description

Used in conjunction with Call Detail Recording (CDR), Charge Account bills calls directly to specific accounts or charge numbers instead of Directory Numbers (DN).

Charge Account supports fixed-length numbers of 0 to 23 digits (default is 0), specified on a per-customer basis. The charge account number is validated by the system for length only. Verification of the actual digits entered is part of CDR downstream processing.

On Meridian 1 proprietary telephones, this feature can be activated by a separate Charge key/lamp pair, or dial accessed. On attendant consoles, it is activated by a separate key/lamp pair. On single-line telephones, it is dial-accessed.

When a Charge Account number is used, the entire call is billed to that number. The number can be entered either before or during a call, or when Consultation Hold, Call Transfer, or Conference is activated.

The Charge Account feature is not supported for internal calls. A Charge Account number entered through the Charge key/lamp pair is blocked for established internal calls.

Charge Account can be used to charge an entire conference call or portions of the call. Portions of the call are assigned to different accounts by entering the account number when adding trunks to a conference, before the conference is completed.

- When using analog (500/2500 type) telephones, enter the account information immediately after the switchhook flash, before the new trunk is dialed.
- When using Meridian 1 proprietary telephones, enter the number after pressing the Conference key the first time, and before dialing.

The charge record shows the identity of the user who made the entry and the trunk that was added to the call. If the new call is not added to the conference, the record shows a simple two-party call.

An entire call is charged to the same account by entering the charge number while active on the conference. When using Meridian 1 proprietary telephones, press the Charge key and enter the number in the usual manner. When using analog (500/2500 type) telephones, enter the number after a switchhook flash.

The call is reestablished without dialing additional trunks; a record is produced for each trunk involved in the conference. In all these records, the telephone user entering the number is considered the originating party. When an entire call is charged to only one account number, it must be entered while all trunks are connected to the conference.

Calling Party Number (CPN) is an extension of Charge Account that allows entry of the calling party's number on collect calls. Meridian 1 proprietary telephones are assigned a separate Calling Party Number (CPN) key/lamp pair to activate this feature. When the calling party's number is entered, a Calling Party Number (CPN) record is produced. This record may be compared to a telephone company billing for collect calls. Calling party numbers can be up to 23 digits, and may include an asterisk (*) and octothorpe (#). A CPN record is generated on the Call Detail Recording (CDR) device similar to a normal Charge record.

Operating parameters

A valid charge account number is recognized when the number of dialed digits matches the account length, or when the octothorpe (#) indicates end of dialing. After a valid charge account number has been entered, the system returns a dial tone.

If too few digits are dialed, no response is given until the interdigit timeout occurs. Overflow tone is returned for 15 seconds after timeout; then the user is locked out.

If Call Transfer or Conference is used to consult with a third party and returns to the original call without completing the transfer or conference, the charge account number is applied to the Consultation call only.

Attendant use of Charge or CPN is restricted to situations in which there is only one account party involved in the call (source side). When the calling party number is used, the attendant must transfer the call, or the Call Detail Recording (CDR) record does not reflect it.

Feature interactions

Attendant Barge-In Attendant Busy Verify

A charge account number cannot be entered when Barge-In or Busy Verify is active. Barge-In cannot be used to connect to a trunk after an account number has been entered.

Call Transfer

A Call Transfer call produces two records: a Call Detail Recording (CDR) start record and a CDR end record.

China – Flexible Feature Codes - Outgoing Call Barring

Digits dialed after a charge account are checked against the active Outgoing Call Barring level.

Conference

Conference calls produce multiple Call Detail Recording (CDR) records. Whenever a new trunk is added to a conference, the connection between the connected telephone and the trunk is recorded, and a connection to the conference loop is established. This causes CDR to generate a start record with the telephone and trunk identified as the involved parties. As trunks are removed from a conference, CDR end records are produced. These records may identify different telephones or conferences as the local parties.

Music, Enhanced

The Charge Account (CHG) and Calling Party Number (CPN) keys place the far end party on Hold while a charge number is entered. The held party receives Music during this period.

Override

When Charge Account is used during active Override, some digits may be lost. When entered with Override in conference, a Charge Account number is accepted and no digits are lost.

Ring Again

When Ring Again is activated, no charge record is generated, but the information is stored for future use. If Ring Again is canceled before a trunk is seized, the charge number is deleted and no record is produced. If a trunk is seized later by Ring Again, the charge record is generated in the usual manner. The use of Ring Again with Charge Account ties up system resources because an auxiliary call register must be maintained in the Ring Again queue.

Speed Call

Charge account numbers, including the Charge Account access Special Prefix (SPRE) code, can be stored as Speed Call or Autodial numbers. All current limitations of these features apply, such as a maximum of 23 digits per entry, including the access code. An Autodial number or dialed digits can follow, but not precede, a Speed Call number. The digits generated by an Autodial key during feature operation are accepted as Charge Account digits.

Telephone keys

A Charge Account entry is aborted with any of the following keys:

- DN
- Page
- Voice Call
- In-Calls
- Call Waiting
- Call Pickup
- Release
- Not Ready
- a loop key
- Release Destination, and
- Release Source.

Feature packaging

CDR with Charge Account (CHG) package 23 requires:

- Call Detail Recording (CDR) package 4
- Charge Account/Authorization Code Base (CAB) package 24

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Add or modify the customer Charge Account.
- 2 LD 10 – Allow analog (500/2500 type) telephone access to Charge Account.
- 3 LD 11 – Allow Meridian 1 proprietary telephone access to Charge Account.
- 4 LD 12 – Allow attendant console access to Charge Account.

LD 15 – Add or modify the customer Charge Account.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	CDR	Call Detail Recording Gate Opener.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- CHLN	(0)-23	Maximum number of digits that can be entered as a charge account number.

LD 10 – Allow analog (500/2500 type) telephone access to Charge Account.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(XFD) XFA	(Deny) allow call transfer.

LD 11 – Allow Meridian 1 proprietary telephone access to Charge Account.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx CPN	Add a Calling Party Number key (must be key 24 for the M2317).
	xx CHG	Add a Charge key (must be key 25 for the M2317).

LD 12 – Allow attendant console access to Charge Account.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	2250	Attendant console type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CUST	xx	Customer number, as defined in LD 15
KEY	0-9 CPN	Add a Calling Party Number key.
	0-9 CHG	Add a Charge key.

Feature operation

This section explains Charge Account feature and Calling Party Number feature operation for Meridian 1 proprietary telephones, analog (500/2500 type) telephones, and attendant console.

Meridian 1 proprietary telephones

To charge a call to an account before dialing, follow these steps:

- 1 Select a free extension.
- 2 Press **Charge** or dial SPRE + 5.
- 3 Dial the Charge Account number.
- 4 When you have a dial tone, dial the telephone number.

To charge during a call in progress, follow these steps:

- 1 Press **Charge**.
- 2 Dial the Charge Account number.
- 3 Press the extension key to return to your call.

To use a SPRE code to charge a call in progress, follow these steps:

- 1 Press **Transfer** or **Conference**.
- 2 Dial SPRE + 5.
- 3 Dial the Charge Account number.
- 4 Press the extension key to return to your call.

To charge a call to an account when you transfer a call, follow these steps:

- 1 Press **Transfer**.
The call is on hold.
- 2 Press **Charge** or dial SPRE + 5.
- 3 Dial the Charge Account number.
- 4 Dial the number where the call is to be transferred.
- 5 Press **Transfer**.

To charge a call to an account when adding a party to a conference call, follow these steps:

- 1 Press **Conference**.
The call is on hold.
- 2 Press **Charge** or dial SPRE + 5.
- 3 Dial the Charge Account number.
- 4 Call the party that you want to add to the conference.
- 5 Press **Conference**.

To record a caller's number for accounting purposes, follow these steps:

- 1 Press **Calling No.**
The other party is on hold.
- 2 Dial a Charge Account number or the caller's number.
- 3 Press **Calling No.** again to return to the call.

Analog (500/2500 type) telephones

To charge a call to an account before dialing, follow these steps:

- 1 Select a free extension.
- 2 Dial SPRE + 5.
- 3 Dial the charge account number.
- 4 When you have a dial tone, dial the telephone number.

To charge during a call in progress, follow these steps:

- 1 Flash the switchhook or link.
- 2 Dial SPRE + 5.
- 3 Dial the Charge Account number.
- 4 Flash the switchhook or link to return to the call in progress.

To charge a call to an account when adding a party to a conference call, follow these steps:

- 1 Flash the switchhook or link.
- 2 Dial SPRE + 5.
- 3 Dial the Charge Account number.
- 4 Call the party that you want to add to the conference.
- 5 Flash the switchhook or link.

Attendant Consoles

To charge a call to an account before dialing, follow these steps:

- 1 Press the **loop** key.
- 2 Press **Charge**.
- 3 Dial the Charge Account number.
- 4 When you have a dial tone, dial the telephone number.

To charge during a call in progress, follow these steps:

- 1 While the source call is active on a loop key, press **Charge**.
- 2 Dial the Charge Account number.
The voice connection remains active.
- 3 Flash the switchhook or link to return to the call in progress.

To record a caller's number for accounting purposes, follow these steps:

- 1 While the source call is active on a loop key, press **Calling No.**
The other party is on hold.
- 2 Dial a Charge Account number or the caller's number.
- 3 Press **Calling No.** again to return to the call.

Charge Account, Forced

Contents

This section contains information on the following topics:

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Feature interactions	1015
Feature packaging	1017
Feature implementation	1017
Feature operation	1020

Feature description

Forced Charge Account (FCA) temporarily overrides Class of Service restrictions for toll-denied users. Use Forced Charge Account long distance calls to an account number when calling from a telephone that is restricted from making long distance calls. The unrestricted Class of Service provided by FCA applies for the duration of the call.

When the account number is entered, a charge record is produced on a Call Detail Recording (CDR) device.

FCA supports variable-length numbers of 1 to 23 digits. The minimum value for the account number is specified at the customer level.

A valid account number equals or exceeds the minimum value defined, and is validated by the system for length only. Verification of the actual digits entered is part of Call Detail Recording (CDR) downstream processing.

FCA can be allowed or denied at both customer and user levels. Users include any station or TIE and Common Control Switching Arrangement (CCSA) type trunks assigned a Toll-Denied (TLD), Conditionally Toll-Denied (CTD), or Conditionally Unrestricted (CUN) Class of Service.

Meridian 1 proprietary telephones activate this feature by using a separate Charge key/lamp pair. Any user can access this feature by dialing SPRE + 5.

A distinction is made between normal CDR Charge Account processing and FCA. If all the following conditions are met, the account number is treated as an FCA code:

- The telephone from which the number is entered has a TLD, CTD, or CUN Class of Service.
- The station or trunk from which the number is entered is in a state to originate a call (press a Directory Number [DN] key or flash the switchhook).
- FCA is enabled at the customer level.
- FCA is allowed for the station or trunk from which the number is entered.
- A valid account number is entered at the beginning of the call.

The unrestricted Class of Service provided by FCA, as described above, applies for the duration of the call only. The account number must be reentered for each successive toll call placed by the station or trunk.

Operating parameters

An octothorpe (#) dialed after the account number indicates that the subsequent digits are part of the dialed number.

CDR charge account numbers are fixed-length codes for which a maximum value is specified by the customer. This is also the maximum allowed for the FCA account number.

Because 500 telephones cannot dial an octothorpe (#), they are restricted to fixed-length account numbers.

FCA does not apply to attendant calls.

Feature interactions

Autodial Speed Call

FCA numbers (including the SPRE code and the Charge Account access code) can be entered in Speed Call lists or stored as Autodial numbers. The digits can also be stored, provided that the account number, regardless of its length, is followed directly by an octothorpe (#).

Authorization Code Security Enhancement

If the Authorization Code is used to change the Class of Service of the user, the new Class of Service must be TLD, CTD, or CUN. If an Authorization Code entered after FCA has altered the Class of Service to unrestricted (UNR), the change made by the Authorization Code still comes into effect.

If the originator's Network Class of Service (NCOS) has been changed by an Authorization Code prior to an applicable FCA entry, the new NCOS is replaced by the FCA NCOS, provided the new Facility Restriction Level (FRL) is not lower than the existing FRL. Similarly, if the originator's NCOS has been changed by an FCA entry, the NCOS will be changed again by a valid Authorization Code entry.

Basic Alternate Route Selection (BARS)

Network Alternate Route Selection (NARS)

If BARS or NARS is equipped, a Network Class of Service (NCOS) associated with FCA must be defined in the Customer Data Block.

Call Detail Recording

Normal Call Detail Recording (CDR) charge account numbers can still be entered before or after an FCA code. If the criteria for an FCA call are not met, (CDR) charge account numbers function in the normal manner.

Call Transfer Conference

If an FCA code is entered at the beginning of a call, the new unrestricted Class of Service remains in effect for any transfer or conference made during the call. If all FCA criteria are met, an account number entered after activating the Conference key, Call Transfer key, or a switchhook flash is interpreted as an FCA code.

Last Number Redial

These codes are not stored in Last Number Redial (LNR). To use these features when calling the number stored in LNR, the code must first be dialed manually. When dial tone is returned, LNR can be used to complete the dialing.

Pretranslation

The first digit dialed after a valid Charge Account Code is sent to the pretranslator.

Scheduled Access Restrictions

FCA can be used to override Scheduled Access Restrictions (SAR) on a per-call basis, provided the current Class of Service (COS) of the telephone or trunk is CUN, TLD, or CTD. The current COS is the COS in force according to the SAR schedule. If an Authorization Code that sets the COS to CUN, TLD, or CTD is dialed before the FCA, the call is allowed. FCA sets the COS to UNR and the Network COS (NCOS) to the NCOS defined in LD 15, provided that FCA is enabled on both a customer and telephone/trunk basis.

Stored Number Redial

The Forced Charge Account code is not stored. To store a code, dial the code prior to using Stored Number Redial to dial the call.

Trunk Group Access Restrictions (TGAR)

Trunk Group Access Restrictions apply to the telephone or trunk entering the account number.

Feature packaging

This feature is included in base system software. Forced Charge Account (FCA) package 52 requires:

- Charge Account/Authorization Code Base (CAB) package 24
- Charge Account (CHG) package 23

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Enable Forced Charge Account for a customer.
- 2 LD 10 – Enable Forced Charge Account for analog (500/2500 type) telephones.
- 3 LD 11 – Enable Forced Charge Account for Meridian 1 proprietary telephones.
- 4 LD 14 – Enable Forced Charge Account for each incoming TIE or CCSA trunk.

LD 15 – Enable Forced Charge Account for a customer.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	CDR	Call Detail Recording.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- CHLN	(0)-23	Maximum number of digits that can be in an FCA code (default is 0).

- FCAF	(NO) YES	(Disable) enable FCA for the customer.
- CHMN	xx	Minimum number of digits that can be in an FCA code (must be less than CHLN).
- FCNC	xx	NCOS to be assigned to FCA codes.

LD 10 – Enable Forced Charge Account for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
FCAR	(NO) YES	FCA can be used by this telephone. FCA is restricted from use by this telephone.

LD 11 – Enable Forced Charge Account for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.

TN	l s c u	Terminal number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
FCAR	(NO) YES	FCA can be used by this telephone. FCA is restricted from use by this telephone.

LD 14 – Enable Forced Charge Account for each incoming TIE or CCSA trunk.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	TIE CAA	Trunk type (must be TIE or CCSA).
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
FCAR	(NO) YES	FCA can be used by this trunk. FCA is restricted from use by this trunk.

Feature operation

To use FCA, follow these steps:

- 1 Select a free extension.
- 2 Press **Charge** or dial SPRE + 5.
- 3 Dial the Charge Account number.
- 4 When you have a dial tone, dial the long distance number.

For operating procedures from particular telephones or consoles, see the Charge Account and Calling Party Number module in this document.

Charge Display at End of Call

Contents

This section contains information on the following topics:

Feature description	1021
Operating parameters	1022
Feature interactions	1023
Feature packaging	1023
Feature implementation	1023
Feature operation	1024

Feature description

This feature allows the set display of a charged party to show the charged amount of a metered call, along with the normal call-display information. To give you time to read and transcribe the charges, the feature maintains this display for ten seconds after call completion, unless you do something with the set such as make another call or use another feature.

The currency (for instance, pound sterling, mark, and dollar) displayed is the currency specified in the feature configuration (LD 15 and LD 16). The charge information is received from the Central Office (generated from a Periodic Pulse Metering trunk or an Integrated Services Digital Network (ISDN) trunk).

This feature is operational in a standalone environment, and is available on modular digital sets and M2317 sets. For M2317 sets, the charge information is appended to the standard call-display information. On modular sets, the charge information is scrolled to the second line (there are two lines of display on these sets).

When a call is transferred, the Advice of Charge display appears on the set to which the call is transferred. It does not appear on the display of the set that transferred the call.

M2317 charge display

For M2317 sets, the charge information is appended to the standard call-display information. In the example below, the dialed DN (90113145078400) is displayed followed by the cost charged to the call (\$22.45).

90113145078400 2245

=====>

Modular Set charge display

On modular sets, which have two lines of display, the charge information is scrolled to the second line. In the example below, the name of the caller is displayed on the first line. The dialed DN (90113145078400), followed by the cost charged to the call (\$12.75), is displayed on line two.

LOIS LANE

90113145078400 1275

Operating parameters

The charge is displayed only if all of the following conditions are met:

- the customer to which the set belongs has the Charge Display at End of Call (CHDA) option defined
- the set has a display with Message Registration Allowed Class of Service.
- the trunk is configured with buffered or non-buffered Periodic Pulse Metering.

Feature interactions

There are no feature interactions associated with this feature.

Feature packaging

This feature is included in base system software.

The following packages are required for Charge Display at End of Call:

- International Supplementary Features (SUPP) package 131
- Periodic Pulse Metering/Message Registration (MR) package 101

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 17 – Implement Periodic Pulse Metering (PPM).
- 2 LD 15 – Allow or deny Charge Display at End of Call for a customer.

LD 17 – Implement Periodic Pulse Metering (PPM).

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	PARM	System Parameters.
...		
MTRO	PPM	Periodic Pulse Metering

LD 15 – Allow or deny Charge Display at End of Call for a customer.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	FTR	Features and options.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
...		
OPT	CHDA CHDD	Enter CHDA to allow Charge Display at End of Call. CHDD = Default

Feature operation

No specific operating procedures are required to use this feature.

China – Attendant Monitor

Contents

This section contains information on the following topics:

Feature description	1025
Operating parameters	1026
Feature interactions	1026
Feature packaging	1030
Feature implementation	1030
Feature operation	1031

Feature description

Attendant Monitor Function

Attendant Monitor is a customer defined option which allows the attendant to monitor, in listen only mode, any established call involving a set or trunk on the customer's switch with or without the connected parties being aware that monitoring is taking place (depends on the configuration of the customer tone option).

The differences between the existing Busy Verify and Barge-In features and the Attendant Monitor feature are the following:

- Attendant Monitor provides a listen only path for the attendant.
- There is no click sound given to the connected parties upon attendant connection when the no tone option is configured.

- The tone to the connected parties may or may not be given depending on the new customer tone option for Attendant Monitor.
- The display (if there is one) on any parties involved in the call does not indicate that the attendant is monitoring.

Operating parameters

Since Attendant Monitor is based on Busy Verify and Barge-In, it has the same restrictions which apply to Busy Verify and Barge-in unless otherwise stated in this feature description.

This feature has been developed exclusively for use in China.

Attendant Monitor is strictly a standalone, same-customer feature which is not supported over networks. A customer equipped with the Attendant Monitor feature can only monitor a DN or trunk defined for that customer without going over the network.

The toggle function between having a one-way speechpath and a two-way speechpath during monitoring is not supported.

This feature is not supported for attendants monitoring other attendants.

Monitoring an M2216 or M5317 is not supported.

The attendant may be blocked from monitoring a DN or trunk due to a limit on the number of conference timeslots.

Feature interactions

Attendant Barge-In

When China (CHINA) package 285 is equipped, the normal operation of Barge-In changes slightly. The repeatable tone is now configurable with the (TOA)/TOD option in LD 15.

If an attendant is monitoring a trunk, a second attendant defined at the same customer location is blocked from Barging In to any trunk involved in the monitored call.

If an attendant is Barged-In with a trunk, a second attendant defined at the same customer location will be blocked from monitoring any party involved in the monitored call.

Attendant Break-In

If an attendant is monitoring a DN, a second attendant defined at the same customer site will be blocked from Breaking In to any party involved in the monitored call.

If an attendant is in a Break-In situation with a DN, a second attendant defined at the same customer site will be blocked from monitoring any party involved in the monitored call.

Attendant Busy Verify

When China (CHINA) package 285 is equipped, the normal operation of Busy Verify changes. The repeatable tone is now configurable with the (TOA)/TOD option in LD 15.

If an attendant is monitoring a DN, a second attendant defined for the same customer will be blocked from Busy Verifying any party involved in the monitored call.

If an attendant is Busy Verifying a DN, a second attendant defined for the same customer will be blocked from monitoring any party involved in the monitored call.

Automatic Call Distribution

The attendant cannot monitor a call in which an Automatic Call Distribution (ACD) DN is involved.

Call Forward All Calls Call Forward Busy Call Forward, Internal Calls Call Forward No Answer

If an attendant attempts to monitor a DN which is Call Forwarded and is idle, idle DN treatment is given.

Call Hold, Permanent

Monitoring is not affected if anybody involved in the monitor's call activates hold, except for the case of a simple call. For a monitored simple call, activating hold deactivates monitoring. In all cases, activation of music on hold deactivates monitoring.

An attendant monitoring a call cannot put the monitored DN on hold. The attendant pressing the hold key has no effect while monitoring is enabled.

Call Park

If a DN being monitored becomes parked by another party, the Attendant Monitor feature is deactivated.

Call Trace

If a Call Trace is performed on the attendant, the output will consist of the existing Call Trace information elements for an attendant loop. In addition, "MON" will be printed immediately after "ATTN" to indicate that this attendant is monitoring.

If a Call Trace is performed on any other party involved in the monitored call, the output will consist of the existing information elements for a DN or trunk, as well as "MON" being printed immediately before "ACTIVE".

Call Transfer

If any party at the customer location involved in a monitored call attempts to activate call transfer, monitoring is immediately deactivated.

Centrex Switchhook Flash

If any set at the customer location involved in the monitored call switchhook flashes or performs a Centrex switchhook flash, Attendant Monitor is immediately deactivated.

Conference

If any party involved in a monitored call attempts to activate conference, monitoring is immediately deactivated. With Attendant Monitor active, the attendant cannot create a conference without first disabling the Attendant Monitor feature.

Do Not Disturb

If an attendant attempts to monitor a DN which has Do Not Disturb activated and is idle, idle DN treatment is given.

Make Set Busy

If an attendant attempts to monitor a DN which has Make Set Busy activated and is idle, idle DN treatment is given.

Malicious Call Trace

If a party involved in a monitored call activates the TRC key, monitoring is immediately deactivated.

Multiple Appearance DN

If Attendant Monitor is attempted on a Multiple Appearance DN, the Multiple Appearance Redirection Prime (MARP) TN becomes the desired party.

Override

A set may operate override to join into a desired call. If the desired call is being Attendant Monitored at the time, one of the following occurs:

- If the desired call is a conference call, the override attempt is blocked as per existing operation.
- If the call is a simple one with the Attendant Monitoring with no tone, the override attempt is successful and Attendant Monitor is deactivated.
- If the call is a simple one with the Attendant Monitoring with tone, the override attempt is blocked.

Override, Enhanced

A set may operate enhanced override on a desired call. If the desired call is being Attendant Monitored at the time, existing operation occurs for the first time the Enhanced Override key is pressed. The second time the key is pressed, the interaction with Attendant Monitor is the same as with regular override.

Privacy Release

If Privacy Release is activated on a set that is involved in a monitored call, Attendant Monitor is deactivated.

Private Line

Attendant Monitor is blocked from monitoring a Private DN.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Enable the Attendant Monitor option for a customer, and then either allow or deny the tone option.
- 2 LD 12 – Define the Barge-In/Attendant Monitor key and the Busy Verify/Attendant Monitor key on an attendant console.

LD 15 – Enable the Attendant Monitor option for a customer, and then either allow or deny the tone option.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	ATT_DATA	Attendant console options
- OPT	(AMD) AMA (TOA) TOD	(Deny) allow Attendant Monitor. (Allow) deny Attendant Monitor Tone.

LD 12 – Define the Barge-In/Attendant Monitor key and the Busy Verify/Attendant Monitor key on an attendant console.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	2250	Attendant console type.
...		
KEY	00 BVR	Allow both Busy Verify and Attendant Monitor on key 00.
	01 BIN	Allow both Barge-In and Attendant Monitor on key 01.

Feature operation

Monitor a DN

- 1 Press an idle Loop key on the attendant console. The Loop indicator is lit.
- 2 Press the Busy Verify key. The Busy Verify lamp is lit.
- 3 Press the Busy Verify key again to enable Attendant Monitor. The Busy Verify lamp is in the flashing state indicating that the Attendant Monitor option is enabled.
- 4 Dial the extension desired to be monitored. One of the following happens:
 - Attendant Monitor is blocked when the extension is maintenance busy or disabled.
 - Attendant Monitor is blocked when the extension is vacant.
 - Attendant Monitor is blocked when the extension is in some transient state (for example, Conference or Transfer)
 - Attendant Monitor is blocked when the extension is idle, receiving busy tone, or receiving overflow tone.
 - Attendant Monitor is blocked when the extension is involved with another attendant.

- Attendant Monitor is blocked when the extension has activated the Hold key.
- Attendant Monitor is blocked when the extension is already involved in a monitored call by another attendant.
- Attendant Monitor is active when the extension is busy. The attendant is able to listen to all connected parties. If the Attendant Monitor Customer tone is denied (TOD), there is no indication given to the connected parties that the attendant is monitoring. If the Attendant Monitor Customer Tone is allowed (TOA), a burst of tone is sent to the connected parties every 16 seconds. When the monitored DN disconnects from the call, Attendant Monitor is deactivated.

In all of the above situations, the display on the parties involved in the call does not indicate that the attendant has attempted to monitor. With TOD configured, upon the attendant successfully joining the connection there is no click sound given to the monitored parties that could indicate that the attendant has joined in.

- 5 When Attendant Monitor is deactivated, the attendant is released from monitoring and is free to process calls. Deactivation occurs due to the following:
 - The RLS key on the attendant console is pressed.
 - Any DN involved in the monitored call disconnects.
 - Any DN involved in the monitored call at the customer location activates some form of call modification.

Monitor a Trunk

- 1 Press an idle Loop key on the attendant console. The Loop indicator is lit.
- 2 Press the Barge-In key. The Barge-In lamp is lit.
- 3 Press the Barge-In key again to enable Attendant Monitor. The Barge-In lamp is in the flashing state indicating that the Attendant Monitor option is enabled.
- 4 Dial the trunk access code and the route member number, then press “#”. One of the following happens:

- Attendant Monitor is blocked when the trunk is disabled.
 - Attendant Monitor is blocked when the trunk is idle.
 - Attendant Monitor is blocked when the trunk is not assigned.
 - Attendant Monitor is blocked when the trunk is already being monitored by another attendant.
 - Attendant Monitor is active when the trunk is busy. The attendant is able to listen to all parties on the trunk. If the Attendant Monitor Customer tone is denied (TOD), there is no indication given to the connected parties that the attendant is monitoring. If the Attendant Monitor Customer tone is allowed (TOA), a burst of tone is sent every 16 seconds.
- 5** When Attendant Monitor is deactivated, the attendant is released from monitoring and is free to process calls. Deactivation occurs due to the following:
- The RLS key on the attendant console is pressed.
 - The trunk disconnects.
 - Any party at the customer location performs some form of call modification or activates hold.
 - Any party at the customer location disconnects.
 - Any trunk involved in the monitored call disconnects.

China – Busy Tone Detection

Contents

This section contains information on the following topics:

Feature description	1035
Operating parameters	1036
Feature interactions	1036
Feature packaging	1037
Feature implementation	1037
Feature operation	1039

Feature description

In many countries, loop start trunks are not supervised. Therefore, many Public Exchanges/Central Offices send a busy tone to the system when the external party has disconnected. A tone detector must be used to detect this tone.

The China – Busy Tone Detection (BTD) feature allows a technician to enter the characteristics of the busy tone to be detected in overlay 97. This information is downloaded to the system trunk for use during call processing. Once the busy tone is detected, the trunk sends a message to the system software, which then disconnects the call, and the trunk is free for other uses.

An option is provided to allow Busy Tone Disconnect to occur only for incoming calls. This option is also programmed in LD 97. Cadence information is downloaded on a card basis.

Operating parameters

The Busy Tone Detection functionality is implemented on the Enhanced Extended Universal Trunk Card for China (NTRA10AA).

The system will disconnect any call once busy tone is detected on the incoming side of the trunk. If the user on the far end causes busy tone to be generated by any means, the call will be disconnected whether or not that was the intention.

The BTD characteristics are downloaded on a card basis only (not on a unit basis) and thus all units on the trunk card must go to Public Exchanges that produce the same busy tone cadence.

Busy Tone Detection may not work with conference bridges in certain situations. This is due to the nature of conference bridges in such that all of the trunks are incoming. In the situation where two or more loop start trunks with BTD disconnect simultaneously, the resulting busy tone from each trunk may be detected by the BTD inhibitors of the other trunks. The result would be a stalemate where all trunks remain connected.

If a trunk card is not designed to support the Busy Tone Detection feature (for example, for future BTD hardware implementation), the functionality can still be configured in software.

To change Busy Tone Detection assigned to a trunk card, all trunks on the card must first be removed using LD 14.

Feature interactions

Loop Start Supervisory Trunks

The interaction with Intelligent Peripheral Equipment (IPE) trunks occurs because Busy Tone Supervision (BTS) can be configured in conjunction with any existing supervision type. For the EXUT, BTS can now be configured with a supervision type of BST (both incoming and outgoing battery reversal) and Polarity Insensitive (PIP). These supervision type's call processing methods are not changed, except that now the first type of supervision received is the one acted upon.

Feature packaging

China - Busy Tone Detection requires Busy Tone Detection (BTD) package 294, which depends upon Intelligent Peripheral Equipment (XPE) package 203.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 97 – Busy Tone table configuration.
- 2 LD 14 – Busy Tone Detection Table and Busy Tone Supervision assignment.

For China, the BTD table and its assignment to the various routes is automatic and does not require configuration in LD 97 or LD 14, as long as the BTD package is equipped. Only the configuration of Busy Tone Supervision in LD 14 is required.

LD 97 need only be changed if the values other than the default are required. If table 0 is modified, rather than creating a new one, the assignment to the trunk in LD 14 is not required. After the BTD table is created, or changed, the data must be dumped and the system reloaded in order for the information to be downloaded.

LD 97 – Busy Tone table configuration.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	BTD	Busy Tone Detection.
BTDT	(0)-7 X1-X7	Busy Tone Detection Table.

BCAD	Ph1 Ph2 (350 350)	Busy Tone Cadence. The input values are rounded to the nearest multiple of 25 ms.
BTDD	(BOTH) INC	Busy Tone Detection allowed on both incoming and outgoing calls. Busy Tone Detection allowed on incoming calls only.

LD 14 – Busy Tone Detection Table and Busy Tone Supervision assignment.

Prompt	Response	Description
REQ	NEW	Create or change a route.
TYPE	COT	Central Office trunk.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
XTRK	EXUT	Extended Universal Trunk.
...		
SIGL	LOP	Loop Start signaling.
...		
SUPN	(NO) YES	Supervision.
STYP		Supervision type, where:
	(PIP)	PIP = Polarity Insensitive
	BTS	BTS = Busy Tone Supervision
	BST	BST = Both way Supervision Trunk (BST) (that is, PIP on both incoming and outgoing calls)
	PIP BTS	PIP BTS = PIP and BTS, and
	BST BTS	BST BTS = BST and BTS.
BTDT	(0)-7	Busy Tone Detection Table number.

Feature operation

No specific operating procedures are required to use this feature.

China – Flexible Feature Codes

Contents

This section contains information on the following topics:

Feature description	1041
Operating parameters	1042
Feature interactions	1043
Feature packaging	1047
Feature implementation	1048
Feature operation	1056

Feature description

Three Flexible Feature Code (FFC) features have been developed to meet the requirements of the Chinese Ministry of Posts and Telecommunications for the rural switch market in China, these features can be used in other markets. The three features are Busy Number Redial (BNR), Customer Call Forward (CCFW), and Outgoing Call Barring (OCB). With all three of these features, there is an option to provide a confirmation tone upon feature activation.

Busy Number Redial

Busy Number Redial enables a user of an analog (500/2500 type) telephone encountering a busy condition to automatically redial the busy number by performing a switchhook flash and dialing the Busy Number Redial FFC. When the user goes off-hook next without dialing any digit, the busy number is automatically redialed. This feature remains in effect until the desired Directory Number (DN) is reached, up to a maximum of 20 minutes.

Customer Call Forward

Customer Call Forward allows users of analog (500/2500 type) telephones to forward their telephones to a central answering position by dialing the Customer Call Forward FFC. This feature activates the Call Forward All Calls function without having to specify the forward DN.

Outgoing Call Barring

Outgoing Call Barring allows a set to be blocked from making some or all outgoing calls. Three levels of barring are available which can be selected by dialing the Outgoing Call Barring FFC, the barring level desired, and the Station Control Password (SCPW).

The three levels are each associated with a New Flexible Code Restriction (NFCR) tree in the Customer Data Block. When a DN is dialed, the digits dialed are compared to the associated NFCR tree and busy tone is given if the call is barred. An FFC is also available to verify that the feature is active.

The active level cannot be changed without first deactivating the feature and reactivating it with a new level.

Operating parameters

Although designed for China, the China – Flexible Feature Codes feature can be used in other markets.

Busy Number Redial is only available for internal calls and for trunk calls that provide a busy signal when busy tone is given.

Busy Number Redial and Customer Call Forward are only available for analog (500/2500 type) telephones.

Outgoing Call Barring does not apply to BRI sets.

The Reply DN for CCFW is limited to 16 digits.

OCB will only process “*” and “#” according to the active NCFR tree if the digits are to be outpulsed on a route with OPR active (including all necessary conditions for OPR). If they are dialed as part of an FFC, the call is allowed; otherwise, an octothorpe will cause the call to be blocked. An “*” will be ignored, except during digit counting. Thus, FFCs containing a “*” or a “#” cannot be blocked by this feature.

OCB will not prevent calls from terminating when there are too few dialed digits to traverse the full NCFR tree (for example, if the active tree is set up to bar 2001, but a DN of 200 exists, calls to 200 will be allowed with no error message).

The maximum number of digits that will be processed by OCB is 32. If the call is not allowed or denied by that point, the call is barred.

OCB can bar feature access codes such as Special Prefix (SPRE) codes and numeric FFCs. It will not bar the digits dialed after a feature access code.

Feature interactions

Busy Number Redial

Autodial

Activation of Busy Number Redial changes the activation of Autodial. The DN that is autodialed becomes the DN that was busy. When the BNR activation timer expires or the busy DN is redialed when it is idle, the autodial capability is deactivated, but the number saved is not cleared. If Autodial is then activated without entering a DN, the number used is the formerly busy DN.

Activation of Autodial when BNR is active deactivates BNR.

Automatic Set Relocation

Busy Number Redial is deactivated when a set is relocated.

Deactivate Feature FFC

The Deactivate Feature (DEAF) FFC deactivates Busy Number Redial.

Hot Line

Busy Number Redial cannot be used on Flexible Hot Line or Enhanced Hot Line sets.

Off-Hook Alarm Security

Busy Number Redial cannot be used on a set with Off-Hook Alarm Security Allowed, since autodial cannot be configured on these sets.

16-Button Dual-tone Multifrequency (DTMF) Sets

Busy Number Redial (BNR) activate can be a postdial function, and BNR deactivate can be a predial function. Both FFCs may be dialed normally from a 16-button DTMF telephone.

