Software Portfolio for the International Carrier VoIP Market

Communication Server 2000 (CS2000)

Release ISN08

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Chapter 1   Using the Communication Server 2000 (CS2000) Software Portfolio

1.1   Audience, Purpose and Structure

The *Communication Server (CS2000) Software Portfolio* provides a comprehensive overview of the CS2000 software options available to network operators in release ISN08. This guide gives an overview of all the new software functionalities available with the CS2000 solution, including the Product Computing module Load and related solution component loads. This document is part of the continuing commitment by Nortel Networks to provide advance planning information, enabling network operators to make informed and confident investment decisions. It is intended for account executives, proposal specialists and marketers, as well as technology planners. The guide provides assistance in selecting the most appropriate features to meet network operator requirements.

This guide is organised as follows:

- The Contents pages give a complete list of CS2000 features, along with their respective order codes.
- Chapter 1 (this Chapter) is an overview of this Guide.
- Chapter 2 describes the network capabilities of CS2000.
- Chapter 3 describes the network services which CS2000 can provide.
- Chapter 4 contains a list of abbreviations and acronyms.
- The Applicability Matrix appendix gives information about the applicability of order codes to solutions and gateways. Nortel Networks is committed to providing high quality products that meet the needs of the customer and the particular market, and to the support of open standards. Therefore, some options may be provided specifically for certain solutions and gateways.
- The Order Code History appendix gives a history of the order codes which have been replaced in subsequent development releases due to changes in the software architecture.
- The TDM Order Code Mapping appendix shows mappings between order codes where TDM order code functionality has been productized for Wireline VoIP with new order codes. These Wireline VoIP order codes may map to a single TDM order code, or map to multiple TDM order codes.

This guide assumes that the reader is familiar with the CS2000 switch offering. Further information can be found in *CS2000 Product Description Communication Server Capabilities for International Markets,* which provides a high-level functional view of the complete portfolio of ISN08 capabilities that are available for deployment in international markets. It is intended for internal use and for controlled external distribution to Nortel networks customers.

Note: Information on TDM software functionalities available on the TDM side of a CS2000 hybrid switch can be found in NN10515-111, *Software Portfolio for the international TDM market*.

In addition, there are five versions of the Customer Information Guide (CIG) - one for each solution:

NN10049-100, *Int Packet Trunking / Transit Solution - AAL2*

NN10050-100, *Int Packet Trunking / Transit Solution - IP*

NN10052-100, *Int Integrated Packet Access Solution - Wireline*

NN1050101-101, *ISN08 International Succession Hybrid Solution*

NN10266-100, *Integrated Packet Universal Access Solution*

For other documents on Voice Over IP solutions portfolio, contact your Nortel Networks representative.

Feature Information

The following example illustrates the layout used for the feature information in Chapters 2 and 3. Not all sections are required for all features.

Order code .... **LOC00005   Dial Plan Translation Enhancements**

NEW!

Order code description .... This order code increases the maximum number of entries in table LINEATTR from 1024 to 4096.

This symbol indicates an order code or feature that is new in this release.

Features which make up the order code .... **CAPABILITIES AND VALUE**

Feature name .... **Dial Plan Translation Enhancements**

Feature Description ....
- Provides an increased number of entries in table LINEATTR from 1024 to 4096. In the CS2000, the various blocking arrangements and dialling plan combinations are defined for each rate zone in table LINEATTR.
- Provides an increased number of line treatment groups from 256 to 512.

Value

Advantages of the feature to the network operator.... This feature enables the network operator to maintain high levels of service and end-user satisfaction by accommodating the expanding number of dialling plans and classes of service required by end-users.

Ref No. for more information....................... ### Technical reference

AF6755

DEPENDENCIES

Dependency on other hardware or software....... There are no additional order codes required for this functionality to be operational.

Ordering New Functionality

New functionality must be ordered from Nortel Networks using the appropriate software order codes.

Document Updates

Printed copies of this guide should be considered uncontrolled. Soft copies of this guide may be obtained from Sales.Com or SP&C provider. Non-Nortel Networks employees should refer to their Nortel Networks representative for document updates or general queries on content.

Version and Issue

The first two digits following the document number at the foot of each page indicate the document version, which corresponds to the software release. They increase each time the document is updated to support a new software release. The second two digits indicate the document issue. They increase each time the document is revised but re-released in the same document release cycle and are followed by the document status (*Draft* or *Approved*).

1.2   Communication Server Software Options

A portfolio of software options is available to provide well-integrated solutions, based on the Communication Server 2000, to address the diverse needs of different networks and network operators. Simplicity, robustness and flexibility are achieved by channelling Nortel Networks experience and knowledge into a base portfolio of standard software plus a portfolio of options that can be used to tailor a system exactly. Special attention has been given to the need to evolve painlessly from traditional TDM networks to fully featured integrated voice and data networks, working with a combination in the interim.

Chapters 2 and 3 of this guide contain details of the software, concentrating on network capability features and network service features respectively. Each option has an order code and description in a shaded panel, and information which should help you to decide whether it is an appropriate part of your solution. Many options contain a number of features, each individually described. Loading and maintenance of software is made simple by having standard software loads with individual options enabled using licensing.

For any solution, the software will be delivered via a number of separate loads. These include:

- CS2000 & CS2000-Compact Product Computing module Load (PCL)
- Gateway Controller/UAS/APS Non-Computing module Load (NCL)
- Element Management System NCLs
- Media Gateway software

Depending on their functionality, optional features will either be ordered at the CS2000 PCL or the component NCL level.

Note: For confirmation of the market applicability of features from the ISN08 software load, please refer to your Nortel Networks representative for further details.

1.3 ISN08 Order Code summary

The following table lists, in alphanumeric order, the Order Codes and their features that are available at ISN08. The table indicates the release at which an Order Code or feature was first introduced. To go to the section which describes a particular Order Code or feature, click on the appropriate text in the table.

Magenta highlighting in the '*Introduced at Release*' column indicates that an Order Code or feature is new at this release.

Order Code	Order Code Name / Feature Name	Introduced at Release
9KEM0080	MG9000 Element Manager NCL	ISN08
	MG9000 Mgr Capacity Increase	ISN07
	MG9000 OC3 Channelisation Support from EM	ISN07
ACD00005	ACD MIS	ISN08
	ACD/MIS over IP off of CS2K / CS2Kc	ISN08
ACSI0003	V5.2	ISN04
	V5.2 Communication Server Analogue Lines	ISN04
	V5.2 Audits and Alarms Enhancements	ISN05
	V5.2 Flow Control	ISN05
	V5.2 ETSI Enhancements	ISN05
	V5.2 Interface and Link Enhancement	ISN06
AMG20080	Nortel Media Gateway 3200	ISN07
	Nortel Media Gateway 3200	ISN07
APS00100	Audio Provisioning Server NCL	ISN03
ATA00001	ASCII Term Acc Gwy	ISN04
BASE0011	CO Data Change Capture	ISN03
	CO Data Change Capture	ISN03
BASE0014	BASE DIRP Enh to 72 vol	ISN07
	DIRP Enhancements for Billing	ISN07
BASE0015	BASE IOM Disk Enhancement	ISN07
	IOM Disk Enhancements	ISN07
BASE0100	XA Core Max Power	ISN03
BILL0001	Billing	ISN03
	Billing	ISN03
BILL0002	Carrier Connect AMA	ISN03
	Carrier Connect AMA	ISN03
BILL0003	AMA Reject Calls	ISN03
	AMA Reject Calls	ISN03
BILL0004	VPN AMA Billing	ISN03
	VPN AMA Billing	ISN03
	VPN AMA Billing for PRI Overlap	ISN03
BILL0006	SMDR DE Extension	ISN03

Order Code	Order Code Name / Feature Name	Introduced at Release
	SMDR DE Extension	ISN03
BILL0007	AMA Time to Answer	ISN03
	AMA Time to Answer	ISN03
BILL0008	AMA Redirection Information	ISN03
	AMA Redirection Information	ISN03
BILL0009	AMA Call Completion Reason	ISN03
	AMA Call Completion Reason	ISN03
BILL0010	AMA Generation Management Reports	ISN03
	AMA Generation Management Reports	ISN03
BILL0012	BC Billing for BTUP	ISN03
	BC Billing for BTUP	ISN03
BILL0013	AMA Support Up To 30 Digits	ISN03
	AMA Support Up To 30 Digits	ISN03
BPRD0001	CS2000 Platform	ISN03
	ISUP Optional Parameter Control	ISN05
	CLI Default Number	ISN05
	Translation and Routing Expansion	ISN05
	Multiple Time Zone Support	ISN05
	Middlebox and Access Topology Provisioning	ISN06
	Internet Transparency Application Agent	ISN06
	GWC-EM support for Internet Transparency - Pre-MIDCOM	ISN06
	Control of Media Proxy	ISN06
	Support for Gateways behind a NAT Device	ISN06
	Codec Selection Enhancement	ISN06
	MCS Interworking to (I)SN08	ISN08
BSTP0711	Basic STP	ISN06
CBM00080	Core and Billing Manager NCL	ISN08
	Core and Billing Manager NCL	ISN07
CCA00080	3PC Peel / Linux NCL	ISN08
CICE0080	CentrexIP Client Manager Element Manager	SN07
	CentrexIP Client Manager Element Manager	SN07
CICM0080	Centrex IP Client Manager Gateway	ISN07
	CICM Flow Through Provisioning, CICM Component	ISN07
	Centrex IP Client Manager i2001 User Interface support	ISN07
	Centrex IP Client Manager 3069 termination capacity	ISN07
	CICM H.248 Call Control Signalling	ISN07
	Services support for the Universal Access-Internet Protocol (UA-IP) solution	ISN07
	Multiple Time Zone support for CICM Clients	ISN07
	i200x Key Expansion Module	ISN07

Order Code	Order Code Name / Feature Name	Introduced at Release
	CICM Australian Tones verification	ISN07
	CICM Faults and Alarms	ISN07
	CICM Performance Measurements	ISN07
	CICM Active Call Fail-Over	ISN08
	CICM: Country Specific Requirements - Tone and Language	ISN08
	Increase CICM Lines to 25K from 37K	ISN08
	SRG Interop with CICM lines	ISN08
CIPI0601	CIPI CentrexIP RTU	ISN07
CIPI0602	CIPI CICM Shelves	ISN07
CLDN0003	PBX CLI Management	ISN03
	PBX CLI Management	ISN03
CLDN0004	CLI Screening Via Translations	ISN03
	CLI Screening Via Translations - Enhancements	ISN03
	CLI Blocking and Screening Robustness	ISN03
	CLI Based VPN Access	ISN03
	CLI Screening Via Translations - Protocol Support	ISN03
	CLI Screening via Translations - Carrier Reseller Routing Enhancements	ISN03
	Account Code Validation and Protocol	ISN06
	Indirect Access by AuthCode	ISN06
	ETSI PRI Indirect Access by MONA	ISN06
	AuthCode Screening - Ph 1	ISN06
CMON0002	CMON X25 LI	ISN03
	ETSI compliance feature - Lawful Interception on SDM	ISN03
CNCD0004	CNCD RTB OFT	ISN04
CNCD0006	Billing Filtering	ISN04
	Billing Stream Filtering	ISN04
CNOM0001	CNOM PH 1	ISN04
CNOM0002	CNOM OM 02	ISN04
CPUS0001	XA-Core Processors	ISN03
CPUS0003	Multi-Core 3+1	ISN03
	XA-Core Multicore	ISN03
The CS2000 Management Components NCL include the following:	Gateway Controller EMS, Universal Audio Server EMS, APS EMS and SAM21 EMS	ISN03
	Line Maintenance Manager	ISN04
	Trunk Maintenance Manager	ISN04
	Line Test Manager	ISN04
CS2B0001	Communication Server 2000 Base	ISN06

Order Code	Order Code Name / Feature Name	Introduced at Release
	Directed Terminations to Conference Circuits Phase II	ISN06
	ISUP 200,000 Ports Trunk support	ISN07
	MG9K EM Frame Location enhancements	ISN07
	Deload Tool for Graceful Deloading of IW SPM ATM and IW SPM IP	ISN08
	Trunk group OM Registers for Bearer Path Failures	ISN08
	IW SPM/MG4K IPservice interworking to CICM, H.323, SIP / MCS	ISN08
CS2B0002	GWC Support and Control	ISN03
CS2B0004	H.323 GateKeeper	ISN06
	Cisco Gatekeeper to Gatekeeper support	ISN07
	H.323 Gatekeeper to CS2K Gatekeeper Interoperability	ISN07
	H.323 Gateway Change Capability	ISN07
	Support International Advice of Charge over H.323 (OneAccess GW)	ISN08
	Cisco Call Manager Interop Enhancements	ISN08
	GK-GK T.38 Fax Support	ISN08
CS2B0005	DPT Trunk SOC	ISN05
	DPT SOC	ISN05
	Elimination of APG from Solution	ISN08
CS2B0008	CS2B CS to CS Calls	ISN07
	SIP Call Server SOC	ISN07
CS2B0009	Call Server to Apps Server Calls	ISN07
	SIP App Server SOC	ISN07
CS2B0010	CS 2000-Compact Geographic Survivability	ISN08
	CS 2000 Compact Geographic Survivability – End-to-end	ISN08
CS2C0001	Communication Server 2000 Common	ISN08
	Merge eCW Content On Stream	ISN08
CS2E0080	IEMS CS2000 Manager (SDM) NCL	ISN08
CS2M0080	CS2000 Management Components NCL	ISN08
	Patching SSPFS and IEMS via the NPM	ISN07
	Northbound Alarm Interface changes for Operations Support System (OSS)	ISN07
	IEMS SNMP OM polling from GWC and SC	ISN07
	SAM21 Element Manager support for CICM	ISN07
	Sync Backup & Recovery - IEMS	ISN08
	Sync Backup & Recovery - (MG9KEM, CS2M)	ISN08
CS2Q0001	Quality of Service/Dynamic QoS	ISN06
	DQoS support for Cable	ISN06
CS2Q0002	Virtual Call Admissions Control	ISN07
	GWC-EM Internet Transparency VCAC Provisioning	ISN07

Order Code	Order Code Name / Feature Name	Introduced at Release
	Virtual Call Admissions Control on Communication Server 2000	ISN07
	GWC-EM Internet Transparency VCAC Provisioning Support for CentrexIP Gateways	ISN07
	Network Wide VCAC	ISN08
CS2W0002	CS2W Inter-Communication Server	ISN03
	Support of Anchor Packet Gateway	ISN04
	SIP-T support for providing tones on an incoming SIP-T trunk	ISN04
	SIP-T support of providing in-band digit collection	ISN04
	SIP-T support of PRI interworking (with PRI services)	ISN04
	SIP-T support of line interworking (including audible ringing)	ISN04
	SIP-T support of Moving Bearer Channel	ISN04
	SIP-T to SIP-T interworking	ISN04
	CS-3000 (TSS) interworking using SIP-T	ISN04
	IMS interworking using SIP-T	ISN04
	IN triggering over SIP-T originations	ISN04
DSSP0001	Basic CS-1R SSP	ISN03
	Basic CS1 SSP	ISN03
	CS-1R Service Profile Introduction	ISN03
	CS-1R Real Time Enhancements	ISN03
	CS-1R Enhancements for Australia	ISN03
	CS-1R Automatic Disarming of EDPs	ISN03
	CS-1R Billing Records for Internal SRF	ISN03
	CS-1R CallingPartyNumber in Connect Operation	ISN03
	CS-1R Continue Call Processing	ISN03
	CS-1R EDP Monitor Mode Consistency	ISN03
	SSP - Allow Unsupported SSP Operations	ISN03
	SSP - Architecture Enhancement	ISN03
	Realtime Activity	ISN03
	INAP Support for Context Identification	ISN04
	INAP Auto-Continue on SCP Shutdown/Tssf Timer Expiry	ISN04
	INAP Support for SCCP Segmentation	ISN04
	CS-1R Service Interaction Interworking	ISN04
DSSP0007	Trunk Trigger Subscription	ISN04
	Trunk Trigger Subscription	ISN03
	SSP Trunk Retriggering	ISN03
DSSP0008	CS-1R Service Filtering	ISN03
	CS-1R Service Filtering	ISN03

Order Code	Order Code Name / Feature Name	Introduced at Release
DSSP0010	AMA FCI	ISN03
	AMA FCI	ISN03
	CS-1R Multi-Vendor FCI	ISN03
DSSP0013	Call Information Request and Report	ISN03
	Call Information Request and Report	ISN03
DSSP0014	CS-1R TDP2	ISN03
	TDP2	ISN03
DSSP0015	Call Party Handling	ISN05
	Call Party Handling (Basic Warning Tone)	ISN05
DSSP0017	CS-1R Call Gapping	ISN03
	CS-1R Call Gapping	ISN03
DSSP0018	Point of Re-entry Control	ISN03
	Point of Re-entry Control	ISN03
DSSP0019	CS-1R Correlation ID	ISN03
	CS-1R Correlation ID	ISN03
DSSP0021	SSP - Strip Leading Digits	ISN03
	SSP - Strip Leading Digits	ISN03
DSSP0022	SSP - OCI Retention and Capture in AMA for Follow-on Calls	ISN03
	SSP - OCI Retention and Capture in AMA for Follow-on Calls	ISN03
DSSP0028	Apply Charging	ISN05
	China ISUP Calling Card Service	ISN05
	China VPN Service (SSP Functionality)	ISN06
	China NTS Service (SSP Functionality)	ISN06
	China INAP compliance enhancement Part 1	ISN07
	China INAP compliance enhancement Part 2	ISN07
ENTA0001	Enhanced Term Access	ISN04
GSS00033	Global Server SW Rel 3.3 NCL	ISN04
GSSB0002	GSSB 3rdparty MS Win2K OS	ISN04
GSSB0003	GSSB (3p) MSWin2K Res kit	ISN04
GSSB0004	GSSB Win Term Srvs Client	ISN04
GSSB0006	GSSB Ghost Enterprise SW	ISN04
GWCW0080	International Gateway Controller NCL	ISN08
	Redirecting MGC NCL	ISN06
	MG9000 Mgr Capacity Increase	ISN07
	CS2000 Packet Cable compliancy	ISN07
	CMTS/MTA Signalling Security Integration for Cable	ISN07
	Trunk Security	ISN07
	PacketCable 1.0 Security compliance	ISN07
	T.38 FAX support for International H.323	ISN07

Order Code	Order Code Name / Feature Name	Introduced at Release
	Emergency Call Tracing	ISN07
	Audio Server Node Announcement Capacity Increase to 1280	ISN07
	GWC Robustness: Utilize Both Core CMHOST IP (CSIP) Addresses Enhancement	ISN08
	GWC Robustness: Utilize Both Core CMHOST IP (CSIP) Addresses Enhancement	ISN08
	Next Generation GWC (SW Support)	ISN08
	Upgrades: GWC Tool for Bulk Upgrades	ISN08
	GWC Messaging Detection and Alarm	ISN08
IBIL0002	Australasia Billing Enhancements	ISN03
	Australasia Billing Enhancements	ISN03
IBIL0003	VPN AMA Enhancements	ISN03
	VPN AMA Enhancements	ISN03
IBIL0004	NOA/NPI Capture in AMA	ISN03
	Called Number Parameter Capture in AMA	ISN03
IBIL0005	SSUTR2 IC Charge Message Billing	ISN03
	SSUTR2 Charge Message Billing	ISN03
IBIL0006	CPC AMA	ISN03
	CPC AMA Capture	ISN03
IEMS0080	Integrated Element Management System NCL	ISN08
	IEMS - Central Office Browsing and Launching Tools for OAM&P Applications	ISN07
	Integrated Element Management System High Availability Support and Co-residency with Call Server 2000 Manager	ISN07
	IEMS - Centralised OAM&P Security Administration	ISN07
	MCS Fault and Performance Feed integration with IEMS	ISN07
	IEMS - Performance Phase 2 (Phase 2; Adding NEs, not Resourced in SN07)	ISN08
	Sync Backup & Recovery - (MG9KEM, CS2M)	ISN08
IIND0004	Tone Burst on Answer for Indirect Access	ISN04
	ISUP Tone Burst on Answer	ISN04
ILIN0002	Standard Line Features	ISN03
	Call Waiting	ISN03
	Cancel Call Waiting	ISN03
	Call Waiting Ringback	ISN03
	3-Way Call	ISN03
	Call Forward Unconditional	ISN03
	Call Forward Busy	ISN03
	Call Forward No Answer	ISN03
	Call Forward Call Waiting Calls	ISN03
	Call Forward No Answer Variable Timing	ISN03

Order Code	Order Code Name / Feature Name	Introduced at Release
	Call Forward Indication	ISN03
	Last Number Redial	ISN03
	Speed Calling, Individual Short List	ISN03
	Speed Calling, Individual Long List	ISN03
	Automatic Call Back	ISN03
	Automatic Recall/Automatic Recall of Diallable DN	ISN03
	Call Completion to Busy Subscriber	ISN03
	Message Waiting Indicator - Audible (MWT)	ISN03
	Secondary DN/Teen Service	ISN03
	Enhanced Secondary DN (ESDN)	ISN03
	Subscriber Activated Call Barring	ISN03
	Call Forward Intragroup	ISN04
	Call Forward With Announcement	ISN04
	Speed Calling Group	ISN04
	Automatic Recall/Automatic Recall of Diallable DN AMA Billing Enhancements	ISN05
ILIN0003	CLASS Line Features	ISN03
	Delivery of Diallable Number	ISN03
	Calling Number Delivery	ISN03
	Calling Number Delivery Blocking	ISN03
	Calling Name Delivery	ISN03
	Network Wide Calling Name Delivery	ISN06
	Calling Name Delivery Blocking	ISN03
	Anonymous Call Rejection	ISN03
	Selective Call Acceptance	ISN03
	Selective Call Forward	ISN03
	Selective Call Rejection	ISN03
	Distinctive Ringing/Call Waiting	ISN03
	Message Waiting Indicator - Visible (MWT)	ISN05
	Fixed Calling Number Delivery Blocking	ISN04
	Spontaneous Call Waiting With Identification (SCWID)	ISN04
	CEPT Calling Number Delivery Blocking Override	ISN06
ILIN0004	Enhanced Line Features	ISN03
	Private Numbering Plan	ISN03
	Direct Inward Dialling	ISN03
	Direct Outward Dialling	ISN03
	Call Transfer	ISN03
	Call Park	ISN03
	Call Pickup	ISN03
	Consultation Hold	ISN03
	Call Hold	ISN03

Order Code	Order Code Name / Feature Name	Introduced at Release
	Permanent Hold	ISN03
	Automatic Line	ISN03
	Warm Line	ISN03
	Make Set Busy	ISN03
	Ring Again	ISN03
	Call Forward Validation	ISN03
	Call Forward Remote Activation	ISN03
	Directed Call Park	ISN04
	Directed Call Pickup	ISN04
	MADN Single Call Arrangement / Multiple Call Arrangement	ISN04
	MADN Ring Forward (Automatic and Manual)	ISN08
	Call Restrict Area	ISN04
	Do Not Disturb	ISN04
	Group Intercomm	ISN04
	MultiCarrier	ISN04
	Simultaneous Ring	ISN04
	Announcement Before Routing (ABR)	ISN06
	CEPT International Call Waiting (ICWT)	ISN06
	CEPT I3WC (International Three Way Call, including Consultation Hold)	ISN04
	CEPT CFx (Call Forwarding)	ISN04
	CEPT Calling Number Delivery	ISN06
	CEPT Calling Number Delivery Blocking	ISN06
	CEPT Memo Box: Call FWD to Voice Mail	ISN05
	CEPT Hot Line/Warm Line	ISN05
	CEPT Wake Up Call	ISN05
	CEPT International Line Restriction	ISN05
	CEPT Call Transfer	ISN05
	CEPT Call Completion to Busy Subscriber	ISN06
	CEPT Call Forward Remote Activation	ISN06
	CEPT Message Waiting Indicator - Visible	ISN06
	CEPT Spontaneous Call Waiting with Identification	ISN06
	LDI Display for CLASS phones	ISN07
	China PSTN Line Service compliance	ISN07
	ACRJ functionality for HongKong	ISN07
	GIC Support	ISN08
ILIN0005	Network Line Features	ISN03
	Denied Origination	ISN03
	Denied Termination	ISN03
	Suspend / Resume	ISN03

Order Code	Order Code Name / Feature Name	Introduced at Release
	Requested Suspend Service	ISN03
	Plug Up	ISN03
	Wake-Up Call Request	ISN03
	Hunting	ISN03
	Code Restrictions (NCOS-Based Call Barring)	ISN03
	Essential Line	ISN03
	Secondary Language	ISN03
	Fax	ISN03
	Authorisation Code	ISN04
	Meet-Me Conference (6 port)	ISN04
	Station Controlled Conference (6 port)	ISN04
	Direct Inward System Access (DISA)	ISN04
	Distinctive Ringing	ISN04
	Bridged Night Number	ISN04
	Line Overflow to DN	ISN04
	Line Overflow to Route	ISN04
	Networked Centrex	ISN04
	Uniform Call Distribution	ISN04
	Line Reversal and Cut-Off on Disconnect for International Integrated	ISN05
	Enhanced Meet-Me Conference	ISN07
ILIN0006	Voice Mail Support	ISN03
	Voice Mail Support	ISN03
ILIN0009	Regulatory Line Features	ISN03
	Calling Line Flash (CLF) (for Malicious Call Identification)	ISN03
	Carrier Selection	ISN03
	Emergency Call Routing	ISN03
	Sub Community Routing for Emergency Calls	ISN06
	Denied Incoming Call Forwarding	ISN06
	Automatic Collect Call	ISN04
	Priority Class of Service (PCOS)	ISN06
	Local Number Portability	ISN03
	Calling Number Delivery enhancements for ISDN PRI	ISN05
	DRS Treatment for Malicious/E999 Call, MCT Alarm Control Enhancements	ISN05
	Call Forward Prevention	ISN05
	Emergency Service Call	ISN06
ILIN0100	International Line Features	ISN05
	International Packet IBN Line SOCs	ISN05
INAP0002	INAP Line Cap	ISN04

Order Code	Order Code Name / Feature Name	Introduced at Release
	CS1R Line Triggering CFD/3WC	ISN04
	SSP Line Triggering Support	ISN05
	CS1-R Line Triggering Enhancements	ISN05
INAP0003	INAP ANSI7+ Capability	ISN03
	INAP ANSI7+ Capability	ISN03
INAP0004	INAP ETSI ISUP Capability	ISN03
	INAP ETSI ISUP Capability	ISN03
INAP0005	INAP PRI Capability	ISN03
	INAP PRI Capability	ISN03
INEM0100	INEM IEMS Base (provided with IEMS0080)	ISN07
	IEMS - Media Server 2010, 2020 Conf. Integration	ISN08
INEM0200	INEM IEMS Base HA (High Availability)	ISN07
INFT0010	INFT Fault NB SCC2	ISN07
INFT0020	INFT Fault NB Syslog	ISN07
INFT0030	INFT Fault NB SNMP	ISN07
INFT0040	INFT Fault NB NTSTD	ISN07
INFT0100	IEMS Fault Base (provided with INEM0100)	ISN08
	IEMS - CEM Integration into IEMS (Phase 2)	ISN08
INLI0002	Int'l Lawful Interception	ISN03
	International Lawful Interception	ISN03
	LI for Incremental ETSI PRI Services	ISN05
	LI for Incremental Analogue Services (Phase 4)	ISN05
	LI - German Regulatory	ISN05
	LI - Portugal	ISN06
	LI - Call Content delivery in Mono Mode for Portugal	ISN06
	LI - ASN.1 Encoded Call Data Delivery via FTP TCP/IP	ISN06
	Private Network Interception Selection	ISN07
	ETSI 201 671 Compliance	ISN07
INPR0010	INPR Performance NB XML	ISN07
INPR0020	INPR Performance NB CSV	ISN07
INSC0010	Security Centralised Authentication (provided with IEMS0080)	ISN07
INSC0030	Security Extended Authentication/ Authorisation	ISN07
INTR0001	Internet Transparency	ISN08
	Media Portal 5 and 30 minute OMs – Provide Peg Counts/ OMs on Usage of the RTP Portal and % Blocking that has Occurred for Traffic Management.	ISN08
	RTP Portal QoS reporting to GWC	ISN08
	IW SPM/MG4K IPservice interworking to CICM, H.323, SIP / MCS	ISN08
ISP70001	Base ISUP (ANSI IBN7)	ISN03

Order Code	Order Code Name / Feature Name	Introduced at Release
	Base ISUP	ISN03
	QSIG Interworking	ISN05
ISSP0002	IN Triggers Processing	ISN03
	Point of Re-entry Control for Post CS-1R Continue Operation Translations	ISN03
	SSP Support of Overdecadic Digits	ISN03
ISSP0005	Originating Basic Call State Machine EDPs	ISN03
IXLS0002	Service Number Portability and Number Port Provisioning	ISN03
	Service Number Portability and Number Port Provisioning	ISN03
	Number Portability PNSCRN Enhancements (Variable-length Prefix, Overdecadic Digits)	ISN03
IXLS0003	NCOS/CUST GRP allocation	ISN03
	VFG Call Routing Enhancements	ISN03
IXLS0005	CPC Routing	ISN03
	CPC Routing	ISN03
IXLS0006	Called Number Parameter	ISN03
	Random and Circular Hunting	ISN03
	Called Number Parameter Translation	ISN03
	CS-1R Routing Based on NOA	ISN03
IXLS0007	ETSI ISUP V2 Carrier Selection and Preselection	ISN03
	Carrier Selection	ISN03
	ETSI ISUP V2 Carrier Selection and Preselection	ISN03
	Carrier Preselection	ISN03
IXLS0008	Charge Category Based Routing	ISN03
	Charge Category Based Routing	ISN03
IXLS0012	ISUP Reroute on Congestion	ISN03
	Conditional Rerouting on Congestion	ISN03
	ISUP Reroute on Congestion	ISN03
IXLS0014	Call Control	ISN05
	Universal Screening	ISN05
IXLS0015	Class of Service Screening	ISN05
	Class of Service Screening	ISN05
	Multiple Failure Announcements	ISN05
IXLS0016	CLI Delivery Control	ISN05
	CLI Delivery Control	ISN05
	BTUP CLI Delivery Control	ISN05
	Calling Number Delivery Enhancements for ISDN PRI	ISN05
LCS00019	AdventNet SNMP V3 Platform 3rd Party License	ISN03
LCS00020	ILOG JView Platform 3rd Party License	ISN03
LCS00022	LCS High Availability SW	ISN07

Order Code	Order Code Name / Feature Name	Introduced at Release
	Succession Solaris Platform Foundation Service - High Availability Enhancement	ISN07
LOC00005	Dial Plan Translation Enhancements	ISN03
	Dial Plan Translation Enhancements	ISN03
	Expand LINEATTR Table to 32,000	ISN03
MG350080	Nortel Media Gateway 3500	ISN08
	Nortel Media Gateway 3500	ISN08
MG3E0080	Nortel Media Gateway 3500 EMS	ISN08
	Nortel Media Gateway 3500 EMS	ISN08
MG900001	MG9000 Base	ISN08
	MG9000 CPR: FITS: Improved In-Service Fault Detection	ISN08
	MG9000 CPR: Fault Detection and Recovery: Callp/Mtc Fault Linkages	ISN08
	MG9000 GigE Network Interface	ISN08
	MG9000 SN08 Clock Sync Enhancements	ISN08
	MG9000 GigE Link Maintenance	ISN08
	MG9000 LCI for GigE	ISN08
	MG9000 5/30 Minute OMs	ISN08
MG900002	MG9000 Emergency Stand Alone Functionality	ISN08
	MG9000 Internodal ESA	ISN08
MG9E0001	MG9000 Element Manager	ISN08
	MG9000 Upgrade Tool CLUI	ISN08
	Deserialise MG9000 EM Patching	ISN08
	Sync Backup & Recovery - IEMS	ISN08
	Sync Backup & Recovery - (MG9KEM, CS2M)	ISN08
	MG9000 Internodal ESA Element Manager	ISN08
	MG9000 GigE Network Interface - EM Portion	ISN08
	MG9000 Internodal ESA Element Manager	ISN08
	MG9000 GigE Network Interface - EM Portion	ISN08
	MG9000 5/30 Minute OMs	ISN08
MG9K0080	MG9000 NCL	ISN08
	MG9000 Auto Imaging	ISN07
	OC3 Channelised Support	ISN07
	Support for Internet Telephony Processor ITP	ISN07
	Supporting the DS1-IMA network interface on a UA-IP MG9000	ISN07
	MG9000 Electrically Programmable Device Loader	ISN07
	New Virtual Media Gateway (VMG) Out of Service Alarms	ISN07
	MG9000 Russian Market Fit	ISN07
	MG9000 IP - SIP Interworking	ISN08

Order Code	Order Code Name / Feature Name	Introduced at Release
MS200080	AudioCodes Media Server 2010 IP 7.0 Load	ISN07
	Nortel Media Server 2000 Series	ISN07
NETK0024	Network AOC Tariff	ISN03
	Network Advice Of Charge (CGP)	ISN03
	Network Advice Of Charge Interworkings (ETSI PRI)	ISN03
	ISUP Network Advice Of Charge Tariffing (CDP)	ISN03
	Network AOC Integrated Charge Determination and Generation (combined CGP/CDP)	ISN04
	SIP-T Network Advice Of Charge Tariffing (CDP)	ISN05
	Network AOC Integrated Charge Determination and Generation (combined CGP/CDP) (QSIG)	ISN05
	Network Advice Of Charge (NAOC) German Regulatory Enhancements	ISN06
	French NAOC	ISN08
NETK0041	ETSI ISUP V2 Hop Counter	ISN03
	ETSI ISUP V2 Hop Counter	ISN03
NETK0083	Russia ISUP V2+	ISN06
	Russia ISUP V2+	ISN06
NGSF0001	Next Generation Session Server Shared FG	ISN08
	TLS for SIP	ISN08
	Session Server Overflow Control	ISN08
NGSF0002	Next Generation Session Server Trunk Gateway Software	ISN07
	SIP on NGSS Tracing/Debug Framework	ISN07
	SIP Call Audits	ISN07
	Nortel Carrier Grade Linux (NCGL) Platform Session Server	ISN07
NGSS0080	Next Generation Session Server NCL	ISN08
NPE00001	Number Plan Evolution 1	ISN03
	Provisioning and maintaining the same subscriber numbers in different area codes	ISN03
NPE00002	Number Plan Evolution 2	ISN03
	Number Plan Evolution 2	ISN03
NPE00003	E.164 NPE	ISN03
	Control 11- and 12-Digit DN Data Entry	ISN03
	14 Digit DN Support for POTS Agents	ISN03
	E.164 Centrex - DISA 12-Digit VARDN Support	ISN03
	E.164 Centrex Phase 2	ISN03
	E.164 Utilities Phase 2	ISN03
	14 Digit DN Support for IBN Line Call Forwarding	ISN03
NPE00004	Enhanced Multiple NPA Support	ISN05
	NPA Split/Overlay Support	ISN05

Order Code	Order Code Name / Feature Name	Introduced at Release
NSUP0002	ETSI ISUP V1 & Variants	ISN03
	Generic ETSI ISUP V1 Capabilities	ISN03
	Brazilian ISUP	ISN03
	Brazilian ISUP	ISN06
	B-Party Call Control over ETSI ISUP	ISN03
	Czech ISUP	ISN03
	Danish ISUP	ISN04
	Italian ISUP subset (ISUP-S)	ISN04
	Italian ISUP interworking to V5.2 lines	ISN04
	Italian ISUP for Interconnect Compliance	ISN04
	Malaysian ISUP (ETSI ISUP V1 (M))	ISN04
	Mexican ISUP	ISN04
	Portuguese ISUP	ISN03
	Spanish ISUP V1	ISN03
	Telmex ISUP	ISN04
	Turkish ISUP V1	ISN04
NSUP0003	ETSI ISUP V2	ISN03
	Generic ETSI ISUP V2 Capabilities	ISN03
	Australian ACIF_G500 ISUP	ISN03
	Chinese ISUP	ISN04
	German ISUP	ISN03
	Hong Kong ISUP	ISN05
	Israeli ISUP	ISN04
	Singapore ISUP	ISN04
	Spanish ISUP	ISN03
	SPIROU (France)	ISN03
	Telstra CA30 ISUP (Australia)	ISN03
	Turkish ISUP V2	ISN04
	UK ISUP	ISN03
	Japan Trunk Services	ISN07
	IeISUP Failmsg and Tmtmap Mapping	ISN07
	DN compliance in HK ISUP	ISN07
	Manipulation of CLI from Line Originations through Table CALLCTRL	ISN07
	Support Korean ISUP use of REL Cause IE	ISN07
NSUP0006	BC Billing For ETSI ISUP	ISN03
	BC Billing for ETSI ISUP	ISN03
NSUP0014	ETSI/UK ISUP Answer No Charge Support	ISN03
	ETSI/UK ISUP Answer No Charge Support	ISN03
NSUP0015	Bearer Capability Mapping	ISN03
	Bearer Capability Mapping	ISN03

Order Code	Order Code Name / Feature Name	Introduced at Release
NSUP0016	CCBS SCCP Support for Local Number Portability	ISN03
	CCBS SCCP Support for Local Number Portability	ISN03
NSUP0018	Japan Unified ISUP	ISN05
	Japan Interconnect ISUP	ISN05
	Unified ISUP - Multiple Carrier ID	ISN05
	JI-ISUP Carrier Name Notification for Carrier Designation - Early ACM	ISN05
NSUP0020	Intl ISUP/NAOC/PCA Supp Svcs	ISN06
	Payment Ceiling for Succession International Integrated Access-Cable	ISN06
	Payment Ceiling Regulatory Enhancements	ISN06
NSUP0021	Int'l ISUP/TUP/Redbk TUP Variants	ISN06
	CTUP	ISN06
	CTUP Interworkings	ISN06
	China specific OM	ISN06
	French TUP	ISN03
	SSUTR2 Interconnect Compliance	ISN03
	French Two CLI Support with ETSI ISUP V2	ISN03
	SSUTR2 Charge Message Interworking to ISDN	ISN03
NSUP0022	Int'l ISUP/TUP/CAS Variants	ISN06
	C1 Development on FDCP platform (DMS 100i equivalence)	ISN06
	C1 Interworking with CISUP and CTUP	ISN06
	Korean R2 - Call Server	ISN08
NSUP0023	PCA SW Mtr Bill Supp	ISN06
	PCA SW Metering Support for Billing	ISN06
NSUP0024	China ISUP Call Control Enhancements	ISN08
	China ISUP Enhancement	ISN08
NSW00008	ISN08 Non-Resident Load NCL	ISN08
OAMI0002	Interconnect OMs and Answer OM Enhancements	ISN03
	Interconnect OMs and Answer OM Enhancements	ISN03
OAMI0003	Interconnect OMs	ISN03
	Interconnect OMs	ISN03
OAMI0004	Equal Access - Serving Carrier ID	ISN03
	Equal Access - Serving Carrier ID	ISN03
OAMI0006	Long Call Audit	ISN03
	Long Duration Call Audit	ISN03
P86S0070	Ethernet Routing Switch 8600 and Device Manager for Ethernet Routing Switch 8600	ISN07
	Ethernet Routing Switch 8600 and Device Manager for Ethernet Routing Switch 8600	ISN07

Order Code	Order Code Name / Feature Name	Introduced at Release
PBXA0002	PBX DPNSS	ISN06.2
	DPNSS	ISN06.2
	DPNSS Diversion On No Reply Enhancement	ISN06.2
	DPNSS CBWF Interworking to MADNs	ISN06.2
PBXA0004	PBX DPNSS Exec Intrusion	ISN06.2
	DPNSS Exec Intrusion	ISN06.2
PBXA0008	PBX DPNSS Voice Mail Enhancements	ISN06.2
	DPNSS Voice Mail Enhancements	ISN06.2
	Reverse Translations for MWI Over DPNSS	ISN06.2
PBXA0009	PBX DPNSS Route Optimisation	ISN06.2
	DPNSS Route Optimisation - Terminating Node	ISN06.2
	DPNSS Route Optimisation - Originating Node	ISN06.2
	Transit DPNSS Route Optimisation Answer Indication	ISN06.2
PBXA0019	PBX DPNSS - ANSI ISUP	ISN06.2
	DPNSS - ANSI ISUP	ISN06.2
PBXT0011	PRI Advice of Charge	ISN03
	PRI Advice of Charge	ISN03
PBXT0036	QSIG COLP-COLR	ISN05
	QSIG Support for COLP/COLR	ISN05
PNTK0001	Public Network Trunking	ISN03
	Public Network Trunking	ISN03
PNTK0002	BTUP Version 2+	ISN03
	BTUP Version 2+	ISN03
PNTK0004	BTUP CLI for AMA	ISN03
	BTUP CLI for AMA	ISN03
PNTK0008	INAP BTUP Capability	ISN03
	INAP BTUP Capability	ISN03
PNTK0009	PBX BI Control	ISN03
	PBX BI Control	ISN03
PNTK0010	BTUP BC Routing	ISN03
	BTUP BC Routing	ISN03
PRIT0002	PRI ETSI/ITU PRI Services	ISN03
	PRI ETSI/ITU PRI Services	ISN03
	Inband Digit Collection for ETSI PRI on CS2000	ISN04
	IN Prompt & Collect and Mid-call on PRI	ISN04
	China PRI via PVG, interworking to China ISUP	ISN05
	Hong Kong PRI (CR13)	ISN05
	ISDN Redirecting Number Enhancement	ISN06
PRIT0003	ETSI PRI MoU 1 & 2 Basic Services	ISN03
	ETSI PRI MoU 1 & 2 Basic Services	ISN03
PRIT0004	PRI DN Billing	ISN03

Order Code	Order Code Name / Feature Name	Introduced at Release
	PRI - DN Billing	ISN03
PRIT0006	PRI Non-ETSI Services	ISN03
	PRI Non-ETSI Services	ISN03
PRIT0008	COLP/COLR	ISN03
	PRI - COLP/COLR	ISN03
	PRI COLP/COLR Presentation Number with Special Arrangement Feature	ISN03
PRIT0011	INS1500 Japanese PRI	ISN05
	INS1500 Japanese PRI Network Mode on CS2000	ISN05
	ETSI ISUP to J-PRI UUI Unblocking	ISN08
PRIT0012	QSIG	ISN05
	QSIG on CS2000	ISN05
PSNW0008	ISN08 Peripheral firmware Load (PPL)	ISN07
PRVS0001	PRVS Provisioning (part of CS2M0080 NCL)	ISN08
	CS2K Provisioning for Support of Generic 3rd Party Gateways - Profiles	ISN08
	CS2K Provisioning for Support of Generic 3rd Party Gateways - Pre-Provisioning	ISN08
RBIL0005	Usage Sensitive Billing	ISN03
	Subscriber Usage Sensitive Billing	ISN03
	Subscriber Usage Billing Enhancements	ISN03
RBIL0007	NDS Billing - Indirect Subscribers	ISN03
	NDS Billing - Indirect Subscribers	ISN03
RBIL0008	NDS Billing - Direct Subscribers	ISN03
	NDS Billing - Direct Subscribers	ISN03
RMPC0080	CS2K RTP Media Portal Software Model	ISN07
RMPD0080	CS2K RTP Media Portal DSM Platform SW Model	ISN07
RMPF0080	CS2K RTP Media Portal Solaris 2.8 for N240	ISN07
RMPP0080	CS2K RTP Media Portal Third Party Applications	ISN07
RMPT0080	CS2K RTP Media Portal Solaris 2.8 for T1400	ISN07
SACD0002	ACD Base Features	ISN04
	Abandon Call Clearing	ISN04
	ACD Call Transfer with Time	ISN04
	Automatic Not Ready	ISN04
	Automatic Overflow	ISN04
	Call Queue Slots (Queue Slot Announcement Allocation)	ISN04
	Call Delay Announcement	ISN04
	Force Announcements	ISN04
	Incoming Call Queue	ISN04
	Night Service (Night Treatment)	ISN04
	Night Service Recorded Announcement & Forward	ISN04

Order Code	Order Code Name / Feature Name	Introduced at Release
	Priority Promotion & Overflow	ISN04
	Ring Threshold	ISN04
	Time Delay & Basic Overflow (Overflow of Queued Calls)	ISN04
	Incoming Call Queue Overflow	ISN04
	Second and Third Delay Announcements	ISN04
	Queue to Make Set Busy	ISN04
	Variable Wrap-up	ISN04
SACD0006	ACD Agent Features	ISN04
	Agent Queue	ISN04
	Agent Login (ACD 2500 Set Login/Logout)	ISN04
	ACD Not Ready (code for IBN) (ACD 2500 Set Not Ready)	ISN04
	Call Park by ACD Agent	ISN04
	Call Name/Number Display	ISN04
	Call Source Identification	ISN04
	Secondary DNs	ISN04
	Observe from Analogue Handset	ISN04
SAM20080	Services Application Module NCL	ISN08
	Support for CICM in SAM21 Chassis	ISN07
	Upgrades: SC Tool for Bulk Upgrades	ISN08
	SAM21 Robustness	ISN08
SBM00001	Billing Appl Base	ISN04
	SBA Inbound File Transfer Performance Robustness	ISN08
SBM00003	AMADNS DDI I/F	ISN04
SBM00006	SBA-SMDR	ISN04
	SBA-SMDR	ISN04
SCFT0001	Secure File Transfer	ISN07
	FTP Proxy for SDM and CBM	ISN07
SFT00001	Secure File Transfer	ISN04
SGAT0002	Int'l CLI Screening	ISN05
	Translations and Routing Enhancements	ISN05
	CLI Screening Support for International Numbering	ISN05
SGAT0003	Serving Country Code	ISN05
	Serving Country Code	ISN05
SIWI0080	IW-SPM IP NCL	ISN08
	IW SPM Hybrid Office for GSP Int'l GW	ISN07
	NTLZ20CA Core Definition	ISN07
SMET0002	Software Metering	ISN05
	Trunk Software Metering for China ISUP	ISN05
	CTUP Metering	ISN05

Order Code	Order Code Name / Feature Name	Introduced at Release
SMET0003	Hardware Metering	ISN06.2
	Full Line Hardware Metering / Billing Compliance	ISN06.2
SOMD0001	Secure Operational Measurements Delivery Outbound	ISN07
	OMDD: Outbound Connection Security	ISN07
SPC00001	Session Policy Controller	ISN08
	Session Policy Controller on NGSS Platform	ISN08
SPFS0080	Server Platform Foundation Software	ISN08
	Missing Patches Robustness	ISN08
SSAS0001	SSAS Basic Platform	ISN04
SSAS0002	Basic OAM&P Software	ISN04
	USP Java GUI introduction to Succession	ISN07
	Universal Signalling Point Interface Client - GUI	ISN07
SSAS0004	IP High Speed Link	ISN04
	SS7 IP High Speed Link	ISN04
SSAS0005	SSOMs	ISN04
	Special Study OMs	ISN04
SSAS0007	GUI Workstation	ISN04
	GUI Workstation	ISN04
SSAS0011	Routeset 256 to 511	ISN04
SSAS0012	Routeset 512 to 767	ISN04
SSAS0013	Routeset 768 to 1023	ISN04
SSAS0014	Routeset 1024 to 1279	ISN04
SSAS0015	Routeset 1280 to 1535	ISN04
SSAS0016	Routeset 1536 to 1791	ISN04
SSAS0017	Routeset 1792 to 2047	ISN04
SSAS0018	Routeset 2048 to 4000	ISN04
SSAS0019	ITU & China HSL	ISN06
SSAS0021	OSS Electronic CLI	ISN06
SSBM0001	Secure Shell Billing Manager Outbound	ISN07
	SBA: Outbound Connection Security	ISN07
STA00001	Secure Terminal Access	ISN07
	Secure Terminal Access	ISN07
STRM0004	STORM NCL (Dothill)	ISN05
STRM0006	STORM NCL (HP Server)	ISN05
SULN0002	BRI Base	ISN03
	China BRI Supplementary Services using Keypad protocol	ISN03
SW000008	ISN08 Int'l CS2000 PCL	ISN08
SWC00008	ISN08 Int'l CS2000 - Compact SN08 PCL	ISN08
TEL00004	C7 Routeset Increment	ISN03
	C7 Routeset Increment	ISN03
TEL00006	C7 Link Prot. Tester	ISN03

Order Code	Order Code Name / Feature Name	Introduced at Release
	C7 Link Prot. Tester	ISN03
TEL00007	C7 Link Flt. Locator	ISN03
	C7 Link Flt. Locator	ISN03
TEL00009	C7 Network Integrity Items	ISN03
	C7 Network Integrity Items	ISN03
TEL00011	C-Side 14 Extended Messaging	ISN03
	C-Side 14 Extended Messaging	ISN03
TEL00012	Multiple Point Code	ISN03
	Multiple Point Code Support	ISN03
TEL00015	NI Interworking	ISN03
	NI Interworking	ISN03
TEL00016	TOD Clock Sync to SDM	ISN03
	TOD Clock Sync to SDM	ISN03
TPNN0050	TPNN Uplink 3rd Party SW	ISN07
UASA0080	Universal Audio Server NCL	ISN08
UASB0003	UASB 3rdpty MS UNIX Svcs	ISN04
UASB0006	UASB 3rd Party SNMPRI EMANAT	ISN03
UASB0010	UASB 3rd party MS DOS 6 2	ISN04
UASF0001	UASF Announcement Feature	ISN03
	Announcement Feature	ISN03
UASF0002	UASF Conference Feature	ISN03
	UASF Conference Feature	ISN03
UASF0003	UASF Bearer Channel Tandem	ISN03
	UASF Bearer Channel Tandem	ISN07
UASM0001	Universal Audio Server EMS	ISN06
UASR0001	UASR RightToUse Announcement	ISN03
UASR0002	UASR RightToUse Conference	ISN03
UASR0003	UASR RightToUse Bearer Channel Tandem	ISN03
USP00100	Universal Signalling Point Server NCL	ISN07
USP00701	Basic Universal Signalling Point	ISN05
USP00703	Route Master Mediation	ISN05
USP00100	SN08 USP NCL	ISN08
	USP/USPc: Log Delivery Stream to IEMS	ISN08
USPL0100	SN08 USPc NCL	ISN08
	USP/USPc: Log Delivery Stream to IEMS	ISN08
USPL0701	USP Basic USP	ISN05
VPNW0002	VPN over ETSI ISUP Support	ISN05
	Networked ISDN VPN Support	ISN05
	ISUP Backbone - Indirect Access Support (DISA, MONA, Account Codes)	ISN05
VPNW0003	VPN over ANSI7+	ISN05

Order Code	Order Code Name / Feature Name	Introduced at Release
	ANSI7+ NETINFO and ANSI ISUP+ VPN Enhancements	ISN05
	VPN Netwrk CLI Enhnt	ISN05
VPNW0004	VPN QFT over ETSI ISUP	ISN05
	TCAP Support For QSIG FT	ISN05
	ETSI ISUP V2 Support for QSIG FT	ISN05
	ISUP V2+ Enhancements for QFT	ISN05
	QFT over ETSI ISUP V2	ISN05
	ISUP Backbone - NETINFO Support	ISN05
	ISUP Backbone - QFT/NETINFO/DFT Support for UCD Termination	ISN05
	ISUP Backbone - Private Translation at Transit PINX	ISN05
	ISUP Backbone - Call Forwarding	ISN05
	ISUP Backbone - Call Offer	ISN05
	ISUP Backbone - Recall	ISN05
	ISUP Backbone - Call Transfer	ISN05
	Network Centrex over ETSI ISUP V2	ISN05
	ETSI ISUP Backbone - Network Centrex	ISN05
	Network Centrex over ETSI ISUP - Busy Name Display	ISN05
VPNW0007	VPN H.323	ISN07
VPNW0008	VPN DPNSS Feature Transparency	ISN07
	VPN DPNSS Feature Transparency	ISN07
VPNW0009	VPN MCDN Feature Transparency	ISN07
	International Support for MCDN Networked Services	ISN07
W3PC0002	Compact SOS Processor	ISN04
	Compact SOS Processor	ISN04

Chapter 2   Communication Server 2000 (CS2000) Capability

2.1   CS2000 Order Codes

2.1.1   CS2000 XA-Core Platform Order Codes

All CS2000 XA-Core based solutions require the following order codes:

SW000008   ISN08 Int'l CS2000 PCL

PSNW0008   ISN08 Peripheral firmware Load (PPL)

NSW00008   ISN08 Non-Resident Load (NRL)

In addition, the following processor order codes are required for all CS2000 solutions:

BASE0100   XA Core Max Power

CAPABILITIES AND VALUE

This order code is used in association with order code CPUS0003 to control the number of XA Core processing elements in use.

DEPENDENCIES

The following order code is required for this functionality to be operational:

CPUS0003 Multi-Core 3+1

CPUS0001   XA-Core Processors

CPUS0003   Multi-Core 3+1

CAPABILITIES AND VALUE

XA-Core Multicore

The eXtended Architecture Core (XA-Core) controls signalling gateway and media gateway functionality for the CS2000.

The XA-Core system consists of:

- Shared memory, which is redundantly implemented
- 3+1 processors to provide computing capacity, load sharing and fault tolerance
- A number of Input/Output (I/O) cards to provide mass storage and external interfaces

The implementation of XA-Core provides increased processing capacity many times that of a single processor. In addition, I/O capacity is scalable and, therefore, can increase with call processing requirements.

Value

By providing a significant increase in processing capacity, this feature ensures the CS2000 can grow to support increased traffic. The architecture of the XA-Core also provides a high level of reliability and enables planned growth as and when capacity is required. This feature increases the customer satisfaction of the network operator's customers, thus providing the network operator with the potential for increased revenue.

Technical reference

59024916

HARDWARE REQUIREMENTS

This feature's hardware requirements include one NTLX01CA standalone XA in a C42 cabinet. For information on additional hardware requirements for this feature, please refer to the engineering manuals.

DEPENDENCIES

The following order code is required for this functionality to be operational:

SW000008 ISN08 Int'l CS2000 PCL

BASE0100 XA Core Max Power

2.1.2   *CS2000-Compact Platform Order Codes*

All CS2000-Compact solutions require the following order codes:

SWC00008   ISN08 Int'l CS2000 - Compact SN08 PCL

NSW00008   ISN08 Non-Resident Load NCL

CCA00080   3PC Peel / Linux NCL

STRM0004   STORM NCL (Dothill)

STRM0006   STORM NCL (HP Server)

In addition, the following processor order code is required for all CS2000-Compact solutions:

W3PC0002   Compact SOS Processor

CAPABILITIES AND VALUE

Compact SOS Processor

The processor complex for the CS2000-Compact is a non-proprietary 3PC (Third Party Core), which consists of a pair of Motorola N765 processor cards, also known as 3PC blade cards. The Call Agent supports call processing and service logic by means of the standard CS2000 load running on a combination of Linux operating system and PEEL (Protel Environment Emulation Layer) software.