Customer Call Forward

Customer Call Forward (CCFW) is another way of activating Call Forward All Calls (CFWAC), therefore all interactions with CCFW not specified below are the same as with CFWAC.

Call Forward All Calls

When CCFW is active Call Forward All Calls (CFWAC) cannot be activated by Flexible Feature Code, but can be activated by SPRE. When CFWAC is active, CCFW cannot be activated.

CCFW can be deactivated by deactivating CFWAC. CFWAC can only be deactivated by the CCFD FFC if the current CFW DN is the same as the current CCFW DN.

Deactivate Feature FFC

The Deactivate Feature FFC deactivates Customer Call Forward.

Make Set Busy

Customer Call Forward takes precedence over Make Set Busy if both are active.

16-Button Dual-tone Multifrequency (DTMF) Sets

CCFA and CCFD are allowed as predial ABCD functions. They may also be dialed normally from 16-Button DTMF telephones.

Outgoing Call Barring

Outgoing Call Barring is an additional feature that may block a call. All other call blocking features still apply as usual.

Authorization Code Security Enhancement

Digits dialed after an Authorization Code are checked against the active OCB level.

Call Forward All Calls

When a set with Outgoing Call Barring active activates CFWAC with a new CFW DN, the CFW DN is checked against the current barring level. If the DN is not allowed to be dialed, it can also not be used as a Call Forward DN. This is to prevent a set from forwarding to a barred DN and then dialing its own DN to bypass the restrictions.

Charge Account and Calling Party Number

Digits dialed after a charge account are checked against the active OCB level.

Digit Display

Meridian 1 proprietary telephones with displays do not display the OCB level and the Station Control Password (SCPW) when OCB FFCs are dialed. This protects the security of the SCPW.

Flexible Feature Codes

Flexible Feature Codes containing a “*” or an “#” will always be allowed by OCB. Therefore, FFCs which can be used to make a call should be entirely numeric if barring of them is required.

Some FFCs are equivalent to Special Prefix functions and these will be subject to barring based on the equivalent Special Prefix codes, even if the FFC is entirely numeric.

Last Number Redial

Barred DNs will be stored by Last Number Redial (LNR). DNs redialed using LNR are checked against the active OCB level.

OCB Flexible Feature Codes are not stored as the last number dialed.

Network Alternate Route Selection (NARS)/Basic Alternate Route Selection (BARS)

Calls made through NARS or BARS that result in local termination may not be barred based on the full dialed digits. They will be barred based on the resulting local digits. Calls to a Local Steering Code will use the full dialed digits, as well as the resulting termination. Calls to the Home Location Code (HLOC) will be barred based on the AC1 and HLOC, and then barred separately based on the local DN. Other local terminations include calls to an Numbering Plan Area (NPA) or Home Numbering Plan Area (HNPA) that use Supplemental Digit Restriction and Recognition to recognize a Local Direct Inward Dialing (DID) number, and calls using a Route List Block which terminate using the LTER option.

New Flexible Code Restriction

Outgoing Call Barring uses New Flexible Code Restriction (NFCR) trees to define the digit sequences that are not allowed for each level of barring. However, OCB analyses all dialed digits, whereas NFCR only analyses digits outpulsed on trunks. This means that the same tree will not normally be usable for both features, unless only Coordinated Dialing Plan trunk calls are to be blocked for both features and no digit manipulation is done.

Outpulsing of Asterisks and Octothorpes

The NFCR trees used for Outgoing Call Barring are allowed to contain asterisks and octothorpes when the Outpulsing of Asterisk and Octothorpe (OPAO) package 104 is equipped. These special digits will only be used for processing dialed digits on routes with OPAO allowed.

Remote Call Forward

Activation of CFW to a barred DN by Remote Call Forward will be permitted, since the user has had to dial the Station Control Password, which could also have been used to deactivate OCB.

Ring Again

Ring Again cannot be activated after a call is barred by Outgoing Call Barring. Sets with display will not offer Ring Again.

Saved Number Redial

DNs redialed using Saved Number Redial (SNR) are checked against the active OCB level.

M2317 sets will offer a “Save #” after a call to a barred DN.

Speed Call

Digits dialed using Speed Call are checked against the active OCB level. This includes calls made using the Dial Access to Speed Call feature (that is, using Pilot DN).

Speed Call, System

Digits dialed using System Speed Call are checked against the active OCB level.

16-Button Dual-tone Multifrequency (DTMF) Sets

The Outgoing Call Barring FFCs are not allowed as ABCD functions. They may be dialed normally from 16-Button DTMF telephones.

Feature packaging

China – Flexible Feature Codes is contained in base system software. The following packages are required for feature activation:

- Flexible Feature Codes (FFC) package 139
- Busy Number Redial also requires the Autodial functionality that is contained in Optional Features (OPT) package 1
- Customer Call Forward also requires the Call Forward All Calls functionality contained in Optional Features (OPT) package 1 and Special Service for 2500 Sets (SS25) package 18
- Outgoing Call Barring also requires the New Flexible Feature Code Restriction (NFCR) package 49

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Define the basic setup for all three of the FFC-based features.
- 2 LD 56 – Define Confirmation Tone.

LD 15 – Define the basic setup for all three of the FFC-based features.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	FFC	Flexible Feature Codes
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- FFCS	(NO) YES	(Do not) change Flexible Feature Code end-of-dialing indicator.
- STRL	1-3	String Length of end-of-dial indicator.
- STRG	xxx	String to indicate end-of-dialing. Up to three digits as defined by STRL. Digits 0-9 and “#” are valid entries.
REQ	CHG	Change.
TYPE	FTR	Features and options.
- SPRE	nnnn	Special Function Prefix (required for FFCs to operate).

LD 56 – Define Confirmation Tone.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	FTC	Flexible Tones and Cadences.
TABL	0-31	FTC Table Number.
HCCT	YES	Hardware controlled cadences and tones.
...		
- FFCT		Configure Confirmation Tone.
-- XTON	0-(4)-255	XCT (NT8D17 Conference/TDS) Tone code.
-- XCAD	(0)-255	XCT (NT8D17 Conference/TDS) Cadence number (FCAD cadence number).

Busy Number Redial**Task Summary List**

Complete the following steps to configure the Busy Number Redial feature:

- 1** LD 57 – Configure Flexible Feature Codes for Busy Number Redial.
- 2** LD 15 – Set the Autodial Delay time used by Busy Number Redial.
- 3** LD 10 – Allow Busy Number Redial for analog (500/2500 type) telephones.

LD 57 – Configure Flexible Feature Codes for Busy Number Redial.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	FFC	Flexible Feature Codes.
CUST	xx	Customer number, as defined in LD 15

FFCT CODE	(NO) YES	Flexible Feature Confirmation Tone. Change code.
- DEAF	xxxx	Deactivate Feature.
- BNRA	xxxx	Busy Number Redial activation code.
- BNRD	xxxx	Busy Number Redial deactivation code.

LD 15 – Set the Autodial Delay time used by Busy Number Redial.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	FFC	Flexible Feature Codes
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- ADLD	(0)-20	Number of seconds to delay before autodialing the saved busy number (0 will make the feature unavailable). Odd entries are rounded up to the next even number.

LD 10 – Allow Busy Number Redial for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.

TN	l s c u	Terminal number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(BNRD) BNRA	(Deny) allow Busy Number Redial for this telephone.
FTR	ADL xx	Autodial, where: xx = the maximum number of digits that can be stored.

Customer Call Forward

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 57 – Configure Flexible Feature Codes for Customer Call Forward.
- 2 LD 15 – Add or change the Reply DN for Customer Call Forward.
- 3 LD 10 – Configure the Call Forward feature to allow Customer Call Forward for analog (500/2500 type) telephones.

LD 57 – Configure Flexible Feature Codes for Customer Call Forward.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	FFC	Flexible Feature Codes.
CUST	xx	Customer number, as defined in LD 15
FFCT	(NO) YES	Flexible Feature Confirmation Tone.
CODE		Change code.
- DEAF	xxxx	Deactivate Feature.

- CCFA	xxxx	Customer Call Forward activation code.
- CCFD	xxxx	Customer Call Forward deactivation code.

LD 15 – Add or change the Reply DN for Customer Call Forward.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	RDR	Call Redirection
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- CCFWDN	dd..dd X	Customer Call Forward DN (maximum of 16 digits). X to delete.

LD 10 – Configure the Call Forward feature to allow Customer Call Forward for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
FTR	CFW nn	Call Forward (nn must be the same number of digits as the CCFW DN).

Outgoing Call Barring

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 57 – Configure the Flexible Feature Codes for Outgoing Call Barring.
- 2 LD 15 – Specify NFCR trees and Station Control Password length for Outgoing Call Barring.
- 3 LD 49 – Create NFCR trees for Outgoing Call Barring.
- 4 LD 10 – Allow Outgoing Call Barring for analog (500/2500 type) telephones.
- 5 LD 11 – Allow Outgoing Call Barring for Meridian 1 proprietary telephones.

LD 57 – Configure the Flexible Feature Codes for Outgoing Call Barring.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	FFC	Flexible Feature Codes.
CUST	xx	Customer number, as defined in LD 15
FFCT	(NO) YES	Flexible Feature Confirmation Tone.
CODE		Change code
- OCBA	xxxx	Outgoing Call Barring activation code.
- OCBD	xxxx	Outgoing Call Barring deactivation code.
- OCBV	xxxx	Outgoing Call Barring verification code.

LD 15 – Specify NFCR trees and Station Control Password length for Outgoing Call Barring.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	FCR	New Flexible Code Restriction options
NFCR	(NO) YES	(Disable) enable New Flexible Code Restriction.
- MAXT	1-255	Maximum number of NFCR trees.
- OCB1	0-MAXT	NFCR tree for Outgoing Call Barring level 1. Enter 255 to deactivate.
- OCB2	0-MAXT	NFCR tree for Outgoing Call Barring level 2. Enter 255 to deactivate.
- OCB3	0-MAXT	NFCR tree for Outgoing Call Barring level 3. Enter 255 to deactivate.
TYPE	FFC	Flexible Feature Codes
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- SCPL	0-8	Station Control Password Length.

LD 49 – Create NFCR trees for Outgoing Call Barring.

Prompt	Response	Description
REQ	NEW	Add new data.
TYPE	FCR	Flexible Code Restriction.
CUST	xx	Customer number, as defined in LD 15
CRNO	(0)-254	New Flexible Code Restriction tree number.

INIT	ALLOW DENY	Allow or deny digit strings not in tree.
ALLOW	xxxx	Digit sequence to be allowed unconditionally.
	xxxx y...y	Digit sequence to be conditionally allowed and maximum number of digits that can follow.
UPDT	(YES), NO	Data is correct and NFCR tree can be updated.
DENY	xxxx	Digit sequence to be denied unconditionally.
	xxxx y...y	Digit sequence to be conditionally denied and maximum number of digits that can follow.
UPDT	(YES) NO	Data is correct and NFCR tree can be updated.

LD 10 – Allow Outgoing Call Barring for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
SCPW	xxxx	Station Control Password. Length must match SCPL in LD 15.
CLS	(OCBD) OCBA	(Deny) allow Outgoing Call Barring.

LD 11 – Allow Outgoing Call Barring for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change existing data.

TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
SCPW	xxxx	Station Control Password. Length must match SCPL in LD 15.
CLS	(OCBD) OCBA	(Deny) allow Outgoing Call Barring.

Feature operation

Busy Number Redial

To activate Busy Number Redial, a switchhook flash is done, and the BNRA FFC is dialed. The number to be redialed is stored in the set’s storage area for Autodial. Confirmation tone is given if configured.

When the user goes off-hook and does not dial within the number of seconds configured for the Autodial Delay timer (ADLD) the busy number is automatically redialed. If the DN is idle when redialed, the feature is deactivated, otherwise it remains available for 20 minutes. The feature can be deactivated manually by dialing the BNRD FFC, or the Deactivate Feature FFC. The user again hears confirmation tone. Deactivating the feature when it is not active will still cause confirmation tone to be heard, since the feature may have just timed out when going off-hook to dial the deactivation code.

Customer Call Forward

Customer Call Forward is activated by dialing the CCFA FFC. Confirmation tone is given if activation is successful. When Customer Call Forward is activated, the CFWAC feature is activated with the CFW DN set to the Reply DN.

CCFW is deactivated by dialing the Customer Call Forward Deactivate FFC, or the Deactivate Feature FFC (it will also be deactivated by the activation of certain other features, see the Feature interactions section of this description).

Outgoing Call Barring

Outgoing Call Barring can be activated from a set with OCBA Class of Service. To activate OCB, the subscriber dials the OCBA FFC, the barring level desired, and the Station Control Password. An octothorpe must also be dialed from Meridian 1 proprietary telephones and analog (500/2500 type) telephones. If activation is successful confirmation tone is given. If the feature is not activated overflow tone is given.

The feature is deactivated by dialing the OCBD FFC, then the active level, and the Station Control Password. An octothorpe must also be dialed from Meridian 1 proprietary telephones and analog (500/2500 type) telephones. The subscriber may dial the OCBV FFC to verify that OCB is active. Confirmation tone is heard if OCB is active, otherwise overflow tone is heard.

China – Supervised Analog Lines

Contents

This section contains information on the following topics:

Feature description	1059
Operating parameters	1060
Feature interactions	1062
Feature packaging	1063
Feature implementation	1063
Feature operation	1065

Feature description

The China – Supervised Analog Lines feature provides two types of call supervision signaling capabilities: battery reversal answer/disconnect supervision and hook flash disconnect supervision. These forms of supervision are provided to terminal devices connected to analog ports in the system.

Battery Reversal Supervision

Battery reversal answer and disconnect supervision signaling is used for calls originating from the terminal device. It provides both far-end (the called party) answer supervision and far-end disconnect supervision signals to the terminal device. It does not apply to incoming calls terminating at the terminal device.

In the idle state, the analog port in the system provides ground signal on the tip lead and battery on the ring lead. This polarity is maintained during dialing and ringing at the far end. When the far end answers, the battery and ground connections are reversed. The reverse battery is maintained while the call is established. When the far end disconnects, the battery and ground connections are reverted to the idle state to signal that the far end has disconnected. If the terminal device disconnects first, the system sends the Deactivate Battery Reversal Scan Signal Distribution (SSD) message to the firmware after receiving the on-hook status to revert the polarity to its idle state.

Two types of battery reversal are supported. Battery Reversal for Absolute Answer Only provides an answer supervision signal to the terminal device only when the system detects an absolute answer. Battery Reversal for Absolute and Assumed Answer provides an answer supervision signal to the terminal device even when an assumed answer is detected and the far end is not capable of indicating definite answer (for example, an outgoing call on an unsupervised loop start trunk).

Hook Flash Disconnect Supervision

Hook flash disconnect supervision is used for incoming calls terminating at the terminal device. The disconnect signal is indicated by the removal of the ground connection to the tip lead for a specific period of time, which is provided by firmware ranging from a minimum of 10 milliseconds to a maximum of 2.55 seconds. The analog port is held busy for incoming calls while hook flash is in progress.

Operating parameters

This feature applies to Intelligent Peripheral Equipment that support the Supervised Analog Line feature only.

Disconnect supervision is not provided to the terminal device if the system does not receive any indication of the far end releasing.

If the system does not receive any answer indication, and answer supervision is not extended to the terminal device following an assumed answer condition, disconnect supervision cannot be extended when the far end disconnects.

If the Battery Reversal Supervision feature is configured for an analog line on an analog card that does not support battery reversal, the battery reversal SSD messages from the system software are ignored by the analog card firmware. In this case, no battery reversal signal is extended to the terminal device.

If the Hook Flash Disconnect Supervision feature is configured for an analog line on an analog card that does not support hook flash, the hook flash SSD messages from the system software are ignored by the analog line card firmware. In this case, no hook flash signal is extended to the terminal device.

If the system initializes while an outgoing call originating from an analog line is established and battery reversal is activated, unprotected data for the call is lost. In this case, battery reversal remains activated when the call is cleared down by either party. However, the line status is reverted to normal when the next outgoing call is answered and then cleared down.

If the hook flash timer is set equal to or greater than the on-hook timer, activation of the hook flash disconnect signal also causes the card to send an on-hook message and then an off-hook message to the system. In this case, if the user remains off-hook after the far end disconnects, dial tone is received and an outgoing call can be initiated.

Battery reversal supervision is supported on the following cards:

- The Enhanced Extended Analog Line Card for China NTRA08AA or later vintage.
- The Off-Premise Station Line Card NT1R20AB or later vintage, and
- The Off-Premise Station Line Card for China NTRA06AB or later vintage.

Hook flash disconnect supervision is supported on the following cards:

- The Off-Premise Station Line Card NT1R20AB or later vintage, and
- The Off-Premise Station Line Card for China NTRA06AB or later vintage.

Feature interactions

Call Transfer

If more than one active call is extended to an analog line, the call type associated with an analog line is determined by the first active call. The call type is assumed to be incoming and hook flash supervision applies if a terminal device answers an incoming call from an idle state. If the terminal device performs a switch hook flash to put the first party on hold and initiates a consultation call, the Battery Reversal feature is not supported; no battery reversal answer signal is extended to the terminal device when the second party answers.

If the first party disconnects while the terminal device is connected to the second party, no disconnect supervision is extended to the terminal device. However, hook flash disconnect supervision is extended to the terminal device when the second party disconnects (that is, a disconnect supervision signal is sent only when the last party connected to the terminal disconnects).

If a terminal device originates an outgoing call, battery reversal answer supervision is extended when the called party answers. The polarity of the line remains reversed when the terminal device performs a switch hook flash and then initiates a consultation call to a second party. The analog line is reverted to normal polarity when the terminal device completes the transfer and drops out or when the last of either the held party or the consultation party disconnects.

Conference

If a terminal device answers an incoming call and then initiates a conference, no battery reversal answer supervision signal is extended to the terminal device when new parties of the conference answer. However, a hook flash disconnect supervision signal is extended to the terminal device when the last party in the conference disconnects.

If a terminal device initiates a conference, battery reversal answer supervision is extended to the terminal device when the first party answers. No polarity change is made when additional parties are added to the conference. The polarity is reverted to normal when the terminal device disconnects or when the last party in the conference disconnects.

Multi-Party Operations

As in the cases with Call Transfer and Conference, the call type of the first active call determines whether battery reversal or hook flash supervision applies. Also, supervision signaling is not supported for the second call. A disconnect supervision signal is extended only when the last party disconnects.

Feature packaging

This feature is included in base system software

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 10 – Enable battery reversal supervision.
- 2 LD 10 – Enable hook flash disconnect supervision..

LD 10 – Enable battery reversal supervision.

Prompt	Response	Description
REQ:	NEW CHG	Add, or change.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.

...		
FTR	OSP (1)	Outgoing call supervision. Answer and disconnect supervision for outgoing calls with absolute and assumed answer indication. If the numeric parameter is not entered and the saved value is null, it is defaulted to 1. Otherwise it remains unchanged.
	OSP 2	Answer and disconnect supervision for outgoing calls with absolute answer supervision only.
	XOSP	Enter XOSP to disable battery reversal answer and disconnect supervision.

LD 10 – Enable hook flash disconnect supervision.

Prompt	Response	Description
REQ:	NEW CHG	Add, or change.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
...		
FTR	ISP 1...(75)...255	Enable hook flash disconnect supervision with flash timer in 10 millisecond units. If the numeric parameter is not entered and the saved value is null, it is defaulted to 75. Otherwise it remains unchanged.
	XISP	Enter XISP to disable hook flash disconnect supervision.

Note: Respond to the FTR prompt in LD 10 with OSP 1, and then with ISP 1...(75)...255 to enable both battery reversal supervision and hook flash disconnect supervision.

Feature operation

No specific operating procedures are required to use this feature.

China – Toll Call Loss Plan

Contents

This section contains information on the following topics:

Feature description	1067
Operating parameters	1068
Feature interactions	1068
Feature packaging	1069
Feature implementation	1070
Feature operation	1072

Feature description

The China – Toll Call Loss Plan feature provides the requirement of 7 dB loss for 2.0 Mbps Digital Trunk Interface (DTI2) toll calls from a system, acting as a Class 5 (C5) office. It is only applicable for a DTI2 trunk connection using MFC signaling to an analog (500/2500 type) telephone.

Feature specific losses on the DTI2 card and 500/2500 line card are provided if the call is recognized as a toll call and the local party is using an analog (500/2500 type) telephone. The loss levels for toll calls are configured in LD 73 by using the TOLT and TOLL prompts.

With this feature, when a toll condition is detected, loss levels are sent to the ONS line card. When the call is terminated, the original loss levels are sent to the ONS line card.

The outgoing toll call is recognized by defining the toll digits as a Special Service List number in LD 18 and specifying it in the DTI2 Route Data Block. For incoming calls, the toll status is provided by the Multifrequency Compelled (MFC) signaling. When the toll status is determined, the appropriate pad values are used on the DTI2 card and 500/2500 line card.

Operating parameters

The Toll Loss Plan is only supported when a pure Intelligent Peripheral Equipment (IPE) Loss Plan for China is used. Existing pad levels for DTI2 toll calls with Hybrid Loss Plan for China are unchanged.

This feature is only supported for a Class 5 system.

The Toll Loss Plan is only supported on DTI2 MFC trunks.

If an initialization occurs, the toll call stays connected, but the toll status is lost. The pad levels are reinserted as if it is for a non-toll call.

The Toll Loss Plan is not supported when a conference call is in progress.

China specific IPE 500/2500, DTI2, and MFC line cards are required.

Feature interactions

Call Diversion (Call Transfer, Call Forward All Calls, Call Forward Busy, Call Forward, Internal Calls, Call Forward No Answer, Hunting)

Toll pad switching is also provided after call diversion has been completed. When the toll call is diverted, the diverted party's pad level is switched back to its original value (unless it is an OPS station using dynamic switching). The Toll Loss Plan is applied again for the new call as if it is a direct call. For Call Transfer, it is provided after the transferring party completes the transfer and drops out. For Call Forward or Hunting, it is provided when the forwarding or hunting call is answered.

Conference

Toll Loss Plan is not supported when a conference is in progress. When a local party connecting to a toll call makes a conference call, the pad levels on the ONS line card are switched back to their original (non-toll call) values. Then, the existing Conference algorithm takes care of the necessary pad switching. This would not alter the existing conference call in terms of loss levels.

When a conference call joins in a toll call, the Toll Loss Plan is not effective.

When a conference call involving a toll call becomes a two-party call, the Toll Loss Plan is applied on the set and DTI2 trunk.

The conference pad switching algorithm is not changed for the Toll Loss Plan, since the 7 db requirement does not apply to a Conference call.

Digitone Receiver Pads

When a Digitone Receiver (DTR) is connected to the DTI2 call (receive only), the pad value to be used on the DTI2 pack is defined in LD 73. There is no interaction with this since the Toll Loss Plan is only supported on a DTI2 trunk with MFC signaling.

Multifrequency Compelled Signaling Pads

There is no interaction with this operation, since the Toll pad switching is only performed when the call is established and the Multifrequency Compelled signaling has terminated.

Multi-Party Operations

When a user toggles between one party and another, the Toll Loss Plan is inserted on the active call if it is a toll call. If the user toggles to a non-toll call, the Toll Loss Plan is removed.

Feature packaging

The China Toll (CHTL) package 292 must be provisioned to activate this feature.

In addition the China – Toll Call Loss Plan feature requires:

- Multifrequency Compelled Signaling (MFC) package 128
- 2 Mbps Digital Trunk Interface (DTI2) package 129
- International Supplementary Features (SUPP) package 131 for the Special Service List functionality.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 18 – Define toll digits for China.
- 2 LD 16 – Enter the SSL number (defined in LD 18) in the Route Data Block of the DTI2 trunk.
- 3 LD 73 – Enter the pad codes for a toll call on DTI2.

LD 18 – Define toll digits for China.

Prompt	Response	Description
REQ	NEW CHG	Add, or change.
TYPE	SSL	Special Service List.
SSL	1-15	Enter Special Service List number.
SSDG	0	China national toll call.
- TOLL	YES	The SSDG entry is a toll number.
...		
SSDG	00	China international toll call.
- TOLL N	YES	The SSDG entry is a toll number.

...		
SSDG	<CR>	End entry.

LD 16 – Enter the SSL number (defined in LD 18) in the Route Data Block of the DTI2 trunk.

Prompt	Response	Description
REQ	NEW CHG	Add, or change.
TYPE	RDB	Route Data Block
...		
SSL	1-15	Enter the SSL number defined in LD 18.

LD 73 – Enter the pad codes for a toll call on DTI2.

Prompt	Response	Description
REQ	NEW CHG PRT	Add, change, or print.
TYPE	DTI2	2.0 Mbps DTI data block.
FEAT	PAD	Pad category.
PDCA	1-16	Pad category table.
TNLS	(NO) YES	Terminal Number list.
DFLT	(1)-16	Default table.
...		

TOLT	Rx Tx (0) (0)	Toll call pad data on DTI2 card, where: Rx = Receive, and Tx = Transmit. The default values are 0 dB receive, and 0 dB transmit.
TOLL	Rx Tx (16) (30)	Toll call pad data on line card, where: Rx = Receive, and Tx = Transmit. The default values are 0 dB receive, and 7 dB transmit.

Feature operation

No specific operating procedures are required to use this feature.

CIS ANI Digits Manipulation and Gateways Enhancements

Contents

This section contains information on the following topics:

Feature description	1073
Operating parameters	1086
Feature interactions	1087
Feature packaging	1089
Feature implementation.	1090
Feature operation.	1106

Feature description

This chapter describes the Commonwealth of Independent States (CIS) Automatic Number Identification (ANI) Digits Manipulation and Gateways Enhancements features. The features are presented together because they share many common characteristics.

CIS ANI Digits Manipulation and Gateways Enhancements features allow the ANI to be built in a more flexible way when the call is originated from a set and from a route.

ANI Definition

The Automatic Number Identification (ANI) information is a string of digits sent to the Central Office (CO), which it uses to identify the calling subscriber for billing purposes, Malicious Call Trace (MCT) purposes, and for immediate information about the subscriber when reaching some vital service such as fire brigade, emergency medical care, or law enforcement officials. The ANI information is sent over the speech path whenever the CO requests it.

ANI is sent on the following CIS trunks on the system:

- CIS three-wire analog trunk
- CIS digital trunk interface Dial Pulse (DP) and Multi-Frequency Shuttle (MFS)

Shared functionality

When configuring outgoing CIS routes, the feature is activated using the prompt ANIC to enable composition of a new ANI.

Two similar ANI tables are configured in the customer data block. One is used when call is originated from a set. The second table is used when call is originated from a route.

Up to 2000 entries can be configured in the ANI table for sets. Up to 512 entries can be configured in the ANI table for routes.

An ANI entry contains the following data:

- DNLG (DN Length): it gives the number of digits of the calling number that will be used for building the ANI DN (for example calling party DN = 342390 and DNLG = 4 will give an ANI DN = 2390).
- LEC: Local Exchange Code.
- ANDN: used as ANI DN if DNLG=0.
- ADDG: additional digits.

CIS ANI Digits Manipulation introduction

The CIS ANI Digits Manipulation feature enhances the system CIS ANI digits manipulation capabilities by increasing flexibility and ensuring greater accuracy. The feature modifies the length of outgoing ANI and it allows the building of outgoing ANI using the table configured in customer data block.

CIS Gateway Enhancements introduction

The purpose of the gateways enhancement feature is to enhance several gateways with Commonwealth of Independent States (CIS) trunks.

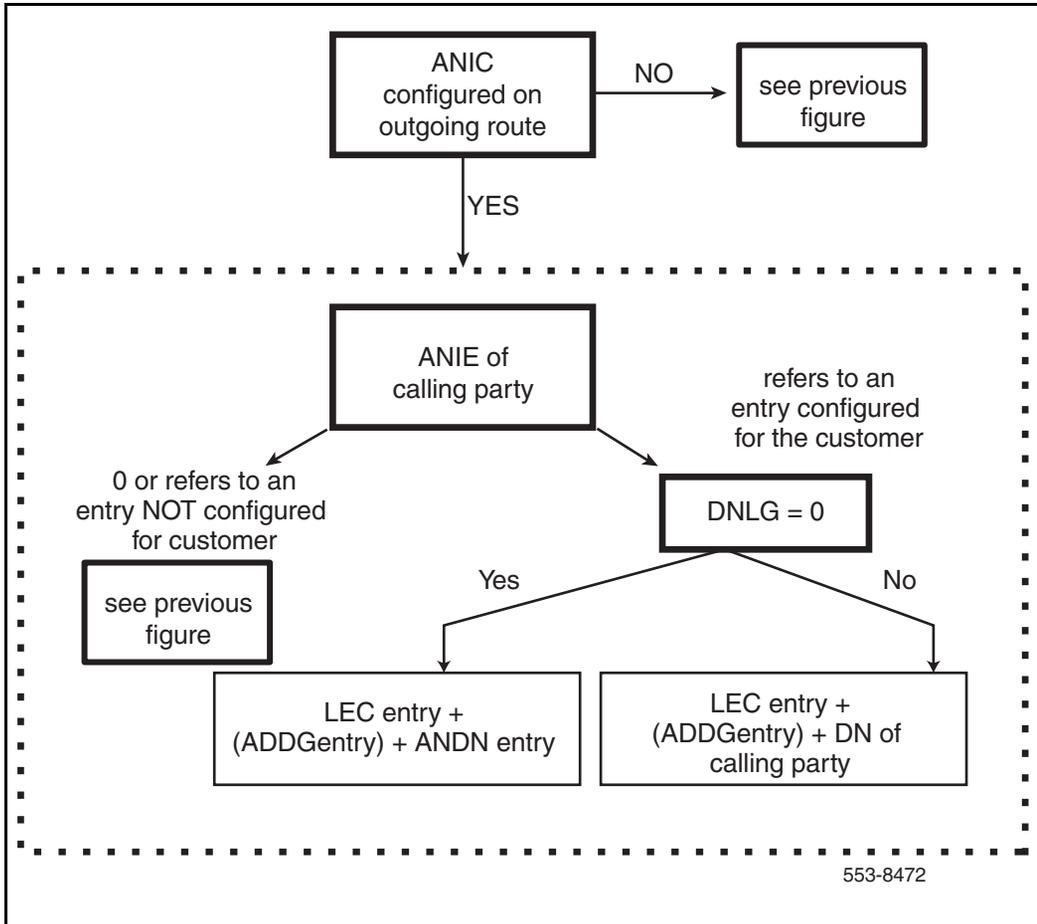
CIS gateways considered are with all route types with an emphasis on connectivities that can receive a Calling Number: R2MFC, ISDN interfaces and incoming CIS DTI2.

ANI Digits Manipulation feature functionality

The ANI may be built in two ways with the enhancements introduced by the CIS ANI Digits Manipulation feature as described in the list below (see Figure 9):

- 1** The ANI may be built with the following modifications:
 - The length of the ANI information built by the software is configurable on a per route basis and may reach 15 digits (for LEC+ANI DN).
 - The part of the ANI DN to be truncated (in case the truncation can't be avoided) is the beginning (that is the most significant digits).
 - The system has the option to work without LEC, that is the response to the prompt LEC in LD 16 is not mandatory anymore.
 - In the case of LEC+ANI DN smaller than the programmed length, additional digit(s) (ADDG) is (are) added at the beginning of the ANI DN (between the ANI DN and the LEC), in compliance with the CIS standards. ADDG can be more than one digit long.
- 2** Optionally, the ANI data may be retrieved from entries configured in LD 15. It provides much more flexibility in building the ANI. An ANI entry number can be assigned to each circuit switched network set, BRI set and BCS DN key.

Figure 9
Example of how ANI is built in call originating from a set (using enhanced functionality)



CIS ANI Digits Manipulation examples

This section provides diagrams and tables that show how CIS ANI Digits Manipulation feature operates. Example 1 is presented in Table 6. Example 2 is shown in Table 7.

Example 1 - DN on key 1 is to be used in ANI**Table 6**
DN on key 1 is to be used in ANI

ANI entry	Entry X	Entry Y
DNLG, length of DN to use in ANI	4	0
LEC, Local Exchange Code	940	940
ADDG, additional digits	89	8
ANDN, used as ANI DN if DNLG is 0		7676

Example 2 - DN on key 1 is not to be used in ANI**Table 7**
DN on key 1 is not to be used in ANI

ANI entry	Entry X	Entry Y
DNLG, length of DN to use in ANI	4	0
LEC, Local Exchange Code	940	940
ADDG, additional digits	89	8
ANDN, used as ANI DN if DNLG is 0		7676

Gateways Enhancement feature functionality

The gateway enhancements are composed of the following new functionalities, which are described in this section:

- Mapping of the received calling number to ANI:
 - Mapping CNI to ANI, ANI to CNI
 - Mapping CLID to ANI and OLI to ANI
 - Mapping ANI to ANI in gateway CIS to CIS
- Building ANI for interfaces without calling number

Mapping of the received calling number to ANI

To map any Calling number to ANI the idea is to be able to manipulate the received Calling Number when tandeming it into ANI. In a gateway situation the incoming trunk is the originator of the outgoing call. So the Calling Number is manipulated by assigning an ANI table entry to the incoming route. An ANI table entry is also assigned to route types whose connectivity does not give the possibility to receive a Calling Number. For these routes, the ANI table entry allows to build the outgoing ANI using only information pertaining to the incoming route.

CIS Gateway Enhancement introduces a list of ANI entries applicable to incoming route considered for the gateway with CIS, or incoming and outgoing route. When package CIST is equipped, an ANI entry is attached to each applicable route. An entry for routes is configured with prompt: R_ENTRY.

Some of the fields defined in ANI table entry were already existing in route configuration. ANI table entry fields that were already existing on route (RDNL, ANDN) are suppressed from the route. It must be noticed that prompt RDNL of Route Data Block is replaced by prompt DNLG in ANI table entry. A new prompt is added on Route data configuration to defined ANI table entry: ANIE. During upgrades, former Route Data Block prompt values are moved into an ANI table entry and this table entry is assigned to the route.

Several routes can have the same tandeming information configured. The data has been moved from Route Data Block to Customer Data Block. In case no ANI table entry is configured, the default table entry (0) is used.

ANI is built as follows:

If outgoing route does not allow use of ANI table entry assigned on incoming route (ANIC prompt of outgoing CIS route is set to NO), Calling number is built as before. Notice that part of the received Calling Number (DNLG) and ANDN INC route are configured in ANI table entry of the incoming route.

- 1 If outgoing route allows to use ANI table entry assigned on incoming route (ANIC is set to yes on CIS outgoing route), ANI is built as LEC inc route + ADDG inc route + (part of) received Calling Number or, when calling Number not available.

Note: With new implementation “part of received calling Number” indicates N least significant digits of received Calling Number, where N is the value configured against prompt DNLG in the ANI table entry associated to the incoming Route Data Block.

- 2 LEC inc route + ADDG inc route +ANDN inc. route

ANI has a predetermined size, configured on outgoing CIS route. It can happen that ANI built is smaller or longer than the ANI configured size. This is handled the same way as for ANI built when call originator is a set.

When the ANIC of the outgoing route is set to yes, data from the ANI table entry configured for the incoming route is used, even if empty. Thus it is up to the craftsman to ensure that the ANI built using the ANI table entry is correct.

Mapping CNI to ANI, ANI to CNI

On MFC routes, prompt ANDN is currently defined. This prompt is removed and replaced by prompt ANIE which allows configuring the ANI table entry number.

Both CNI and ANI contain a CAC field. The value and meaning of the field in both cases are not the same.

On the gateway side of the R2MFC to CIS, the purpose of this mapping is to convert the 10 MFC CAC meanings into CIS CAC meanings, or to define a default CIS CAC value. For this, a conversion table is defined. Conversion tables are defined in LD 15. Up to 32 tables can be configured. A conversion table can be assigned on each MFC route. For this, the prompt CAC_CONV is added to the MFC incoming route configuration. If no CAC conversion table is configured on the MFC route, default table (number 0) will apply to the MFC incoming route.