Value

The compact PCI processor platform provide a lower cost, smaller footprint offering without compromising full featured functionality.

HARDWARE REQUIREMENTS

For information on additional hardware requirements for this feature, please refer to the engineering manuals.

DEPENDENCIES

The following order code is required for this functionality to be operational:

SWC00008 ISN08 Int'l CS2000 - Compact SN08 PCL.

2.1.3   CS2000 Base Software Order Codes

All CS2000 solutions, regardless of platform, require the following base software order codes:

BPRD0001   CS2000 Platform

The Base Platform software load runs on the Core and provides the network intelligence needed for telephony applications. It contains the base set of facilities operational in all CS2000 solutions, to which other options may be added. It supports central call processing for VoIP (Voice over IP) and VoATM (Voice over ATM) applications over packet bearer networks. The Base Platform software exercises direct control of the signalling channel but does not directly control the bearer channel. Connection instructions are exchanged between the Core and Gateway Controller which makes the connection fabric transparent to the protocols and services related to the call. Scaling, interworking and option changes are easily achieved. A wide range of protocols, and gateways from a number of vendors, are supported, and the platform can be used in multiple controller configurations.

Specifically, this order code includes:

- Base operating software which provides self-healing operation of the CS2000, with elemental capabilities such as tables, office parameters, synchronization, data storage, disk shadowing, No Restart SWACT and other robustness features
- Basic telephony functions supporting basic capabilities such as call setup, call clear down, translations and routing
- Software support of standard interfaces permitting interconnection with elements in the PSTN network, from CCS7 nodes to PBXs

The Base Platform is supported by software management, network management and Operation, Administration, and Maintenance (OAM) facilities provided by other software and hardware in the CS2000 portfolio.

CAPABILITIES AND VALUE

ISUP Optional Parameter Control

By means of datafill, this feature allows the selective suppression of these optional parameters on a per trunk group basis for the following ISUP variants:

- ETSI ISUP V1/V2
- ETSI ISUP country variants
- IBN7

- NCCI ISUP
- Japan ISUP
- Australian ISUP variants

Value

Some network operators require that certain "unsupported" optional parameters are not sent within or into their networks. This feature allows CS2000 operators to comply with these requirements through datafill configurations.

Technical reference

59028040

CLI Default Number

This feature provides default Calling Line Identity (CLI) or default Charge Number or default Contractor Number on all incoming trunks that support CLI, Charge Number or Contractor Number.

Protocols that support default CLI are:

- ISUP and its variants:
    — ETSI ISUP V1and V2
    — UK ISUP
    — Australian ACIF-G500 ISUP
    — ANSI ISUP
    — Japanese Interconnect ISUP
- ETSI PRI
- QSIG
- BTUP

Protocols that support default Charge Number are:

- ANSI ISUP

Protocols that support default Contractor Number are:

- Japanese Interconnect ISUP

Default Numbering Plan Indicator (NPI), Nature of Address (NOA), Presentation Indicator (PI) and Screening Indicator (SI) are also set for default number functionality.

The default number from the new table DEFNUM is outpulsed on the outgoing trunk according to the datafill for the following DEFNUM options against the incoming trunk:

- If OVERI is datafilled, the default number overrides any CLI, Charge Number or Contractor Number in the incoming message
- If NOCLI is datafilled, the default number is outpulsed only when no CLI is received in the incoming message
- If NOCHG is datafilled, the default number is outpulsed when no Charge Number is received in the incoming message

- If NOCON is datafilled, the default number is outpulsed when no Contractor Number is received in the incoming message
- If NOINFO is datafilled, the default number is outpulsed when no digits for CLI, Charge Number or Contractor Number are received in the incoming message

Only one of the numbers CLI or Charge Number or Contractor Number is outpulsed on the outgoing trunk.

Default NPI, NOA, PI and SI datafilled in table DEFNUM are also outpulsed on the outgoing trunk. The TRAVER tool is enhanced to support CLI default number functionality.

If CLI Screening (Charge Number Screening) is invoked, Module Code 612 is attached to the Automatic Message Accounting (AMA) record. If CLI Screening is invoked and CLI Default Number is activated, Module Code 612 contains the default charge number datafilled in table DEFNUM according to the OVERI, NOCHG or NOINFO options.

Value

This feature allows the CS2000 to better meet the needs of the GSP customer base.

Technical reference

59028834

Translation and Routing Expansion

This feature provides the following enhancements to the CS2000 Translations and Routing capabilities.

- Expands the number of universal translations by adding four new CODE tables:
  - — Country translations (CT2CODE)
  - — Foreign translations (FA2CODE)
  - — Office translations (OFC2CODE)
  - — Prefix translations (PX2CODE)

  Each of the CODE tables provides a suite of analysis and manipulation functions allowing the operator to translate different dialling plans.
- Expands the number of possible routing tuples by adding 90 additional routing tables (OVR0 - OVR89).
- Provides the ability to route from any Universal translations HEAD or CODE table to any routing table (IBNRTx, OFRx, OVRx or xxRTE).

Value

Provides enhancements to the CS2000 Translations and Routing capabilities. More tables are added to increase the amount of translations and routing data that can be supported on the switch.

Technical reference

59023454

Multiple Time Zone Support

The feature provides a framework for multiple time zones and Daylight Saving Times (DMT) for subscriber visible services on both analogue (IBN/RES) lines and sets. By allowing individual lines to store offsets from the switch time this feature provides:

- The ability to calculate local time
- A framework for billing/logs/network services to be easily adapted

Functionality is provided via a new table MULTITZ and a new line option MTZ.

This feature impacts the following subscriber activated features which use the time of day:

- Wake Up Call Request (WUCR)
- Caller Number Display (CND)
- Caller Name Display (CNAMD)
- Automatic Recall Diallable Directory Number (ARDDN)
- Delivery of Diallable Number (DDN)
- Query Time and Date (QTD) (payphone only)

Value

This feature allows the network operator to provide billing and network services which reflect subscriber local time, thus improving customer satisfaction. Additionally, this features improves subscriber satisfaction by relating subscriber activated services to local time.

Technical reference

59038784

Middlebox and Access Topology Provisioning

Connection Admission Control and NAT-traversal functions, collectively known as Internet Transparency (ITrans) in Voice over IP (VoIP) networks will in future be performed by MIDCOM-compliant middleboxes. However, the MIDCOM protocol is not yet available. These features form part of a group of features which together deliver pre-MIDCOM Internet Transparency.

Feature 89007657 deals with the data provisioning of the Gateway Controller (GWC) for ITrans functionality, and making that data available to GWC call processing elements.

Feature 89009783 provides support for the discovery by the GWC of the IP address and port of a Media Gateway (MG) that is deployed behind a Network Address and Port Translator (NAPT).

Feature 89007814 provides access to ITrans elements from an Operations Support System (OSS) interface. The elements accessed are NAT middleboxes and Media Proxies. Once these elements have been provisioned using the CS200 Management Tools Graphical User Interface (GUI), ITrans information can be queried and modified using the OSSGate interface.

Value

These features support the provisioning of middlebox and access topology, thereby supporting delivery of pre-MIDCOM ITrans.

Technical reference

89007657, 89009783, 89007814

Internet Transparency Application Agent

This feature introduces the framework and services to support internet transparency solutions. This framework takes the form of the Internet Transparency application Agent (ITA), which is hosted on the Gateway Controller (GWC). The ITA provides transparency solutions for two middlebox types and low bandwidth links. The middlebox types are Network Address Translator (NAT) and Network Address and Port Translator (NAPT) devices. These devices map private (internal) IP addresses and ports to public (external) IP addresses and ports.

Value

This feature allows network operators to provide customers that are using low bandwidth links or protecting their networks with uncontrolled NA(P)Ts with the ability to handle calls involving media gateways behind NA(P)Ts.

The ITA introduces the ability to allocate NA(P)T binds dynamically through the use of a Media Proxy, thus allowing endpoints behind NA(P)T boxes to remain reachable on a per-call basis.

Hardware requirements

This feature requires an Real Time Protocol (RTP) Portal with Version 1.1 software.

Technical reference

89007980

GWC-EM support for Internet Transparency - Pre-MIDCOM

The Pre-MIDCOM solution comprises the provisioning of Media Proxies and Network Address Translators (NATs) to allow calls to take place across Virtual Private Networks (VPNs).

The Media Proxy device allows a gateway in one domain to communicate with a gateway in another domain. A Gateway Controller (GWC) selects and then sets up the Media Proxy per call flow. The NAT provides the gateway with a temporary public address.

A Graphical User Interface (GUI) allows:

- One or more physical NATs to be provisioned as a single logical NAT per Media Gateway
- Media Proxies to be provisioned to resolve the addressing of NATs

Value

This feature helps to deliver pre-MIDCOM Internet Transparency (ITrans).

Technical reference

89007809

Control of Media Proxy

This feature implements the Nortel proprietary protocol MGCP+ for the CS2000 Gateway (GWC) platform.

MGCP+ is a simple protocol loosely based on the Internet Engineering Task Force (IETF) protocol Media Gateway Control Protocol (MGCP). It uses a very small subset of MGCP messages, which are modified and extended. MGCP+ is used by the GWC to control an Interactive Multimedia Server (IMS) Real Time Protocol (RTP) Portal as a Media Proxy.

Value

This feature removes barriers to Voice over Internet Protocol (VoIP) caused by lack of Internet Transparency in IP networks arising from Network Address Translation (NAT) devices or limited bandwidth links in the network

Technical reference

89007985

Support for Gateways behind a NAT Device

Network Address Translation (NAT) devices allows multiple gateways to be mapped onto a single unique IP address. This feature changes the code in the Gateway Controller (GWC) in order to add support for gateways behind a NAT device.

Value

This feature provides support for gateways behind a NAT device.

Technical reference

89009783

Codec Selection Enhancement

This feature provides the option of per call COder DECoder (CODEC) selection based on:

- Incoming trunk group
- Outgoing trunk group
- Called Party Number
- Called Party Nature of Address
- Calling Party Number
- Calling Party Nature of Address

The packetisation rate is not affected by this feature.

Value

Where there are concerns over voice quality, this feature allows those calls to be passed through the VoIP (Voice over IP) network uncompressed. For example:

- Calls that have already had compression performed on another leg of the end-to-end bearer path (for example, calls originating from a mobile network)
- Calls where the additional latency of using a compressed CODEC would add too much of a delay (for example, International VoIP calls)

Technical reference

19012781

MCS Interworking to (I)SN08

This feature has been introduced to ensure that interoperability between the CS2000 and the MCS52000 Multimedia Communication Server continues to be supported for new releases (e.g. MCS 4.1) and interface implementations (e.g. RFC3261 SIP off Session Server, succeeding RFC2543 SIP off VRDN).

Value

Ensures continuity of CS2000/MCS5200 interoperability across successive releases and new SIP interfaces.

Technical reference

00008134

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

BASE0011   CO Data Change Capture

This order code provides a data echo back capability that is used with an Operating Support System (OSS) to keep the data synchronised with the table data on the CS2000.

CAPABILITIES AND VALUE

CO Data Change Capture

Provides the ability to capture all data changes made to CS2000 tables and generate a log providing information on the table and tuple changed. It can also store the information in one or more files.

Value

Improved system performance. Helps to minimise outages by providing continual backup of Communication Server data. Continual updates of Communication Server data minimise delays and errors in provisioning that can result from the use of outdated data.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

CS2B0001   Communication Server 2000 Base

This order code provides base voice over IP functionality in the areas of lines/trunks access. Operations, Administration and Maintenance (OA&M), network services, Universal Audio Server and Universal Signalling Server support.

CAPABILITIES AND VALUE

Directed Terminations to Conference Circuits Phase II

This feature enhances and optimises conferencing services in a hybrid configuration.

A Universal Audio Server (UAS) provides conference circuits on a packet switching network, whereas the Maintenance Trunk Module/Conference Trunk Module (MTM/CTM) provides them on a Time Division Multiplexing (TDM) Enhanced Network (ENET).

Directed terminations provides a mechanism to select the appropriate bridge type, based on the network type of other agents in the call. Usually the conference circuit matches the network of the agent that initiates conference.

This feature also permits conference services to be deployed with a looparound solution. Looparound trunks are assumed to be configured with the national ISUP protocol.

The following features that make use of 3-port conference hardware are enhanced as part of this activity:

- 3-Way Call
- CEPT International 3-Way Call
- Call Transfer
- Operator Override over BTUP and UK-ISUP

Value

The major benefits provided by this feature are:

- Conferencing support on both sides of a hybrid (that is, TDM and packet switching separately)
- Conferencing capability for a hybrid looparound configuration

This feature also provides improved usage of Interworking - Spectrum Peripheral Module (IW-SPM) resources, where conferencing with both UAS and MTM/CTM is supported for IW-SPM connections.

Technical reference

89008477

ISUP 200,000 Ports Trunk support

The constant increase in number of ISUP ports over the past few years has stretched and, in places, outgrown the following ISUP maintenance resources:

- ISUP outgoing message queue elements
- ISUP Timer Blocks

This feature increases the maximum number of ports that can be supported by a Service Switching Point (SSP) by increasing the limit on the size of table C7TRKMEM for a standalone SSP from 165,000 to a maximum of 200,000 tuples.

This feature also introduces EPUTIL, which is a Command Interface (CI) tool in the Central Module (CM). By typing EPUTIL at the CI prompt, maintenance messages sent from the Gateway Controllers (GWCs) to the CM are captured and displayed.

Value

This feature increases the maximum number of provisioned ISUP, PRI, DPT, and PTS ports that an SSP can support to 200,000.

Hardware requirements

This increased limit of table C7TRKMEM can only be realized for CS2000 switches which have the Universal Signalling Platform (USP) being used as an SS7 network interface.

Technical reference

00003485

MG9K EM Frame Location enhancements

The feature delivers the following enhancements:

- The Office Frame number is displayed in the MG9K Element Manager (MG9K EM) Alarm browser, Integrated Element Management System (IEMS) Alarm browser and any other Alarm browsers provided by Operations Support System (OSS)

- The MG9K-EM Frameview display is enhanced so that, for example:

    — The Master frame is shown to the far left and all subtending frames are shown to the right of the Master frame

    — Adjacent frames are displayed without scrolling, even when there is a gap between frames

- Complete flow through provisioning is supported for Internet Telephony Processor (ITP) Virtual Media Gateways (VMGs). The operating company personnel no longer need to fill Frame location information in table LGRINV. They provision Frame location information at MG9K-EM.

Value

By enhancing the display of MG9K-EM Frameview and providing complete flow through provisioning for ITP VMGs, this feature simplifies the work required by operating company personnel.

Technical reference

00003531

Deload Tool for Graceful Deloading of IW SPM ATM and IW SPM IP

NEW!

This feature provides the capability to place the individual bridge terminals of an Interworking Spectrum Peripheral Module (IW-SPM) in a state where they are not available for active call processing. This capability is intended to be used on both the ATM IW-SPM and the IP IW-SPM for two purposes:

- **Initial commissioning**
  During initial commissioning individual bridge terminals can be put into a state where they can be validated without being used for active call processing. Without the feature, all the bridge terminals become available for use by call processing as soon as the node is brought into service without any opportunity for testing them first.

- **Hardware conversion (and other maintenance actions)**
  Individual bridge terminals, when in-service, can be placed into a state where they are not available for new calls. Once all active calls on the terminal have finished the hardware can be taken out of service for maintenance while active call processing continues using the terminals that remain in service. Without the feature, the IW-SPM node would have to be taken out of service for maintenance, causing all established calls to be released.

Value

Allows a customer to verify a newly installed IW-SPM before bringing it into service and to gracefully deload an IW-SPM in order to take a node out of service without impacting active calls.

Technical reference

00007121

Trunk group OM Registers for Bearer Path Failures

NEW!

This feature introduces a new OM register that provides a per-trunk group OM count for any line-to-trunk, trunk-to-line, or trunk-to-trunk call failure.

Value

Easier and faster diagnosis of the root cause of major bearer path failures

Technical reference

00008350

IW SPM/MG4K IPservice interworking to CICM, H.323, SIP / MCS

NEW!

This feature provides a means of reliably sending and receiving DTMF digits and other signalling tones over an IP network between an Interworking SPM (IW-SPM) and peer H.323 GWCs (notably the MCS5200 Multimedia Communications Server). Digits are sent out-of-band using H.245 Peer Messaging. This method is used in place of other techniques that are not supported by H.323 GWCs, such as sending digits in-band using full bit-rate (G.711) codecs or out-of-band using RFC2833.

Value

Provides reliable interworking between the IW-SPM and H.323 GWCs when transmission of tones is required.

Technical reference

00006120

DEPENDENCIES

The following order code is required for this functionality to be operational:

GWCW0080 Gateway Controller NCL

CS2B0002   GWC Support and Control

CAPABILITIES AND VALUE

This feature provides a method to control the deployment of Communication Server 2000 Gateway Controller (GWC). The GWC is a device which controls line/trunk gateways and audio servers for CS2000 networks. The utility that enables this feature controls the number of GWC pairs that a CS2000 has in service and also the ability to increase/decrease this number via a password or during the load-build process.

Value

A major benefit of using this utility is the control of the optional functionality and resource usage on the Core without changing the software loads. This allows customers to choose specifically the functionality they require thereby enabling them to customise their Communication Servers to best match their operation and subscriber requirements.

Technical reference

DCSCMPRV

HARDWARE REQUIREMENTS

Hardware requirements include an NTRX51BL standalone Core in an SAM21 chassis. For information on additional hardware requirements for this feature, please refer to the engineering manuals.

DEPENDENCIES

The following order code is required for this functionality to be operational:

GWCW0080 Gateway Controller NCL

CS2B0004   H.323 GateKeeper

CAPABILITIES AND VALUE

Cisco Gatekeeper to Gatekeeper support

This feature is one of the components of the CS2000 H.323 solution. The functionality provided by this feature is to use the H.323 NTNA PRI to tunnel the H.323 data from one H.323 node to another H.323 node within the same CS2000. This tunnelling capability is supported for the H.323 Basic Call Service, Call Associated Services (CAS), and Non-Call Associated Services (NCAS).

Value

This feature enables interworking to Cisco Gatekeeper via the CS2000.

Technical reference

00002206

H.323 Gatekeeper to CS2K Gatekeeper Interoperability

This feature provides support for H.323 GateKeeper (GK) to CS2000 H.323 GK interoperability through the use of an H323 Proxy device. This H.323 Proxy registers multiple gateway instances from a single box so that all the gateways it registers share one IP address. This allows provisioning of multiple gateways with the same IP address and port.

Value

This feature enables integration of an H323 Proxy device in order to support GK to GK signalling across networks.

Technical reference

00002550

H.323 Gateway Change Capability

This feature is part of the ongoing effort for provisioning H.323 Gateways (GWs) and Endpoint Groups (EPGs) within the software suite. This feature provides the following new or amended functionality:

- Change the capacity of an H.323 GW after initial provisioning
- Change the IP address of an H.323 GW after initial provisioning
- Change the Port of an H.323 GW after initial provisioning
- Allow users to specify the Terminal Identifier (TID) location of EPGs

- Provide modified Graphical User Interface (GUI) display capabilities for H.323 EPGs

Value

This feature makes it possible to change the initial provisioning of an H.323 GW without affecting the already provisioned GWs and EPGs.

Technical reference

00003995

Support International Advice of Charge over H.323 (OneAccess GW)

NEW!

The Advice of Charge (AOC) ISDN supplementary service enables subscribers to be informed of the number of charge units they incur for a call. The CS2000 implementation supports provision of this information either during a call (AOC-D service) or at the end of a call (AOC-E service) to PRI and Q.SIG users. This feature provides AOC support for originating agents connected to the CS2000 over H.323 via the OneAccess third-party gateway.

Value

Extends C2000 support for the AOC service to H.323 originating agents.

Technical reference

00005822

Cisco Call Manager Interop Enhancements

NEW!

The Cisco Call Manager (CCM) is a third-party product that is widely used in enterprise networks to provide IP PBX functionality. This feature enables interoperability between the CCM and the CS2000 H.323 Gatekeeper, which sees the CCM as an H.323 gateway. The CCM can thus form part of a CS2000 VoIP VPN and interoperate with other gateways such as the PVG and MG9000.

Value

Support for the CCM provides a good selling point for network operators marketing hosted VoIP VPN services.

Technical reference

00007322

GK-GK T.38 Fax Support

NEW!

T.38 is an ITU-defined standard for the transparent transport of Group 3 fax calls over IP. This feature supports T.38 fax calls between H.323 endpoints residing on gateways within carrier and enterprise networks.

Value

Provides support for T.38 fax calls over IP.

Technical reference

00007232

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

CS2B0005   DPT Trunk SOC

CAPABILITIES AND VALUE

DPT SOC

This feature Dynamic Packet Trunk (DPT) controls the usage of DPT ports via Software Optionality Control (SOC) utilities and an office parameter. The network operator can activate a certain number of simultaneously active DPT ports using a key code issued by Nortel. When the number of active DPT calls reaches the SOC limit, no new DPT calls will go through.

The value of DPT_MAX_PORTS in table OFCVAR is the number of simultaneously active DPT ports allowed by the switch. This number cannot exceed the SOC limit. This feature automatically sets the office parameter to the usage limit maintained by SOC utilities when the limit is set in the SOC. Using the table control interface, the network operator can tune down the office parameter to better fit the needs of the network. It can be tuned up by purchasing a new key code specifying an additional amount of DPT port usage.

By default, DPT calls are not allowed without first activating this feature with a valid key code. The network operator sets the DPT usage limit through the standard SOC Command Interpreter (CI) interface. The limit is usually set to the number of purchased DPT ports but a warning threshold can be set (by default it is 75%) above which the switch generates warning logs (SOC402) when the actual usage exceeds the warning threshold. If the DPT usage limit is reached, a new log (DPTM702) is generated for each rejected call request.

Value

This feature allows the network operator to monitor DPT port usage on a switch and thereby pay for only the number of DPT ports required, rather than the full capability of the switch.

Technical reference

59038733

Elimination of APG from Solution

NEW!

This feature enables MS2000 Series media servers to be used to provide Packet Media Anchor (PMA) support for service scenarios in which tone application or digit collection is required for a call over a Dynamic Packet Trunk (DPT). This is required because DPT GWCs have no access to media streams across the packet network. The PMA replaces Anchor Packet Gateway (APG) functionality provided by TDM-side looparound trunks on PVGs, which was used for this purpose in releases prior to ISN08.

Value

Media-server based PMAs provide a much more flexible and cost-effective mechanism than PVG-based APGs for supporting DPTs.

Technical reference

00007120

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

CS2B0008   CS2B CS to CS Calls

CAPABILITIES AND VALUE

SIP Call Server SOC

This feature is controlled by a Software Optionality Control (SOC) option. This feature implements a mechanism to control the maximum number of Session Initiation Protocol for Telephony (SIPT) calls that utilize the Next Generation Session Server (NGSS) platform when the far end is another CS2000. A usage SOC, CS2B0008, is implemented to limit these types of calls.

The usage-controlled CS2B0008 SOC added by this activity applies to calls that meet the following criteria:

• The incoming or outgoing trunk group has the DYNAMIC option with SIPT SIGNALING in table TRKOPTS

• A match of the incoming or outgoing trunk group is found in the SIPTTRK field of one of the tuples in table SIPLINK

• The CONNTYPE field of the tuple in table SIPLINK is set to CS2CS

A counter keeps track of the current number of calls matching the above criteria. For each new call matching these criteria, the current value in the counter is checked against the limiting value in the SOC. If the addition of a new call of this type would exceed the SOC limit, the call is sent to treatment; otherwise, the counter is incremented and the call is allowed to proceed. When the call is ended, the counter is decremented.

Value

This feature allows the network operator to monitor the number of SIPT calls that utilize the Next Generation Session Server (NGSS) platform when the far end is another CS2000 and thereby pay for only the number of calls required, rather than the full capability of the switch.

Technical reference

00004414

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

CS2B0009   Call Server to Apps Server Calls

CAPABILITIES AND VALUE

SIP App Server SOC

This feature is controlled by a Software Optionality Control (SOC) option. This feature implements a mechanism to control the maximum number of Session Initiation Protocol for Telephony (SIPT) calls that utilize the Next Generation Session Server (NGSS) platform when the far end is an Application server (that is, NOT another CS2000). A usage SOC, CS2B0009, is implemented to limit these types of calls.

Value

This feature allows the network operator to monitor the number of SIPT calls that utilize the Next Generation Session Server (NGSS) platform when the far end is an Application Server and thereby pay for only the number of calls required, rather than the full capability of the server.

Technical reference

00004271

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

CS2B0010   CS 2000-Compact Geographic Survivability

NEW!

CAPABILITIES AND VALUE

CS 2000 Compact Geographic Survivability – End-to-end

NEW!

Geographic survivability is the distribution of components across a geographic area to make sure that services continue in the event of a catastrophic event such as a fire or explosion.

This feature introduces geographic survivability for CS2000-Compact configurations in which duplicate units are deployed at separate sites up to 120km / 73 miles apart. Provided that these sites are connected via a high-capacity optical fibre link as well as via the backbone packet network, such a configuration can continue to provide service following a catastrophic event at either site.

Value

This feature ensures that, by duplicating hardware and links, CS2000-Compact configurations will continue to provide service even after a catastrophic event at one site.

Hardware requirements

The MCG905 card introduced as a new GWC hardware platform at ISN08 is required by this feature.

Technical reference

00004005

CS2C0001   Communication Server 2000 Common

NEW!

CAPABILITIES AND VALUE

Merge eCW Content On Stream

NEW!

This feature enhances the conformance of Multimedia Terminal Adapters (MTA) attached to cable access networks to the PacketCable^{TM} signalling protocol specification. It includes the following main enhancements:

- **Graceful Restart Method**
  The Call Management Server (CMS) of the CS2000 will support receiving a Restart In-Progress (RSIP) message with a restart method of "Graceful" from

MTA's, to be used as a method to deload lines on a Gateway. When RSIP Graceful is received, the endpoint(s) specified in the message will no longer be able to make or receive new calls.

- **DNS Support for Multiple Addresses**
  For MTA's which are provisioned as using dynamic IP addressing, the CMS will support multiple IP addresses being provisioned in the DNS Server (up to two will be supported). The MTA will be allowed to come into service from either address via an RSIP message. The IP address at which the Gateway is in-service will be considered the "primary" address, and the other address is considered the "alternate".

Value

Improved support by MTAs for the PacketCable architecture.

Technical reference

00006772

DEPENDENCIES

The following order code is required for this functionality to be operational:

CS2B0004 H.323 GateKeeper

CS2W0002 CS2W Inter-Communication Server

CAPABILITIES AND VALUE

A simple CS2000 solution can use one communication server (CS2000) with one Gateway Controller (GWC) to control both the ingress and egress media gateways. A higher-capacity, more robust CS2000 solution can use multiple CS2000s each having multiple Gateway Controllers (GWCs). In this case, the ingress and egress gateways may be controlled by separate GWCs on separate CS2000s.

Order Code CS2W0002 provides the means of communication between GWCs on different communication servers. The GWCs can be from another vendor, provided that the other vendor's equipment meets the open standards established for the packet network. CS2000 uses SIP-T, which is an enhanced version of session initiation protocol, for communication between communications servers.

The following protocols may be transported transparently within SIP-T:

- ETSI ISUP V1
- ETSI ISUP V2
- IBN7 (ANSI ISUP+)
- IUP (BTUP)
- UK ISUP
- SSUTR2 (French TUP)
- SPIROU (French ISUP)
- Australian ACIF-G500 ISUP
- Brazil ISUP
- CA.30
- China ISUP

- Czech ISUP
- German ISUP (V2)
- Israeli ISUP
- Italian ISUP V1
- Italian ISUP V2
- Malaysian ISUP
- Mexican ISUP
- Portuguese ISUP
- Spanish ISUP (V1 and V2)
- Telmex ISUP
- Turkish ISUP V1
- Turkish ISUP V2

Value

This feature provides the necessary communication protocol required for implementing multiple communication server networks.

Multiple communication server networks provide the following benefits:

- Increased capacity in terms of both the number of available ports and busy hour call attempts (BHCA)
- Redundancy for improved reliability

Support of Anchor Packet Gateway

The Anchor Packet Gateway (APG) feature is part of the Dynamic Packet Trunk (DPT) Services solution. This feature introduces the following components to the gateway controller architecture:

- APG Protocol Engine. The APG component of the DPT Adaptor is responsible for communicating with the Anchor Context Controller (ACC) component on a peer Gateway Controller (GWC). An Aspen gateway (Passive Voice Gateway) acts as the APG by connecting two Time Division Multiplexing (TDM) terminations via a looparound physical circuit
- ACC is responsible for controlling the APG call context
- The messaging protocol between the APG and the ACC

Technical reference
59030573

SIP-T support for providing tones on an incoming SIP-T trunk

Since signals on an Aspen gateway can only be applied to the Time Division Multiplexing (TDM) interface, signals need to be reversed by the Anchor Context Controller (ACC). Because of the loopback configuration, any signal request applied to the p-side actually needs to be applied to the c-side connection (tones need to be applied to ep2 on the Anchor Packet Gateway (APG) because the APG plays the tone on its TDM side). Therefore, the ACC changes any tone request to be applied to the proper connection.

Technical reference

59030573

SIP-T support of providing in-band digit collection

Since signals on an Aspen gateway can only be applied to the Time Division Multiplexing (TDM) interface, Request Notification requests (for example, digit collection) need to be reversed. Any request to the Dynamic Packet Trunk (DPT) p-side is requested on the p-side of ep2. Conversely, any notification (for example, digits received) is reported by the gateway on the termination of ep2 (DPT c-side). The notification is reported to the DPT on the p-side.

Technical reference

59030573

SIP-T support of PRI interworking (with PRI services)

This feature implements SIP-T support of PRI interworking with PRI services.

Technical reference

59034771

SIP-T support of line interworking (including audible ringing)

Remote Bearer Control (RBC) is a required component for supporting Dynamic Packet Trunk (DPT) services. The RBC solution entails tandeming requests via SIP-T to the connecting switch. RBC provides audible ringing to the originator under the control of the terminating switch.

Technical reference

59030597

SIP-T support of Moving Bearer Channel

This feature adds the necessary functionality to Remote Bearer Control (RBC) to support the following:

- Suppressing unnecessary silent tone requests
- Providing audible ringing into a conference
- RBC and Interactive Multimedia Server (IMS) interoperability (mid-call inter-MGC (Media Gateway Controller) modify messages)
- RBC lawful intercept interoperability
- RBC IP interworking interoperability

Technical reference

59034771

SIP-T to SIP-T interworking

This feature supports SIP-T to SIP-T interworking, involving services such as:

- Successful Call
- Call Release
- 3 Way Call / Transfer
- Call Forward No Answer

- Conference

Technical reference

59032553

CS-3000 (TSS) interworking using SIP-T

The CS2000 inter-operates with the CS3000 (TSS) as a generic SIP-T user agent. The CS2000 and Transport Services Shelf (TSS) communicate over the existing version of SCTP (5.1) and do not use UDP.

For communication with the Trunk-Servicing System (TSS) using ETSI derivative ISUP protocols, the CS2000 does not have the capability to process SIP originations and terminations messages without ISUP payloads. From a CS2000 point of view the TSS is a peer node that supports ISUP calls transported over SIP-T. All transactions initiated by the CS2000 have ISUP payloads. The CS2000 expects all requests from the TSS to have ISUP payloads and that the ISUP payloads alone provide the call information.

Technical reference

59036800

IMS interworking using SIP-T

This feature allows the CS2000 and the Interactive Multimedia Server (IMS) to originate and terminate calls, and to communicate between the two via SIP-T messages. The functionality includes basic calls between the CS2000 and the IMS both ways, as well as a set of services such as Call Forwarding and Three Way Call.

This feature supports the following services:

- Anonymous Caller Reject, Auto Dial, Automatic Line,
- Call Forward Call Waiting, Calling Number Delivery,
- Calling Number Delivery Blocking, Cancel Call Waiting,
- Customer Originated trace, Denied Origination,
- Direct Inward Dialling, Direct Outward Dialling,
- Distinctive Ringing/Call Waiting, Fax/Modem, Private Number Plan,
- Selective Call Acceptance, Selective Call Forwarding, Selective Call Rejection,
- Speed Calling, Spontaneous Call Waiting Indicator,
- Subscriber Activated Call Blocking (SAAB), Teen Service, Warm Line, MADN

The following services are also supported with some limitations. Details on these limitations can be obtained from your Nortel Networks representative:

- Auth Code, Automatic Call Back, Automatic Recall,
- Call Completion to Busy Subscriber, Call Forward Busy,
- Call Forward Don't Answer, Call Forward Universal, Call Hold, Call Transfer,
- Three Way Call, Call Waiting, Calling Name Delivery,
- Calling Name Delivery Blocking, Consultation Hold, Emergency Call Routing,
- Hunting, Local Number Portability, Malicious Call Hold, Voice Mail,
- Busy Override, Call Park, Call Pick-up, Camp On, Conference, Ring Again,

- ACD, Call Forward Remote Activation, DISA, DTM, MSB, DND, IN,
- Lawful Intercept, MONA, SUS/RES, UCD

Technical reference

59034889

IN triggering over SIP-T originations

This feature enables the CS2000 to support the following CS-1R functionality:

- CS-1R Line Triggering CFW/3WC (and Redirection Triggers)
- CS-1R Service Interaction Interworking
- SCCP Routing and TCAP/SCCP Enhancements
- o_Mid_Call over ISUP and PRI
- Line triggering interworking to SIP-T terminations, including line services support
- SIP-T origination triggering including:
  — Basic triggering (TDP2 and TDP3) and re-triggering
  — Routing (including post connect XLA)
  — EDPs (2,4,5,6,7,8,9,10)
  — Tones, Announcements and Digit Collection
  — FurnishChargingInformation (FCI)
  — ReleaseCall
  — CallGapping and ActivateServiceFiltering
- DTMF digit collection over PRI originations
- Full support of tones in PlayAnnouncement (PA) and PromptAndCollectUserInformation (PCUI) operations over ISUP and PRI
- Lawful Intercept
- Support of Line Triggering. The following line features are supported:
  — Calling Number Delivery
  — Calling Name Delivery
  — Calling Number Delivery Blocking
  — Calling Name Delivery Blocking
  — Call Hold

Technical reference

59028269

DEPENDENCIES

A CS2000 Gateway Controller and at least one other Gateway Controller are necessary in order to use this feature.

BILL0001   Billing

This order code enables CS2000 to generate billing records in Extended Bellcore AMA Format (EBAF).

CAPABILITIES AND VALUE

Billing

The network operator has the ability to deploy EBAF AMA format records within the network. The following records are typically generated by EBAF AMA:

- **Records generated as a result of switching call traffic**, including the originating directory number (DN), terminating number or digits, time and date of origination, and the conversation time of call
- **Records generated as a result of other activity on the Communication Server**, including a time change, closing an active recording file and opening a new active recording file

Customised assignment of call type and service feature AMA parameters is also supported.

Value

- Allows the network operator to accurately bill for all calls and provides accurate inter-administration accounting
- Streamlines billing and usage tracking by the downstream processing system, by adapting call type and service feature codes to suit local tariffs
- Provides greater control of call recording mechanisms, by enabling the network operator to define the format through datafill

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

2.1.4   Base Optional Software Order Codes

The following base software order codes are optional:

LOC00005   Dial Plan Translation Enhancements

CAPABILITIES AND VALUE

Dial Plan Translation Enhancements

This feature provides an increased number of entries in table LINEATTR from 1,024 to 4,096.

This feature provides an increased number of line treatment groups from 256 to 512.

Value

Greater customisation and flexibility in dial plan creation. Allows network operators to maintain high levels of service and end user satisfaction by accommodating the expanding number of dialling plans and classes of service required by end users.

Expand LINEATTR Table to 32,000

This feature increases the maximum number of entries in table LINEATTR from 4,096 to 32,000.

Value

This feature enables the network operator to maintain high levels of service and end-user satisfaction by accommodating the expanding number of dialling plans and classes of service required by end-users.

Technical reference

AF6755

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

NPE00001   Number Plan Evolution 1

This feature provides provisioning support for non-unique subscriber numbers. The subscriber number is composed of the office code and the station code. If the CS2000 uses the 3-3-4 numbering plan, the subscriber number has 7 digits.

CAPABILITIES AND VALUE

Provisioning and maintaining the same subscriber numbers in different area codes

This feature avoids any ambiguity when provisioning or maintaining numbers in different area codes but with the same subscriber number. This feature allows network operators the ability to enter national Directory Numbers (DNs) at the MAP to carry out provisioning, querying and display of DNs.

This feature provides a solution to network operators who serve multiple area codes on one Communication Server or will support local numbers with the last seven digits on one Communication Server. The introduction of Local Number Portability (LNP) increases the likelihood of encountering numbers with the same subscriber number.

Value

This feature provides the following benefits to the network operator:

- Removes the ambiguity of provisioning and querying by allowing the Communication Server operator to enter national DNs. This enhancement provides a maintenance benefit to the network operator because previous provisioning and query tools only supported subscriber DNs

- Enhances the ability of the CS2000 to support LNP within a multi-operator numbering network

- Supports non-unique subscriber DNs "Subscriber Line Usage".

  This functionality enhances Subscriber Line Usage functionality to support non-unique subscriber DNs

This feature provides a range of manual line and number management capabilities for SERVORD queries, with special emphasis on line and number management functions. More specifically, this feature:

- Resolves DN ambiguity for the following SERVORD and CI commands: ADD, ADO, CDN, CHDN, CHF, CHG, CHLK, CICP, CLN, DEL, DEO, DSP, EST, NEW, NEWDN, OUT, OUTDN, RES, SUS, QGRP, QNCOS, QSL
- Allows maintenance functions to accept national DNs including: LTP Level, ALT Level, Line Logs and ALT logs
- Resolves DN ambiguity for various provisioning, debugging and test tools, including: CLTG, QDN, QLEN, TRAVER L, NBCQUERY

Technical reference

AR2230, AU2589, AF7345, and AU2586

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

NPE00002   Number Plan Evolution 2

CAPABILITIES AND VALUE

Number Plan Evolution 2

Provides the ability to datafill and use over 8000 unique NPA-NXX entries when using the Universal or Enhanced_North_American Directory Number (DN) systems. It does not increase the number of NPA entries available but it does increase the number of NPA-NXX combinations available when these DN systems are used.

Note: Previously this functionality was included under NPE00001.

Value

This feature provides the network operator with greater flexibility in provisioning NPA-NXX entries.

Technical reference

AU2541

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

NPE00003   E.164 NPE

The following functionalities are delivered as enhancements to existing order code, NPE00003, E.164 NPE.

CAPABILITIES AND VALUE

Control 11- and 12-Digit DN Data Entry

This feature provides Software Optionality Controlled (SOC) functionality to allow Directory Numbers (DN) up to 12 digits to be stored in table DNINV. The following restrictions apply to this feature:

- The ability to define 11- and 12-digit DNs is controlled by SOC option NPE00003.
- Support for DNs greater than 10 digits is provided for Direct Inward System Access (DISA) only.

Note: This feature can only be activated if the Market_OF_OFFICE value is GERMANY.

Value

E.164 is mandated by the ITU and is necessary in order to compete in the European market. Today, work arounds such as padding digits are being used to get around some of the current CS2000 limitations in supporting VARDN. These methods, however, do not fully comply with ITU E.164 dialplan requirements. This feature, E.164 (Open Number Plan), allows network operators to reduce provisioning, administration, and implementation costs by providing a supportable framework designed to evolve into a fully compliant product.

Technical reference

59005973

14 Digit DN Support for POTS Agents

This feature provides Software Optionality Controlled (SOC) functionality to allow variable length Directory Numbers (DNs) as indicated by the International Telegraph and Telephone Consultative Committee (ITU-T) E.164 number structure and mapping recommendations.

This feature supports the ITU-T E.164 specification for variable length national numbers up to 14 digits in length.

Value

This feature ensures that variable length DNs of up to 14 digits can be defined on the CS2000, thereby allowing network operators to meet E.164 regulatory requirements and providing network operators with increased flexibility with regard to the provisioning of DNs.

Technical reference

59018520

E.164 Centrex - DISA 12-Digit VARDN Support

This feature provides support for variable-length Directory Numbers (DN) up to 12 digits for the Centrex Direct Inward System Access (DISA) feature.

Value

E.164 is mandated by the ITU and is necessary in order to compete in the European market. Today, work arounds such as padding digits are being used to get around some of the current CS2000 limitations in supporting VARDN. These methods, however, do not fully comply with ITU E.164 dialplan requirements. This feature, E.164 (Open Number Plan), allows network operators to reduce provisioning, administration, and implementation costs by providing a supportable framework designed to evolve into a fully compliant product.

Technical reference

59007213

E.164 Centrex Phase 2

This feature makes Centrex translation and routing selectors and public routing selector, OFRT DN, compliant with Open Dial Plan (ODP) on the CS2000. In the ODP described under the ITU-T Recommendations E.164 and E.165, a directory number (DN) is of variable format.

This feature provides the ODP enhancement for the following Centrex components:

- Abbreviated Dialling
- Direct Outward Dialling
- Network calls
- DN terminations
- Retranslation

This feature also provides the ODP enhancement for the following public component:

- DN terminations (OFRT DN)

Value

This feature allows network operators to meet E.164 regulatory requirements.

Technical reference

59011676

E.164 Utilities Phase 2

This feature determines the Directory Number (DN) type, for example, local or national.

Previously, the CS2000 used either length-based checks, which in the E.164 scenario of variable-length DNs are not valid, or real-time intensive procedures to determine whether a DN was local or national. This feature replaces these methods for determining DN type with procedures that are E.164-compliant, and that reduce real-time impact.

Flexible digit analysis provides control over the number of digits that are reported from the Gateway Controller to the Computing Module (CM) on a per-message basis.

Value

This feature provides E.164-compliant procedures, which are less real-time intensive, for determining DN type.

Technical reference

59012642

14 Digit DN Support for IBN Line Call Forwarding

This feature introduces modifications to POTS Call Forwarding to meet requirements to support variable length Directory Numbers (DNs) as indicated by the International Telecommunications Union - Telecommunications Standardisation Sector (ITU-T) E.164 recommendations.

This feature enhances POTS Call Forwarding variations to allow up to a 13 digit dialled number to be datafilled as the Subscriber Number (SN). The variations which are enhanced are:

- Call Forward (CFW)

- Remote Call Forward (RCF)
- Remote Call Forward Equal Access (RCFEA)
- Call Forward Busy Line (CFBL)
- Call Forward Don't Answer (CFDA)
- Call Forward Group Don't Answer (CFGDA)

Call Forward Remote Access (CFRA) has been enhanced to request up to 15 digits of the DN to be forwarded for both English and French subscribers.

Value

This feature progresses E.164 support on the CS2000. This feature allows network operators to meet E.164 regulatory requirements, thereby providing network operators with the potential for increased revenue.

Technical reference

59018894

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

NPE00004   Enhanced Multiple NPA Support

CAPABILITIES AND VALUE

NPA Split/Overlay Support

This feature introduces the following functionality:

- Hunt Group support: this allows members of a hunt group to be assigned to a different Numbering Plan Area (NPA) from the one assigned to the pilot Directory Number (DN) of the hunt group
- Teen Service Secondary DN support: this allows a secondary DN (SDN) to be assigned to a different NPA from the one assigned to the primary DN (PDN)
- Provisioning: this modifies the following SERVORD commands:

  NEW, ADD, ADO, DEO, CHF, EST, CDN, CHDN

  to:

  — support multiple NPAs for SDNs and hunt group members

  — enhance translation tables (LENFEAT, IBNFEAT, HUNTMEM and PREHUNT) to process 10-digit SDNs and hunt group member DNs

Value

This feature lifts cross-NPA restrictions for primary and secondary DNs to simplify cross-NPA support for CS2000s for a range of revenue-generating features.

Technical reference

59007190, 59007186, 59006893, FMA 2000-0047

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

TEL00004   C7 Routeset Increment

Used in conjunction with the CCS7 external routing software provided in the CS2000 Switching Platform and external routing hardware, this order code supports an expansion of the CCS7 routesets from 255 to 2047 in a CS2000 Service Switching Point (SSP).

CAPABILITIES AND VALUE

C7 Routeset Increment

Expands CCS7 routesets from 255 to 2047 in a CS2000 SSP.

HARDWARE REQUIREMENTS

This order code requires Link Interface Units (LIU7s) and CCS7 external routers.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

TEL00006   C7 Link Prot. Tester

This order code enhances CCS7 link maintenance by enabling the CS2000 Maintenance and Administration Position (MAP) to build, send and monitor CCS7 test messages without the need for external traffic simulation or monitoring equipment.

CAPABILITIES AND VALUE

C7 Link Prot. Tester

CCS7 protocol or hardware problems can be isolated through the following capabilities:

- Enables up to two technicians from CS2000 MAPs to monitor CCS7 message traffic with a variety of protocol parameters to find a specific message or class of messages.
- Builds, displays, alters and transmits CCS7 messages.
- Intercepts incoming CCS7 messages that match entries in a table.
- Permits message injection, monitoring, and interception in both directions (going out on a link and coming into the Communication Server).
- Intercepts and monitors messages between the Integrated Processor and F-Bus Interface (IPF) and its associated Signalling Termination (ST) in an LIU7.
- Informs the technician, through logs, when monitoring or intercepting has been enabled or disabled on a particular LIU7.
- Offers enhanced password protection.

Value

This feature reduces the time required to isolate and identify the source of improper datafill or hardware problems that are affecting CCS7 messaging over designated links (such as detecting circular routing problems).

This feature enhances revenue generation by maximising in-service time, while at the same time reducing Operations, Administration, and Maintenance (OA&M) costs, with no new hardware requirements.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

TEL00007   C7 Link Flt. Locator

This order code provides the Link Fault Sectionalisation feature which is used to identify faulty segments of a DS-0 CCS7 transmission path.

This feature is used after trouble notification has been detected by the CCS7 Bit Error Rate test. Link Fault Sectionalisation is a menu-driven procedure integrated at the MAP.

CAPABILITIES AND VALUE

C7 Link Flt. Locator

The Link Fault Sectionalisation feature originates loopback test commands from the MAP to test specific CCS7 links sections to and from remote network nodes, according to the manual procedures defined in Bellcore TR-489.

Value
- Minimises link downtime by reducing the time and effort required to isolate and identify faulty CCS7 signalling link transmission path segments.
- Provides a manual method to isolate faults at remote nodes without having to dispatch a maintenance technician to the site.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

TEL00009   C7 Network Integrity Items

This order code provides enhanced Signalling Link Test procedures.

CAPABILITIES AND VALUE

C7 Network Integrity Items

Provides CCS7 Base Network Reliability Council capabilities.

Value
- Improves network performance. Better error detection provides improved network performance and reduces the impact of faults, particularly during failures and traffic congestion.
- Reduces stress on the signalling network and contributes to the reliability and robustness of the CCS7 network as a whole.
- Contributes to the infrastructure required for future revenue generating services such as those available through the Intelligent Network (IN).

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

TEL00011   C-Side 14 Extended Messaging

CAPABILITIES AND VALUE

C-Side 14 Extended Messaging

This feature provides ENET support for the datafill and maintenance of Gateway Controller extended message links. Support is provided to add, delete or move an Gateway Controller with extended message links, as well as to upgrade an existing Gateway Controller to use extended message links.

Value

This feature allows the CS2000 to make use of the unused channel 0s on 12 of the 16 logical ports on a DS512 fibre that span an ENET and host Gateway Controller providing up to 12 additional messaging channels per Gateway Controller. The existing messaging channels are kept intact and continue to use the CS2000 I/O datalink protocol. The new messaging channels use the DMS-Y datalink protocol.

Technical reference

AC1460

DEPENDENCIES

Link control and enhanced message protocol circuit packs NT6X40FC and NT6X69QA are required for this functionality to be operational.

TEL00012   Multiple Point Code

CAPABILITIES AND VALUE

Multiple Point Code Support

This feature enables the Multiple Point Code (MPC) capability on the Service Switching Point (SSP) CS2000. This capability allows network operators to datafill multiple point codes for a single Network Indicator (NI). This feature provides support for up to eight SSP nodes and, therefore, up to eight point codes, per NI. The maximum limit of eight SSP nodes per CS2000 office remains unchanged.

Value

This feature increases CCS7 network flexibility and allows network operators to support multiple carrier resellers within the network, thereby providing network operators with the potential for greater revenue.

Technical reference

AJ5337

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

TEL00015   NI Interworking

CAPABILITIES AND VALUE

NI Interworking

This feature provides operators with interworking, looparound and limited multiple point code signalling links. The maximum number of point codes per network is limited to four. An enhanced version allowing more than four point codes per network is provided by the Multiple Point Code feature TEL00012.

Value

This feature increases CCS7 network flexibility and allows network operators to support multiple carrier resellers within the network, thereby providing network operators with the potential for greater revenue.

Technical reference

59009726

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

TEL00016   TOD Clock Sync to SDM

CAPABILITIES AND VALUE

TOD Clock Sync to SDM

This feature implements the Simple Network Time Protocol (SNTP) client in the CS2000 core. The SNTP client enables the Time of Day (TOD) clock of the core to become synchronised with the reference time provided by the Supernode Data Manager (SDM).

Value

This feature allows operators to synchronise CS2000 Communication Servers.

Technical reference

59009726

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

2.1.5   SS7 Signalling Optional Software Order Codes

ISP70001   Base ISUP (ANSI IBN7)

This order code provides IBN7 (ANSI ISUP+) interworking with the PSTN.

CAPABILITIES AND VALUE

Base ISUP

ANSI ISUP+ provides the highest potential level of functionality between the CS2000 and the PSTN. ANSI ISUP+ is Nortel Networks' proprietary implementation of ANSI ISUP. It is an enhanced version of the ANSI ISUP standard, with extensions to support various proprietary features.

ANSI ISUP+ has the NETINFO option which enables the following information to be provided for outgoing calls:

- Network identifier
- Customer group name
- Network Class of Service (NCOS)
- Permitted call types

ANSI ISUP+ supports the following signalling interworking

ISUP variant			ETSI ISUP V1 [1]	ETSI ISUP V2 [1]	IBN7 ISUP	TUP [2]	INAP	SIP (no CCS7) [3]	PRI [4]	QSIG	H.323 [5]	DPNSS [6]	CentrexIP	IBN lines		
Country / name	Characteristics	Implementation												LAN MGs [7]	Cable MGs [8]	V5.2 MGs [9]
IBN7 ISUP	ANSI ISUP with Nortel proprietary extensions	TDM	Y	Y	Y	Y	Y	Y	Y[10]	Y	Y	Y	Y	N	N	N
		SIP-T [11]	Y	Y	Y	Y	Y	Y	Y[12]	Y	Y	Y	Y	N	N	N

[1]   Entries in these columns refer to interworking with base/generic ETSI ISUP. Each variant of ETSI ISUP V1 and V2 can be interworked to itself as well as to base/generic ETSI ISUP.

[2]   CS2000 does not support a base/generic TUP call processing agent, but supports three national TUP variants for China (CTUP), France (SSUTR2 / FTUP) and the UK (IUP / BTUP). Y appears in this column for ISUP variants that can be interworked to one or more of these national TUP variants.

[3]   When communicating with an MGC or gateway that does not provide ISUP payload in the SIP message (e.g. MCS5200), CS2000 generates an IBN7 ISUP payload based on SIP message type and content.

[4]   CS2000 supports a base/generic call processing agent for ETSI PRI (30B+D). It also supports two national 30B+D PRI variants for China and Spain, and three national 23B+D PRI variants for the USA (ANSI PRI), Hong Kong (CR13) and Japan (INS1500). Entries in this column apply to support for interworking between ISUP variants and base/generic ETSI PRI. Footnotes are used to indicate whether interworking is supported for a national PRI variant as well as (or instead of) base/generic ETSI PRI.

[5]   The international implementation of H.323 is based on mapping H.225 connection control messages (SETUP etc) on to their QSIG equivalents, with APDUs being conveyed transparently in Facility IEs in QSIG messages. Support for H.323 basic call interworking means support for H.225 call establishment, and does not imply support for the handling of non-call-related information over the interworking. Basic call interworkings supported are therefore as for QSIG.

[6]   CS2000 support for DPNSS is based on the international implementation of H.323 (see footnote [5]). Between the GWC and the Westell DPNSS gateway, DPNSS signalling is encapsulated in Westell-defined manufacturer-specific operations in the H450.1 SupplementaryService data field of a H323 message. For communication between the GWC and the Core, the GWC performs mapping between these operations and QSIG Facility IEs.

[7]   For IBN lines supported by media gateways attached to customer LANs, ISUP interworking means interworking between ISUP signalling and MGCP signalling.

[8]   For IBN lines supported by media gateways served by cable access networks, ISUP interworking means interworking between ISUP signalling and NCS signalling.

[9]   For IBN lines supported by V5.2 media gateways, ISUP interworking means interworking between ISUP signalling and V5.2 Layer 3 signalling backhauled to CS2000 over a V5UA/SCTP/IP protocol stack, together with co-ordination between ISUP signalling and H.248 device/media control signalling.

[10]   TDM-side IBN7 ISUP can be interworked to all supported PRI variants except those for China and Japan.

[11]   Functionality equivalent to SIP-T with an encapsulated IBN7 ISUP payload is provided by SIP DPTs with no ISUP payload. This enables CS2000 to communicate with an MGC or gateway that does not provide ISUP payload in SIP message (e.g. MCS5200), by generating an IBN7 ISUP payload based on SIP message type and content.

[12]   IBN7 ISUP over SIP-T can be interworked to all supported PRI variants except Chinese PRI.

Value

ANSI ISUP+ provides the foundation for Virtual Private Networking (VPN) services to directly connected end users, as well as indirectly connected end users who are able to access VPN via PSTN connections.

QSIG Interworking

This feature introduces ANSI ISUP+ support for QSIG.

Value

QSIG is the only corporate signalling standard recognised internationally by a growing number of PBX manufacturers as the open standard for implementing fully featured private networks or Virtual Private Networks (VPN)s. With QSIG, network operators are able to launch VPN services to an ever growing proportion of target end users.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

NETK0024   Network AOC Tariff

CAPABILITIES AND VALUE

Network Advice Of Charge (CGP)

This feature enables the Charge Generation Point (CGP) part of the Network Advice Of Charge (NAOC) functionality for originators that subscribe of AOC functionality. It allows the CGP to deliver AOC charge information, based on Network AOC tariff information received from the CDP, to the originating end user.

On CS2000, PRI trunks are supported as originating agents. From this feature's point of view, the terminating agent can be any valid agent.

Value

This feature allows the network operator on the originating exchange to generate AOC tariff information on the originating node, which will be transferred to the originating end user. It also allows the operator of the originating network to prohibit the usage of carrier selection, if the transit operator cannot deliver NAOC information.

Technical reference

59007780

Network Advice Of Charge Interworkings (ETSI PRI)

Network Advice Of Charge (AOC) informs the originating subscriber, during a call, about the cost of that call. Network AOC operates in a multicarrier network environment.

The implementation of Network AOC makes use of both the Charging Determination Point (CDP) and the Charging Generation Point (CGP). The CDP determines the tariffing of the call, and sends this information to the CGP. The CGP is located in the network to which the originating subscriber is connected. The CGP, using the information sent by the CDP, provides the AOC information to the originating subscriber.

This feature enables the CGP functionality of the Network AOC service. This feature also allows the Network AOC service to operate with the ETSI PRI originators.

In addition, this feature provides Billing to the nearest Second (BNS) functionality for AOC end users on ETSI PRI that receive AOC information in the form of currency units.

Value

This feature allows the network operator to generate AOC tariff information to be transferred between different operators, thereby offering a new service through which network operators can generate increased revenue.

Technical reference

59032878

ISUP Network Advice Of Charge Tariffing (CDP)

This feature determines the charge-related information (CDP functionality) and the transfer of this information between a Charge Determination Point (CDP) and a Charge Generation Point (CGP) over German ETSI ISUP V2 trunks. The CDP determines which tariff to apply for a call. The CGP converts the charging information received from the network into a format delivered to the subscriber. The CDP and CGP are usually found in the multiple networks of different operators.

This feature provides the complete CDP functionality and deploys the following components:

- Multiple carriers and resellers
- Enhanced call translations
- Zoning
- Type of day/time of day systems
- Logical originator groups
- Discount system
- Block tariffing
- Combination tariffing
- Tariff tables

Value

This feature allows the operator to generate AOC tariffing information to be transferred between different operators, thereby offering a new service through which network operators can generate increased revenue.

In Germany it also prevents the AOC subscriber of a carrier selection operator from being force released by the owner of the originating network.

Technical reference

59008229

Network AOC Integrated Charge Determination and Generation (combined CGP/CDP)

Network Advice Of Charge (AOC) informs the originating subscriber, during a call, about the cost of that call. Network AOC operates in a multicarrier network environment. There are two types of nodes involved in the implementation of Network AOC: the Charging Determination Point (CDP) and the Charging Generation Point (CGP). The CDP is the node in the carrier network that determines the tariffing of the call, and sends this information to the CGP. The CGP is located in the network to which the originating subscriber is connected. The CGP, using the information sent by the CDP, provides the AOC information to the originating subscriber.

This feature combines the CDP and CGP functionalities in one node. It supports interworking with the following originating agent:

- ETSI PRI

This feature provides an homogenous interface for network operators, regardless of whether AOC information is received from another network, sent to another network, or remains within the network.

Value

This feature allows the network operator to have a single AOC tariff information database, thereby reducing operating costs.

Technical reference

59013775

SIP-T Network Advice Of Charge Tariffing (CDP)

This feature enhances the *Network Advice Of Charge Tariffing (CDP)* feature (59008229) to determine the charge-related information (CDP functionality) and the transfer of this information between a Charge Determination Point (CDP) and a Charge Generation Point (CGP) over SIP-T trunks.

Value

With SIP-T interworking, network operators are able to provide NAOC (CDP) services to an ever growing proportion of target end users.

Network AOC Integrated Charge Determination and Generation (combined CGP/CDP) (QSIG)

This feature allows the Network Advice Of Charge (NAOC) service, with combined the CDP and CGP functionalities in one node, to operate with QSIG originators.

Value

QSIG is the only corporate signalling standard recognised internationally by a growing number of PBX manufacturers as the open standard for implementing fully featured private networks or VPNs. With QSIG, network operators are able to launch VPN services to an ever growing proportion of target end users.

Technical reference

59038835

Network Advice Of Charge (NAOC) German Regulatory Enhancements

Premium Rate Services (PRS) 0900, to be introduced in Germany in 2003, result in the need to support more NAOC zones and tariffs in the NAOC database tables. It is also necessary to increase the maximum length of service DNs from 11 digits to 24 digits to allow service providers to use different tariffing based on the service DN suffix.

This feature extends NAOC/PCA functionality as follows:

- Increases the number of NAOC tariff zones to 1022
- Increases the number of tariff indices and tariffs to 1022
- Increases the permitted length of DNs to 24 digits
- Increases the number of entries to 1,308,160

- Increases the number of provisionable destination ranges to 1,467
- Increases the range of possible international zone numbers to 0-1022
- Extends NAOC Essential functionality to support:
  — Line-to-line calls
  — Line-to-PRI/QSIG trunk calls
  — PRI/QSIG trunks to any agent calls
- Extends PCA Essential functionality to support:
  — Line-to-line calls
  — Line-to-PRI/QSIG trunk calls

Value

This feature enhances the NAOC tariff database to handle more tariffs, more zones and longer service Directory Numbers (DNs). The feature also enhances Payment Ceiling Advice (PCA) and NAOC Essential functionality to support more agents. This feature thereby allows network operators to meet German regulatory requirement Telekommunikations Kundenschutzverordnung 18 (TKV 18).

Technical reference

99007454

French NAOC

NEW!

This feature introduces support for the NAOC (Network Advice of Charge) ISDN service in the French market using the SPIROU ISUP protocol as the network signalling agent. In particular the following are supported:

- Delivery of charge information to PRI and H.323 originators
- Relaying of NAOC information in SPIROU ITX and TXA messages by CS2000 transit nodes

Value

Provides for interchange of tariff information between different network operators, as required by the deregulation of the French market.

Technical reference

00006730

DEPENDENCIES

The following order code is required for this functionality to be operational:

NETK0001 Pub NTWK Trk

NETK0041   ETSI ISUP V2 Hop Counter

CAPABILITIES AND VALUE

ETSI ISUP V2 Hop Counter

This feature can prevent circular looping within a network operator's network or between networks.

This features provides an optional parameter, the Hop Counter (HC), in ETSI ISUP Initial Address Messages (IAMs). The HC parameter allows the network operator to limit the number of intermediate exchanges that an IAM can pass through within an ETSI ISUP V2 network before the call is released. If the HC limit expires, a Release Message is sent to the originating exchange, indicating that the provided datafill has caused problems because of circular routing.

The functionality is optional and is controlled via Software Optionality Control (SOC).

Value

This feature can reduce network congestion caused by circular routing within a network operator's network or between networks. This feature also makes the detection and resolution of circular loops more efficient, increasing customer satisfaction and providing the network operator with the potential for increased revenue due to freeing up resources.

Technical reference

59016998

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

NETK0083   Russia ISUP V2+

CAPABILITIES AND VALUE

Russia ISUP V2+

This feature enables Russia ISUP V2+ (a variant of ETSI ISUP V2+) to be used on CS2000.

The following interworkings are supported:

- Russia ISUP V2+ to/from Russia ISUP V2+
- Russia ISUP V2+ to/from IBN/V5.2 lines
- Russia ISUP V2+ to/from ETSI PRI
- Russia ISUP V2+ to/from Russia ISUP V2+ over SIP-T
- IBN to/from Russia ISUP V2+

This feature implements the following Russia ISUP V2+ requirements:

- Definition of the following Russian specific ISUP messages:
  — Calling Line Clear (CLC) is a forward message sent instead of a RELease message in malicious call hold. It is also used to provide 'called control disconnection type'.

— Ring (RNG) is a forward message sent from an operator-connected exchange to the line-connected exchange.

- Non-standard handling of the following messages received from Russia ISUP V2+ trunks:

  — The Charging Information (CRG) message is ignored.

  — The Facility (FAC) message is not generated and sent over Russia ISUP V2+ trunks, and it is not supported at terminating exchanges.

- Modifications in basic call scenarios.

  When a called subscriber goes on-hook, the ISUP_REL message is sent instead of the ISUP_SUS message.

- Modifications to the following signalling parameters:

  — Called Party Number - Nature of Address Indicator

  — Nature of Connection Indicator - Satellite Indicator

- New Calling Party Categories (CPCs) as required by the Russian network. This feature provides the modifications requires for tandeming new CPC values.

- Configurable usage for IDR/IRS - INR/INF messages

- Enhancement of ISUP Timers T5, T13, T15, T19, T23 and T33.

  The ranges of these timers are modified to time-out values. However, T5 and T17 timer values greater than 320 are effective only on PDTCs when both units are equipped with SX05.

- Tandeming Toll Break In (TBI) messages.

  Toll operators in the Russian network can establish calls to busy subscribers using the TBI feature with ISUP-R-1994 signalling.

Value

This feature enables Russia ISUP V2+ (a variant of ETSI ISUP V2) to be used on the CS2000, thereby allowing the CS2000 to better meet the needs of the Russia market.

Technical reference

00005164

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

NSUP0002   ETSI ISUP V1 & Variants

This order code provides ETSI ISUP V1 signalling capability and the following associated market variants on CS2000.

- Brazilian ISUP
- Czech ISUP
- Danish ISUP
- Italian ISUP
- Malaysian ISUP
- Mexican ISUP
- Norwegian ISUP
- Portuguese ISUP
- Spanish ISUP
- Telmex ISUP
- Turkish ISUP

ETSI ISUP V1 is the subject of ETS 300 121 (1992), but this ETS merely endorses the text of CCITT Recommendation Q.767 (1991) without any modification. Q.767 defines ISUP in relation to CCITT Recommendations Q.761*, Q.762*, Q.763*, Q.764* (1988, Blue Book). These Recommendations define ISUP for intra-network use (typically within a national network); Q.767 defines an ISUP subset suitable for use as an international interface, that is, between networks with different characteristics.

CAPABILITIES AND VALUE

Generic ETSI ISUP V1 Capabilities

ETSI ISUP V1 supports the following basic call capabilities:

- Bearer Capability: Speech
- Bearer Capability: 3.1 kHz audio
- Bearer Capability: 64 kbit/s unrestricted digital information
- Echo control procedure (static and dynamic echo control)
- Tones and announcements
- Message Transfer Part (MTP) pause and resume
- Access delivery information
- Transportation of user teleservice information
- Inpulsing/Outpulsing capacity

ETSI ISUP V1 supports the following generic procedures for supplementary services:

- End-to-end signalling - Pass along method (for Spanish ISUP)

The table *Interworking support for ETSI ISUP V1 variants* below summarises CS2000 support for ETSI ISUP V1 interworkings. ISUP variants are listed in alphabetical order, and support for interworking between a given ISUP variant and each other generic interface supported by CS2000 is specified as one of the following:

- Y: Interworking definitely supported.
- N: Interworking definitely not supported.
- t: Interworking not formally supported pending testing and verification, but no design work is believed to be necessary to implement the interworking.

Interworking support for ETSI ISUP V1 variants

ISUP variant			ETSI ISUP V1 [1]	ETSI ISUP V2 [1]	IBN7 ISUP	TUP [2]	INAP	SIP (no CCS7) [3]	PRI [4]	QSIG	H.323 [5]	DPNSS [6]	CentrexIP	LAN MGs [7]	Cable MGs [8]	V5.2 MGs [9]
Country / name	Characteristics	Implemen-tation											IBN lines		
Brazilian ISUP	V1 variant	TDM	Y	Y	Y	N	N	N	Y	N	N	X	N	Y	N	Y
		SIP-T	Y	Y	N	N	N	N	Y	N	N	X	N	N	N	Y
Czech ISUP	V1 variant	TDM	Y	Y	Y	N	N	N	Y	N	N	X	N	N	N	N
		SIP-T	Y	Y	Y	N	N	N	Y	N	N	X	N	N	N	N
Danish ISUP	V1 variant	TDM	Y	Y	Y	N	N	N	N	N	N	X	N	N	N	N
		SIP-T	Y	Y	Y	N	N	N	N	N	N	X	N	N	N	N
V1 (base / generic variant)		TDM	Y	Y	Y	Y [10]	Y	Y	Y [11]	Y	Y	N	Y	Y	Y	Y
		SIP-T	Y	Y	Y	Y [10]	Y	Y	Y [12]	Y	Y	N	Y	Y	Y	Y
Italian ISUP	V1 variant [13]	TDM	Y	Y	Y	N	N	N	Y	N	N	X	N	N	N	N
		SIP-T	Y	Y	Y	N	N	N	Y	N	N	X	N	N	N	N
Malaysian ISUP	Capabilities equivalent to ETSI ISUP V1 [14]	TDM	Y	Y	Y	N	N	N	Y	N	N	X	N	N	N	N
		SIP-T	Y	Y	Y	N	N	N	Y	N	N	X	N	N	N	N
Mexican ISUP	V1 variant	TDM	Y [15]	Y	Y	N	N	N	Y	N	N	X	N	N	N	Y
		SIP-T	Y [15]	Y	Y	N	N	N	Y	N	N	X	N	N	N	Y
Norwegian ISUP	V1 variant	TDM	Y	Y	Y	N	N	N	N	N	N	X	N	N	N	N
		SIP-T	Y	Y	Y	N	N	N	N	N	N	X	N	N	N	N
Portuguese ISUP	V1 variant	TDM	Y	Y	Y	N	N	N	Y	N	N	X	N	N	Y	N
		SIP-T	Y	Y	Y	N	N	N	Y [16]	N	N	X	N	N	N	N
Spanish ISUP	V1 variant [17] [18]	TDM	Y	Y	Y	N	Y	N	Y [19]	Y	N	X	Y	N	Y	N
		SIP-T	Y	Y	Y	N	Y	N	Y	Y	N	X	Y	N	N	N
Telmex ISUP (Mexico) [20]	V1 variant	TDM	Y [15]	Y	Y	N	N	N	Y	N	N	X	N	N	N	Y
		SIP-T	Y [15]	Y	Y	N	N	N	Y	N	N	X	N	N	N	Y
Turkish ISUP	V1 variant [17] [21]	TDM	N	N	N	N	N	N	Y	N	N	X	N	N	N	N
		SIP-T	N	N	N	N	N	N	Y	N	N	X	N	N	N	N

[1] Entries in these columns refer to interworking with base/generic ETSI ISUP. Each variant of ETSI ISUP V1 and V2 can be interworked to itself as well as to base/generic ETSI ISUP.

[2] CS2000 does not support a base/generic TUP call processing agent, but supports three national TUP variants for China (CTUP), France (SSUTR2 / FTUP) and the UK (IUP / BTUP). Y appears in this column for ISUP variants that can be interworked to one or more of these national TUP variants.

[3] When communicating with an MGC or gateway that does not provide ISUP payload in the SIP message (e.g. MCS5200), CS2000 generates an IBN7 ISUP payload based on SIP message type and content.

[4]   CS2000 supports a base/generic call processing agent for ETSI PRI (30B+D). It also supports two national 30B+D PRI variants for China and Spain, and three national 23B+D PRI variants for the USA (ANSI PRI), Hong Kong (CR13) and Japan (INS1500). Entries in this column apply to support for interworking between ISUP variants and base/generic ETSI PRI. Footnotes are used to indicate whether interworking is supported for a national PRI variant as well as (or instead of) base/generic ETSI PRI.

[5]   The international implementation of H.323 is based on mapping H.225 connection control messages (SETUP etc) on to their QSIG equivalents, with APDUs being conveyed transparently in Facility IEs in QSIG messages. Support for H.323 basic call interworking means support for H.225 call establishment, and does not imply support for the handling of non-call-related information over the interworking. Basic call interworkings supported are therefore as for QSIG.

[6]   CS2000 support for DPNSS is based on the international implementation of H.323 (see footnote [5]). Between the GWC and the Westell DPNSS gateway, DPNSS signalling is encapsulated in Westell-defined manufacturer-specific operations in the H450.1 SupplementaryService data field of a H323 message. For communication between the GWC and the Core, the GWC performs mapping between these operations and QSIG Facility IEs.

[7]   For IBN lines supported by media gateways attached to customer LANs, ISUP interworking means interworking between ISUP signalling and MGCP signalling.

[8]   For IBN lines supported by media gateways served by cable access networks, ISUP interworking means interworking between ISUP signalling and NCS signalling.

[9]   For IBN lines supported by V5.2 media gateways, ISUP interworking means interworking between ISUP signalling and V5.2 Layer 3 signalling backhauled to CS2000 over a V5UA/SCTP/IP protocol stack, together with co-ordination between ISUP signalling and H.248 device/media control signalling.

[10] Interworking is supported with all three national TUP variants: CTUP, SSUTR2 / FTUP and IUP / BTUP.

[11] For TDM-side ETSI ISUP, interworking is supported with all national PRI variants except China.

[12] For ETSI ISUP over SIP-T, interworking is supported with all national PRI variants, including China.

[13] Italian ISUP V1 is the standard national interconnect interface; CS2000 supports Italian ISUP V2 for intra-network support of regulatory services. Interworking between the two variants is not supported. Otherwise, supported interworkings are the same for both variants.

[14] Although it is defined as a variant of ETSI ISUP V1, Malaysian ISUP is implemented on CS2000 using the AISUP agent.

[15] Interworking between Mexican ISUP and Telmex ISUP is also supported, except for interworking between the two SIP-T implementations.

[16] For Portuguese ISUP, interworking is supported with Spanish PRI as well as base/generic ETSI PRI.

[17] V1 and V2 variants are both in use in the national network. CS2000 can support either variant for a given trunk group, depending on the variant supported by the far-end switch. Supported interworkings are the same for both variants except where explicitly stated otherwise.

[18] Interworking between the two variants of Spanish ISUP is also supported, but only between the TDM-side implementation of one and the SIP-T implementation of the other.

[19] For Spanish ISUP, interworking is supported with Spanish PRI as well as base/generic ETSI PRI.

[20] Telmex ISUP is implemented on CS2000 as a sub-variant of Mexican ISUP (NOM112) rather than an ISUP variant in its own right.

[21] Interworking between Turkish ISUP V1 and Turkish ISUP V2 is also supported, except for interworking between the two SIP-T implementations.

ETSI ISUP V1 supports the following Services:

VPN Services

- On-net routing

- Off-net routing

- Automatic route selection

- Time of day selection

- CLI-based screening for indirect and customer group access

- Virtual Facility Group Support

- Networked Centrex through use of NETINFO parameter

ISDN Supplementary Services

ISDN supplementary service	Networked support over ETSI ISUP V1
MoU Priority 1 services	
CLIP	Yes
CLIR	Yes
DDI	Yes [1]
MoU Priority 2 services	
Advice Of Charge During Call (AOC-D)	N/A[1]
Advice Of Charge at End of Call (AOC-E)	N/A[1]
Closed User Group (CUG)	Yes
Connected Line Identification Presentation (COLP)	No
Connected Line Identification Restriction (COLR)	No
Malicious Call Identification (MCI)	Yes
Subaddressing (SUB)	Yes
User-to-User Signalling (UUS)	Yes [2]
Call Completion to Busy Subscriber (CCBS)	No
Call Forward Unconditional (CFU)	Yes [3]
Call Forward on Busy (CFB)	Yes[3]
Call Forward on No Reply (CFNR)	Yes[3]
Partial Rerouting (PRR)	Yes[3]
Explicit Call Transfer (ECT)	Yes
Non-ETSI ISDN services (MoU3)	
Network Advice Of Charge	No
Priority Class Of Service (PCOS) for Germany	No
Emergency Calls	Yes
Random and Circular Hunting for PRI	Yes[1]

[1] No additional network signalling required.
[2] UUS service 1 (implicit) only.
[3] Forwarding node functionality supported, but no notification is provided back to caller or forward to new called party. Such notifications are not defined for Q.767.

ETSI ISUP V1 supports the following Miscellaneous Capabilities:

- Bearer Capability Routing
- Overlap outpulsing for all interworkings supporting overlap signalling
- IN call triggering
- B-Party Call Control for calls to Emergency Call Service Centres

Technical references

ISUP Variant	Capability	Reference
Brazilian ISUP	Brazilian ISUP is based on Telebras Practice 220-250-732, "ISDN - ISUP User Part Common Channel #7 Signalling System, Issue 2, August 1996." This standard is based on ITU-T ISUP Blue Book Recommendations as defined in Q.767 with added national variant messages.	59014266
Brazilian ISUP	Interworking Enhancements. Specifically, enhances Brazilian ISUP to IBN7 in areas of CPC mapping, CalleD Party Number (CPDN) handling, Suspend/Resume (SUS/RES) handling and Cause Indicator parameter mapping. This feature supports the requirement for Brazilian ISUP to interact with Interactive Multimedia Server (IMS).	89008177
ETSI ISUP	B-Party Call Control over ETSI ISUP	AJ5441
Czech ISUP	Czech ISUP is based on "CCITT Signalling System No. 7 National Specification of MTP and ISUP for Czech Republic and Slovak Republic (MTP/ISUP CS)", Version 1; December 1, 1993. This standard is based on ITU-T ISUP Blue Book Recommendations with additional messages and parameters to support national requirements	AR1795 59022257
Danish ISUP	Danish ISUP is a national variant based on ETSI ISUP V1 with additional messages and parameters to support national requirements as stated in the "Standard Interconnect Agreement between Tele Danmark A/S and the 'Operator'" and the "Interconnect Test document Tele Danmark/Customer, January 1999".	A59011833
Italian ISUP subset (ISUP-S)	For use on the CS2000 for national interconnect to the Italian network. ISUP-S is specified in ISPT (*Instituto Superiore delle Poste e delle Telecomunicazioni), Regola Tecnica per il servizio ISDN*, Allegato 1, *Segnalzione su Canale Comune Parte di Utilizzazione per ISDN*, 27 February 1995. This document is based on ETS300 121 (ETSI ISUP V1).	AJ4939

ISUP Variant	Capability	Reference
Italian ISUP	Interworking to V5.2 lines	AF7381
Italian ISUP	Interconnect Compliance Enhancements allowing network operators to support customers directly connected to their network via lines and Private Branch Exchanges (PBXs).	AU2983
Malaysian ISUP	This is a basic ETSI ISUP V1 interface tuned to meet the requirements of a specific Malaysian customer - not a formal Malaysian ISUP specification.	
Mexican ISUP	Mexican ISUP is a national variant based on ETSI ISUP V1 with additional messages and parameters to support national requirements as stated in the specification NOM-112-SCTI-1995.	59011862 59027529
Norwegian ISUP	Norwegian ISUP is a national variant based on the ETSI ISUP V1 with additional parameters to support national requirements as stated in the TELENOR specification "Specifikasjon av signalerings-protokoll"	AJ5326
Portuguese ISUP	Portuguese ISUP is a national variant based on ETSI ISUP V1 with additional messages and parameters to support national requirements as stated in the national specifications "Protocolo do Sistema de Sinalização n°7 - SS7" and "Portugal Telecom CCS7 Interconnect Specification V1.0"	59013627
Spanish ISUP V1	As per National Interconnect requirements documented in Telefonica (Technology and Technical Standards), General Specification E.G.s3.003, April 1993	AJ4819 AJ4820
Telmex ISUP	As per the Telmex ISUP specification which is based on ITU-T Recommendations Q.761 to Q.764 (1997). Telmex ISUP is used as a network protocol within the network of the Mexican network operator, Telmex. This signalling variant is similar to the Mexican ETSI ISUP V1 signalling variant that is used to interconnect with other operators.	59036503
Turkish ISUP V1		59012394

Value

- **Reduced Operating Costs:** By providing direct interworking to many interfaces, this order code eliminates the operating costs associated with looparounds.

- **Feature Transparency across the public network:** Provides basic network access mechanisms for transparently extending advanced services to nationwide multi-location end users, increasing the network operator's revenue potential.

- **Increased Revenue Potential**: Significantly extends the reach of services such as Customer Local Area Signalling Service (CLASS) (for example, Calling Number Delivery), for both business and residential end users.

- **Efficient use of network resources**. Provides more efficient use of network capacity with alternative routing control and continuous call retry features.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

NSUP0003   ETSI ISUP V2 & Variants

This order code provides ETSI ISUP V2 signalling capability and the following associated market variants on CS2000.

- Australian ACIF I-ISUP
- Belgian ISUP
- Chilean ISUP
- Chinese ISUP
- German ISUP
- Hong Kong ISUP
- Israeli ISUP
- Italian ISUP
- Mexican ISUP
- Pakistan ISUP
- Singapore ISUP
- Spanish ISUP
- SPIROU (France)
- Swedish ISUP
- Telstra CA30 ISUP (Australia)
- Turkish ISUP
- UK ISUP

ETSI ISUP V2 is defined in ETS 300 356-1 (1995). This ETS is a delta to ITU-T Recommendations Q.761, Q.762, Q.763, Q.764 (1993, White Book). ETSI ISUP V2 is a superset of ETSI ISUP V1. ETSI ISUP V2 supports all capabilities supported by ETSI ISUP V1, plus additional messages and parameters for networked support of ISDN MoU2 services.

CAPABILITIES AND VALUE

Generic ETSI ISUP V2 Capabilities

ETSI ISUP V2 supports the following basic call capabilities:

- Bearer Capability: Speech
- Bearer Capability: 3.1 kHz audio
- Bearer Capability: 64 kbit/s unrestricted digital information
- Compatibility procedure (message and parameter compatibility only)
- Confusion procedure
- Echo control procedure (static and dynamic echo control)
- Tones and announcements
- Message Transfer Part (MTP) pause and resume
- Access delivery information
- Transportation of user teleservice information
- Simple segmentation
- Inpulsing/Outpulsing capacity

ETSI ISUP V2 supports the following generic procedures for supplementary services:

- Generic number transfer
- Generic digit transfer
- Generic notification procedure

The table ***Interworking support for ETSI ISUP V2 variants*** summarises CS2000 support for ETSI ISUP V2 interworkings in the ISN08 release. ISUP variants are listed in alphabetical order, and support for interworking between a given ISUP variant and each other generic interface supported by CS2000 is specified as one of the following:

- Y: Interworking definitely supported.
- N: Interworking definitely not supported.
- t: Interworking not formally supported pending testing and verification, but no design work is believed to be necessary to implement the interworking.

Interworking support for ETSI ISUP V2 variants

Country / name	Characteristics	Implementation	ETSI ISUP V1 [1]	ETSI ISUP V2[1]	IBN7 ISUP	TUP [2]	INAP	SIP (no CCS7) [3]	PRI [4]	QSIG	H.323 [5]	DPNSS [6]	CentrexIP	LAN MGs [7]	Cable MGs [8]	V5.2 MGs [9]
Australian ACIF I-ISUP	ETSI ISUP V2 variant	TDM	Y	Y[10]	Y	N	Y	Y	Y	Y	N	X	N	N	Y	N
		SIP-T	Y	Y	Y	N	Y	Y	Y	Y	N	X	N	N	N	N
Belgian ISUP	ETSI ISUP V2 variant	TDM	Y	Y	Y	N	N	N	Y	N	N	X	N	N	N	N
		SIP-T	Y	Y	Y	N	N	N	Y	N	N	X	N	N	N	N
Chilean ISUP	ETSI ISUP V2 variant	TDM	Y	Y	Y	N	N	N	Y	N	N	X	N	N	N	N
		SIP-T	Y	Y	Y	N	N	N	Y	N	N	X	N	N	N	N
Chinese ISUP	ETSI ISUP V2 variant	TDM	N	Y	Y[11]	Y[12]	N	Y	Y[13]	N	N	X	N	Y[14]	N	Y
		SIP-T	Y[15]	Y[15]	Y[15]	Y[12]	N	Y	Y[13]	N	N	X	N	N	N	Y
Czech ISUP	V2 variant [16]	TDM	Y	Y	Y	N	N	N	Y	N	N	X	N	N	N	N
		SIP-T [17]	Y	Y	Y	N	N	N	Y	N	N	X	N	N	N	N
ETSI ISUP V2 (base / generic variant)		TDM	Y	Y	Y	Y[10]	Y	Y	Y[11]	Y	Y	N	Y	Y	Y	Y
		SIP-T	Y	Y	Y	Y[10]	Y	Y	Y[12]	Y	Y	N	Y	Y	Y	Y
German ISUP	ETSI ISUP V2 variant	TDM	Y	Y	Y	N	N	N	Y	Y	N	X	N	N	Y	N
		SIP-T	Y	Y	Y	N	N	N	Y	Y	N	X	N	N	Y	N
	T-ISUP variant of ETSI ISUP V2	TDM only	Y	Y[18]	N	N	N	N	N	N	N	X	N	N	N	N
	G-ISUP variant of ETSI ISUP V2	TDM	Y	Y[18]	N	N	N	N	N	N	N	X	N	N	N	N
		SIP-T	Y	Y[18]	N	N	N	N	N	N	N	X	N	N	N	N
Hong Kong ISUP	ETSI ISUP V2 variant	TDM	Y	Y	Y	N	N	N	Y[19]	N	N	X	N	Y	N	N
		SIP-T	Y	Y	Y	N	N	N	Y[19]	N	N	X	N	Y	N	N
Indian ISUP	ETSI ISUP V2 variant	TDM	N	Y	Y	N	N	N	N	N	N	X	N	N	N	N
		SIP-T	N	Y	Y	N	N	N	N	N	N	X	N	N	N	N
Israeli ISUP [20]	ETSI ISUP V2 variant	TDM	Y	Y	Y	N	N	N	Y	Y	N	X	N	N	N	N
		SIP-T	Y	Y	Y	N	N	N	Y	Y	N	X	N	N	N	N
Italian ISUP	V2 variant [21]	TDM	Y	Y	Y	N	N	N	Y	N	N	X	N	N	N	N
		SIP-T	Y	Y	Y	N	N	N	Y	N	N	X	N	N	N	N
Mexican ISUP	V2 variant	TDM	Y[22]	Y	Y	N	N	N	Y	N	N	X	N	N	N	Y
		SIP-T	Y[15]	Y	Y	N	N	N	Y	N	N	X	N	N	N	Y
Pakistan ISUP	ETSI ISUP V2 variant	TDM	N	N[23]	N	N	N	N	N	N	N	X	N	N	N	N
		SIP-T	N	N[23]	N	N	N	N	N	N	N	X	N	N	N	N
Russian ISUP	ETSI ISUP V2 variant	TDM	Y	Y	Y	N	N	N	Y	N	N	X	N	Y	N	Y
		SIP-T	Y	Y	Y	N	N	N	Y	N	N	X	N	Y	N	Y
Singapore ISUP	ETSI ISUP V2 variant	TDM	Y	Y	Y	N	N	N	Y	N	N	X	N	N	N	N
		SIP-T	Y	Y	Y	N	N	N	Y	N	N	X	N	N	N	N
Spanish ISUP	V2 variant [24] [25]	TDM	Y	Y	Y	N	Y	N	Y[26]	Y[27]	N	X	Y	N	Y	N
		SIP-T	Y	Y	Y	N	Y	N	Y	Y[27]	N	X	Y	N	N	N
SPIROU (France)	ETSI ISUP V3 variant [28]	TDM	Y	Y	Y	N	N	N	Y	Y	N	X	N	N	N	N
		SIP-T	Y	Y	Y	N	N	N	Y	Y	N	X	N	N	N	N
Swedish ISUP	ETSI ISUP V2 variant [29]	TDM	Y	Y	Y	N	N	N	N	N	N	X	N	N	N	N
		SIP-T	Y	Y	Y	N	N	N	N	N	N	X	N	N	N	N
Telstra CA30 ISUP (Australia)	ETSI ISUP V2 variant	TDM	Y[30]	Y[10][30]	Y	N	Y	Y	Y	N	N	X	N	Y	N	N
		SIP-T	Y	Y	Y	N	Y	Y	Y	N	N	X	N	Y	N	N

ISUP variant			ETSI ISUP V1 [1]	ETSI ISUP V2[1]	IBN7 ISUP	TUP [2]	INAP	SIP (no CCS7) [3]	PRI [4]	QSIG	H.323 [5]	DPNSS [6]	CentrexIP	IBN lines		
Country / name	Characteristics	Implemen-tation												LAN MGs [7]	Cable MGs [8]	V5.2 MGs [9]
Turkish ISUP	V2 variant [17] [31]	TDM	N	N	N	N	N	N	Y	N	N	X	N	N	N	N
		SIP-T	N	N	N	N	N	N	Y	N	N	X	N	N	N	N
UK ISUP	ETSI ISUP V3 variant[28]	TDM	Y	Y	Y	Y [32]	N	Y	Y	Y	Y	N	N	N	Y	N
		SIP-T	Y	Y	Y	Y [32]	N	N	Y	Y	Y	N	N	N	N	N

[1] Entries in these columns refer to interworking with base/generic ETSI ISUP. Each variant of ETSI ISUP V1 and V2 can be interworked to itself as well as to base/generic ETSI ISUP.

[2] CS2000 does not support a base/generic TUP call processing agent, but supports three national TUP variants for China (CTUP), France (SSUTR2 / FTUP) and the UK (IUP / BTUP). Y appears in this column for ISUP variants that can be interworked to one or more of these national TUP variants.

[3] When communicating with an MGC or gateway that does not provide ISUP payload in the SIP message (e.g. MCS5200), CS2000 generates an IBN7 ISUP payload based on SIP message type and content.

[4] CS2000 supports a base/generic call processing agent for ETSI PRI (30B+D). It also supports two national 30B+D PRI variants for China and Spain, and three national 23B+D PRI variants for the USA (ANSI PRI), Hong Kong (CR13) and Japan (INS1500). Entries in this column apply to support for interworking between ISUP variants and base/generic ETSI PRI. Footnotes are used to indicate whether interworking is supported for a national PRI variant as well as (or instead of) base/generic ETSI PRI.

[5] The international implementation of H.323 is based on mapping H.225 connection control messages (SETUP etc) on to their QSIG equivalents, with APDUs being conveyed transparently in Facility IEs in QSIG messages. Support for H.323 basic call interworking means support for H.225 call establishment, and does not imply support for the handling of non-call-related information over the interworking. Basic call interworkings supported are therefore as for QSIG.

[6] CS2000 support for DPNSS is based on the international implementation of H.323 (see footnote [5]). Between the GWC and the Westell DPNSS gateway, DPNSS signalling is encapsulated in Westell-defined manufacturer-specific operations in the H450.1 SupplementaryService data field of a H323 message. For communication between the GWC and the Core, the GWC performs mapping between these operations and QSIG Facility IEs.

[7] For IBN lines supported by media gateways attached to customer LANs, ISUP interworking means interworking between ISUP signalling and MGCP signalling.

[8] For IBN lines supported by media gateways served by cable access networks, ISUP interworking means interworking between ISUP signalling and NCS signalling.

[9] For IBN lines supported by V5.2 media gateways, ISUP interworking means interworking between ISUP signalling and V5.2 Layer 3 signalling backhauled to CS2000 over a V5UA/SCTP/IP protocol stack, together with co-ordination between ISUP signalling and H.248 device/media control signalling.

[10] Interworking is also supported between TDM-side ACIF I-ISUP and TDM-side Telstra CA30 ISUP.

[11] For TDM-side Chinese ISUP over SIP-T, interworking is supported with TDM-side IBN7 ISUP, but not with IBN7 ISUP over SIP-T.

[12] Interworking between Chinese ISUP and Chinese TUP (CTUP) is supported.

[13] PRI interworking for Chinese ISUP is supported with Chinese PRI (23B+D) as well as base/generic ETSI PRI.

[14] Interworking verified only for Askey gateways.

[15] For Chinese ISUP over SIP-T, interworking is supported with ETSI ISUP and IBN7 ISUP over SIP-T, but not with TDM-side ETSI ISUP or IBN7 ISUP.

[16] Czech ISUP V1 is supported on the TDM side and over SIP-T. Czech ISUP V2 is supported only over SIP-T.

[17] Czech ISUP V2 over SIP-T interworks only with itself and with Czech ISUP V1 (TDM and SIP-T). The entries in this row apply to interworkings for Czech ISUP V1 over SIP-T.

[18] Interworking supported with base/generic ETSI ISUP V2, T-ISUP and G-ISUP, but not with German ETSI ISUP V2.

[19] Interworking supported with Hong Kong PRI (CR13) as well as base/generic ETSI PRI.

[20] In addition to the standard national version of Israeli ISUP, CS2000 supports an ISDEFO-AVNET variant of ETSI ISUP V2 for use in the Israel Defence Forces network. Supported interworkings for this variant are as shown for Israeli ISUP.

[21] Italian ISUP V1 is the standard national interconnect interface; CS2000 supports Italian ISUP V2 for intra-network support of regulatory services. Interworking between the two variants is not supported. Otherwise, supported interworkings are the same for both variants.

[22] Interworking between Mexican ISUP and Telmex ISUP is also supported, except for interworking between the two SIP-T implementations.

[23] Interworking verified only for the Pakistan variant of ETSI ISUP V2. See A00007864.

[24] V1 and V2 variants are both in use in the national network. CS2000 can support either variant for a given trunk group, depending on the variant supported by the far-end switch. Supported interworkings are the same for both variants except where explicitly stated otherwise.

[25] Interworking between the two variants of Spanish ISUP is also supported, but only between the TDM-side implementation of one and the SIP-T implementation of the other.

[26] For Spanish ISUP, interworking is supported with Spanish PRI as well as base/generic ETSI PRI.

[27] Interworking with QSIG supported only for Spanish ISUP V1, not Spanish ISUP V2.

[28] CS2000 supports two national variants of ETSI ISUP V3, but does not support a base/generic V3 call processing agent.

[29] Swedish ISUP is defined as a variant of ETSI ISUP V1, but is implemented on CS2000 as a variant of ETSI ISUP V2.

[30] For TDM-side Telstra CA30 ISUP, interworking is supported only with ETSI ISUP over SIP-T, not with TDM-side ETSI ISUP.

[31] Interworking between Turkish ISUP V1 and Turkish ISUP V2 is also supported, except for interworking between the two SIP-T implementations.

[32] Interworking between UK ISUP and IUP/BTUP is supported.

ETSI ISUP V2 supports the following Services:

VPN Services

- On-net routing
- Off-net routing
- Automatic route selection
- Time of day selection
- CLI-based screening for indirect and customer group access
- Virtual Facility Group Support
- ETSI ISUP V3 APM (Application Transport Mechanism). This provides networked support for private numbering plans. Networked Centrex through use of NETINFO parameter

ISDN Supplementary Services

ISDN supplementary service	Networked support over ETSI ISUP V2
MoU Priority 1 services	
CLIP	Yes
CLIR	Yes
DDI	Yes [1]
MoU Priority 2 services	
Advice Of Charge During Call (AOC-D)	N/A[1]
Advice Of Charge at End of Call (AOC-E)	N/A[1]
Closed User Group (CUG)	Yes
Connected Line Identification Presentation (COLP)	Yes
Connected Line Identification Restriction (COLR)	Yes
Malicious Call Identification (MCI)	Yes
Subaddressing (SUB)	Yes
User-to-User Signalling (UUS)	Yes [2]
Call Completion to Busy Subscriber (CCBS)	Yes [3]
Call Forward Unconditional (CFU)	Yes
Call Forward on Busy (CFB)	Yes
Call Forward on No Reply (CFNR)	Yes
Partial Rerouting (PRR)	Yes
Explicit Call Transfer (ECT)	Yes
Non-ETSI ISDN services (MoU3)	
Network Advice Of Charge	Yes
Priority Class Of Service (PCOS) for Germany	Yes
Emergency Calls	Yes
Random and Circular Hunting for PRI	Yes[1]

[1] No additional network signalling required.
[2] UUS service 1 (implicit) only.
[3] TCAP NCAS (Non Call Associated Signalling) for CCBS is conveyed across the packet network between CS2000 USPs by means of a TCAP / SCCP / MTP3 / M2PA / UDP / IP protocol stack.

ETSI ISUP V2 supports the following Miscellaneous Capabilities:

- Translations and Routing based on:

  — Bearer Capability

  — Numbering Plan Indicator / Nature of Address

  — Calling Party Category

- Continuity checking

- Overlap outpulsing for all interworkings supporting overlap signalling

- IN call triggering

- Full originating and terminating node support for suspend/resume functionality and use of the re-answer timer T6.

- ISUP V2+ support for QSIG Feature Transparency (QFT) using the generic APM (Application Transport Mechanism).

- ISUP V2+ support for Network Advice of Charge

- T9 timer suppression for FreePhone calls

- Reroute on congestion

Capabilities Specific to Australian ACIF G.500 I-ISUP:

- Digit Outpulsing of up to 30 digits; IAM conveys a maximum of 16 digits with excess in a SAM message.

- CLI handling up to 24 digits
- Billable digits (30 digits)
- Support of CLI and CPC parameter values in IAM message

Capabilities Specific to UK ISUP:

- Dynamic Routing Control (DRC) via the RCI (Routing Control Indicator)

Technical references

ISUP Variant	Capability	Reference
Australian ACIF_G500 ISUP	Provides the European Telecommunications Standards Institute ISDN Signalling User Part (ETSI ISUP) variant, Australian ACIF-G500 ISUP.	59008417
	Provides equivalent functionality to that of I-ISUP and becomes the default agent for carrier interconnection in Australia.	59013668
Belgian ISUP	Belgian ISUP is specified in *Belgacom SS7 MTP Specification for the Interconnection with the OLO*, Edition 1, 25/7/97	AJ4910
Chinese ISUP	Based on the China ISUP specification YDN 038-1997 *National No. 7 signalling Technical Specification of Integrated Service Digital Network User Part (ISUP)* - Ministry of Post and Telecommunication PRC 1997.5. The implementation is based on ITU-T Recommendations Q.761 to Q.764 (White Book), ETS300.356-1 to ETS300.356-19 (February, 1995) with additional messages and parameters to support national requirements.	59036494
	Interworking enhancements	59040486 59040657
	Handling Operator Calls	59040141
	Handling Emergency Lines Calls	59040141
ETSI ISUP V2	Simple Segmentation. This functionality is compliant with ITU Q.764 (03/93) section 2.1.12.	AU3362
German ISUP	Provides the basis for the interconnection of CS2000 to the PSTN in Germany. It is based on Q.763 (03/93), Q.764 (03/93) and the German interconnection specification for signalling ("Zeichengabe im ZZN7") with the Application Transport mechanisms as defined in ETSI ISUP V3.	59030731

ISUP Variant	Capability	Reference
Hong Kong ISUP	Interworking to IBN Lines	59039663
IBN7 ISUP	Interworking to V5.2 lines	
Israeli ISUP		AF6856 AF7171
Italian V2 ISUP		AU2983
Mexican ISUP		59026201
Pakistan ISUP		00007864
Singapore ISUP		59034058
Spanish ISUP	Based on the ITU Q764 (1993) series of specifications.	59027768 59029294
SPIROU (France)	Based on the ART SPIROU specification, which is the evolution of the public carrier SS7 interconnect from SSUTR2 (French TUP), and is based on ITU-T Recommendations Q.761 to Q.764 (1997) and ETSI ISUP V3.	59013177
Swedish ISUP		59015832
Telstra CA30 ISUP (Australia)	CA.30 is the ISUP specification for use within the TELSTRA network in Australia. It is based on ETSI ISUP V2 (ITU-T Recommendations Q.761-Q.764 (White Book)) with additional messages and parameters.	59028026 59029294 59032172
Turkish ISUP V2	 Interworking to Analogue Lines Malicious Call Identification for ISDN	59012394 59018055 59022191
UK ISUP	Based on PNO-ISC/ SPEC007 which is in turn based on Q.761-Q.763 and Q.763-Q764 ITU-T ISUP 97. UK ISUP is intended to be the long-term replacement for IUP/ BTUP as the standard CCS7 trunk interface for use within and between networks in the UK. Blocking Indicator enhancements Routing Control Indicator enhancements BTUP and UK ISUP Interworking	AU3356 PNO-ISC/007 59008843 59012932 AJ5370

Value

- **Reduced Operating Costs:** By providing direct interworking to many interfaces, this order code eliminates the operating costs associated with looparounds.

- **Feature Transparency across the public network:** Provides basic network access mechanisms for transparently extending advanced services to nationwide multi-location end users, increasing the network operator's revenue potential.

- **Increased Revenue Potential**: Significantly extends the reach of services such as Customer Local Area Signalling Service (CLASS) (for example, Calling Number Delivery), for both business and residential end users.

- **Efficient use of network resources**. Provides more efficient use of network capacity with alternative routing control and continuous call retry features.

Japan Trunk Services

This feature introduces the Japan trunk services Notification of Time and Charge (NTC), Carrier Name Notification (CNN) and Account Code (ACCT) on the CS2000 Hybrid product IP side.

The NTC service calls the subscriber after the original call has ended and plays an announcement that gives call duration and charge information.

Value

This feature provides the NTC service over JI-ISUP trunks. This feature thereby allows the CS2000 to better meet the needs of the Japanese market.

Technical reference

00002756

IeISUP Failmsg and Tmtmap Mapping

This feature modifies the Australian Interconnect ISUP variant ETSI ISUP V2-based IeISUP, which supersedes IISUP.

When handling failure messages, IISUP uses "AISUP" as a key to access table FAILMSG; while IeISUP uses "Q767" as the key (except for ETSI PRI and TS14 PRI interworking, which already use the "AISUP" key).

This feature provides datafillable failure message mapping for:

- IeISUP <-> ETSI ISUP V1 base
- IeISUP <-> ETSI ISUP V2 base
- IeISUP <-> Telstra CA30 ISUP (V2)

And allows IeISUP to use "AISUP" as the key when using table FAILMSG for:

- IeISUP <-> ETSI ISUP V1 base
- IeISUP <-> ETSI ISUP V2 base
- IeISUP <-> Telstra CA30 ISUP (V2)
- IeISUP <-> IBN7
- IeISUP <-> IBN line

This feature also allows IeISUP to use "AISUP" as the key to access table TMTMAP, while ETSI ISUP V2 uses "Q767" key.

Value

This feature allows Failure message mapping and Treatment message mapping between IeISUP and ETSI ISUP variants

Technical reference

00002794

DN compliance in HK ISUP

This feature enables the Presentation Number (PN) to be used as the Directory Number (DN) for HK ISUP.

For a line to HK ISUP call, the PN of the originating line, if available, is used as the Calling Line Identifier (CLI) in the Calling Party Number (CGPN) parameter in the Initial Address Message (IAM). If the PN is not datafilled in table DNATTRS/ DNGRPS the Network Number (NN) of the originating line is used.

Similarly in the call forward scenario, if the Original Called Number (OCN) or Redirecting Number (RGN) has its own PN datafill in table DNATTRS or DNGRPS, the corresponding PN is reflected in the OCN and/or RGN parameter in IAM for HK ISUP.

Value

This feature provides DN compliance in HK ISUP by using the DN rather than the NN in the CGPN, OCN and RGN parameters of HK ISUP. This feature thereby allows the CS2000 to better meet the needs of the Hong Kong market.

Technical reference

00004693

Manipulation of CLI from Line Originations through Table CALLCTRL

All ONE NUMBER Voice over IP (VoIP) lines have a real DN (original DN) that is datafilled on the call server and a virtual DN, where the original DN is replaced by a new Calling Line Identifier (CLI) when the called number is in a special range. This feature enhances the capability to modify the CLI based on called number and calling number (through table CALLCNTL) for IBN line originating calls. This feature also provides the ability to control by datafill whether the modified CLI or the original CLI is used in the Orig Open Digits field of an AMA record.

Value

This feature allows customers with IBN lines to send an alternative CLI, depending on the dialled digits and calling digits for their ONE NUMBER service.

Technical reference

00004743

Support Korean ISUP use of REL Cause IE

This feature enhance the Gateway Controller (GWC) capability to handle the following incoming ETSI ISUP V2 BASE messages with octet 1A (Recommendation Indicators) in the Cause Indicators parameter:

- RELease (REL)
- Release Complete Message (RLC)
- ConFusioN (CFN)
- Address Complete (ACM)
- Call ProGress (CPG)
- Facility ReJected (FRJ)

Value

This feature allows the CS2000 to better meet the needs of the Korean market.

Technical reference

00004976

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

NSUP0006   BC Billing for ETSI ISUP

CAPABILITIES AND VALUE

BC Billing For ETSI ISUP

This feature provides a method for billing ISDN calls over ETSI ISUP (V1 & V2). ISDN billing captures ISDN information consisting of Bearer Capability (BC), Network Interworking, Signalling or Supplementary Capabilities, and Release Cause. This information is added as part of Automatic Message Accounting (AMA) Modules 070/071.

Value

This feature allows the network operator to capture bearer capability information in its Automatic Message Accounting (AMA) billing records for calls originating on ETSI ISUP trunks. Capturing bearer capability enables the network operator to offer differential tariffing, and the potential to generate additional revenue with new services.

Technical reference

AG5335

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

NSUP0014   ETSI/UK ISUP Answer No Charge Support

CAPABILITIES AND VALUE

ETSI/UK ISUP Answer No Charge Support

This feature changes the setting of the Charge Indicator (CI) field of the Backward Call Indicator parameter of the ACM, ANM, CPG, and CON messages of ETSI ISUP and its variants.

The CI value indicates to a node whether to charge or not charge the end user for a particular call. This feature makes it possible to change the default **chargeable** setting of CI and make a call non-chargeable for ETSI ISUP.

This feature applies to the following interworkings:

- Access signalling protocol
    - ETSI PRI
    - Spanish PRI
- Network signalling protocols
    - ETSI ISUP V1
    - ETSI ISUP V2
    - IBN7 (ANSI ISUP+)
    - IUP (BTUP)
    - UK ISUP
    - SSUTR2 (French TUP)
    - SPIROU (French ISUP)
    - Australian ACIF-G500 ISUP
    - CA.30
    - Brazil ISUP
    - Czech ISUP
    - Portuguese ISUP
    - Spanish ISUP V2

Value

This feature makes it possible for operators to indicate to those networks that route calls to theirs if the caller should not be charged for a particular call (such as to a freephone number or if the call terminates to an announcement).

Technical reference

59008898

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

NSUP0015   Bearer Capability Mapping

CAPABILITIES AND VALUE

Bearer Capability Mapping

This feature provides a flexible framework for determining the connection type (bearer capability) for voice calls going over BTUP and ETSI ISUP trunks. This feature allows outgoing ETSI ISUP and BTUP trunks to be datafilled with a bearer capability value. It is possible to distinguish if this value is being applied to either non-ISDN calls, ISDN calls, or all calls.

Value

This feature allows CS2000 to meet prevailing national conditions and requirements regarding the handling of speech vs 3.1 kHz audio calls. In particular, it solves the UK 3.1 kHz problem ensuring that 3.1 kHz calls complete to all destinations, and allows the operator to set the bearer capability for calls from analogue lines.

Technical reference

59008005

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

NSUP0016   CCBS SCCP Support for Local Number Portability

CAPABILITIES AND VALUE

CCBS SCCP Support for Local Number Portability

This feature provides transit support for SCCP routing on CS2000 for the ISDN supplementary service Call Completion to Busy Subscriber (CCBS), when the called number may have been ported to or from another network. Networks that cannot perform a ported number query can request CS2000 to perform the query for them.

This feature implements the SCCP routing requirements for the German market (transit support only).

Note: This feature is supported in single communication server implementations only.

Value

This feature allows CCBS to work in markets with Local Number Portability (LNP) for ported numbers, thereby providing network operators with the potential for greater revenue.

Technical reference

59012762

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

NSUP0018   Japan Unified ISUP

CAPABILITIES AND VALUE

Japan Interconnect ISUP

This feature provides a Japanese interconnect ISUP protocol, JI-ISUP, to replace the various ISUPs that local, tandem, international and mobile network operators use to connect to the Nippon Telephone and Telegraph (NTT) network.

JI-ISUP supports all features and services provided by the existing Japanese NCC-ISUP (that is, NCC-I, NCC-L and NCC-T), thus allowing network operators in Japan to migrate transparently to JI-ISUP. JI-ISUP conforms to specification TTC JJ-90.10 Version 2 (March 19999) and Japan Interconnection Charge Billing Method (that is, IAA), Edition 2.

ISUP variant			ETSI ISUP V1 [1]	ETSI ISUP V2 [1]	IBN7 ISUP	TUP [2]	INAP	SIP (no CCS7) [3]	PRI [4]	QSIG	H.323 [5]	DPNSS [6]	CentrexIP	IBN lines		
Country / name	Characteristics	Implemen-tation												LAN MGs [7]	Cable MGs [8]	V5.2 MGs [9]
Japanese JI-ISUP	ETSI ISUP V2 variant	TDM	Y	Y	Y	N	Y	N	Y	N	N	X	N	N	N	Y
		SIP-T	Y	Y	Y	N	Y	N	Y	N	N	X	N	N	N	Y

[1] Entries in these columns refer to interworking with base/generic ETSI ISUP. Each variant of ETSI ISUP V1 and V2 can be interworked to itself as well as to base/generic ETSI ISUP.

[2] CS2000 does not support a base/generic TUP call processing agent, but supports three national TUP variants for China (CTUP), France (SSUTR2 / FTUP) and the UK (IUP / BTUP). Y appears in this column for ISUP variants that can be interworked to one or more of these national TUP variants.

[3] When communicating with an MGC or gateway that does not provide ISUP payload in the SIP message (e.g. MCS5200), CS2000 generates an IBN7 ISUP payload based on SIP message type and content.

[4] CS2000 supports a base/generic call processing agent for ETSI PRI (30B+D). It also supports two national 30B+D PRI variants for China and Spain, and three national 23B+D PRI variants for the USA (ANSI PRI), Hong Kong (CR13) and Japan (INS1500). Entries in this column apply to support for interworking between ISUP variants and base/generic ETSI PRI. Footnotes are used to indicate whether interworking is supported for a national PRI variant as well as (or instead of) base/generic ETSI PRI.

[5] The international implementation of H.323 is based on mapping H.225 connection control messages (SETUP etc) on to their QSIG equivalents, with APDUs being conveyed transparently in Facility IEs in QSIG messages. Support for H.323 basic call interworking means support for H.225 call establishment, and does not imply support for the handling of non-call-related information over the interworking. Basic call interworkings supported are therefore as for QSIG.