A CAC conversion entry contains the following data:

- CAC0 to CAC9: against CAC0 prompt is configured the CIS CAC value to be sent if an R2MFC CAC of value 0 has been received.
- DFLT: against this prompt is configured the CIS CAC value to be sent if the R2MFC CAC has not been received or is not in the correct range.

When CNI has not been received at the time ANI is built, a default value must also be used. This default value is defined in the CAC Conversion table. On CIS trunks, 10 CAC values can be sent, from 0 to 9. Each one has a particular meaning (see Table 8).

Default table is number zero and is configurable. After upgrade this table is defined in memory as shown in table below. The craftsman must be aware that modifying this default table after conversion will modify the CAC generated for all gateway cases where the incoming route had a CAC set to three (before upgrade).

In this default table all fields are set to three, as it is the current CIS CAC default value. A value of three for CIS Category Code means the caller is residential, business or hotel subset with the access to local network and without access to automatic regional, toll, international network and to chargeable service numbers.

Table 8
CAC conversion table entry 0 for R2MFC route

MFC CAC	CIS CAC	CIS CAC description
CAC0	3	CIS value corresponding to MFC CAC DGT0
CAC1	3	CIS value corresponding to MFC CAC DGT1
....	3	
CAC8	3	CIS value corresponding to MFC CAC DGT8
CAC9	3	CIS value corresponding to MFC CAC DGT9
Default	3	CIS value used when MFC CAC has not been received, or MFC CAC received is not in the MFC CAC list of this table

MFC routes were given a CAC prompt on which was configured the CAC value of incoming route when tandeming to CIS. This data has no more utility on incoming MFC route as a CAC conversion table is configured against prompt CAC_CONV. Thus, CAC prompt is removed from MFC incoming routes. On upgrade, former CAC prompt value is moved into a CAC conversion table, and this table is assigned to the route.

In the gateway side CIS to R2MFC, the purpose of this mapping is to convert the 10 CIS CAC meanings into R2MFC CAC value. For this, a conversion table is defined.

Prior to upgrading, the CAC sent was defined in the R2MFC table (LD 94). In this R2MFC table, it is the same value for all non-tie incoming trunks. In LD 15, for CAC conversion table, the same range (1-10) and default value (6) than in LD 94 are used. The value 0 is also allowed, it means that the value defined in R2MFC table for incoming non-Tie trunk has to be used.

CAC conversion tables must be defined by the craftsperson in LD 15. Up to 32 tables can be configured. Then a configured conversion table entry can be assigned on each incoming DTI2 CIS route. For this, new prompt CAC_CONV is added to the CIS incoming route configuration. If no CAC conversion table is configured on the CIS route, the default table entry number 0 will apply on CIS incoming routes.

Default table entry is number 0 and is configurable. During upgrades, this table is defined in memory as shown in Table 9. As all values of default tables are set to 0, the R2MFC table will be used until default table number 0 is configured.

Table 9
CAC Conversion table entry 0 for CIS incoming DTI2 route (Part 1 of 2)

CIS CAC	MFC CAC	Description and CIS CAC meaning
CAC0	0	MFC value corresponding to CIS CAC 0 "Reserved"
CAC1	0	MFC value corresponding to CIS CAC 1 "Residential or business subset with the access to automatic regional, toll and international network"
CAC2	0	MFC value corresponding to CIS CAC 2 "Hotel subset with the access to automatic regional, toll international network"
CAC3	0	MFC value corresponding to CIS CAC 3 "Residential, business or Hotel subset with the access to local network only"
CAC4	0	MFC value corresponding to CIS CAC 4 "Business subset with the access to regional, toll, international network and to special service numbers; preferential access to regional and toll network"
CAC5	0	MFC value corresponding to CIS CAC 5 "Business subset of telecommunications administration with the access to automatic regional, toll, international network and to special service numbers free of charge"

Table 9
CAC Conversion table entry 0 for CIS incoming DTI2 route (Part 2 of 2)

CIS CAC	MFC CAC	Description and CIS CAC meaning
CAC6	0	MFC value corresponding to CIS CAC 6 “Toll Coin box and public call paystation with the access to automatic regional and toll network also the general purpose coin box with the access to local and toll network (paying in cash) and the coin box with access to special services only”
CAC7	0	MFC value corresponding to CIS CAC 7 “Business or residential subset with automatic access to regional, toll and international network plus to chargeable service numbers”
CAC8	0	MFC value corresponding to CIS CAC 8 “Business subset for data, facsimile and electronic mail with automatic access to regional, toll and international network.”
CAC9	0	MFC value corresponding to CIS CAC 9 “Local call coin box”
DFLT	0	MFC value corresponding to CIS CAC 0 “Reserved”

Mapping CLID to ANI and OLI to ANI

The feature implements mapping of CLID on Euro-ISDN and enhances it on other ISDN interfaces.

The ANIE prompt in LD 16 configures an ANI table entry for the trunk route.

Building ANI for interfaces without calling number

The title of this subsection refers to routes whose connectivity does not give the possibility to receive a calling number (DTI2, Analog,...).

This case is similar to the situation where an Incoming route with calling number does not receive the calling number.

Mapping ANI to ANI in gateway CIS DTI2 to CIS

The feature CIS ANI Reception is developed concurrently to this one for incoming CIS DTI2 routes (see CIS ANI Reception in this document). For the gateway DTI2 CIS to CIS, on the outgoing CIS route the ANI is built using the ANI received on incoming route. The received ANI can be manipulated using ANI table entry configured on incoming CIS route.

The CAC used on outgoing route is the one received in incoming ANI. This CAC is copied into outgoing ANI without any modifications. If no ANI has been received on incoming CIS route. The CAC used is the one configured against CAC_CIS prompt on incoming CIS route.

Examples of Gateways Enhancements

The following pages contain examples of how to implement gateways enhancements.

Table 10
CAC conversion table, entry 1 content

MFC CAC	CIS CAC
CAC0	9
CAC1	8
CAC2	7
CAC3	6
CAC4	5
CAC5	4
CAC6	3
CAC7	2
CAC8	1
CAC9	0
Default	3

Example 1 - Gateway call through node 3 to CO C

In this example, Received CNI on route 320 is 1234, with CAC translated to DGT5. Outgoing ANI is 555 1 7476 4.

Table 11
Example 1 - Detail of built CAC

LEC Outgoing	Additional Digit	ANI DN Incoming	Category Code
555	1	7476	4

Example 2 - Gateway call through node 2 to CO B

In this example, received CNI on route 230 is 647678, with CAC translated to DGT 8. Outgoing ANI is 555 123 7678 1.

Table 12
Example 2 - Detail of built CAC

LEC Incoming	Additional digit	DNLG*CNI	Category Code
555	123	7678	1

Example 3 - Gateway call through node 1 to CO A

In this example, received CLID on route 120 is 25. Outgoing ANI is 444 123456123 25 5.

Table 13
Example 3 - Detail of built CAC

LEC Incoming	Additional digit	DNLG*CLID	Category Code
444	123456123	25	5

Operating parameters

This section lists the operating parameters for CIS ANI Digits Manipulation and CIS Gateways Enhancements.

CIS ANI Digits Manipulation operating parameters

The data in ANI is built only once at the beginning of the call. The data is not changed or re-downloaded for any kind of operation during a call. Therefore, if the call goes through any type of modification such as a transfer or call forward for instance, the ANI information sent when requested is of the original originator of the call.

This feature does not allow the user to associate ANI entry to attendant consoles. When an outgoing call is originated by an attendant, the ANI message is built using the old mechanism.

The ANI size flexibility is not supported by the analog trunks (E3W, X3W). For these type of trunks, the prompt ANSZ (LD 16) must be answered with seven. CIS standards recommend setting ANSZ to seven for CIS DTI2 ANSZ prompt.

CIS Gateways Enhancements operating parameters

ANI is downloaded to the card only once and immediately after trunk seizure. Thus calling number can be tandemed into ANI only if received before trunk is seized. That means that the calling number must be received at the same time that the called number or before enough digits of the called number are received to seize the CIS trunk. In case of gateway ISDN interface/CIS calling number (CLID) is always received before or at the same time as the called number. In case of gateway R2MFC/CIS calling number (CNI) can be received after trunk has been seized. Then incoming MFC route must be configured to request CNI before enough digits of called number are received to seize CIS trunk.

There is no cross checking of the ANI R_ENTRY associated with the route against the ANI R_ENTRY in the customer Data Block. If an ANI R_ENTRY is removed from the ANI table and the ANI R_ENTRY is still assigned to a route, ANI in this case is built using the default R_ENTRY, R_ENTRY number 0 and ERR9044 message is issued at call processing time.

While default R_ENTRY number 0 has not been configured, all its fields are empty except ADDG whose default value is 8. Thus the ANI built using this table is a repetition of 8. It is strongly recommended to configure this default table as soon as ANIC prompt is set to yes on an outgoing CIS route.

It is possible to associate an undefined ANI_R_ENTRY to a route. Then, when constructing ANI if R_ENTRY is still undefined, default R_ENTRY number zero is used and ERR9044 message is issued at call processing time.

Due to the independence between ANI table and outgoing CIS route, it is possible to define a LEC, or ANDN greater than ANI size configured on outgoing route. Then most significant digits will be truncated. The way it is done is similar in case of call originated from a set or a trunk.

There is no cross checking of the CAC Conversion table entries associated with a CIS or R2MFC route against the CAC Conversion table in the customer Data Block. If a CAC Conversion table entry is removed from the CAC Conversion table and this entry is still assigned to a route, CAC in this case is built using the default CAC Conversion table entry, CIS_ENT number 0 for an incoming CIS route and MFC_ENT number 0 for an incoming MFC route. Additionally ERR9051 message is issued at call processing time.

It is possible to associate an undefined CIS_ENT or MFC_ENT to a route. Then, when constructing CAC if CIS_ENT or MFC_ENT is still undefined, default CIS_ENT or MFC_ENT (number 0) is used and ERR9051 message is issued at call processing time.

Feature interactions

This section identifies feature interactions for CIS ANI Digits Manipulation and Gateways Enhancements.

CIS ANI Digits Manipulation feature interactions

CIS Three Wire Analog Trunk

CIS ANI digits manipulation feature modifies Automatic Number Identification.

CIS Digital Trunk Interface

CIS ANI digits manipulation feature modifies Automatic Number Identification.

CIS MF Shuttle

CIS ANI digits manipulation feature modifies Automatic Number Identification.

CIS Gateways Enhancements

Some changes introduced in CIS ANI digits manipulation feature will impact on CIS Gateways Enhancements feature. These changes are listed below:

- The size of the ANI is configurable on a per outgoing CIS route basis.
- Valid responses for LEC, ADDG and ANDN programmed on the outgoing CIS route are modified.
- The additional digit(s) is(are) inserted between LEC and ANI DN when necessary to complete the ANI DN.
- Prompt ANIC (ANI Composing) added in LD 16 is also used in CIS Gateways Enhancements.

CIS Gateways Enhancements feature interactions

CIS Three Wire Trunk Analog

This development interacts with the feature CIS Three Wire Trunk Analog by changing how ANI is built in case of gateway from ISDN/DPNSS/R2MFC to CIS Analog.

CIS Digital Trunk Interface

The CIS Gateways Enhancements feature interacts with CIS Digital Trunk Interface by changing how ANI is built in case of gateway from ISDN/DPNSS/R2MFC to CIS Digital.

CIS ANI Digits manipulation interaction

These interactions are already described in CIS ANI Digits Manipulation feature interactions.

Feature packaging

No new packages are introduced for these features.

The existing Commonwealth of Independent States Trunks (CIST) package 221 is required for these features to be operable.

CIS Multi Frequency Shuttle package is required if MF Shuttle signaling is to be used but is not mandatory for the CIS ANI digits manipulation and Gateways Enhancements functions.

The CIS DTI2 feature (including MF Shuttle) requires:

- Flexible Tones and Cadences (FTC) package 125
- International Supplementary Features (SUPP) package 131
- 2 Mbit Digital Trunk Interface (DTI2) package 129
- Flexible Numbering Plan (FNP) package 160

CIS Analog Three Wire Trunks feature requires:

- International Supplementary Features (SUPP) package 131
- Flexible Numbering Plan (FNP) package 160
- Flexible Tones and Cadences (FTC) package 125
- Trunk Fail Monitor (TFM) package 182
- IPE package (XPE) package 203 (required for outgoing X3W packs)
- Fast Tone and Digit Switch (FAST_TDS) package 87 (required for outgoing E3W package)

Feature implementation

CIS ANI Digits Manipulation feature

This section contains the overlay procedures required to configure the CIS ANI Digits Manipulation feature. The CIS Gateways Enhancements feature implementation section begins on page 1099.

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 - Configure ANI Table for telephones
- 2 LD 16 - Create or modify outgoing CIS route data block.
- 3 LD 10 - Define ANI entry for analog (500/2500) sets.
- 4 LD 10 - Configure the CAC for CIS and MFC signaling for analog 500/2500 sets.
- 5 LD 11 - Configure ANI entry for Meridian 1 proprietary sets.
- 6 LD 11 - Configure the CAC for CIS and MFC signaling for digital sets.
- 7 LD 27 - Configure ANI entry for Basic Rate Interface (BRI) lines.
- 8 LD 27 - Configure the CAC for CIS and MFC signaling for BRI sets.
- 9 LD 15 - Configure the ANI route table and CAC conversion table.
- 10 LD 16 - Configure the ANI table entry in the Route Data Block for incoming R2MFC route.
- 11 LD 16 - Configure the ANI table entry and CAC conversion table for Incoming CIS DTI2 route.
- 12 LD 16 - Configure the ANI table entry for all other route types (ISDN, incoming CIS analog, incoming DTI2 and DPNSS).
- 13 LD 88 - Configure the CAC for CIS signaling.

LD 15 - Configure ANI Table for telephones

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data
TYPE:	ANI	Automatic Number Identification
...
ANLD	xx...xx	ANI listed directory number (for North American trunk)
CIS_ANI	YES (NO)	CIS ANI option. If CIS_ANI=YES, the next subprompts will be prompted, allowing the configuration of ANI entries for CIS ANI message composing. If CIS_ANI=NO, the following sequence of subprompts is skipped.
- S_SIZE	(0)-2000	Maximum number of ANI entries for sets that can be configured. If S_SIZE=0, next prompts are skipped. If <CR> is entered when REQ=NEW, it defaults to 0 and next prompts are skipped. The S_SIZE can't be decreased if the entries between the old size and the new one are not empty.
- S_ENTRY	aa Xaa Xaa Xbb	ANI entry for a set to be created or modified. ANI entry for a set to be deleted. ANI entries (aa-bb) for a set to be deleted. Prompted only if S_SIZE is greater than 0. ANI entries must be between 1 and S_SIZE. If REQ=NEW, this prompt and its subprompts are given only once. If REQ=CHG, they are repeated until S_ENTRY is answered with <CR>.
-- DNLG	0-(4)-15	Directory Number Length.

-- LEC	0-99...99 X	Local Exchange Carrier. Delete LEC.
-- ADDG	0-(8)-99...99	Additional digits, 1 to 15 digits long.
-- ANDN	0-99...99 X	Used as ANI DN if DN Length = 0. Delete ANDN.
...

LD 16 - Create or modify outgoing CIS route data block.

Prompt	Response	Description
REQ	NEW	Add new data.
	CHG	Change existing data.
TYPE	RDB	Route Data Block
TKTP	DID	Direct Inward Dial.
	COT	Central Office Trunk.
ICOG	OGT	Outgoing Route.
...
CCBA	(NO) YES	Deny/Allow collect call blocking.
CISR	YES (NO)	CIS Route
- ANSZ	(7)-15	ANI information size. Response is length of LEC+ANI DN. For analog routes, the only valid response is seven (7).

<p>- ANIC</p>	<p>(NO) YES</p>	<p>ANI Composing Prompted for outgoing CIS route.</p> <p>If ANIC=NO, old ANI composing is used: if the originator of the call is a set, ANI message will consist of the CAC of the originator + the LEC of the outgoing route + the DN of the originator or the ANDN of the outgoing CIS route, depending on the class of service (DNAA/DNAD) of the set. If the originator of the call is an incoming route, the components of the ANI message are retrieved from default ANI entries and/or from the data block of the outgoing CIS route (See "CIS Gateways Enhancements feature implementation" on page 1099.)</p> <p>If the outgoing CIS route requires new ANI composing to be used (prompt ANIC=YES), the following is done:</p> <p>If no entry is associated to the calling set (ANIE=0), then old ANI composing is used.</p> <p>If an ANI entry is associated to the calling set (ANIE has a non-zero value), but the associated ANI entry is not configured, then old ANI composing is used.</p> <p>If an ANI entry is associated to the calling set (ANIE has a non-zero value), and the associated ANI entry is configured, then ANI table will be used for building the ANI message: none of the components of the ANI message will be retrieved from the data block of the outgoing CIS route.</p>
<p>- LEC</p>	<p>0-99...99</p> <p>X</p>	<p>Local Exchange Code of the route. It can be from 0 digit long up to ANSZ digit long. Prompted for outgoing CIS route. Used for building ANI message if ANIC is NO or if ANIC=YES but the ANI entry associated with the originator of the call is not configured.</p> <p>Remove LEC.</p>

- ADDG	0-(8)-99...99	<p>Additional digits used in ANI message if ANIC is NO or if ANIC=YES but the ANI entry associated with the originator of the call is not configured. It is used to complete ANI DN if LEC+ANI DN consists of less than ANSZ digits.</p> <p>Prompted for outgoing CIS route.</p> <p>It can be from 1 digit long up to ANSZ digit long.</p>
- ANDN	0-99...99	<p>Default ANI DN. It can be from 0 digit long up to ANSZ digit long. Prompted for outgoing CIS route.</p> <p>Used for building ANI message if ANIC=NO and DN of set is not allowed to be sent (CLS DNAD). Also used if ANIC=YES but the ANI entry associated with the originator of the call is not configured, and DN of set is not allowed to be sent (CLS DNAD).</p> <p>Remove ANDN.</p>
	X	

LD 10 - Define ANI entry for analog (500/2500) sets.

Prompt	Response	Description
REQ:	NEW	Add new data.
	CHG	Change existing data.
TYPE:	500	500 set.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CUST	xx	Customer number, as defined in LD 15
...
DN	xxxx ccc	Directory Number, CLID entry.

- MARP	(NO) YES	Deny/Allow Multi Appearance Redirection Prime.
- CPND	aaaa	Calling Party Name Display.
- VMB	aaaa	Voice Mailbox.
- ANIE	(0)-N	ANI Entry: it is of (0)-N where N=S_SIZE in customer data block. If ANIE=0, no entry is associated with the set. The old mechanism will be used for building the ANI message. If ANIE is of 1-N: <ul style="list-style-type: none"> • If ANIC = YES for the outgoing CIS route where the call takes place, then the components of the ANI message are retrieved from the ANI entry in Customer Data Block, if configured. • If the given ANI Entry is not configured, or if ANIC = NO for the outgoing CIS route where the call takes place, then the old mechanism is used for building the ANI message.
...

LD 10 - Configure the CAC for CIS and MFC signaling for analog 500/2500 sets.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	500	Type of data block for analog (500/2500) set.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CUST	xx	Customer number, as defined in LD 15

...	...	
SFLT	a..a	Secretarial Filtering.
CAC_CIS	0-(3)-9	CIS ANI Category Code.
CAC_MFC	(0)-10	MFC CNI Category Code.

LD 11 - Configure ANI entry for Meridian 1 proprietary sets.

Prompt	Response	Description
REQ:	NEW	Add new data.
	CHG	Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CUST	xx	Customer number, as defined in LD 15
...
KEY	xx AAA yyyy... ccc	xx = key number. AAA = Key Function. yyyy = DN or other data related to key function. ccc = CLID entry.
- MARP	(NO) YES	Deny/Allow Multi Appearance Redirection Prime.
- CPND	aaaa	Calling Party Name Display.

<p>- VMB</p> <p>- ANIE</p>	<p>aaaa</p> <p>(0)-N</p>	<p>Voice Mailbox.</p> <p>ANI Entry:</p> <p>It is of (0)-N where N=S_SIZE in customer data block.</p> <p>If ANIE=0, no entry is associated with the DN key. The old mechanism will be used for building the ANI message.</p> <p>If ANIE is of 1-N:</p> <ul style="list-style-type: none"> • If ANIC=YES for the outgoing CIS route where the call takes place, then the components of the ANI message are retrieved from the ANI entry in Customer Data Block, if configured. • If the given ANI Entry is not configured, or if ANIC=NO for the outgoing CIS route where the call takes place, then the old mechanism is used for building the ANI message.
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LD 11 - Configure the CAC for CIS and MFC signaling for digital sets.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CUST	xx	Customer number, as defined in LD 15
...	...	

CAC_CIS	0-(3)-9	CIS ANI Category Code.
CAC_MFC	(0)-10	MFC CNI Category Code.

LD 27 - Configure ANI entry for Basic Rate Interface (BRI) lines.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	TSP	Administer Terminal Service Profile on Digital Subscriber Loop.
...
SPID	xxxx	Service Profile ID.
DN	xxxx ccc	Directory Number (DN) and Calling Line Identification (CLID) entry. xxxx = DN ccc = CLID
- CT	aaaa	Call Types for DN aaaa = VCE or DTA.
- MCAL	1-(4)-8	Maximum Calls allowed per DN
- CLIP	(YES) NO	Allow/Deny Calling Line Identification Presentation for incoming calls.

- PRES	(YES) NO	Allow/Deny Presentation of CLID to far end on outgoing calls.
- ANIE	(0)-N	<p>ANI entry. It is of (0)-N where N=S_SIZE in customer data block.</p> <p>If ANIE=0, no entry is associated with the DN key. The old mechanism is used for building the ANI message.</p> <p>If ANIE is 1-N:</p> <ul style="list-style-type: none"> • If ANIC=YES for the outgoing CIS route where the call takes place, then the components of the ANI message are retrieved from the ANI entry in Customer Data Block, if configured. • If the given ANI Entry is not configured, or if ANIC=NO for the outgoing CIS route where the call takes place, then the old mechanism is used for building the ANI message.

LD 27 - Configure the CAC for CIS and MFC signaling for BRI sets.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	DSL	Digital Subscriber Loop.
DSL	l s c dsl c u dsl	Digital Subscriber Loop For Large Systems For Small Systems and CS 1000S systems
...	...	
CAC_CIS	0-(3)-9	CIS ANI category code.
CAC_MFC	(0)-10	MFC CNI category code.

CIS Gateways Enhancements feature implementation

This section contains the overlay procedures required to configure the CIS Gateways Enhancements feature.

Feature implementation for R2MFC route

In case of gateway R2MFC/CIS it must be noticed that to be tandemed CNI must be received on R2MFC route before outgoing CIS trunk is seized. This is possible using an up-front CNI request. Up-front CNI request is defined on R2MFC route by giving a non zero value to prompt NCNI. Configure the ANI table entry and CAC conversion table for Incoming CIS DTI2 route using LD 16.

LD 15 - Configure the ANI route table and CAC conversion table.

Prompt	Response	Description
REQ:	NEW CHG	Add new data. Change existing data. REQ = NEW, default table R_SIZE (0) is created. REQ = NEW, default table CACC(0) is created. REQ = NEW, R_SIZE defaults to number of ANI entries. for incoming route created during conversion.
TYPE:	ANI	Automatic Number Identification
....
ANLD	xx...x	ANI Listed Directory Number. Only included here for clarification if this prompt appears. Only applies to North American ANI.
CIS_ANI	(NO) YES	Deny/Allow configuration of ANI entries for CIS ANI message.
...	...	
- R_SIZE	(1)-512	Maximum number of ANI entries that can be configured for incoming routes. This maximum number is limited to 512 as it is the maximum number of routes. Entries must be empty to decrease R_SIZE.

- R_ENTRY	aa Xaa Xaa Xbb <CR>	ANI entry for an incoming route to be created or modified. ANI entry for an incoming route to be deleted. ANI entries for an incoming route between aa and bb to be deleted. Exit. R_ENTRY is repeated until <CR> is entered. ANI entries must be between 0 and (R_SIZE-1). For REQ=NEW, only default table 0 is configurable. An R_ENTRY can be deleted even if still assigned on an incoming route.
-- DNLG	0-(4)-15	DN Length Number of digits of the Calling Line ID (CLID), Originating Line Identifier (OLI), Calling Number Identification (CNI) to use in the ANI message, starting with the less significant digits.
-- LEC	0-99..99 X	Local Exchange Code, 1 to 15 digits. Remove LEC.
-- ADDG	0-(8)-99...99	Additional digits, 1 to 15 digits. Used to complete ANI Directory Number (ANDN) if Local Exchange Carrier (LEC)+ANDN is less than ANSZ digits defined in LD 16.
-- ANDN	0-99...99 X	Used as ANI DN if calling number is not available or DNLG=0. Up to 15 digits may be entered. Remove ANDN.
CACC	(NO) YES	Deny/Allow Calling Party Category Code (CAC) Conversion table option.

<p>-MFC_ENT</p> <p>aa</p> <p>Xaa</p> <p>Xaa Xbb</p> <p><CR></p> <p>-- CAC0</p> <p>-- CAC1</p> <p>-- CAC2</p> <p>-- CAC3</p> <p>-- CAC4</p> <p>-- CAC5</p> <p>-- CAC6</p> <p>-- CAC7</p> <p>-- CAC8</p> <p>-- CAC9</p> <p>-- DFLT</p>	<p></p> <p></p> <p></p> <p></p> <p></p> <p>0-(3)-9</p>	<p>CAC conversion table to convert MFC CAC into CIS CAC for use on R2MFC routes.</p> <p>CAC conversion table entry to be created or modified.</p> <p>CAC conversion table entry to be deleted.</p> <p>CAC conversion table entries between aa and bb to be deleted.</p> <p>Exit MFC CAC conversion table, gives CIS_ENT prompt. This prompt is repeated until <CR> is entered. It is prompted if CACC=YES.</p> <p>CAC conversion table entries must be between 0 and 31. For REQ=NEW, only default table 0 is configurable. An ENTRY can be deleted even if still assigned on an incoming route.</p> <p>CIS value corresponding to MFC DGT0</p> <p>CIS value corresponding to MFC DGT1</p> <p>CIS value corresponding to MFC DGT2</p> <p>CIS value corresponding to MFC DGT3</p> <p>CIS value corresponding to MFC DGT4</p> <p>CIS value corresponding to MFC DGT5</p> <p>CIS value corresponding to MFC DGT6</p> <p>CIS value corresponding to MFC DGT7</p> <p>CIS value corresponding to MFC DGT8</p> <p>CIS value corresponding to MFC DGT9</p> <p>CIS value used when MFC CAC has not been received, or MFC CAC received is not in the MFC CAC list of this table</p>
--	--	---

LD 16 - Configure the ANI table entry in the Route Data Block for incoming R2MFC route.

Prompt	Response	Description
REQ	NEW	Add new data.
TYPE	RDB	Route Data Block.
...
MFC	YES	Configure Multifrequency Compelled signaling.
- MFCI	x	MFC Incoming Table.
- MFCO	x	MFC Outgoing Table.
...	...	
ICOG	IAO	Incoming and Outgoing.
	INC	Incoming.
NCNI	1	Request CNI after the defined number of digits are received. CNI is requested during incoming MFC call after the first digit of dialed number has been received.
ANIE	(0)-x	ANI table Entry for Route (configured under prompt R_ENTRY, OVL 15). x = R_SIZE-1. R_Size is the maximum table entry number that can be configured. (R-SIZE is defined in LD 15).
CAC_CONV	(0)-31	CAC conversion table number for CIS Gateway. Configured against MFC_ENT in LD 15. Prompted only for non "outgoing only" R2MFC route.

LD 16 - Configure the ANI table entry and CAC conversion table for Incoming CIS DTI2 route.

Prompt	Response	Description
REQ	NEW	Add new data.
TYPE	RDB	Route data block
...
DGTP	DTI2	2 Mbit Digital Trunk Interface.
...
ICOG	INC	Incoming route.
...
ANIE	(0)-x	ANI table Entry for Route (configured under prompt R_ENTRY, OVL 15). x = R_SIZE-1. R_Size is the maximum table entry number that can be configured. (R-SIZE is defined in OVL 15). Default table entry is number 0.
CISR	YES	CIS Route
...
- CAC_CONV	(0)-31	CAC conversion table number for CIS-to-R2MFC gateway, configured against CIS_ENT in CDB. Prompted only for incoming CIS DTI2 route.
CAC_CIS	0-(3)-9	CIS ANI Category Code

LD 16 - Configure the ANI table entry for all other route types (ISDN, incoming CIS analog, incoming DTI2 and DPNSS).

Prompt	Response	Description
REQ	NEW	Add new data.
TYPE	RDB	Route Data Block.
...	...	
ISDN	YES	Enable ISDN
...
ICOG	IAO	Incoming and outgoing.
	ICT	Incoming.
...	...	
ANIE	(0)-x	ANI table Entry for Route (configured under prompt R_ENTRY, LD 15). x= R_SIZE-1. R_Size is the maximum table entry number that can be configured.
...
CAC_CIS	0-(3)-9	CIS ANI Category Code

LD 88 - Configure the CAC for CIS signaling.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	AUB	Authcode Data Block
...
CLAS	(0)-115	Classcode value assigned to authcode (NAUT).
...
NCOS	(0)-99	Network Class of Service group number.
CAC_CIS	0-(3)-9	CIS ANI category code.

Feature operation

No specific operating procedures are required to use this feature.

CIS ANI Reception

Contents

This section contains information on the following topics:

Feature description	1107
Operating parameters	1115
Feature interactions	1115
Feature packaging	1115
Feature implementation	1116
Feature operation	1121

Feature description

The Commonwealth of Independent States (CIS) Automatic Number Identification (ANI) Reception feature allows the system to receive the Automatic Number Information from the CIS Central Office (CO) calling party on incoming local calls. The CIS Public Telephone Network does not provide ANI information on the incoming toll calls.

The CIS ANI Reception feature works on the CIS Digital Trunk Interface (DTI) feature. It requires CIS DTI2 card, vintage NTCG01AC (Large Systems) or NTCG02AC (Small Systems and CS 1000S systems).

The ANI digits received from the CIS CO are used by the system as the R2MFC Calling Number Identification (CNI) digits. A list of uses for the ANI digits is found on page 1108. The ANI digits are also displayed on the display of the proprietary set or on the attendant console display.

ANI Reception is performed in one of two ways:

- ANI request is issued automatically by the incoming local CIS DTI2 trunk during the call setup.
- ANI request is issued by the incoming local CIS DTI2 trunk upon a manually solicited request from the proprietary set with display or from the attendant console. The request to receive the ANI information is invoked by pressing a calling number display key on the attendant console source key or on the proprietary set by pressing the display key followed by the trace key. Press trace key for active call for Proprietary sets and attendant consoles. The trace key can be used instead of the source key for Malicious Call Trace (MCT) for sets and consoles. An ANI request can also be made by 500/2500 sets by entering the Flexible Feature Code (FFC) assigned for MTRC in LD 57.

Automatic ANI request

The automatic ANI request is sent by the CDTI2 card to the CIS CO before the incoming local call is answered. If the incoming trunk operates in the decadic, or Dial Pulse (DP) mode, the ANI request is sent to the CIS CO after all dialed digits have been collected from the CIS CO (see Figure 10.) If the trunk operates in the MF Shuttle mode, the ANI request is sent after the end of the MF Shuttle dialing (see Figure 11 on page 1111). The ANI digits are uploaded to the system.

The Automatic ANI request option may be used only in conjunction with the DN Size Feature. The DN Size Flexible (using the SSL tables) or Fixed should be defined for the incoming CIS DTI2 DID route before setting the automatic ANI option to “Yes”.

The ANI digits are used in the following way:

- They are tandemed as the Calling Line Identification (CLID) Originating Line Identifier on DPNSS (OLI) to the Integrated Services Digital Network (ISDN)/Digital Private Network Signalling System (DPNSS) gateways, Basic Rate Interface (BRI) gateways
- They are mapped into the Multi-frequency Compelled Signaling complying with CCITT R2 specification (R2MFC) Calling Number Identification R2MFC (CNI)

- They are displayed on the display of the proprietary sets and on the attendant consoles
- They are stored in the Call Detail Recorder
- They are sent through the Meridian Link and the ICCM link using the fields dedicated for the R2MFC CNI digits

The translation of the dialed number which is received from the CIS CO is postponed until the CDTI2 card informs the system that the ANI digits have been received. If the ANI reception report does not arrive from the card, the call is treated after the ANI timer expires. The treatment for the call that failed to provide the automatic ANI is configured on the route data block level.

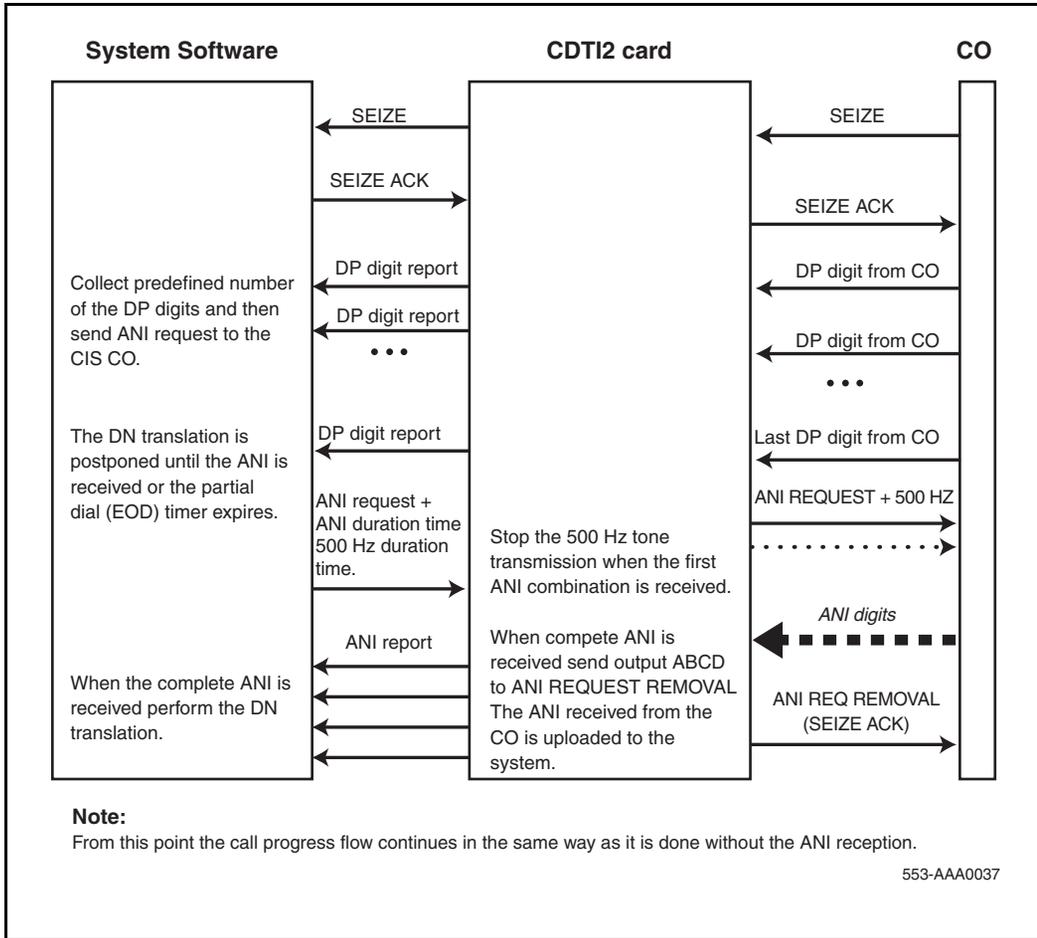
Solicited ANI request

The solicited ANI request is issued upon a manual request from the Meridian 1 proprietary set using the display key or from the attendant console using the trace key. The received ANI information is displayed on the display of the proprietary set or attendant console and it is also used for the CDR, call trace. If the request is performed using the Trace key, the MCT record is printed also on the MCT TTY. The system sends the ANI request message to the CDTI2 card when a user presses the DN key after the set has entered display mode using the Digit Display key or after the Trace key was pressed. The CDTI2 card performs the ANI interaction and uploads the received ANI to the system (see Figure 12).

The ANI is stored in the unprotected trunk data block. The solicited ANI request may be performed an unlimited number of times during a single call. Each time, the new ANI replaces the previously received ANI (if there is one).

When solicited ANI request is initiated using the Trace key, the Malicious Call Trace feature functionality remains unchanged, the ANI request is sent in addition to the normal MCT activities. The ANI information, when received from the card, is also printed on the MCT TTY as MCT ticket.

Figure 10
Automatic ANI request for incoming local call (decadic dial pulse mode)



Note:

From this point the call progress flow continues in the same way as it is done without the ANI reception.

553-AAA0037

Figure 11
Automatic ANI request for the MF shuttle call

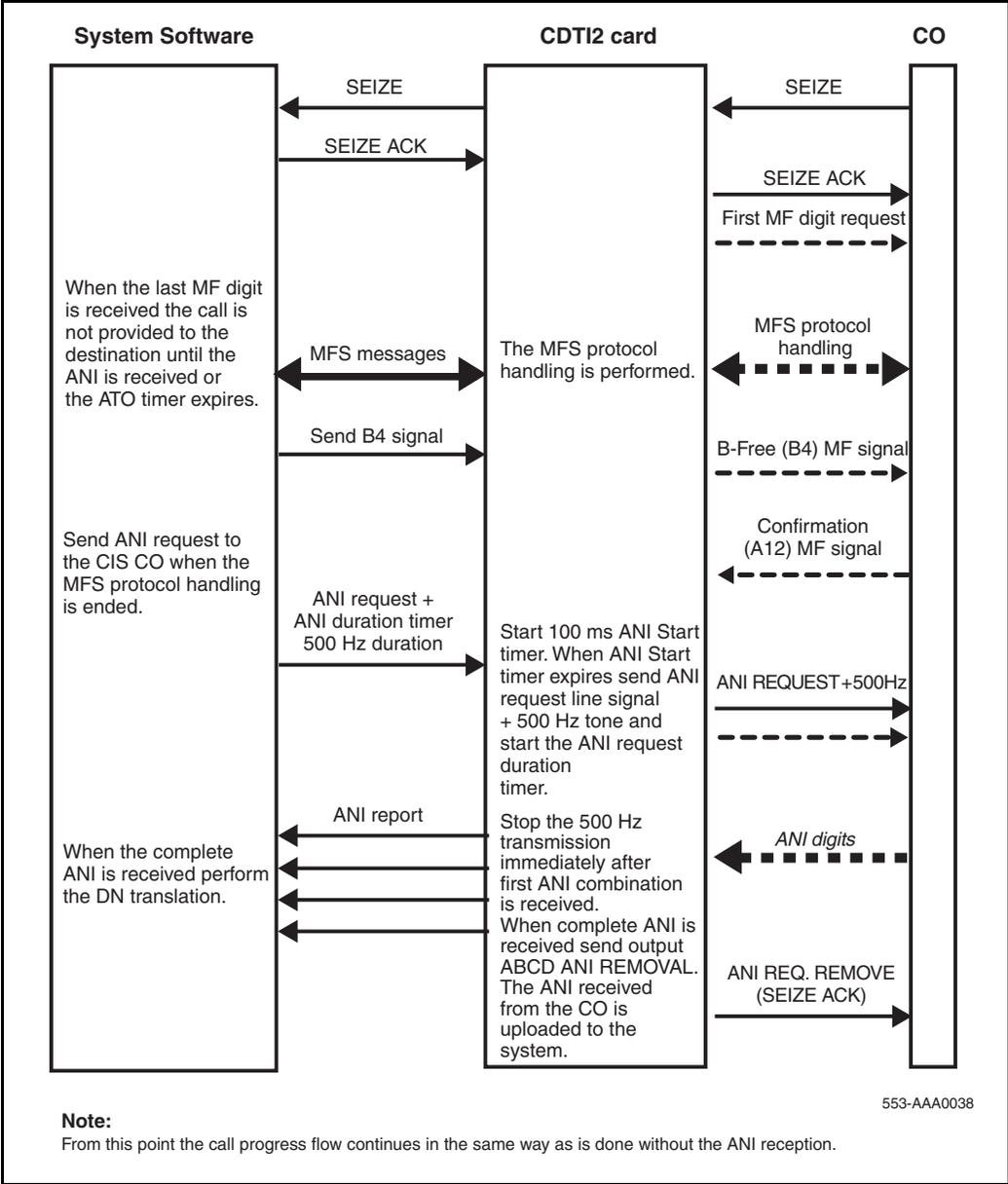
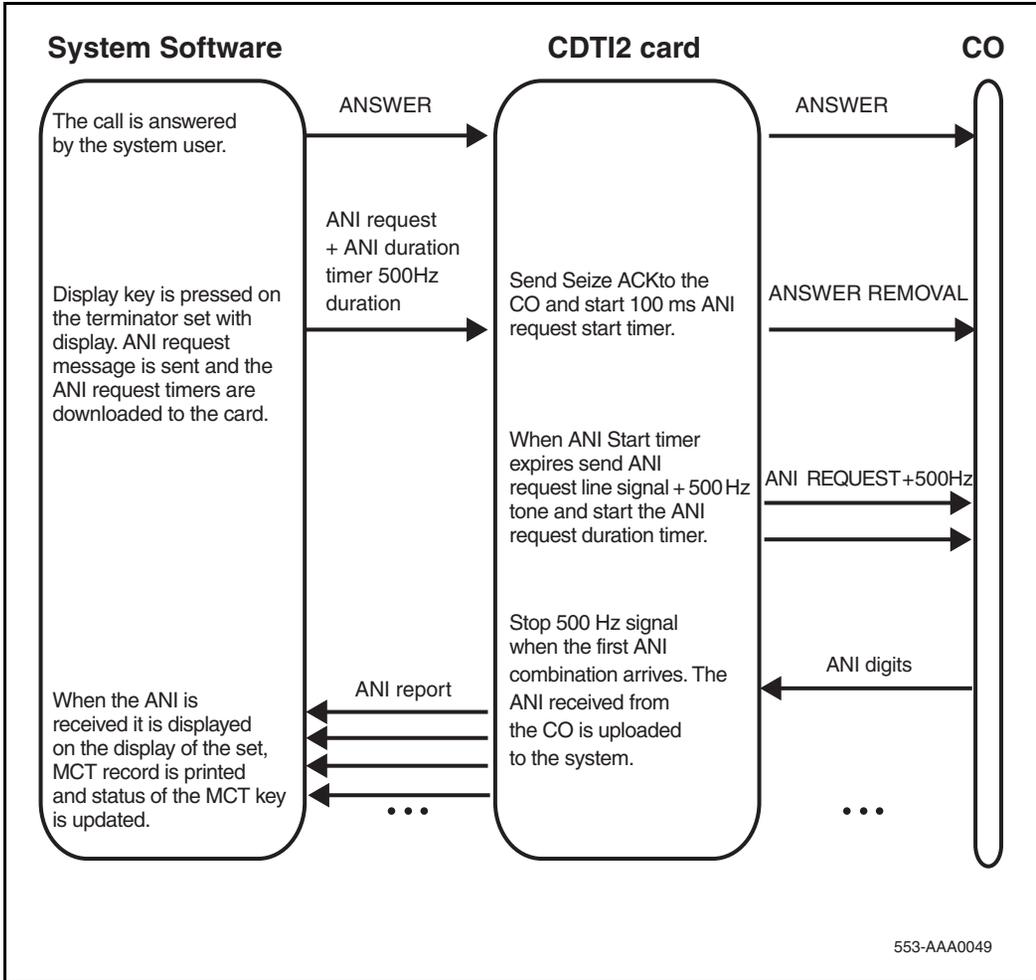


Figure 12
Manually solicited ANI request



ANI Gateways

The ANI digits which are received from the CIS CO party as a response to the automatic ANI request are propagated to the system terminating party if it is capable of receiving the CNI digits.

The ANI digits are propagated to the following terminating types:

- R2MFC trunks - the ANI to R2MFC CNI mapping is performed in the following way: all the ANI digits except for the ANI Calling Party Category Code (CAC) are used for the CNI composition, the ANI CAC is converted to the Multi-frequency Compelled (MFC) CNI CAC according to the CAC conversion tables.
- ISDN trunks - Meridian Customer Defined Integrated Services Digital Network (MCDN), EuroISDN: European Integrated Services Digital Network (EURO), Q Signaling (QSIG), DPNSS - the ANI to CLID/OLI mapping is based on the R2MFC CNI to CLID mapping.
- CIS trunks - the ANI to ANI mapping is implemented in the framework of the CIS ANI Digits Manipulation and Gateways Enhancements feature described in this document. The ANI information that is received from the incoming CIS DTI2 trunks is used by the CIS Gateways Enhancements feature to compose the ANI information to be downloaded to the outgoing CIS trunks.

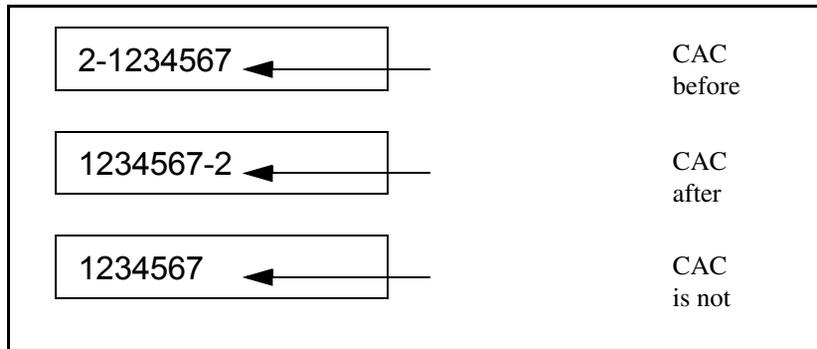
ANI Digits Display

The ANI digits are displayed on the display of the proprietary set or of the attendant console. The ANI digits are displayed starting from the left side of the display. The CAC display option is configured on the route data block level and it may be set to one of the following options (see Figure 13):

- display CAC before the ANI number
- display CAC after the ANI number
- do not display CAC

The CAC digit is separated from the ANI number by the minus sign. When displaying ANI, there are several options available for CAC display. If ANI request is repeated several times during a single call, each time new ANI digits overwrite old ANI digits on the display. If the DN key that requested the ANI information is placed on hold when the ANI digits arrive from the CDTI2 card, the ANI digits are not displayed. In this case, when the call is returned from hold, the ANI digits are displayed.

Figure 13
ANI Display options



ANI Digits in CDR

The ANI digits are placed in the CDR at the place intended for the R2MFC CNI digits. The CAC may be stored in the CDR together with the ANI digits. The presentation of the CAC in the CDR is configured at the route data block level as shown in the dash list below. The CAC may be either:

- placed before the ANI digits
- placed after the ANI digits
- not placed in the CDR

The CDR records containing ANI are generated only if the CDR options are configured in the customer data block (LD 15) as described in the CDR NTP.

The feature does not change the CDR output formats. The ANI digits are stored in the CDR in the same way as the R2MFC CNI digits.

Operating parameters

This feature requires the CIS DTI2 card NTCG01 vintage AC for Large Systems, and the CIS DTI2 card NTCG02 vintage AC for Small Systems.

Feature interactions

CIS Digital Trunk Interface and CIS Multifrequency Shuttle (MFS)

The feature is based on the CIS DTI2 interface features. The feature enhances the capabilities of CIS DTI2 but does not change previous functionality.

Malicious Call Trace (MCT)

The feature allows MCT to receive ANI digits on incoming local CIS DTI2 calls. There is no MCT feature that can be activated from the system on the CIS CO. When the ANI digits are received from the CO, they are printed on the MCT TTY and displayed on the display of the set or console that activated the MCT feature.

Feature packaging

No new package is introduced for this feature. The following packages are required:

- 2 Mbit Digital Trunk Interface (DTI2) package 129
- International Supplementary Features (SUPP) package 131
- Commonwealth of Independent States Trunks (CIST) package 221
- Optional - Malicious Call Trace (MCT) package 107

Feature implementation

This section contains the overlay procedures required to configure the ANI Reception feature.

Note: If Malicious Call Trace is used, turn to the Software Features Guide for detailed MCT implementation instructions.

- **LD 73** - The response MFA - Multifrequency Advanced has been added to the CISFW prompt to support the ANI Reception and the Firmware Dial Tone Detection features on the NTCK01AC and NTCK02AC cards. When operating in the CIS mode, the NTCG01AA/02AA cards should be configured as DP, and the NTCG01AB/02AB cards should be configured as MFS.
- **LD 14** - The CNA may be defined for the incoming DID DTI2 trunk if it is configured on the CDTI2 loop with the CIS Firmware version set to MultiFrequency Advanced in LD 73.
- **LD 16** -Set the prompt CISR to YES to allow access to the CIS Route prompts.

The following options are added for the CIS DTI2 routes:

- The Automatic ANI (AANI) option determines if the automatic ANI request should be sent to the CIS CO party at the end of dialing on incoming local calls. If the ANI information is required for gateway calls this option should be set to YES.
- The ANI Failure Treatment (ANFT) option defines the treatment for incoming calls which failed to provide ANI (see Note). The possible options are:
 - to provide the call to the required destination using the alternative ANI to indicate the ANI Reception failure
 - to drop the call
 - to transfer the call to the predefined intercept DN using the Alternative ANI to indicate the ANI Reception failure
- The Intercept DN (ITDN) prompt defines the intercept DN if the intercept treatment option is selected.

Note: The Alternative ANI is composed from the access code of the incoming CIS DTI2 DID route and the number of the incoming trunk within the route.

- The ANI TimeOut (ATO) timer which was used only for Outgoing CIS trunks is now also used for incoming CIS trunks to define timeout for the automatic ANI digits reception. The termination of the incoming call is delayed until either the ANI digits are received from the CDTI2 card, the ANI failure report is received from the CDTI2 card or the ATO expires. The ATO timer should be set at least twice as large as the following ARD timer.
- ANI Request Duration (ARD) timer is added to the route timers, the timer defines how long the CDTI2 card waits for the ANI information after sending the ANI REQUEST line signal. When the ARD timer expires for the first time the CDTI2 card performs an additional attempt to request the ANI information from the CIS CO. If the timer expires after the second attempt the ANI reception failure is reported to the system. The ARD timer is downloaded to the CDTI2 firmware. The timer should not exceed half of the ATO timer.
- CAC Display (CACD) option defines how the Category Access Code (CAC) is displayed on the proprietary set or attendant console. The possible options are:
 - to display CAC before the ANI
 - to display CAC after the ANI or
 - not to display CAC
- CAC in CDR (CACC) option defines how the Category Access Code (CAC) is stored in the CDR. The possible options are to:
 - store CAC before the ANI
 - store CAC after the ANI
 - not store CAC.

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 73 - Define Multifrequency Advanced (MFA) as firmware type definition.
- 2 LD 14 - Add Calling Number Identification Allowed (CNA) as a class of service for incoming Direct Inward Dial (DID) CIS DTI2 trunks.
- 3 LD 16 - Define the CIS Route.

LD 73 - Define Multifrequency Advanced (MFA) as firmware type definition.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	DTI2	Digital Trunk Interface loops.
FEAT	LPTI	Loop Timers and additional definitions.
CDTI2	YES	CDTI2/CSDTI2 card
...	...	
CISFW	MFA	Multifrequency Shuttle protocol handling + ANI Reception + Firmware Dial Tone Detection capabilities are supported by the card.
- MFSL	(0)-3	The MFS signals transmission level. The prompt appears when CISFW is set to MFS or MFA and the CISMFS package is equipped. The transmission level may be set to the following values: 0 = -7.3 dB 1 = -5.0 dB 2 = -3.5 dB 3 = 0 dB
- 500L	(0)-1	ANI request tone (500 Hz) transmission level. The prompt appears when CISFW is set to MFA. The transmission level may be set to the following values: 0 = -7.3 dB 1 = -3.5 dB

LD 14 - Add Calling Number Identification Allowed (CNA) as a class of service for incoming Direct Inward Dial (DID) CIS DTI2 trunks.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	DID	Direct Inward Dial trunks.
...
CLS	CNA	Class of Service. Allow Calling Number Identification for incoming CIS DTI2 DID trunks.

LD 16 - Define the CIS Route.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	RDB	Route Data Block.
TKTP	DID	Direct Inward Dial.
...
DTRK	YES	Digital Trunk Route
- DGTP	DTI2	Digital Trunk Type
...
ICOG	ICT	Incoming Trunk.
...
CNTL	YES	Allows change to controls or timers.
TIMR	ARD 512-(1024)-2048	ANI Request Duration timer, defines duration of the ANI request signal. The timer is stored as increments of the 256 ms.

TIMR	ATO 2048-(2560)-5120	ANI Timeout timer. Defines how long the system waits for the ANI information from the CIS CO. If timer expires before the ANI is uploaded from the CDTI2 card, the system treats the call as it is defined in the ANI Failure Treatment option. The ATO should be at least twice as large as the ARD.
CISR	YES	CIS Route
- CACD		The option defines how the CAC is displayed on the display of the set or console. The option also controls presentation of the CAC in the messages to the auxiliary processors. The options are:
	(NO) BEF AFT	NO = do not display CAC. BEF= display CAC before ANI. AFT= display CAC after ANI.
- CACC		Defines how CAC is stored in CDR.
	(NO) BEF AFT	NO = do not store CAC BEF = store CAC before ANI AFT = store CAC after ANI
- AANI		The option defines if the Automatic ANI request should be sent to the CIS CO when the incoming calls are originated from the CIS CO to the trunks within this route.
	(NO) YES	NO = do not send automatic request. YES = send automatic request.
- ANFT		The prompt defines the ANI Failure Treatment option. It is prompted only if the AANI is set to YES. The possible options are:
	(CONT) FAIL ITDN	Provide call to the required destination. Drop call. Transfer call to intercept DN.
- - ITDN	<DN>	Intercept DN (up to 8 digits) defines the DN to transfer the incoming calls which failed to provide ANI. The prompt appears if the ANFT option is set to ITDN.

Feature operation

Manual ANI request is made by pressing a calling number display key on the attendant console or on the proprietary set followed by pressing the SCR key or by pressing the TRC key on the proprietary set or attendant console.

CIS Toll Dial Tone Detection

Contents

This section contains information on the following topics:

Feature description	1123
Operating parameters	1127
Feature interactions	1127
Feature packaging	1127
Feature implementation	1127
Feature operation	1129

Feature description

The Commonwealth of Independent states (CIS) Toll Dial Tone Detection feature allows the system to detect a dial tone from a CIS Toll Central Office (CO) on outgoing toll calls. When received, the tone indicates that the CIS CO is prepared to collect dial pulse (decadic) digits from system for outgoing toll calls. The feature is implemented only for CIS DTI2 trunks.

The CIS DTD feature introduces CIS toll outpulsing criteria, which are terms that define conditions that need to be satisfied to allow the system to start the outpulsing of the decadic digits on the outgoing Toll CIS DTI2 calls (see Figure 14).

The criteria is composed as a combination of two events: dial tone detection and ANI interaction. It may include only dial tone detection, only ANI Interaction, dial tone or ANI, dial tone and ANI. The criteria is defined at the route data block level. The detection is performed by the CIS DTI2 cards (NTCG01AC and NTCG02 AC) and when the criteria is satisfied the system receives a report from the card. The system postpones the outpulsing of the digits until the report. If the report does not arrive before the ATO timer expiration, defined in LD 16, the outpulsing may continue, or the call may be disconnected and busy tone provided to customer.

Outgoing toll CIS DTI2 calls can be made using the indirect or direct connection method (see Figure 15 and Figure 16).

Figure 14
CIS network block diagram

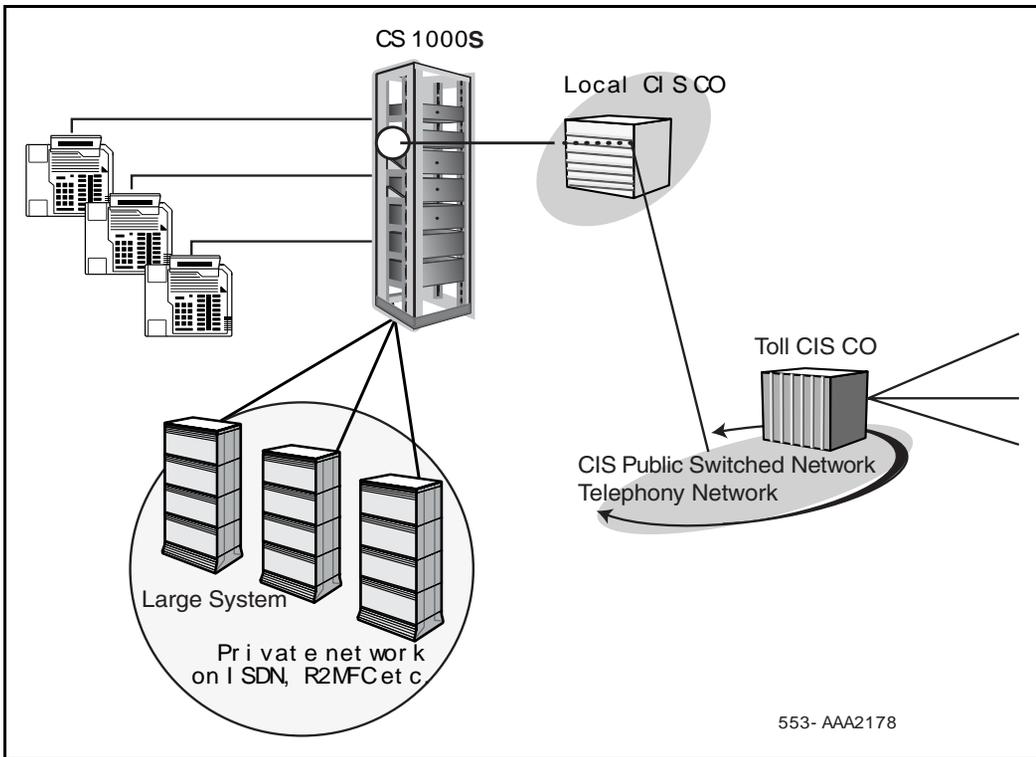


Figure 15
Indirect outgoing toll call with dial tone detection

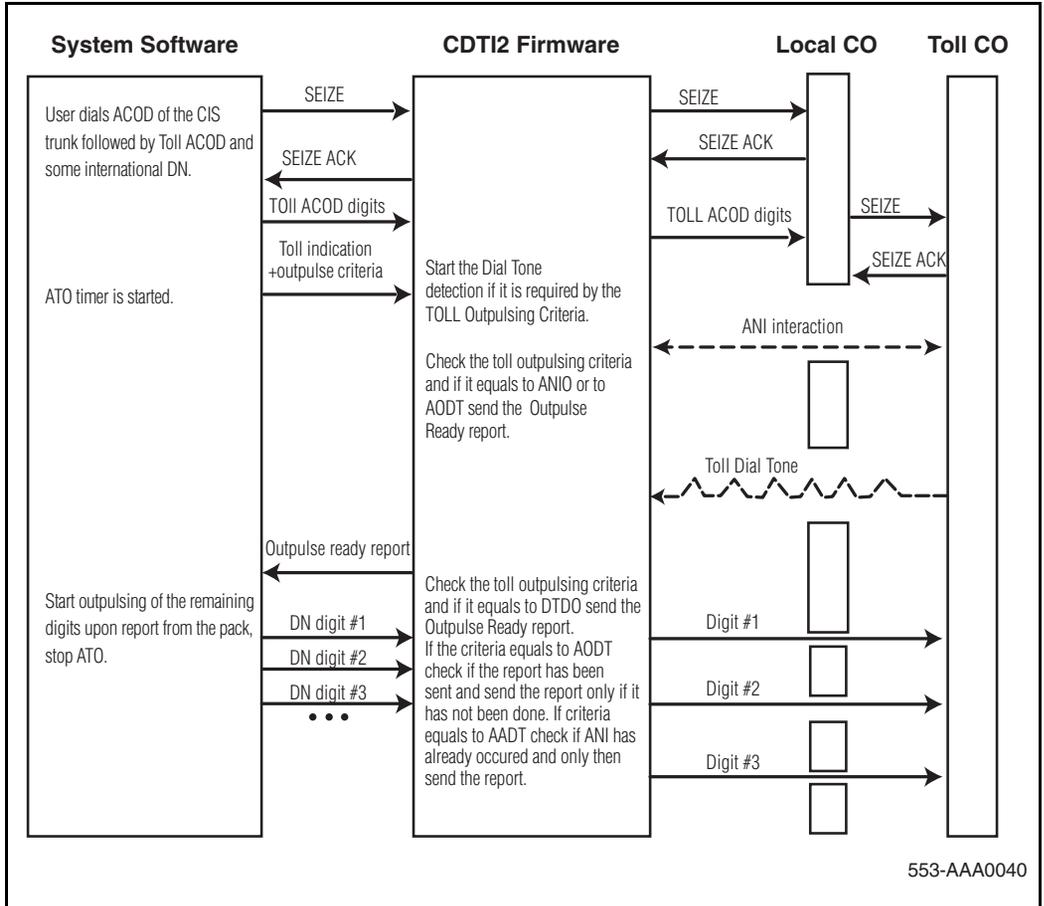
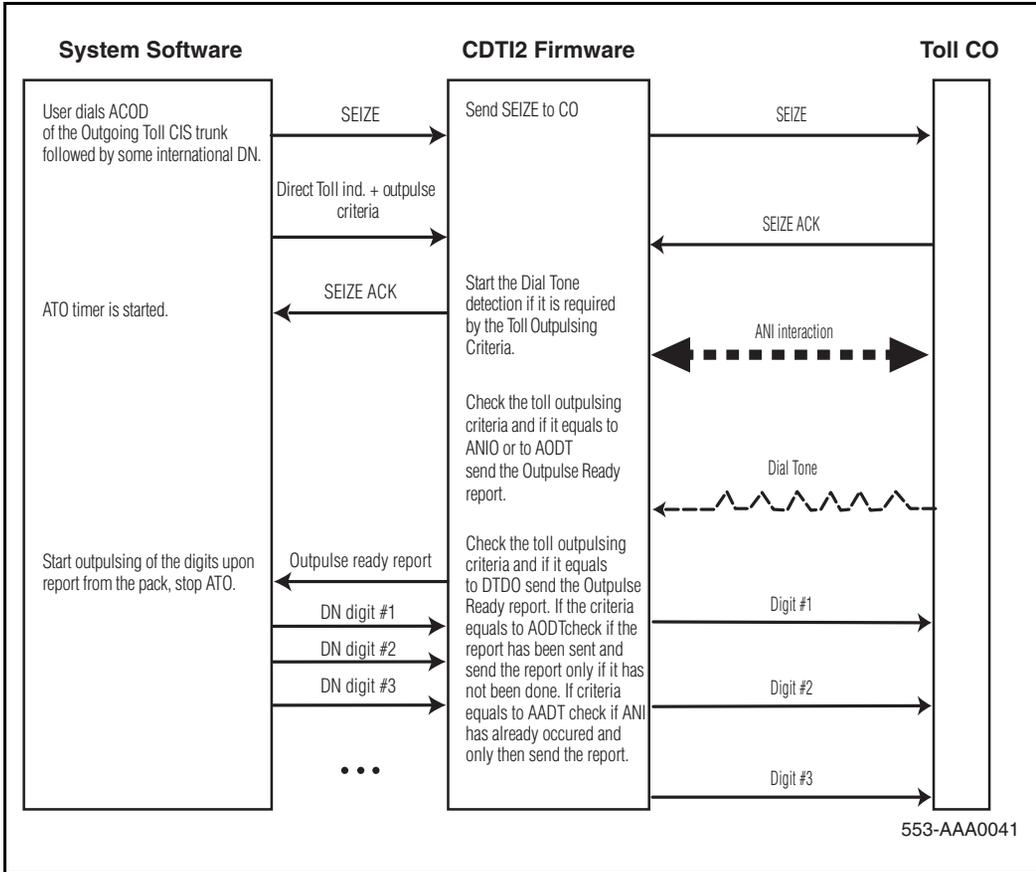


Figure 16
Direct toll call with dial tone detection



Operating parameters

This feature requires the CIS DTI2 card NTCG01AC for Large Systems. Card NTCG02AC is used in Small Systems. These CIS DTI2 cards have increased functionality that allows detection of the CIS toll dial tone.

Feature interactions

CIS 2 Mbit Digital Trunk Interface (CIS DTI2)

CIS DTD feature improves the reliability of outgoing CIS DTI2 toll calls by adding the ability to use the dial tone provided by the CIS CO as criteria to start outpulsing the decadic digits to the toll CIS CO.

Feature packaging

No new package is introduced for this feature. The following packages are required:

- 2 Mbit Digital Trunk Interface (DTI2) package 129
- International Supplementary Features (SUPP) package 131
- Commonwealth of Independent States Trunks (CIST) package 221

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 73 - Add Multifrequency Advanced (MFA) as a CIS firmware type.
- 2 LD 16 - Specify CIS route information.

LD 73 - Add Multifrequency Advanced (MFA) as a CIS firmware type.

Prompt	Response	Description
REQ	CHG	Change existing data.
TYPE	DTI2	Digital Trunk Interface loops.
FEAT	LPTI	Loop timers and additional definitions.
CDTI2	YES	CDTI2/CSDTI2 card
...	...	
CISFW	MFA	Multifrequency Shuttle protocol handling + ANI Reception + firmware dial tone detection capabilities are supported. MFA capabilities are supported by CIS CDTI2 card (NTCG01AC for Large Systems, or NTCG02AC for Small Systems).

LD 16 - Specify CIS route information.

Prompt	Response	Description
REQ	NEW CHG	Add new data. Change existing data.
TYPE	RDB	Route Data Block.
TKTP	COT	Central Office Trunk
...
ICOG	OGT	Outgoing only trunk.
...
CNTL	(NO) YES	Deny/Allow changes to controls or timers.

- TIMR	ATO 128-(4992)-65408	ANI timeout timer in milliseconds. For CIS outgoing trunk routes this defines the time delay performed after the outpulsing of the toll access code. During this delay further outpulsing is temporarily halted until the special message from the card firmware confirms the satisfaction of the CIS Toll outpulsing criteria. If the timer expires before satisfaction the behavior of the system depends on the COAT prompt. If COAT is set to YES the outpulsing continues on timeout. If COAT is set to NO the call is dropped.
...
CISR	YES	CIS Route
- DTOC	(NO) YES	Deny/Allow Direct Toll Connection.
- CTOC	(DTDO) AADT ANIO AODT	CIS Toll Outpulsing Criteria. DTD Only. ANI And DTD. ANI Only. ANI Or DTD.
- COAT	(NO) YES	NO = Drop Call when ATO timer expires. YES = Continue Outpulsing when ATO timer expires.

Feature operation

No specific operating procedures are required to use this feature.

CLASS: Calling Number and Name Delivery

Contents

This section contains information on the following topics:

Feature description	1131
Operating parameters	1158
Feature interactions	1159
Feature packaging	1165
Feature implementation	1165
Feature operation	1168

Feature description

The Custom Local Area Signaling Service (CLASS) Calling Number and Name Delivery (CND) feature enables the system to send the calling number and/or calling name to a CLASS set when a call is presented to it, per the Bellcore CLASS CND standard. Once the system delivers the CLASS CND information, it is completely up to the CLASS set to determine how the information is to be displayed. The CLASS set can even choose to ignore certain information by not displaying it.

A CLASS set is, by definition, any non-proprietary analog set with an integrated display and a Frequency Shift Key (FSK) modem receiver, or with a FSK modem receiver built-in display attachment. The CLASS sets are configured on the system as analog (500/2500 type) sets using LD 10, and are supported by the existing 500/2500 type peripheral line cards.

The calling number and/or calling name data is delivered from the system to the CLASS sets using FSK signaling by a CLASS modem (CMOD) unit. The CMOD units are configured using LD 13. They are supported by an Extended CLASS Modem (XCMC) IPE line card, the NT5D60AA.

Up to 255 CMOD units may be configured on a system that is equipped with the CLASS CND feature. Once configured, the CMODs are shared throughout a multi-customer system. When a call is presented to a CLASS set, an available CMOD is automatically allocated.

Upon reaching the CND delivery interval, the appropriate CND information is delivered to the CLASS set. The CND delivery interval is the first silent interval, after ringing has been applied for a new call, that is greater than two seconds. The allocated CMOD unit is released when ringing resumes on the CLASS set after the CND delivery interval, or when the call is disconnected, answered, or redirected. If the call is disconnected, answered, or redirected before the CND delivery interval has been reached, then no CND information is delivered. If the call is disconnected, answered, or redirected while the CND information is being delivered, the CND delivery is immediately terminated. Figures 17 to 20 depict a typical call processing and system resource allocation scenario for a new call being presented on a CLASS set.