[6] CS2000 support for DPNSS is based on the international implementation of H.323 (see footnote [5]). Between the GWC and the Westell DPNSS gateway, DPNSS signalling is encapsulated in Westell-defined manufacturer-specific operations in the H450.1 SupplementaryService data field of a H323 message. For communication between the GWC and the Core, the GWC performs mapping between these operations and QSIG Facility IEs.

[7] For IBN lines supported by media gateways attached to customer LANs, ISUP interworking means interworking between ISUP signalling and MGCP signalling.

[8] For IBN lines supported by media gateways served by cable access networks, ISUP interworking means interworking between ISUP signalling and NCS signalling.

[9] For IBN lines supported by V5.2 media gateways, ISUP interworking means interworking between ISUP signalling and V5.2 Layer 3 signalling backhauled to CS2000 over a V5UA/SCTP/IP protocol stack, together with co-ordination between ISUP signalling and H.248 device/media control signalling.

Value

JI-ISUP provides a more cost-effective end to end carrier interconnection than the various ISUPs it replaces. This feature reduces network operator costs by consolidating all network interconnection protocol into the JI-ISUP. This single ISUP protocol is also the basis for equal access and carrier preselection in Japan.

Technical reference

59017299

Unified ISUP - Multiple Carrier ID

This feature provides the capability to identify and transport the Carrier Identity across the network using Unified ISUP (U-ISUP).

This feature enables the storage of more than one Carrier ID per switch. When a CS2000 is shared between a number of network operators, the switch is able to differentiate between network operators for billing purposes.

Value

This feature enhances the capacity of the CS2000 by allowing it to be shared between different network operators and to be able to differentiate between network operators for billing purposes.

This feature allows the CS2000 to better meet the needs of the Japanese market.

Technical reference

59027481

JI-ISUP Carrier Name Notification for Carrier Designation - Early ACM

This feature is required by the Carrier Designation Service MYLINE PLUS, which is one of two options for carrier pre-selection service in Japan. MYLINE PLUS allows a subscriber to register one telephone company as the subscriber's service provider for each of the four following telephone company categories:

* The local telephone company
* The telephone company that handles long distance calls within one prefecture
* The telephone company that handles long distance calls over than one prefecture
* The international telephone company

After MYLINE PLUS is started, when a subscriber originates a call, the one designated local telephone company handles calls from the originator and then forces all calls to be routed to the originator's designated telephone company, even if another telephone company's identification number is dialled by the originator. The Carrier Name Notification feature sends an Early Address Complete Message (ACM) to open the backward speech path for the announcement to be played to the calling party informing them of the forced routing of the call. As an early ACM has been sent, the normal ACM is mapped to a Call Progress Message (CPG).

This feature also supports the generation of the Inter Administration Accounting (IAA) parameters (which are used by the Japan market for billing purposes) in CPG, and their mapping from ACM to CPG.

This feature introduces the Charge Indicator CPGCGIND to take care of the Charge Indicator value in CPG.

Value

This feature enhances the Japanese Interconnect ISUP protocol, JI-ISUP, by enhancing the MYLINE PLUS service that provides the Carrier Pre-selection service. The feature serves to notify the subscriber of the service by means of the Carrier Name Notification Announcement.

This feature allows the CS2000 better meet the needs of the Japanese market.

Technical reference

59034248

DEPENDENCIES

The following order code is required for this functionality to be operational:

NETK0001 Pub NTWK Trk

NSUP0020   Intl ISUP/NAOC/PCA Supp Svcs

CAPABILITIES AND VALUE

Payment Ceiling for Succession International Integrated Access-Cable

This feature provides an announcement-based solution, where the subscriber is informed that he has reached the payment limit. The payment ceiling announcement is played for every call after the limit is reached until the billing period is over.

An analogue line subscriber with Line Class Code **IBN** can request the Payment Ceiling Advice (PCA) option to be added to the subscriber's primary Directory Number (DN). The subscriber specifies a payment ceiling amount to apply to the subscriber's billing cycle.

This feature supports the following functionality:

- When 80% of the ceiling is reached, an announcement is played to the subscriber after all digits are collected and before connecting to the called party. After the announcement the call is routed as usual

- When the ceiling is reached, a special tone is played to the subscriber

- When the ceiling has been exceeded, an announcement is played to the subscriber at each call origination. The announcement is played after all digits are collected and before connecting to the called party. After the announcement the call is routed as usual

No announcement is played if the subscriber originates an emergency class call.

The payment ceiling counter is automatically reset to the provisioned payment ceiling amount at the beginning of each billing cycle. This feature enhances the NAOCCI tool to include PCA functionality. Operating company personnel can use this tool to:

- **Query** a subscriber's PCA entries

- **Reset** a subscriber's PCA entries

Value

The PCA for Succession International Access-Cable (IA-C) feature allows network operators to meet German regulatory requirement Telekommunikations Kundenschutzverordnung (TKV 18). By allowing the subscriber the option to set a payment ceiling limit this feature increases customer satisfaction.

Technical reference

59034497

Payment Ceiling Regulatory Enhancements

This feature enhances Payment Ceiling Advice (PCA) and Network Advice Of Charge (NAOC) to comply with German Telecommunication Decree TKV18, *Telekommunikations Kundenschutzverordnung*.

This feature introduces support for the following functionality:

- A mid-call announcement when the payment ceiling limit has been reached during an active call
- A PCA base Directory Number (DN) which is used to track multiple lines/DNs against one DN
- PCA support for charge free numbers
- Support for foreign currencies other than the EURO
- Enhancing PCA functionality in order to work with analogue IBN lines

Value

By complying with German Telecommunication Decree TKV18, this feature allows the CS2000 to better meet the requirements of the German market.

By setting a discount threshold instead of the PCA limit and disabling forced release functionality, the subscriber can be notified when sufficient charges have been accumulated to get a bonus (discount). This allows the network operator to offer an additional service thereby providing the network operator with the potential for improved customer satisfaction and increased revenue.

Technical reference

89007461

DEPENDENCIES

The following order codes are required for this functionality to be operational:

NETK0024 Network AOC Tariff

NSUP0020 Intl ISUP/NAOC/PCA SuppSvcs

NSUP0021   Int'l ISUP/TUP/Redbk TUP Variants

CAPABILITIES AND VALUE

CTUP

This feature enables China Telephony User Part (CTUP) to be supported on CS2000. CTUP is a variant of CCS7 TUP specified in CCITT Blue Book recommendations Q.721 - Q.725.

This feature supports the following interworkings:

* IBN line to CTUP trunk
* CTUP trunk to IBN line
* CTUP trunk to CTUP trunk
* CTUP trunk to Tones/Announcement

This feature also supports the following supplementary services:

* Calling Number Delivery (CND)
* Diallable Directory Number (DDN)
* Fixed Calling Number Delivery Restriction (SUPPRESS)

Value

By supporting CTUP this feature allows the CS2000 to better meet the needs of the China market.

Technical reference

89008212

CTUP Interworkings

This feature complies with the following:

* YDN 034.3-1997, *ISDN User-Network Interface Layer 3 Specification for Basic Call Control*
* YDN 038-1997, *National No. 7 Signalling Technical Specification of Integrated Service Digital Network User Part (ISUP)*
* YDN 065-1997, *Telephone Switching Equipment Specification, Ministry of Information*
* IBN7, *Interface Specification ISUP Protocol*
* GF 001-9001, *Technical Specification of Signalling System No. 7 for the National Telephone Network of China*
* GF 001-9001, *Technical Specification of Signalling System No. 7 for the National Telephone Network of China - Supplementary*
* ITU Recommendation Q.931(03/93), *Digital Subscriber Signalling System No. 1 (DSS 1) - ISDN User-Network Interface Layer 3 Specification for Basic Call Control*
* ITU Recommendation Q.699 (09/97), *Interworking between ISDN access and non-ISDN access over ISDN User Part of Signalling System N0. 7*

This feature supports interworkings between China Telephony User Part (CTUP) and:

- CISUP
- IBN7 ISUP
- PRI
- BRI

Value

By supporting CTUP interworkings this feature allows the CS2000 to better meet the needs of the China market.

Technical reference

89008404

China specific OM

This feature provides two new Operational Measurement (OM) registers and enhances three OM registers to meet the requirements of the China market for the following interworkings:

- CISUP-CISUP
- CISUP-CTUP
- CTUP-CTUP

The new registers are:

- TRK2:RINGING This counts the number of connected calls per the outgoing trunk group
- Trunk group and Destination Code Traffic Summary: Answer Usage (TRKDCTS:ANSU) This counts the total traffic answered every 100 seconds, per destination code and per outgoing trunk group

The enhanced registers are:

- Destination Code Traffic Summary: Number of Connected Calls (DCTS:NSCO) This counts the number of connected calls on all office trunks per destination code
- Trunk group and Destination Code Traffic Summary: Number of Connected Calls TRKDSCT:NSCT This counts the number of connected calls per specified office trunk, per destination code and per trunk group
- Trunk group and Destination Code Traffic Summary: Number of Answered Calls TRKDSCT:NANST This counts the number of answered calls per specified office, per destination code and per trunk group

Value

By providing new and enhanced Operational Measurement (OM) registers, this feature enables network operators to offer an enhanced OM summary capability to their subscribers, thus increasing customer satisfaction and providing the potential for increased revenue opportunities.

This feature allows the CS2000 to better meet the needs of the China market.

Technical reference

89008458

French TUP

FTUP (France Telephony User Part) is the French variant of CCITT Common Channel Signalling System No.7 (CCS7) for interconnecting switches within the PSTN. FTUP is the French national variant of the ITU-T Q.723 specification.

- FTUP provides interworking to CS2000.
- FTUP supports the following signalling interworking:
    — SSUTR2 (French TUP)
    — SPIROU (French ISUP)
    — ETSI ISUP V1
    — ETSI ISUP V2
    — IBN7 (ANSI ISUP+)
    — ETSI PRI

Value

This feature enables CS2000 to interconnect with the French public network. It also gives feature transparency across the public network. This provides the basic network access mechanism for extending advanced services to end users, increasing the network operator's revenue potential.

SSUTR2 Interconnect Compliance

This feature provides the following enhancements to SSUTR2 on CS2000:

- Access Information Domain (AID) Handling: CS2000 takes special actions to ensure that the mandatory Bearer Capability in the Access Information Domain (AID) of an SSUTR2 MIF is passed on successfully for all relevant interworkings.
- Support for an International flag: Within Europe, ETSI ISUP V1 or V2 is used as the international backbone by the alternative operators. An international flag in table TRKOPTS has been created for France.
- A restriction on double call forwarding: France Telecom requires that a call can only be forwarded once. If a call is forwarded twice, CS2000 applies a treatment, which can be mapped to an announcement through datafill.

Value

This feature provides enhancements to SSUTR2 on CS2000, allowing network operators to meet the evolving requirements for interconnect in France. The feature allows alternative operators to interconnect to the France Telecom network.

Technical reference

AU3275

French Two CLI Support with ETSI ISUP V2

This feature is specific to the French market and supports two Calling Line Identities (CLIs) for ETSI PRI to ETSI ISUP V2 interworking:

- Calling Party Number (CGPN)
- Generic Number Parameter (GNP)

These CLIs are carried in the IAM message of the ETSI ISUP V2 trunk for ETSI PRI to ETSI ISUP V2 interworking.

Value

This feature enhances the network operator's interconnect capability in the French market.

Technical reference

58027509

SSUTR2 Charge Message Interworking to ISDN

This feature allows network operators to provide charge information received over outgoing SSUTR2 trunks (in the form of ITX messages) back to an ISDN ETSI PRI originator using the Advice Of Charge - During service (AOC-D). With this functionality, the network operator avoids generating the charge information on CS2000.

This transit-only feature is required to provide accurate Advice of Charge for special service calls in the French network where the call charges are determined by the service provider and transmitted back to the originating subscriber exchange.

Value

This feature saves administration costs for the alternative operator by allowing the alternative operator to provide correct charge information to the originator, rather than generating the bill on CS2000.

Technical reference

AU3283

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

NSUP0022 Int'l ISUP/TUP/CAS Variants

CAPABILITIES AND VALUE

C1 Development on FDCP platform (DMS 100i equivalence)

This feature enables the CS2000 to comply with the specifications for C1 line signalling systems in the Chinese telephone network, as specified in the standard *YDN 065-1997 - General technical Specification for telephone Exchanges - Ministry of Posts and Telecommunications P.R.C. 1997.12.*

This feature introduces the China No. 1 (C1) Multi Frequency Compelled (MFC) Channel Associated Signalling (CAS) Signalling System. This provides the CS2000 with the capability to function as a local or tandem office in order to carry automatic calls via a C1 MFC trunk, which is supported as a one-way incoming or outgoing trunk.

The following interworkings are supported on CS2000 by this feature:

- IBN line to C1 MFC trunk
- C1 MFC trunk to IBN line
- C1 MFC trunk to C1 MFC trunk

This feature is based on the Flexible Digital CAS Platform (FDCP) and supported on the PCM-30 Digital Trunk Controller (PDTC) with the SX05 processor.

Value

By complying with the standard *YDN 065-1997 - General technical Specification for telephone Exchanges - Ministry of Posts and Telecommunications P.R.C. 1997.12* this feature allows the CS2000 to better meet the needs of the China market.

Technical reference

89008204

C1 Interworking with CISUP and CTUP

This feature complies with the following:

- GF 001-9001, *Technical Specifications of Signalling System No. 7 for the National Telephone Network of China*
- YDN 038-1997, *Technical Specifications of Signalling System No. 7 for the National Telephone Network of China, Integrated Service Digital Network User Part (ISUP)*
- YDN 065-1997, *General Technical Specification for Telephone Exchanges*

This feature supports interworkings between C1 and the following:

- China ISUP (CISUP)
- China Telephony User Part (CTUP)

when the CS2000 takes on the following roles:

- Local switch
- Local tandem
- Tandem between originating local exchange and originating toll/international exchange
- Tandem between terminating toll and terminating local exchange

Value

By supporting more C1 interworkings this feature allows the CS2000 to better meet the needs of the China market.

Technical reference#

89008792

Korean R2 - Call Server

This feature introduces CS2000 support for the Korean R2 Channel Associated Signalling (CAS) interface, which can be used either as an access interface for PBXs or as a peer-to-peer network interface for PSTN connections. Korean R2 CAS uses Multi Frequency Compelled (MFC) register signalling, which supports a maximum of 15 different forward signals and 15 backward signals, each corresponding to a combination of tones. CS2000 CAS trunks are terminated on Nortel Media Gateway 3200 gateways controlled via H.248.

Interworking is supported between Korean R2 CAS and the following interfaces:

- ETSI ISUP V2 (TDM-side and SIP-T)
- SIP (MCS5200)
- INAP
- ETSI PRI
- H.323 (QSIG base)
- IBN lines (cable MTA)
- V5.2

Value

Support of the CAS interface allows the CS2000 to better meet the needs of the Korean market.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

NSUP0024   China ISUP Call Control Enhancements

China ISUP Enhancement

This feature introduces enhancements to the CS2000 implementation of China ISUP in response to regulatory changes and new carrier numbering plan requirements that affect, among other things, the handling of the Calling Party Number (CGPN), Original Called Party Number (OCN) and Redirecting Number (RGN) by an originating or tandem switch. The feature gives operators greater flexibility to alter the behaviour of call control in the switch (for example in translations and screening) via datafill.

Value

This feature allows the CS2000 to better meet the needs of the China market.

Technical reference

00006407

PNTK0001   Public Network Trunking

This order code provides BTUP interworking between CS2000 and other network switches. The BTUP interworking is defined in BTNR167, BTUP Version 2 (1985).

BTUP (British Telecom User Part) is the UK variant of CCITT Common Channel Signalling System No.7 (CCS7) for interconnecting switches within the PSTN. It is also used for intra-network trunking, particularly to other vendors' switches.

CAPABILITIES AND VALUE

Public Network Trunking

- Supports the following BTUP signalling interworking:

  — ETSI PRI

  — ANSI ISUP+

- Supports Calling Line Identity (CLI), where CS2000 is the interconnecting node

- Supports CLI for calls within the CLASS environment. It allows the network operator to alter (by datafilling a new parameter) the Blocking Indicator (BI) on any outgoing BTUP route from a CS2000 node.

- This feature is applicable for all calls from ISUP to BTUP and BTUP to BTUP

- Supports re-routing of calls on an alternative BTUP trunk when congestion is encountered

- Supports the Indirect Access by CLI service

- Provides network support for the following UK public network features:

  — Operator Override (OOR)/Network Barge In

  — Emergency Calls

  — Routing Control

  — Caller Confidentiality (141 Service)

  — Automatic Recall (1471 Service)

- Provides BTUP trunk testing and maintenance facilities

Value

This feature:

- Provides the basic network access mechanism for transparently extending advanced services to nationwide multi-location end users, increasing the network operator's revenue potential

- Provides more efficient use of network capacity with alternative routing control and continuous call retry features

- Allows the network operator to datafill the CLI in the CLASS environment for greater flexibility

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

PNTK0002   BTUP Version 2+

This order code enhances BTUP Version 2 with a sub-set of BTUP Version 3 as defined in BTNR167, BTUP Version 3 (1987).

BTUP (British Telecom User Part) is the UK variant of CCITT Common Channel Signalling System No. 7 (CCS7) for interconnecting switches within the PSTN. It is also used for intra-network trunking, particularly to other vendors' switches.

CAPABILITIES AND VALUE

BTUP Version 2+

Supports a sub-set of BTUP Version 3 interworking to CS2000 as defined in BTNR167, including:

- BTUP Version 3 protocol handling of the Calling Line Identity (CLI), Calling/ Called Party Category (CCPC) and release mapping
- Transit of Nodal End-to-End DPNSS (NEED) messaging
- Routing Control Indicators (RCI) value 0-3, including the network operator ability to datafill default values

Value

This feature:

- Makes efficient use of network resources. Provides network operator control on routing, allowing more efficient use of capacity
- Provides support for supplementary and network services such as CLI and NEED

Technical reference

10370222

DEPENDENCIES

The following order code is required for this functionality to be operational:

PNTK0001 Pub Ntwk Trk

PNTK0004   BTUP CLI for AMA

This order code enables the network operator to selectively include a Calling Line Identity (CLI) in the billing record for calls arriving across a Point of Interconnect (POI) using BTUP trunks.

CAPABILITIES AND VALUE

BTUP CLI for AMA

This feature provides the ability to selectively include a CLI in the billing record for calls arriving across a POI using BTUP trunks.

The mechanism for sharing revenue when a call crosses operator boundary is referred to as Inter-Administration Accounting (IAA). Revenue allocation between operators is typically based upon date, time and duration of traffic passing between themselves as specified in the Interconnect Agreement between operators.

Value

Allows for Interconnect Agreements between network operators where the revenue share is based not only on date, time and call duration, but also upon the distance that the call has travelled in the forwarding network.

DEPENDENCIES

The following order codes are required for this functionality to be operational:

BILL0001 Billing

PNTK0001 Pub Ntwk Trk

PNTK0008 INAP BTUP Capability

This order code provides BTUP to CS-1R (Capability Sets-1 Refined) interworking, allowing calls to the Service Switching Point (SSP) on BTUP trunks to trigger Intelligent Network (IN) functionality.

BTUP (British Telecom User Part) is the UK variant of Common Channel Signalling System No.7 (CCS7) for interconnecting switches within the PSTN. It is also used for intra-network trunking, particularly to other vendors' switches.

CAPABILITIES AND VALUE

INAP BTUP Capability

Provides BTUP to CS-1R interworking, giving access to IN functionality.

Value

Allows network operators to offer IN capability on BTUP trunks, extending IN service coverage across CS2000 nodes.

DEPENDENCIES

The following order codes are required for this functionality to be operational:

DSSP0001 Basic CS-1R SSP

PNTK0001 Pub Ntwk Trk

PNTK0009 PBX BI Control

This order code provides Calling Line Identity (CLI) Blocking Indicator (BI) control which enables control of the CLI availability on a per incoming trunk group basis.

CAPABILITIES AND VALUE

PBX BI Control

- Provides the ability to control CLI availability on a per incoming trunk group basis
- Allows the interworking indicator to be set to a value meaning no interworking is involved, thereby enabling CLI delivery and display across different switch types. At present, when interworking is involved, a terminating node that is not a CS2000 may not request a CLI

Value

This feature:

- Enables the network operator to offer the PBX owner a choice of CLI delivery (always available, always unavailable, available but withheld)
- Ensures consistent CLI delivery across multi-vendor switches

DEPENDENCIES

The following order code is required for this functionality to be operational:

PNTK0001 Pub Ntwk Trk

PNTK0010 BTUP BC Routing

This order code provides routing based on bearer capability for BTUP protocols on CS2000.

CAPABILITIES AND VALUE

BTUP BC Routing

Provides routing for BTUP protocols based on the bearer capability information in the call setup message. The selection of the final outgoing route depends on datafill in the appropriate CS2000 tables.

Value

This feature:

- Enables network operators to better utilise their transmission networks with bearer capability routing. Bearer capability routing enables operators to route certain types of calls via least-cost routes without compromising service quality

- Enables network operators to differentiate between voice and data calls, and charge different tariffs. Specifically in the UK network, this feature enables removal of the 000 international ISDN prefix

DEPENDENCIES

The following order code is required for this functionality to be operational:

PNTK0001 Pub Ntwk Trk

2.1.6 V5.2 Signalling Optional Order Codes

ACSI0003   V5.2

ACSI0003 is a Software Optionality Controlled (SOC) feature that controls the number of V5.2 interfaces. The limit for ACSI0003 is set by purchasing V5.2 interfaces through |Nortel customer service. ACSI0003 has a maximum value of 1000. This is a "usage limit" that corresponds directly to the absolute maximum number of V5.1 interfaces that may be defined per CS2000.

CAPABILITIES AND VALUE

V5.2 Communication Server Analogue Lines

This feature supports analogue lines (Integrated Business Network (IBN) lines) over V5.2 access connected to a Packet Voice Gateway (PVG). The PVG is connected over a Managed Packet Network with the CS2000.

The V5.2 interface comprises the following:

- PSTN signalling protocol
- Control requirements and protocol for PSTN
- Link Control protocol
- BCC protocol
- Protection protocol

Interworkings with V5.2 IBN lines over CS2000 are supported for the following agents:

- V5.2 IBN lines over CS2000
- ETSI PRI over CS2000

- ETSI ISUP V2 over CS2000
- Brazil ISUP over CS2000
- Mexican ISUP over CS2000
- Session Initiation Protocol for Telephony (SIP-T)
- Interworking to TDM lines and trunks using looparound trunks

The following IBN line services are provided over V5.2:

- Call Forward Unconditional (CFU)
- Call Forward Busy (CFB)
- Call Forward Don't Answer (CFD)
- Call Waiting (CWT)
- Cancel Call Waiting (CCW)
- Three Way Call (3WC)
- Call Transfer (CXR)
- CLI with Flash (CLF). This is equivalent to Malicious Call Trace (MCT)
- Do Not Disturb (DND)
- Wake-Up Call (WUC)
- Speed Calling Short/Long List (SCS/SCL)
- Subscriber Activated Call Barring (SACB)
- Automatic Line/Hot Line (AUL)
- Warm Line (WML)
- Consultation Hold (CH)
- Last Number Redial (LNR)
- Emergency Call (with origination dependent routing)

Value

This feature provides:

- Reduced host and transmission equipment requirements
- Industry standards compliance with the ETSI V5 specification, ETS 300-347-1
- Open standard based host-remote interface, providing an access network solution with an open concentrating interface

Technical reference

59034339

V5.2 Audits and Alarms Enhancements

This feature enhances the alarm and audit functionality between the Call Manager (CM), Gateway Controller (GWC), Gateway (GW) and Access Networks (AN).

This feature enables CS2000 to support the audits and alarms that are available on the DMS/GPP platform.

The following Alarms are implemented for the GWC:

- V5 Interface alarm (V5I). This is a critical alarm that is set if there is a failure in the Control protocol (for example, V5.2 Interface activation with an incorrect Interface ID).

- PSTN protocol alarm (PSTN). This is a critical alarm that is set if there is a failure in the PSTN protocol.

- C-Channel alarm (C-Chnl). This is a major alarm that is set if a C-Channel becomes inoperable (for example, if a link with an assigned C-Channel is busied or out of service).

- V5 link minor alarm (V5LK). This is a minor alarm that is set if a V5 Link becomes inoperable (for example, if it is busied or out of service).

- The V5LK Alarm is raised if the percentage of links that show a V5LK alarm does not exceed the V5LKM threshold value datafilled in table V5PROV.

- V5 link major alarm (V5LKM). This is a major alarm that is set if several V5 Link becomes inoperable.

  The V5LK Alarm is raised if the percentage of links that show a V5LK alarm exceeds the V5LKM threshold value datafilled in table V5PROV.

This feature implements the following V5.2 Audits:

- Bearer Channel Control (BCC) Audits. These are used to ensure that the GWC and the Access Node have the same view of provisioned user ports and allocated bearer channels.

- V5CC Audits. This audit coordinates V5 status mismatches between the CC and GWC, and handles logical mismatches in V5 data within the CC. The V5CC audit is invoked every 10 minutes for each V5.2 interface and comprises: Interface Audit, Link Audit, C-Channels audit, Data Link audit and Lines audit.

- Virtual Layer 1 Audit. This audit ensures that the Layer 1 Finite State Machine (FSM) located on the GW reports the Link Status for all active V5 links to the GWC.

Value

This feature enables CS2000 to support audits and alarms that are available on the DMS/GPP platform.

Technical reference

59038943

V5.2 Flow Control

This feature implements V5.2 signalling Flow Control procedures for the Gateway Controller (GWC), including methods to recognise overload on the Signalling Gateway (SG) and Access Node (AN) side. If overload is detected the GWC takes action to reduce V5.2 messaging by:

- throttling down new call attempts

- protecting an overloaded SG by switching a signalling channel to another SG

Value

This feature implements the overall GWC V5.2 strategy upon overload to process all active calls but reject a certain percentage of new origination attempts.

Technical reference

59038965

V5.2 ETSI Enhancements

This feature supports V5.2 IBN interworking to the following agents:

- Analogue IBN lines over ETSI V5.2
- Session Initiating Protocol for Telephony (SIP-T)
- ETSI ISUP V1
- China ISUP V2
- Telmex ISUP
- ETSI PRI
- China PRI
- QSIG

The feature supports the following analogue line signals to connect analogue PBXs:

- Line Reversal On Answer (LROA) and Line Reversal on Seizure (LROS) on a per user port basis
- Cutoff on Disconnect (COD) on a per user port basis

This feature implements the following V5 signalling items:

- Early-Disconnect
- Early-Deallocation after expiry of treatment

This feature supports the following IBN services:

- Automatic Collect Call (ACC)
- Automatic Collect Call Blocking (ACCB)
- Code Restrictions (NCOS based call barring)
- Denied Origination (DOR)
- Denied Termination (DTM)
- Message Waiting Indicator (MWI) audio
- Network Class Of Service (NCOS)
- Resume (RES)
- Suspend (SUS)
- Voice Band Data (Group 3 Fax and Modem)
- Voice Mail Service (VMS)
- Wake-Up Call Reminder (WUCR)

Value

This feature implements V5.2 procedures for analogue IBN lines, which are required for the China market and applicable to the International market. Early-Disconnect and Early-Deallocation save V5.2 resources on PBX lines and Residential lines.

Technical reference

59038988

V5.2 Interface and Link Enhancement

This feature increases the maximum number of V5.2 links and V5.2 interfaces that may be defined on a Gateway Controller (GWC) as follows:

- V5.2 links (E1 links): increased from 32 to 128 maximum
- Protected V5.2 interfaces: increased from 16 to 63 maximum
- Unprotected V5.2 interfaces: increased from 32 to 63 maximum

Note: GWCs and GWs may not handle the maximum number of V5.2 links and V5.2 for a "whatever" configuration and traffic model.

Value

By increasing the number of V5.2 links and V5.2 interfaces, the number of small Access Networks (ANs) that can be connected over Gateways (GWs) to Gateway Controllers (GWCs) is increased. This means that less hardware (GWCs, VSP cards and E1 cards) is required and existing hardware capacity can be better exploited.

Technical reference

89009559

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

2.1.7   PBX Signalling Optional Order Codes

PRIT0002   PRI ETSI/ITU PRI Services

CAPABILITIES AND VALUE

PRI ETSI Services

This feature is a series of services that together implement the International Primary Rate Interface (PRI) on the CS2000. This provides functional equivalence to the Gateway Controller platform. Specifically:

- ETSI PRI signalling support to a Gateway Controller
- ETSI PRI Basic Call
- Supplementary services
- Link and trunk maintenance
- PRI trunk provisioning on the CS2000 Network Manager (SNM)

The following PRI variants are supported:

- ETSI
- Spanish PRI

Value

This feature allows most of the CS2000 software supporting the services and international variants to be reused thus ensuring considerable cost savings for the operator.

Technical reference

59020206

Inband Digit Collection for ETSI PRI on CS2000

When Dual Tone Multi Frequency (DTMF) digits are keyed in by the subscriber on the PBX they are not converted into Q.931 INFO messages by the PBX, but pass transparently through it on the voice path. These inband digits are collected by the Gateway Controller and the Gateway and reported to the Computing Module.

By introducing inband digit collection on ETSI PRI trunks this feature allows:

- CM-based Prompt & Collect on PRI for stage 2 Indirect Access
- o_Mid_Call over PRI

Value

This feature allows ETSI PRI trunks connected to a Gateway to accept and process inband DTMF digit collection and provides network operators with the potential for increased user services.

Technical reference

59034387

IN Prompt & Collect and Mid-call on PRI

This feature supports interaction of Intelligent Networking (IN) triggering with:

- CS-1R Line triggering CFW/3WC (and Redirection Triggers)
    - Line features that allow a multi-leg call including: Call Forward Universal (CFU), Call Forward Don't Answer (CFD), Call Forward Busy (CFB) and Three Way Call (3WC). Interaction with IN triggering depends on whether the original call is currently under IN control.
    - Line features that perform call origination including: Ring AGain (RAG), Network RAG, Automatic Callback (ACB) and Automatic Recall (AR)
    - The Call Number Delivery, Calling Name Delivery, Call Number Delivery Blocking, Calling Name Delivery Blocking and Call Hold line features
- CS-1R Service Interaction Interworking
- SCCP Routing and TCAP/SCCP Enhancements

This feature also supports:

- o_Mid_Call over ISUPs and PRI
- Line triggering interworking to SIP-T terminations
- DTMF digit collection over PRI originations
- Tones in PlayAnnouncement (PA) and PromptAndCollectUserInformation (PCUI) operations
- Lawful Intercept

This feature supports the SIP-T origination triggering required for networks using more than one CS2000 Server, including:

- Basic triggering (TDP2 and TDP3) and re-triggering
- Routing (including post-connect XLA)
- The following Event Detection Points (EDPs) for CFU, CFD, CFB and 3WC:
    - EDP-2 (Collected Info) armed as EDP-R (Request)
    - EDP-4 (Route_Select_Failure) armed as EDP-R or EDP-N (Notification)

- — EDP-5 (o_Called_Party_Busy) armed as EDP-R or EDP-N
- — EDP-6 (o_No_Answer) armed as EDP-R or EDP-N
- — EDP-7 (o_Answer) armed as EDP-N
- — EDP-8 (o_Mid_Call) armed as EDP-R or EDP-N
- — EDP-9 (o_Disconnect) armed as EDP-R or EDP-N (not for 3WC)
- — EDP-10 (o_Abandon) armed as EDP-R or EDP-N
- Tones, Announcements and Digit Collection
- FurnishChargingInformation (FCI)
- ReleaseCall
- Call Gapping & ActivateServiceFiltering

Value

By introducing support for more line triggering features, this feature allows network operators to implement more of the services required by their end users.

This feature also removes the need for dedicated looparounds, thereby realising operating cost and footprint savings.

Technical reference

59028629

China PRI via PVG, interworking to China ISUP

This feature enhances China PRI to support the following interworkings:

- SIP-T (ETSI ISUP V2)
- SIP-T (IMS)
- ETSI PRI

This feature also supports China ISUP and IBN7 ISUP interworking on the following types of trunk interfaces:

- GWC controlled TDM trunks
- GWC controlled SIP-T (ISUP transport) packet trunks for CS2000 interconnect or CS3000 (TSS) connection

Value

This feature enables the national China PRI variant of ETSI PRI to be used on CS2000s, thereby allowing the CS2000 to better meet the needs of the China market.

Technical reference

59039647

Hong Kong PRI (CR13)

This feature introduces Hong Kong PRI, also known as CR13 PRI, on the CS2000. Hong Kong PRI supports the following interworkings:

- ETSI PRI
- ETSI ISUP v2
- Hong Kong ISUP (CR15 - E1 and CR14 - T1)
- China ISUP

- SIP-T (Hong Kong ISUP)
- SIP-T (No ISUP, To IMS)
- IBN lines

Hong Kong PRI implements basic call support including:

- The following circuit mode bearer services:
    — Speech
    — 3.1 kHz audio
    — 64 kbit/s restricted
    — 64 kbit/s unrestricted
- Overlap sending to the CS2000
- Enbloc sending (up to 19-digit CalleD Party Number) and receiving
- Support of NETWORK mode

Interworking to IBN lines will support the following services:

- Anonymous Call Rejection, Automatic Recall, Call Hold, Call Hunting,
- Call Forward No Answer Variable Timer, Call Forward Remote Activation,
- Call Park, Call Pick Up, Call Waiting, Cancel Call Waiting,
- Conference (3 Party), Consultation Hold,
- Distinctive Call Waiting, Distinctive Ringing (Intra-Group and Outside Call),
- Hot Line, Incoming Operator Toll Call Barring, Last Number Redial,
- Malicious Call Trace, Message Waiting Indicator,
- Multi-Party Line/Teen Service, Ring Again (Intra-Group),
- Selective Call Acceptance, Selective Call Forward, Selective Call Rejection,
- Speed Call (Short List), Speed Call (Long List),
- Subscriber Activated Call Barring, Wake Up Call

Hong Kong PRI supports both the Hong Kong toneset and the North American toneset.

Value

This feature enables the national Hong Kong PRI variant of ETSI PRI to be used on CS2000s, thereby allowing the CS2000 to better meet the needs of the Hong Kong market. This feature allows network operators to increase PRI deployment and hence, increase revenue.

Technical reference

59039654

ISDN Redirecting Number Enhancement

This feature provides redirecting number support and enhancements when a forwarded call is terminated on an ETSI PRI, ETSI PRI VN4 or ETSI PRI VN6 CS2000.

This feature supports the following functionality:

- In Call Forward scenarios, the Redirecting Number is added is added to the Q931 SETUP message for ETSI PRI, ETSI PRI VN4 and ETSI PRI VN6

- The Redirecting Number is supported in the SETUP message when the diverted to user is ETSI PRI VN4 or ETSI PRI VN6

- When redirection has occurred in another network and Redirecting information is received at the terminating ETSI PRI, ETSI PRI VN4 or ETSI PRI VN6 over an ISUP, the Redirecting Number Information Element (IE) is sent to the terminating end

- When redirection has occurred in another network and Redirecting information is received at the terminating ETSI PRI when multiple diversions have occurred, the first Redirecting Number IE has the information for the first diversion while the second Redirecting Number IE has the information for the last diversion

- When a call is forwarded on the same switch to ETSI PRI, the Redirecting Information is sent in the SETUP message in the DivertingLegInfo2 component of FACILITY IE

- When multiple redirections occur on the same network and the diverted to user is ETSI PRI, the multiple redirection information is provided in the DivertingLegInfo2 component of FACILITY IE component in the SETUP message

- For ETSI PRI VN4 and ETSI PRI VN6 multiple diversions, only the first redirection information is presented to the diverted to user

- The presentation of the Redirecting information to the diverted to user is determined by the Presentation Indicator and Calling Line Identification Presentation/Calling Line Identification Restriction (CLIP/CLIR)

This feature functionality is supported when:

- The served user is ETSI PRI, ETSI PRI VN4, ETSI PRI VN6 or an IBN/EBS line

OR

- The redirecting information is received over ETSI ISUP V2, FTUP, ANSI ISUP or SPIROU to a diverted to ETSI PRI, ETSI PRI VN4 or ETSI PRI VN6 user

Value

By providing Redirecting Number support and enhancements, this feature allows the CS2000 to better meet the needs of the Hong Kong market.

Technical reference

89008946

HARDWARE REQUIREMENTS

Four main components are required:

- Computing Module (CM)
- CS2000 Network Manager
- Gateway Controller (GWC)
- Packet Voice Gateway (PVG)

The gateway must be able to support carriers transporting ISDN PRI traffic and signalling.

Note: The term Gateway describes the co-location of the Media (for payload transportation) Gateway and the Signalling (for signalling transportation) Gateway.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

PRIT0003   ETSI PRI MoU 1 & 2 Basic Services

CAPABILITIES AND VALUE

ETSI PRI MoU 1 & 2 Basic Services

This feature provides the following functionality:

- Adds ETSI PRI signalling support to a Gateway Controller
- Supports ETSI PRI Basic Call
- Supports Spanish PRI
- Provides supplementary services
- Provides link and trunk maintenance
- Supports PRI trunk provisioning on the CS2000 NM

Supported Memorandum Of Understanding (MoU) Priority 1 services are:

- Calling Line Identification Presentation (CLIP)
- Calling Line Identification Restriction (CLIR)
- Direct Dialling In (DDI)

Supported MoU Priority 2 services are:

- Explicit Call Transfer (ECT)
- Partial ReRoute (PRR)
- Call Completion to Busy Subscriber (CCBS)
- Closed User Group (CUG)
- User-to-User Signalling (UUS)
- Malicious Call IDentification (MCID)

Value

By delivering this functionality, the feature increases the network operator's customer satisfaction and thereby provides the network operator with the potential for increased revenue.

Technical reference

59020206

DEPENDENCIES

The following order code is required for this functionality to be operational:

PRIT0002 PRI ETSI PRI

PRIT0004 PRI DN Billing

CAPABILITIES AND VALUE

PRI - DN Billing

This feature allows CS2000 to bill ETSI PRI calls to the station making the calls, rather than to a single number for all ETSI PRI calls. This feature provides the option to bill ETSI PRI calls to either the unaltered Calling Party Number (CPN) from the SETUP message or the screened/edited Calling Line Identifier (CLI) number. This feature also allows CS2000 to generate a log if a billing number cannot be determined.

Value

This feature enhances the billing capability of CS2000 by making more precise billing possible for ETSI PRI calls. This feature increases customer satisfaction for customers who lease ETSI PRI trunks from network operators, by providing those customers with more precise billing records. CS2000 generates a log if the billing number cannot be determined, thereby alerting the network operator that further datafill is required in order to bill future calls appropriately.

Technical reference

AU3273

DEPENDENCIES

The following order code is required for this functionality to be operational:

PRIT0002 PRI ETSI PRI

PRIT0006 PRI Non-ETSI Services

CAPABILITIES AND VALUE

PRI Non-ETSI Services

This feature is a series of services that together implement the International Primary Rate Interface (PRI) on the CS2000 server.

The following PRI variants are supported:

- ETSI
- Spanish PRI

The Non-ETSI supported services are

- Priority Class Of Service
- Emergency Calls
- Random and Circular Hunting for PRI Trunk Groups
- Network Advice of Charge

Value

By introducing support for more PRI services, network operators can increase customer satisfaction and the potential for increased revue.

Technical reference

59020206

HARDWARE REQUIREMENTS

Four main components are required:

- Computing Module (CM)
- CS2000 Network Manager
- Gateway Controller
- Gateway

The gateway must be able to support carriers transporting ISDN PRI traffic and signalling.

Note: The term Gateway describes the co-location of the Media (for payload transportation) Gateway and the Signalling (for signalling transportation) Gateway.

DEPENDENCIES

The following order code is required for this functionality to be operational:

PRIT0002 PRI ETSI PRI

PRIT0008   COLP/COLR

CAPABILITIES AND VALUE

PRI - COLP/COLR

This feature provides the following functionality for the COnnected Line identification Presentation (COLP)/ COnnected Line identification Restriction (COLR) feature for ETSI PRI on the CS2000:

- Provisioning for a default CoNnected Number (CNN) in table LTDATA, provided on a per-trunk basis. This default number is datafillable for COLP
- Extension of the maximum allowed CNN size from 10 to 15 digits
- Implementation of the COLR TEMP RESTRICT functionality. Previously, only COLR TEMP ALLOW and COLR PERM RESTRICT scenarios were possible
- Editing and screening capability for the CNN

This feature supports the following interworkings:

- ETSI PRI
- ETSI ISUP V2

The COLP supplementary service can provide the calling party with the connected party's ISDN number. The COLR supplementary service enables the connected party to prevent presentation of its ISDN number to the calling party.

Value

This feature increases the versatility of the COLP/COLR functionality on the CS2000, thereby increasing end-user satisfaction and providing the network operator with the potential for greater revenue.

Technical reference

AU3248, 59007284

PRI COLP/COLR Presentation Number with Special Arrangement Feature

This feature extends the COnnected Line identification Presentation (COLP)/ COnnected Line identification Restriction (COLR) feature for ETSI PRI to support the connected Presentation Number (PN).

When the Network Number (NN) is used as the connected number, it identifies the actual network termination point at which the call terminates. This feature gives the called party the option to display a diallable number, the connected PN, to the calling party. The connected PN and the connected NN may be different numbers.

The PN displayed to the calling party can be one of the following:

- A default PN as datafilled against the called party in the LTDATA table
- A number, provided by an ISDN called party (PRI only), that is edited and screened according to the called party's datafill
- A number provided by an ISDN called party (PRI only) without editing or screening. This functionality is provided by the Special Arrangement feature, which allows the terminating agent to send the connected PN without any editing or screening

This feature receives and sends the connected PN over ETSI PRI.

This feature also supports the following interworkings:

- ETSI ISUP V2
- UK ISUP

Value

This feature enables consistency between the number dialled and the number displayed to the calling party. By enhancing the versatility of the COLP/COLR functionality on the CS2000, this feature increases end-user satisfaction and provides the network operator with the potential for increased revenue.

Technical reference

59012493

DEPENDENCIES

The following order code is required for this functionality to be operational:

PRIT0002 PRI ETSI PRI

PRIT0011   INS1500 Japanese PRI

CAPABILITIES AND VALUE

INS1500 Japanese PRI Network Mode on CS2000

This feature introduces INS1500 Japanese PRI on the CS2000. INS1500 supports the following interworkings:

- ETSI ISUP v2 Base
- ETSI ISUP v2 SIP-T
- JI-ISUP (variant of ETSI ISUP V2) and JI-ISUP SIP-T
- INAP triggering

- IBN7 and IBN7 SIP-T

This feature supports the following supplementary services:

- Calling Line Identification Presentation/Restriction (CLIP/CLIR)
- Sub-Addressing (SUB)
- Low Layer Compatibility/High Layer Compatibility (LLC/HLC)
- Network tones

This feature supports the following robustness:

- Warm SWitch in ACTivity (SWACT)
- Cold SWACT
- VSP reset

Value

This feature enables the national Japanese PRI variant of ETSI PRI to be used on CS2000s, thereby allowing the CS2000 to better meet the needs of the Japanese market. This feature allows network operators to increase PRI deployment and hence, increase revenue.

Technical reference

INS15PRI, 59039128

ETSI ISUP to J-PRI UUI Unblocking

NEW!

The CS2000 supports interworking between ETSI ISUP and Japan PRI (INS1500). However, Japan PRI does not support the User to User Information (UUI) parameter, so any UUI parameter received in an incoming ISUP IAM message is discarded. In releases prior to ISN08, no indication of this is sent back, which is required by the ETSI ISUP specifications. This feature supports this backward indication in the form of an ACM including a UUI response parameter with the Network discard indicator set to "User-to-user information discarded by network".

Value

Improves conformance of ETSI ISUP / Japan PRI interworkings to standards and better supports the requirements of the Japan market.

Technical reference

00006406

DEPENDENCIES

The following order code is required for this functionality to be operational:

PRIT0002 PRI ETSI PRI

PRIT0012   QSIG

CAPABILITIES AND VALUE

QSIG on CS2000

This feature introduces the QSIG protocol on the CS2000. QSIG is an open interface for the interconnection of different node types in a multi-vendor network.

This feature supports the following interworkings:

- QSIG
- ETSI PRI, Spanish PRI
- ETSI ISUP V1, ETSI ISUP V2, ETSI ISUP V2+/V3, Australian ACIF-G500 ISUP, SPIROU (French ISUP V3), Spanish ISUP V1, German ISUP, UK ISUP, Israel ISUP
- ANSI ISUP (IBN7)
- IBN7 lines
- QSIG Feature Transparency (QFT) over ETSI ISUP V2+ or SIP-T
- INAP onward interworking

This feature also supports the following QSIG NCAS interworkings:

- QSIG NCAS
- Q.VPN (CCS7)
- Q.VPN (USP)

The following interworkings are supported for supplementary services:

- between QSIG originating agent and the following terminating agents:
  — QSIG
  — ETSI PRI
  — Analogue IBN lines
  — ETSI ISUP V2
  — German ETSI ISUP V2
- between QSIG terminating agent and the following originating agents:
  — QSIG
  — ETSI PRI/Spanish PRI
  — Analogue IBN lines
  — ETSI ISUP V2
  — German ETSI ISUP V2

The following supplementary services are supported:

A - between QSIG and QSIG,

B - between QSIG and ETSI PRI/Spanish PRI,

C - between QSIG and IBN lines,

D - between QSIG and German ETSI ISUP v2:

- Calling Line Identification Presentation (CLIP) - All

- Calling Line Identification Restriction (CLIR) - All
- COnnected Line identification Presentation (COLP) - A and B
- COnnected Line identification Restriction (COLR) - A and B
- Advice of Charge During Call (AOC-D) - A and B
- Advice of Charge at End of Call (AOC-E) - A and B
- Direct Dialling In (DDI) - A and B
- SUB-addressing (SUB) - A and B

This feature provides transit support for the following supplementary services:

- Call Forward Unconditional (CFU) - All
- Call Forward Don't Answer (CFDA) - All
- Call Forward Busy (CFB) - All
- Call Hold - C
- Call Waiting - C
- Calling Number Delivery Blocking (CNDB) - C
- Delivery of Diallable Number (DDN) - C
- Private Call Completion to Busy Subscriber (CCBS) - A and C
- Private Call Completion on No Reply (CCNR) - A
- Public Call Completion to Busy Subscriber (CCBS) - B, C, D
- Public Call Completion on No Reply (CCNR) - B
- Support of Private Numbering Plan - A and D
- Support of Private Name Display - A, C, D
- Transit Counter - A and D

Lawful Intercept is not supported.

Value

QSIG is the only corporate signalling standard recognised internationally by a growing number of PBX manufacturers as the open standard for implementing fully featured private networks or VPNs.

With QSIG, network operators are able to launch VPN services to an ever growing proportion of target end users.

Technical reference

59038835

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

PBXT0011   PRI Advice of Charge

This order code provides the ETSI PRI Advice of Charge (AOC) supplementary service.

CAPABILITIES AND VALUE

PRI Advice of Charge

- Provides the ETSI PRI AOC supplementary service on ETSI PRI lines operating in network mode
- The rate at which charge units are accumulated during a call is known as a tariff. Different calls require different tariffs. AOC allows the network operator to define tariffs based on the following factors:
  — Type of call
  — Type of originator
  — Destination number
  — Network used
  — Type of day
- Discounts are supported for end node billing only, not for billing for a transit node

Value

This feature:

- Enables the network operator to offer ISDN end users a means to monitor the cost of their outgoing telephone calls. AOC can provide the actual charge unit count on a regular basis during a call (referred to as AOCD) or only at the end of a call (referred to as AOCE), or both. Provided the value of one charge unit is known, a user can calculate the cost of a call.
- Allows the network operator to give a discount, which is defined as a reduction in charge units, expressed as a percentage. A discount is dependent on the type of originator, destination number and network or route.
- This feature enables the network operator to offer AOC functionality to customers who wish their PBXs to communicate using ETSI PRI with media gateways controlled by CS2000s. This increases end-user satisfaction and the potential to generate additional revenue with new services. AOC functionality is provided with variants to meet in-country requirements

Technical reference

59020791

DEPENDENCIES

The following order code is required for this functionality to be operational:

PRIT0002 PRI ETSI PRI

PBXT0036   QSIG COLP-COLR

CAPABILITIES AND VALUE

QSIG Support for COLP/COLR

This feature enhances QSIG to support the following supplementary services towards the public network:

- COnnected Line identification Presentation (COLP). This provides the calling party with the possibility to receive the connected user's number. Special Arrangement (ETSI), also known as No Screening, is also supported.
- COnnected Line Restriction (COLR). This enables the connected party to prevent presentation of its number to the calling party.

The functionality is optional and is controlled via Software Optionality Control (SOC).

Value

This feature allows network operators to provide their customers with additional services, thereby providing network operators with the potential for improved customer satisfaction and increased revenue.

Technical reference

59027747

DEPENDENCIES

The following order code is required for this functionality to be operational:

PRIT0012 QSIG

2.1.8   OA&M and Billing Optional Order Codes

BASE0014   BASE DIRP Enh to 72 vol

CAPABILITIES AND VALUE

DIRP Enhancements for Billing

This feature increases the number of Device Independent Recording Package (DIRP) volumes in table DIRPPOOL from 24 to 72. The functionality is optional and is controlled via software optionality control (SOC) BASE0014. The status of this SOC must be set to **YES** before the additional capacity is visible.If the SOC state is **IDLE**, this feature restricts the provisioning of more than 24 volumes per DIRP pool. Rejection messages indicate that this feature is inactive.

Feature A00003905 works in conjunction with feature A00002186 to realize 4G of storage capacity for a DIRP subsystem. Feature A00002186 increases Disk Drive Unit (DDU) storage capacity from 1G to 4G. However, for any feature functionality to be active, 4G DDUs must be present in the switch with the appropriate IOM load.

To achieve 4G of DIRP DDU storage capacity, both features A00003905 and A00002186 must be present and active. Both features are enabled and disabled via SOC. IOM load XXXYYYZZZ is required.

Value

This feature significantly increases DDU storage capacity, so enhancing the number of billing records that can the stored by the CS2000.

Technical reference

00003905

DEPENDENCIES

The following order code is required for this functionality to be operational:

BASE0015 BASE IOM Disk Enhancement

BASE0015   BASE IOM Disk Enhancement

CAPABILITIES AND VALUE

IOM Disk Enhancements

This feature increases the Input/Output Module Disk Drive Unit (IOM DDU) capacity from 1G to 4G. The maximum number of volumes per DDU increases from 32 to 63. The maximum volume size remains unchanged at 65,536 Kilobytes. By allocating 63 volumes at maximum volume size, the entire 4G can be used.

The ability to use the additional disk capacity is controlled by SOC BASE0015. The status of this SOC must be set to **YES** before the additional capacity is visible. If the status is set to **IDLE** after additional volumes have been allocated, further volume allocation maintenance may not be possible, however all volumes and files will continue to be accessible.

The IOM load with version IOMEXXXX must be used in conjunction with this feature.

Feature A00003905 works in conjunction with feature A00002186 to realize 4G of storage capacity for a Device Independent Recording Package (DIRP) subsystem. Feature A00002186 increases DDU storage capacity from 1G to 4G. However, for any feature functionality to be active, 4G DDUs must be present in the switch with the appropriate IOM load.

To achieve 4G of DIRP DDU storage capacity, both features A00003905 and A00002186 must be present and active. Both features are enabled and disabled via SOC. IOM load XXXYYYZZZ is required.

Value

This feature enhances the storage capacity of the CS2000 thereby enhancing, for example, the number of billing records that can the stored.

Hardware requirements

The capacity enhancement is applicable only to the IOM DDU.

The IOM disk drive, NTFX32BA, must be Release 7 or later.

Technical reference

00002186

DEPENDENCIES

The following order code is required for this functionality to be operational:

BASE0014 BASE DIRP enh to 72 vol

BILL0002   Carrier Connect AMA

This order code provides the ability to provision the circuit seizure time (both incoming and outgoing seizure) in all call generated billing records in EBAF Automatic Message Accounting (AMA) format. Circuit seizure time is also referred to as carrier connect time.

CAPABILITIES AND VALUE

Carrier Connect AMA

- Enables the provisioning of the circuit seizure time (both incoming and outgoing seizure) in all call generated billing records. Circuit seizure time is defined as the receipt of the Initial Address Message (IAM) on an incoming CCS7 trunk and/or the sending of an IAM on an outgoing CCS7 trunk.
- Supports the following interworking using the EBAF AMA call recording system:
  — IBN7 (ANSI ISUP+)
  — SSUTR2 (French TUP)
  — ETSI ISUP
  — BTUP
  — ETSI PRI

Value

This feature enables accurate inter-administration accounting as defined by Inter-Exchange Carriers (IECs) and regulatory requirements.

Technical reference

AE1580

DEPENDENCIES

The following order code is required for this functionality to be operational:

BILL0001 Billing

BILL0003   AMA Reject Calls

This order code provides enhancements to the Automatic Message Accounting (AMA) billing records.

CAPABILITIES AND VALUE

AMA Reject Calls

Provides the following enhancements to the AMA billing records.

- Capture of treatment codes
- Rejected call recording

Value

This feature enables the network operator to produce detailed AMA billing records for rejected calls in their network. This allows them to monitor rejected calls and the reasons for rejection.

Technical reference

AG5040

DEPENDENCIES

The following order code is required for this functionality to be operational:

BILL0001 Billing

BILL0004　　VPN AMA Billing

This order code provides the ability to capture the dialled digits in an Automated Message Accounting (AMA) billing record for Virtual Private Network (VPN) calls.

CAPABILITIES AND VALUE

VPN AMA Billing

This feature provides the ability to capture the dialled digits in the AMA billing record for VPN calls. The digits are captured when the call is established as a VPN call. If the VPN selector is encountered more than once, the digits from the last encounter overwrite any previously captured digits.

Value

Enhanced billing capabilities. Enables the network operator to differentiate VPN calls and bill accordingly.

VPN AMA Billing for PRI Overlap

This feature allows CS2000 to append dialled digits to the AMA record for incoming ETSI PRI overlap calls that become VPN calls. The digits are captured in module 026 or 612 when the call is established as a VPN call. If the VPN option is encountered more than once during translations, the digits from the last encounter overwrite any previously captured digits. These digits can be used to determine the type of call made.

Value

This feature allows the network operator to have records of incoming ETSI PRI overlap calls that become VPN calls, and to bill accordingly.

CS2000 captures all of the incoming digits in module 026 or 612, and therefore provides more information in the AMA record.