Figure 17
System allocation when a CLASS set is idle

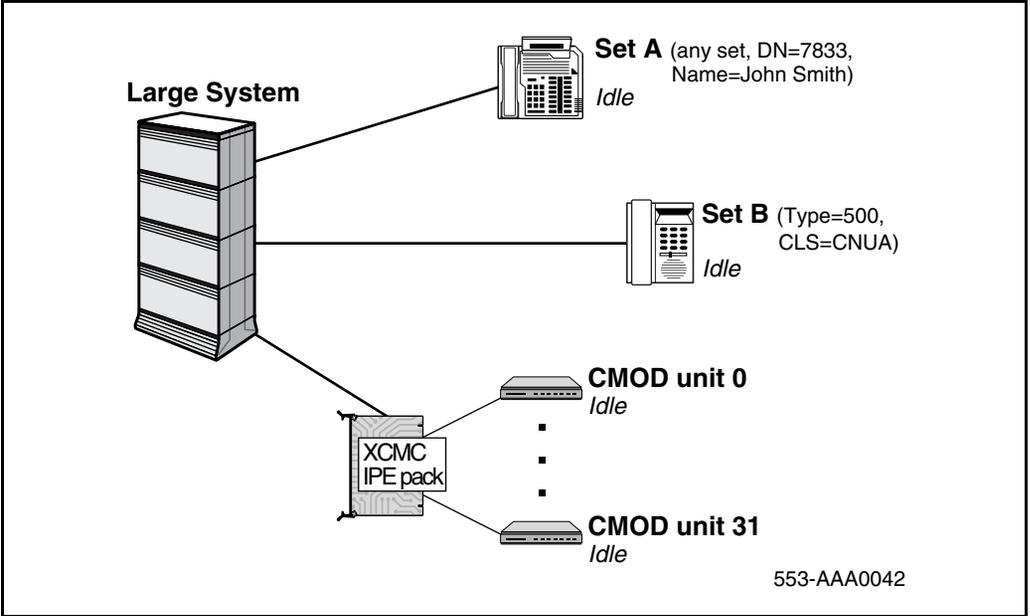


Figure 18
System resource allocation when a new call begins to ring on the CLASS set

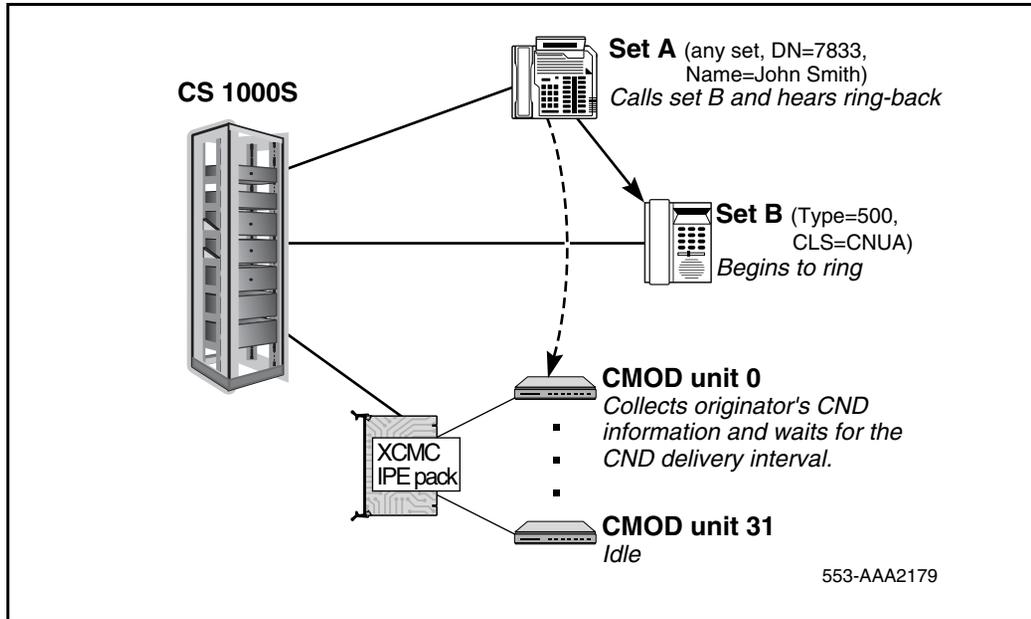


Figure 19
System resource allocation during the CND delivery interval

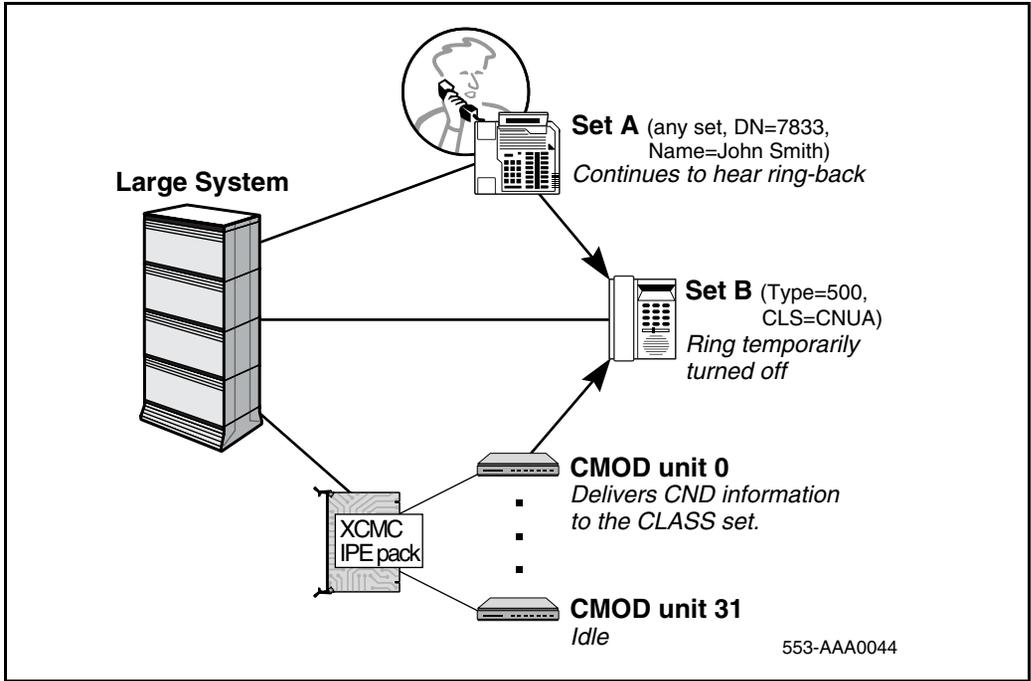
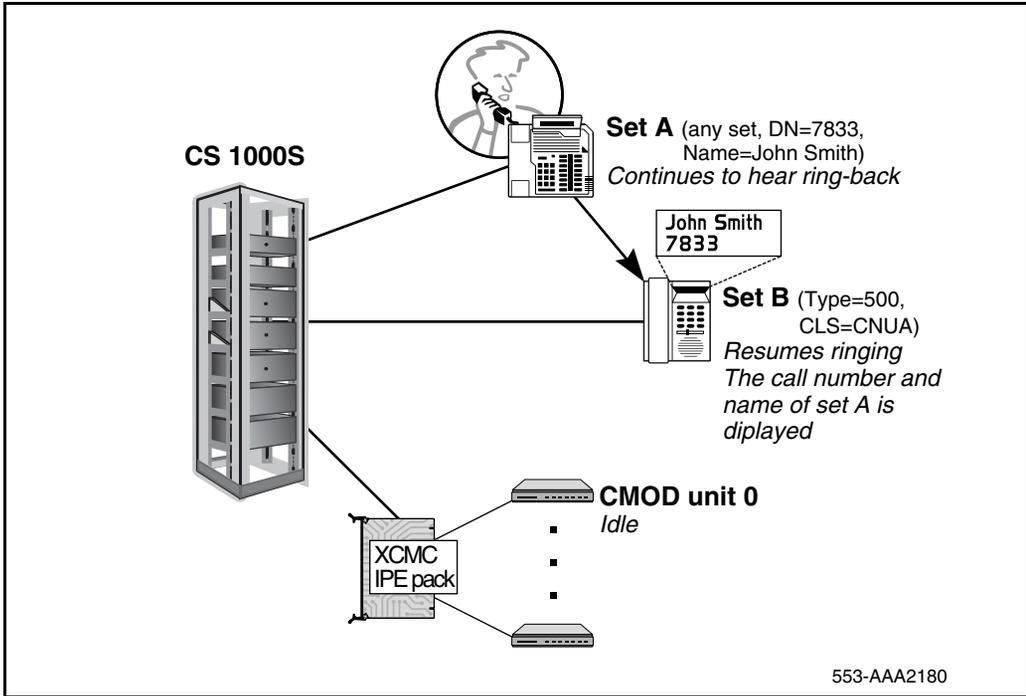


Figure 20
System resource allocation after the CND delivery interval



Configure CND Class of Service on CLASS sets

In LD 10, the system administrator may configure a CLASS set to deliver both Calling Number Delivery, Calling Name Delivery, or both.

To activate only Calling Number Delivery, the station set is to be configured with one of the following class of service:

- CLASS Calling Number Single Data Message Format Allow (CNUS) or
- CLASS Calling Number Multiple Data Message Format Allow (CNUA)

Subsequently, whenever a call is presented to that set, the software will deliver the date and time stamp information (see the Date and time stamp information section which follows below) and the calling number information (see the Calling number information section which follows on page 1138), per the Bellcore CLASS CND delivery standard.

To activate only Calling Name Delivery, the station set is to be configured with the Calling Name Multiple Data Message Format Allow (CNA A) class of service. Subsequently, whenever a call is presented to that set, the system software will deliver the date and time stamp information and the calling name information (see the Calling name information section on page 1139), per the Bellcore CLASS CND delivery standard.

To activate both Calling Number Delivery and Calling Name Delivery, the station set is to be configured with both the CLASS Calling Number Multiple Data Message Format Allow (CNUA) and the CLASS Calling Name Multiple Data Message Format Allow (CNA A) class of service.

Subsequently, whenever a call is presented to that set, the system software will deliver the date and time stamp information, the calling number information, and the calling name information, per the Bellcore CLASS CND delivery standard.

Date and time stamp information

The date and time stamp information delivered to a CLASS set is in the format *mm dd hh mm*, where *mm* is a two-digit number for the month, *dd* is a two-digit number for the day of the month, *hh* is a two-digit number for the military hour of the day, and *mm* is a two-digit number for the minute of the hour. It is up to the CLASS set to display the date and time stamp information.

Calling number information

For a non-ISDN trunk-to-CLASS set call, the calling number delivered to the CLASS set will be the incoming In-Band ANI, or if no ANI is passed on, then the calling number unknown indicator is delivered in place of the calling number. The calling number unknown indicator, per Bellcore CLASS CND delivery standard, refers to the ASCII "O" that is sent in place of the calling number.

For an ISDN trunk-to-CLASS set call, the calling number delivered to the CLASS set will be the CLID received from the incoming ISDN trunk (if the CLID is longer than 10 digits, only the first 10 will be delivered). If the incoming CLID is defined as display denied (the originating set has Display Digit Denied, Calling Party Privacy, or Calling Line Identification Restriction active), then the calling number privacy indicator is delivered instead of the calling number, or, if no CLID is passed on by the incoming trunk, then the calling number unknown indicator is delivered in place of the calling number. The calling number privacy indicator, per Bellcore CLASS CND delivery standard, refers to the ASCII "P" that is sent in place of the calling number.

For a station (set)-to-CLASS set call, the calling number delivered to the CLASS set will be one of the following:

- If the originating set has Display Digit Denied active (CLS = DDGD in LD 10 or 11), then the calling number privacy indicator is delivered in place of the calling number.
- If the CLID entry of the originating DN specifies that it is to be identified by its internal DN (CLASS_FMT = DN in LD 15), then the originating DN is delivered.
- If the CLID entry of the originating DN specifies that it is to be identified by its local number (CLASS_FMT = LCL in LD 15), then the local public number associated with the originating DN is delivered, (if the CLID is longer than 10 digits, only the first 10 will be delivered). The local public number is composed by the ISDN CLID Enhancements feature, which forms the calling number by concatenating the customer defined home local number (HLCL in LD 15) and the originating DN.

- If the CLID entry of the originating DN specifies that it is to be identified by its national number (CLASS_FMT = NTN in LD 15), then the national public number associated with the originating DN is delivered (if the number is longer than 10 digits, only the first 10 will be delivered). The national public number is composed by the ISDN CLID Enhancements feature, which forms the calling number by concatenating the customer defined home national number (entered using prompt HNTN and HLCL in LD 15) and the originating DN.
- If the originating set is assigned with an undefined CLID entry, then the originating DN is delivered.

For a station (attendant)-to-CLASS set call, the calling number delivered to the CLASS set will be one of the following:

- If CLID entry 0 specifies that it is to be identified by its internal DN (CLASS_FMT = DN in LD 15), then the customer's attendant DN (the ATDN in LD 15) is delivered.
- If CLID entry 0 specifies that it is to be identified by its local number (CLASS_FMT = LCL in LD 15), then the local public number associated with the customer's Listed Directory Number 0 (the LDN0 in LD 15) is delivered (if the number is longer than 10 digits, only the first 10 will be delivered).
- If CLID entry 0 specifies that it is to be identified by its national number (CLASS_FMT = NTN in LD 15), then the national public number associated with the customer's Listed Directory Number 0 (the LDN0 DN in LD Overlay) is delivered (if the number is longer than 10 digits, only the first 10 will be delivered).
- If CLID entry 0 is not configured, then the customer's attendant DN (the ATDN in LD Overlay) is delivered. The calling number for calls originated by an attendant is composed using CLID entry 0, as per the ISDN CLID Enhancements feature.

Calling name information

For a non-ISDN trunk-to-CLASS set call, the calling name unknown indicator is delivered to the CLASS set in place of the calling name. The calling name unknown indicator, per Bellcore CLASS CND delivery standard, refers to the ASCII "O" that is sent in place of the calling name.

For an ISDN trunk-to-CLASS set call, the calling name delivered to the CLASS set will be the calling name received from the incoming ISDN trunk (if the calling name is longer than 15 characters, only the first 15 will be delivered). If the calling name is defined as presentation denied (the originating set has Display Name Denied, Calling Party Privacy, or Calling Line Identification Restriction active), then the calling name privacy indicator is delivered in place of the calling number, or, if no calling number is passed on by the incoming trunk, then the calling name unknown indicator is delivered in place of the calling name. The calling name privacy indicator, per Bellcore CLASS CND delivery standard, refers to the ASCII "P" that is sent in place of the calling name.

For a station (set)-to-CLASS set call, the calling name delivered to the CLASS set will be one of the following:

- The calling name associated with the originating DN (if the calling name is longer than 15 characters, only the first 15 will be delivered).
- If no name is defined with the originating DN, then the calling name unknown indicator is delivered in place of the calling name.
- If the originating set has Display Name Deny Class of Service (CLS=NAMD in LD 10 or 11), then the calling name privacy indicator is delivered in place of the calling name.

For a station (attendant)-to-CLASS set call, the calling number delivered to the CLASS set will be one of the following:

- The calling name associated with the customer's attendant DN (if the calling name is longer than 15 characters, only the first 15 will be delivered).
- If no name is associated with the customer's attendant DN, then calling name unknown indicator is delivered in place of the calling name.

Network engineering for CLASS sets

In a system with a single group network, the network internal blocking is determined by the concentration ratio of equipped ports on Intelligent Peripheral Equipment and the number of interfaced loops or superloops. Depending on traffic engineering, a non-blocking network is achievable.

In a multi-group system, intergroup junctors are required to switch calls between two network groups. Due to the concentration of time slots from a network group to that of inter-group junctors, blocking may occur. This is true for a multi-group system with or without CLASS sets. However, since the CLASS feature depends on a voice path to deliver Calling Name and Number Delivery (CND) to a set, excessive congestion at the inter-group junctor could block the delivery of CND and diminish the usefulness of the feature, as well as impact the grade of service of the existing equipment on the system.

This engineering section examines the inter-group junctor blocking issue and provides recommend engineering rules to alleviate potential network congestion problems.

In general, the engineering effort for CLASS feature can be classified into three categories:

A new site following engineering rules (see page 1147) requires no inter-group junctor traffic check-off.

An existing or new site with relatively low inter-group junctor traffic, will require only one XCMC (Extended CLASS Modem Card) IPE pack that can serve all CLASS sets in a multi-group system.

An existing site with heavy inter-group junctor traffic will require either moving trunks/sets around between network groups when only one XCMC pack is equipped or providing an XCMC pack (or packs) for each group.

System multi-group network

This section is only relevant to a system multi-group network. A single group system does not have inter-group junctors. Therefore, special engineering on the junctor is not applicable. The Cabinet system have network architectures that are different from other systems.

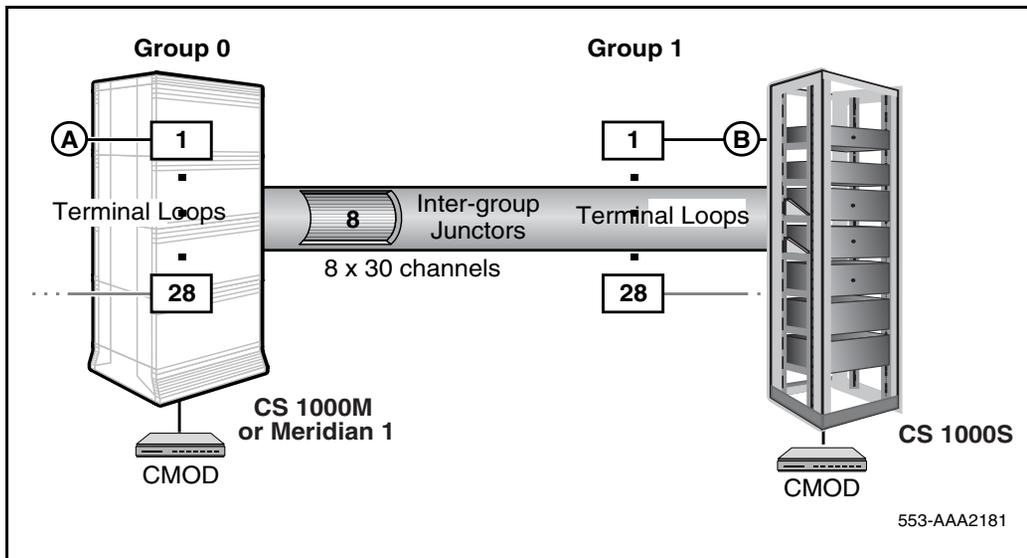
It has a non-blocking network and does not require any network engineering, except to use Table 15 CMOD (Class MODem) capacity table to find the number of modems needed.

In general, inter-group junctor blocking is most severe when there are only two groups, since under typical traffic distribution assumptions, 50% of calls will stay in the originating group and 50% will terminate on the second group through junctors, unless a Community Of Interest (COI) is known and taken into consideration in engineering to minimize inter-group traffic.

Under the assumption of even distribution of traffic, the percentage of traffic to an inter-group junctor will drop to 33.3% of the total group traffic for a three-group system. Similarly, the junctor traffic will be 25% of group traffic for a four-group system and 20% for a five-group system.

A simplified system with two-group network and CLASS sets is shown by Figure 21.

Figure 21
A system with a two-group network



Note that traffic to a CLASS set can be originated from a non-CLASS set, another CLASS set or an incoming trunk. Since trunks have more traffic impact on junctor blocking, they are used to illustrate the feature operation, however, both sets and trunks can be traffic sources to CLASS sets.

The maximum size system comprises of 5 network groups. Each group has 32 loops of which 28 can be terminal loops, the rest are service loops (TDS loops for tones, conference and music).

From Group 0 to Group 1, as shown in Figure 21, there are 8 one-way junctors. Similarly, there are another 8 one way junctors from Group 1 to Group 0. For practical purposes, they can be treated as 8 two-way junctors. A two-way path is equal to a voice channel. A junctor has 30 voice traffic channels as on a loop. Each two-way channel represents a conversation path. A channel is also used to deliver the CND from the CMOD to a CLASS set.

CLASS feature operation

A call originated from Set A (or trunk A) seeks to terminate on a CLASS set B. When B starts to ring, A will hear ringback. A unit in CMOD (CLASS Modem) is assigned to collect originator's CND information and waits for the CND delivery interval. After the first ring at B, a silence period (deliver interval) ensues, the CMOD unit begins to deliver CND information to the CLASS set.

The CND information of a traffic source (A) is a system information, which is obtained by the system when a call is originated. During the two-second ringing period of the CLASS set B, A's CND is delivered to CMOD through SSD messages (using a signaling channel only). When the CND information is sent from CMOD to CLASS set B, it is delivered through a voice path during the four-second silence cycle of set B. The CMOD unit is held for a duration of six seconds.

If the XCMC (Extended CLASS Modem Card) IPE pack, which provides up to 32 CMOD units, is located in the IPE of Group 0, the CMOD unit in the pack will receive CND data through the SSD messages and use one of the voice channels of the inter-group junctor to deliver it to CLASS set B in Group 1.

If the XCMC IPE pack is located in Group 1, the system will deliver SSD messages containing CND information to CMOD and then send it to Set B during the delivery interval through a voice path, which is an intra-group channel not involving an inter-group junctor.

When CMOD units and CLASS sets are co-located in the same network group, there are no voice paths on the inter-group junctor required to deliver CND information; when they are equipped on different groups, inter-group junctors must carry CND traffic. The resource allocation algorithm will search for a CMOD unit located in the same group as the terminating CLASS set first before it attempts to use a CMOD unit from a different group.

Inter-group junctor capacity

The time slot allocation algorithm for inter-group junctors is somewhat different from regular network loops, however, it is a close approximation to use the network loop capacity for junctor capacity, since they each have 30 traffic channels.

In order for the connection between a CMOD unit and the remote set (on a different group) to meet the Grade Of Service (GOS) of the system for internal call setup, traffic on the loop and inter-group junctor should meet normal GOS requirements, that is 660 CCS per loop or junctor.

If we let an inter-group junctor be loaded to 660 CCS like a loop, the total allowed traffic at eight junctors is 5280 CCS ($=660 \times 8$). At 6 CCS per CLASS set, the allowed number of sets generating inter-group traffic is 880 ($=5280/6$). If half of set traffic is intra-group, and the other half inter-group, the allowed number of CLASS sets in Group 1 is 1,760 ($=880/0.5$). On per loop basis, each loop can be equipped with 62 ($=1760/28$) CLASS sets.

Similarly, a 3-group network is likely to have 1/3 of traffic remaining in the group, 1/3 of traffic going to the next group, and another 1/3 of calls going to the third group. By using this inverse proportion approach to breakdown traffic flow at junctors, the capacity of a network group in terms of CLASS sets is summarized in Table 14. The entry in the Table 14 is the threshold for inter-group junctor traffic check-off.

The table entry indicates that in a two group system, the second group is allowed to have 1760 CLASS sets or a combination of CLASS and equivalent sets without a need to move sets or trunks around to reduce inter-group junctor traffic. Due to higher traffic, an agent set or a trunk is counted to be equal to four regular sets. The conversion needs to be done before using Table 14.

If the number of equipped sets (CLASS or otherwise) or equivalent sets (sets converted from trunks and agent sets) is less than the threshold, the junctor traffic is expected to be low. There is no special engineering necessary for CLASS sets (other than providing required modems).

Note that the junctor traffic issue can be ignored if each group is fully equipped with sufficient CMOD units to handle CLASS sets within the group. It is the attempt to use one XCMC pack to serve multiple groups that requires special attention to inter-group traffic. As long as CLASS service is not impacted by a traffic in-balance already existed in the system, it is not the objective of this engineering guideline to solve that problem.

Once the threshold is exceeded, re-configuration of the system is necessary to reduce junctor congestion. The detailed engineering rules are given later in this document.

Table 14
Maximum CLASS sets per group (based on inter-group junctor capacity limitation)

No. of Groups	Sets/Group
2	1760
3	2933
4	3520
5	4080

Note: Convert a trunk or an agent set to four equivalent sets before applying Table 14.

A single group system can have as many CLASS sets as each loop allows. The engineering of the system is not different from that of non-CLASS sets, since there is no inter-group junctor involved. The only engineering required is to find the required number of CMOD units from Table 15 to serve a given number of CLASS sets.

Note that the capacity per group for multigroup systems assumes no trunking in that particular group (or trunks have been converted to equivalent sets). Therefore, the total system capacity, by taking into account trunks, agent sets and service circuits, will not be as large as a straight multiple of number of groups by the number of sets per group.

The number of allowed CLASS sets per group in Table 14 is strictly a function of inter-group traffic (except for five-group systems). When a system becomes five-group, the junctor capacity is no longer a bottleneck under the assumption of even traffic distribution. The system capacity will become unrealistic if it is purely based on the inter-group junctor capacity, therefore, other system resources, particularly the system CPU, need to be checked. The number 4080 is based on loop traffic (28 loops/7 superloops), not junctor capacity.

If a group comprises of both regular sets and CLASS sets, the total number of sets in the group should not exceed the quoted number in the table. If trunks and agent sets are included in the group, convert them to “equivalent sets” before using Table 14. More details are described in the engineering guide.

Table 15 shows the CMOD capacity. It provides the number of CMOD units required to serve a given number of CLASS sets with the desired grade of service. The required number of CMOD units should have a capacity range whose upper limit is greater than the number of CLASS sets equipped in a given configuration.

The procedure to use Table 15 is further illustrated in engineering examples starting on page 1149.

Table 15
CMOD unit capacity

CLAS S Set	1-2	3-7	8-27	28- 59	60- 100	101- 150	151- 200	207- 267
CMO D Unit	1	2	3	4	5	6	7	8
CLAS S Set	268- 332	333- 401	402- 473	474- 548	549- 625	626- 704	705- 785	786- 868
CMO D Unit	9	10	11	12	13	14	15	16
CLAS S Set	869- 953	954- 1039	1040 - 1126	1127 - 1214	1215 - 1298	1299 - 1388	1389 - 1480	1481 - 1572

CMO D Unit	17	18	19	20	21	22	23	24
CLAS S Set	1573 - 1665	1666 - 1759	1760 - 1854	1855 - 1949	1950 - 2046	2047 - 2142	2143 - 2240	2241 - 2338
CMO D Unit	25	26	27	28	29	30	31	32
CLAS S Set	2339 - 2436	2437 - 2535	2536 - 2635	2637 - 2735	2736 - 2835	2836 - 2936	2937 - 3037	3038 - 3139
CMO D Unit	33	34	35	36	37	38	39	40
CLAS S Set	3140 - 3241	3242 - 3344	3345 - 3447	3448 - 3550	3551 - 3653	3654 - 3757	3768 - 3861	3862 - 3966
CMO D Unit	41	42	43	44	45	46	47	48
CLAS S Set	3967 - 4070	4071 - 4175	4176 - 4281	4282 - 4386	4387 - 4492	4493 - 4598	4599 - 4704	4705 - 4811
CMO D Unit	49	50	51	52	53	54	55	56
CLAS S Set	4812 - 4918	4919 - 5025	5026 - 5132	5133 - 5239	5240 - 5347	5348 - 5455	5456 - 5563	5564 - 5671
CMO D Unit	57	58	59	60	61	62	63	64

General engineering guidelines for non-Call Center applications

In a non-call center application, there is no significant number of agent sets. Therefore, no agent set to regular set conversion is needed. The only type of port requiring special treatment is trunk.

Configurations following engineering rules (no re-configuration required)

The following engineering rules should be followed to avoid the need to re-configure a switch to accommodate the CLASS feature.

- 1** Provide the number of CMOD units serving all CLASS sets in the system based on the capacity table (Table 15).
- 2** Equip all CLASS sets in one network group.
- 3** Equip the XCMC IPE pack on the network group with CLASS sets.

If the system is a single group system, or if above rules are fully met, no further engineering is necessary. However, in case of an existing multi-group site upgrading to provide CLASS feature, we may need to re-configure the system in order to satisfy rule (2).

When the above rules are not fully met, continue the system engineering by following the procedure in the next subsection.

Re-configuration may be required (when engineering rules are not fully followed)

When above rule (2) can not be satisfied in a new site or an existing one, the following guidelines are designed to minimize network blocking, and to determine whether a re-configuration (to move trunks and sets around) or to provide an XCMC pack per group is necessary.

- 1 To use Table 15 to estimate CMOD unit requirements, consider only CLASS sets (no trunks or non-CLASS sets).
- 2 If CLASS sets are equipped in more than one group, locate the XCMC IPE pack in the group with most CLASS sets.
- 3 Use Table 14 to decide whether re-configuration is required. For a network group with trunks, regular sets and CLASS sets, convert trunks to sets by using the formula: 1 trunk = 4 sets (called equivalent sets), and then add up the total.

Check threshold in Table 14, if the number of equivalent sets is less than 1760 (for example, for a two-group system), there is no need to re-configure the system.

If the number is greater than 1760, we need to move some of the CMOD units to a second XCMC IPE pack on another group (when CLASS sets are scattered in two groups), or move some sets or trunks from one group to another group to satisfy the threshold.

The following examples will show some of the engineering details of dealing with various alternatives.

To simplify discussion, the network group 0 has minor number of CLASS sets. The majority of CLASS sets are in group 1 (refer to Figure 21).

Engineering examples for non-Call Center applications***One XCMC pack serving a single group system***

No special engineering rule is needed for a single or half group system (CS 1000M SG, Meridian 1 PBX 61C, and CS 1000M HG). Look up Table 15 to find the required number of CMOD units to serve the given CLASS sets. For example, to serve a CS 1000M SG with 400 CLASS sets, use Table 15 to find the number of CMOD units serving a range including 400 sets. The result is 10 units which can serve 333 to 401 CLASS sets.

One XCMC pack serving a 2-group system

1 Example 1: No re-configuration

A 2-group system serving an office is expected to convert 400 analog sets to CLASS sets. Currently, 100 of them are located in group 0, where all incoming trunks are located, and the remaining 300 sets are in group 1. Assume that group 1 is also equipped with 800 non-CLASS sets. How many CMOD units are needed to serve this application and does the customer need to re-configure the switch (move sets and trunks between group 0 and group 1) to do the upgrade?

Solution:

The table lookup indicates that 400 CLASS sets need 10 CMOD units. Since one pack provides 32 units, one XCMC pack is sufficient for this customer.

Group 1 is equipped with 300 CLASS sets which is greater than the 100 sets in group 0, the pack should be installed in group 1.

The total equipped ports in group 1 is 1100 (=800+300). For a 2-group system, the second group is allowed to have 1760 sets (from Table 14) without junctor traffic concerns, therefore, there is no need for the customer to re-configure the switch.

2 Example 2: Re-configuration

A similar application as in the last example, except that there are 1600 non-CLASS sets and 100 trunks in group 1.

Solution:

The same number of CMOD units (10), since the number of CLASS sets in the system is the same.

The number of total equivalent sets in group 1 is 2300 (=1600 +300 +100x4) which is greater than the 1760 threshold in the Table 14 for a 2-group system.

The customer will have a number of alternatives to resolve the junctor blocking issue, depending on the situation:

- (1) move the 100 CLASS sets from group 0 to group 1, so all CLASS sets are served by the XCMC pack in group 1, or
- (2) move the 300 CLASS sets and the XCMC pack to group 0, or
- (3) move 540 non-CLASS sets (=2300-1760) from group 1 to group 0, or
- (4) move 100 CLASS sets from group 1 to group 0 and split the 10 CMOD units to 5 for group 0 and 5 for group 1. However, this will require another XCMC pack to be equipped in group 0. The cost of this approach is not trivial. It can be justified only when growth plan indicates a need for a second pack in the near future anyway.

The final decision depends on the specific situation of a site.

General engineering guidelines for Call Center applications

Configurations following engineering rules (no re-configuration required)

The following engineering rules should be followed to avoid the need to re-configure a switch to accommodate the CLASS feature for call center environment.

- 1** Convert an agent set to regular set by using 1 agent CLASS set = 4 sets (called equivalent sets)
- 2** Sum up the total number of regular CLASS sets and equivalent CLASS sets and find the number of CMOD units required based on the capacity table (Table 15).
- 3** Equip CLASS agent sets in the group where trunks carrying incoming traffic to agent sets are located.
- 4** Equip non-agent CLASS sets in the same group as the agent CLASS sets.
- 5** Equip the XCMC IPE pack on the network group with CLASS sets.

If the system is a single group system, or if above rules are fully met, no further engineering is necessary.

In case of an existing multi-group site upgrading to provide CLASS feature, re-configuring the system may be necessary to satisfy rules (3) and (4).

When above rules are not fully met, continue the system engineering by following the procedure in the next subsection.

Configurations do not fully meet engineering rules (re-configuration may be required)

When above rules can not be satisfied in a new site or an existing one, the following guidelines are designed to (1) minimize network blocking, (2) determine whether a re-configuration (to move trunks and sets around) is necessary, or (3) whether separate XCMC packs are necessary to serve the multi-group system.

- 1** Convert an agent set to regular set by using 1 agent CLASS set = 4 sets.
- 2** Sum up the total number of equivalent CLASS sets and find the number of CMOD units required based on the capacity table (Table 15).

- 3** Equip the XCMC IPE pack on the network group with most CLASS sets (or equivalent sets).
- 4** Limit the number of agent CLASS sets to be 200 or less per group.
- 5** Limit the number of regular CLASS sets in a group without XCMC pack to be 100 or less.
- 6** Convert trunks (1 trunk = 4 sets), and agent set (1 agent set = 4 sets) to equivalent sets before using Table 14 to find junctor traffic threshold.
- 7** If the threshold in Table 14 is greater than the total number of equivalent sets, traffic in the system is balanced, there is no need for further network engineering.
- 8** If the number of equivalent set is greater than the threshold, one or all of the following engineering rules should be followed to reduce junctor traffic:
 - a.** Move sets (CLASS or non-CLASS) or trunks to another group to satisfy the above engineering rules.
 - b.** Equip XCMC pack in more than one group to serve local CLASS set traffic.
- 9** When a trunk route is known to serve only agent sets, and these trunks and agent sets are in the same group, exclude them from the set count in Table 14 threshold (for example, do not include trunks and agent sets with known COI to use Table 14; they do not generate traffic to junctors).

The following examples will show some of the engineering details of dealing with various alternatives.

To simplify discussion, the network group with most trunks is called group 0, consequently, a majority of CLASS sets, if not all, are in group 1. If most agent CLASS sets and XCMC pack are in group 0, there will be no need for further engineering.

Engineering examples for Call Center applications

One XCMC pack serving a single group system

No special engineering rule is needed for a single group system. Look up Table 15 to find the required number of CMOD units to serve the given CLASS sets. For example, to serve a CS 1000M SG or Meridian 1 PBX 61C with 300 agent CLASS sets, use Table 15 to find the CMOD units that can serve 1200 equivalent sets ($=300 \times 4$). The result is 20 units.

One XCMC pack serving a 2-group system

1 Example 1: No re-configuration required

A two-group system serving a call center is expected to upgrade 300 analog sets (100 administrative sets and 200 agent sets) to CLASS sets. The 100 administrative sets are located in group 0, where are also located all incoming trunks. The 200 agent sets are in group 1, which will continue to be used as agent sets after upgrading. Assume that group 1 is also equipped with 500 non-CLASS sets. How many CMOD units are needed to serve this application and does the customer need to re-configure the switch (move sets and trunks between group 0 and group 1) to do the CLASS feature upgrade?

Solution:

The table lookup indicates that 900 equivalent CLASS sets ($=100+200 \times 4$) need 17 CMOD units. Since one pack provides 32 units, one XCMC pack is sufficient for this customer.

Group 1 is equipped with 200 agent CLASS sets or 800 equivalent sets which is greater than the 100 sets in group 0, the pack should be installed in group 1.

The total equipped ports in group 1 is 1300 ($=200 \times 4 + 500$). For a 2-group system, the second group is allowed to have 1760 sets (from Table 14) without junctor traffic concerns, therefore, there is no need for the customer to re-configure the switch.

In addition, both “100 CLASS sets in a group without CMOD units (group 0)”, and “200 agent CLASS sets in a group separate from incoming trunks (group 1)” statements are within engineering rules, therefore, no re-configuration is necessary.

2 Example 2: Re-configuration required

A similar application as in the last example, but there are 1600 non-CLASS sets in group 1.

Solution:

The same number of CMOD units (17) is required, since the number of equivalent CLASS sets (900) in the system is the same.

Equip the 17 CMOD units in group 1, since the XCMC pack should be equipped in the group with most CLASS (equivalent) sets.

The number of total equivalent sets in group 1 is 2400 ($=1600+200 \times 4$) which is greater than the 1760 threshold in Table 14 for a two-group system.

The customer will have a number of alternatives to resolve the junctor blocking issue, depending on the situation:

Move the 100 CLASS sets from group 0 to group 1, or

Equip the 200 CLASS agent sets and the XCMC pack in group 0, or

Move 640 non-CLASS sets ($=2400-1760$) from group 1 to group 0 to avoid threshold violation, or

Move 100 CLASS sets from group 1 to group 0 and split the 17 CMOD units to 10 for group 0 and 7 for group 1; however, this will require another XCMC pack to be equipped in group 0, or

Move 160 trunks with COI to agent sets from group 0 to group 1, so that the total equivalent sets in group 1 will become 1760 ($=1600+(200-160) \times 4$), since this way the 160 trunks and an equal number of agent sets will not generate traffic to junctors.

The final decision depends on the specific situation of a site.

3 Example 3: Mixed sets, trunks in both groups and re-configuration required

A two-group system serving a call center is expected to equip 200 administrative CLASS sets in group 0 and 400 CLASS agent sets in group 1. 500 trunks carrying incoming traffic to agents are located in group 0, 60 trunks serving local CO non-ACD traffic are equipped in group 1. Assume that group 1 is also equipped with 300 non-CLASS sets. Can this configuration meet engineering rules? How many CMOD units are needed?

Solution:

The equivalent CLASS sets in system = $200 + 400 \times 4 = 1800$. From Table 15, 27 CMOD units are needed. It requires the XCMC pack to be equipped in group 1.

When we equip the XCMC pack in group 1, there are three violation of rules: (1) the number of CLASS sets in the group without CMOD units (group 0) is greater than 100, (2) the number of agent sets in a group without incoming trunks (group 1) is 400 which exceeds the 200 per group limit, and (3) the violation of threshold in Table 14 for group 1 ($=400 \times 4 + 60 \times 4 + 300 = 2140 > 1760$). Several alternatives are available to make this configuration meeting engineering rules:

Move 100 CLASS sets and 400 incoming trunks from group 0 to group 1; all above 3 violations are removed by this re-configuration: (1) CLASS sets in group 0 is 100, (2) 400 CLASS agent sets and 400 incoming trunks with COI are in the same group (group 1), (3) the number of equivalent sets in group 1 for threshold check-off is reduced to 640 ($=100 + 60 \times 4 + 300 = 640$) which is certainly within the limit (1760).

However, it is impractical to put almost all trunks and agent sets in one group (group 1). With so many rule violations, the most realistic approach is to move 200 CLASS agent sets to group 0 and equip approximately 15 CMOD units in group 0 and 12 units in group 1.

One XCMC pack serving a 3-5 group system

Chances of groups larger than three requiring special engineering are slim, since the threshold (Table 14) limiting the number of sets per group is much higher.

If the rule of co-locating CLASS sets and CMOD units in the same group is not fully met, as long as basic rule like putting XCMC pack in the group with most CLASS sets is followed, perhaps, no re-configuration between any two groups is necessary.

However, if in doubt, isolate any two groups at one time, and go through the two-group engineering procedure to re-configure the system two groups at a time. Ignore the rest of system during the engineering process, except for calculating the total number of CMOD units, which should cover the need of all CLASS sets in the system. However, during a two-group engineering, only the number of CMOD units attributable to the two-group at hand should be used in calculations.

Also remember to use 2933 (equivalent) sets per group for threshold check-off for the three-group system, and their respective number for four- and five-group systems (Table 14).

The complete check-off of set threshold between any two groups in a multi-group system can be represented by the following combinations (a number denotes the group number: for example, 1-2 represents group one-group 2):

three-group: 1-2, 1-3, 2-3.

four-group: 1-2, 1-3, 1-4, 2-3, 2-4, 3-4.

five-group: 1-2, 1-3, 1-4, 1-5, 2-3, 2-4, 2-5, 3-4, 3-5, 4-5.

It should be noted that although CMOD units are equipped according to the traffic requirement of CLASS sets in a network group for the inter-group junctor traffic consideration, they are a system resource shared by the whole system.

Operating parameters

Dialed Number Identification System (DNIS) is not supported by the CLASS feature.

This feature has been developed for the North American residential market, as well as for the small business, hospitality, schools and universities, nursing homes and hospitals, and mobile home markets.

This feature applies to a standalone environment, and to an ISDN networking environment supporting CLID and a non-ISDN networking environment with or without In-Band Automatic Number Identification (ANI).

If the CLASS Calling Number Delivery and CLASS Calling Name Delivery data to a CLASS set is lost, there is no indication, such as an error message, provided. The call is presented in the normal manner, as if the CLASS CND function has not been activated.

A maximum of 10 digits can be delivered as the calling number, and a maximum of 15 characters can be delivered as the calling name. These are Bellcore limitations.

The 16 port Analog Message Waiting line card (QPC789A) is not supported for CLASS: Calling Number and Name Delivery.

Up to 255 CLASS modems can be configured on a system, and up to 32 CLASS modem units can be configured on any Extended CLASS Modem card.

No CLASS CND traffic measurement is supported.

The CND delivery interval is the first silent interval, after ringing has been applied for a new call, that is greater than two seconds. If the ringing applied to the CLASS set uses a cadence with a ring-off cycle that is more than four seconds in duration, then the CLASS set might view the call as having been disconnected and might clear the CND display as a result. This is a CLASS set firmware limitation.

Due to firmware limitations on some types of CLASS sets, after a call has been disconnected, the CND information associated with the disconnected call may still appear on the CLASS set's display for several seconds. During this time, the CLASS set cannot display new CND information. Though the system delivers the CND information pertaining to a new call, there is no guarantee that the CLASS set will display the delivered information.

Feature interactions

Attendant Call Extension

When an attendant extends a call to a CLASS set, the Calling Name and Number of the attendant is delivered to the CLASS set, and not that of the extended station.

Automatic Wake Up

When an Automatic Wake Up call is presented to a CLASS set with Calling Name Delivery activated, then the calling name unknown indicator is delivered in place of the calling number.

Blind Transfer

When a Meridian 1 proprietary set completes a Blind Transfer to a CLASS set, the Calling Name and Number of the transferring set is delivered to the CLASS set, and not that of the set being transferred. When an analog (500/2500 type) set completes a Blind Transfer to a CLASS set, the transfer is presented as a new call to the CLASS set. Therefore, the Calling Name and Number of the transferred set is delivered to the CLASS set.

Call Forward All Calls

When a call is redirected to a CLASS set using Call Forward All Calls, the Calling Name and Number of originating set, and not that of the forwarding set, is delivered to the CLASS set.

Call Forward, Internal

When a call is redirected to a CLASS set using Internal Call Forward, the Calling Name and Number of originating set, and not that of the forwarding set, is delivered to the CLASS set.

Call Transfer

When a Call Transfer has been completed, the Calling Name and Number of the transferred party will not be delivered.

Calling Line Identification Restriction for ISDN BRI sets

When an ISDN BRI set, with Calling Line Identification Restriction active, makes a nodal call to a CLASS set with Calling Name Delivery active, the calling name privacy indicator will be delivered as the calling name.

Conference/No Hold Conference

When a set initiates a conference call to a CLASS set, the Calling Name and Number of the initiating set is delivered to the CLASS set.

Dial Intercom

The CLASS Calling Name and Number class of service cannot be configured on Dial Intercom Group sets.

Direct Inward System Access (DISA)

If a call is made to a CLASS set using DISA dialing, then the Calling Name and Number delivered to the CLASS set is that of the incoming trunk and not the DISA DN. This is consistent with the normal display function for DISA calls.

Display of Calling Party Denied

When a set with Display of Calling Party Denied active makes a nodal call to a CLASS set with Calling Number Delivery active, then the calling name privacy indicator is delivered in place of the calling name.

Distinctive Ringing

The normal delivery cycle for Calling Name and Number Delivery applies to calls presented to a CLASS set with distinctive ringing, that is, the Calling Name and Number Delivery information is delivered during the first silent period that is longer than two seconds.

Flexible Numbering Plan (FNP) Enhancement

For a customer equipped with the FNP package 160, the calling number delivered to the CLASS set can be of any length, up to 10 digits.

For a customer not equipped with FNP, the following apply:

- For a station (set or attendant) making a call to a CLASS set, if the local public number is to be delivered to the CLASS set as the calling number of the calling station, then the system software will pad or truncate the calling number to be exactly seven digits long.
- For a station (set or attendant) making a call to a CLASS set, if the national number is to be delivered to the CLASS set as the calling number of the calling station, then the system software will pad or truncate the calling number to be exactly 10 digits long.
- For an incoming trunk call to a CLASS set, the incoming Calling Number Identification/Automatic Number Identification that is passed to the CLASS set be of any length, up to 10 digits.

Group Call

When a set makes a Group Call to a CLASS set with Calling Number Delivery active, the calling number unknown indicator will be delivered in place of the calling number.

When a set makes a Group Call to a CLASS set with Calling Name Delivery active, the calling name unknown indicator will be delivered in place of the calling name.

Hotline

When a Hotline call is made to a CLASS, then the Calling Name and Number is delivered in the same manner as when a call is presented to the CLASS set using normal dialing.

Hunt

When a call is redirected to a CLASS set using Hunt, the Calling Name and Number of originating set, and not that of the redirecting set, is delivered to the CLASS set.

Incremental Software Management

While no new License limit is introduced by the CLASS feature, each CLASS modem unit TN is counted against the system TN limit and is reflected in the overlay banner.

Feature Group D

When an incoming Feature Group D trunk call is presented to a CLASS set with Calling Number Delivery active, the calling number delivered to the CLASS set will be one of the following:

- If the Feature Group D trunk route is configured so as to not show the incoming ANI (SHAN = NO in LD 19), the calling number privacy indicator is delivered in place of the calling number.
- If no ANI is passed on, then the calling number unknown indicator is delivered in place of the calling number.
- Otherwise, the incoming Feature Group D trunk ANI is directly delivered.

In-Band ANI

When an incoming In-Band ANI trunk call is presented to a CLASS set with Calling Number Delivery active, the calling number delivered to the CLASS set will be one of the following:

- If no ANI is passed on, then the calling number unknown indicator is delivered in place of the calling number.
- Otherwise, the incoming In-Band ANI is directly delivered.

Integrated Services Digital Network

When an incoming Integrated Services Digital Network (ISDN) trunk call is presented to a CLASS set with Calling Number Delivery active, the calling number delivered to the CLASS set will be one of the following:

- If the incoming CLID is defined as display denied (the originating set has Display Digit Denied, Calling Party Privacy, or Calling Line Identification Restriction active), then the calling number privacy indicator is delivered in place of the calling number, or, if no CLID is passed in from the incoming trunk, then the calling number unknown indicator is delivered in place of the calling number.

- If no CLID is passed on by the incoming trunk, then the calling number unknown indicator is delivered in place of the calling number.
- Otherwise, the CLID received from the incoming ISDN trunk is directly delivered. If the CLID is longer than 10 digits, only the first 10 will be delivered.

When an incoming ISDN trunk call is presented to a CLASS set with Calling Name Delivery active, the calling name delivered to the CLASS set will be one of the following:

- If the calling name is defined as presentation denied (the originating set has a Display Name Denied, Calling Party Privacy, or Calling Line Identification Restriction active), then the calling name privacy indicator is delivered instead of the calling name.
- If no calling name is passed on by the incoming trunk, then the calling name unknown indicator is delivered in place of the calling name.
- Otherwise, the calling name received from the incoming ISDN trunk is directly delivered. If the calling name is longer than 15 characters, only the first 15 will be delivered.

Meridian 911

When an incoming M911 trunk call is presented to a CLASS set with Calling Number Delivery active, the calling number delivered to the CLASS set will be one of the following:

- If no ANI is passed on, then the calling number unknown indicator is delivered in place of the calling number.
- Otherwise, the incoming ANI is directly delivered.

Private Line Service

When a Private Line Service call is made to a CLASS, then the Calling Name and Number is delivered in the same manner as when a call is presented to the CLASS set using normal dialing.

VIP Automatic Wakeup

When an attendant makes a VIP Automatic Wakeup call to a CLASS, then the Calling Name and Number is delivered in the same manner as when the attendant makes a call to the CLASS set using normal dialing.

Virtual Network Services (VNS)

When an incoming VNS trunk call is presented to a CLASS set with Calling Number Delivery active, the calling number delivered to the CLASS set will be one of the following:

- If the incoming CLID is defined as display denied (the originating set has Display Digit Denied, Calling Party Privacy, or Calling Line Identification Restriction active), then the calling number privacy indicator is delivered in place of the calling number.
- If no CLID is passed on by the incoming VNS trunk, then the calling number unknown indicator is delivered in place of the calling number.
- Otherwise, the CLID received from the incoming VNS trunk is directly delivered. If the CLID is longer than 10 digits, only the first 10 will be delivered.

When an incoming VNS trunk call is presented to a CLASS set with Calling Name Delivery active, the calling name delivered to the CLASS set will be one of the following:

- If the calling name is defined as presentation denied (the originating set has a Display Name Denied, Calling Party Privacy, or Calling Line Identification Restriction active), then the calling name privacy indicator is delivered in place of the calling name.
- If no calling name is passed on by the incoming VNS trunk, then the calling name unknown indicator is delivered in place of the calling name.
- Otherwise, the calling name received from the incoming VNS trunk is directly delivered. If the calling name is longer than 15 characters, only the first 15 will be delivered.

Feature packaging

The following packages are required for the CLASS Calling Name and Number Delivery feature:

- Calling Party Name Display (CPND) package 95
- CLASS Calling Number Delivery (CNUMB) package 332
- CLASS Calling Name Delivery (CNAME) package 333 and

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 - Configure the CLASS CLID parameters in the Customer Data Block.
- 2 LD 10 - Configure the CLASS Calling Name and Calling Number Delivery Class of Service for Analog (500/2500 type) sets.
- 3 LD 13 - Configure the CLASS modem unit (up to 255 CLASS modem units may be configured per system).

LD 15 - Configure the CLASS CLID parameters in the Customer Data Block.

Prompt	Response	Description
REQ:	CHG	Change or delete existing data.
TYPE:	NET	Networking data.
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
...		

CLID	(NO) YES	CLID option. NO = (the default) do not configure a CLID table. In this case, the remaining prompts are not generated, and no CLID is sent for the customer. YES = configure a CLID table for the customer.
- SIZE	0-(256)-4000	Number of CLID entries required.
...		
- ENTRY	aaaa Xaaaa Xaaaa Xbbbb <CR>	aaaa = CLID entry to be configured. Xaaaa = CLID entry to be deleted. Xaaaa Xbbbb = CLID entries to be deleted. aaaa and bbbb must be a value between 0 and (SIZE-1). The action for the entry will be saved to system memory after the CLID entry has been completely configured. If an existing CLID entry is changed, the message "ENTRY aaaa SAVED" is displayed. If a CLID entry or CLID entries is/are deleted, the message "ENTRY aaaa DELETED" or "ENTRIES aaaa-bbbb DELETED" is displayed.
...		
- LSC	0-9999999 X	Local steering code, 1-7 digits. X = delete digits.
-- CLASS_FMT	(DN) LCL NTN	Send internal DN to a CLASS set as the calling number. Send local number to a CLASS set as the calling number. Send National Number to a CLASS set as the calling number.
ENTRY aaaa SAVED ENTRY aaaa DELETED ENTRIES aaaa-bbbb DELETED		Displayed message. Refer to the ENTRY prompt description.
...		

Note 1: You may print the CLASS_FMT information included in the CLID using LD 21.

Note 2: You may print or count the station sets class of service using LD 81. This information would typically be used for billing purposes, to bill set users for calls according to the assigned class of service.

LD 10 - Configure the CLASS Calling Name and Calling Number Delivery Class of Service for Analog (500/2500 type) sets.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
...		
DN	x..x yyyy	Directory Number for this set (x..x) and CLID entry associated with this set (ENTRY configured in LD 15).
	(CNUD)	CLASS Calling Number Delivery Denied.
	CNUA	CLASS Calling Number Multiple Data Format Allowed.
	CNUS	CLASS Calling Number Single Data Format Allowed.
	(CNAD)	CLASS Calling Name Delivery Denied.
	CNA A	CLASS Calling Name Multiple Data Format Allowed.
		Refer to the section "Configure CND Class of Service on CLASS sets" on page 1137 for details.
		Note: These Class of Service entries are not valid for a Dial Intercom Group (DIG) set.
CLS		
...		

LD 13 - Configure the CLASS modem unit (up to 255 CLASS modem units may be configured per system).

Note: While no new License limit is introduced by the CLASS feature, each CLASS modem unit TN is counted against the system TN limit and is reflected in the overlay banner.

Prompt	Response	Description
REQ	NEW CHG	Add new data Change existing data.
TYPE	CMOD	CLASS modem unit.
DMOD	1-127	Default Model number for this route for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
TN		Terminal number <i>Note:</i> Since the CLASS modem unit uses the octal-density Extended CLASS Modem Card (XCMC), up to 32 units can be configured on any XCMC card.
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.

Note: You can print the CMOD unit information using LD 20.

Feature operation

No specific operating procedures are required to use this feature.

CLASS: Visual Message Waiting Indicator

Contents

This section contains information on the following topics:

Feature description	1169
Operating parameters	1173
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Feature description

The Custom Local Area Signaling Service (CLASS) Visual Message Waiting Indicator (VMWI) feature allows a CLASS set to receive a visual indication that messages are waiting. The visual indicator may be in the form of a lighting or flashing Light Emitting Diode (LED), or a special message on a liquid crystal display, or both. The type of visual indicator depends on the firmware of the CLASS set being used.

Note: For a non-Class set, lighting the Message Waiting Lamp through a high voltage message (Voltage Message Waiting) is still supported and operates in the same way as it did before.

The visual indication message (an “ON/OFF” CLASS VMWI specific message) is delivered from the system to the CLASS sets using Frequency Shift Keying (FSK) signaling based on Bellcore specifications, using a CLASS modem (CMOD) unit. The CMOD units are configured using LD 13. Once configured, the CMOD units are shared throughout a multi-customer system. When an FSK message is presented to a CLASS set, an available CMOD unit is automatically allocated.

After all messages are retrieved, the visual indicator is cleared. The CLASS VMWI feature will not be able to turn off the message waiting indicator until the CLASS set has returned to the idle state, even though all of the messages have been retrieved by the user.

The CLASS VMWI feature supports the Bellcore Single Data Message Format (SDMF) and Multiple Data Message Format (MDMF) messaging. These formats are configured in the system database using LD 10. To use SDMF, a Class of Service of CNUS is required. For MDMF, a Class of Service of CNUA and/or CNAA is required.

The following description outlines the general functionality of the CLASS VMWI feature.

The following scenarios affect the sending of an ON or OFF message indicator to a CLASS set.

If the CLASS set is idle:

- the ON/OFF message is sent immediately to the set.

If the CLASS set is busy:

- as soon as the CLASS set becomes idle (goes on-hook), the system immediately sends the VMWI message to the set.

If the CLASS set or CMOD unit is disabled (using LD 32 or 30), or no CMOD unit is available:

- the CLASS VMWI feature will automatically abort the VMWI message. The CLASS set is then checked every 10 seconds, for up to 2 1/2 hours, until the set is detected to be idle. At that time, the system will immediately deliver the VMWI message.

If a CLASS set is in the middle of receiving a VMWI message, and the CLASS set goes off-hook:

- the VMWI message will be aborted. The CLASS set is checked every 10 seconds, for up to 2 1/2 hours, until the set is detected to be idle. At that time, the system will immediately deliver the VMWI message.

Note that, if the CLASS VMWI feature is waiting to send an “ON/OFF” message and another “ON/OFF” message is requested, only the last “ON/OFF” message is actually sent to the CLASS set.

The CLASS VMWI feature supports Nortel and third party CLASS sets, if these sets are Bellcore VVMI compliant.

The following figures depict a typical feature operation and system resource allocation scenario for a CLASS Visual Message Waiting Indication being presented to a CLASS set. Note that the representation is for an ON message being delivered to the CLASS set. The same operation and system resource allocation applies for an OFF message being sent, except that the contents of the message would be different.

Figure 22
CLASS set is in idle state

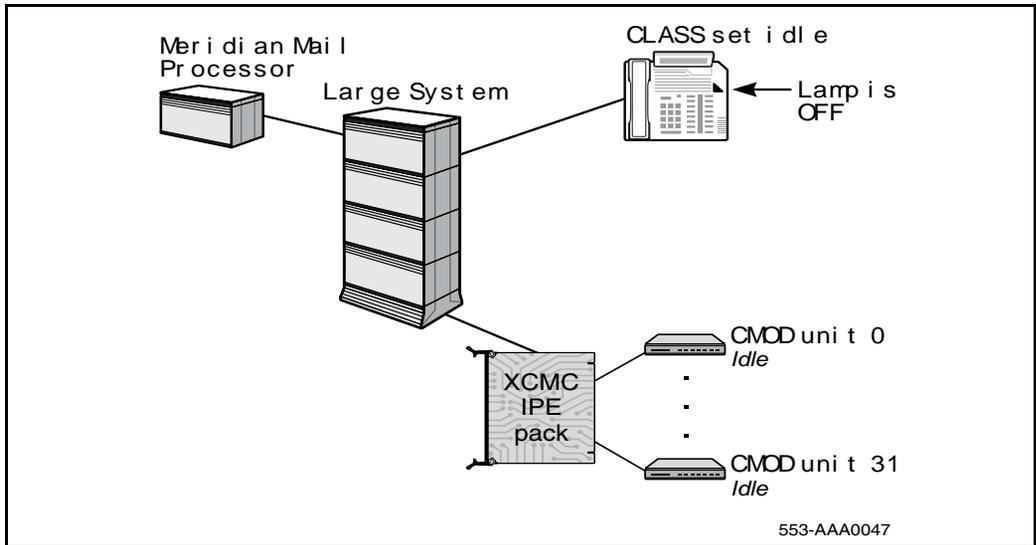


Figure 23
CLASS VMWI ON message in the process of being delivered to the CLASS set

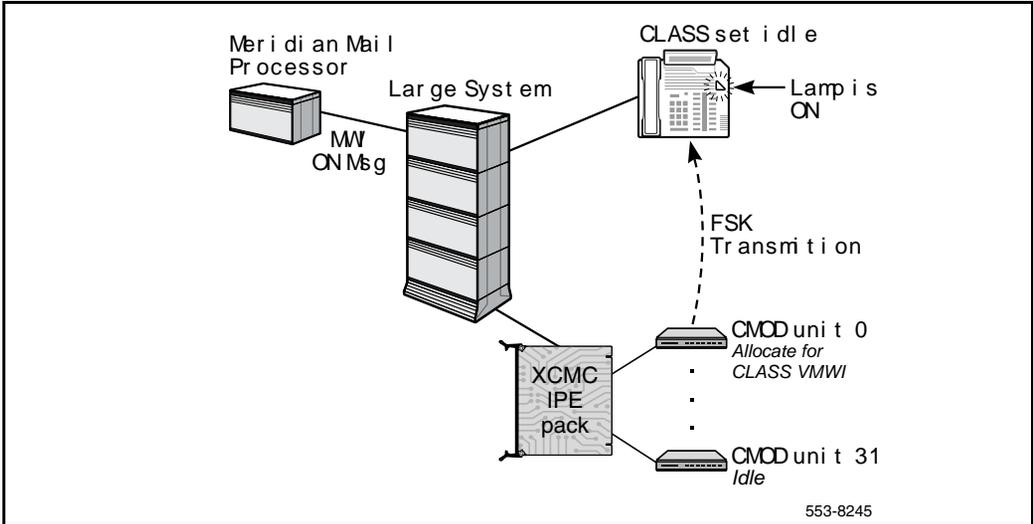
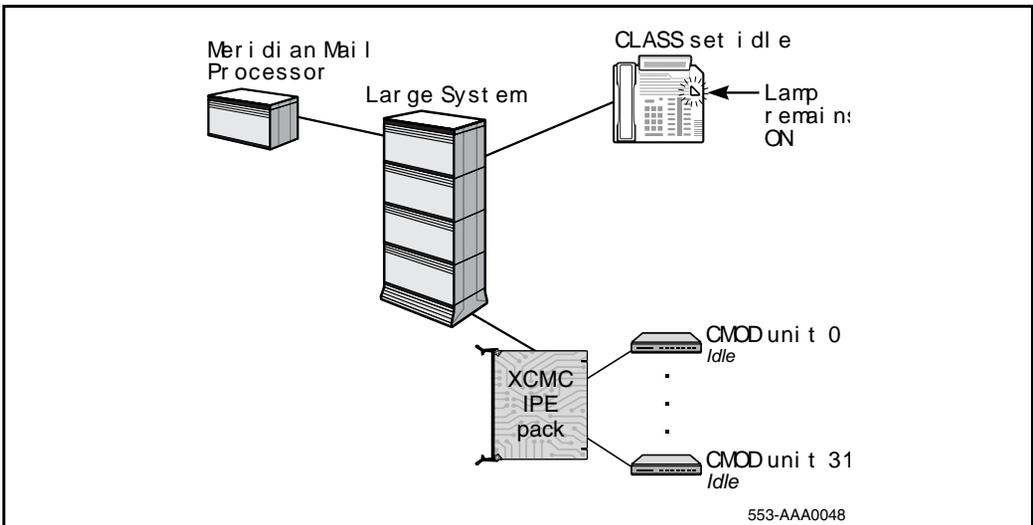


Figure 24
CLASS VMWI has been delivered to the CLASS set



Operating parameters

This feature has been developed for the North American residential market, as well as for the small business, hospitality, schools and universities, nursing homes and hospitals, and mobile home markets.

When a craftsperson uses LD 10 to administer a service change to a CLASS set, if the system software identifies, during overlay wrap-up, that the CLASS VMWI feature is waiting to send a visual indication to the set being serviced, a SCH1099 message will be generated, indicating that the VMWI pending message is lost and no retry will be attempted. The service change itself does not trigger any messages to the set.

Some CLASS sets, like Nortel's M9000 series of sets, support both voltage and CLASS (FSK) Message Waiting. However, once the CLASS set is configured in LD 10, then the system will no longer send voltage messages to the set.

If a CLASS set that previously used FSK messaging to receive Visual Message Waiting Indication has the Class of Service changed to be a non-CLASS set that uses Voltage Message Waiting, the visual indicator will not operate correctly. The following will occur:

- Voltage Message Waiting will work if the set is returned to the no message waiting state (visual indicator is dark) before switching over from FSK to voltage.
- Voltage message waiting will not work if the set is left at the message waiting state (visual indicator is lit) before switching from FSK to voltage.

It is up to the craftsperson to ensure that a CLASS set is correctly configured to support the CLASS VMWI feature.

Up to 255 CMOD units may be configured on a system. Once configured, the CMOD units are shared throughout a multi-customer system. When an FSK message is transmitted to a CLASS set, an available CMOD unit is automatically allocated.

If a CLASS set with a lit message waiting indicator retrieves all of its messages, the CLASS VMWI feature will not be able to turn off the message waiting indicator until the CLASS set has returned to the idle state.

Lamp audit does not apply to the CLASS VMWI feature.

There is a 2 1/2 hours time limit for a retry in the case of a pending message. Up to 255 CLASS modem units can be configured on a system, and up to 32 CLASS modem units can be configured on any Extended CLASS Modem card.

Feature interactions

Attendant Console

When a CLASS set that is on a call with the attendant goes on-hook, the call will not be released until the attendant releases the call. The CLASS VMWI feature will wait until the call is actually disconnected before sending the VMWI message to the CLASS set that had already gone on-hook

Call Party Control Incoming

When a CLASS set on an active call is placed in Call Party Control Incoming (CPCI) state, the set will not be presented with any other incoming call. The CLASS VMWI feature will not send the VMWI message to the CLASS set to turn the visual indication ON or OFF, until the set releases the active call.

Make Set Busy

When a CLASS set is in the Make Set Busy state, the set will not be presented with incoming calls. Although no incoming calls are presented to the set, VMWI message can still be sent to the CLASS set to turn the visual indication ON or OFF, as long as the set is in the idle and on-hook state.

Meridian Mail

The CLASS VMWI feature makes use of Meridian Mail by having the Meridian Mail functionality communicate with the system to inform the CLASS set to turn the visual message waiting indicator ON or OFF. The system software determines the appropriate type of protocol based on the configuration of the CLASS set, and sends it to the set to turn the visual message waiting indicator ON or OFF.

Message Waiting

In order to support the CLASS VMWI functionality on a CLASS set, the Message Waiting feature has been enhanced to turn the message waiting indicator ON or OFF on the CLASS set through FSK signalling.

In addition, the CLASS VMWI feature can interwork with Stuttered Dial Tone. The Stuttered Dial Tone functionality (which is part of the Flexible Tones and Cadences feature) provides an audible indication, rather than a visual one, that a message is waiting. It is configured separately from the CLASS VMWI feature, using the Class of Service (CLS) prompt in LD 10. If the LPA (Lamp Allowed) response is entered, then a CLASS visual indication is sent. If the LPD (Lamp Denied) response is entered, then Stuttered Dial Tone is sent instead. Note that the Stuttered Dial Tone and CLASS visual indication are mutually exclusive. A CLASS set may receive either Visual or Stuttered Dial Tone as a message waiting indicator, but not both.

Permanent Hold

When a CLASS set is placed on permanent hold, the set is still treated as though it is presented with a telephone call. The CLASS VMWI feature will not send the VMWI message to the CLASS set to turn the visual indication ON or OFF, until the set actually goes on-hook or the call is not presented to the set. At this time, VMWI message will be sent to the CLASS set to update the visual message waiting status.

Set Relocation

When a CLASS set is relocated, the CLASS VMWI feature will lose the message when the set finishes the relocation. An SCH1099 error message is printed to indicate that the CLASS VMWI message is lost and no automatic retry will be attempted.

Feature packaging

The following packages are required for the CLASS VMWI feature:

- Message Waiting Center (MWC) package 46
- CLASS Calling Number Delivery (CNUMB) package 332, or
- CLASS Calling Name Delivery (CNAME) package 333, and

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 10 - Configure a CLASS set as an analog (500/2500 type) set, and configure the required Class of Service for the set.
- 2 LD 13 - Configure the CLASS modem unit (up to 255 CLASS modem units may be configured per system).

LD 10 - Configure a CLASS set as an analog (500/2500 type) set, and configure the required Class of Service for the set.

Prompt	Response	Description
REQ:	CHG	Change existing data.
TYPE:	500	Telephone type
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CUST	xx	Customer number, as defined in LD 15
...		
DN	xxxx	Directory Number for the set
...		
CLS		Class of Service for the CLASS set

...	<p>MWA LPD</p> <p>CNUA CNUS CNA A</p>	<p>Message Waiting Allowed. Visual Indication (Lamp) Denied.</p> <p>Note: At least one of the following CLASS CLS must be allowed.</p> <p>CLASS Calling Number Multiple Data Format Allowed. CLASS Calling Number Single Data Format Allowed. CLASS Calling Name Multiple Data Format Allowed.</p>
-----	---	---

LD 13 - Configure the CLASS modem unit (up to 255 CLASS modem units may be configured per system).

Prompt	Response	Description
REQ	NEW CHG	Add new data Change existing data.
TYPE	CMOD	CLASS modem unit.
DMOD	1-127	Default Model number for this route for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
TN	<p></p> <p>l s c u</p> <p>c u</p>	<p>Terminal number</p> <p>Note: Since the CLASS modem unit uses the octal-density Extended CLASS Modem Card (XCMC), up to 32 units can be configured on any XCMC card.</p> <p>Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.</p> <p>Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.</p>

Note: You may print the CMOD unit information using LD 20.

Feature maintenance and diagnostics

LD 30 and LD 32

LD 30 and LD 32 handle CLASS VMWI messaging, in the case that a CMOD unit or a CLASS set is in the state of being disabled. Any CLASS VMWI message that is in progress will be aborted. A check every 10 seconds, for up to 2 1/2 hours, will be done on the CLASS set until another CMOD unit is found or the CLASS set is enabled, before a VMWI message is actually sent to the set to perform visual indication.

LD 77

LD 77 is used to monitor CLASS VMWI messaging.

Feature operation

No specific operating procedures are required to use this feature.

CLID on Analog Trunks for Hong Kong (A-CLID)

Contents

This section contains information on the following topics:

Feature description	1179
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Feature description

With the Calling Line Identification on Analog Trunks (A-CLID) feature and the DXUT-A card (NTRB37AA), on an incoming Central Office (CO) call, the system can extract information such as:

- Calling Party Number
- Calling Party Name
- Reason for absence of Calling Party Number or Name (if necessary)

The A-CLID information is treated similar to ISDN CLID for delivery to other modules and applications in the system, including the display on digital telephones and consoles at the local node and other network nodes (if any).

You can enable or disable A-CLID on an individual trunk port basis.

The A-CLID information passes to the terminating party, which includes:

- Trunks — ISDN (PRI/BRI/QSIG), R2MFC (DTI/DTI2, Analog)
 - Calling Party Number information can be tandemed over all ISDN and R2MFC interfaces
 - Calling Party Name information can be tandemed only on SL1 and QSIG ISDN interfaces. R2MFC does not support name information.
- Terminals — attendant consoles, telephones (CLASS, 2208 with display, 2216, 2616, 2317, 5317, M3902, M3903, M3904, M3905)
- Applications — CallPilot, Customer Controlled routing, Meridian Mail, Meridian Link, Symposium Call Center Server (calling party number only)

Figure 25 describes the feature operation.

Figure 25
System structure for CLID delivery

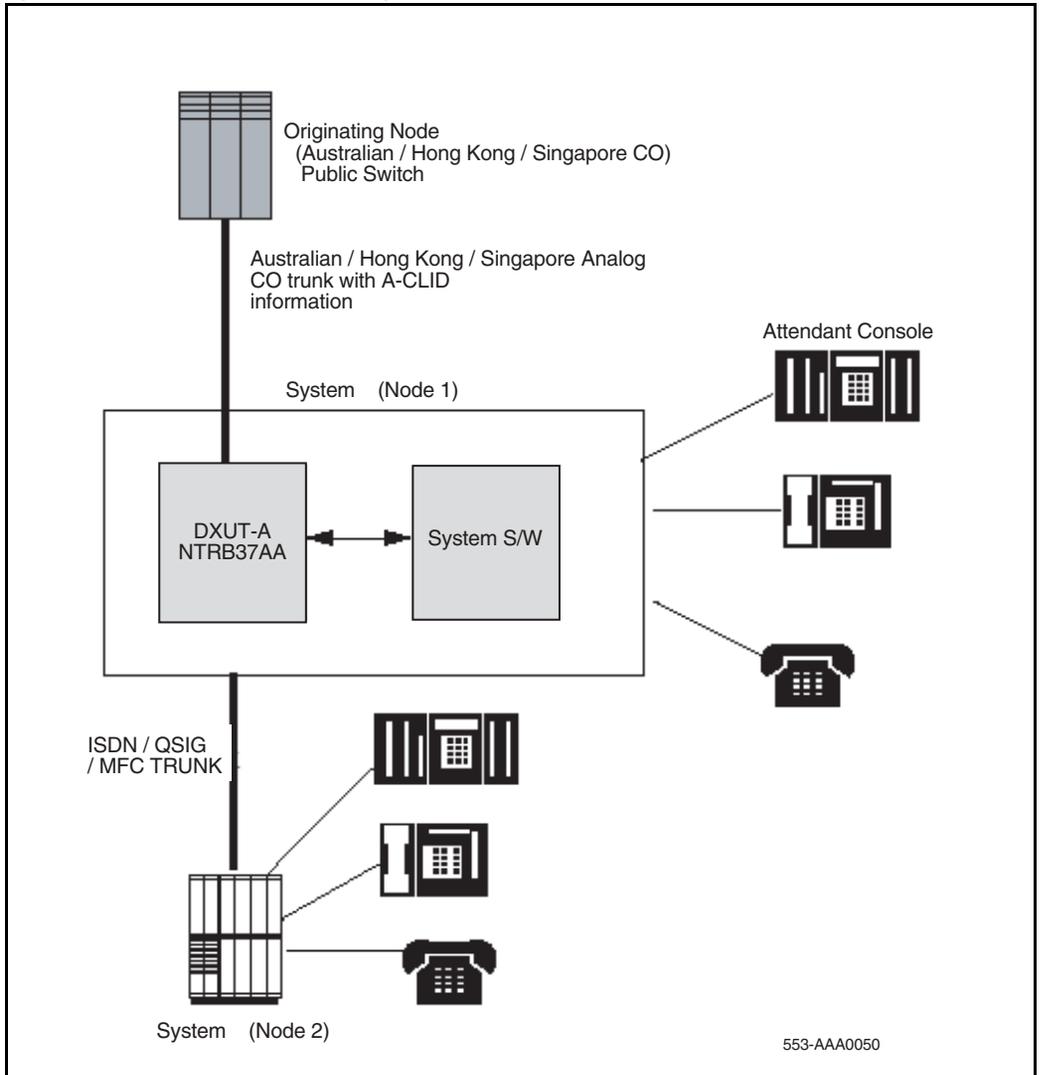


Table 16 shows the display format for different combinations of analog CLI information.

If you do not receive the calling number (“P” or “O” is received as the reason for absence), the display shows the P/O route access code number and member number.

If you do not receive the calling name (“P” or ”O” is received as the reason for absence), then the display shows “PRIVATE” or ”UNAVAILABLE”.

If you do not receive either the calling name, or its reason for absence, then the display shows “UNAVAILABLE”.

Table 16
Format of CLI information

Calling Number	Reason for Absence of Calling Number	Calling Name	Reason for Absence of Calling Name	Display Format
491893021	-	JOHN SMITH	-	JOHN SMITH 491893021
-	“O “	PAY PHONE	-	PAY PHONE O-8015-1
-	“O “	-	-	UNAVAILABLE O-8015-1
-	“O “	-	“O “	UNAVAILABLE O-8015-1
-	“P “	-	-	UNAVAILABLE P-8015-1
-	“P “	-	“P “	PRIVATE P-8015-1
P = Private		O = Other		

Operating parameters

The A-CLID feature is only for incoming loop start trunks (both supervised and non-supervised) in Hong Kong.

Direct Inward Dialing (DID) trunks do not support the A-CLID feature.

A-CLID requires one mode: On-hook data transmission with ring.

If you initialize the system while the CLID information is transferring from the DXUT-A card to software:

- you lose all CLID information not sent.
- you lose the un-established call (a call is established after the software receives the complete CLID information).