Technical reference

AJ3809

DEPENDENCIES

The following order code is required for this functionality to be operational:

BILL0001 Billing

BILL0006   SMDR DE Extension

This order code provides the ability to capture the time taken to answer calls and information about the calls in a Station Message Detail Recording (SMDR) record. The capture of the time to answer is triggered against the originating customer group.

CAPABILITIES AND VALUE

SMDR DE Extension

- Captures the following call information in an extension to the SMDR record associated with a call:
  — The origination time of the call
  — The call treatment code
- Supports the following call types:
  — Unanswered
  — Busy
  — Answered
  — Routed to treatment

Value

This feature allows a network operator who uses SMDR to provide end users with the time taken to answer calls and the treatment the calls received.

Using the origination time provided by this order code and the answer time which is already available in SMDR, the network operator's downstream processor can calculate the time taken to answer a call. This data allows the end users to monitor performance.

DEPENDENCIES

The following order code is required for this functionality to be operational:

BILL0001 Billing

BILL0007   AMA Time to Answer

This order code provides the ability to capture the ringing start time of the terminating party in an Automated Message Accounting (AMA) record, for the terminating customer group.

CAPABILITIES AND VALUE

AMA Time to Answer

- Provides the ability to capture the ringing start time of the terminating party in an AMA record, for the terminating customer group.
- The following types of terminating parties are supported:
  — IBN lines
  — ACD Group
  — UCD Group
  — Attendant Console
  — Hunt Group (all types)

— Multiple Appearance Directory Number (MADN) Group

Value

Enhanced reporting capabilities. The ringing start time and the answer time can be used to calculate the time taken to answer a call, which is useful for reports on the performance of agents answering calls.

DEPENDENCIES

The following order code is required for this functionality to be operational:

BILL0001 Billing

BILL0008　　　AMA Redirection Information

This order code provides the ability to capture the reason for a re-directed call and the directory number (DN) to which it was re-directed in an Automated Message Accounting (AMA) billing record.

CAPABILITIES AND VALUE

AMA Redirection Information

- Provides the ability to capture the redirection information in an AMA billing record for calls that are re-directed before they are answered. The redirection information is captured in an AMA billing record associated with the first leg of the call

- The following type of redirection is supported:

  — Call Forward

Value

Enhanced reporting capabilities. Redirection information can be included on management reports for analysis of calls terminating to lines.

DEPENDENCIES

The following order code is required for this functionality to be operational:

BILL0001 Billing

BILL0009　　　AMA Call Completion Reason

This order code provides the ability to capture the call completion type in an Automated Message Accounting (AMA) billing record associated with the call.

CAPABILITIES AND VALUE

AMA Call Completion Reason

- Provides the ability to capture the call completion type in an AMA billing record associated with the call

- For all call types, the following types of call completion can be captured:

  — Normal answered calls

  — Abandoned calls (clear down during ringing)

  — Calls that encounter busy treatment

— Calls that encounter any other treatment

— Abnormal or unknown (any other reason)

If enabled, this functionality causes structure code x0511 to be generated. This has the same fields as x0510, but with the addition of a field to hold details of the reasons for call completions.

Value

By capturing the AMA call completion reason, the network operator and end user are able to analyse how calls are completed.

Technical reference

AJ4226

DEPENDENCIES

The following order code is required for this functionality to be operational:

BILL0001 Billing

BILL0010   AMA Generation Management Reports

This order code provides Automated Message Accounting (AMA) billing records on an originating customer group basis, for calls that would not otherwise produce an AMA record.

CAPABILITIES AND VALUE

AMA Generation Management Reports

Provides AMA billing records on an originating customer group basis for calls that would not otherwise produce an AMA record.

An AMA record can be provided for all calls or for answered calls only. Calls from ISUP trunks and Virtual Facility Groups (VFG) can be separately included or excluded from the calls that trigger AMA records. A new call type code can be selected for the records produced using datafill.

Value

Enhanced management reporting. Management reports can be produced which contain summaries of the data stored in an AMA record. The AMA records contain information about the type of call, the originating and terminating numbers, date and time, and so on. Management reports can be useful for monitoring calling habits and analysing costs.

Technical reference

AJ4226

DEPENDENCIES

The following order code is required for this functionality to be operational:

BILL0001 Billing

BILL0012 BC Billing for BTUP

CAPABILITIES AND VALUE

BC Billing for BTUP

This feature provides a method for billing ISDN calls over BTUP. ISDN billing captures ISDN information such as Bearer Capability (BC), Network Interworking Indicator, and Release Cause.

Value

This features allows the network operator to capture bearer capability information in its AMA billing records for calls originating on BTUP trunks. Capturing bearer capability allows the network operator to offer differential tariffing and the potential to generate additional revenues with new services.

Technical reference

AG5334

DEPENDENCIES

The following order code is required for this functionality to be operational:

BILL0001 Billing

BILL0013 AMA Support Up To 30 Digits

CAPABILITIES AND VALUE

AMA Support Up To 30 Digits

This feature enables the Automatic Message Accounting (AMA) billing system to capture up to 30 terminating digits within the billing record.

This feature captures up to 30 terminating digits of the call in the base AMA structure code. The specific structure codes supported are:

- Structure Code 513: SOC code BILL0013, AMA Support Up to 30 Digits activates structure code x0513 if BILL0009, AMA Call Completion Records is not active. Structure code x0513 has the same structure as x0510 with the addition of capturing up to 30 terminating digits in two fields 126. These fields replace fields 502 and 503.

- Structure Code 514: SOC code BILL0013, AMA Support Up to 30 Digits activates structure code x0514 if BILL0009, AMA Call Completion Reason is active. Structure code x0514 has the same structure as x0511 with the addition of capturing up to 30 terminating digits in two fields 126. These fields replace fields 502 and 503.

Value

Operators can more easily meet the requirements of their customers for detailed account and customer billing. The feature also provides the opportunity to use the information captured to increase revenue generation.

Technical reference

59007855, AJ4957

DEPENDENCIES

The following order code is required for this functionality to be operational:

BILL0001 Billing

IBIL0002 Australasia Billing Enhancements

This order code provides the ability to provision the circuit seizure time (both incoming and outgoing seizure) in all call generated billing records in EBAF Automatic Message Accounting (AMA) format. Circuit seizure time is also referred to as carrier connect time.

CAPABILITIES AND VALUE

Australasia Billing Enhancements

- Enables the provisioning of the circuit seizure time (both incoming and outgoing seizure) in all call generated billing records. Circuit seizure time is defined as the receipt of the Initial Address Message (IAM) on an incoming CCS7 trunk and/or the sending of an IAM on an outgoing CCS7 trunk

- Supports IBN7 (ANSI ISUP+) interworking using the EBAF AMA call recording system

- Allows the capability to bill a PBX end user on a per-extension basis, by overlaying the National Significant Number (NSN) format CLI with the National Number (NN) format

Value

This feature enables:

- Accurate inter-administration accounting as defined by Inter-Exchange Carriers (IECs) and regulatory requirements

- Accurate billing for PBX end users, by ensuring the extension number is added to the billing records for all users serviced by a particular trunk group

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

IBIL0003 VPN AMA Enhancements

This order code provides feature activation codes in the AMA billing stream similar to those found in Station Message Detail Recording (SMDR) for VPN calls supported by CS2000, and is intended for the Australasian market.

CAPABILITIES AND VALUE

VPN AMA Enhancements

- Provides a module code in the AMA record which contains the originating and terminating feature codes

- Terminating feature codes shown in the module code are:

  — Call Forwarding

  — Six-way, Meet Me, Preset and Attendant Conference

  — Call Back Queuing

— Multiple Answer

— Flexible Station Controlled Conference

• Originating feature codes shown in the module code are:

— Three Way Calling

— Six-way, Meet Me, Preset and Attendant Conference

Value

By aligning the contents of the AMA and SMDR streams, the need for the network operator to collect, analyse and synchronise two data streams is eliminated. Therefore, only one data stream needs to be managed.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

IBIL0004 NOA/NPI Capture in AMA

CAPABILITIES AND VALUE

Called Number Parameter Capture in AMA

This feature provides the option to capture the following information in an Automatic Message Accounting (AMA) record:

• Incoming calling party Numbering Plan Indicator (NPI) and Nature Of Address (NOA), or Type Of Number (TON)

• Incoming called party NPI and NOA/TON

• Outpulsed called party NPI and NOA/TON

• Outpulsed called party digits

The NPI, NOA/TON and outpulsed called party digits are captured for the following protocols:

• IBN7 (ANSI ISUP+)

• ETSI ISUP

• SSUTR2 (French TUP)

• ETSI PRI

• INAP

PRI uses the TON field instead of the NOA field that is used in CCS7 protocols.

The outpulsed called party digits are captured in an AMA record for BTUP, as well as the protocols listed above.

Value

This feature provides the network operator with the option to have more detailed information in their AMA records. Because the called party digits, NPI, and NOA or TON can be modified in translations and routing, the Called Party Number digits captured in the AMA billing record may be ambiguous. International Calling Line Identities (CLI) can also be ambiguous.

This feature benefits network operators who are setting up a global network because of the role played by the CS2000 in controlling media gateways located in different geographical locations. This feature ensures that calls are correctly identified and appropriately charged, even when the calls transit different networks.

Technical reference

59013592

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

IBIL0005　　SSUTR2 IC Charge Message Billing

CAPABILITIES AND VALUE

SSUTR2 Charge Message Billing

This feature allows the CS2000 to process billing information from received charge allocation (ITX) messages. This functionality allows an alternative operator to support and correctly bill special service calls that use the ITX backwards charging procedure. One example of an application that uses ITX messages is a Teletaxe server.

For SSUTR2 to SSUTR2 calls, the CS2000 can transit or respond to ITX messages. The Backwards Charging service is supported on all supported interworkings to SSUTR2 trunks.

Value

This feature provides network operators with the potential for greater revenue by enhancing the billing capabilities of CS2000. This feature also provides a key service for new network operators seeking to build a customer base in France.

Technical reference

AU3283

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

IBIL0006　　CPC AMA

CAPABILITIES AND VALUE

CPC AMA Capture

This feature enables CS2000 to capture the Calling Party Category (CPC) and the ISDN Access Indicator (for SSUTR2, ETSI ISUP V1 plus supported variants, and ETSI ISUP V2 plus supported variants) within an Automatic Message Accounting (AMA) record.

This feature adds a new context identifier, 80027, to the AMA record for module code 611. This context identifier indicates that the module contains calling information.

The new version of module code 611 contains:

- A protocol indicator
- The CPC

- The originating ISDN access indicator (if capture is for SSUTR2, ETSI ISUP and all supported variants)

Module code 611 with this new functionality can be triggered on a per-incoming trunk basis via datafill in table AMATKOPT, or on a per-call basis via datafill in universal translations (tables AMAXLAID and FLEXAMA).

Value

This feature enables the network operator to identify calls' CPCs within the AMA billing record. This feature ensures that calls are correctly identified and appropriately charged, even when the calls transit different networks.

Technical reference

AJ5340

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

NSUP0023   PCA SW Mtr Bill Supp

CAPABILITIES AND VALUE

PCA SW Metering Support for Billing

This feature provides the software metering counter in Automatic Message Accounting (AMA) extensions. This feature reuses the existing Network Advice Of Charge (NAOC) tariff database and framework to provide tariff information for every call. The existing Payment Ceiling Advice (PCA) charge calculation routines are extended to allow charge calculation

This feature supports the following functionality:

- Triggering the calculation of call charges for either all supported NAOC and PCA subscribers on a global (per switch) basis:
    — IBN
    — V5.2 IBN
    — PRI/QSIG
  or specific PCA subscribers on a per line basis:
    — IBN
- Writing the calculated call charges into a newly introduced extension of the AMA module code 612

The functionality is optional and is controlled via Software Optionality Control (SOC).

Value

By registering call charges in real-time, this feature speeds up the billing process.

By complying with the standard *Rating in the digital switching exchanges, GT.ER.d4.463* (Spanish Metering specification) this feature allows the CS2000 to better meet the needs of the Spanish market.

Technical reference

00002638

DEPENDENCIES

This feature requires the following order codes to be activated by SOC:

NETK0024 Network AOC Tariff

NSUP0020 NAOC/PCA Supp Svcs

NSUP0023 PCA SW Metering Support for Billing (this order code)

OAMI0002   Interconnect OMs and Answer OM Enhancements

CAPABILITIES AND VALUE

Interconnect OMs and Answer OM Enhancements

Provides Interconnect OM enhancements to the following:

- Increased tuple limit of table DCTS from 512 to 1024
- Increased tuple limit of table TRKDCTS from 1024 to 2048
- Increased maximum number of digits per destination code from 5 to 8 digits

Introduces a new ANSWER OM register for routing attempts, seizure attempts, seize failures, total trunk usage and busy state usage.

Value

Aids in the prevention of issues and acts as an early warning system to network operators.

Provides the operator with the flexibility to accommodate and add additional destination codes for monitoring.

Allows operators to carry out real-time traffic analysis and Communication Server monitoring more effectively to ensure optimum network performance and aid network planning.

Technical reference

AU2916

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

OAMI0003   Interconnect OMs

CAPABILITIES AND VALUE

Interconnect OMs

This feature provides pegging on various types of outgoing trunks. Depending on the type of outgoing trunk, several Operational Measurements (OMs) are possible.

The scope of this feature spans the following OMs:

- Number of call attempts on all trunks
  — Number of seizures on all office trunks
  — Number of successful calls on all office trunks
  — Number of answered calls on all trunks

- — Total Traffic usage on all trunks
- — Number of partial-dial treatments
- — Number of called subscriber busy
- Number of calls encountering un-allocated number
  - — Number of congestion in distant exchange signals
  - — Number of subscriber line transferred signal
  - — Total number of IAM or IAI messages on all N7 office trunks
  - — Total number of UBM messages on a trunk
- Number of non-received message forward address message (FAM)
  - — Number of call attempts on a specified destination and particular trunk group
  - — Number of seizures on a destination and particular trunk group
  - — Number of successful calls on a destination and particular trunk group
- Number of answered calls on a specified destination and particular trunk group
  - — Total Traffic usage on a destination and particular trunk group
  - — Number of IAM and IAI messages on a specified destination and particular trunk group
- Number of UBM messages on a destination and on a particular trunk group
  - — Number of non-received messages after sending a FAM messages on a specified destination and particular trunk group.

Value

With this feature, inter-operator accounting and negotiations are eased as operators can back discussions and arguments with real-time performance and traffic details. This feature aids in the prevention of issues and acts as an early-warning system to operators.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

OAMI0004   Equal Access - Serving Carrier ID

CAPABILITIES AND VALUE

Equal Access - Serving Carrier ID

This feature provides a means of associating and identifying the service provider of the trunk service. In the case where the service provider and the network carrier are different companies, services can be easily identified using this feature. In addition, call records that are produced from these services contain the serving carrier identifier. This information is required for billing purposes, to determine billing and transfer rates.

This feature allows:

- Identification of the serving carrier of each trunk

- Transportation or restriction of serving carrier information across the IBN network
- Capture of Originating and Terminating party serving carrier information in the Bellcore AMA format with 00512 structure code

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

OAMI0006   Long Call Audit

CAPABILITIES AND VALUE

Long Duration Call Audit

The call condense block hung (CCBHNG) tool allows a network administrator to detect long calls (that is, calls that exceed a configured time interval) and hung calls if the hung party is a trunk. At predetermined intervals, the CCBHNG tool scans all the CCBs to find long and hung calls. It detects long calls by finding the call duration and hung calls if one agent of the CCB is NIL.

In telecommunications systems, where long-distance calls are concerned, the speech/data path is set up using more than one switch, and the communication between those switches is provided using trunks. When the call is over, all the lines, trunks, and the CCB associated are released.

In some circumstances, when a call is being cleared due to a problem, one trunk is released and the other trunk remains hung. Hung calls cause the lines, trunks, and CCBs of the switch to be busy. This situation can be seized if one side of the CCB is NIL.

Value

This feature can increase the satisfaction of the network operator's customers. It allows the network operator to track long-duration calls that exceed a predetermined time limit, and it eliminates any conflict resulting from long-call billing.

Technical reference

59010018

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

RBIL0005   Usage Sensitive Billing

CAPABILITIES AND VALUE

Subscriber Usage Sensitive Billing

Subscriber Usage Sensitive Billing (SUSB) allows network operators to create AMA billing records which record activation, deactivation, programming and usage of IBN line features and Customer Local Area Signalling Service (CLASS) features. It is a method of billing for some services based on service activation and deactivation by the customer.

The following CLASS features are supported by this functionality:

- Call Forward Universal (CFU)
- Call Forward Fixed (CFF)
- Call Forward Don't Answer (CFD)
- Call Forward Busy (CFB)
- Call Forward Operator (CFO)
- Call Forward to Announcement (CFTANN)
- Subscriber Activated Call Blocking (SACB)
- Wake Up Service (WUCR)
- Station Controlled Conference (CNF)
- Call Transfer (CXR)
- Three Way Calling (3WC)
- Station Activated Do Not Disturb (MSB)
- Calling Number Delivery (CND)
- Calling Name Delivery (CNAMD)
- Calling Number Delivery Blocking (CNDB)
- Automatic callback (ACB)
- Automatic Recall (AR)
- Selective Call Forwarding (SCF)
- Selective Call Acceptance (SCA)
- Selective Call Rejection (SCRJ)

Value

This feature allows the network operator to provide those customers with fixed dial plans with more usage sensitive billing reports This feature thereby increases customer satisfaction and provides network operators with the potential for increased revenue.

Technical reference

59008318

Subscriber Usage Billing Enhancements

This feature enhances the basic feature and provides a generic solution for replacing the padding digits of the originating and terminating Directory Number (DN) fields of SUSB AMA records (Structure code 1030) with an overdecadic digit specified by the office parameter REPLACE_PADDING_DIGIT in records generated by a subset of CLASS features.

Value

This feature allows the network operator to provide those customers with <10 digit dial plans with more usage sensitive billing reports. This feature thereby increases customer satisfaction and provides network operators with the potential for increased revenue.

Technical reference

59017328

DEPENDENCIES

The following order code is required for this functionality to be operational:

BILL0001 Billing

RBIL0007   NDS Billing - Indirect Subscribers

CAPABILITIES AND VALUE

NDS Billing - Indirect Subscribers

This feature allows operators in France to record the designated supplementary number (NDS) supplied in an FTUP initial address message in an AMA record. The NDS is captured in AMA module code 046 with a source of charge number of 5.

This feature is activated by enabling Software Optionality Control (SOC) option RBIL0007 and entering data in option USERCLI on a two-way or incoming FTUP trunk in table AMATKOPT.

Value

This feature allows the network operator to provide its customers with detailed billing reports (down to the PABX extension level) for indirect access calls over its network.

Technical reference

59008500

DEPENDENCIES

The following order code is required for this functionality to be operational:

BILL0001 Billing

RBIL0008   NDS Billing - Direct Subscribers

CAPABILITIES AND VALUE

NDS Billing - Direct Subscribers

This feature enables the calling line identification (CLI) received in the setup message of the ETSI PRI trunk to be appended to the existing AMA billing record in module code 046 after any screening or editing.

This feature is controlled by a Software Optionality Control (SOC) option. The functionality is enabled by datafilling the AMACLID option in table AMATKOPT against the incoming trunk group. If the SOC is not on, the customer can still enter the data for the AMACLID option in table AMATKOPT with a warning.

The table AMAOPTS option AMACLID_IC_PRI_CGN allows the received Calling Number to be captured in module code 046 in preference to the screened/edited Calling Number.

Value

This feature allows the network operator to provide its directly connected customers with detailed billing reports (down to the PABX extension level) for calls over its network.

Technical reference

59007644

DEPENDENCIES

The following order code is required for this functionality to be operational:

BILL0001 Billing

SMET0002　　　Software Metering

CAPABILITIES AND VALUE

Trunk Software Metering for China ISUP

This feature supports software metering call processing on the CS2000 for China ISUP trunks. Both incoming and outgoing trunks are supported.

Trunk software metering is a method for determining the charge for the elapsed time of a call by adding 'charging units' to one of up to four software meters that are assigned to the metered agent for China ISUP trunks. The meter used is determined by the call characteristics (for example, local, national, international call). Every incoming ISUP call is metered unless there is an indication that the call is free of charge.

This feature functionality is supported for all supported interworkings of China ISUP trunks.

Value

This feature supports software metering on the CS2000 for China ISUP, thereby allowing the CS2000 to better meet the needs of the China market. Software metering provides network operators with a billing system, thereby allowing them to generate revenue.

Technical reference

59040148

CTUP Metering

This feature provides the generation, tandeming and receipt of Meter Pulse Messages (MPM) which allows meter counts to be transmitted from the generation office to the origination office.

IBN lines are supported with MPM reception.

This is a C 100i equivalence feature which is implemented according to China TUP as specified in GF001-9001, *Technical Specification of Signalling System No. 7 for the National Telephone Network of China.*

This feature supports the following interworkings:

- IBN line to CTUP trunk
- CTUP trunk to IBN line
- CTUP trunk to CTUP trunk
- CTUP trunk to Tones/Announcement

This feature also supports the following supplementary services:

- Calling Number Delivery (CND)

- Diallable Directory Number (DDN)
- Fixed Calling Number Delivery Restriction (SUPPRESS)

Value

By supporting CTUP metering this feature allows the CS2000 to better meet the needs of the China market.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

SMET0003   Hardware Metering

CAPABILITIES AND VALUE

Full Line Hardware Metering / Billing Compliance

This feature enhances Line Hardware metering support by extending the granularity of the length of charging intervals. Previously, it was only possible to charge per minute or per second. This is extended to allow more flexibility by providing a number of predefined values for the length of the charging interval. These values allow charging interval lengths of 1, 10, 15, 20, 30, 60, 90, 120, 240, 300, 360, 720 seconds.

The usage of the charging interval can also be turned off by setting its value to '0'.

Value

This feature provides more flexible charging and enhances Line Hardware metering support for Network Advice of Charge (NAOC). NAOC is a Regulatory Service which implements the tariffing of calls over the network boundaries in a single or a multiple carrier environment.

Technical reference

0002625

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

2.2   Gateway Controller Software Order Code

The Gateway Controller (GWC) supports the CS2000 by acting as a protocol converter and creating a bridge between CS2000 call processing and the media gateways (Nortel Networks or other vendor). The GWC converts between both proprietary, Core Peripheral Processing Virtual Machine (PPVM) messages and ISUP messages, and the open standard protocols that media gateways use with their related packet network. This confers two advantages:

- Protocol conversion responsibilities are off-loaded onto the GWC, freeing up the Core to handle real-time call processing tasks
- The Communication Server fits easily into a multi-vendor environment, and is future-ready for new protocols as they become defined

The GWC itself does not process bearer traffic (this traffic remains between gateways).

The GWC supports the following protocols:

- ASPEN
- Media Gateway Control Protocol (MGCP)
- ISDN User Adaptation (IUA)

The GWC implements the RFC 2833 Internet Engineering Task Force defined standard for the transport of tones over IP. In particular, the GWC adds support of RFC 2833 to the Local Control Options field (for Media Gateway Control Protocol (MGCP)) and the local Session Dependent Protocol (SDP) field (for H.248) in the Create Connection (CRCX) and ADD messages respectively. These messages are sent from the Gateway Controller (GWC) to the gateway during call setup, triggering the gateway to include the RFC 2833 in its Session Dependent Protocol (SDP) response. This is then used by the far end gateway to ensure that both gateways support RFC 2833 before the functionality is used.

The GWC also implements the International Telephony Union defined standard for the transport of group 3 fax calls over IP. It does this by adding support of T.38 to the Local Control Options field (for Media Gateway Control Protocol (MGCP)) and the local Session Dependent Protocol (SDP) field (for H.248) in the Create Connection (CRCX) and ADD messages respectively. These messages are sent from the Gateway Controller (GWC) to the gateway during call setup, triggering the gateway to include the T.38 in its Session Dependent Protocol (SDP) response. This is then used by the far end gateway to ensure that both gateways support T.38 before the functionality is used.

GWCW0080   International Gateway Controller NCL

CAPABILITIES AND VALUE

Redirecting MGC NCL

The Redirecting Media Gateway Controller (RMGC) enables line Gateways to discover their Gateway Controller's (GWC's) address. On receiving a registration request from a gateway, the RMGC contacts the Network Topology service (NetworkView) to obtain the GWCs address that is associated with the MG. The RMGC then redirects the MG to the GWC.

MG9000 Mgr Capacity Increase

This feature increases the maximum number of H.248 native lines that MG9000 Manager can support from 55000 to 110,000. The maximum number of MG9000 network elements that can be supported is increased from 60 to 75.

The recovery time is also enhanced and the recovery of "leaf nodes" in the system has been simplified. All configurable MG9000 data is persisted and restored from an Oracle database.

Value

This feature increases the maximum number of lines and network elements that MG9000 Manager can support.

Technical reference

00003074

CS2000 Packet Cable compliancy

This feature provides the enhancements and modifications needed to become more fully compliant with the PacketCable specifications. The following areas are addressed by this feature:

- DNS Time-to-Live Tracking
- Dynamic Quality of Service (DQOS) T5 Timer
- DQOS Session Class marking for Priority Calls
- DQOS Least Upper Bound calculation
- Secure Association compliance for DQOS
- Media Security for Network Call Signalling (NCS)

Value

This feature provides compliance with the following PacketCable specifications:

- PacketCable Network-based Call Signalling Protocol Specification, PKT-SP-EC-MGCP-I08-030728
- PacketCable Security Specification, PKT-SP-SEC-I09-030728
- PacketCable DQOS Specification, PKT-SP-DQOS-I07-030815

Technical reference

00003481

CMTS/MTA Signalling Security Integration for Cable

The Cable Modem Termination System (CMTS)/Multimedia Terminal Adapter (MTA) Signalling Security Integration for Cable feature provides Gateway Controller (GWC) security enhancements in the following areas:

- Kerberos Key Management
  — IP Security (IPSec) Secure Association (SA) lifetime management
  — Traffic and DoS attacks support
  — DNS interactions when FLEX policy is used
- IPSEC

- — Memory re-architecture
- — Deletion of policies
- — Key schedules
- — Traffic and DoS attacks support
- — Removal of code linked to hardware SAs

Value

This feature provides enhancements and modifications needed to become compliant with the PacketCable security specifications.

Technical reference

00003575

Trunk Security

This feature enables the IP Security (IPSec) capability for the following Gateway Controller (GWC) trunking profiles:

- TRUNKNA (North American Trunk GWC profile)
- TRUNKINTL (International Trunk GWC profile)

The IPSec provisioning GUI is modified/enhanced as follows:

- In the "IPSec Profile" panel, the "SA renew thresh" field is changed to "Grace Period (seconds)".
- A "Comment" field is added to the "Connection Policy" panel. When a connection policy is added, the user can enter descriptive comments in the "Comment" field. These descriptive comments provide an extra level of detail or history regarding that specific connection policy.
- The Kerberos service key can be entered in hexadecimal format.
- The Kerberos panel and the "KERBEROS" option in the "IPSec Profile" panel "Key Negotiation" field can be displayed if the Kerberos capability is included for that GWC profile.

The IPSec portion of the GWC on-line help panels are enabled.

Value

This feature enhances IP security for North American and International trunks.

Technical reference

00003576

PacketCable 1.0 Security compliance

This feature provides the enhancements and modifications needed to become fully compliant with the PacketCable security specifications. The following areas are addressed by this feature:

- Commit policy for Internet Protocol Security (IPSec) Secure Associations (SAs)
- Re-transmission timers policy
- Disabling of the Kerberos Key Management
- Service key version
- New tool available from PMDEBUG interface for:

— disabling IKE renewal

— enabling/disabling all IPSec CW behaviours

Value

This feature provides the enhancements and modifications needed to become fully compliant with the PacketCable security specifications.

Technical reference

00003577

T.38 FAX support for International H.323

This feature provides Call Server controlled switchover to T.38 (or G.711) for Call Server routed H.323 calls. Fax interworking is supported on calls between H.323 Gateways (for example, Meridian, Cisco, Business Communication Manager (BCM) and H.248 Gateways (for example, PVG) or MGCP Gateways (for example, Mediatrix). At least one agent must be an H.323 Gateway.

This feature provides Call Server controlled switchover to T.38 (or G.711) depending on T.38 network option:

- If the T.38 network option **Netopt** is set to "T.38" and both Gateways (GWs) support T.38, then upon fax detection, switchover is done from G.729 (or G.711) to T.38 codec.

- If **Netopt** is not set to "T.38", or a GW does not support T.38, then switchover to T.38 does not apply.

Value

This feature provides Call Server controlled, non-autonomous switch-over to T.38 fax for Gatekeeper routed H.323 calls.

Technical reference

00003627

Emergency Call Tracing

This feature provides the ability to trace established intra and inter office calls involving Session Initiation Protocol-Telephony (SIP-T) Dynamic Packet Trunking (DPT) for Call Server 2000 (CS2000).

Previously, CS2000 Core had the ability to trace emergency calls (police, fire, hospital etc.) for only TDM trunks.

This feature works for all calls and not just E911 calls.

The trunk information is provided through a new man-machine command interpreter (CI) command "SIPTRACE". This command tool utility is limited to SIP-T DPT and TDM trunks as input to this command, while the output can be SIP-T DPT, TDM trunks or lines.

Value

This feature enhances the trace abilities of CS2000 to identify which SIP-T DPT (originating and/or terminating) is associated with an active call within the call server.

Technical reference

00004422

Audio Server Node Announcement Capacity Increase to 1280

This feature provides the capability to increase the number of simultaneous announcement calls which can be supported in the CS2000 for an Audio Server Node from 300 to 1280. This increase is needed to support playing an announcement (a recorded music announcement) to members of an Automatic Call Distribution (ACD) queue.

Value

This feature increases the maximum number of simultaneous announcements supported from 300 to 1280.

Hardware requirements

The audio server gateways subtending the Gateway Controller (GWC) that is datafilled as an Audio Server node must have the appropriate configuration to support 1280 ports

Technical reference

00006483

HARDWARE REQUIREMENTS

This order code introduces support for the following PEC codes:

- ITP: NTNY30CA and NTNY30CB

GWC Robustness: Utilize Both Core CMHOST IP (CSIP) Addresses Enhancement

NEW!

In releases prior to ISN08 each Gateway Controller (GWC) had to be manually provisioned with a single C-side IP address, used by the GWC to communicate with the core. All outbound and inbound messaging then used this single link.

With this feature, the GWC will be provisioned automatically with two C-side IP addresses. This enhancement has the following advantages:

- Outages due to provisioning errors are eliminated and the provisioning process simplified.
- The availability of a second CMHOST link makes the GWC much more robust with respect to link or edge router failure.
- Across a given GWC node, messaging between GWC and Core is fully balanced.

Value

This feature simplifies GWC provisioning and makes GWCs more resilient to failures.

Technical reference

00007102

Next Generation GWC (SW Support)

NEW!

This feature provides support for all existing platform and application software on the MCG 905 cPCI card, introduced at ISN08 as the new hardware platform for the CS 2000 GWC. The MCG 905 card includes a 1-GHz processor and 512MB RAM and delivers more robustness than the existing MCPN750.

Value

This feature provides software support for MCG 905 GWC card which delivers greater processing power and memory than the existing (pre-ISN08) card.

Hardware requirements

The MCG905 GWC card is required by this feature.

Technical reference

00007100

Upgrades: GWC Tool for Bulk Upgrades

In releases prior to ISN08, upgrading Gateway Controller (GWC) cards was performed manually via the GWC EM GUI (Graphical User Interface). This feature makes the same capability available via a secure Command Line Interface (CLI) so it can be automated via a central upgrade manager application.

Value

Automating the process of upgrading GWCs considerably reduces the time and degree of manual intervention required.

Technical reference

00007140

GWC Messaging Detection and Alarm

This feature implements GWC messaging path detection and alarming for all messaging paths such as those to a DNS server. GWC applications will raise an alarm when an external messaging path is lost and clear the alarm when the connection is re-established. Alarms will also be raised for other conditions, including:

- Gateway FQDN (Fully Qualified Domain Name) lookup failure in a DNS server
- Out of service state for endpoints on a GWC

Value

Increases the reliability of networks by reporting GWC messaging path and related problems.

Technical reference

00007113

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

2.3 Services Application Module Software Order Code

The Services Application Module (SAM21) software provides the necessary software functionality required to host and support GWC circuit cards and their associated software.

CS2000 Services Application Module functionality is delivered via the following order code:

SAM20080 Services Application Module NCL

Support for CICM in SAM21 Chassis

This feature enables the SAM21 Shelf Controller (SC) to support the CICM/CICM-EM application on the IntelCompactPCI card in the SAM21 Shelf.

Value

The advantages of CICM in a SAM21 chassis, as opposed to a SAM16 chassis, are many:

- **Capacity increase:** On a SAM16 there can be a maximum of 2,556 subscribers per CICM shelf, while the SAM21 supports 3069 subscribers per pair of CICM blades.

- **Footprint reduction:** On a SAM 16 a maximum of two shelves are supported, that is, 6,000+ subscribers. However, the SAM21 configuration can support seven pairs per shelf, and at two shelves per SAM21 that is 42,00+ subscribers.

- **Versatility:** The CICM cards can be introduced in the SAM21 Gateway Controller (GWC) with any other GWC products.

- **Simplicity:** The CICM EM manager uses the same CICM blade and fits into the same SAM21 shelf.

Technical reference

00003602

Upgrades: SC Tool for Bulk Upgrades

NEW!

In releases prior to ISN08, upgrading SAM21 Shelf Controller (SC) cards was performed manually via the EM GUI (Graphical User Interace). This feature makes the same capability available via a secure Command Line Interface (CLI) so it can be automated via a central upgrade manager application.

Value

Automating the process of upgrading SC Cards considerably reduces the time and degree of manual intervention required.

Technical reference

00007140

SAM21 Robustness

NEW!

This feature introduces the following enhancements to CS2000 SAM21 (21-slot Service Application Module) fault management:

- An alarm and an indication at the CS 2000 SAM21 Element Manager when a SAM21 shelf is locked

- New functionality that allows the SAM21 Shelf Controller (SC) to identify and log IP addresses if the controller receives an excessive number of IP packets

- An application monitor within the SAM21 SC that monitors pings from controller processes and restarts applications after a certain amount of time has elapsed without a ping being received

Value

Increased robustness for the SAM21 and the network as a whole (by assisting control of flooding by IP packets).

Technical reference

00008902

2.4 Integrated Element Management System (IEMS) Software Order Codes

Integrated Element Management System (IEMS) software provides functionality for operation, administration, maintenance and provisioning (OAM&P) in network solutions that use CS2000. This functionality uses graphical user interfaces (GUI) and web-based client interfaces to manage network services and operations. IEMS also provides support for Operations Support System (OSS) clients via the packet network.

IEMS is responsible for the general management of the CS2000 logical call server including the gateways, audio servers and signalling servers. It includes software that allows operating company personnel to manage Network services and operations in a scalable and flexible way. It provides cost-effective deployment and, if required, cost/performance traceability.

IEMS also provides:

- OSS interfaces for both legacy OSS systems and new interfaces, such as Simple Network Management Protocol (SNMP) interfaces based on Internet Engineering Task Force (IETF) and industry standards

- Easier configuration management

- Equipment and service provisioning

- High-reliability, high-capacity SuperNode Billing Application (SBA) billing solutions and AMA Call Detail Records (CDR)

- Continuity of existing interfaces, added security, and easier administration

- Integration of faults, flexibility in the recording, storage, and output of high-speed and real-time surveillance streams

IEMS manages the CS2000 through a series of Graphical User Interfaces (GUIs), giving an integrated view for the fault, configuration, and performance categories. It is supported by the following element manager applications:

- **CS2000 Core Manager**
  This provides OA&M support for the Services Application Module (SAM21) Manager application which allows provisioning of Shelf Controller (SC) and Gateway Controller (GWC) circuit cards, upgrading software on the SC and GWC circuit cards, and viewing SAM21 alarms, as well as SDM-based OA&M capability.

- **CS2000 Management Tools**
  This is a web-based application with a graphical user interface (GUI), through which you can remotely configure, monitor and maintain the Gateway Controller (GWC) and Universal Audio Server (UAS).

The core management capabilities can be delivered in either of two ways:

- By the SuperNode Data Manager (SDM), which is implemented by means of the CS2E software package on a Motorola PowerPC Series FX system running AIX.

- By the Core and Billing Manager (CBM), which is implemented by means of the CBM software package running on a Sun Netra 240 server.

Refer to section 2.4.1 on page 144 and section 2.4.2 on page 148 for details of the capabilities supported by each configuration.

The GUIs are software components which run in a commercial web browser on a customer-supplied desktop computer.

IEMS functionality is delivered via the following base and optional software order codes.

2.4.1   CS2000 Manager Software Order Codes

Base Software Order Codes:

CS2E0080   IEMS CS2000 Manager (SDM) NCL

ATA00001   ASCII Term Acc Gwy

CNCD0004   CNCD RTB OFT

CNOM0001   CNOM PH 1

CNOM0002   CNOM OM 02

ENTA0001   Enhanced Term Access

SBM00001   Billing Appl Base

CAPABILITIES AND VALUE

SBA Inbound File Transfer Performance Robustness

The Supernode Billing Application (SBA) on the SDM/CBM can suffer from performance problems when there are a large number of inbound file transfers, particularly at times when the server CPU is heavily utilised. This feature is designed to improve performance under these conditions.

Value

Alleviates SBA performance problems when handling large numbers of file transfers

Technical reference

00007462

SBM00003   AMADNS DDI I/F

SFT00001   Secure File Transfer

Optional Software Order Codes:

CNCD0006   Billing Filtering

CAPABILITIES AND VALUE

Billing Stream Filtering

This SDM Billing Application (SBA) feature enables an operator to select various subsets of billing records from the stream of records received from the CS2000 and schedule them for transfer to different locations.

The filtering functionality allows multiple filtered streams to be created from an associated main stream, each containing a set of billing records that have been filtered according to criteria defined by the operator. The criteria by which records are filtered are identical to the criteria available in the SDM AMADUMP tool.

This feature can be used in conjunction with Real-Time delivery of billing records on the SDM and is available with DIRP file format. Filtering is available with DIRP and DNS file formats.

Value

This feature enables the operator to send specific records to a specific downstream destination, thereby improving both the efficiency of record transfer and the flexibility of the SBA tool. The operator can determine which set(s) of billing records are sent to external entities for further processing for example, sending only billable records to a billing processing centre or only suspect records to a fraud detector.

Technical reference

A60007686

DEPENDENCIES

The following order codes are required for this functionality to be operational:

SBM00001 Billing Appl Base and

SBM00003 AMADNS DDI I/F

SBM00006   SBA-SMDR

CAPABILITIES AND VALUE

SBA-SMDR

This feature provides the capability of storing SMDR record files in the AMADNS file format as defined in GR-1343 Core Issue 2, 8/96.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

SCFT0001   Secure Core File Transfer

CAPABILITIES AND VALUE

FTP Proxy for SDM and CBM

This feature provides passthrough (file transfer) to the Command Module (CM) from the ftp client (downstream machine) via Supernode Data Manager/Core Billing Manager (SDM/CBM) in a Non-Distributed Computer Environment (DCE).

Currently ftp users have the passthrough (file transfer to CORE) capability on the SDM only if it has SSH Core File Transfer (SCFT) installed. This feature provides the file transfer facility to the CORE and SDM/CBM from a standard ftp client terminal without requiring SCFT and DCE environment.

FTP Proxy is used by an external ftp client for transferring files between:

- Client and CORE
- Client and SDM/CBM

On SDM, SCFT provides the passthrough capability to the ftp users so that FTP Proxy and SCFT are mutually exclusive; only one of them can reside on SDM.

On CBM, SCFT is not available so the FTP Proxy can reside independently of other CBM applications; but FTP Proxy it is mutually exclusive with the SSPFS ProFTPD service.

This feature is an optional application on SDM and CBM. It includes functionalities such as creating ftp users dynamically and deleting them when file transfer is over, and supporting parallel sessions.

New customer logs are introduced to provide information regarding file transfers between FTP Client and CORE, and which ftp-users are logged on to CORE.

Value

This feature provides file transfer to the CM from the ftp client via SDM/CBM in a Non-DCE environment.

Technical reference

00004868

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

SOMD0001   Secure Operational Measurements Delivery Outbound

CAPABILITIES AND VALUE

OMDD: Outbound Connection Security

The Operational Measurements Data Delivery (OMDD) application on the Supernode Data Manager/Core Billing Manager (SDM/CBM) collects OM reports from the core, processes them in to Comma Separated value (CSV) files and sends the CSV files to downstream destinations.

Additionally, this feature uses a Private Data Manager on the SDM./CBM for encrypting data by all applications. OMDD contacts the Private Data Manager for storing downstream destination passwords in encrypted format.

This feature provides an optional mechanism to prevent OMDD outbound transfers from sending out clear text passwords and data in the network. The mechanism uses the OpenSSH secure ftp client for doing outbound file transfers from SDM/CBM to the downstream destination. OpenSSH encrypts all data (including passwords) exchanged between the SDM/CBM and decrypting the data after it arrives at the downstream. The sftp also provides a data integrity check to ensure that no one has tampered the data during the transfer.

Value

This feature enhances the transfer security for OM reports by encrypting the data (including passwords) before it leaves the SDM/CBM and decrypting it after it arrives at the OSS. It also provide a data integrity check to ensure that the data has not been tampered with during transfer.

Technical reference

00005074

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

SSBM0001   Secure Shell Billing Manager Outbound

CAPABILITIES AND VALUE

SBA: Outbound Connection Security

The Secure Billing Application (SBA) on the Supernode Data Manager/Core Billing Manager (SDM/CBM) provides optional secure outbound file transfer using an OpenSSH Secure File Transfer Protocol (sftp) client. The sftp client protects all data including sensitive data such as users' passwords by encrypting the data before it leaves SDM/CBM and decrypting the data after it arrives at the downstream. The sftp also provides a data integrity check to ensure that no one has tampered the data during the transfer.

The user has to manually accept the downstream host key for each destination before configuring secure outbound file transfer to the destination.

This feature also enhances the SBA password protection scheme by using Private Data Manager SDM/CBM to store all the passwords for Operations Support System (OSS) access. The private data manager is responsible for storing the data in an encrypted form.

Value

This feature enhances data transfer security by encrypting data before it leaves the SDM/CBM and decrypting it after it arrives at the downstream destination. It also provide a data integrity check to ensure that the data has not been tampered with during transfer.

Technical reference

00005073

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

STA00001   Secure Terminal Access

CAPABILITIES AND VALUE

Secure Terminal Access

This feature provides a Secure Shell (SSH) Login based access to SuperNode Data Manager/Core Billing Manager (SDM/CBM) command line login and access to the MAPCI pass-through interface. This application replaces the existing SDM applications, order codes ENTA0001 and ATA00001, which require Distributed Computing Environment (DCE) security application support to operate. The application STA00001 uses Open SSH security framework.

2.4.2   Core and Billing Manager Software Order Codes

Base Software Order Codes:

CBM00080   Core and Billing Manager NCL

CAPABILITIES AND VALUE

Core and Billing Manager

This feature introduces the Core and Billing Manager (CBM) product, which is a SUN/Solaris based OAM&P platform supporting TDM, VoIP and Wireless switches. CBM has the same application set as the SuperNode Data Manager (SDM).

The CBM offers a suite of OAM&P applications for managing fault, configuration, accounting and performance data with several security options for the transfer of data including simple Telnet/FTP and industry standard Open SSH. The CBM enhances OAM&P functionality by enabling service providers to use their existing LAN resources and expertise to create an "operations Intranet" with Ethernet connectivity from the CBM to various OSSs upstream, off-loading OAM&P responsibilities from the Computing Module.

CBM-850 is a high availability configuration based on two COAM Servers connected to XA-Core through Ethernet interfaces. CBM 850 connects through a standard IP switching fabric to the XA-Core or CS2000 Compact Core Ethernet Interfaces. There are no dependencies on or integration with the Core maintenance facilities.

Value

The CBM leverages the existing SDM application inventory, including Supernode Billing Application, Log Delivery, Operational Measurement Delivery and others, and new technologies to provide increased capacity, performance and reliability.

The management of the CBM platform and the CBM applications are loosely integrated to ensure platform independence of the CBM applications, and allow deployment on commercially available NEBS compliant hardware. This allows high performance at a low cost and a significant reduction in the footprint of the equipment.

Technical reference

00002008, 00002043, 00002132, 00002133, 00002155, 00002162, 00002164, 00002165, 00002385, 00002757, 00002822, 00002823, 00002920, 00002966, 000003613, 00003615, 00003616, 00003617, 00003618, 00003023, 00004758, 00004770

CNCD0004   CNCD RTB OFT

CNOM0001   CNOM PH 1

CNOM0002   CNOM OM 02

SBM00001   Billing Appl Base

SBM00003   AMADNS DDI I/F

Optional Software Order Codes:

CNCD0006   Billing Filtering

CAPABILITIES AND VALUE

Billing Stream Filtering

This SDM Billing Application (SBA) feature enables an operator to select various subsets of billing records from the stream of records received from the CS2000 and schedule them for transfer to different locations.

The filtering functionality allows multiple filtered streams to be created from an associated main stream, each containing a set of billing records that have been filtered according to criteria defined by the operator. The criteria by which records are filtered are identical to the criteria available in the SDM AMADUMP tool.

This feature can be used in conjunction with Real-Time delivery of billing records on the SDM and is available with DIRP file format. Filtering is available with DIRP and DNS file formats.

Value

This feature enables the operator to send specific records to a specific downstream destination, thereby improving both the efficiency of record transfer and the flexibility of the SBA tool. The operator can determine which set(s) of billing records are sent to external entities for further processing for example, sending only billable records to a billing processing centre or only suspect records to a fraud detector.

Technical reference

60007686

DEPENDENCIES

The following order codes are required for this functionality to be operational:

SBM00001 Billing Appl Base and

SBM00003 AMADNS DDI I/F

SBM00006   SBA-SMDR

CAPABILITIES AND VALUE

SBA-SMDR

This feature provides the capability of storing SMDR record files in the AMADNS file format as defined in GR-1343 Core Issue 2, 8/96.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

SCFT0001   Secure Core File Transfer

CAPABILITIES AND VALUE

FTP Proxy for SDM and CBM

This feature provides passthrough (file transfer) to the Command Module (CM) from the ftp client (downstream machine) via Supernode Data Manager/Core Billing Manager (SDM/CBM) in a Non-Distributed Computer Environment (DCE).

Currently ftp users have the passthrough (file transfer to CORE) capability on the SDM only if it has SSH Core File Transfer (SCFT) installed. This feature provides the file transfer facility to the CORE and SDM/CBM from a standard ftp client terminal without requiring SCFT and DCE environment.

FTP Proxy is used by an external ftp client for transferring files between:

- Client and CORE
- Client and SDM/CBM

On SDM, SCFT provides the passthrough capability to the ftp users so that FTP Proxy and SCFT are mutually exclusive; only one of them can reside on SDM.

On CBM, SCFT is not available so the FTP Proxy can reside independently of other CBM applications; but FTP Proxy it is mutually exclusive with the SSPFS ProFTPD service.

This feature is an optional application on SDM and CBM. It includes functionalities such as creating ftp users dynamically and deleting them when file transfer is over, and supporting parallel sessions.

New customer logs are introduced to provide information regarding file transfers between FTP Client and CORE, and which ftp-users are logged on to CORE.

Value

This feature provides file transfer to the CM from the ftp client via SDM/CBM in a Non-DCE environment.

Technical reference

00004868

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

SOMD0001   Secure Operational Measurements Delivery Outbound

CAPABILITIES AND VALUE

OMDD: Outbound Connection Security

The Operational Measurements Data Delivery (OMDD) application on the Supernode Data Manager/Core Billing Manager (SDM/CBM) collects OM reports from the core, processes them in to Comma Separated value (CSV) files and sends the CSV files to downstream destinations.

Additionally, this feature uses a Private Data Manager on the SDM/CBM for encrypting data by all applications. OMDD contacts the Private Data Manager for storing downstream destination passwords in encrypted format.

This feature provides an optional mechanism to prevent OMDD outbound transfers from sending out clear text passwords and data in the network. The mechanism uses the OpenSSH secure ftp client for doing outbound file transfers from SDM/CBM to the downstream destination. OpenSSH encrypts all data (including passwords) exchanged between the SDM/CBM and decrypting the data after it arrives at the downstream. The sftp also provides a data integrity check to ensure that no one has tampered with the data during the transfer.

Value

This feature enhances the transfer security for OM reports by encrypting the data (including passwords) before it leaves the SDM/CBM and decrypting it after it arrives at the OSS. It also provide a data integrity check to ensure that the data has not been tampered with during transfer.

Technical reference

00005074

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

SSBM0001   Secure Shell Billing Manager Outbound

CAPABILITIES AND VALUE

SBA: Outbound Connection Security

The Secure Billing Application (SBA) on the Supernode Data Manager/Core Billing Manager (SDM/CBM) provides optional secure outbound file transfer using an OpenSSH Secure File Transfer Protocol (sftp) client. The sftp client protects all data including sensitive data such as users' passwords by encrypting the data before it leaves SDM/CBM and decrypting the data after it arrives at the downstream. The sftp also provides a data integrity check to ensure that no one has tampered the data during the transfer.

The user has to manually accept the downstream host key for each destination before configuring secure outbound file transfer to the destination.

This feature also enhances the SBA password protection scheme by using Private Data Manager SDM/CBM to store all the passwords for Operations Support System (OSS) access. The private data manager is responsible for storing the data in an encrypted form.

Value

This feature enhances data transfer security by encrypting data before it leaves the SDM/CBM and decrypting it after it arrives at the downstream destination. It also provide a data integrity check to ensure that the data has not been tampered with during transfer.

Technical reference

00005073

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

STA00001   Secure Terminal Access

CAPABILITIES AND VALUE

Secure Terminal Access

This feature provides a Secure Shell (SSH) Login based access to SuperNode Data Manager/Core Billing Manager (SDM/CBM) command line login and access to the MAPCI pass-through interface. This application replaces the existing SDM applications, order codes ENTA0001 and ATA00001, which require Distributed Computing Environment (DCE) security application support to operate. The application STA00001 uses Open SSH security framework.

2.4.3 CS2000 Management Components Software Order Codes

The CS2000 Management Components NCL include the following:

- GWC Element Manger
- UAS Element Manger
- APS Element Manger
- SAM21 Element Manager
- Trunks/Lines/V5.2 Configuration Managers
- Network Patch Manager
- QoS collector

CAPABILITIES AND VALUE

Gateway Controller EMS, Universal Audio Server EMS, APS EMS and SAM21 EMS

The Gateway Controller, Universal Audio Server, APS and SAM21 Element Management Systems provide configuration and provisioning functionality for their respective elements.

Line Maintenance Manager

The LMM is a client-server application that provides the capability to display Call Server lines and to perform basic maintenance on these lines, such as busy, return to service, test, and information query.

Trunk Maintenance Manager

The TMM is a client-server application that provides the capability to display Call Server trunks and trunk groups, and to perform basic maintenance on these trunks, such as post, busy, installation busy, force release, and return to service.

Line Test Manager

The LTM is a client-server application that provides the capability to perform diagnostic tests on lines.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

Base Software Order Codes:

CS2M0080   CS2000 Management Components NCL

CAPABILITIES AND VALUE

Patching SSPFS and IEMS via the NPM

Network Patch Manager (NPM) has been enhanced to be able to patch the following additional components in Succession Networks, as well as components in non-Succession configurations:

- Succession Solaris Platform Foundation Service (SSPFS) platform
- Integrated Element Management System (IEMS)

NPM is now delivered as part of the SSPFS platform, not the CS2000 Management load.

Value

This feature implements patching for these components in a manner consistent with other Succession Solution Network Elements.

Technical reference

00003560

Northbound Alarm Interface changes for Operations Support System (OSS)

This feature modifies the functionality of the CS2000 Management tools alarm system and makes the following changes to the Alarm Interface:

- The CS2000 Management tools Alarm Graphical User Interface (GUI) no longer allows alarm acknowledgements. Instead, this ability is present in the IEMS alarm GUI.
- The CS2000 Management tools Syslog Alarm feed is disabled by default. The resulting Nortel Standard or SCC2 logs are identical to those generated is previous releases.
- An Alarm log is generated when CS2000 Management tools cannot communicate with a managed device. This is now a major, rather than critical, alarm.
- A Log is created when CS2000 Management tools encounter difficulties generating CORBA notifications for Alarm events

The CS2000 Management tools alarm GUI no longer allows alarm acknowledgements. Instead, this ability is present in the IEMS alarm GUI.

Value

This feature is part of an overall effort to aggregate fault data into a single feed to Operational Support Systems, which reduces OSS integration costs.

Technical reference

00003667

IEMS SNMP OM polling from GWC and SC

This feature allows the Simple Network Management Protocol (SNMP) Poller application to read the Shelf Controller (SC) and Gateway Controller (GWC) Managed Information Base (MIB) data, even when the Poller is not using the same ethernet interface that the EMs use to communicate with the devices.

Value

This feature allows the SNMP Poller application to be located on a different Call Server 2000 Management Tools server (CMT).

Technical reference

00003691

SAM21 Element Manager support for CICM

This feature enhances the SAM21 Element Manager to allow the user to:

- Provision Centrex IP Client Manager (CICM) on an MCPN5385 card
- Provision CICM Element Manager (CICM-EM) on an MCPN5385 card
- Enable provisioning Gateway Controller (GWC) applications on a Force695 card

The SAM21 EM defines provisioning panels for the CICM and CICM-EM services.

Value

This feature provides an enhanced interface to aid with the provisioning of CICM and CICM-EM on MCPN5385 cards.

Technical reference

00003562

Sync Backup & Recovery - IEMS

NEW!

This feature introduces an application on IEMS that coordinates the synchronized backup and restore of service data and software loads on related devices. Each backup represents the state of the devices at a particular time, and no changes are permitted to data or software on the affected devices during backup or restore.

Backups are stored locally on the device to allow for faster restoral, but can also be archived remotely to provide safe off-site storage in case of catastrophic conditions precluding restoral from a local copy.

Value

Permits backups to take place unattended at scheduled times and ensures that backup and restore of data and software is synchronised across all affected devices.

Technical reference

00006979

Sync Backup & Recovery - (MG9KEM, CS2M)

NEW!

This feature introduces an application on IEMS that coordinates the synchronized backup and restore of service data and software loads for the MG9000 Manager server. Each backup represents the state of the devices at a particular time, and no changes are permitted to data or software on the affected devices during backup or restore.