If the call is established, and you initialize the system, the call is restored. However, maintaining the displayed information is not guaranteed.

Note: If system initialization occurs after the A-CLID call is in the agent queue, the ACD module must display the CLID information after the call is established.

If the cyclic redundancy check (CRC) fails, the call terminates without displaying the CLID (“UNAVAILABLE” and “O-Route access code number - Member number” for name and number display).

If data transmission stops half-way, the call terminates without displaying the CLID (“UNAVAILABLE” and “O-Route access code number - Member number” for name and number displays).

The system can receive, process, and display alphanumeric characters as CLI information. No CLI information displays if the CO transmits information in another format.

A maximum display of 20 digits and 27 characters is possible with this feature.

When the call is tandemed to an ISDN/MFC trunk, only the first 16 digits of A-CLID passes on.

This feature does not change the functionality of R2-MFC trunks. R2-MFC trunks display the route access code number when the CLI information is not available, and not the member number.

If the system receives unrecognized messages or parameter types, the call terminates without displaying the CLID (“UNAVAILABLE” and “O-Route access code number - Member number” for name and number displays).

The A-CLID feature delays the occurrence of the first ring. The terminating set rings when the complete FSK message is received, or the software times out waiting for the FSK message.

When a DISA call is abandoned, the CO trunks will be busy for a short period of time before disconnecting. This is characteristic of CO trunks.

Feature interactions

Attendant Call Extension

If an attendant extends a call from an incoming A-CLID CO trunk, the terminating set receives the analog CLI information.

CLASS: Calling Number and Name Delivery

The analog CLI information is given to the XCMC service pack to provide number and name display to analog CLASS telephones. The CLASS telephones can only display the CLI information when the incoming CO call is auto-terminated on that telephone.

For calls terminating on a CLASS set, only the:

- calling party number and name information display.
- first 15 characters of the information display.

Direct Inward System Access (DISA)

If a user connects to the system through Direct Inward System Access (DISA) dialing, the incoming trunk information is passed, not the DISA DN information.

Information Notification Service for Japan

The A-CLID feature does not work with the Information Notification Service for Japan (INS-J) feature.

Private Line Service

A-CLID information does display on the telephone.

Feature packaging

This feature requires Analog Calling Line Identification (ACLI) package 349.

Feature implementation

Use the Calling Line Identification Allowed (CLIA) Class of Service (CLS) in LD 14 to activate the A-CLID feature on an individual port basis.

Note: If EXUT is configured on a DXUT-A card pack, and the ACLI package is equipped, then the default CLS is Calling Line Identification Denied (CLID) for all incoming CO trunks to that card.

LD 14 – Configure analog CLI.

Prompt	Response	Description
REQ	CHG NEW x	Change existing data block. Add new data block to the system. Follow NEW with a value of 1-255 to create that number of consecutive trunks.
TYPE	COT	Central Office Trunk data block.
....	
XTRK	EXUT	Enhanced Extended CO trunk card.
....	
SIGL	LOP	Loop start
....	

CLS 	CLIA (CLID) 	Class of Service options for trunks. Calling Line Identification Allowed Calling Line Identification Denied (default)
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Feature operation

No specific operating procedures are required to use this feature.

Collect Call Blocking

Contents

This section contains information on the following topics:

Feature description	1187
Operating parameters	1189
Feature interactions	1191
Feature packaging	1194
Feature implementation	1194
Feature operation	1199

Feature description

In Brazil an automatic long distance collect call service called DDC is available. The Collect Call Blocking feature enables a system administrator to block DDC calls on incoming Direct Inward Dialing (DID) and Public Exchange/Central Office trunks (analog or DTI2). Under the following conditions, the system sends a special answer signal to the Central Office to indicate to the Central Office that collect calls cannot be accepted:

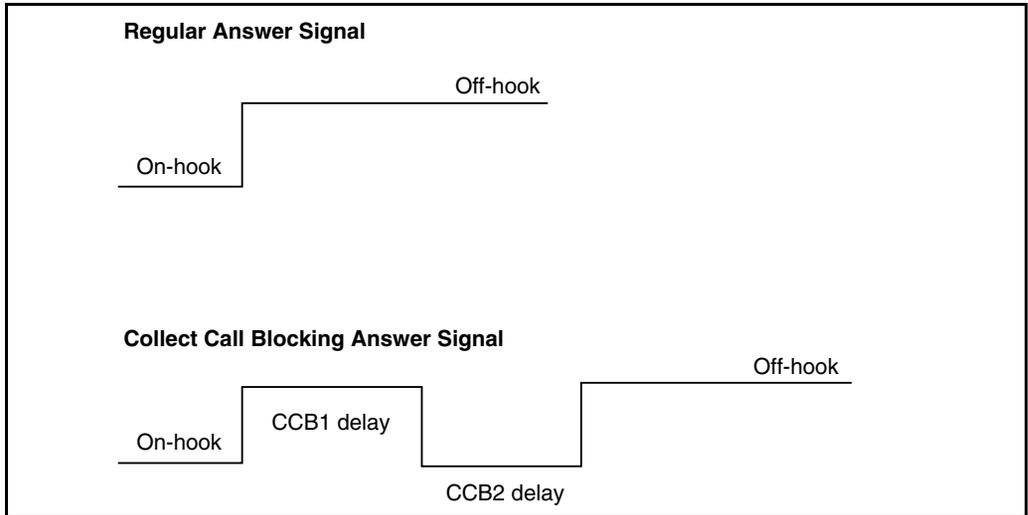
- The Collect Call Blocking (CCB) package 290 is enabled
- The incoming route has CCB enabled using the CCB prompt in the Route Data Block, and
- The call is answered by a CCB user (that is, Collect Call Blocking Allowed Class of Service or option).

Classes of Service and prompts have been introduced to inhibit specific users from receiving collect DID and Central Office calls. These can be configured for the following:

- analog (500/2500 type) telephones and Meridian 1 proprietary telephones through the Collect Call Blocking Allowed/Denied (CCBA/CCBD) Class of Service.
- Attendant and Network Alternate Route Selection calls on a per customer basis through CCBA/CCBD option.
- Automatic Call Distribution (ACD) queues through the CCBA prompt.
- Direct Inward System Access (DISA) through the CCBA prompt.
- Tandem calls dialed with Coordinated Dialing Plan (CDP) (Trunk Steering Code, Distant Steering Code) through the CCBA prompt.
- Tandem non-CDP calls through the CCBA prompt in the Route Data Block from the outgoing trunk route.

The system sends the CCB answer signal in place of the regular signal for incoming DID/CO calls from routes with CCB enabled, when a call is answered by a CCB user. If the call is a collect call, the CO will disconnect the call.

Figure 26
Collect Call Blocking answer signal compared to regular answer signal



Operating parameters

The Collect Call Blocking feature supports both analog and DTI2 trunks, and the following Intelligent Peripheral Equipment (IPE) cards:

- the NTCK16BB Extended Flexible COT Trunk Card (XFCOT) with firmware flash timing
- the NT8D14BA Enhanced Extended Universal Trunk Card (EXUT) containing the Centrex Switchhook Flash function in the firmware, and
- the NT8K14AK Extended Universal Trunk Card (XUT) which may be used if the Centrex Switchhook Flash is configured with software timing.

The Collect Call Blocking answer signal can only be sent in cases where answer supervision is provided by the system.

Once the modified answer signal is sent to the CO, the system has no control over how the call will be handled by the CO.

If a CCB user answers a call from a CO/DID route with Collect Call Blocking activated, the CCB answer signal is sent to the CO for all incoming DID and CO calls. For analog trunks, the user will experience clicking on the line and a temporary break in speechpath (0.5 to 2.5 seconds) while the CCB answer signal is being sent.

If the XFCOT and EXUT cards do not have flexible firmware timing, the CCB flash portion of the CCB answer signal will be ignored by firmware, and the regular answer signal will be returned to the CO. However, software controlled signaling can be done with EXUT cards.

In a standalone environment, all input from a set (except from the Release key) is ignored while the Collect Call Blocking answer signal is being sent.

Collect Call Blocking is applied to attendants on a customer basis only; it cannot be applied on a tenant basis.

The answer signal returned for a call from a route with CCB enabled and that is Network Attendant Service (NAS) routed is determined by the customer option on the source node. Thus, NAS routing can be configured across any Meridian Customer Defined Network environment, but the source node determines the answer supervision sent to the CO.

Call Detail Recording (CDR) record timing begins on the first answer of the CCB answer sequence. For this reason, CDR records will be generated for incoming calls to CCB users across routes on which CCB is enabled. If the call is collect, and is dropped, a CDR record of approximately CCB1 + CCB2 length will be generated.

For data calls, all calls will be answered with the CCB answer signal, if CCB is enabled. This may have an effect on data protocols, while CCB signaling is taking place.

If firmware timing is used (FWTM = YES in Overlay14) for sending the CCB flash, the CCB2 timer is downloaded to the card before sending the firmware flash. If the CCB2 timer is changed in the Route Data Block, either the card has to be enabled or the switch has to be initialized to get the new CCB2 timer downloaded to the card.

Feature interactions

Automatic Answerback

The Automatic Answerback (AAB) feature, when assigned to a Meridian 1 proprietary telephone, allows any incoming call to a single-appearance Prime Directory Number (PDN) to be answered automatically. If an incoming DID or CO call terminates on a set with the AAB feature enabled, the call is automatically answered after one ring. If the set has a CCBA Class of Service, the CCB answer signal is provided in the place of the regular answer signal.

Automatic Call Distribution

Collect Call Blocking can be enabled on an ACD queue basis. Hence, if an incoming CO or DID call is answered by an ACD agent, the answer supervision signal that is returned to the CO is determined by the value of the CCBA prompt in LD 23. While the CCB answer signal is being sent, the same limitations apply to ACD as apply to sets with CCBA Class of Service.

Automatic Call Distribution Interflow

If an ACD call from a route with CCB enabled is diverted to an interflow DN, and answer supervision has not already been provided, the answer signal returned to the CO depends on the source ACD queue. The CCB answer signal is returned to the CO if the source ACD queue has CCB enabled.

Automatic Call Distribution Night Call Forward

During Night Call Forward (ACD) call processing, the source ACD queue is removed or overwritten. Therefore, the CCB treatment given will be based on the queue the call happens to be in at the time the call is answered.

Automatic Call Distribution Night RAN Route Announcement

If an ACD call from a route with CCB enabled is diverted to a Night RAN route (defined by NRRT in the ACD block), the CCB signal returned to the CO depends on the source ACD queue. If the source ACD queue has CCB enabled, the CCB answer signal is sent to the CO.

Automatic Call Distribution Overflow

If an ACD call from a route with CCB enabled is diverted to an overflow ACD DN and answer supervision has not already been provided, the answer signal returned to the CO depends on the source ACD queue from where the call came. If the source ACD queue has CCB enabled, the CCB signal is sent to the CO.

Autoterminate

If an incoming DID or CO call from an autoterminate trunk terminates on a set or ACD queue with a CCBA Class of Service, the CCB answer signal is provided in place of the regular answer signal.

Basic Rate Interface (BRI) Sets

For BRI sets CCBA/CCBD Class of Service cannot be programmed. Therefore, it is not possible to prevent BRI sets from accepting DDC collect calls.

Central Answering Position

The answer signal returned to the CO for calls that get answered by a Central Answering Position (CAP) is determined by the source ACD configuration and not the customer option (CCBA/CCBD in LD 15) on the source node.

Centralized Attendant Service

The answer signal returned to the CO for calls that get answered by a Centralized Attendant Service is determined by the customer option (CCBA/CCDB in LD 15) on the source node.

Centrex Switchhook Flash

A Centrex Switchhook Flash cannot be invoked by another feature while the CCB answer signal is being sent.

Malicious Call Trace - Enhanced

If a station activates Malicious Call Trace (MCT) while the CCB answer signal is being sent, MCT activation is ignored. This also applies to the case when MCT is activated from a remote node.

Meridian Mail

Because Meridian Mail is configured using ACD queues, the same interactions exist as in the ACD case. When Meridian Mail sends a call answer message to the system, the CCB configuration in the source ACD queue is used to determine if a CCB answer signal should be sent to the Central Office. All mail boxes using the same ACD queue to access Meridian Mail will get the same CCB treatment.

If some of the mail boxes are allowed to receive collect calls, this may be a problem. A possible solution is to configure two ACD queues on the system to access Meridian Mail. One queue would have collect calls allowed and the second queue would have collect calls denied.

Network Automatic Call Distribution

The answer signal returned to the CO for a network ACD call from a route with CCB enabled is determined by the source ACD queue. If the source ACD queue has CCB enabled, the CCB answer signal is returned in place of the regular answer signal.

Pilot DN

If an incoming DID or CO call has CCB enabled and is routed to a pilot DN, the answer signal returned to the CO is determined by the CCB configuration of the terminating station.

Private Line Service

If an incoming DID or CO call from a private line trunk terminates on a set with a CCBA Class of Service, the CCB answer signal is provided in place of the regular answer signal.

Recorded Announcement

A Recorded Announcement (RAN) route is defined as having CCBA YES or NO, which is used if Coordinated Dialing Plan (CDP) or ACD queues were not used to get to the RAN route. If the call is routed through ACD/CDP to terminate on RAN, the CCB treatment will depend upon the CCB data of the ACD/CDP, and not of the RAN route.

Tandem to Unsupervised Trunk

If an incoming DID or CO call tandems to an unsupervised trunk before it terminates, the answer signal is sent by time-out. Therefore, any CCB tandem calls made to unsupervised trunks will not have the CCB answer signal sent until the time-out occurs.

Trunk Hook Flash

If a station activates Trunk Hook Flash (THF) while the CCB answer signal is being sent, THF activation is ignored.

Feature packaging

Collect Call Blocking (CCB) package 290 must be provisioned to activate this feature.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1** LD 16 – Enable Collect Call Blocking on a route and configure timers.
- 2** LD 14 – Setup the firmware timing for XFCOT and EXUT cards.
- 3** LD 15 – Allow Collect Call Blocking for attendants.
- 4** LD 10 – Enable Collect Call Blocking for analog (500/2500 type) telephones.
- 5** LD 11 – Enable Collect Call Blocking for Meridian 1 proprietary telephones.
- 6** LD 23 – Enable Collect Call Blocking on ACD queues.
- 7** LD 24 – Enable Collect Call Blocking on DISA blocks.
- 8** LD 87 – Enable Collect Call Blocking on CDP Steering codes.

LD 16 – Enable Collect Call Blocking on a route and configure timers.

Prompt	Response	Description
REQ	NEW CHG	Add. Change.
TYPE	RDB	Route Data Block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
TKTP	aaa	Trunk type. Must be COT, DID, FEX, or WAT for CCB.
...		
M911_ANI	NO	M911 route. Must be set to NO to enable CCB.
...		
ISDN	NO	ISDN route. Must be set to NO to enable CCB.
...		
ICOG	IAO ICT OGT	Incoming and outgoing, incoming, or outgoing. Must be either IAO or ICT to enable CCB. Must be either IAO or OGT to get the CCBA prompt for outgoing calls.
...		
CNTL	(NO) YES	Change to controls or to timers.
...		
CCB	(NO) YES	Collect Call Blocking enabled or disabled on incoming route. CCB package 290 is required. Enter YES to obtain CCB timer prompts.

CCB1	512-(1536)-4992	Collect Call Blocking delay timer 1 in milliseconds. Input rounded to the next multiple of 128 milliseconds.
CCB2	500-(1520)-2550	Collect Call Blocking delay timer 2 in milliseconds. Input rounded to the next multiple of 10 milliseconds. If any CCB route members (trunks) are using firmware timing (FWTM = YES in LD 14), changes to the CCB2 timer value will not take effect until the new timer value is downloaded to the card. This can be done by enabling the card or initializing the switch.
CCBA	(NO) YES	Collect Call Blocking allowed or denied for outgoing route.

LD 14 – Setup the firmware timing for XFCOT and EXUT cards.

Prompt	Response	Description
REQ	NEW CHG	Add. Change.
TYPE	DID COT FEX WAT	Trunk Type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
XTRK	EXUT XCOT	Type of card.
FWTM	(NO) YES	Firmware timing for flash. Enter YES to enable firmware timing.
CUST	xx	Customer number, as defined in LD 15
RTMB		Route number and Member Number
	0-511 1-4000	Range for Large System and CS 1000E system.

	0-127 1-4000	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
SUPN	YES	Answer supervision required.

LD 15 – Allow Collect Call Blocking for attendants.

Prompt	Response	Description
REQ:	NEW CHG	Add. Change.
TYPE:	FTR	Features and options
CUST	0-99 0-31	Customer number For Large Systems For Small Systems and CS 1000S systems
- OPT	CCBA	Allow Collect Call Blocking. CCBD =Default

LD 10 – Enable Collect Call Blocking for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	NEW CHG	Add. Change.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
...		
CLS	(CCBD) CCBA	(Deny) allow Collect Call Blocking.

LD 11 – Enable Collect Call Blocking for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	NEW CHG	Add. Change.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
...		
CLS	(CCBD) CCBA	(Deny) allow Collect Call Blocking.

LD 23 – Enable Collect Call Blocking on ACD queues.

Prompt	Response	Description
REQ	NEW CHG	Add. Change.
TYPE	ACD	ACD data block.
CUST	xx	Customer number, as defined in LD 15
ACDN	xxxx	ACD Directory Number.
...		
CCBA	(NO) YES	(Deny) allow Collect Call Blocking.

LD 24 – Enable Collect Call Blocking on DISA blocks.

Prompt	Response	Description
REQ	NEW CHG	Add. Change.
TYPE	DIS	DISA data block.
CUST	xx	Customer number, as defined in LD 15
...		
DN	xxxxxxx	DISA Directory Number.
...		
CCBA	(NO) YES	(Deny) allow CCB answer signal to be sent.

LD 87 – Enable Collect Call Blocking on CDP Steering codes.

Prompt	Response	Description
REQ	NEW CHG	Add. Change.
CUST	xx	Customer number, as defined in LD 15
FEAT	CDP	Coordinated Dialing Plan.
TYPE	TSC DSC	Steering code type.
...		
CCBA	(NO) YES	(Deny) allow Collect Call Blocking.

Feature operation

No specific operating procedures are required to use this feature.

Conference

Contents

This section contains information on the following topics:

Feature description	1201
Operating parameters	1202
Feature interactions	1203
Feature packaging	1215
Feature implementation	1216
Feature operation	1217

Feature description

Conference adds additional parties to an established call. The maximum is three or six, depending on the Conference feature assigned to the conference call originator. Not all conference parties have to be local to the system, although one party must be an internal Directory Number (DN) to uphold the conference connection. The attendant can also establish six-party conferences.

Meridian 1 proprietary telephones require a separate Conference 3 or Conference 6 key/lamp pair. M2317 sets establish conference calls by means of a softkey. Analog (500/2500 type) telephones use the switchhook to establish a three-party conference.

The six-party Conference (C6A) Class of Service enables analog (500/2500 type) telephones to establish a six-party conference, which operates the same as a three-party conference, with the exception of Conference Control operation.

Conference Control disconnects an unwanted third party (trunk only) from a three-party conference. Analog (500/2500 type) telephone users implement this feature by means of switchhook flash. Telephones with the six-party conference capability implement Conference Control by dialing SPRE + 87.

It is recommended that all analog (500/2500 type) telephones have either the three-party conference (C6D) Class of Service or the six-party Conference (C6A) Class of Service to avoid confusion when using Conference Control.

Operating parameters

Due to the possibility of getting annoying noise (squealing, for example) when two or more trunks are involved in a conference, it is strongly recommended that no more than two trunks be involved in the process.

At least one party in the conference must be a telephone on the local system for the duration of the conference call.

Attendant Administration does not support the implementation of six-party conference for analog (500/2500 type) telephones. An error message is displayed if an attempt is made to remove Transfer Allowed (XFA) Class of Service for analog (500/2500 type) telephones with a C6A Class of Service.

A Transfer allowed (XFA) Class of Service is required for a three-party conference (C6D) and is also a prerequisite for the six-party conference Class of Service (C6A) on analog (500/2500 type) telephones.

Dial access of Conference Control is provided only for analog (500/2500 type) telephones with a C6A Class of Service.

The number of timeslots is limited to 30 per conference loop. For Small Systems, a maximum of five simultaneous conferences, each consisting of six conference users, is supported per conference loop.

Double conferences are blocked to avoid conference chains (that is, set A and set B are on an established call. The user of set B presses the Conference key to call set C. Any attempt by set C to initiate another conference is blocked if set B has not yet completed the conference).

While the originating side of a call is linked to a transfer or conference key (that is, the originator of a transfer/conference call has not yet completed the transfer/conference), the terminating side cannot initiate a transfer or conference. Conference calls cannot be transferred.

A warning tone is available for conference calls. When the option is enabled, the tone lets callers know that they are entering a conference call. The switch for this option is preset to disable the warning tone. For information on the switch settings for the NT8D17 Conference/TDS card, refer to *Circuit Card: Description and Installation* (553-3001-211).

Feature interactions

500/2500 Line Disconnect

If one of the parties in the conference is connected to a 500/2500 port that is in turn connected to a Voice Response Unit (VRU), dial tone is provided to the 500/2500 port when all the other parties in the conference disconnect. This feature enhancement applies in the same way to Call Transfer and Hunting.

AC15 Recall: Transfer from Meridian 1

The use of the Conference key does not activate the AC15 Recall: Transfer from Meridian 1 feature. Conference call is not supported because it is not possible to have two parties on the same trunk.

AC15 Recall: Timed Reminder Recall

The conference feature is sometimes used to perform a transfer when a controlling party establishes a call, the controlling party establishes a conference with a third party and releases, and a call is established between the two remaining parties.

If an established call is extended over a trunk to initiate a conference call, this conference call cannot be set up if this trunk has answer supervision and the called extension has not answered. The AC15 Timed Reminder Recall feature cannot be activated by using the conference feature to extend a call over an AC15 TIE trunk, because the AC15 TIE trunk must have answer supervision and the called extension must be ringing.

AC15 Recall: Transfer from Norstar

It is not possible in any situation with Transfer from Norstar to establish a three-party conference. It is not possible for an AC15 trunk to initiate a consultation if it is involved in a conference.

Advice of Charge for EuroISDN

If a set is participating in a conference, no charge is displayed for that set. Whenever an ISDN CO trunks that provides Advice of Charge (AOC) is added to a conference, the call charging information, received from the network, accumulates against the set that initiates the call.

Once the last set involved in a conference call disconnects, a search is made of all trunks remaining in the conference call to determine which trunk has been established in the call for the longest period of time. This trunk becomes the chargeable TN. Once this trunk disconnects, the process is repeated so a new chargeable TN can be located.

Attendant Barge-In Attendant Busy Verify

Conference Control cannot be activated if an attendant has used Barge-In or Busy Verify during a conference that involves a trunk.

Attendant Break-In

If the attendant cannot break in to a conference call because the call is supporting the maximum number of callers, busy tone continues and the Break-In key lamp flashes.

Attendant Console

Three-party Conference (C6D) allows analog (500/2500 type) telephones on established calls to flash the switchhook and Dial 0 to talk to the attendant. Six-party conference users follow the same sequence, but the conference loop is seized and the call is treated as a conference call. When only two parties remain from the conference, the call is returned to a simple call if neither of the remaining parties is an attendant console.

Attendant Overflow Position

An Attendant Overflow Position (AOP) call answered on an AOP DN may be conferenced with another DN.

Autodial Tandem Transfer

The Autodial Tandem Transfer feature is blocked during Conference and No Hold Conference calls.

Automatic Redial

When an Automatic Redial (ARDL) call is not accepted by the calling party, the Conference (A03 or A06) key is ignored.

**B34 Codec Static Loss Plan Downloading
B34 Dynamic Loss Switching**

When a conference connection is established, no pads are switched in on the trunk side; any extra loss that is required is provided by the conference circuit based on an algorithm which takes into account the number of lines and trunks.

Call Forward All Calls

On analog (500/2500 type) telephones, Call Forward All Calls can be activated or canceled during a conference call.

Call Forward by Call Type

Calls modified by Conference receive Call Forward by Call Type treatment for the conferenced telephone. If party A calls party B, and B tries to conference in party C, the forwarding DN and Class of Service are that of C. For example, Joan and Bob are in conversation, and they try to conference in Mack. Mack is not at his desk, so the attempted conference call is sent to the destination associated with Mack's telephone.

Call Page Network Wide

A station set or attendant console that conferences an external Call Page Network Wide (PAGENET) uncontrolled call is not blocked. However, an external PAGENET controlled call is blocked.

Call Park

A parked call can be accessed after Conference is activated

Call Party Name Display

When pressed during an active call, or to set up a conference, the Conference, Connect, or Join Parties key clears the display. The telephones involved in the conference have blank displays. If the conference returns to a two-way only call, each telephone displays the DN and name of the other telephone.

Call Pickup

This feature cannot be activated during a conference call. Meridian 1 proprietary telephones can activate Call Pickup if an idle Directory Number (DN) key is available. The conference call must be put on hold before pressing the idle DN key to pick up the call.

Call Pickup Network Wide

Call Pickup Network Wide may be used to pickup an enquiry call from a conference, subject to the same limitations as apply to Call Transfer.

Call Transfer

Conference can be used to transfer calls, eliminating the need for a separate Call Transfer key/lamp pair on Meridian 1 proprietary telephones. Calls in the ringing state cannot be transferred with Conference. The third party must answer before the transfer can be completed.

A conference can also be established after initiating a Call Transfer operation. After the third party answers, pressing the Conference key establishes a three-way conference.

When a switchhook flash transfers calls on analog (500/2500 type) telephones with three-party conference (C6A) Class of Service, the transferring party goes on hook, leaving the other two parties established. Telephones with a C6A Class of Service involved in a conference having more than three parties must add the last party to the conference, then flash the switchhook and go on hook to complete the transfer.

Called Party Disconnect Control

Trunks with Called Party Disconnect Control allowed are treated as trunks without disconnect supervision when conferenced.

Calling Party Name Display Denied

Call Party Name Display, and thus the Calling Party Name Display Denied enhancement, do not apply to conference calls.

Calling Party Privacy

The Calling Party Privacy (CPP) feature will pass the Privacy Indicator to the terminating set to inhibit the display of the Calling Party Name and Number if the Conference feature is used for the purpose of performing a transfer.

Camp-On, Forced

Telephones involved in Conference calls cannot be camped on to. Overflow tone is returned to telephones attempting Forced Camp-On.

Centrex Switchhook Flash

Centrex Switchhook Flash (THF) allows conference calls through the CO. It can be invoked only if there is an established call connected to an outside trunk. If the telephone is engaged in internal conference calls, THF cannot be used.

Charge Account and Calling Party Name

Conference calls produce multiple Call Detail Recording (CDR) records. Whenever a new trunk is added to a conference, the connection between the connected telephone and the trunk is recorded, and a connection to the conference loop is established. This causes CDR to generate a start record with the telephone and trunk identified as the involved parties. As trunks are removed from a conference, CDR end records are produced. These records may identify different telephones or conferences as the local parties.

China – Attendant Monitor

If any party involved in a monitored call attempts to activate conference, monitoring is immediately deactivated. With Attendant Monitor active, the attendant cannot create a conference without first disabling the Attendant Monitor feature.

China – Supervised Analog Lines

If a terminal device answers an incoming call and then initiates a conference, no battery reversal answer supervision signal is extended to the terminal device when new parties of the conference answer. However, a hook flash disconnect supervision signal is extended to the terminal device when the last party in the conference disconnects.

If a terminal device initiates a conference, battery reversal answer supervision is extended to the terminal device when the first party answers. No polarity change is made when additional parties are added to the conference. The polarity is reverted to normal when the terminal device disconnects or when the last party in the conference disconnects.

China – Toll Call Loss Plan

Toll Loss Plan is not supported when a conference is in progress. When a local party connecting to a toll call makes a conference call, the pad levels on the ONS line card are switched back to their original (non-toll call) values. Then, the existing Conference algorithm takes care of the necessary pad switching. This would not alter the existing conference call in terms of loss levels.

When a conference call joins in a toll call, the Toll Loss Plan is not effective.

When a conference call involving a toll call becomes a two-party call, the Toll Loss Plan is applied on the set and DTI2 trunk.

The conference pad switching algorithm is not changed for the Toll Loss Plan, since the 7 db requirement does not apply to a Conference call.

Controlled Class of Service

If Controlled Class of Service (CCOS) is activated at a telephone involved in a conference call, established Central Office or toll calls are not affected. The CCOS restriction level is applied immediately, and no new calls can be initiated from the conference. The telephone remains in the CCOS active state after the conference is terminated.

Controlled Class of Service, Enhanced

If Controlled Class of Service (CCOS) is activated at a telephone on a conference call, established Public Exchange/Central Office or toll calls are not affected. The CCOS restriction level is applied immediately; however, no new calls can be initiated from the conference. That telephone remains in the CCOS state after the end of the conference.

Dial Access to Group Calls

The Conference feature cannot be applied to a Group Call.

Dial Intercom

If an analog (500/2500 type) telephone is part of a Dial Intercom Group (DIG), the user of the telephone can conference only with another user whose telephone is within the same Dial Intercom Group (DIG).

Digital Private Signaling System #1 (DPNSS1) Executive Intrusion

Executive Intrusion is denied if the requested party is established in a local conference, or if the requested party is involved in an enquiry call. These restrictions may apply to the unrequested party depending on the connection being used between the requested and unrequested parties.

End-to-End Signaling

The attendant console and the telephone receiving Attendant End-to-End Signaling cannot both activate End-to-End Signaling simultaneously.

Group Call

Neither Call Transfer nor Conference can be initiated during a Group Call. If an analog (500/2500 type) telephone user flashes the switchhook during an established Group Call, the user is dropped from the call.

Held Call Clearing

Active Conference calls are cleared by an on-hook or Release key action. Conference calls being held are cleared by an on-hook action only, and not by a Release key action. In either case, all other parties on the conference remain connected.

Hot Line

A Flexible Hot Line (non-enhanced) telephone cannot place conference calls, but an Enhanced Hot Line telephone can activate the conference feature. If the Hot Line restriction option is set, the conference call can terminate only to other Hot Line telephones. If the restriction option is not set, the conference call can terminate to any type of telephone.

ISDN QSIG/EuroISDN Call Completion

A Call Completion request cannot be made on a conference call attempt.

ISDN QSIG Name Display

An incoming QSIG call with name display presentation allowed is conferenced locally. When a conferee drops out of the conference, calling party's name information is displayed and is passed on to another conferee. Name display information remains until the last local set remains on the call. With presentation restricted, the calling party's name information is not displayed as conferees leave the call.

In-Band Automatic Number Identification

If an agent activates the Conference feature while active on an In-Band Automatic Number Identification (IANI) call, the display is cleared. The display remains clear while the Conference call is active. If the conferenced party releases first, the ANI number appears on the agent's display.

Malicious Call Trace

When a station or console that is on the conference loop activates the MCT feature, the trace record shows only the conference loop number and conference number as the ORIGTN, and the Terminal Number (TN) of the station or console that activated the feature as the TERTN. No information on the other parties in the conference is given.

Malicious Call Trace - Enhanced

If MCT is activated during a conference, the trace record shows the conference number and the conference loop number. Trace records are printed for each party involved in the conference. The originator of the call's trace record is printed first.

Meridian Mail Conference Control

Three- and six-party conference allows 2500 telephones to disconnect from Meridian Mail by dial access during a conference call.

A 2500 telephone on an established call flashes the switchhook to place the existing call on Consultation Hold. After receiving special dial tone, the user dials the third party. If the third party does not answer, the call is forwarded to Meridian Mail. If the 2500 telephone flashes the switchhook again, a three-party conference is established, including Meridian Mail. If the user does not flash the switchhook at this time, Privacy is in effect and the user can disconnect from Meridian Mail by dial access before returning to the original call. This can be done if the user is in conference or on a simple two-party call.

To disconnect from Meridian Mail, press octothorpe (#) to stop the recorded greeting, octothorpe (#) to stop recording your message, and 83 to disconnect. To disconnect from any other message system connected to the system, press 3 to stop the recorded message and the asterisk (*) to disconnect.

Meridian 911

When a call is answered, and then conferenced, the trunk priority is lost (the conference consultation call is an internal call and treated as low priority by the software). This operation is the same for normal calls and 911 calls.

Meridian 911 - Call Abandon

M911 abandoned calls cannot be conferenced.

Message Registration

The party that originates a call is charged. The charge cannot be moved to another party using Conference.

Multi-Party Operations

Current Conference feature for analog (500/2500 type) telephones with C6A is not affected by conference with TSA Class of Service.

Multi-Party Operations – Call Join

The Call Join feature allows a user of a system or digital telephone to conference in or transfer a third party to a party held on the user's telephone, without having to dial the third party. The user can then hang up.

Multi-Party Operations -Three-Party Service Multi-Party Operations Enhancements

The patience tone or the Misoperation ringback is not applied to a conference party.

Music

With basic Music on Hold, when a call is placed on consultation hold while a Conference is being established, music does not play. Enhanced Music (EMUS) package 119 is required for music on consultation hold. See the "Music, Enhanced" feature description in *Features and Services* (553-3001-306), Book 2.

Music, Enhanced

The held party receives Music when the Conference key is pressed, while the conference is being established, and whenever the conference is reduced to two parties with one party on Hold. Once the conference is established, Music is no longer provided.

A Six-party Conference operates the same as a Three-party Conference.

Network and Executive Distinctive Ringing

If a new party is to be included in an established conference, the ringing that is applied to the set of the new party depends on the sets of the established parties. The system scans the trunks and sets of the conferees for a trunk marked as distinctive or a set designated as executive. The ringing cadence of the new set depends on the highest index found by the scan.

Network Intercom

A Conference call may involve a mixture of intercom and regular DN keys.

No Hold Conference

This feature can be enabled at any time that a regular Conference-6 feature can be activated.

Off-Hook Alarm Security

The Off-Hook Alarm Security (OHAS) line lockout treatment occurs when a telephone associated with an OHAS DN initiates a Conference call and the ASTM expires. Only the Conference initiator receives the OHAS treatment; other conferees remain in Conference. If the initiator of the Conference call presses the Conference key, the OHAS DN is conferenced in with the other conferees.

On Hold on Loudspeaker

It will not be possible to conference the loudspeaker call to another party.

Override

A conference call cannot be entered by using Override.

Override, Enhanced

Telephones involved in conference calls cannot be force camped on or Priority Overridden. Overflow (fast busy) tone is returned to telephones attempting either Forced Camp-On or Priority Override.

Paging

Paging trunks cannot be conferenced.

Periodic Pulse Metering (PPM)

Whenever a PPM trunk is added to a conference, a CDR Start record is generated, if CDR is equipped on the trunk. The PPM pulse counts from the trunk are accumulated against the party who initiated the call. If a party who adds a PPM trunk to the conference disconnects while the conference is still in progress, read requests are sent to the PPM trunk to read the residual count. Then, the on-board counter is cleared, the residual count is added to the temporary meter, and the contents of the temporary meter are added to the terminal meter. A CDR Transfer (X) record is then printed against this party, and the temporary meter is cleared. The party that is charged is the one that has been in conference the longest. When a trunk with disconnect supervision disconnects, a CDR End record is immediately printed. For trunks that do not provide a disconnect signal, their CDR records are not printed until the last party disconnects from the conference.

Privacy Override

The Conference feature can be used to add other parties to a Privacy Override connection.

Recorded Announcement Trunk

A Recorded Announcement (RAN) trunk cannot be Conferenced.

Recorded Telephone Dictation

Dictation trunks cannot be conferenced.

Ring Again

This feature cannot be activated during a conference call.

Station Activity Records

For a set with Class of Service Call Detail Monitoring Allowed (CDMA) involved in a call with a trunk, a Station Activity Record is produced only when that set conferences in the first party. Conferencing of all subsequent parties does not generate a "D" record. An additional "D" record is produced when the last conferee with Class of Service CDMA connected to the trunk goes on hook. This does not affect any other CDR record generation during a conference.

Trunk Access from any Station

A switchhook flash on analog (500/2500 type) telephones results in special dial tone. Dialing SPRE + 4 (TAFAS access code) then picks up an incoming Trunk Access from any Station (TAFAS) call. A second switchhook flash reconnects the user to the original conference call. The call picked up by TAFAS is put on Consultation Hold. No other action can be taken with a call picked up in this way during an established conference call.

Trunk Barring

The originator of a conference call can connect only to a barred route on a consultation basis. A switchhook flash from an analog (500/2500 type) telephone results in a reestablished connection with the Originating Trunk Connection. The user of a Meridian 1 proprietary telephone must release the barred connection to return to the Originating Trunk connection, or the conference containing the Originating Trunk connection; operating the Conference key on a Meridian 1 proprietary telephone has no effect. An attendant may return to the Originating Trunk Connection, or the conference containing the Originating Trunk Connection, by releasing the barred connection. This is done by pressing the RLS DEST key; pressing the Conference key has no effect.

Trunk to Trunk Connection

Trunk to Trunk Connection allows external trunks to remain established in a call, provided that all external trunks involved have disconnect supervision. With respect to charging costs associated with a conference call, once the last set involved in the conference call disconnects, a search is made of all remaining trunks in the call to determine which call is established in the call for the longest period of time. This trunk is the chargeable Terminal Number (TN). This process is repeated to find the next chargeable TN.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 10 – Enable Conference 3 or Conference 6 for analog (500/2500 type) telephones.
- 2 LD 11 – Enable Conference 3 or Conference 6 for Meridian 1 proprietary telephones.

LD 10 – Enable Conference 3 or Conference 6 for analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(XFD) XFA (C6D) C6A	(Deny) allow transfer Class of Service. (Deny) allow six-party conference (C6A requires an XFA Class of Service).

LD 11 – Enable Conference 3 or Conference 6 for Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.

TN	l s c u	Terminal number Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx AO3 AO6	Add a Conference 3 or Conference 6 key. xx = key number.

Feature operation

To add a new party to an established call on a Meridian 1 proprietary telephone, follow these steps:

- 1 Press **Conference**.
The first party is on hold and you receive a dial tone.
- 2 Dial the number of the new party.
When the new party answers, you may talk privately.
- 3 Press **Conference** to include all parties in the call.
- 4 To add more parties to the conference (up to six, including yourself), repeat steps 1-3.

Note: If you make a mistake while dialing or receive a busy signal, press **Rls** to disconnect. To return to the call, press the key beside the fast flashing indicator.

To add a new party to an established call on an analog (500/2500 type) telephone, follow these steps:

- 1 Flash the switchhook.
You hear three beeps followed by dial tone. The first party is on hold.
- 2 Dial the telephone number of the person to be included in your call.
When the call is answered, you may talk privately with the new party.

- 3 Flash the switchhook to include all parties in the call.
- 4 To add more parties to the conference (up to six, including yourself), repeat steps 1-3.

Note: If you make a mistake while dialing or receive a busy signal, flash the switchhook to return to the original caller.

Conference Warning Tone Enhancement

Contents

This section contains information on the following topics:

Feature description	1219
Operating parameters	1220
Feature Interactions	1220
Feature packaging	1220
Feature implementation	1221
Feature operation	1222

Feature description

The Conference Warning Tone Enhancement feature was developed to meet the Italian requirements to distinguish between a conference warning tone and a true intrusion. A Conference Warning Tone warns users that they are involved in a conference connection. An Intrusion Tone warns users involved in a conference of an intrusion into their connection.

Prior to this development, the Intrusion Tone was also used as a Conference Warning Tone, and the two tones could only be distinguished by their cadences, not by their tone frequency. With this feature, a separate Conference Warning Tone can be defined, with its tone and cadence defined in overlay program. This tone and cadence can only be programmed in Flexible Tones and Cadences (FTC) table 0.

The Conference Warning Tone can be enabled or disabled using the CWFT prompt in overlay program. When the tone is enabled, a permanent speech path connection is placed from the tone circuit to the conference circuit to provide the tone to all parties connected in a conference. The tone and cadence for the Conference Warning Tone can be programmed to be distinctively different from the tone and cadence produced by the Intrusion Tone given by such features as Barge-In, Break-In, or Busy Verify.

Operating parameters

This feature only applies to the Cabinet system.

The Conference Warning Tone will only be contained and defined within FTC Table 0. All other FTC tables will not contain any references to the Conference Warning Tone and this tone cannot be copied to any other FTC table by a numbered response to the DFLT (Default to existing FTC tone table) prompt in overlay program. Since existing code does not allow FTC table 0 to be deleted, there is no danger of deleting the Conference Warning Tone.

For cadence tables, table numbers above 15 should be chosen for the Conference Warning Tone, because cadence tables numbers below 15 are influenced by Software Controlled table numbers.

Feature Interactions

Tones and Cadences

There are no changes to the limitations to cadence numbers entry values. The same restriction still applies.

Feature packaging

This feature is included in base system software.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 56 – Configure Conference Warning Tone.
- 2 LD 97 – Enable Conference Warning Tone.

LD 56 – Configure Conference Warning Tone.

Prompt	Response	Description
REQ	CHG	Modify existing data.
TYPE	FTC	Flexible Tones and Cadences data block.
TABL	0	FTC table number 0. Only table number 0 can be used to make changes to the Conference Warning Tone.
...		
RING	NO	Modify the ringing feature definitions.
HCCT	YES	Modification of the hardware controlled cadence tone definitions allowed.
...		
- EEST	NO	End-to-end Signaling type.
- CFWT		Conference Warning Tone.
-- XTON	0-(3)-255	The Conference Warning Tone number. A tone number provided by the tone circuit.
-- XCAD	0-(19)-255	The Conference Warning Tone cadence number. Cadence number must have been previously set up within LD 56 by responding to the TYPE prompt with FCAD.

LD 97 – Enable Conference Warning Tone.

Prompt	Response	Description
REQ	CHG	Modify existing data.
TYPE	XCTP	Conference/TDS/MF Sender card parameters.
CPAD	(0) 1	Conference pad values. Use software pad values. Use pad values defined by switch settings.
DTMF	0-(14)-255	Tone table of the first Dual-tone Multifrequency digit to be used.
CFWT	(NO) YES	(Disable) enable Conference Warning Tone.

Feature operation

No specific operating procedures are required to use this feature.

Console Operations

Contents

This section contains information on the following topics:

Feature description	1223
Operating parameters	1224
Feature interactions	1225
Feature packaging	1225
Feature implementation	1225
Feature operation	1227

Feature description

Console Operations consists of Console Presentation and Queue Thermometer.

Console Presentation

This part of the feature makes it possible to present a call to a certain Incoming Call Indicator (ICI) key only to specified consoles of a customer or an Attendant Console Group (ACG).

Those consoles are configured (LD 15 option PSA/PSD) to have presentation status for the ICI key to handle the following call treatments:

- If a call is not automatically presented to an idle console, it is indicated on the appropriate ICI key on all consoles within the customer or ACG (LD 15 option MTI/CUI).

- When all attendants with presentation status for a certain ICI key within a group, customer or ACG are in position busy, then a call to that ICI key will be presented to any other console within the group or only presented to the last console that is not in Night Service in a group (LD 15 option RECA/RECO).
- When a ACG is in Night Service, a call to that ACG is redirected to the customer or trunk night DN, or to a night ACG (LD 15 option NCA/NCD).

Queue Thermometer

This part of the feature applies to a special console which has four single-digit numeric displays. Each display can be configured to show the number of attendant calls in queue for specified ICI keys of a customer or an ACG (LD 15 option MTI/CUI).

A queue thermometer display can also be configured to show the number of calls to those ICI keys that are not individually displayed on any other display of that console.

Optionally, this sum may exclude calls to ICI keys to which inter-attendant calls, recalls and metered calls are presented (LD 15 option DRT/DRE).

Operating parameters

Console Presentation

When Multi-tenant Service (MTS) is in use, the following limitations apply when using Console Operations:

- All attendants must belong to an ACG
- All attendants must belong to only one ACG, and
- No attendants must belong to ACG 0.

Feature interactions

Console Presentation

Departmental Listing Directory Number

Departmental Listing Directory Number is a way of directing attendant calls. The feature has some similarities to MTS, but it overrides Multi-tenant Service (MTS) and is therefore not affected by Console Presentation.

Listed Directory Numbers, Network Wide

Console Operation makes it possible for each console to select which ICI call types will be presented to the console. Network wide LDN does not work with the Console Presentation feature because it is not supported by NAS. Console Operation can, however, be configured with two additional LDNs.

The queue thermometer indicates how many calls are in the queue for a certain ICI key. An ICI key can correspond to more than one ICI type. Even though the ICI type of a call may be different with or without this feature active, it will not interact with queue thermometer operations.

Feature packaging

Console Operations (COOP) package 169.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Configure the Console Presentation feature.
- 2 LD 15 – Configure the Queue Thermometer feature.

Console Presentation

LD 15 – Configure the Console Presentation feature.

Prompt	Response	Description
REQ:	NEW CHG	Add, or change.
TYPE:	ATT_DATA	Attendant console options
...		
- OPT	(PSD) PSA	Presentation Status selection allowed (denied) on attendant consoles.
	(CUI) MTI	ICI lamps show Multi-tenant Service (MTS) Attendant Console Group (AGP) information for incoming calls.
	(RECO) RECA	Attendant calls will be redirected when there is no presentation status to other consoles in the console group; RECO when all consoles are busy, RECA when all but one console is busy.
	(NCD) NCA	When an Attendant Console Group is in Night Service, redirection of attendant calls is allowed (denied).

Queue Thermometer

LD 15 – Configure the Queue Thermometer feature.

Prompt	Response	Description
REQ:	NEW CHG	Add, or change.
TYPE:	CDB	Customer Data Block.
...		
- OPT	(DRE) DRT	Queue thermometer includes (excludes) Inter-Attendant calls, Recalls and Metered calls.

Feature operation

No specific operating procedures are required to use this feature.

Console Presentation Group Level Services

Contents

This section contains information on the following topics:

Feature description	1229
Operating parameters	1230
Feature interactions	1230
Feature packaging	1231
Feature implementation	1232
Feature operation	1234

Feature description

A Console Presentation Group (CPG) is a subset of the consoles configured for a customer. A CPG handles attendant calls from one or more tenants and incoming trunk calls on one or more routes. CPG improves functions for the following CPG Level Services:

- **Attendant Overflow Positions (AOP)**
AOP DN and waiting time threshold can be specified for each CPG.
- **Call Waiting Indication**
Count thresholds, timers, and buzz options can be defined for each CPG.
- **Incoming Call Identification (ICI)**
ICI keys can be defined for each CPG. Attendants see only those ICI definitions for their own CPG.

- Listed Directory Numbers (LDN)
Each CPG allows four LDNs.
- Night Service (NSVC)
Each CPG can go into Night Service mode independent of the other groups.
- Recorded Announcement (RAN)
Each CPG can have its own recorded overflow announcements.

Operating parameters

Console Presentation Group (CPG) services and Departmental Listed Directory Numbers (DLDN) are mutually exclusive at the customer level. That is, DLDNs can be equipped on the same system with Console Presentation Groups (CPGs), but not enabled for the same customer group at the same time.

Feature interactions

Attendant Administration

Attendants can dial the access code and activate the Administration mode. In this mode, they can modify the configuration of any telephone for this customer.

Attendant Secrecy

The Secrecy option specified for a customer applies to all attendants for that customer.

Attendant Supervisory Console

The supervisory console specified for a customer belongs to one CPG. In the Supervisory mode, ICI indicators show only the information for ICIs in that CPG. Thresholds specified in the Customer Data Block apply only to the CPG where that console resides, and do not effect any other CPG.

Call Park

Parked calls recall to the attendant who parked them. If that attendant console goes into Position Busy mode, the call recalls to an attendant in the same CPG as the original.

If the attendant goes into Night Service while a call is parked, the recall is presented to the Night DN defined for that CPG. If an attendant goes into Night Service while the recall is in the attendant queue, it stays in the attendant queue until the call is abandoned.

Tenant access checking between the set (A) who picks up a parked call and the party (B) who parked the call, is enforced as follows:

- If B is a set, tenant-to-tenant access must be allowed between A and B.
- If B is an attendant, A and B must belong to the same CPG for tenant-to-tenant access.
- If access is denied, set A (who intends to pick up the access-denied parked call) receives a blocking tone.

Network-Wide Listed Directory Number

CPG does not work with the network part of Network-Wide Listed Directory Number (LDN) because CPG is not supported by Network Attendant Service, which the network part requires. This feature does, however, provide two additional LDNs for each Console Presentation Group.

Night Key for Direct Inward Dialing Digit Manipulation

The Day/Night table can be activated with the DRC key by any attendant in the Console Presentation group.

Feature packaging

Console Presentation Groups (CPGS) package 172 requires:

- Multi-Tenant Service (TENS) package 86

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 93 – Enable Console Presentation Group (CPG).
- 2 LD 93 – Assign attendant consoles to a presentation group.
- 3 LD 93 – Assign tenants to an attendant group number.
- 4 LD 93 – Assign a route to an attendant group number.
- 5 LD 93 – Add Console Presentation Group features.

LD 93 – Enable Console Presentation Group (CPG).

Prompt	Response	Description
REQ	CHG	Change.
TYPE	TENS	Multi-Tenant data block.
CUST	xx	Customer number, as defined in LD 15
CPGS	YES	Enable CPG Level Services.

LD 93 – Assign attendant consoles to a presentation group.

Prompt	Response	Description
REQ	CHG	Change.
TYPE	CPG	Console Presentation Group data block.
CUST	xx	Customer number, as defined in LD 15
AGNO	0-63	Attendant Console Group number.
ANUM	1-63 1-63	Attendant console numbers.

LD 93 – Assign tenants to an attendant group number.

Prompt	Response	Description
REQ	CHG	Change.
TYPE	TCPG	Tenant to Console Presentation Group data block.
CUST	xx	Customer number, as defined in LD 15
TEN	1-511	Tenant number.
AGNO	0-63	Attendant Console Group number.

LD 93 – Assign a route to an attendant group number.

Prompt	Response	Description
REQ	CHG	Change.
TYPE	RCPG	Route to Console Presentation Group data block.
CUST	xx	Customer number, as defined in LD 15
ROUT		Route number
	0-511	Range for Large System and CS 1000E system.
	0-127	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
AGNO	0-63	Attendant Console Group number.

LD 93 – Add Console Presentation Group features.

Prompt	Response	Description
REQ	NEW CHG	Add, or change Multi-Tenant Service for a customer.
TYPE	CPGP	Console Presentation Group level parameters.
CUST	xx	Customer number, as defined in LD 15

CPG	1-63	Console Presentation group number.
LDN0	xxxx	Listed DN 0.
NIT1	xxxx	First Night Service by Time of Day (NTOD) DN.
TIM1	hhmm	Hour minute for First NTOD DN.
NIT2	xxxx	Second NTOD DN.
TIM2	hhmm	Time for Second NTOD.
NIT3	xxxx	Third NTOD DN.
TIM3	hhmm	Time for Third NTOD DN.
NIT4	xxxx	Fourth NTOD DN.
TIM4	hhmm	Time for Fourth NTOD.
ICI	xx aaa	Incoming Call Indicators (ICI).
AQTT	0-(30)-255	Attendant queuing threshold.
AODN	xxxx	Attendant overflow DN.
CWCL	(0)-255 (0)-255	Number of waiting calls, lower threshold and upper bound.
CWTM	(0)-511 (0)-511	Time for waiting calls, lower threshold and upper bound.
CWBZ	(NO) YES (NO) YES	Call Waiting Buzz. The first field provides a two-second buzz when the upper CWCL or CWTM threshold is exceeded. The second field provides a buzz when the first call enters the queue.

Feature operation

No specific operating procedures are required to use this feature.

Controlled Class of Service

Contents

This section contains information on the following topics:

Feature description	1235
Operating parameters	1235
Feature interactions	1236
Feature packaging	1238
Feature implementation	1238
Feature operation	1240

Feature description

Controlled Class of Service (CCOS) alters the Class of Service restriction levels on telephones that have been defined as CCOS controlling telephones. This applies to Meridian 1 proprietary telephone users designated as CCOS controllers. While CCOS is active, Public Exchange/Central Office or toll calls made from these telephones cannot be completed without first being routed through an attendant.

Meridian 1 proprietary telephones designated as CCOS controlling telephones are assigned a CCOS key/lamp that is used to activate or cancel the system-defined CCOS restriction level on individual DNs.

Operating parameters

Controlling telephones can be any Meridian 1 proprietary telephone.

CCOS controlling telephones must refer to the Prime Directory Number (PDN) when activating or canceling CCOS on other telephones.

Automatic Call Distribution (ACD) agents cannot be restricted by CCOS.

Feature interactions

Authorization Code

The Authorization Code overrides a telephone's CCOS restriction level.

Conference

If CCOS is activated at a telephone involved in a conference call, established Central Office or toll calls are not affected. The CCOS restriction level is applied immediately, and no new calls can be initiated from the conference. The telephone remains in the CCOS active state after the conference is terminated.

Flexible Feature Codes

If Electronic Lock (ELK) is activated, the CCRS Class of Service is used whether Controlled Class of Service (CCOS) is active or not. ELK takes precedence over CCOS. If ELK is deactivated, the set is treated as per existing operation.

When FFC ELKA and a password is entered, this set will use the CCRS Class of Service configured in LD 15. The CCRS Class of Service will always be used whether or not CCOS is currently controlling the set's Class of Service. When FFC ELKD and a password is entered, the set will use the appropriate Class of Service associated with this set. If CCOS is enabled for the set, the associated customer Class of Service is used (that is, CCRS, ECC1, or ECC2). If CCOS is not enabled for this set, the set's own Class of Service is used.

When FFC ELK is deactivated, the set reverts back to the Class of Service as it should be without FFC ELK, instead of always reverting back to the set's Class of Service (that is, if CCOS is enabled, it will use the customer's Class of Service; if CCOS is not enabled, it will use the set's Class of Service).

Hot Line

When a Hot Line DN is on a telephone that has Controlled Class of Service activated, Hot Line calls ignore the imposed Class of Service if the System Speed Call (SSC) package is present and the Hot Line list is given an adequate Network Class of Service (NCOS) for the override

Multiple Appearance Directory Number

CCOS restriction levels are activated or canceled on controlled telephones through their Prime Directory Number (PDN). When the PDN of a Meridian 1 proprietary telephone is made CCOS active, all DNs on that telephone are also restricted. If the DN is a PDN on other telephones, those telephones are also restricted (if they have CCSA Class of Service).

Room Status

You can change the access restrictions for room telephones from the BGD or from a telephone equipped with a Room Status key (RMK).

Scheduled Access Restrictions

During normal hours, CCOS restrictions override normal telephone restrictions. During off-hour periods or times when a Scheduled Access Restrictions (SAR) LOCK is in effect, however, Scheduled Access Restrictions apply. When the LOCK or off-hour period ends, CCOS restrictions continue to apply until they are removed or SAR becomes effective again. Whether a CCOS controller or electronic lock is used to activate CCOS, there is no indication to the user when Scheduled Access Restrictions are in effect, overriding CCOS restrictions. A telephone defined in LD 10 or 11 or a trunk defined in LD 14, which is assigned an SAR group number, has its Class of Service defined by the SAR schedule of its SAR group.

Station Category Indication

The Controlled Class of Service (CCOS) feature has priority over SCI. A station's SCI category is suppressed when CCOS is active, and calls to the attendant DN carry the CCOS class defined in the database.

Feature packaging

The (CCOS) package must be equipped to activate the Controlled Class of Service feature.

Feature implementation

Task summary list

The following is a summary of the tasks in this section:

- 1 LD 15 – Enable CCOS for a customer.
- 2 LD 11 – Allow CCOS on Meridian 1 proprietary telephones.
- 3 LD 10 – Allow CCOS on analog (500/2500 type) telephones.
- 4 LD 11 – Change CCOS controlling telephone assignments on Meridian 1 proprietary telephones.

LD 15 – Enable CCOS for a customer.

Prompt	Response	Description
REQ:	CHG	Change.
TYPE:	CCS	Controlled Class of Service options
CUST	0-99 0-31	Customer number For Large Systems For Small Systems and CS 1000S systems
- CCRS	UNR CUN CTD TLD SRE FRE FR1 FR2	Unrestricted. Conditionally unrestricted. Conditionally toll-denied. Toll-denied. Semi-restricted. Fully restricted. Fully restricted 1. Fully restricted 2.

LD 11 – Allow CCOS on Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(CCSD), CCSA	(Deny) allow CCOS.

LD 10 – Allow CCOS on analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(CCSD) CCSA	(Deny) allow CCOS.

LD 11 – Change CCOS controlling telephone assignments on Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx COS	Assign CCOS controlling key.

Feature operation

To activate CCOS, follow these steps:

- 1 Press **CCOS**.

Note that this is a toggle: If CCOS is already active, pressing the key will change the CCOS state to inactive. Check the CCOS lamp to determine if CCOS is already active.

- 2 Dial the Prime Directory Number (PDN) of the telephone to be changed and press **CCOS**.
- 3 Press **Rls**.

To deactivate CCOS, follow these steps:

- 1 Press **CCOS**.
- 2 Dial the PDN of the telephone to be returned to its original Class of Service and press **CCOS**.
- 3 Press **Rls**.

Controlled Class of Service, Enhanced

Contents

This section contains information on the following topics:

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Feature description

Enhanced Controlled Class of Service (ECCS) allows a controller or attendant console to alter the Class of Service (CLS) restriction levels of other Controlled Class of Service (CCOS) telephones. The feature allows two customer-defined levels of restriction. In addition, the CCOS key can be assigned to an attendant console as a programmable key.

Operating parameters

Controlling telephones can be any Meridian 1 proprietary telephone.

A CCOS controlling telephone must refer to the Prime DN when activating or canceling CCOS on other telephones.

Automatic Call Distribution (ACD) agents cannot be restricted by CCOS.

This feature is applicable only when the CLS lamp is lit on the controlling telephone.

The CLS key on an attendant console can be used only on an idle loop. (The loop lamp is lit; source and destination lamps are dark.)

Feature interactions

Attendant Administration

This feature cannot change Controlled Class Service restrictions (CCRS), ECC1 or ECC2, but can assign CLS keys to certain telephones.

Attendant Supervisory Console

When the attendant is in the supervisory mode, CCOS programming is prohibited.

Authorization Codes

The Authorization Code can override a telephone's CCOS restriction level.

Conference

If CCOS is activated at a telephone on a conference call, established Public Exchange/Central Office or toll calls are not affected. The CCOS restriction level is applied immediately; however, no new calls can be initiated from the conference. That telephone remains in the CCOS state after the end of the conference.

Coordinated Dialing Plan

The internal DN is used for programming the CLS level for Coordinated Dialing Plan (CDP) from the controlling telephone.

Multiple Appearance Directory Number

All CCOS restriction levels are activated and canceled from the Prime Directory Number (PDN) for CCOS controlling telephones. The PDN for a Meridian 1 proprietary telephone is made CCOS active, and all DN's for that telephone are restricted as well. If that DN is a PDN on other telephones, they are also restricted (if they have CCSA Class of Service).

Pretranslation

The DN used to program the CCOS should be the actual DN before pretranslation. When programming CCOS, the DN entered is not pretranslated.

Feature packaging

Enhanced Controlled Class of Service (ECCS) package 173 requires:

- Controlled Class of Service (CCOS) package 81.

Feature implementation**Task summary list**

The following is a summary of the tasks in this section:

- 1 LD 15 – Define the Class of Service restrictions for the system.
- 2 LD 11 – Assign keys for the controller telephone.
- 3 LD 10 – Configure controlled analog (500/2500 type) telephones.
- 4 LD 11 – Configure the controlled Meridian 1 proprietary telephones.
- 5 LD 12 – Assign ECCS keys for attendant console.

LD 15 – Define the Class of Service restrictions for the system. (Part 1 of 2)

Prompt	Response	Description
REQ:	CHG	Change.
TYPE:	CCS	Controlled Class of Service options
Note: Input restrictions apply when CCSA is active. When CCSA is inactive, the telephone has the CLS assigned in LD 10/11.		

LD 15 – Define the Class of Service restrictions for the system. (Part 2 of 2)

Prompt	Response	Description
CUST		Customer number
	0-99	Range for Large System and CS 1000E system.
	0-31	Range for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T.
- CCRS		CCOS restrictions.
	(UNR)	Unrestricted service.
	CTD	Conditionally Toll Denied.
	CUN	Conditionally Unrestricted.
	FRE	Fully Restricted.
	FR1	Fully Restricted level 1.
	FR2	Fully Restricted level 2.
	SRE	Semi-Restricted.
	TLD	Toll Denied.
- ECC1	xxx	Enhanced Controlled Class of Service, Level 1. xxx = (UNR), CTD, CUN, FRE, FR1, FR2, SRE, TLD.
- ECC2	xxx	Enhanced Controlled Class of Service, Level 2. xxx = (UNR), CTD, CUN, FRE, FR1, FR2, SRE, TLD.
<p>Note: Input restrictions apply when CCSA is active. When CCSA is inactive, the telephone has the CLS assigned in LD 10/11.</p>		

LD 11 – Assign keys for the controller telephone. (Part 1 of 2)

Prompt	Response	Description
REQ:	CHG	Change.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.

LD 11 – Assign keys for the controller telephone. (Part 2 of 2)

Prompt	Response	Description
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx COS	Key number for CCOS key on controller telephone.

LD 10 – Configure controlled analog (500/2500 type) telephones.

Prompt	Response	Description
REQ:	CHG	Change.
TYPE:	500	Telephone type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(CCSD) CCSA	(Deny) allow CCOS.

LD 11 – Configure the controlled Meridian 1 proprietary telephones.

Prompt	Response	Description
REQ:	CHG	Change.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
CLS	(CCSD) CCSA	(Deny) allow CCOS.

LD 12 – Assign ECCS keys for attendant console.

Prompt	Response	Description
REQ	CHG	Change.
TYPE	2250	Attendant console type.
TN		Terminal number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
KEY	xx COS	Key number for CCOS controller key on attendant console. xx = key number (must be greater than 1).

Feature operation

To activate Enhanced Controlled Class of Service (ECCS) from a Meridian 1 proprietary telephone with the feature currently inactive, follow these steps:

- 1 Press **CCOS** to begin the activation sequence.

Note that this is a toggle: if CCOS is already active, pressing the key will change the CCOS state to inactive. Check the CCOS lamp to determine if CCOS is already active.

- 2 Dial the PDN of the telephone to be changed and press **CCOS**. The controlling telephone's display, if equipped, shows the DN of the changed telephone and a 0 (zero).

- 3 To select ECC1, dial # 1.

Note that the octothorpe (#) is required. The controlling telephone's display, if equipped, shows the DN of the changed telephone and a 1.

To select ECC2, dial # 2.

Note that the octothorpe (#) is required. The controlling telephone's display, if equipped, shows the DN of the changed telephone and a 2.

- 4 Press **Rls**.

To activate ECCS from an attendant console, follow these steps:

- 1 Select an idle loop key.

- 2 Press **CCOS**.

Note that this is a toggle: If CCOS is already active, pressing the key will change the CCOS state to inactive. Check the CCOS lamp to determine if CCOS is already active.

- 3 Dial the PDN of the telephone to be changed and press **CCOS**. The console's display shows the DN of the changed telephone. A 0 (zero) is displayed if the telephone is active in the original CCOS mode.

If the telephone does not have CCOS or ECCS active, the console does not acknowledge that you have successfully entered a valid CCOS DN.

- 4 To select ECC1, dial # 1.
 Note that the octothorpe (#) is required. The console's display shows the DN of the changed telephone and a 1.

 To select ECC2, dial # 2.
 Note that the octothorpe (#) is required. The console's display shows the DN of the changed telephone and a 2.
- 5 Press **Rls**.

To deactivate Enhanced Controlled Class of Service (ECCS), follow these steps:

- 1 Select an idle loop key.
- 2 Press **CCOS**.
- 3 Dial the PDN of the telephone to be returned to its original Class of Service and press **CCOS**.
- 4 Press **Rls**.

Converged Office

The multimedia strategy of many CS 1000 customers is based on deploying the Microsoft® Office Communicator soft clients and Live Communications Server. This strategy enables the introduction of multimedia capabilities using popular instant messenger (IM) clients without the need to install and support additional desktop software.

The Nortel Converged Office feature combines the business-grade telephony of the Communication Server 1000 with the real-time multimedia communication and the remote call control provided by Microsoft® Office Live Communications Server 2005 and Microsoft® Office Communicator 2005 products.

For a complete description of this product, refer to *Nortel Converged Office Implementation Guide* (553-3001-025).

On the Call Server, package 408, Multimedia Systems Convergence (MS_CONV) must be unrestricted. Class of Service (CLS) Remote Call Control (T87D/T87A) must be allowed in LD 11. For more information, refer to *Software Input/Output: Administration* (553-3001-311).

Corporate Directory

Contents

This section contains information on the following topics:

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Feature description

A Corporate Directory database is created from Optivity Telephony Manager (OTM) information. This database is downloaded and stored on the system.

The Corporate Directory feature extends the use of this database to IP Phones. The Nortel IP Phone 2002, IP Phone 2004, IP Softphone 2050, and Mobile Voice Client (MVC) 2050 provide access to Corporate Directory through the **Directory** key.

Corporate Directory is not supported on the IP Phone 2001.

Corporate Directory provides an alphabetical list of entries using last names (system generated). Users can:

- search by name
- view additional information on each entry
- dial from the Corporate Directory

The system administrator can configure OTM to download the directory database manually, or automatically, to the system.

Note: For information on the Corporate Directory feature for M3900 series telephones, refer to *Telephones and Consoles: Description, Installation, and Operation* (553-3001-367).

Operating parameters

The following telephones support the Corporate Directory feature:

- IP Phone 2002
- IP Phone 2004
- IP Softphone 2050 or MVC 2050

To access Corporate Directory from the telephone, the user must have the Corporate Directory Allowed (CRPA) Class of Service defined in LD 11.

When Corporate Directory is being updated with new data, the user cannot access Corporate Directory.

The OTM Corporate Directory utility gathers data from the OTM databases and downloads it to the system. To use the Corporate Directory utility, OTM 2.0 or later must be installed. For more information, refer to *Optivity Telephony Manager: Installation and Configuration* (553-3001-230).

Call Server memory requirements

The Call Server memory usage for Corporate Directory is the same for both IP Phones and Digital Telephones.

The equations for approximating Call Server memory usage for Corporate Directory are:

- 1 Call Server hard disk space needed (bytes) = Number of directory entries * Average length of all entries *2
- 2 Call Server RAM needed to store database (bytes) = (Average length of all entries + 20) * 1.25 * Number of directory entries

For a sample database where the average length is 29.5 characters, see Table 2 for the Call Server memory requirements.

Table 2
Memory requirements based on database size

Call Server RAM needed	Database size (rounded to nearest 1000)	Call Server Hard disk space needed (rounded to next 0.5 MB)
1 MB	16 000	1.5 MB
2 MB	32 000	2.0 MB
3 MB	48 000	3.5 MB
4 MB	64 000	4.0 MB
5 MB	80 000	5.5 MB
6 MB	96 000	6.0 MB
7 MB	113 000	7.0 MB

Feature interactions

Call Transfer Conference

The Corporate Directory lookup feature works during Call Transfer and Conference operations.

Feature packaging

This feature is packaged under Corporate Directory (CDIR) package 381.

Feature implementation

Note: You can change the Call Server configuration while IP Phone users are logged on to Corporate Directory. The changes only take effect when the user logs off and then logs on again to the Corporate Directory.

LD 11 – Configure CRPA/CRPD Class of Service.

Prompt	Response	Description
REQ:	NEW CHG	Add new data, or change existing data.
TYPE:	a...a	Telephone type. Type ? for a list of possible responses.
TN		Terminal Number
	l s c u	Format for Large System and CS 1000E system, where l = loop, s = shelf, c = card, u = unit.
	c u	Format for Small System, CS 1000S system, Media Gateway 1000B, and Media Gateway 1000T, where c = card and u = unit.
...		
CLS	(CRPD) CRPA	Enable or disable the Corporate Directory feature for this TN.

Feature operation

Refer to Procedure 1 to access the Corporate Directory on the IP Phones.

Procedure 1

Accessing the Corporate Directory

- 1 Press the **Directory** key to view a list of available applications.
- 2 Highlight **Corporate Directory**, and then press the **Select** soft key.
- 3 Go through the Status Query process.
- 4 Enter a name, and select **Search**.

Note: You can enter special characters in the search parameters. The special characters include some symbols (for example, “+” and “-”) and international characters.

- 5 To enter special characters, press the Up navigation key.

The special characters are displayed.

- 6 Use the navigation keys to review the special characters available.

Note: The Corporate Directory may not be available for the following reasons:

- The Corporate Directory is locked. The message “Try again Later” displays.
- The Corporate Directory file is not available. The message “Directory unavailable” displays.
- The Class of Service is not configured.

- 7 To exit the Corporate Directory, press the **Quit** key or the **Directory** key.

End of Procedure

Special characters

The special character set includes all characters from the extended portion of the ASCII character set. The extended ASCII character set that supports the IP Phone's current language is the character set that appears in the edit mode. The special character set contains up to 130 characters. It is displayed in six lines with 24 characters on each line. Use the navigation keys to scroll through the list or to move through a 24-character line.

The special character set does not include upper and lowercase letters or numerals. Use the keypad of the IP Phone to define these characters.

Search/Edit screen features

Review Table 3 for more information on the Search/Edit screen features. The features in Table 3 apply to the IP Phone 2002, IP Phone 2004, IP Softphone 2050, and the MVC 2050.

Table 3
Search and Edit screen features (Part 1 of 2)

Select this key...	To...
Delete	Backspace one character.
Cancel	Close the Corporate Directory.
Case	Switch the next character to either uppercase or lowercase.
Search	Search for directory entries. Results are displayed in either a List View screen or No Match screen.
More	Switch pages.
Number 1-9	Toggle characters.
Up/Down navigation	Display a screen to enter special characters. Use the Up and Down navigation keys to navigate through the lists of available special characters.

Table 3
Search and Edit screen features (Part 2 of 2)

Select this key...	To...
Right/Left navigation	Move cursor location. When reviewing special characters, use these keys to select a character in the line display.
Choose	Select a special character. This option is available when reviewing the special characters.
Text	Close the special character display. No special character is selected. The display returns to the default Search/Edit screen.

Corporate Directory views

There are two search results screens available for the IP Phones:

- ListView (default view) — available for IP Phone 2002, IP Phone 2004, IP Softphone 2050, and MVC 2050
- CardView — available only for IP Phone 2004, IP Softphone 2050, and MVC 2050

If a search was successful and entries were found in the directory, the first match displays on the screen.

Note: If there is no match to the search query, you can choose to either start a new search or change the information in the initial search.

ListView

The ListView is available for IP Phone 2002, IP Phone 2004, IP Softphone 2050, and MVC 2050. The ListView screen shows a list of names where the user selects the name they want to call from the list using the navigation keys.

CardView

The CardView is available only on the IP Phone 2004, the IP Softphone 2050, and the MVC 2050. The Card view provides the following information about the name found in the directory: name, telephone number, and department name.

Table 4
ListView and CardView screen features

Press this key...	To...
Up or Down	Scroll through the list of directory entries that match your search criteria.
Right	On the IP Phone 2004 and IP Softphone 2050, change view to Card view, where the name, telephone number, and department are displayed.
Left	In Card view only, return to List view.
Dial	<p>Dial the selected DN.</p> <ul style="list-style-type: none"> — If there is no DN number associated with the directory entry, a message displays (“No number in directory”). — If there is no available DN key, a message displays (“No available line”). When displayed, select Done to return to the List view or Card view.
NewFind	Return to the Search/Edit screen.
Resume	<p>Return to the Search/Edit screen with the previously entered name displayed.</p> <p>Appears on both views.</p>

Nortel Communication Server 1000

Features and Services

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