Backups are stored locally on the device to allow for faster restoral, but can also be archived remotely to provide safe off-site storage in case of catastrophic conditions precluding restoral from a local copy.

Value

Permits backups to take place unattended at scheduled times and ensures that backup or restore of data and software is synchronised across all affected devices.

Technical reference

00006979

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

PRVS0001   PRVS Provisioning (part of CS2M0080 NCL)

NEW!

CAPABILITIES AND VALUE

CS2K Provisioning for Support of Generic 3rd Party Gateways - Profiles

NEW!

With effect from ISN08, Nortel provides generic profiles for the provisioning of third-party gateways. Pre-defined profiles for Nortel Networks gateways and third-party gateways are provided as part of the CS2000 open interoperability program.

Profiles will be consistent across gateways and include the following values:

- Profile name
- Gateway name format rules
- Endpoint name format rules
- Call processing protocol
- General provisioning and configuration capabilities
- Maximum endpoint capacity

Customers can make limited changes to profiles for third-party gateways.

Value

This feature allows profiles for new devices to be rapidly created without having to wait for a new software release or incur the expense of custom design work.

Technical reference

00007071

CS2K Provisioning for Support of Generic 3rd Party Gateways - Pre-Provisioning

NEW!

This feature is part of the Nortel Networks interoperability program and with it the CS2000 GWC will offer pre-provisioned endpoints for line gateways.

For large line gateways the call server will require commissioning configuration of line endpoints on those gateways. The operating companies will also select the LEN (Line Equipment Number) that will be used to represent each endpoint in the CS2000 core.

For small line gateways, GWC endpoints and CS2000 core LENs will be added when the gateway is associated with (added to) the CS2000. GWC endpoints and LENs will be added and deleted as necessary when the size of a GW is changed. This capability enables the operating company to find unequipped lines (HASU–Hardware Assigned, Software Unassigned) on existing equipment in order to use it to assign new service.

Value

Simplifies and accelerates the process of provisioning third-party gateways on the CS2000 GWC.

Technical reference

00007072

Optional Software Order Codes:

UASM0001   Universal Audio Server EMS

2.4.4   Server Platform Foundation Software Order Codes

Base Software Order Codes:

SPFS0080   Server Platform Foundation Software

CAPABILITIES AND VALUE

Missing Patches Robustness

This feature introduces enhancements to the Network Patch Manager (NPM) automated patching system, which coordinates the distribution and application of software updates. These enhancements ensure that an office remains patch current.

Using the NPM GUI, missing patches can be automatically identified and delivered to the NPM. For patches that affect the CS2000 GWC and MG9000:

• Immediate device audits can be carried out if cards are reloaded
• Missing R-status patches can be applied automatically

Value

Provides an improved user interface to the software patching system and ensures that the office remains patch current.

Technical reference

00006901

LCS00019   AdventNet SNMP V3 Platform 3rd Party License

LCS00020   ILOG JView Platform 3rd Party License

Optional Software Order Codes:

LCS00022   LCS High Availability SW

Succession Solaris Platform Foundation Service - High Availability Enhancement

This feature provides the following enhancements to the Succession Solaris Platform Foundation Service (SSPFS) High Availability (HA) framework:

- *Application Groups may have unique IP Address*:

  This allows for IEMS and CS2000 Management tools co-residency and provides a framework for future application co-residency.

- *Expanded HA API*:

  A complete set of C++ and command line tools for applications which need to interface with the HA framework, such as CBM and NPM.

- *Cluster Software upgrade*:

  A newer version of the cluster software from Continuous Computing Corporation is introduced. This provides enhanced "split-brain" resolution and memory mapped file handling required by SBA.

- *Enhanced Ethernet interface fail over*:

  This introduces Continuous Computing Corporation's UpLink product to provide faster Ethernet interface fail over on both simplex and HA cluster SSPFS system. On simplex systems, this removes the use of Solaris IP multi-pathing. Since Solaris IP multi-pathing required two test IP Addresses, the number of IP Addresses required by SSPFS is reduced.

- *Non-replicated application file systems*:

  This gives applications a new option to have their file systems not replicated by the HA software, required by the CBM applications.

- *Cluster state change notification to applications*:

  Applications may register to be called when a cluster state change occurs (such as a swact).

- *User option to disable cluster fail over*:

  A new option is added to the "cli" tool which allows users to disable cluster fail over (or swact) as needed.

Value

This feature provides greater control and flexibility of use for OAM&P applications configured in a cluster. Specific features also reduce administrative overheads associated with IP addresses.

Technical reference

00003618

TPNN0050   TPNN Uplink 3rd Party SW

Optional Order Codes:

2.4.5   MG9000 Element Manager NCL

9KEM0080   MG9000 Element Manager NCL

CAPABILITIES AND VALUE

MG9000 Mgr Capacity Increase

This feature increases the maximum number of H.248 native lines that MG9000 Manager can support from 55000 to 110,000. The maximum number of MG9000 network elements that can be supported is increased from 60 to 75.

The recovery time is also enhanced and the recovery of "leaf nodes" in the system has been simplified.

Value

This feature increases the maximum number of lines and network elements that MG9000 Manager can support.

Technical reference

00003074

MG9000 OC3 Channelisation Support from EM

This feature enhances Element Manager (EM) to enable the user to:

- View the channelised carrier (OC3) configuration
- Modify the administrative and configuration status of the OC3

This feature introduces new screen and modifications to the existing Graphical user Interface (GUI).

Value

This feature enhances the EM to provide better support for OC3 channelisation.

Technical reference

00003591

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

2.4.6   Nortel Media Gateway 3500 Element Manager

MG3E0080   Nortel Media Gateway 3500 EMS

NEW!

CAPABILITIES AND VALUE

Nortel Media Gateway 3500 EMS

NEW!

This feature provides Element Manager capabilities for the Nortel Media Gateway 3500.

2.4.7 Integrated Element Management System NCL

IEMS Base:

INEM0100   INEM IEMS Base (provided with IEMS0080)

CAPABILITIES AND VALUE

IEMS - Media Server 2010, 2020 Conf. Integration

NEW!

This feature provides an IEMS interface to configure the MS 2010 and MS 2020 Media Servers. This interface replaces the existing CLI available through Succession Element and Subnetwork Manager (SESM). The IEMS interface supports configuration of port assignments, language assignments, network time protocol and other parameters.

Value

Integrates media server configuration into the IEMS interface.

Technical reference

00007341

INFT0100   IEMS Fault Base (provided with INEM0100)

NEW!

CAPABILITIES AND VALUE

IEMS - CEM Integration into IEMS (Phase 2)

NEW!

The CEM (Core Element Manager) is the OAM&P element manager for the CS2000 Processor Complex (Core). This feature adds CEM fault management and performance measurement functionality to the IEMS. It provides an Active Alarm List for the Core and allows technicians to drill down to Core peripherals through IEMS for increased fault isolation.

Value

Integrates CEM fault and performance management into the IEMS interface.

Technical reference

00007302

INEM0200   INEM IEMS Base HA (High Availability)

CAPABILITIES AND VALUE

The IEMS Base, in conjunction with Web NMS 4.0, enables the integration of multiple element management systems (EMS) onto one unified platform. It is recommended that it be deployed on a high availability (HA) platform for improved availability.

Value

The IEMS provides a single interface for consolidating fault, performance, and security of a series of Network Elements (NE) and EMS.

DEPENDENCIES

The following order code is required for this functionality to be operational: CS2M0080

Hardware: Sun Netra 240

IEMS Fault Base:

INFT0010   **INFT Fault NB SCC2**

INFT0020   **INFT Fault NB Syslog**

INFT0030   **INFT Fault NB SNMP**

INFT0040   **INFT Fault NB NTSTD**

CAPABILITIES AND VALUE

A single fault viewer at the virtual switch level conveniently provides a centralized view of alarms and events for dozens of elements. The network provider has a choice of fault feeds for flexible OSS integration, including northbound traditional (NTSTD, SCC2) and next-generation (Syslog, SNMP) protocols. The SNMP interface will support SNMPv2c, SNMPv3 and SNMPv4 with USM/VACM encryption (configurable on a per connection basis).

Value

Integrated EMS fault management capabilities greatly simplify integration of VoIP solutions into the back office OSS system. The collective set of fault and alarm feeds within the VoIP solution are aggregated at the Integrated EMS and converted to a single customer-chosen northbound feed protocol. For maximum flexibility, the user may choose from two traditional voice-oriented protocols and two data-oriented standards. The Integrated EMS also reduces expenses by delivering a better operational fit. By reducing the number of northbound feeds, the service provider benefits from lower operational costs due to reduced integration requirements, fewer adapted licences to purchase, and less OAM on OSS ports. The network fault data is presented in a centralized viewer, providing convenient central-office based browsing of all VoIP network faults and alarms, resulting in operational efficiency by giving craft personnel fast, easy access to central office surveillance data.

DEPENDENCIES

The following order code is required for this functionality to be operational: INEM0100

IEMS Performance Base:

INPR0010   INPR Performance NB XML

INPR0020   INPR Performance NB CSV

CAPABILITIES AND VALUE

The Integrated EMS Performance Module enables the user to create templates, collect data, generate reports, and transfer data and report files from the supported EMS modules and NEs to the OSS. The EMS modules will still continue to collect performance data from their supported NEs and provide this data to the Integrated EMS at collection times configured by the user.

Integrated EMS offers a scheduler that allows data collection to take place at specified user-configured time intervals. Based on the time interval given, the scheduler schedules the data collection process. The scheduler can also schedule periodic reports to be generated. Based on the settings, the user can specify which report should be generated, when, and how often, and at the specified time, the report will be produced. The scheduler also allows the user to specify table cleanup and periodic table deletion.

Value

Integrating performance feeds from multiple EMSs can reduce operating costs for the network provider.

Files of multiple formats can be integrated into fewer files, and traditional comma separated value (CSV) and next-generation XML protocols are supported to enable integration with most performance systems. Performance thresholds can be set to predefined performance levels, thus determining severity levels that trigger alarms. Integrated EMS enables the network provider to customize performance reports. The system generates historical and current data. Reports can be fully customized, from data selection and how it is grouped, to how it is presented, in bar or line graph outputs.

DEPENDENCIES

The following order code is required for this functionality to be operational: INEM0100

IEMS Security Base:

INSC0010   Security Centralised Authentication (provided with IEMS0080)

INSC0030   Security Extended Authentication/ Authorisation

CAPABILITIES AND VALUE

The Integrated EMS client has a security management engine that has the capability to perform user authentication and fine-grain access control, as well as administration of these controls. The Authorization Engine handles access control for every user, performing basic authorization checks in the Integrated EMS. Other Integrated EMS FCPS modules - such as Topology, Faults, etc. - query the Authorization Engine for access verifications. Whenever a user requests permission to perform any operation, the request is passed to the Authorization Engine.

Value

The Integrated EMS is designed to seamlessly integrate with EMS modules using open-standards authentication mechanisms, streamlining system integration. Audit trails for user and group accounts help safeguard the network, and password protection reduces the need for craft personnel to re-enter login information each time they move to a different NE or EMS, while maintaining integrity of restricted access.

The security design of the Integrated EMS enables rapid integration of new Nortel Networks products as well as third-party elements. It fits easily into existing operations and eliminates the requirement for a commercial third-party security system.

DEPENDENCIES

The following order code is required for this functionality to be operational: INEM0100

IEMS0080   Integrated Element Management System NCL

CAPABILITIES AND VALUE

IEMS - Central Office Browsing and Launching Tools for OAM&P Applications

This feature introduces a Common Inventory data schema and helps to eliminate redundant data. The applications affected are: GWC Manager, UAS Manager, Alarm manager, Proxy Agent, Data Engine, Network View , Service Broker, Line Provisioning, Trunk Provisioning, LMM, Cs2kCfgMgr, V52CfgMgr ProfileManager and TMM.

It also generates Integrated Element Management (IEM) compliant customer logs.

Value

This feature optimises software and hardware resources with the introduction of IEMS to contain the overall solution cost.

Technical reference

00003371

Integrated Element Management System High Availability Support and Co-residency with Call Server 2000 Manager

This feature enables Integrated Element Management System (IEMS) to:

- Support High Availability (HA) on the Sun N240 hardware platform
- Co-reside with all Call Server 2000 Manager (CS2M) applications and Audio Provisioning Server (APS) on both the SUN T1400 and N240 hardware platforms

Value

This feature allows IEMS to be introduced to CS2000 solutions without impacting the hardware footprint.

Hardware requirements

When IEMS is deployed co-resident with CS2M, with or without APS, the hardware must be upgraded to 4G RAM.

Technical reference

00003666

IEMS - Centralised OAM&P Security Administration

This feature introduces the following Centralised OAM&P Security Administration functionality:

- Centralised Management and administration of OAM&P accounts
- Enhanced account administration features such as password aging, user groups profiles, etc.
- Centralised interfaces for applications to authenticate users
- Centralised interfaces for applications to obtain user group information
- Support for single-use single sign-on (SSO) tokens and time-to-live SSO tokens (to meet single sign-on requirements)
- Support for customers to use their own authentication, authorisation, and SSO solutions/databases.

Value

The Integrated Element Management System (IEMS) provides centralised OAM&P security administration, thereby avoiding the need for Administrators to access Network Elements (NEs), Element Managers (EMs) and local tools to administer user accounts.

Technical reference

00003912

MCS Fault and Performance Feed integration with IEMS

The Integrated Element Management System (IEMS) supports the Inventory/ Topology, Fault Collection, Performance Management, GUI/CLUI Launching and Configuration management.

The IEMS has interfaces to support these functionalities. These interfaces collect data that is propagated and make the necessary format conversion and propagate via the IEMS.

Value

The Integrated Element Management System (IEMS) provides a consolidated system for managing the entire Succession solution.

Technical reference

00003914

IEMS - Performance Phase 2 (Phase 2; Adding NEs, not Resourced in SN07)

NEW!

This feature adds Integrated Element Management System (IEMS) support for performance collection and reporting for the following Network Elements (NEs), not supported in releases before ISN08:

- CS2000 Core (XA-Core and Compact)
- Core Manager/CBM
- PVG (via MDM)
- GWCs (via GWC EM)
- UAS (via UAS Manager)

- MG9000 (via MG9000 EM)
- USP

Value

Provides much more comprehensive reporting of the performance of NEs via the IEMS.

Technical reference

00007388

Sync Backup & Recovery - IEMS

NEW!

This feature introduces an application on IEMS that coordinates the synchronized backup and restore of service data and software loads on related devices. Each backup represents the state of the devices at a particular time, and no changes are permitted to data or software on the affected devices during backup or restore.

Backups are stored locally on the device to allow for faster restoral, but can also be archived remotely to provide safe off-site storage in case of catastrophic conditions precluding restoral from a local copy.

Value

Permits backups to take place unattended at scheduled times and ensures that backup and restore of data and software is synchronised across all affected devices.

Technical reference

00006979

2.5   Universal Audio Server Software Order Codes

The Universal Audio Server (UAS) and associated Audio Provisioning Server (APS) is a highly scalable and configurable server platform utilising a conventional Windows NT/Intel computing server architecture, industry standard internal buses, standard external physical interfaces, and standard protocols for communication to the network.

The UAS provides the following capabilities:

- *Announcements*: Packetised announcements are provided to call parties in responses to CS2000 requests.

  Note: In general, tones are provided by gateways directly to the TDM-side trunks and lines, not by the UAS. However, tones can be recorded as announcements at the UAS and provided across the packet network; this is how tones used for Intelligent Networking (IN) are supported.

- *Conferencing*: Conference circuits for multi-party calls are provided across the packet network.

- *Lawful Interception*: Centralised Replicator (CR) functionality is provided for the Lawful Interception (LI) regulatory service, which allows packet network bearer connections to be monitored by a Law Enforcement Agency (LEA).

Note: The voice path interface for playing announcements, and collecting or recording caller responses, is 'universal' across IP, ATM and TDM fabrics. The ATM solution supports announcements (AAL2); the IP solution supports announcements, conferencing and lawful interception.

For a complete list of the additional hardware required to support the Conference, Announcement and Lawful Interception ports provided by the following order codes, please contact your Nortel representative. The number of ports supported on the hardware depends on the sample size, function and media type (ATM/IP). Please contact your Nortel representative for Engineering guidelines when provisioning this hardware.

CS2000 Universal Audio Server / Audio Provisioning requires the following order codes:

Base Software Order Codes:

UASA0080   Universal Audio Server NCL

UASB0006   UASB 3rd Party SNMPRI EMANAT

UASA0008: Order one per UAS module supplied.

UASB0006: Order one per UAS module supplied.

Optional Software Order Codes

UASF0001   UASF Announcement Feature

CAPABILITIES AND VALUE

Announcement Feature

The Announcement Feature allows prompts and announcements to be directed to the end user via the gateway under the control of CS2000. These standard announcements may be simple or composite if digit collection is not required, and can be tailored according to the associated Common Language Location Identifier (CLLI).

This order code includes 120 announcement port licences. One announcement requires one port. If more than 120 ports are required, extra ports are ordered via UASR0001.

Value

This feature can increase the user-friendliness of the system by the end user, and opens up many possibilities for voice-based services which generate additional revenue.

DEPENDENCIES

This order code requires that the Universal Audio Server be part of the network configuration.

UASF0002   UASF Conference Feature

CAPABILITIES AND VALUE

UASF Conference Feature

This feature enables the CS2000 to perform 3-way calling and 6-way calling on a packet network.

This order code includes 120 conference port licences. One 3-way call requires 3 ports. One 6-way call requires 6 ports. If more than 120 ports are required, extra ports are ordered via UASR0002.

Value

This feature increases the user-friendliness of the system and allows network operators to generate increased revenues from voice-based services.

DEPENDENCIES

The following order code is required for this functionality to be operational:

UASF0001 UASF Announcement Feature

UASF0003   UASF Bearer Channel Tandem

CAPABILITIES AND VALUE

UASF Bearer Channel Tandem

This feature provides a packet forking capability that enables a bearer path connection to be made to multiple destinations and is used to enable Lawful Intercept for Succession networks.

This order code includes 120 bearer channel tandem port licences. One facility for call monitoring requires four ports. If more than 120 ports are required, extra ports are ordered via UASR0002.

Value

This feature increases the user-friendliness of the system and allows network operators to generate increased revenues from voice-based services. This feature allows network operators to meet regulatory requirements.

DEPENDENCIES

The following order code is required for this functionality to be operational:

UASF0001 UASF Announcement Feature

UASR0001   UASR RightToUse Announcement

This order code reflects additional blocks of 24 announcement port licenses. It should be ordered in quantities representing the number of additional 24 port licence blocks.

UASR0002   UASR RightToUse Conference

This order code reflects additional blocks of 24 conference port licenses. It should be ordered in quantities representing the number of additional 24 port licence blocks.

UASR0003   UASR RightToUse Bearer Channel Tandem

This order code reflects additional blocks of 24 bearer channel tandem port licenses. It should be ordered in quantities representing the number of additional 24 port licence blocks.

2.6   Audio Provisioning Server Software Order Codes

The Universal Audio Server (UAS) is deployed in clusters. Each UAS cluster consists of two or more UAS units and one Audio Provisioning Server (APS). The APS is another element manager within IEMS. It resides on a Sun Netra t1400 and hosts the audio database. An audio provisioning web server also resides on the APS. For a complete list of the additional hardware required to support this platform, please contact to your Nortel representative.

Base Software Order Codes:

APS00100   Audio Provisioning Server NCL

2.7   Global Server Software Order Codes

The Global Server Software NCL provides platform software for the Universal Audio Server.
Base Software Order Codes:

GSS00033   Global Server SW Rel 3.3 NCL

GSSB0002   GSSB 3rdparty MS Win2K OS

GSSB0003   GSSB (3p) MSWin2K Res kit

GSSB0004   GSSB Win Term Srvs Client

GSSB0006   GSSB Ghost Enterprise SW

UASB0003   UASB 3rdpty MS UNIX Svcs

UASB0010   UASB 3rd party MS DOS 6 2

2.8 Universal Signalling Point (USP) PCL

The USP performs the following functions:

- Encapsulates and routes SS7 ISUP and SCCP messages over an IP network to an Application Server (AS) using the SIGTRAN protocols M3UA over SCTP
- Routes received IP encapsulated ISUP and SCCP messages from an Application Server (AS) (via M3UA/SCTP) to an SS7 Network

Base Software Order Codes:

USP00100   Universal Signalling Point Server NCL

USP00701   Basic Universal Signalling Point

SSAS0001   SSAS Basic Platform

SSAS0002   Basic OAM&P Software

CAPABILITIES AND VALUE

USP Java GUI introduction to Succession

This feature replaces the existing Universal Signalling Point (USP) Graphical User Interface (GUI) with a Java compiled client GUI that connects to the USP via an Secure Shell (SSH) proxy on the Succession Solaris Platform Foundation Service (SSPFS).

Instead of installing the GUI on a local desktop or on a reach-through PC running Citrix Metaframe, the GUI is installed on a central webserver and launched via Java Web Start.

Value

By exploiting the multi-platform support of Java 2 technology, this feature enables the introduction of a cross-platform GUI.

Technical reference

00004020

Universal Signalling Point Interface Client - GUI

This feature provide a graphical user interface (GUI) capable of running on multiple operating system platforms in a windows based environment. The GUI provides a complete multi-platform solution for managing the operation of the Universal Signalling Point (USP) by providing an intuitive user interface client to perform administration, system monitoring and reporting. The GUI client implements a consistent interface model to present all USP data to ensure ease-of-use and quick navigation of the data retrieved from the USP.

Value

This feature provides a complete multi-platform GUI solution that expands upon the functionality and usability provided by the previous GUI version.

Technical reference
00005029

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

Optional Software Order Codes:

SSAS0004   IP High Speed Link

CAPABILITIES AND VALUE

SS7 IP High Speed Link

This function enables the Signalling Transfer Point (STP) to provide reliable SS7 Links over IP networks for both ANSI and ITU-based networks. The function allows customers to operate an STP in both the PSTN and IP domains. An STP can provision a maximum of 32 High Speed Links (HSLs) or a combination of ATM HSL and SS7 IP links.

The SS7 IP feature offers the following functionalities:

- 10/100 Base-T Ethernet interface
- SCCP/MTP3/M2PA/SCTP/IP/Ethernet protocol stack
- Capacity equivalent to eight DS0A/V.35 links at 25 byte MTP Signalling Units (MSUs)
- Up to eight SS7 IP Link system nodes per shelf, or in combination with ATM HSLs

DEPENDENCIES

There following order codes are required for this functionality to be operational:

BSTP0711, Basic STP Software - USP7.0

SSAS0001, Basic Platform

SSAS0002, Basic OAM&P Software

USP00701, Basic Universal Signalling Point Software

SSAS0005   SSOMs

CAPABILITIES AND VALUE

Special Study OMs

Special Study OMs (SSOMs) provide measurement reports that determine traffic flows between nodes in the SS7 network.

Traffic flow reports can be used to troubleshoot SS7 network problems.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

SSAS0007   GUI Workstation

CAPABILITIES AND VALUE

GUI Workstation

The OAM&P workstation provides the user console of the USP. From the OAM&P workstation, the user can perform OAM&P tasks such as managing the CAM shelf and configuring the USP functionality. The user-access hardware component consists of a personal computer, a remote access server (RAS), and Ethernet hubs. An OAM&P workstation is provided as part of the base system. This order code allows customers to purchase additional workstations.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

Optional Software Order Codes:

SSAS0011   Routeset 256 to 511

SSAS0012   Routeset 512 to 767

SSAS0013   Routeset 768 to 1023

SSAS0014   Routeset 1024 to 1279

SSAS0015   Routeset 1280 to 1535

SSAS0016   Routeset 1536 to 1791

SSAS0017   Routeset 1792 to 2047

SSAS0018   Routeset 2048 to 4000

Each routeset is composed of logically associated linkset serving as possible routes for each signalling point in the network. The maximum number of routesets entries supported in the basic software package is 256. The maximum number of routesets can be extended to 4,000 through optional software packages.

Other Optional Software Order Codes:

SSAS0019   ITU & China HSL

SSAS0021   OSS Electronic CLI

BSTP0711   Basic STP

USP00703   Route Master Mediation

USP00100   SN08 USP NCL   NEW!

CAPABILITIES AND VALUE

USP/USPc: Log Delivery Stream to IEMS   NEW!

In releases prior to ISN08, the Universal Signalling Point (USP) maintained logs of significant events, but these were not available via the Integrated Element Management System (IEMS). This feature enables data from the following logs to be transmitted to the IEMS:

- Security logs, which include events related to the security subsystems including user authentication, authorization and administration activities and other security related events. Security logs are meant to alert the security administrators of symptoms of security attacks or improper use or configuration of the security features.

- Audit logs, which include all recorded user-initiated events including login / logout, maintenance, configuration, software management and other operations related activities.

Value

Allows users to access USP log information via the IEMS.

Technical reference

00007359

2.9 Compact USP NCL

The Compact USP NCL supports the signalling functions for a CS2000-Compact configuration.

Base Software Order Codes:

USPL0701   USP Basic USP

SSAS0001   SSAS Basic Platform

SSAS0002   SSAS Basic OAMP Software

USPL0100   SN08 USPc NCL   NEW!

CAPABILITIES AND VALUE

USP/USPc: Log Delivery Stream to IEMS   NEW!

In releases prior to ISN08, the Universal Signalling Point (USP) maintained logs of significant events, but these were not available via the Integrated Element Management System (IEMS). This feature enables data from the following logs to be transmitted to the IEMS:

- Security logs, which include events related to the security subsystems including user authentication, authorization and administration activities and other security related events. Security logs are meant to alert the security administrators of symptoms of security attacks or improper use or configuration of the security features.

- Audit logs, which include all recorded user-initiated events including login / logout, maintenance, configuration, software management and other operations related activities.

Value

Allows users to access USP log information via the IEMS.

Technical reference

00007359

2.10   Other Media Gateway Software Order Codes

Depending on the specific CS2000 Solution delivered, one or more of the following Gateway Software Loads is required in addition to the CS2000 PCL and Gateway Controller/SAM/CS2000 Network Manager/Universal Audio Server NCLs:

2.10.1 PVG7K Software

Passport PVG7K (Packet Voice Gateway) is a high-density packet telephony gateway optimised for bridging the traditional Public Switched Telephone Networks (PSTNs) with emerging packet (IP/ATM) data networks. Passport PVG7K enables voice and data convergence in parallel with an extensive set of data services, including ATM, IP, frame relay, and circuit emulation services.

As a Multi-Service Gateway for a small- to mid-density application, the PVG7K interfaces between standard narrowband circuit-switched trunks and the data packet backbone.

The PVG7K consolidates telephony and data traffic to simplify the network and help constrain ongoing operating costs.

In addition to the PVG7K software, IEMS Multiservice Data Manager (SMDM) and Device Adaptor (PMDM-DA) software is required for PVG7K element management.

Note: Unlike the CS2000 PCL, which needs to be ordered separately, the appropriate gateway software is delivered as standard whenever the corresponding gateway hardware is ordered.

2.10.2 PVG15K Software

The Passport PVG15K offers higher traffic densities in less space (over 43,000 voice channels per frame) than the Passport PVG7K to deliver high-capacity services closer to subscribers.

In addition to the PVG15K software, IEMS Multiservice Data Manager (SMDM) and Device Adaptor (PMDM-DA) software is required for PVG15K element management.

Note: Unlike the CS2000 PCL, which needs to be ordered separately, the appropriate gateway software is delivered as standard whenever the corresponding gateway hardware is ordered.

Note: The features described in the preceding section, PVG7K Software, also apply to PVG15K software.

2.10.3 Analogue Station Gateway

An analogue station gateway consists of a gateway software load one of the following platforms:

- Mediatrix 24 port (1124)
- ASKEY 4 port (RT 132V)
- ASKEY 12 port (RT 132V)
- Ambit 32 port IAD

Specifically, it supports access to an IP backbone network for analogue subscriber lines.

Customers are responsible for ordering these software loads directly from the manufacturer. Please contact your Nortel representative for the ISN08 compatible software version.

2.10.4 MG9000 Media Gateway

The MG9000 high-capacity line media gateway supports two types of termination:

- Analogue subscriber lines
- Asymmetrical Digital Subscriber Lines (ADSL)

CS2000 Gateway Controllers (GWCs) use the H.248 device/media protocol to control MG9000 operation. The MG9000 supports both voice and data access to packet network, and can support ADSL broadband and Plain Ordinary Telephone Service (POTS) narrowband services simultaneously.

- The maximum number of POTS lines in a single ATM MG9000 node is 8064. If MTAs are required for line testing, the maximum number is 7936 POTS lines.
- For IP MG9000, the maximum number of POTS lines in a single node is 6016. If MTAs are required for line testing, the maximum number is 5920POTS lines.

MG9K0080   MG9000 NCL

CAPABILITIES AND VALUE

MG9000 Auto Imaging

Currently, after a new load is loaded into a Supercore OC3, ITX, ITP or DS1 device, each device must then be patched up to date. This process can take hours, days and some times months depending on the size of the office, the number of patches and the maintenance window.

This feature allows the customer to upgrade an MG9K Device, patch the device up to date, image the MG9K Device load with the patches applied and then upgrade the rest of the devices in the office with the imaged load.

This feature also supports automatic imaging so that after the upgrade, if more patches arrive at the site, the customer can continuously keep a stored, up to date, imaged load.

This feature introduces MG9K device imaging from the following applications:

- MG9K Element Manager (MG9K EM)
- Network Patch Manager (NPM)

The MG9K EM provides an interface for the user to image one MG9K Device at a time. The NPM provides a mechanism for the user to image a device via a maintenance command through the NPM user interfaces as well as schedule an imaging task through the NPM scheduler.

A new Information log indicates the success or failure of an image while a new Audit log indicates user access of the image command.

Value

This feature enables the imaging of a Media Gateway 9000 (MG9K) device load using the MG9K EM or NPM applications. This simplifies and speeds up the processes involved in the implementation and maintenance of new loads into Supercore OC3, ITX, ITP or DS1 devices.

Technical reference

00001893, 00001894

OC3 Channelised Support

This feature allows the Local Craft Interface (LCI) user to:

- Provision the carrier in OC3 Channelised mode and assign DS-3 or STS1 Payload to the Channelised paths individually
- Lock/unlock the OC3 Section/Line and the three STS1 Path alarms individually, if the carrier is provisioned in OC3 mode
- View the three STS1 Path alarms and the DS3 Path alarms if the carrier is provisioned in OC3 mode

Value

This feature allows the user to provision the carrier (only for SONET - not for SDH) in Channelised mode.

Technical reference

00003604

Support for Internet Telephony Processor ITP

This feature introduces the MG9000 Internet Telephony Processor (ITP) card. The Product Equipment Codes (PEC) code for this card are:

ITP: NTNY30CA

- NTNY30CA

    — provides ITP with 1 DSP

    — can support 160 ATM calls or 160 IP G.711 calls

Note: G.729 is not supported in SN07 loads.

Value

The NTNY30CA can be configured to support either ATM or IP. Previously, ATM required the NTNY30AB card, while IP required the NTNY30BA.

Technical reference

00003774

Supporting the DS1-IMA network interface on a UA-IP MG9000

This feature supports the DS1-IMA network interface on a UA-IP MG9000. In the SN06 timeframe, to deliver UA-IP MG9000 DS1-IMA, an OC-3 UA-IP MG9000 is deployed that terminates on a Passport 7400. The Passport 7400 provides the DS1-IMA interface that connects the MG9000 to a Passport 15000.

Value

This feature addresses a need to provide a DS1-MA network interface on a UA-IP MG9000. This feature provides significant cost savings by eliminating the need for a Passport 7400.

Technical reference

00004960

MG9000 Electrically Programmable Device Loader

This feature introduces a new application, the MG9000 EPLD Loader (MEL), which loads newer firmware versions on the targeted devices as a result of a power-up or card reset. MEL implements In Circuit Programming (ICP) of the Electrically Programmable Logic Devices (EPLD) on the MG9000 via the Joint Test Action Group (JTAG) interface. The Lattice semi-conductor parts, FUDD and ELMER, are the first devices that can be loaded in this way. Previously, re-programming of these parts on the NG9000 meant that the affected cards had to be removed from the shelf and set in the new firmware to be reloaded.

Value

This feature allows new firmware to be applied along with a new MG9000 load.

Technical reference

00003775

New Virtual Media Gateway (VMG) Out of Service Alarms

This feature supports the following new Megaco fault types:

- vmgAdminStatusOutOfService
- vmgInitializing
- vmgOOSCardLocked
- vmgOOSCardDisabled
- vmgOOSLineMtcNotReady
- vmgOOSMegacoMtcNotReady
- vmgOOSGWCUnreachable
- vmgOOSNoReplyFromGWC
- vmgOOSAAL1BearerOnRepairNotReady
- vmgOOSIPBearerOnRepairNotReady

The Alarms are displayed by the MG9000 EM Alarm Browser.

Some faults have a severity of WARNING. These faults are raised for issues that are most likely caused by user intervention, for example locking cards, setting the VMG administrative state to Out of Service and restarting cards.

The other faults assume that there is a problem preventing the VMG from going into service and have a severity of CRITICAL, as for existing VMG300 faults.

Value

This feature introduces new VMG alarms to give the craftperson a better insight into why the VMG is out of service.

Technical reference

00005016

MG9000 Russian Market Fit

This feature enhances MG9000 LineAgent to meet the needs of the Russian market.

Some Russian market requirements do not operate with the Call Processing Finite State Machines (Callp FSMs). For example, the range of values for a valid flash interferes with dial pulse digit collection. This feature modifies the internal workings of the Callp FSMs to allow per market values to be set and function ubiquitously. These market values are based on the country code.

Value

Dial pulse penetration of the Russian market is expected to be upwards of 99%. This feature enhances the MG9000 to meet the requirements of the Russian market.

Technical reference

00005282

MG9000 IP - SIP Interworking

NEW!

This feature provides IP versions of the MG9000 line media gateway with the capability to interwork with SIP clients supported off the CS2000 Nortel General-purpose Session Server (NGSS).

Value

Allows network operators to better meet subscriber requirements by enhancing interoperability.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

MG900001   MG9000 Base

CAPABILITIES AND VALUE

MG9000 CPR: FITS: Improved In-Service Fault Detection

NEW!

This feature enhances the MG9000's in-service hardware fault detection capability.

Value

Improved fault detection and reduction in outages.

Technical reference

00007527

MG9000 CPR: Fault Detection and Recovery: Callp/Mtc Fault Linkages

NEW!

This feature enhances the linkage between CallP and the maintenance subsystem of the MG9000 so that the appropriate maintenance actions can be taken on CallP failures.

Value

Improved reporting of MG9000 CallP failures and reduction in outages.

Technical reference

00007115

MG9000 GigE Network Interface

This feature introduces a new SuperCore card for the MG9000 that supports a Gigabit Ethernet (GigE) interface providing GigE ports for IP connectivity to the packet network. SuperCore cards are provisioned in 1+1 hot-swappable pairs to provide GigE link redundancy.

Value

The GigE Interface offers greater capacity, higher efficiency, and increased cost-effectiveness over the existing MG9000 IP Network Interface.

Technical reference

00006865

MG9000 SN08 Clock Sync Enhancements

This feature gives the GigE interface card the ability to support international timing interfaces (2048 kbit/s) as specified in ITU-T Recommendation G703, Clause 13.

Value

Enables the GigE Interface card to support the international standard 2048 kbit/s interface.

Technical reference

00006906

MG9000 GigE Link Maintenance

This feature provides the following functionality in support of the GigE interface described above:

- The interface for the MG9000 Local Craft Interface (LCI) and EM to provision and configure the GigE links
- The logic to maintain the GigE links, including handling the switching (via a SWACT) to the second link if the first fails
- Raising alarms and supporting performance monitoring

Value

Provides resiliance and supports provision and configuring for the GigE Interface.

Technical reference

00007074

MG9000 LCI for GigE

This feature provides the following enhancements to the MG9000 Local Craft Interface (LCI) in support of the GiGE interface described above:

- Provisioning, controls, status and test for the GigE link
- VLAN provisioning, shaping and prioritising
- Display of GigE alarms
- IP-Tools (Ping and Trace-route)

Value

Enhances Mg9000 LCI to support the GigE Interface.

Technical reference

00007263

MG9000 5/30 Minute OMs

This feature enables the MG9000 to provide Operational Measurements (OMs) to the MG9000 Element Manager at 5 and 30 minute intervals as well as the pre-ISN08 interval of 15 minutes.

Value

Provides greater flexibility in the provision of OMs by the MG9000.

Technical reference

A00007107

MG900002   MG9000 Emergency Stand Alone Functionality

CAPABILITIES AND VALUE

MG9000 Internodal ESA

Emergency Stand Alone (ESA) is a capability that allows for a remote switching element to continue call processing when connectivity to the controlling host switch is lost. In particular, ESA ensures that emergency calls will complete and that local calls can be dialled using the existing dialling plan.

Intranodal ESA was supported by the MG9000 in releases prior to ISN08, and this enables calls to be made between Virtual Media Gateways (VMG) within the same MG9000 node. This feature introduces support for Internodal ESA for the MG9000 product, which enables calls to be made between a limited number of MG9000 nodes (termed a "Community of Interest") when connectivity to their controlling CS2000 has been lost. The Community of Interest can support a significantly greater number of lines than a single MG9000 in intranodal ESA.

The MG9000 nodes forming a Community of Interest must have access to the same LAN Switch (a Packet Voice Gateway such as the Passport PP15000) in order for Internodal ESA calls to complete.

Value

This feature enhances the ability of VoIP networks to continue with some call processing when connectivity to the controlling CS2000 has been lost by enabling internodal calls to be made between different MG9000 media gateways.

Technical reference

00006894

MG9E0001   MG9000 Element Manager

CAPABILITIES AND VALUE

MG9000 Upgrade Tool CLUI

In releases prior to ISN08, upgrading MG9000 GW cards was performed manually via the MG9000 EM GUI (Graphical User Interace). This feature makes the same capability available via a secure Command Line Interface (CLI) so it can be automated via a central upgrade manager application.

Value

Automating the process of upgrading MG9000s considerably reduces the time and degree of manual intervention required.

Technical reference

00007140

Deserialise MG9000 EM Patching

This feature removes internal limitations on the MG9000 EM that made the process of patching inefficient.

Value

Simpifies and speeds up MG9000 EM patching.

Technical reference

00006957

Sync Backup & Recovery - IEMS

This feature introduces an application on IEMS that coordinates the synchronized backup and restore of service data and software loads on related devices. Each backup represents the state of the devices at a particular time, and no changes are permitted to data or software on the affected devices during backup or restore.

Backups are stored locally on the device to allow for faster restoral, but can also be archived remotely to provide safe off-site storage in case of catastrophic conditions precluding restoral from a local copy.

Value

Permits backups to take place unattended at scheduled times and ensures that backup and restore of data and software is synchronised across all affected devices.

Technical reference

00006979

Sync Backup & Recovery - (MG9KEM, CS2M)

This feature introduces an application on IEMS that coordinates the synchronized backup and restore of service data and software loads on the CS2000 Management Tools (CMT) server. Each backup represents the state of the devices at a particular time, and no changes are permitted to data or software on the affected devices during backup or restore.

Backups are stored locally on the device to allow for faster restoral, but can also be archived remotely to provide safe off-site storage in case of catastrophic conditions precluding restoral from a local copy.

Value

Permits backups to take place unattended at scheduled times and ensures that backup and restore of data and software is synchronised across all affected devices.

Technical reference

00006979

MG9000 Internodal ESA Element Manager

NEW!

Emergency Stand Alone (ESA) is a capability that allows for a remote switching element to continue call processing when connectivity to the controlling host switch is lost. In particular, ESA ensures that emergency calls will complete and that local calls can be dialled using the existing dialling plan.

Internodal ESA on the MG9000 product enables calls to be made between a limited number of MG9000 nodes (termed a "Community of Interest" – COI) when connectivity to their controlling CS2000 has been lost. This feature introduces the MG9000 Internodal ESA Element Manager, which provides COI provisioning facilities. Each required COI is configured using the IP addresses of its member nodes and Virtual Media Gateways (VMGs). Once a COI has been defined, the EM then provisions each node in the COI with the address data, enabling them to communicate with each other.

Note that the EM must be used to provision COIs; no default COI is provided.

Value

Provisions MG9000 media gateways as part of a Community of Interest to enable internodal ESA.

Technical reference

00007415

MG9000 GigE Network Interface - EM Portion

NEW!

From ISN08, the MG9000 supports a new SuperCore card for a Gigabit Ethernet (GigE) interface for IP connectivity to the packet network. This feature enhances the MG9000 Element Manager to provide support for the new card, including provisioning and OMs. Supercore cards are provisioned in 1+1 hot-swappable pairs to provide GigE link redundancy.

Value

Provides EM functions in support of the GigE Interface card.

Technical reference

00007000

MG9000 5/30 Minute OMs

NEW!

This feature enables the user to change the intervals at which the MG9000 EM collects Operational Measurements (OMs).

The following combinations of sample and summary intervals can be selected:

- Sample and summary intervals of 5 and 30 minutes respectively.
- Sample interval of 15 minutes and no summary interval.

Value

Provides greater flexibility in the collection of OMs by the MG9000 EM.

Technical reference

A00007213

2.10.5 IW-SPM IP NCL

SIWI0080   IW-SPM IP NCL

CAPABILITIES AND VALUE

IW SPM Hybrid Office for GSP Int'l GW

Interworking to Spectrum Peripheral Module (IW SPM) (IP) is used in the hybrid environment as follows:

- Provides TDM to/from IP interworking
- DS512 connection to the ENET to give access to DMS peripherals
- RTP/UDP over 10/100 baseT over Ethernet to/from packet network

IW SPM supported services are

- 2016 simultaneous calls over G711
- Fax, modem support, G729a/b

The following key areas have been verified for each agent interworking type:

- Basic trunk interworking
- ECAN
- Soft Trunk to Dynamic Packet Trunk (DPT) interworking

Value

This feature verifies the GSP trunks - virtual looparound (soft trunk) - Succession trunks interworking with IW SPM in the GSP/ISN IWSPM hybrid environment.

Technical reference

00003501

NTLZ20CA Core Definition

This feature provides the software support for the new NTLZ20CA 1000bLX (1300 nm, single mode) w/ LC connector Product Equipment Codes (PEC) for the IP MG4000/IW Gigabit Ethernet Module (GEM) card.

Value

This feature introduces a new peccode to the existing list of supported PEC codes for MG4000 and Interworking - Spectrum Peripheral Modules (IW-SPMs).

Technical reference

00003672

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

2.10.6 Nortel Media Gateway 3200

AMG20080   Nortel Media Gateway 3200

CAPABILITIES AND VALUE

Nortel Media Gateway 3200

The Nortel Media Gateway 3200 is a small, cost effective Voice over IP (VoIP) gateway for connecting PSTN or PBX trunks to a packet network. It offers telecommunications service providers a rapid, reliable and cost effective entry into next generation networks.

The Media Gateway 3200 is a compact device that is scalable, with a range of 1 to 16 E1 or T1 spans for connecting TDM trunks to a packet network. It has standards based control and transport interfaces to ensure effective integration with existing networks and with new products and services. It is controlled through the H.248 protocol by the CS 2000 and CS 2000 - Compact. It is controlled through the SIP protocol by the Multimedia Control Server 5200 (MCS 5200).

Media Gateway 3200 element management is through an embedded web server with graphical user interface. It also support SNMP v2 for connection to a centralised element management system.

Value

The Nortel Media Gateway 3200 supports all Nortel Networks VoIP solutions: local, long distance, cable and wireless.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

2.10.7 Nortel Media Gateway 3500

MG350080   Nortel Media Gateway 3500

NEW!

NEW!

CAPABILITIES AND VALUE

Nortel Media Gateway 3500

The Nortel Media Gateway 3500 is a small, cost effective Voice over IP (VoIP) gateway for connecting PSTN or PBX trunks to a packet network. It offers telecommunications service providers a rapid, reliable and cost effective entry into next generation networks.

The Media Gateway 3500 is a compact device that is scalable, with a range of of 1, 2, 4, 8, or 16 TDM DS1 or E1 spans for connecting TDM trunks to a packet network via a 100BaseT Ethernet packet interface. It has standards based control and transport interfaces to ensure effective integration with existing networks and with new products and services. It is controlled through the H.248 protocol by the CS 2000 and CS 2000-Compact.

Media Gateway 3500 element management is through its own Element Management System (EMS) described in section 2.4.6 on page 159.

Value

The Nortel Media Gateway 3500 supports all Nortel Networks VoIP solutions: local, long distance, cable and wireless. Functionally it is equivalent to the MG 3200, but it has improved reliability and increased capacity.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

2.11   Next Generation Session Server Order Codes

NGSS0080   **Next Generation Session Server NCL**

NGSF0001   **Next Generation Session Server Shared FG**

NEW!

CAPABILITIES AND VALUE

TLS for SIP

NEW!

TLS (Transport Layer Security) is a security protocol that enables secure data transmission between two communicating applications over a non-secure packet network. This provides connection security with two properties:

- Privacy–Symmetric cryptography with secret keys is used for data encryption.
- Reliability–Message transport includes a message integrity check using a keyed Message Authentication Code (MAC).

With this feature, CS2000 session servers configured as SIP trunk gateways support TLS for securing SIP messages in peer-to-peer inter-CS communication. Support for TLS includes all *must* requirements in RFC3261 and RFC2246.

Value

Provides a high level of security for SIP messages over trunk gateways, even when an otherwise insecure connection is used.

Technical reference

00006893

Session Server Overflow Control

NEW!

This feature provides overload control for the Session Server by means of call shedding when CPU occupancy reaches certain thresholds, which are provisionable.

Value

Increased robustness for the Session Server platform.

Technical reference

00007270

NGSF0002   **Next Generation Session Server Trunk Gateway Software**

CAPABILITIES AND VALUE

SIP on NGSS Tracing/Debug Framework

This feature introduces the Session Initiation Protocol (SIP) on Next Generation Session Server (NGSS) Debug/Tracing stand alone tool. This tool controls the Radvision SIPT Toolkit log module and filters the internal NGSS traces that are written into the various tracing files. Note: The Radvision documentation uses the word "log" for an output from the RV SIPT Toolkit log module. Thus, for this feature, the words "log" and "trace" are synonymous.

This tool can be run in two modes:

- Simple Mode - straightforward tracing of SIP messages

- Prompt Mode - more sophisticated tracing using the following commands:

  — *set* the combination of modules/filters to be monitored/traced

  — *start* monitoring

  — *stop* monitoring

  — *status* (get a view of own session)

  — *users* (get an overall view of all users of this tool)

  — *help*

  — *display* (the status of SIP servers IP addresses)

  — *quit* own session

Value

This feature provides a tracing facility that is separate from the NGSS platform logging system. This feature is primarily targetted to Customer Support groups. Due to the impact of running the tracing session on the capacity of the field office, it should not be done on a regular basis or at high traffic levels.

Hardware requirements

Customer switches require the Session Server to deliver the functionality of this feature.

Technical reference

00003280

SIP Call Audits

This feature implements two audit areas:

- Gateway Controller (GWC) to Next Generation Session Server (NGSS)

  This audit verifies calls that exist in the GWC also exist in the NGSS. If any of these calls are found to exist only within the GWC, the call is taken down and associated resources are freed.

- The NGSS driven end-to-end CallP audit

  This audit verifies calls that exist in the NGSS are still alive and well in both the GWC and the far end server.

Value

This feature addresses the handling and recovery associated with the maintenance actions of Core, GWC and NGSS.

Technical reference

00003281

Nortel Carrier Grade Linux (NCGL) Platform Session Server

This feature introduces the Session Server, which consists of a Network Equipment-Building System (NEBS) Level 3 compliant hardware platform plus a software framework and architecture for developing Carrier Grade applications and services.

The architecture of Session Server consists of a mated pair of Services Application Module- eXtreme Thin Server (SAM-XTS) with a configuration similar to that of gateway controller. The units consists of an active and inactive unit. Each unit is in

reality a fully functional Session Server that is interconnected via a gigabit ethernet LAN. Each server provides processor capacity, local disk storage, and high-bandwidth network connectivity.

The Session Server can be configured to use the Integrated Element Manager System (IEMS) between the customer operation LAN and the Call Server 2000 LAN or it can be configured without the IEMS.

The SIP Gateway application is the initial application for the Session Server platform, with the intention to provide a reusable infrastructure that can support additional applications.

The Session Server software load packages the kernel and ram disk images using CDROM as the software delivery mechanism. Software installation and upgrades are as simple as inserting the CD into the drive and re-booting. The software installation procedure is done separately on a per Session Server unit.

Value

This feature introduces a highly available base platform for delivery of multiple applications.

Technical reference

00004005

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

SPC00001   Session Policy Controller

NEW!

CAPABILITIES AND VALUE

Session Policy Controller on NGSS Platform

NEW!

This feature introduces the Session Policy Controller (SPC) on the NGSS (Nortel General-purpose Session Server) software platform. The SPC monitors, controls, and enforces use of network resources, its main functions being policy control and management. At ISN08, the SPC is used to support network wide Virtual Call Admission Control (VCAC) for Carrier Hosted Services (see "Network Wide VCAC" on page 309).

Value

Provides a common platform for policy control and management applications such as VCAC.

Technical reference

00007393

2.12   AudioCodes Media Server 2010

MS200080   AudioCodes Media Server 2010 IP 7.0 Load

CAPABILITIES AND VALUE

Nortel Media Server 2000 Series

The Nortel Media Server 2000 Series is the announcement gateway for releases after ISN06.2. Basic services include instant conferencing and network announcements, media resource functions, and VoIP access lines. Enhanced services include Voice Mail, Messaging and Interactive Voice Response in deployments such as Voice VPN and IP Centrex.

Value

This feature introduces a highly available base platform for delivery of multiple applications.

Technical reference

00004005

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

2.13   RTP (Real-time Transport Protocol) Media Portal

RMPC0080   CS2K RTP Media Portal Software Model

RMPD0080   CS2K RTP Media Portal DSM Platform SW Model

RMPP0080   CS2K RTP Media Portal Third Party Applications

RMPF0080   CS2K RTP Media Portal Solaris 2.8 for N240

This order code is required if the Management Server and Database Server are installed on Netra N240 platform.

RMPT0080   CS2K RTP Media Portal Solaris 2.8 for T1400

This order code is required if the Management Server and Database Server are installed on the T1400 platform.

The Real-time Transport Protocol (RTP) Media Portal is an optional component of a solution that performs many media-layer functions. The RTP Media Portal addresses media plane specific issues with advanced service delivery, Internet addressing efficiencies, and system security.

The primary function of the RTP Media Portal is to extend the reach of multimedia services so that they are accessible to obscured endpoints, devices residing behind a firewall or Network Address and/or Port Translation (NAT and/or NAPT) device. Additionally, the RTP Media Portal functions as a media NAPT point that shields Private Network components from external exposure through leaks in the media streams.

The RTP Media Portal also enables elements in the Private Network safely communicate with elements in the Public Network. The RTP Media Portal provides IP address/port pair mapping between internal and external network components, as well as media anchoring and media pivot abilities for terminals.

2.14 Ethernet Routing Switch 8600 & Device Manager for Ethernet Routing Switch 8600

P86S0070 Ethernet Routing Switch 8600 and Device Manager for Ethernet Routing Switch 8600

CAPABILITIES AND VALUE

Ethernet Routing Switch 8600 and Device Manager for Ethernet Routing Switch 8600

The Communication Server 2000 LAN (CS LAN) is an Ethernet network based on the Ethernet Routing Switch 8600 switch / router. Physically, the CS LAN consists of direct Ethernet cable connections between ports on the Ethernet Routing Switch 8600 and ports on Communication Server 2000 hardware components.

To provide redundancy, each CS LAN has two Ethernet Routing Switch 8600s, configured using VRRP (Virtual Router Redundancy Protocol) and operating in load-sharing mode. A given Communication Server 2000 component such as a GWC is connected to both Ethernet Routing Switch 8600s, using one as its default router and the other as a backup. The dual Ethernet Routing Switch 8600 configuration routers provide all the necessary routing and Ethernet switching functionality for communication across the LAN.

The CS LAN not only supports intra-Communication Server 2000 communication, but also provides the interface between the CS LAN and the external managed IP or ATM network.

Device Manager

Device Manager is the element manager for the Ethernet Routing Switch 8600s on which the CS LAN is based. Device Manager is a real-time graphical SNMP tool. Because the software is Java-based, it can operate on a variety of operating system platforms including: Windows 95/98/NT, and UNIX variants, Sun Solaris, and HP-UX.Value.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

2.15 Nuera BTX-8, BTX-21 Gateways

Nuera BTX-8 Release 2.0.4.5

NEW!

Nuera BTX-21 Release 2.0.4.5

CAPABILITIES AND VALUE

NEW!

Nuera Gateway International Fit

This feature introduces CS2000 support for Nuera BTX-8 and BTX-21 trunk gateways, which are designed to support interconnection with the PSTN for VoIP solutions that support subscriber access by means of HFC cable access networks. They are compliant with the PacketCable™ specifications that define the network architecture and protocols to be used by such cable solutions. The BTX gateways support G.711 vocoders and auto-detection of fax and modem signals. Dynamic jitter buffers, adaptive echo cancellation, lost packet recovery, and DiffServ packet priority features enable the gateway to provide the highest quality service under the most demanding network conditions. MF tone detection and processing for E911 and operator services is supported on all voice ports.

The BTX interoperates with DOCSIS 1.1 CMTSs and MTAs which guarantee QoS over the cable plant using the DQOS specifications. The BTX-21 supports up to 68 T1 or E1 interfaces (up to 2040 voice ports). The BTX-8 supports up to 16 T1 or E1 interfaces.

Value

The Nuera BTX gateways offer a number of advantages in certain markets over existing gateways, including compact size and PacketCable compliance.

Technical reference

00007514

Chapter 3   Services

3.1   Virtual Private Network Software Order Codes

CS2000 supports the following VPN functionality:

VPNW0002   VPN over ETSI ISUP Support

This order code provides the base capability to implement Virtual Private Networks (VPN) with Lines and PBXs hosted on multiple CS2000s connected by ETSI ISUP trunks. The ETSI ISUP trunks may be TDM or SIP-T dynamic packet trunks and may be shared by multiple VPNs if desired. Each VPN may have its own private dialplan. Customer Group and Network Class Of Service (NCOS) information of subscribers is passed across the ETSI ISUP trunks (via the NETINFO capability) extending Centrex feature capabilities to calls between agents on different CS2000s i.e. "Networked Centrex".

CAPABILITIES AND VALUE

Networked ISDN VPN Support

This feature provides ETSI ISDN Virtual Private Network (VPN) functionality by allowing the ETSI ISUP V2 APplication transport Parameter (APP) to transport private information for:

- ETSI BRI (Point-to-Point)
- QSIG (Bearer call only)

This feature supports private numbering plans for ETSI PRI, ETSI BRI (Point-to-Point), and QSIG (Bearer call only). VPN functionality is also provided over a network with an ETSI ISUP V2 backbone.

VPN functionality is also provided over a network with an ETSI ISUP V2 backbone.

This feature supports the following capability:

- Private Numbering Plan
- Calling Line Identification Presentation (CLIP) (Public and Private)
- Transport of business group ID, private called party number, and private calling party number across the network using ETSI ISUP V2.
- Private calling numbers in the AMA billing record (module 026)

The following call types are supported for this feature:

- On-Net calls
- Off-Net calls
- Forced On-net
- Virtual On-net
- Direct Dialling In (DDI)

For VPN calls controlled by CS2000s, the following information must be transported over ETSI ISUP V2 if the information is available in the APP:

- private/public calling/called party number
- business group ID

- context identifier equal to PSS1 ASE (VPN)

Billing records are generated for all VPN calls. Information such as Type of Call and called private/public number is captured in billing records. This information allows downstream billing to charge VPN subscribers as such.

Value

This feature allows network operators to support ISDN VPN capability for all end user's sites, rather than a fragmented portion. This feature provides network operators with a competitive advantage over other operators that do not support VPN capability for all of these protocols. The billing enhancements provided by this feature, which allow the network operator to bill VPN subscribers as such, provide the network operator with the potential for greater revenue.

Technical reference

AJ5447

ISUP Backbone - Indirect Access Support (DISA, MONA, Account Codes)

This feature supports the following indirect access facilities:

- Direct Inward System Access (DISA). This allows a customer to dial a Free Phone number which is translated within the PSTN to the VPN access code and DISA Directory Number. This method of routing allows on-net calls (calls made by a VPN user to another user on the same VPN) to be made over off-net facilities when on-net facilities are not available.
- Meridian Off Net Access (MONA). This allows a call originator from outside a VPN to gain access to the network by dialling an authorisation code.
- Account Codes (also known as Cost Centre Codes). Account codes allow calls specified via subscriber dialling to be billed to account numbers. The account number appears in Station Message Detail Recording (SMDR).

This feature supports NETINFO interaction for Indirect Access calls, transporting NETINFO if it is present in the IAM on the first leg of a call, and populating and transport if it is not present on the first leg of a call.

This feature allows the name and number of DISA calls to be displayed using Calling Line Identifier (CLI) screening over ETSI ISUP QSIG Feature Transparency (QFT).

This feature also supports Call Forward Remote Activation (CFRA) over an ETSI ISUP backbone. CFRA allows the originator to call a DISA DN from a remote location and then, by means of an interactive announcement, activate Call Forward.

Value

This feature enables network operators to provide an enhanced Indirect Access service to their customers, thereby providing network operators with the potential for improved customer satisfaction and increased revenue.

Technical reference

59028079

DEPENDENCIES

The following order code is required for this functionality to be operational:

NSUP0003 ETSI ISUP V2 and variants

VPNW0003   VPN over ANSI7+

This order code provides the base capability to implement Virtual Private Networks (VPN) with Lines and PBXs hosted on multiple CS2000s connected by ANSI7+ trunks. The ETSI ISUP trunks may be TDM or SIP-T dynamic packet trunks and may be shared by multiple VPNs if desired. Each VPN may have its own private dialplan. Customer Group and Network Class Of Service (NCOS) information of subscribers is passed across the ANSI7+ trunks (via the NETINFO capability) extending Centrex feature capabilities to calls between agents on different CS2000s i.e. "Networked Centrex".

All network operators taking CS2000 software for the first time at release ISN05 and requiring IBN7 VPN services should use this order code which provides enhanced interworkings and functionality to the ISP70001 ANSI7+ order code.

In particular the ANSI ISUP+ NETINFO VPN Enhancements capability in this order code is strongly recommended to be used in preference to other NETINFO capabilities. This version of NETINFO support caters for more extensive agent types and services than the older NETINFO capabilities.

This order code allows network operators to introduce services spanning customer groups that are distributed across multiple CS2000s.

In a Networked Centrex environment, customer groups can be distributed across more than one CS2000, and internal calls can be placed on CCS7 trunks and retain their customer group identification using NETINFO parameter. The NETINFO parameter also allows multiple business groups to be supported on the same network using shared trunking.

This order code also enables Virtual Private Network (VPN) users, who share IBN7 trunks (enhanced ANSI ISUP signalling trunks with proprietary parameters), to select a private or a public Calling Line Identity (CLI) on a per call basis.

CAPABILITIES AND VALUE

ANSI7+ NETINFO and ANSI ISUP+ VPN Enhancements

This order code provides basic networking capabilities, including the following:

*   Supports NETINFO parameter generation for all outgoing ANSI-ISUP+ trunks, as opposed to certain originating calls.

    Note: This is the preferred VPN/NETINFO option as it supports the greatest number of originating agents and interworkings. Datafilling trunks to use this option is mutually exclusive with datafilling them to use the NETINFO option provided as part of ISP70001

*   Allows users on multiple CS2000s to be in the same customer group

*   Provides full support for indirectly connected customers to access the ANSI ISUP+ VPN network through various indirect access methods such as CLI screening, AuthCode, MONA/DISA, including support for Call Forwarding to the VPN for the CLI screening case.

Value
*   The major benefit to the end user is private network access and feature transparency over CCS7 facilities. Using public facilities, the network operator can offer private network access to end users who could not justify dedicated tie trunks. Also, leased private lines can be augmented by using public CCS7 facilities as an alternate route choice

- For the small or medium sized businesses that cannot currently justify tie trunks between exchanges, the NETINFO facility brings many advantages:

  — Extension dialling among all locations

  — Ability to distinguish between internal and external calls

  — Diallable Calling Number (displayed according to the end user's dialling plan)

  — Calling Name

  — Call Redirection Reason Display

  — Network Ring Again (NRA)

- Network features such as Network Class of Service (NCOS) are available and calls can be extended to PBX stations that do not have Direct Dial Inward (DDI) service

- The following gives a few examples of how features expand from intra-nodal to inter-nodal operation with VPNW0003:

  — Displays the directory number (DN) of calling and called parties from any network node

  — Supports NRA to allow an end user who encounters a busy station anywhere in his customer group, on any network node, to automatically call that station again

- This feature provides enhancements to the ANSI ISUP+ Virtual Private Network (VPN), to support access for indirectly connected customers to the VPN. This feature allows network operators to extend the VPN service to more customers, thereby providing network operators with the potential for increased revenue

Note: The Virtual Function Group (VFG) Call Routing Enhancements functionality of IXLS0003 is not supported by this version of ANSI ISUP+ NETINFO.

Technical reference

59024957

VPN Netwrk CLI Enhnt

Provides selection of private CLI or public CLI across shared ISUP trunks.

Value

Allows shared ISUP trunks for VPNs and for advanced feature access such as Voice Mail.

DEPENDENCIES

The following order codes are required for this functionality to be operational:

ISP70001 Base ISUP

VPNW0004   VPN QFT over ETSI ISUP

This order code enhances the Virtual Private Networks (VPN) capabilities of VPNW0002, *VPN over ETSI ISUP Support,* with the capability to support additional services on networked calls using QSIG service signaling. The QSIG service signaling is transported within ISUP

according to Q765.1 to request and action the services not supported by standard ETSI ISUP PSTN trunks and to provide supplementary "private network" information such as Name information.

These services are supported between QSIG PBX subscribers and/or CS2000 hosted Lines on different CS2000s connected with ETSI ISUP trunks.

CAPABILITIES AND VALUE

TCAP Support For QSIG FT

This feature provides QSIG Generic Function (GF) Feature Transparency (FT). This supports the transparent carriage of non-call associated information over a public network using TCAP.

This feature provides the following functionality:

- TCAP protocol handling and call processing for support of QSIG VPN non-bearer connection-oriented calls. For example, the transport of QSIG GF information such as supplementary service Call Completion to Busy Subscriber (CCBS), the VPN private number or vendor-specific signalling information within the Facility IE (Information Element) parameter
- Universal translation and table control enhancements
- Business Group Identification (BGID) provisioning and mapping to internal CS2000 customer groups

Value

By providing the FT mechanism for QSIG using TCAP, this feature eliminates the need for the network operator to establish dedicated QSIG trunks for each customer.

Technical reference

AF7185

ETSI ISUP V2 Support for QSIG FT

This feature implements the enhancements to ETSI ISUP to provide support for QSIG Generic Function Feature Transparency (QSIG GF FT) including support of the QSIG Generic Functional Protocol (QSIG GF). It supports the transparent carriage of call associated information over the network using ETSI ISUP V2.

This feature provides the following functionality:

- Adding new parameters, messages and timers for the Application Transport Mechanism to the protocol.
- Ability to segment, send, receive and re-assemble the new messages.
- Triggering the QSIG GF FT capabilities and responding to processing. Use of the Application Transport Mechanism for the carriage of QSIG information. Flexible triggering of this mechanism.
- Performing QSIG gateway and transit PINX functions.

Value

By providing the Feature Transparency (FT) mechanism for QSIG using ETSI ISUP V2, this feature eliminates the need for the network operator to establish dedicated QSIG trunks for each customer.

Technical reference

AJ4986

ISUP V2+ Enhancements for QFT

This feature enhances the ETSI ISUP V2+ QFT (QSIG Feature Transparency) mechanism on the CS2000. The APplication transport Mechanism - Application Service Element (APM-ASE) on the CS2000 supports the implementation of QFT, an APM-user application.

This feature provides the following enhancements:

- Minimises the call processing overhead for non-APM calls
- Enhances the APM-ASE implementation to consider the first 5 APplication transport Parameters (APPs) within an ISUP call control message. Previously, only the first APP was processed.

Value

By supporting QSIG feature transparency for APM applications, this feature allows network operators to increase their market share of PBX networking.

Technical reference

AU3293

QFT over ETSI ISUP V2

This feature validates the QSIG feature transparency (QFT) support on ETSI ISUP V2.

Value

By transporting QSIG signalling over ETSI ISUP V2, an operator using ETSI ISUP V2 for the network backbone can avoid the introduction of dedicated QSIG internode trunks. Therefore, the operator can make cost and efficiency savings by using this feature.

QSIG PBX users can take advantage of the features available on QSIG, a corporate signalling standard recognised internationally by a growing number of PBX manufacturers as the open standard for implementing fully featured private networks or virtual private networks (VPN).

Technical reference

59011110

ISUP Backbone - NETINFO Support

This feature provides the exchange of Network Information (NETINFO) on ETSI ISUP V2+(QFT) (QSIG Feature Transparency) trunks within a Virtual Private Network (VPN). Therefore it provides private call functionality across the customer groups within the same customer network. This is the equivalent to the NETINFO feature implemented on IBN7.

NETINFO transports the customer group identifier and the NCOS (Network Class Of Service), and triggers the private IBN translations in a VPN. The exchange of information is performed by the Application Transport Mechanism (APM).

NETINFO consists of the following:

- A party selection code

- Network Identifier (NETID)
- Network Customer Group Identifier (NETCGID)
- Network Class of Service (NCOS)

Value

This feature:

- Supports all the feature and services within a customer network that are currently supported by a QFT call within a single customer group.
- Provides private call functionality across the customer groups within the same customer network.

Therefore, this feature enables network operators to provide an additional service (NETINFO) to their customers, thereby providing network operators with the potential for improved customer satisfaction and increased revenue.

This functionality could be **dependent** on the dial plan method used (i.e. padded vs. open), and this will be verified during testing.

Technical reference

59023093

ISUP Backbone - QFT/NETINFO/DFT Support for UCD Termination

This feature supports ISUP backbone functionality when terminating to a Uniform Call Distribution (UCD) group. This feature provides the following functionalities:

- ETSI QFT support for calls terminating on a UCD agent
- NETINFO support for calls terminating on a UCD agent
- ETSI DFT support for calls terminating on a UCD agent

Value

This feature offers equivalent IBN7 network Centrex functionality over ETSI ISUP when terminating to a UCD group.

This feature enables replacement of the IBN7-based DFT service between DPNSS PBXs with an ETSI ISUP V2+ backbone, instead of provisioning parallel backbones, resulting in both hardware and OAM savings.

Technical reference

59028016

ISUP Backbone - Private Translation at Transit PINX

This feature supports:

- Private Integrated Network eXchange (PINX) functionality at the transit node
- Segmentation and reassembly at the Transit PINX
- The ability to process Application Protocol Data Units (APDUs) at the Transit PINX

If the Initial Address Message (IAM) from the originating PINX does not contain Network Information (NETINFO), the transit PINX adds NETINFO to the outgoing message. The information needed to construct NETINFO, Network Customer Group Identifier (NETCGID) and Network Class of Service (NCOS), is taken from the mapping between the table BGIDMAP and the BGID received in the IAM.

If the IAM already contains NETINFO, Private Translations (that is, translations using Private CDPN digits in IAM) are triggered at the transit PINX and the node behaves as a standard ETSI ISUP transit node. Also, for an ETSI ISUP QFT - ETSI ISUP QFT NETINFO call, NETINFO is removed from ACM/CPG messages at the Transit PINX.

Value

This feature provides complete Transit PINX functionality for an ETSI ISUP QFT - ETSI ISUP QFT. It supports important functionalities such as segmentation and reassembly, private translations and the ability to process APDUs at the transit PINX.

This feature enables network operators to provide an enhanced NETINFO service to their customers, thereby providing network operators with the potential for improved customer satisfaction and increased revenue.

Technical reference

59028096

ISUP Backbone - Call Forwarding

This feature provides a private call forwarding service over ETSI ISUP V2+(QFT) (QSIG Feature Transparency). It uses the public ETSI ISUP call forward service and customises it for the private user when the QFT option is set ON.

When the calling party calls the served party (owner of the service) and the call forwarding service is switched on, the call is redirected to a forwarded party. The following information is displayed at the calling party:

- Name and number of the forwarded party
- The call forward indication
- The served party number

The following is displayed at the forwarded party:

- Name and number of the calling party
- The call forward type (reason)
- The served party number

This private call forward service permits a served user to use the network to send all the calls, or a subset of them, to another party (forwarded party). The following three types of call forwarding are valid:

- Call Forward Universal (CFU)

  Enables the served user to have the Private Integrated Services Networking (PISN) service redirect the call to another user.

- Call Forward Busy (CFB)

  Enables the served user to have the PISN service redirect the call to another user when the served user's number is busy.

- Call Forward No Reply (CFNR)

- Enables the served user to have the PISN service redirect the call to another user when the served user's number remains unanswered for a specified period of time.

Value

Provides a private call forwarding service to redirect all calls to a third party, and/or specifically when the served user is busy or is not available to take the call. This feature enables network operators to provide an additional service to private network users, thus increasing customer satisfaction and providing an opportunity to increase revenue for the network operator.

This functionality could be **dependent** on the dial plan method used (i.e. padded vs. open), and this will be verified during testing.

Technical reference

59022911

ISUP Backbone - Call Offer

This feature provides Call Offer functionality on ETSI ISUP V2+(QFT) (QSIG Feature Transparency). This is the equivalent to the camp-on feature implemented on IBN7. (Camping-on is a situation where a call is queued to a called party.)

This feature is used when a calling party calls an operator (Electronic Business Set (EBS)), who then calls a called party. The called party can either be an EBS set or an IBN set. The call from the calling party to the operator can be over DPNSS, BTUP, IBN7, ETSI ISUP V2+ etc. The Call Offer feature can only be assigned to a set if 3WC (Three Way Calling) or CXR is assigned to that set.

When the calling party calls the operator and the called party has the call forwarding features 'Call Forward Busy' and 'Call Forward No Answer' implemented, then camp-on takes place. If Call Forward Universal is implemented, then the call will be forwarded to the called party and not camped-on.

There are two types of Call Offer supported when calls are made on a QFT trunk:

- Direct Call Camp-on
- Transferred Call Camp-on

The Call Offer maybe successful or unsuccessful. There are four methods of camped-on calls being accepted:

- Releasing an existing call
- Using Three Way Calling (3WC)
- Using hook flash
- Invoking Call Hold (CHD)

Value

This feature enables network operators to provide an additional service (Call Offer functionality) to their customers, thereby providing network operators with the potential for improved customer satisfaction and increased revenue.

This functionality could be **dependent** on the dial plan method used (i.e. padded vs. open), and this will be verified during testing.

Technical reference

59022994

ISUP Backbone - Recall

This feature provides camp-on recall and blind transfer recall over an ETSI ISUP V2+ (QFT trunk).

- Camp-on Recall

  After successful camp-on, recall is supported. The call is re-presented to the operator if the call is not answered within a specified time.

- Blind Transfer Recall

  Blind Transfer Recall re-presents a call to an operator if the operator has transferred it and the call is not answered within a specified time.

There are two configurations where these features are valid:

- Nodal - If the operator, which is an EBS plain set, and the called party are on the same CS2000.

- DNPSS/ISUP-DFT/IBN7 - If the operator, which is an EBS plain set, and the called party are on the different CS2000s but connected by DNPSS, ISUP-DFT, or IBN7.

Value

Provides camp-on recall and blind transfer recall over an ETSI ISUP V2+ (QFT trunk), thus increasing customer satisfaction in the marketplace and increasing potential revenue for network operators.

This functionality could be **dependent** on the dial plan method used (i.e. padded vs. open), and this will be verified during testing.

Technical reference

59023001

ISUP Backbone - Call Transfer

This feature provides Call Transfer functionality on ETSI ISUP V2+(QFT) (QSIG Feature Transparency) for END PINX. This is the equivalent to the Call Transfer feature implemented on IBN7. This feature supports the private name and number display of the calling party (User B) and the transferred-to party (User C) for calls transferred over ETSI ISUP V2+ trunks.

Call transfer enables a *served* user (User A) to transfer calls from User B to User C. User A may be either the called user or the calling user. Therefore, the two types of interactions are:

- User B calls User A
- User A calls User B

In either of these situations, User A links User B to a third user - User C.

This linking can be executed in either of the following ways:

- Blind transfer - User A puts User B on hold and calls User C. User B is then transferred to User C.

- Three Way Calling (3WC) - A three-way conference between Users A, B and C, is set up by User A. User A then drops out of the conference and User B is transferred to User C.

The following scenarios are valid for this feature:

- Basic Call Transfer
- Call Transfer to a ringing line
- Call Transfer to treatment
- Call Transfer to a line with Feature active
- Call Transfer to an ETSI ISUP V2+(QFT) trunk
- Call Transfer to a non-ETSI ISUP V2+(QFT) trunk

Value

This feature enables network operators to provide an additional service (Call Transfer) to their customers, thereby providing network operators with the potential for improved customer satisfaction and increased revenue.

This functionality could be **dependent** on the dial plan method used (i.e. padded vs. open), and this will be verified during testing.

Technical reference

59023180

Network Centrex over ETSI ISUP V2

This feature converts line Centrex information to QSIG Feature Transparency (QFT) information elements and QFT information elements back to Centrex information. This mechanism allows the network operator to define a Virtual Private Network (VPN) and offer Centrex features over an ETSI ISUP V2+ (ETSI ISUP V2 with QFT) trunk, instead of using an IBN7 trunk.

The following Centrex services are supported:

- Calling Name (including presentation/restriction information)
- Connected Name (including presentation/restriction information)
- Called Name (including presentation/restriction information)
- Calling Number (including presentation/restriction information)
- Connected Number (including presentation/restriction information)

Value

This feature allows network operators to support a VPN and QSIG or Centrex services over one signalling backbone, thereby reducing network and maintenance costs.

Technical reference

AJ5360

ETSI ISUP Backbone - Network Centrex

This feature allows ETSI ISUP V2 to transport the Serving Carrier information between CS2000s via the ETSI ISUP V2 backbone in the ETSI ISUP V2 Initial Address Message (IAM) and the Address Complete Message (ACM). It supports the following feature currently supported by IBN7 under feature AU2371: Serving Carrier ID (SCID).

This feature provides a means of associating a serving carrier with lines and trunks on CS2000. The serving carrier is defined as the carrier providing the service, thus for lines, the serving carrier is the telecommunications company providing service to those lines.

Value

This feature provides the serving carrier information required for billing purposes such that the serving carriers of the originating and terminating party are used to determine the billing rate. This feature thereby allows customers to bill according to the serving carriers associated with the originating and terminating parties.

This feature complements on going global market development of ETSI ISUP V2 by providing support for SCID.

This functionality could be **dependent** on the dial plan method used (i.e. padded vs. open), and this will be verified during testing.

Technical reference

59017323

Network Centrex over ETSI ISUP - Busy Name Display

This feature provides Busy Name Display on a Virtual Private Network (VPN). This service is supported for IBN and FeaturePhone lines, over an ETSI ISUP V2+ trunk, terminating to QSIG, FeaturePhone, and IBN agents.

Busy Name Display delivers the name of the called user, whose line is busy, to the calling user.

Value

This feature provides Busy Name Display for a Centrex group operating on various switches that are connected using ETSI CCS7. This feature provides network operators with an additional service to offer their Centrex customers on a VPN, thereby providing network operators with the potential for greater revenue and increased customer satisfaction.

Technical reference

59013135

DEPENDENCIES

The following order code is required for this functionality to be operational:

VPNW0002 VPN over ETSI ISUP Support

VPNW0007   VPN H.323

CAPABILITIES AND VALUE

This order code provides the base capability to implement Virtual Private Networks (VPN) consisting of lines off H.323 gateways hosted via H.323 gatekeeper functionality on the CS2000 as well as MGCP or H.248 controlled lines hosted directly off the CS2000.

The VPN can consist of multiple private Enterprise Networks, which are hosted off one or more CS2000s. Connectivity between Enterprise Networks hosted off separate CS2000s is provided by ETSI ISUP v2+ trunks with QSIG Feature Transparency (QFT) enabled. The VPN may have its own private dialplan.

As H.323 gateways the following equipment is supported:

- Nortel Business Communication Manager (BCM) 200/400
- Nortel CS1000 / Meridian 1000-M

As MGCP controlled lines involved in the VPN (and hosted off the CS2000) the following types are supported:

- Analog lines off Mediatrix 1104
- Standard IBN lines

As H.248 controlled lines involved in the VPN (and hosted off the CS2000) the following types are supported:

- Lines hosted off Centrex IP Client Manager (CICM)
- P-phones off the CS2000

DEPENDENCIES

The following order code is required for this functionality to be operational:

CS2B0004 H.323 Gatekeeper

VPNW0008   VPN DPNSS Feature Transparency

This order code provides the capability to connect DPNSS PBXs to the CS2K and implement a Carrier Hosted Virtual Private Network (VPN), for example, with DPNSS PBXs for large sites and CS2000 hosted IP or IAD Lines for small sites. An enhanced set of advanced end user Centrex type features is available on inter-site calls, using DPNSS signaling to network the services. The network may span multiple CS2000 Call Servers connected by ANSI7+ (SIP-T or TDM) trunks with the NORTEL DPNSS feature transparency capability.

CAPABILITIES AND VALUE

VPN DPNSS Feature Transparency

This order code provides the capability to connect DPNSS PBXs to the CS2K and provides a Carrier Hosted VPN service to the PBX. It also provides PBX/Centrex type features on networked calls between extensions on the PBXs and CS2K hosted Lines, using DPNSS networked feature signalling. The same level of service is provided for network calls between PBXs and Lines connected to different CS2K call servers.

This feature is only available in the International CS2K software load.

This capability uses a customer premise located Gateway which interfaces to TDM DPNSS trunks from the PBX and tunnels the DPNSS signalling over a H323 IP connection to the CS2K. The Gateway used is the Westell liQ2032.

The DPNSS signalling from the Westell H.323 DPNSS interface is tunnelled transparently by the CS2K to either:

- another DPNSS PBX connected to the CS2K via a Westell H.323 gateway or
- ANSI 7+(SIP-T or TDM) trunks supporting the Nortel proprietary DPNSS feature transparency capability (DFT).

The ANSI7+ (IBN7) trunks supporting the Nortel proprietary DPNSS feature transparency capability (DFT) can interwork to CICM or IAD hosted Centrex lines on the CS2000 with full DPNSS service transparency.

This tunnelling capability supports end to end transparency of DPNSS Real Calls (Basic Call Service & Call Associated Services (CAS)) and DPNSS Virtual Calls (Non-Call Associated Services (NCAS)) between the PBX and CS2K hosted Lines as if the intermediate H323 and IBN7 trunks were not present.

The following table shows the support status of DPNSS services on the CS2000:

DPNSS Supplementary Service	CS2000 Support Status		Order Code Required
	CS2000 as Transit Node	CS2000 as End Node	
Simple Call	Y	Y	PBXA0002
DPNSS - ANSI ISUP	Y	Y	PBXA0019
Data Call	N[1]	N	-
Swap	N[1]	N	-
Call Back When Free	Y	Y	PBXA0002
Executive Intrusion	Y	Y[0]	PBXA0004
Diversion	Y	Y	PBXA0002
Hold	Y	Y	PBXA0002
Three Party	Y	Y	PBXA0002
Call Offer	Y	Y	PBXA0002
NSI Strings (MWI)	Y	Y[2]	PBXA0008
Service Indicator Strings	Y	Y[3]	PBXA0002
Call Waiting	Y	Y[4]	PBXA0002
Bearer Service Selection	N[5]	N	-
Route Optimisation	Y	Y	PBXA0009
Extension Status	Y[i]	N	PBXA0002
Controlled Diversion	Y[i]	N	PBXA0002
Redirection	Y	N	PBXA0002
Series Call	y	N	PBXA0005
Three Party Takeover	Y[i]	N	PBXA0002
Night Service	y	N	PBXA0007
Centralised Operator	y	N	PBXA0002
Traffic Channel Maintenance	N	N	PBXA0002
Remote Alarm Reporting	Y[i]	N	PBXA0002
Add On Conference	Y[i]	N[9]	PBXA0002
Time Synchronisation	Y[i]	N	PBXA0002
Call Back Next Used	Y[i]	N	PBXA0002
Do Not Disturb	Y[i]	N[10]	PBXA0002
Remote Reg. Diversion	Y[i]	N	PBXA0002

Remote Reg. DND	Y[i]	N	PBXA0002
Priority Breakdown	Y[i]	N	PBXA0002
Call Back Messaging	Y[i]	N	PBXA0002
Loop Avoidance	N[11]	N	PBXA0002
Forced Release	Y[i]	N	PBXA0002
Text Message	Y[i]	N	PBXA0002
Charge Reporting	Y[i]	N	PBXA0002
Network Address Extension	Y[i]	N	PBXA0002
Call Park	Y[i]	N[12]	PBXA0002
Call Distribution	Y[i]	N[13]	PBXA0002
Route Capacity Control	Y[i]	N	PBXA0002
Wait on Busy	Y[i]	N	PBXA0002
Call Pick-up	Y[i]	N[14]	PBXA0002
Travelling Class of Service	Y[i]	N	PBXA0002
Number Presentation Restriction	Y[i]	N	PBXA0002
Non-Specified Information Message	n	N	PBXA0002

[0] Supported for Intruding & Unwanted parties on CS2000. Intrusion on a CS2000 hosted Line not yet supported.

[1] 64K clear channel data calls are not currently supported by the CS2000 implementation of DPNSS

[2] Nortel-specific NSI string supported for proprietary networked Message Waiting Indication service with Meridian Mail voice mail system.

[3] Supported only for busy information

[4] Works functionally but no DPNSS signalling at present and normal ring tone to caller.

[5] Supported for a trunk interworking node (gateway), e.g. ISUP to DPNSS.

[5] Signal is relayed but not acted on to ensure required bearer capability is obtained. Bearer capability requested may not be provided due to ECAN and/or compression codec.

[7] Supported via call diversion. Registration of Night Service number at originating node (CS2000) is not supported.

[8] Only mandatory services (Three Party, Call Offer, Redirection, Executive Intrusion, Busy Information) are supported, and only when CS2000 is not the operator position.

[9] Centrex 3/6 party conferencing provides equivalent capabilities without DPNSS signalling.

[10]Centrex DND provides equivalent capabilities without DPNSS signalling.

[11]Message passed on unchanged, so an extra PBX is transited before call is rejected.

[12]Centrex Call Park provides equivalent capabilities without DPNSS signalling.

[13]Centrex ACD/UCD provides equivalent capabilities without DPNSS signalling.

[14]Centrex Call Pickup provides equivalent capabilities without DPNSS signalling

[i] Service implicitly supported as a Transit via core DPNSS procedure to pass on unrecognized signalling information that does not need to be acted on.

Value

Allows the CS2000 operator to offer feature rich Carrier Hosted VPN service to private networks that are based on DPNSS network signalling

Technical reference

A00001965

DEPENDENCIES

The following order codes are required for this functionality to be operational:

VPNW0007, if providing nodal DPNSS feature Transparency for DPNSS PBXs connected via the Westell DPNSS Gateway on a single CS2000

VPNW0003, if providing networked DPNSS feature transparency between CS2000s over ANSI7+

DPNSS Supplementary Services require separate PBXA order codes as noted above.

VPNW0009   VPN MCDN Feature Transparency

This order code provides the capability to connect MCDN PBXs (S1000M or Business Communication Manager (BCM)) to the CS2K and implement a Carrier Hosted VPN network, for example, with PBXs for large sites and CS2000 hosted IP or IAD Lines for small sites. An enhanced set of advanced end user Centrex type features is available on inter-site calls, using MCDN signalling to network the services.

CAPABILITIES AND VALUE

International Support for MCDN Networked Services

This feature supports Meridian Customer Defined Network (MCDN) based service interworking between:

- 1000M or Business Communication Manager (BCM) (H.323 Gateways (GW)) on one call leg, and
- CICM (H.248 GW) or Mediatrix Integrated Access Device (IAD) (MGCP GW), on the other call leg

This feature implements the following subset of MCDN services that are supported on p-phone agents (via CICM) or IBN lines agents (via Mediatrix IAD) within a Virtual Private Network (VPN):

- Calling Number
- Called Number[1]
- Calling Name Delivery
- Call Forwarding (All Calls, Busy, and No Answer)
- Call Transfer

[1] Limitation on Called Number Delivery: In the software load of the BCM gateway, which this feature will be based upon, no functionality exists to transport the Original Called Number Information Element of H.323 call control messages in the non-private portion of the messages. Therefore, this functionality is not supported for the interworkings between Mediatrix and BCM gateways.

MCDN service interworking is supported for nodal calls where the originating and terminating GW is connected to the same Call Server (CS2000). MCDN service interworking is supported across multiple Call Servers via SIP-T (ETSI ISUP V2+ QFT). The following interworkings are supported:

- H.323 GW (BCM) <--> H.248 GW (CICM, P-phone)
- H.323 GW (BCM) <--> MGCP GW (Mediatrix, IBN lines)
- H.323 GW (S1000M) <--> H.248 GW (CICM, P-phone)
- H.323 GW (S1000M) <--> MGCP GW (Mediatrix, IBN lines)

Value

This feature allows the interconnection of MCDN-based PBXs with certain line gateways for use in networked VPNs.

Technical reference

00003626

DEPENDENCIES

The following order code is required for this functionality to be operational:

VPNW0007 VPN over H323

Digital Private Network Signalling System No. 1 (DPNSS)

The following PBXA order codes can be used along with order code VPNW0008 to provide DPNSS Feature Transparency on the CS2000:

PBXA0002   PBX DPNSS

Digital Private Network Signalling System No. 1 (DPNSS) is a UK common channel signalling system used for connection between Private Branch Exchanges (PBXs).

This order code covers the base DPNSS networked feature set supported on CS2000. It allows the CS2000 operator to create a multi-site VPN network with Digital PBXs for large sites and CS2000 hosted lines for small sites and provide consistent support for the supported features to all subscribers on the network for both nodal and inter-site calls.

Note: At present direct interworking of DPNSS trunks to lines is not supported by CS2000. The calls must be routed via an ANSI7+ looparound trunk with DPNSS Feature transparency enabled.

CAPABILITIES AND VALUE

DPNSS

This feature provides support for:

- DPNSS basic calls
- PSTN access to a DPNSS network using the DDI feature
- the following DPNSS supplementary services:

— Call Back When Free (CBWF)

— Call Offer

— Call Diversion

— Three Party Call, including Hold

— Redirection

This feature also provides interworking with DPNSS for Centrex lines and Calling Line Identity (CLI) display on display phones.

Value

- Enables different types of PBXs to communicate via a common peer-to-peer signalling system (DPNSS). A number of PBXs connected in this way can serve as a single large PBX Virtual Private Network (VPN), offering the same features and services to end users regardless of the type of PBX used

- Provides PBX VPN which retains end-to-end feature transparency for all existing PBXs in a DPNSS network, while benefiting from the economic advantages of VPN

- Flexible single pipe access provides:

  — Single physical access for private or public network calls

  — Dynamic allocation of channels giving flexibility of network design

  — Private or public network routing control held by network operator giving account control. Billing records take account of the routing of calls as VPN or PSTN calls to allow different charging rates/mechanisms

- Provides Hybrid VPN networking with Centrex

- Expands the network to include smaller sites using Centrex, where PBXs with DPNSS would be too expensive

DPNSS Diversion On No Reply Enhancement

This feature enhances the CS2000 switch support of Call Drop Back Diversion On No Reply. This feature operates in the following manner: Party A calls party B over Digital Private Network Signalling System (DPNSS) or IBN7 with DPNSS Feature Transparency (DFT). Party B is on a different switch than A, and has Drop Back Diversion On No Reply to Party C activated. When Party B diverts the call to Party C, this feature ensures that A connects with C only if C is free. Otherwise, the connection between A and B is retained. Prior to this feature the call would always be rerouted to C.

Value

This feature increases end-user satisfaction by improving the diversion functionality on the CS2000 switch. With this feature, diverted calls are not dropped until they are routed to an available destination.

Technical reference

AJ5066

DPNSS CBWF Interworking to MADNs

This feature enhances the CS2000 switch by enabling Multiple Appearance Directory Number (MADN) lines to use the Digital Private Network Signalling System (DPNSS) Call Back When Free (CBWF) feature.

Value

This feature improves the versatility of the CS2000 switch, and provides the network operator with the potential for greater revenue and increased customer satisfaction, by increasing the availability of the DPNSS CBWF feature.

Technical reference

AJ5403 59008430

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

PBXA0004   PBX DPNSS Exec Intrusion

This order code provides the DPNSS Executive Intrusion service. Executive Intrusion is a supplementary service which allows extension users who encounter a busy signal to join (or intrude upon) an established conversation.

CAPABILITIES AND VALUE

DPNSS Exec Intrusion

Executive Intrusion allows extension users who encounter a busy signal to join (or intrude upon) an established conversation. To activate the feature from an analogue set, the user presses the switch hook and enters an access code. The Featurephone user presses the dedicated Executive Busy Override feature key (when assigned).

This feature, enhances the existing Executive Intrusion functionality and extends the use of the Three Way Call/Conference feature on DPNSS. It allows a user on an established two party call to intrude upon another user by means of the Three Way Call/Conference feature, provided the wanted extension is also on an established two party call. The intruder party and the intruded party must be located on different CS2000 nodes. The intruder must have an Intrusion Capability Level greater than the intruded Intrusion Protection Level. The feature also supports intrusion without prior validation.

Limitation: In CS2000 it is not currently possible to Intrude upon a CS2000 line, only PBX lines.

Value

- **Increased end user satisfaction**. Allows extension users with high priority who encounter a busy signal to join (or intrude upon) an established conversation, eliminating the need to continually redial the directory number (DN).

- **Improved Virtual Private Network (VPN) offering**. Improves the network operator's Featured Hybrid VPN offering for end users who have a large number of call minutes and use the Three Way Call/Conference feature extensively.

Technical reference

AG5061

DEPENDENCIES

The following order code is required for this functionality to be operational:

PBXA0002 DPNSS

PBXA0008 PBX DPNSS Voice Mail Enhancements

This order code provides Message Waiting Indicator (MWI) over DPNSS and enhances the CS2000 handling of the incoming DPNSS calls routed to a Voice Message System (VMS) located on a PBX.

CAPABILITIES AND VALUE

DPNSS Voice Mail Enhancements

This capability allows a single Voice message system to provide voice mail service to all subscribers in a DPNSS VPN distributed across multiple CS2000s and DPNSS PBXs. The VMS is connected to a CS2000 via one or more DPNSS trunks. Networked Message Waiting Indication is implemented using a configurable DPNSS NSI string in a DPNSS virtual call. The NORTEL Meridian Mail VMS system is one example of a VMS that supports this interface.

Key features of this capability:

- Provides networked control of the MWI over DPNSS. MWI ON/OFF commands are sent from the VMS to the CS2000 in DPNSS virtual call messages. If the called party is located on the CS2000, the feature activates the MWI indications on the phone. If the called party is located remotely, the feature passes on the DPNSS MWI message

- Delivers the addresses for both the calling and forwarding parties to the VMS in the correct network format when depositing messages

- Delivers to the VMS the reason for a message being left, for example, a direct call, Call Forward Busy (CFB), Call Forward Unconditional (CFU), and so on

- Supports MWI in a DPNSS or DPNSS Feature Transparency (DFT) network

Value

Improved MWI performance

Allows a single VMS system to serve a DPNSS VPN distributed over multiple CS2000s. It allows the network operator to pass an address and call forward reason to the end user and provide MWI to all subscribers in the DPNSS VPN network.

Reverse Translations for MWI Over DPNSS

This feature allows the network operator to apply reverse translations to the redirecting party number at the ANSI ISUP+ (IBN7) to DPNSS interworking node. Reverse translations means the calling or redirecting subscriber's number is provided to the called subscriber in a diallable format. This is usually required for display purposes or for voice mail.

Value

This feature permits the network operator to support centralised Voice Mail Services (VMS) over a Virtual Private Network (VPN). When the network is configured to use public Calling Line Identity (CLI) over IBN7, this feature converts public CLIs to private CLIs at DPNSS terminations. This conversion allows the VMS, and hence the

Message Waiting Indicator (MWI), to function correctly for non-DPNSS Feature Transparency (DFT) networks. This feature enhances the service that the network operator can offer the end-user. It also allows the network operator to consolidate VMS equipment within the network.

Technical reference

AJ4917

DEPENDENCIES

The following order code is required for this functionality to be operational:

PBXA0002 DPNSS

PBXA0009   PBX DPNSS Route Optimisation

This order code provides DPNSS route optimisation.

The need for route optimisation arises when the called party diverts the call to another party located on a different CS2000 or PBX. The optimum route from the calling party to the redirected-to party may not be that taken by the diverted call. Route optimisation tries to establish a new call directly from the originator to the new destination and if successful switches the connection to the new call and drops the original call.

CAPABILITIES AND VALUE

DPNSS Route Optimisation - Terminating Node

- Enables the terminating CS2000 in a DPNSS call to set up route optimisation on a separate channel, when requested to do so by the originating node, as specified in BTNR188.

- Provides an indication in the Automatic Message Accounting (AMA) record produced for a route optimised call that the route was optimised, so that the reason for billing the terminating node is available.

- On CS2000, supports route optimisation only on DPNSS Feature Transparency (DFT) to Line terminations.

Value

This feature maximises trunking efficiency and eliminates tromboning (where a call might follow a lengthy route although a shorter one is available). It also provides the network operator with information about which calls took place on optimised routes.

DPNSS Route Optimisation - Originating Node

This feature provides Route OPtimisation (ROP) functionality for the originating node in a private network. Optimisation of the voice path is instigated by the originating node in the call. The path could require optimising due to:

- The call being established as a result of a call transfer

- The call being established after a conference reducing to two parties

- An alternate route was selected due to congestion in the primary route

For this feature, a private network includes both Private Branch eXchange (PBX) networks, and Virtual Private Networks (VPNs) provided by the CS2000 switch.

On CS2000 this feature is supported only for voice calls on Line to IBN7 DPNSS Feature Transparency (DFT) trunk originations.

Value

ROP ensures that the network is used efficiently, thereby reducing operating costs whilst maximizing call throughput for the network operator.

Technical reference

AJ5366

Transit DPNSS Route Optimisation Answer Indication

Transit DPNSS and DFT Route Optimised calls on CS2000 are always marked as answered irrespective of the setting of office parameter (TRANSIT_ROP_BILL_OPTN). This is appropriate since Route optimization is specified in BTNR188 to only take place after Answer.

Value

This feature allows the network operator to bill route optimised calls originating from a PBX where billing of calls from the PBX are performed by the CS2000.

Technical reference

A00005916, AG4940

DEPENDENCIES

The following order code is required for this functionality to be operational:

PBXA0002 DPNSS

PBXA0019   PBX DPNSS - ANSI ISUP

This order code provides direct interworking on CS2000 switches between trunks using ANSI ISUP+ (also known as IBN7) and trunks using DPNSS. For Featured and Hybrid VPNs, ANSI ISUP+ is required between all CS2000 nodes.

CAPABILITIES AND VALUE

DPNSS - ANSI ISUP

Provides direct interworking for basic calls on the CS2000 between trunks using ANSI ISUP+ and trunks using DPNSS, providing networked services such as Private Numbering Plan (PNP), 56/64 kbit/s data transfer and calling number display. Overlap working is provided where appropriate.

Value

Flexibility of network design. A single physical access for private network calls and dynamic allocation of channels for private and public network routing control provides flexibility of network design.

DEPENDENCIES

The following order codes are required for this functionality to be operational:

ISP70001 ISP7 Base ISUP

PBXA0002 DPNSS

3.2   Centrex IP Client Manager Gateway

CICM0080   Centrex IP Client Manager Gateway

CAPABILITIES AND VALUE

CICM Flow Through Provisioning, CICM Component

This feature provides support for the flow through of line and user provisioning data between the CS2000 Management tools OSSGate provisioning interface and the Centrex IP Client Manager (CICM) platform.

This feature supports the introduction of pre-provisioned lines (feature key data). The modelling of feature key settings for the CICM lines is modified such that feature key settings are stored against the relevant line, rather than any user provisioned against that line. The modelling of lines at the CS2000 Management tools, CS2000 and Gateway Controller (GWC) components is also updated by related features to introduce pre-provisioned line support for CICM.

These changes have the following functional implications:

- Line data fill always exists at the CS2000 Management tools, CS2000 and GWC platforms
- Feature key settings that are stored against the line, survive any operations resulting in the deletion or replacement of a user entity. This allows the CICM to remain in sync with the equivalent data fill present at the CS2000

Value

This feature removes the requirement for the duplication of provisioning requests targeted at the CICM platform in:

- the OSSGate interface

  and subsequently in:

- the CICM Element Manager.

This feature thereby reduces the complexity of the provisioning operation and correspondingly reduces the possibility of service mismatches due to human error.

This feature also provides the capability for CICM lines to be datafilled via 3rd party software which can provide End User and Enterprise Administrative control. This allows the telephone company to offload most, if not all, of its line and feature provisioning to a re-seller or enterprise and to some extent down to the user itself.

Technical reference

00003717

Centrex IP Client Manager i2001 User Interface support

Centrex IP Client Manager (CICM) currently supports Phase I i2002 and i2004 terminals. This feature enables CICM to support the i2001 Internet Telephone, which is a reduced functionality sibling of the i2002, with a smaller screen and fewer buttons.

CICM has also been enhanced to provides a common User Interface for the administration and configuration of thei2001, i2002 and i2004 terminals.

Value

This feature allows CICM to support the full range of i2001, i2002 and i2004 terminals with a common user interface.

Technical reference

00003951

Centrex IP Client Manager 3069 termination capacity

This feature provides both increased capacity and improved Return To Service (RTS) performance for the Centrex IP Client Manager (CICM) platform, as well as the GateWay Controller (GWC) changes required for CICM line and nodal flow through provisioning.

Value

This feature increases the capacity of the CICM to support around 3000 terminations.

Technical reference

00003952

CICM H.248 Call Control Signalling

This feature upgrades the H.248 protocol stack in the Centrex IP Client Manager (CICM) product, thereby enabling CICM support for the following features:

- Session Dependent Protocol (SDP) enhancements

  This allows the maximum length of the SDP string to increase from 256 to 512 bytes.

- Emergency Stand-Alone (ESA) Entry

  This provides support for the H.248 duration parameter in association with playing tones

Value

Using the H.248 control protocol between the CICM and the Gateway Controller (GWC) permits standards based signalling between CICM subscribers and other H.248 access devices such as trunk gateway (GW) and Integrated Access Devices (IADs). The enhancement introduced with this feature lays the groundwork for interworking the H.248 protocol with another standard based protocol, Session Initiation Protocol (SIP).

Technical reference

00003954

Services support for the Universal Access-Internet Protocol (UA-IP) solution

This feature provides support for the following services:

- Automatic Call Distribution Observe (ACD OBS): allows an ACD supervisor to monitor the quality of service offered to callers. As an option, an **observe** warning tone may be provided to the agent prior to the observation. There are various types of **observe**:

  — Basic - allows the supervisor to monitor an agent within its group that is involved in an active call.

— Extended - enhances the observe functionality to allow a supervisor to observe any agent that has an INCALLS key in any ACD group within the same customer group.

— Enhanced - allows the supervisor to observe the INCALLS key and a datafilled SDN using the AGENT key.

— Flexible Call Observing (FOBS) - allows supervisors to begin monitoring the service given to a call from the time it is first queued in the ACD system.

- ACD Emergency Key, Emergency Key Backup (ACD EMK): enables an ACD agent to immediately conference in a supervisor and/or an auxiliary device in the event of threatening or abusive calls.

- Camp-on for MDC lines (MBSCAMP): allows an MBS set to "camp-on" to a busy group member. When the MBSCAMP subscriber receives a call and attempts to transfer to another member of the customer group, if that line is busy a call-waiting type indication to the busy line. The MBSCAMP line is provided ringback or audio as an indication of the camping.

- Music on Hold: provides an audio source to a line placed on hold by a line with this option (either on the line or the customer group).

- Executive Busy Override/Executive Busy Override Exempt (EBO/EBX): allows a member of a customer group to override a busy indication from a called line in the group and connect into the call in progress.

- Directed Call pick-up Barge In (DCBI): allows a member of a customer group to pickup an incoming call to a member of a customer group. It also allows the member to barge-in to that call if it is answered prior to the completion of the pickup attempt.

Value

By supporting additional services, this feature enables network operators to offer an enhanced service to their customers, thus increasing customer satisfaction and providing the potential for increased revenue opportunities.

Technical reference

00004872

Multiple Time Zone support for CICM Clients

Centrex IP Client Manager (CICM) lines can exist in multiple time zones because the call server and agents can co-exist in different time zones.

With the existing implementation, line features such as billing and logs work on the switch time for all users irrespective of their local times. This activity provides Multiple Time Zone (MTZ) support by enabling the local time of the user to be stored on the switch. This allows the following features to be activated in terms of the local time of the user:

- Wake Up Call Request (WUCR)
- Automatic Recall Diallable Directory Number (ARDDN)
- Query Time and Date (QTD)

No changes are made to Logs and Billing records.

Value

This activity extends MTZ support to CICM KSET lines.

Technical reference

00005734

i200x Key Expansion Module

The i200x Key Expansion Module (KEM) is a UNIStim device which complements the i200x series of terminals.

The KEM is a 24-key expansion module with an LCD providing both icons and labels similar to those provided on the i2002 terminal. Icons and labels operate on the KEM just as they do on an i2002 terminal. Separate contrast settings for each KEM are configurable from the terminal menu.

The KEM is provisioned through both the DMS and the Element Manager. Before any features can be assigned to the keys on the KEM, the M522 line option must be assigned to the associated terminal on the DMS. The M522 line option includes the specification of one or two expansion modules.

Value

This features introduces the i200x Key Expansion Module to the Centrex IP Client Manager (CICM) platform. Up to two KEMs can be utilized with a single i2002 or i2004 terminal, providing up to 44 additional keys.

Technical reference

00005735

CICM Australian Tones verification

This is a test feature to provide Australian Warble tones (distinctive ringing).

Value

By providing Warble tones, the CS2000 better meets the requirements of the Australian market.

Technical reference

00005989

CICM Faults and Alarms

This feature integrates Centrex IP Client Manager (CICM) with the Integrated Element Manager System (IEMS).

Integrated Element Manager System (IEMS) is a new interface that has been introduced to manage the output used by external Operating Support Systems (OSSs) to monitor the network element and, for example, detect alarm conditions. The IEMS can be accessed via a Graphical User Interface that gives access to the alarms and logs for a network element. This also interacts with the Element Manager GUI.

Two parts of Centrex IP Client Manager (CICM) system can raise alarms and faults to the IEMS:

- CICM

  This sends alarms directly to the IEMS.

- CICM Element Manager

  This raises alarms associated with the Element Manager Platform (for example, memory shortage) and communicates with the CICMs that it manages.

Value

Fault and Alarm management is an important component of any Network Element. The ability for operators to detect, monitor and correct erroneous behaviour and hardware outages is key to maintaining Quality of Service in a packet network.

Technical reference

00003718

CICM Performance Measurements

This feature integrates Centrex IP Client Manager (CICM) with the Integrated Element Manager System (IEMS) to produce performance metrics in a format that the IEMS can read.The following additional Performance metrics are introduce with this feature:

- Number of Busy hour call attempts
- Number of logged in users
- Number of failed call attempts
- Messaging throughput

Value

Performance management is a required part of any Carrier VoIP system.   A Network Element must be able to gather and provide statistical performance data to enable customers to evaluate the system and gauge where improvements would be most beneficial.

Technical reference

00003719

CICM Active Call Fail-Over

This feature ensures that active calls are not lost when a CICM processor fails or is taken out of service for maintenance. If such a failure occurs, a second processor automatically takes over control. Active calls that are stable will not be lost when this happens (a stable call is defined as a call in which the parties have achieved the talking state and for which no user interaction is in progress). "Unstable" calls (e.g. those that are still being set up at the time of failure) may be lost, however.

Value

Ensures that the majority of active calls on CICM lines are not lost if a CICM node fails.

Technical reference

00003953

CICM: Country Specific Requirements - Tone and Language

This feature introduces CICM support for additional country specific tonesets and the languages used for displays such as menus and softkeys on IP phones and softclients.

The new tonesets supported are for:

- Australia

- France
- Germany
- Italy
- Switzerland

The new languages supported are:

- French
- German
- Italian
- Portuguese
- Spanish
- Turkish

Value

This feature allows the CS2000 to better meet the needs of the affected markets.

Technical reference

00008278

Increase CICM Lines to 25K from 37K

This feature increases the number of Centrex IP lines that can be provisioned on the CS2000 as Meridian Business Sets (MBS) to 253,944 (the limit in previous releases was 31,743).

Value

Increased CICM line capacity of the CS2000.

Technical reference

00007790

SRG Interop with CICM lines

This feature provides Survivable Remote Gateway (SRG) functionality for CICM lines for customers at a small remote location (branch offfice). Such customers often do not have multiple ethernet connections to their Enterprise LAN which would enable them to maintain services to users in case of the loss of an ethernet connection.

With SRG, in normal working, IP (Nortel I200x) phones receive service via the Enterprise LAN from the host CS2000 while the SRG provides local PSTN access. When the Ethernet connection is lost, IP clients switch to a "local mode" of operation in which they can continue to make outgoing calls via the PSTN. Although IP clients cannot receive incoming calls directly, calls can be directed to a PSTN number at the branch (for example to an attendant who can then redirect the calls).

Value

This feature provides cost-effective survivability for small remote locations using CICM lines in the event of the loss of Enterprise LAN connectivity.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

CIPI0601   CIPI CentrexIP RTU

CIPI0602   CIPI CICM Shelves

3.2.1   CentrexIP Client Manager Element Manager

CICE0080   CentrexIP Client Manager Element Manager

CAPABILITIES AND VALUE

CentrexIP Client Manager Element Manager

The Element Manager (EM) is the principal management platform for the CICM. The EM is the device used to configure, monitor, and administer CICMs and their clients. Although the CICM's call processing operates without the Element Manager, the EM is required as the administrative interface to the CICM.

The functions of the EM include:

- Acting as a Web server for the Web-based user interface used to configure, monitor, and administer the CICM and its clients

- Performing security checks and authorisations

- Providing the database for CICM configuration data

- Serving as a backup device for CICM configuration files by storing the backup configuration files and executing the automatic backup process

- Providing storage for user profiles and CICM software upgrades

- Storing the firmware upgrade files for the i2004/2002 Ethersets and the software upgrades for the m6350 SoftClients

- Polling the CICMs at regular intervals for status information

- Providing SNTP time synchronization for a network of CICMs over different timezones. The Element Manager supplies the absolute time and each CICM applies local timezone corrections. In the SAM21-based CICM 7.0, the CICM-EM is a pair of Motorola CPN5385 resource cards; one active and the other hot standby for redundancy. Although a CICM requires only one Element Manager, Nortel Networks recommends configuring EMs in redundant pairs to provide redundancy and to avoid a single point of failure. Only one pair of the CICM-EM resource cards is required per CS2000,which is capable of supporting up to 100 pairs of CICM resource cards. The hot standby CICM-EM resource card is equivalent to the Secondary Element Manager (SEM) chassis in the SAM16-based CICM releases.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

3.3   Transit Services

CLDN0003   PBX CLI Management

CAPABILITIES AND VALUE

PBX CLI Management

This feature enhances screening and billing capabilities for ETSI PRI trunk groups.

Three options CLIVD (CLI ValiDate), SIGCLI (SIGnalled CLI), and EDITALLTON (EDITALL Type Of Number) are added to table LTDATA and attribute CLIVD is added to table DNSCRN.

- CLIVD enables screening of DNs on a per trunk group basis. If screening fails a log report is generated with the calls received CLI, the originating trunk CLLI and a failure reason. The call does not fail if screening fails
- SIGCLI controls what CLI is used for signalling purposes
- EDITALLTON enables the functionality of option EDITCLI to be altered via a new option (EDITALLTON) in table LTDATA

Value

This feature enhances screening and billing capabilities on the CS2000 to improve CLI management on PBXs for ETSI PRI trunk groups.

Technical reference

AU2580

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

CLDN0004   CLI Screening Via Translations

CAPABILITIES AND VALUE

CLI Screening Via Translations - Enhancements

This feature allows the network operator to store directory number attributes in a database on CS2000 for use in single-stage Calling Line Identity (CLI) screening. Call screening is enhanced to support CLI service screening and partial CLI screening. This feature also provides CLI-based routing, and routes calls that fail CLI screening.

The following attributes relating to a subscriber's status may be stored for a directory number and used for screening and validation by CS2000 during translations and call processing:

- UNPAID indicates that the subscriber's bills have not been paid
- BLCKCALL indicates that the subscriber is not permitted access to the network

If a call fails CLI screening, a log can be generated for tracking purposes.

With this feature, CLI screening information can be captured in AMA records and logs.

Value

This feature allows the network operator increased control over which end users are permitted network access. Network operators can offer multiple CLI-based indirect access services to service providers and therefore, generate greater revenue. By providing partial CLI screening, this feature gives network operators the opportunity to save time and operational costs. This feature also provides the network operator with greater flexibility in terms of CLI screening service and routing options. By capturing CLI screening information in AMA records, this feature offers the network operator an additional source, other than logs, for screening information.

Technical reference

AJ5351

CLI Blocking and Screening Robustness

This feature enhances Calling Line Identifier (CLI) blocking/unblocking and CLI screening functionality. CLI blocking/unblocking allows the calling party to restrict/allow the presentation of their CLI on a per-call basis or for all calls, across the various interworkings.

Value

This feature enhances CLI blocking/unblocking on CS2000 to provide consistent services across the various interworkings.

Technical reference

59013159

CLI Based VPN Access

Upon successful screening of the CLI, this feature provides the ability to alter the Network Class of Service (NCOS) and CUSTomer GRouP (CUSTGRP) of a call via table DNSCRN. Altering the NCOS and CUSTGRP of a call allows the end user to have access to specific Virtual Private Networks (VPNs).

This feature supports the following interworkings:

- IBN7 (ANSI ISUP+)
- ETSI PRI

Value

This feature provides network operators with greater flexibility by allowing them to offer end users access to different VPNs based on CLI.

Technical reference

AU2804

CLI Screening Via Translations - Protocol Support

This feature provides single-stage CLI Screening via Translations for the following protocols:

- BTUP versions 2 and 2+
- ETSI ISUP V1 and V2, including all applicable national variants
- ETSI PRI
- SSUTR2 (FTUP)

Value

Additional protocol support expands the levels of CLI screening available in the operator's network.

Technical reference

AJ5349

CLI Screening via Translations - Carrier Reseller Routing Enhancements

This feature enhances existing features in order to support the German requirements for reseller support.

Value

This feature allows the operator to use CLI screening for different scenarios (such as handling ISP traffic) and consequently to generate greater revenue.

Technical reference

59007851

Account Code Validation and Protocol

This feature provides the ability to collect optional Account Code information on indirect access Calling Line Identification (CLI) or Authorisation Code screened calls. Such Account Codes can be validated (if required) against a table of predetermined codes (ACCTSCRN).

This feature also provides additional support to both the Authorisation Code and CLI screening functionality to allow calls originating from a wider set of protocols.

The following triggering points are provided for optional Account Code collection and validation on Authorisation Code screening calls:

- per Customer Group. This allows the operator to request all subscribers within a specific Customer Group to enter Account Code information.

- per Access Code. This allows the operator to request individual subscribers with a specific Access Code to enter Account Code information.

- per Authorisation Code. This allows the operator to request individual subscribers with a specific Access Code, or all subscribers within a specific Customer Group, to enter Account Code information.

The following triggering points are provided for optional Account Code collection and validation on CLI screening calls:

- per CLI Screening Service. This allows the operator to request all subscribers using a specific access code to enter Account Code information.

- per CLI. This allows the operator to request individual subscribers to enter Account Code information.

- per CLI per Screening Profile. This allows the operator to request individual subscribers, or all subscribers using a specific access code, to enter Account Code information.

The following protocols are supported:

- ETSI PRI, including the following national variants:

   — French PRI (Numeris 4 and Numeris 6)

- — Belgium PRI (NET3)
- — Netherlands PRI
- — Spanish PRI
- — Italian PRI (X11)
- — Swiss PRI (SWISS3)
- — AusTel TS14 PRI (Australian variant)
- — NTT INS1500 (Japanese variant)
- ISO 1996 QSIG and ETSI 1993 QSIG
- ETSI ISUP
- ANSI ISUP and IBN7
- Australian ISUP
- Japanese ISUP, including
  - — NTT NCC ISUP
  - — Japanese Unified ISUP
- BTUP (IUP)
- FTUP (SSUTR2)
- ITU TUP, including the following national variants:
  - — Saudi Arabian TUP
  - — Brazilian TUP
  - — Philippines TUP
  - — Australian TUP
- R1 CAS, including the following implementations:
  - — Basic R1 CAS
  - — UK-specific R1 CAS
  - — Enhanced CAS (FST)
  - — Generic R1 CAS
  - — AC15
  - — DC5
- R2 CAS, including the following national variants:
  - — Saudi Arabian R2 CAS
  - — Turkey MFC R2 CAS
  - — Malaysian R2 CAS (MR2)
  - — Philippines MFC R2
  - — Sri Lanka MFC R2
  - — Caribbean MFC R2
  - — Brazil MFC R2 CAS (5C/5B)
  - — Mexican MFC R2 CAS

- FDCP, including the following national variants:
  — Italian CAS
  — CAS for TMX-100 markets
  — Czech Republic CAS
  — R2 CAS for Poland
- DPNSS
- Lines (excluding BRI)

Value

This feature provides the ability to collect optional Account Code information on indirect access Calling Line Identification (CLI) or Authorisation Code screened calls. This feature provides these services across an enhanced set of protocols.

Technical reference

59023153

Indirect Access by AuthCode

This feature supports indirect access to the network using authorisation codes and optional security codes. To access the network, the calling party enters an authorisation code and optional security code followed by the directory number (DN). Once a speech path is established, the codes are validated by the DMS-100 MMP before access is allowed.

This feature also supports interworking with ETSI PRI incoming calls. Both ETSI PRI user (slave) and network (master) modes are supported.

- Supports the following features:
- Customer Group
- Network Class of Service (NCOS)
- Restricted Usage
- Tone Burst On Answer
- Intra Nodal Blocking
- Speed Call
- Hot Line
- AuthCode Trap

Automatic Message Accounting (AMA) records can be generated for both the incoming and outgoing legs of an indirect access call.

Value

This feature:

- Increases revenue by allowing network operators, who have a limited geographical coverage, to offer packet-based telephony services on a nationwide basis.
- Includes the authorisation code in the billing record, ensuring that an alternative network operator receives the appropriate revenue from calls routed through their network.

- Uses authorisation codes to allow the caller to make calls from a telephone other than their own.
- Permits indirect access to Virtual Private Networking (VPN). The AuthCode method can be used by roaming VPN users, allowing an individual to cost effectively access the VPN from any remote location such as a hotel or mobile telephone.

ETSI PRI Indirect Access by MONA

This feature enables indirect access calls over an ETSI PRI interconnect trunk to be supported using the Meridian Offnet Access (MONA) functionality.

Value

This feature enhances the network operator's indirect access capabilities to include use of MONA over ETSI PRI.

Technical reference

AJ4886

AuthCode Screening - Ph 1

This feature enhances the existing authorisation code access and validation capabilities.

Authorisation code screening on a per access code basis is enhanced as follows:

- To optionally allow a range of authorisation code lengths up to 14 digits
- To allow partial screening of authorisation codes
- Optionally, to provide a confirmation tone if the authorisation code dialled is valid
- Optionally, to override the default customer group and the Network Class of Service (NCOS) values associated with the incoming trunk
- Optionally, to override the partition name associated with a customer group
- Optionally, to mask a number of digits in the authorisation code of the Automatic Message Accounting (AMA) billing record
- Optionally, to trigger metering options

This feature also optionally allows calls to selected authorisation codes to be blocked in spite of successful authorisation code screening. When calls are blocked a log is generated.

The translation and verification tools TRAVER and TRNSLVF have had their output enhanced for Meridian OffNet Access (MONA).

Value

This functionality provides network operators with a better service to offer their customers, resulting in greater customer satisfaction and the potential for greater revenue.

Technical reference

59028852

DEPENDENCIES

The following order code is required for this functionality to be operational:

CLDN0005 CLI Screen via Trn

IIND0004 Tone Burst on Answer for Indirect Access

CAPABILITIES AND VALUE

ISUP Tone Burst on Answer

Tone Burst on Answer (TBOA) provides an audible tone to the originator of Indirect Access calls. The tone indicates the start of billing. This feature supports TBOA for Indirect Access calls incoming on ISUP trunks.

This feature is supported for Aspen media gateway control protocol. The TBOA tone is mapped to the warning tone within the call progress tone package.

Value

This feature allows network operators to offer Tone Burst on Answer capability on ISUP trunks.

Hardware requirements

This feature requires that the trunking media gateway supports the Aspen call progress warning tone signal.

Technical reference

59037739

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

IXLS0002 Service Number Portability and Number Port Provisioning

CAPABILITIES AND VALUE

Service Number Portability and Number Port Provisioning

This feature implements Number Portability (NP) on CS2000 and supports the following functionality:

- Service Number Portability that is, NP for non-geographic service numbers such as freephone
- Administrative query of ported numbers, especially to provide ported-in numbers to other network operators
- Facilitated provisioning for ported-in, ported-out, and ported-across numbers

Currently, Local Number Portability (LNP) functionality uses a tromboning mechanism whereby a call to a ported Directory Number (DN) is first routed to its expected termination (the donor switch) and then it is routed to its new destination (the recipient network).

This feature provides an interface that allows network operators to easily provision and maintain an on-switch database of ported numbers. This on-switch database contains ported-in, ported-out, and ported-across numbers.

The LNP implementation in this feature is based on this on-switch database of ported numbers. A Universal Translations option, the Ported Number Recognition Function (PNRF), queries the on-switch database to match called digits with stored ported

numbers. If the called digits match a ported number, the query returns the Network Identification Code (NIC) of the recipient network. The NIC is prefixed to the called number and the call is routed directly to the recipient network, rather than being routed to the donor switch.

Value

This feature allows network operators to use their network more efficiently for Number Portability applications, thereby reducing operating costs.

Technical reference

AU2848

Number Portability PNSCRN Enhancements (Variable-length Prefix, Overdecadic Digits)

This feature enhances the functionality provided by Number Portability to make it applicable to European markets.

These enhancements allow CS2000 to:

- Support up to one million Network Identification Codes (NICs) up to nine digits long, where each digit can be one of the set {0-9, B-F}
- Identify ported-in calls to lines resident on the Communication Server and to route the call to the line
- Change the outgoing Numbering Plan Indicator (NPI)/Nature of address (NOA)/ Type of number (TON) as required for ported calls
- Prevent the NIC from being prefixed in translations
- Delay the prefixing of the NIC until immediately prior to translations for BTUP, ETSI ISUP and ANSI ISUP/ANSI ISUP + (IBN7)
- Trigger an Automatic Message Accounting (AMA) record for ported calls
- Capture Number Portability information in an AMA billing record
- Specify a route for the call based on the ported number/NIC
- Reroute ported calls through Universal Translations for further digit analysis
- Prefix the local area code to the number used to search for a ported number, prior to searching for the ported number
- Allow transit calls containing an NIC prefix to route using the same information as locally originated calls
- Refuse further Number Portability service to previously ported calls

Value

This feature enhances Number Portability to make it available to European markets.

Technical reference

59013186

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

IXLS0003 NCOS/CUST GRP allocation

CAPABILITIES AND VALUE

VFG Call Routing Enhancements

This feature allows CS2000 to use the Virtual Facility Group's (VFG's) Network Class of Service (NCOS) and CUSTomer GRouP (CUSTGRP) in the NETwork INFOrmation (NETINFO) parameter of the ISUP_IAM message of the ANSI ISUP+ (IBN7) trunk. Without this option, only the originating agent's NCOS and CUSTGRP are used in the ISUP_IAM message. This option requires the ANSI7+ NETINFO functionality provided as part of ISP70001 and can not be used on trunks which are datafilled to use the NETINFO option provided by VPNW0003.

This feature allows CS2000, at the far end of an ANSI ISUP+ (IBN7) trunk, to use the NETINFO parameter of the ISUP_IAM message to identify the VFG, through which a call is routed, at the originating end of the trunk. This information is required to correctly route the call through a corresponding VFG at the far end of the ANSI ISUP+ (IBN7) trunk.

This feature is supported for calls originating from IBN7, BTUP and AC15, and routing out to IBN7. This functionality is datafill-controlled on a per-VFG basis.

Value

For network operators that use VFGs, this feature allows greater flexibility in the way in which translations may be set up in the network.

Technical reference

AJ5440, 59022327

DEPENDENCIES

The following order code is required for this functionality to be operational:

ISP70001 Base ISUP (ANSI IBN7)

IXLS0005 CPC Routing

CAPABILITIES AND VALUE

CPC Routing

This feature provides CS2000 with the ability to translate based on the Calling Party Category (CPC) for the following protocols:

- BTUP
- Brazilian ISUP
- ETSI ISUP
- SSUTR2

Value

By routing calls based on CPC, network operators are given the flexibility to route calls differently. For example, a Freephone operator not wishing to incur additional call charges may request that calls from cellular subscribers or pay phones should be routed to treatment.

Technical reference

AJ5343, 60007165

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

IXLS0006   Called Number Parameter

CAPABILITIES AND VALUE

Random and Circular Hunting

This feature allows an equal distribution of calls across a set of trunk groups by selecting the trunk group either randomly or sequentially (circular). This eliminates the scenario where the same trunk is initially selected every time.

This feature can be of benefit to the network operator wishing to connect CS2000 to an Internet Service Provider. This feature evens out the allocation of calls to the same dialled number and provides an even distribution of traffic in the network.

Technical reference

AJ4929

Called Number Parameter Translation

This functionality provides the ability to route calls using the called party Nature of Address (NOA) and Numbering Plan Indicator (NPI) for incoming ETSI ISUP, ANSI ISUP+ (IBN7) and SSUTR2 calls, and using the called party Type of Number (TON) and NPI for incoming ETSI PRI, Japan PRI and QSIG calls.

This functionality also provides the ability to set the NOA/TON/NPI in the outgoing called party number for calls over ETSI PRI, Japan PRI, ETSI ISUP, SSUTR2, QSIG and ANSI ISUP+.

Overlap signalling and the ability to set the outgoing parameters in table DIGMAN and in routing tables are also supported.

Value

This feature gives the network operator a greater choice on which to base the routing selection within translations. This feature is of benefit to the network operator setting up a global network, as it enhances the use of CS2000 as an international gateway.

Technical reference

AJ4884, AJ5346, 59013405, 59013196

CS-1R Routing Based on NOA

This feature enhances the base Called Party Number (CdPN) parameter-setting and translation feature as follows:

- Allows the Service Switching Point (SSP) to send an InitialDP operation, containing the Nature Of Address (NOA)/Type Of Number (TON) and the Numbering Plan Indicator (NPI) values set by the base CdPN parameter-setting functionality, to the Service Control Point (SCP)

- Allows the SCP to modify the NOA/TON and NPI values received in an InitialDP operation, and to return those values to the SSP in a Connect or EstablishTemporaryConnection (ETC) operation.

- Allows the feature to use the NOA/TON and NPI values, received in a Connect or ETC operation, in routing the call onward

Value

This feature allows network operators to correctly route calls based on the NOA and NPI on a per call basis using information provided by the SCP.

Technical reference

AG5522

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

IXLS0007   ETSI ISUP V2 Carrier Selection and Preselection

CAPABILITIES AND VALUE

Carrier Selection

This feature provides support for the German Carrier Selection requirements on CS2000. End users can select a carrier on a per-call basis or on a default 'preselection' basis. If the end user does not select a carrier, the network operator can set an office parameter to route the call over carriers of its choice.

Value

This feature makes CS2000 compliant with the regulatory requirements for carrier selection in Germany.

Technical reference

AF7081

ETSI ISUP V2 Carrier Selection Parameter

The Carrier Selection Parameter (CSP) is an ETSI ISUP V2 parameter that has been defined for the German Carrier Selection Market. By using this parameter, the identification code of the carrier selected in a call can be sent to another network, providing the following capabilities:

- The receiving network does not have to be the selected carrier

- Dedicated trunks are no longer required for Carrier Selection calls

- The network operator may accept calls for other carriers which use the network's resources as a reseller

- New Calling Line Identity (CLI) screening with several enhancements.

- The new CLI Screening is not restricted to the German market, it can be used on any ETSI ISUP trunk

- Enhanced billing support

- Additional flexibility for carrier selection translations

- Tools support: TRAVER, PCIMONCI

Value

This feature increases end-user satisfaction and flexibility by allowing them to select alternative long-distance carriers on a preselection or per-call basis, thereby routing their calls in the most economical way. The feature also provides network operators with more economical usage of resources (no dedicated trunks) and simplified datafill for CLI screening (wildcard screening).

Technical reference

AF7580

Carrier Preselection

This feature allows end users to specify to their network operator the carrier or carriers they wish to use for routing their calls. End users can specify a carrier for up to eight different Carrier Pre-Selection (CPS) call types, such as local, national or international calls. By specifying the carriers to the network operator, the end users do not need to enter operator access codes when they make calls.

This feature also simplifies provisioning and billing functions for pre-selected end user lines.

This feature supports the following outgoing protocols:

- ETSI ISUP V1
- ETSI ISUP V2
- IBN7/ANSI ISUP
- UK ISUP
- IUP (BTUP)
- SSUTR2 (French TUP)
- SPIROU (French ISUP)
- Australian ACIF-G500 ISUP
- CA.30

Value

This feature allows network operators to comply with EC Directive 98/61/EC. In addition, by enabling network operators to store different carriers for different call types for each customer, this feature provides the operators with the potential for greater customer satisfaction and increased revenue.

Technical reference

59012694

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

IXLS0008   Charge Category Based Routing

CAPABILITIES AND VALUE

Charge Category Based Routing

This feature allows CS2000 to determine the charge category of a call and to route the call based on the charge category.

A charge category is based on the relationship between the charge group of the calling party and the charge group of the called party. A charge group corresponds to a specific geographic area.

Value

This feature gives the network operator a greater choice on which to base the routing selection within translations.

Technical reference

59012694

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

IXLS0012   ISUP Reroute on Congestion

CAPABILITIES AND VALUE

Conditional Rerouting on Congestion

This feature provides enhanced routing functionality via translations.

Rerouting facilities are provided via the CS2000 for calls that encounter trunk congestion. When this occurs, the call may be made to transit another media gateway based on datafill in the translation route lists.

The types of congestion message acted upon are dependent on the clearing causes and the signalling protocol (ANSI ISUP) of the agents involved in the call.

Value

Rerouting around congestion in a network means that more attempted calls are successfully connected in the network, thus increasing end user satisfaction.

Technical reference

AU2573

ISUP Reroute on Congestion

This feature provides conditional rerouting, when congestion occurs, for calls terminating to ETSI ISUP trunks.

Congestion can be caused by:

- Circuit group congestion, where all the circuits in the route are busy. When this type of congestion is encountered, the terminating Communication Server sends a REL message with a cause value of 34

- Switching equipment congestion, where the switching equipment is experiencing high traffic. When this type of congestion occurs, the terminating Communication Server sends a REL message with a cause value of 42

This feature supports rerouting of calls from the following originating agents:
- ETSI ISUP V1
- ETSI ISUP V2
- IBN7/ANSI ISUP
- UK ISUP
- IUP (BTUP)
- SSUTR2 (French TUP)
- SPIROU (French ISUP)
- Australian ACIF-G500 ISUP
- CA.30
- Brazil ISUP
- Czech ISUP
- Portuguese ISUP
- Spanish ISUP V2
- ETSI PRI
- Spanish PRI

Value

Rerouting around congestion in a network increases the call completion rate, thereby increasing end user satisfaction and providing the network operator with additional revenue.

Technical reference

59013395

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

IXLS0014   Call Control

CAPABILITIES AND VALUE

Universal Screening

This feature introduces the flexible screening and call manipulation function Universal Screening which allows the network operator to manipulate call processing elements as required. The network operator can screen both external and internal parameters and use these screening processes to further manipulate their translations.

Call Control and Universal Screening:
- Can be triggered from a variety of locations
- Perform translations that can be verified using the TRAVER tool

Universal Screening and Call Control allow the network operator to control call processing events such as invocation of screening and setting of internal translation/routing parameters. Calls can be screened based on:
- Called Party Number Digits

- Called Party Number Length
- Network Class of Service (NCOS)
- Customer Group
- User-defined variables
- Inband Dual-Tone MultiFrequency (DTMF)
- Calling Party Number
- Redirection Information Indicator
- Carrier Identification Code
- ISDN Preference Indication
- Calling Number Nature of Address
- Called Number Nature of Address and Numbering Plan Indicator
- Calling Party Category
- Bearer Capability
- Circuit Code
- Originating Line Information
- Satellite Indicator

This feature provides the following options to allow the setting of call processing parameters or altering the behaviour of a call:

- Trigger for Class of Service screening and Multiple Failure Announcements
- Trigger for Least Cost Routing
- Network Class of Service
- Trigger for Calling Line Identity screening
- Manipulation of Called Number and Calling Line Identity
- Customer Group
- Triggering CLI Default Number Functionality
- Bearer Capability
- Transit Network Selection
- Satellite Indicator
- Brazilian Automatic Collect Call triggering
- User-defined variables setting
- Malicious Call Trace log generation
- Called Number Nature of Address and Numbering Plan Indicator

Value

This feature provides the network operators with both flexibility and an increased service offering without requiring customised features.

Technical reference

59028780, 59033687

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

IXLS0015   Class of Service Screening

CAPABILITIES AND VALUE

Class of Service Screening

This feature provides Class of Service (COS) screening and Trunk Loop prevention:

- COS screening

  Allows the operator to override the COS of the originator

  — On a per trunk basis

  — On a per CLI per service basis

  — During call control operation

  It also allows operators to restrict trunk-to-trunk calls by using a COS value assigned to a trunk group. The COS values of the originating and terminating trunks determine if the call is allowed to continue on the same route or is restricted.

- Trunk Loop prevention

  Provides operators with a facility to prevent trunk looping. Trunk looping occurs when calls are routed back to the originating trunk.

  There are two types of trunk looping:

  — On the same trunk group - calls originating and terminating on the same trunk group.

  — Multiple trunk groups - calls originating and terminating on different trunk groups.

  — Operators may use multiple trunk groups to interconnect to other carriers and operators, where calls can loopback on multiple trunk groups.

Note: Trunk looping is checked before COS screening. If a route is looping back, then COS screening will not be attempted for that route. A trunk loop prevention check is performed only if the originating and terminating agents are trunks.

Value

This feature provides network operators with enhanced flexibility of translations setup, and enables more efficient use of network resources.

Technical reference

59023338

Multiple Failure Announcements

This feature provides a mapping function to allow a single announcement to map to many announcements based on the Class of Service (COS) assigned to the originator. This allows subscribers to receive failure announcements in their native language, or announcements that are branded to identify their service provider.

This feature introduces the new COS component COS Group which, together with the existing COS Index and the two new tables ANNCMAP and ANNCIDX, provides the operator with the flexibility of choosing announcements based on COS.

If the COS is assigned more than once, the COS encountered last would be considered for multiple failure announcements.

Value

This feature enables network operators to offer their customers enhanced failure announcements, thus increasing customer satisfaction and providing the network operator with potential for increased revenue opportunities.

Technical reference

59028846

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

IXLS0016　　CLI Delivery Control

CAPABILITIES AND VALUE

CLI Delivery Control

This feature provides a functionality to allow or restrict Calling Line Identity (CLI) delivery over different terminating trunk protocols. CLI delivery control is a facility to select, manipulate and control the delivery of the CLI to the terminating trunk.

CLI delivery, which is applicable to all protocols that provide CLI support, can be controlled at both the originating and terminating trunks. The CLI is only delivered if both the originating and terminating CLI delivery control options are present and indicate that the CLI needs to be delivered. CLI delivery restrictions apply to any CLI sent in the first call set-up message or in a later message. Further CLI screening enhancements for international applications can be obtained from feature 59023556.

Value

Provides a functionality to allow or restrict Calling Line Identity (CLI) delivery over different terminating trunk protocols. This feature enables network operators to configure CLI delivery flexibly, which may be a requirement of network operator interconnection.

Technical reference

59023300

BTUP CLI Delivery Control

This feature supports Calling Line Identity (CLI) delivery control over British Telephony User Part (BTUP) trunk agents, except when both the originating and terminating trunk are BTUP trunks.

Delivery of the CLI to the terminating trunk is achieved by datafilling three options:

- CLI Delivery Control
- CLI Selection
- CLI Digit Manipulation

The CLI is only delivered if both the originating and terminating CLI delivery control options are present and indicate that the CLI needs to be delivered. This feature provides the flexibility to select an address type from a list of address types datafilled with a precedence order. The selected address type is sent out if:

- The type of address is available for the specific call, and

- The CLI parameter is not blocked

This feature also optionally allows the CLI digits to be manipulated before the CLI is sent out as part of the outgoing call setup message.

Value

This feature enables network operators to provide an enhanced CLI delivery control service to their customers, thereby providing network operators with the potential for improved customer satisfaction and increased revenue.

Technical reference

59030222

Calling Number Delivery Enhancements for ISDN PRI

This feature implements a new Calling Line Identity (CLI) delivery logic for the outgoing PRI trunk.

If the field CLIDELV in table TRKOPTS is set to CLIDELV=SCRN_PI:

- When the Presentation Indicator (PI) is set to 00 (Allowed) the CLI is delivered
- When the PI is set to 01 (Restricted) or 10 (Not available), the PI is delivered instead of the CLI

CLI delivery activation and deactivation is controlled by a new option CLIDLVPI in table TRKOPTS on a per trunk group basis.

Value

This feature enhances CLI delivery for outgoing trunks to handle calls when the CLI is restricted or not available.

Technical reference

59040499

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

3.4   Managed (Business) Services

Note: The capabilities of the features described in this section represent a subset of the CS-1R feature capabilities currently supported on the CS2000 platform. As the feature IDs refer to the equivalent CS2000 activities, please note that certain limitations to these capabilities may apply as a result of base dependencies which are not available in ISN04. These limitations fall into the following area:

- Supported SS7 variants are dependent on configuration

DSSP0001   Basic CS-1R SSP

This order code provides the baseline capabilities which enable the network operator to deploy Intelligent Networking (IN). CS-1R SSP complies with ETSI INAP/CS-1R technical standards for IN functionality.

CAPABILITIES AND VALUE

Basic CS1 SSP

This feature provides the following key capabilities:

- **Call Control Function (CCF)** provides the basic call processing capability for IN calls that originated on the supported signalling systems.

- **Service Switching Function (SSF)** provides the interface between the Public Switched Telephone Network (PSTN) and the IN architecture. Its key tasks are to recognise PSTN calls that require IN service processing by means of triggers and to interact with Call Control Function (CCF) call processing in the Service Switching Point (SSP), Service Control Function (SCF) in the Service Control Point (SCP) to ensure that those IN calls are successfully completed.

  CS2000 Feature Processing Environment (FPE) and the Service Switching Functions (SSF) state machine work together in order to enable IN services on the SSP. The SSF also controls the communications to the SCP and supports processing of INAP operations. Initially, INAP operations are conveyed between IN nodes by means of ITU Blue Book Transaction Capabilities Application Part (TCAP) protocol with some restrictions.

- **Triggers**. Calls which require IN handling are identified through triggering. The triggering process consists of comparing parameters from incoming calls with data tables on the CS2000 SSP, called trigger tables. This data is known as the trigger criteria.The trigger tables are datafilled by network operators according to the IN service to be implemented, such as choice of dialled digits for Freephone numbers.

- **Specialised Function (SRF)** provides any specialised resources that are required for interaction with the end user, either to provide information or to obtain it. Information is typically provided to the caller in the form of announcements. DSSP0001 implements SRF located with SSP and considered to be an internal Intelligent Peripheral (IP) and also an SRF separate from the SSP considered to be an External Intelligent Peripheral.

- **OA&M and Billing**. The Extended Bellcore AMA Format (EBAF) billing record format is supported.

  The Reset Timer INAP operation enables the SCP to refresh the application timer in order to avoid a time out. EINTRACE, a diagnostic and debugging tool, enables IN call traces to be performed to capture information about the TCAP and INAP level messaging between the SSP and the SCP. Both call related and non-call related information can be traced.

- **Bearer Capability Routing**. Bearer capability information can be derived from incoming call setup messages and sent to the SCP for call routing. Bearer capability information defines the type of bearer service required by a call. The following types are supported:

  — 3.1 kHz audio

  — speech

  — 64 kbits/s unrestricted data

  Bearer capability is supported on all IN access protocols.

- **International Numbering Plan**. The SSP enhances the international numbering plan. An InitialDP operation with a called party number parameter of up to 30 digits can be sent and a connect operation with a destination routing address parameter containing up to 30 digits can be received.

Value

This feature:

- Enables rapid deployment of revenue generating services through standard architectures and interfaces. The network operator can create a number of revenue generating services and deploy them on a network wide basis, rather than on an exchange basis, to accelerate service introduction.

- Enables multi-vendor platforms by implementing the ETSI INAP/CS-1R standards. The services are independent of the underlying computing and switching platforms.

- Enables access to IN services from a CS2000 SSP for business and residential end users.

- Enables SSP capabilities while retaining the option of using the on-switch advanced business and residential software. This allows the network operator to gain the advantages of both the IN and the existing CS2000 advanced capabilities.

- Allows a variety of IN services based on the bearer capability of a call to be implemented, enabling network operators to differentiate between voice and data calls and charge different tariffs. Bearer capability routing also enables operators to route certain types of calls via least cost routes without compromising service quality.

CS-1R Service Profile Introduction

This feature enhances the degree of control that the network operator has in determining the behaviour of Intelligent Network (IN) services on the CS2000 Service Switching Point (SSP). Through datafill, increased flexibility is introduced to allow services to be tailored to an individual network operator's requirements.

Value

This feature emphasises Nortel Networks continuing commitment to enhance the flexibility of IN services on CS2000 and allows the Communication Server to be customised to meet the requirements of an individual network operator.

Technical reference

AG5512

CS-1R Real Time Enhancements

This feature delivers a reduction in the overall real-time impact of CS-1R calls.

Value

Enables the network operator to obtain greater level of traffic for the same hardware configuration.

Technical reference

AU3020

CS-1R Enhancements for Australia

Note that although this feature was originally developed for the Australia market, much of its functionality is also applicable to other markets.

Delivers support for a series of enhancements to the operation of CS-1R.

Exception triggers are implemented to prevent an IN trigger and allow certain calls to be dealt with through normal translations. This capability can be used to protect the SCP from applications which do not strictly require it.

In addition to Calling Line Identification (CLI) information being sent to the SCP, the Original Called Number (OCN), Redirecting Number (RDN) and Dialled Digits (DD) information can be made available to the SCP through a CS-1R query allowing IN processing to occur on the basis of that information.

The ability to set the AMA Call Code (CC) is provided to ensure that CS-1R related billing data is directed to the same down stream billing system for processing.

CS-1R interactions with various capabilities utilised in the Australian market are also verified including, among others, the key regulatory requirements of preselection, CLI presentation/restriction indication and malicious call trace.

Value

Enables a network operator to offer advanced CS-1R based Intelligent Network services.

Technical reference

AU3181

CS-1R Automatic Disarming of EDPs

This feature automatically disarms Event Detection Points (EDPs) that are armed to detect events that occur in call processing before a call is answered. This feature disarms these EDPs when the call is answered. In addition, this feature allows the Service Switching Point (SSP) to take down unnecessary dialogue with the Service Control Point (SCP).

Value

This feature prevents network resources from being held when they are no longer required. Therefore, this feature saves operational costs for the network operator by using network resources more efficiently.

Technical reference

AG5522

CS-1R Billing Records for Internal SRF

This feature allows the CS2000 Service Switching Point (SSP) to start timing the elapsed connection period for a call on receipt of a ConnectToResource (CTR) operation from the Service Control Point (SCP). The elapsed time shown in the Automatic Message Accounting (AMA) record is the time the call spent connected to the internal Specialised Resource Function (SRF).

If the call continues on receipt of a Connect operation, for example, a new billing record is opened if the call made by translating the Connect is a billable call. There are, therefore, separate billing records for each stage of a two-stage call.

Note: This feature applies only to single-party calls.

Value

This feature ensures that separate AMA records are generated such that the actual portion of call-time spent interacting with the SRF can be accurately determined. This functionality is of benefit to the network operator when reconciling call charges with the access provider.

Technical reference

AG5522

CS-1R CallingPartyNumber in Connect Operation

This feature provides the CallingPartyNumber parameter of the Connect operation. When the Service Control Point (SCP) sends the Service Switching Point (SSP) a Connect operation containing the CallingPartyNumber parameter, the Calling Party Number (CgPN) provided by this parameter may be different from that provided by the previous exchange in the network. In this scenario, the CgPN provided by the Connect operation, rather than the CgPN provided by the previous exchange in the network, is used in the outgoing call setup message.

Value

This regulatory feature provides the network operator with the option to alter the format of the calling party number, depending on the context of the call. For example:

- Calls transiting country boundaries could have their international prefix added
- Calls from Virtual Private Networks (VPNs) could have a generalised VPN switchboard number replace that of the specific extension that originated the call

Technical reference

AG5522

CS-1R Continue Call Processing

This feature provides the Continue CS-1R operation. The Service Control Point (SCP) sends the Continue operation to the Service Switching Point (SSP) in order to continue basic call processing from the Detection Point (DP) at which processing was suspended. Upon receipt of a Continue operation, the SSP continues basic call processing, using the called party information (if needed) originally sent in the call setup message(s).

Value

This feature allows the IN network operator to offer advanced services, such as Number Portability and Prepaid Calling Card, as additional revenue streaming.

Technical reference

AG5522

CS-1R EDP Monitor Mode Consistency

This feature increases the monitor modes supported for Event Detection Points (EDPs) to allow the CS2000 Service Switching Point (SSP) to interwork with some non-Nortel Networks Service Control Points (SCPs). This feature is supported for all interworkings that are supported by the ITU IN-compliant CS2000 SSP.

Value

This feature allows the network operator the flexibility to choose other ITU-compliant SCPs to interwork with the CS2000 SSP.

Technical reference

AG5522

SSP - Allow Unsupported SSP Operations

Without this feature, if the Service Control Point (SCP) receives an unsupported operation, the operation is rejected with the reason UnexpectedOperation. In addition, if a request to arm an unsupported Event Detection Point (EDP) is received by the Service Switching Point (SSP), the RequestReportBCSMEvent operation is rejected with the reason UnexpectedDataValue.

This feature enables IN network operators to specify whether or not the SSP should accept unsupported operations and EDPs without sending a return error message. EDPs and operations that are currently supported by the SSP are accepted and processed as usual. EDPs and operations that are not currently supported by the SSP are accepted, but they are not processed.

Network operators can select this functionality on a per-service basis using datafill in the table, SERVINFO.

Value

This feature enables the SSP to receive (but not to process) unsupported operations and EDPs that are not critical to the overall function of a particular service. As a result, this feature facilitates interworking with other vendors' SCPs.

Technical reference

59012675

SSP - Architecture Enhancement

The Advanced Intelligent Network (AIN) History Data Block (HDB) carries information relating to Intelligent Network (IN) calls. If the information to be carried exceeds the HDB's maximum capacity, this feature allows IN features to overflow HDB data items into other IN-specific extension blocks.

Value

This feature facilitates future IN functional development.

Technical reference

59012925

Realtime Activity

This feature improves the realtime efficiency of the IN application software and reduces the amount of processing time required per IN call. It has no impact on customer-visible functionality.

Value

This feature reduces IN processing time per call.

Technical reference

59028006

INAP Support for Context Identification

This feature provides the following functionality on the CS2000 Service Switching Point (SSP):

- Inclusion of Application Context information in the Transaction Capabilities Application Part (TCAP) Dialogue Portion information element (IE). This feature defines a Nortel Networks-specific Application Context that identifies the INAP variant and ISN load in use at the SSP.

Value

This feature enables the CS2000 to:

- Enables the CS2000 to identify itself to the SCP as a Nortel Networks SSP, so that the SCP can tailor its response to the subset of CS1-R functionality supported by the SSP
- Talk to Service Control Points (SCPs) supporting White Book, as well as Blue Book, TCAP

Technical reference

59033629

INAP Auto-Continue on SCP Shutdown/Tssf Timer Expiry

This feature provides the following functionality on the CS2000 Service Switching Point (SSP):

- Optional Auto-Continue support on a per-service basis. Auto-Continue maintains non-IN functionality in the event of Service Control Point (SCP) failure. Auto-Continue automatically continues a call as a non-IN call if the IN functionality fails. This feature introduces a new register, EINAUTOC, for OM group EIN2. EINAUTOC records the number of times Auto-Continue is invoked.

Value

Auto-Continue enhances call completion by allowing a call to be completed during SCP failure. This means that small, less robust SCPs can be added to the network for value added services and, in the event of SCP failure, calls can still be completed.

Technical reference

59033629

INAP Support for SCCP Segmentation

This feature provides the following functionality on the CS2000 Service Switching Point (SSP):

- Signalling Connection Control Part (SCCP) Segmentation and Reassembly (SAR) support for Intelligent Networks Applications Part (INAP) payload data
- SCCP support for routing based on Global Title Translation (GTT). This functionality means that peer nodes can route a reply back to the CS2000-SSP using GTT

Value

This feature ensures the usage of the segmentation and reassembly facility from the SCCP layer. Customers can use SCPs supporting SCCP segmentation to send INAP operations to the SSP that do not fit within a single SCCP payload.

This feature also enables peer nodes of the CS2000 to use Global Title for routing IN messages back to the SSP. This can simplify network design as the SSP can be identified by Global Title instead of PointCode and Subsystem number. It also facilitates international connections between SCPs and SSPs.

Technical reference

59033629

CS-1R Service Interaction Interworking

This feature introduces support for:

- The **connectedNumberTreatmentInd** parameter of the **serviceInteractionIndicatorsTwo** parameter for the Intelligent Networks Applications Part (INAP) Connect operation.

  This allows the IN service to restrict the presentation indicator of the connected number, generic number(s) and redirection number restriction parameter of the ISUP ANM/CON message that is relayed back to the originating exchange in response to an INAP Connect operation

- The calling party's name in an extension in the INAP InitialDP**.**

  This enables the calling party's name to be presented to the IN service. For ISUP trunk-originating calls, the name is derived from the Initial Address Message (IAM) message. For line-originating calls, the name is derived from datafill of the DNATTRS table

Value

For number translation services the operator may not want the real geographic number to be presented back to the calling party. This functionality enables that presentation to be blocked.

This feature also allows the calling party's name to be supplied to the IN Service Control Point (SCP) in an InitDP extension.

Technical reference

59033637

DEPENDENCIES

The following order code is required for this functionality to be operational:

TEL00009 C7 Network Integrity Items

DSSP0007　　　　Trunk Trigger Subscription

This order code allows the network operator to select a particular trunk group for Intelligent Network (IN) calls.

CAPABILITIES AND VALUE

Trunk Trigger Subscription

This feature provides the ability to subscribe to a trigger type on a trunk group basis. With the Trunk Trigger Subscription feature, a call can only trigger as an IN call if the trunk group the call originated on is subscribed to a trigger group with a trigger criterion which can be met by the incoming call.

Triggering is the SSP process of identifying calls which require IN handling. The calls are identified using the static parameters, called trigger types, kept in look up tables. If a call triggers, the SSP sends a query to the Service Control Point (SCP) service logic which dictates how the call should proceed.

The trigger types are specified by the network operator to implement services required by its end users. For example, a network operator may define indirect access to its network as a trigger type or define a Freephone number for a specific business end user. The trigger types are normally defined for trigger criteria such as called party number. Trigger criteria is datafilled by the network operator.

Value

Allows the network operator to select those trunks which support IN services, improving the efficiency of the processing in the Core of the CS2000.

SSP Trunk Retriggering

This feature enables the Service Control Point (SCP) to invoke sequential triggers in order to activate sequential services that each require triggering on a single call. For example, a network operator may require two services, such as an authorisation service and a number translation service. If there is a requirement to run the services sequentially, re-triggering is necessary to invoke the second service.

Without this feature, looparounds would be required to achieve a re-trigger.

This feature allows one of the following sequential triggers:

- Trigger Detection Point (TDP)-2 trigger followed by n-1 TDP-3 triggers, or
- TDP-3 trigger followed by n-1 TDP-3 triggers

 where n represents the total number of triggers allowed on a single call in the range 1 to 8

Value

This feature provides the network operator with greater flexibility and reduced complexity when accessing several IN services from a single Service Switching Point (SSP), without reducing the outgoing call capacity of the SSP. By removing the need for dedicated looparound trunks, this feature enables the network operator to reduce operational costs.

Technical reference

59013604

DEPENDENCIES

The following order code is required for this functionality to be operational:

DSSP0001 Basic CS1 SSP

DSSP0008   CS-1R Service Filtering

This order code provides the Service Filtering capability, which is an efficient means for the network operator to minimise the message flow between the Service Switching Point (SSP) and the Service Control Point (SCP).

Without the Service Filter capability, with every Intelligent Network (IN) call that arrives into the SSP an enquiry is sent to the SCP to request the call sequence.

CAPABILITIES AND VALUE

CS-1R Service Filtering

This feature delivers the ability of the Service Control Point (SCP) to instruct the Service Switching Point (SSP) to handle certain IN calls without consulting the SCP.

Instead, the SCP sends a message to the SSP instructing it to handle certain calls without checking the SCP. For example, during televoting a counter on the SSP maintains a record of the number of calls to a certain set of numbers. A message is sent from time to time to the SCP with the voting figures.

Value

This feature:

- Allows network operators to optimise their networks for the handling of mass calling events such as televoting

- Increases robustness in the network

- Minimises the message flow between the SSP and the SCP

Technical reference

AU3028

DEPENDENCIES

The following order code is required for this functionality to be operational:

DSSP0001 Basic CS1 SSP.

DSSP0010   AMA FCI

This order code provides AMA Furnished Charge Information (FCI), which is used to append a module of information to the base Automatic Message Accounting (AMA) record. The FCI capability is fully flexible to allow the network operator to customise the additional information contained in the module appended to the billing record.

AMA records are generated each time a billable event occurs on CS2000. The call record is provided in the Extended Bellcore AMA Format (EBAF).

CAPABILITIES AND VALUE

AMA FCI

This feature allows the network operator to append a module of information to the base AMA record generated by CS2000.

Value

This feature provides greater flexibility of AMA call recording mechanisms, by enabling the network operator to customise the additional information contained in the module appended to the billing record.

CS-1R Multi-Vendor FCI

The FurnishChargingInformation (FCI) operation is sent by the Service Control Point (SCP) to the Service Switching Point (SSP) to create or update a call-related AMA billing record. The FCI is also used by the SCP to send network operator-defined information to the SSP. This information is sent in the FCI's FCIBillingChargingCharacteristics parameter. If the SSP receives an FCI operation

containing an FCIBillingChargingCharacteristics parameter, the SSP places the information contained in the parameter in AMA extension module 199, which is then appended to the base AMA record.

Without this feature, the SSP would disallow an FCI operation's FCIBillingChargingCharacteristics parameter that was encoded in a format other than that defined by Nortel Networks. In this scenario, the FCI operation was return errored with the reason, Unexpected Parameter Value.

This feature allows the SSP to accept the FCI's FCIBillingChargingCharacteristics parameter encoded in any format. Datafill, on a per-service basis, determines which type of data (Nortel Networks or non-Nortel Networks) the SSP receives.

Value

This feature enhances connectivity by accepting FCI parameters from multi-vendor, as well as Nortel Networks proprietary SCPs. This flexibility allows network operators equipped with Nortel Networks SSPs the option to "commodity-shop" for the SCP of their choice.

Technical reference

AG5522

DEPENDENCIES

The following order codes are required for this functionality to be operational:

BILL0001 Billing

DSSP0001 Basic CS1 SSP

DSSP0013   Call Information Request and Report

This order code provides two INAP operations, Call Information Request (CIRQ) and Call Information Report (CIRP), to CS2000.

CAPABILITIES AND VALUE

Call Information Request and Report

Provides CIRP and CIRQ which enables the Service Control Point (SCP) to request the Service Switching Point (SSP) to record specific information such as call attempt duration time, call connected elapsed time, call stop time and identification of the terminating trunk on a per call basis and report this information back to the SCP.

Value

CIRQ and CIRP allow network operators to generate statistical data about IN calls in their networks.

DEPENDENCIES

The following order code is required for this functionality to be operational:

DSSP0001 Basic CS1 SSP

DSSP0014   CS-1R TDP2

This order code provides Trigger Detection Point (TDP) 2. TDP2 is the ETSI INAP/CS-1R specified TDP used to provide services based on Service Control Point (SCP) translations such as Virtual Private Network (VPN).

CAPABILITIES AND VALUE

TDP2

With TDP2, the following triggering mechanisms are provided:

- A minimum digits criterion allows calls entering the SSP to trigger an SCP query once the minimum number of digits is received. The minimum digits can be datafilled to **0**

- Specific digit string criteria allow calls to trigger if the dialled digits match static data in trigger tables which are filled by the network operator

- Feature code criteria allow calls to trigger if the dialled digit string is preceded by a star (*) or a hash (#) symbol followed by one, two or three digits

TDP2 can be subscribed to on a trunk-group-wide, line or switch-wide basis.

Triggering is the SSP process of identifying calls which require IN handling. The calls are identified using the static parameters, called trigger types, kept in look up tables. If a call triggers, the SSP sends a query to the SCP service logic which determines how the call should proceed. The trigger types are specified by the network operator to implement services required by its end users.

Value

This feature allows network operators to use TDP2 instead of TDP3 in order to provide simpler triggering mechanism.

DEPENDENCIES

The following order code is required for this functionality to be operational:

DSSP0001 Basic CS1 SSP

DSSP0015   Call Party Handling

CAPABILITIES AND VALUE

Call Party Handling (Basic Warning Tone)

This feature provides support for warning tone functionality. An announcement or tone may be played to either party in a call party scenario.

Value

By providing an announcement or warning tone to parties in a call party scenario this feature enhances end user satisfaction, thereby providing the network operator with the potential for increased revenue.

Technical reference

59038649

DEPENDENCIES

The following order code is required for this functionality to be operational:

DSSP0001 Basic CS1 SSP

DSSP0017   CS-1R Call Gapping

CAPABILITIES AND VALUE

CS-1R Call Gapping

This Intelligent Network (IN) feature provides call overload management to reduce the rate at which service specific requests, for example, calls to a TV or radio phone-in, are sent to the Service Control Point (SCP). A throttle mechanism becomes effective when overload conditions are detected on the SCP. The throttle mechanism allows calls with certain 'call gap' criteria, for example, called party number, to be blocked for predetermined intervals over a predetermined duration.

Value

A quality of service benefit to the network operator.

Prevents degradation of other services being processed on the same SCP or SSP, protecting revenue-generating calls.

Helps the network operator to prevent call failures and long response times

Technical reference

AG5512, AU3027

DEPENDENCIES

The following order code is required for this functionality to be operational:

DISP0001 Display-Based Svcs

DSSP0018   Point of Re-entry Control

CAPABILITIES AND VALUE

Point of Re-entry Control

Provides the network operator with the capability to:

- Modify the access restriction level (NCOS) associated with the incoming call
- Define the point of entry where translation of the number continues in the exchange

Currently, when an IN call receives a CONNECT, CONTINUE or ETC operation, the digits are re-translated as if the originator dialled the number. In some cases the originator is barred from making certain types of call (for example, long distance or international). Depending on how this is done, the IN call could be blocked as well making it impossible for end users to dial a particular IN number.

The TRAVER tool has also been updated to verify CS-1R point of re-entry control datafill. As a result, pre-query translations and trigger criteria checking datafill may be verified in the same trace as post CONNECT or ETC translations datafill.

Value

This feature avoids fraudulent use of high revenue features such as 190x services. Call Termination to the PSTN service can be restricted in network translations. However, access to the PSTN service can be permitted if the 190x number is dialled.

Based on the call type, the SCP can instruct the SSP which translations algorithm and restriction level to use when processing the call.

The Network Operator can avoid building complex translation algorithms to restrict/allow certain call types from being processed.

Technical reference

AU3025

DEPENDENCIES

The following order code is required for this functionality to be operational:

DSSP0001 Basic CS1 SSP

DSSP0019   CS-1R Correlation ID

CAPABILITIES AND VALUE

CS-1R Correlation ID

This feature allows the CS2000 Service Switching Point (SSP) to append extension module 611, containing a correlation ID, to all billing records closed for calls that trigger at Trigger Detection Points 2 and 3 (TDP-2 and TDP-3). The correlation ID contained within extension module 611 is the same for all Automatic Message Accounting (AMA) records resulting from a single call origination. This functionality provides a method of associating multiple billing records with an original call, for example, where call re-origination is involved. Additionally this feature can identify whether the AMA record generated is the last one for the particular call instance.

Value

This feature gives the network operator the means to group multiple billing records that might result from a single call origination. This allows accurate and complete call records to be produced by the downstream billing computer and any ancillary monitoring equipment. By utilising the last record indicator, the billing processor can determine if it has all the AMA records from a single call.

Technical reference

AG5522

DEPENDENCIES

The following order code is required for this functionality to be operational:

DSSP0001 Basic CS1 SSP

DSSP0021   SSP - Strip Leading Digits

CAPABILITIES AND VALUE

SSP - Strip Leading Digits

This feature provides the ability to strip the leading digits from an Intelligent Network Application Part (INAP) called party number. This functionality can serve a number of purposes. For example, it can be used to remove indirect or other access codes, and it allows the Service Switching Point (SSP) to operate with non-Nortel Networks Service Control Points (SCPs) that are not capable of handling lengthy called party numbers. The network operator can specify the number of leading digits to strip, in the range 1 - 30.

This option is available on a per-service basis using datafill in the table, SERVINFO.

Value

This feature provides network operators with increased flexibility in provisioning their SCPs and enables network operators to interwork with other vendors' SCPs.

Technical reference

59012675

DEPENDENCIES

The following order code is required for this functionality to be operational:

DSSP0001 Basic CS1 SSP

DSSP0022 SSP - OCI Retention and Capture in AMA for Follow-on Calls

CAPABILITIES AND VALUE

SSP - OCI Retention and Capture in AMA for Follow-on Calls

This feature allows network operators to capture translations-based billing data items for each leg of an Intelligent Network (IN) call triggering at Trigger Detection Point (TDP)-3. The pre-triggering leg of a call generates a set of billing information. When a connect operation is received from the Service Control Point (SCP) with a new destination number, the call moves to the post-connect leg and goes through a second set of translations. Following translations, the IN billing information overwrites the values recorded for the pre-triggering leg. This functionality allows the OCI from the triggering translations to be maintained.

For those network operators who wish to retain the initial Originating Charge Information (OCI) through each leg of the call, this feature also provides that option on a per-service basis using datafill in the table, SERVINFO. With this option, network operators can retain the initial OCI value in multiple Automatic Message Accounting (AMA) records generated for a single IN call triggering at TDP-3.

Value

By giving network operators flexibility in determining how billing information is maintained through each leg of an IN call triggering at TDP-3, this feature adapts CS2000 to better suit market requirements.

Technical reference

59012663

DEPENDENCIES

The following order code is required for this functionality to be operational:

DSSP0001 Basic CS1 SSP

DSSP0028   Apply Charging

CAPABILITIES AND VALUE

China ISUP Calling Card Service

This feature supports the Calling Card 200 service and has the following components:

- China INAP specific implementation of the ApplyCharging operation
- NTC7 SS7 signalling stack between the Service Control Point (SCP) and Service Switching Point (SSP)

Value

By enhancing CS-1R to support parts of the Chinese INAP specification, this feature provides the network operator with the potential to deploy the "200" calling card service in the China market.

Technical reference

59039729

CAPABILITIES AND VALUE

China VPN Service (SSP Functionality)

This feature supports the China Virtual Private Network (VPN) according to the China specification.

Value

This feature allows the CS2000 to better meet the needs of the China market.

Technical reference

89008388

China NTS Service (SSP Functionality)

This feature supports the China Number Translation System (NTS) service according to the China specification.

The functions to support China 200 services are based on the China Intelligent Network Application Part (INAP) specification GF017-95 and the China INAP test specification YDN107.2-1999.

This feature implements the following functionalities:

- Mandarin, Cantonese and English (using the Chinese currency unit) announcements
- Default CLI support. This allows the Service Switching Point (SSP) to replace the Calling Line Identifier (CLI) with a default CLI defined according to the CalleD Party Number (CDPN) and service type
- The ApplyCharging parameter. This controls the sending of the Apply Charging Report (ACR) to the Service Control Point (SCP)
- Prevention of re-triggering by the same prefix code in Destination Routing Address (DRA)

These functions are supported for the following agents:

- China ISUP

- Lines

Value

This feature allows the CS2000 to better meet the needs of the China market.

Technical reference

89008388

China INAP compliance enhancement Part 1

This feature is based on the China INAP specification and China INAP test specification. The following enhancements are provided:

- CallGap (CG) parameter support: gapInterval
- Multiple CallGaps support
- ResetTimer parameter support: timerValue
- CallInformationRequest/Report parameter support: legID, calledAddress & releaseCause
- ActiveServiceFiltering parameter support: sfBillingRecordCharacteristics
- ApplicationContextName negotiation support
- ApplyChargingReport: conversation time measurement
- CS-1R ICA support

These functions are not agent specific; they are supported on the originating agents with the condition that originating agent to/from INAP interworking is ALREADY supported. For example, China ISUP, IBN lines, SIP-T (no ISUP), China PRI.

The office parameter: INAP_Variant is used for the China INAP specific enhancement. The China INAP specific enhancement only takes effect when:

- INAP_Variant = Chinese

Value

This feature enhances Nortel Service Switching Point's (SSP) INAP functionality to comply with the following China INAP requirements:

- GF017-1995 China INAP Specification
- YDN107.2-1999, INAP test spec - SSP part

Technical reference

00002754

China INAP compliance enhancement Part 2

This feature is based on feature A89008388: *China IN SSP capabilities* and feature AG5145: *External IP*. Two main functionalities are implemented in this feature:

- External IP enhancement

  The following enhancements are made to fully support external Intelligent Peripheral (IP):

  — Enhance operation EstablishTemporaryConnection

  — Enhance operation InitialDP

  Parameters iPAvailable and iPSSPCapabilities are required in IDP operation SSP is able to set these two parameters by datafill.

> — Charging the temporary connection to external IP using ApplyCharging operation
>
> — Charging per duration and time are both supported.
>
> — Unsuccessful connection to external IP handling enhancement
>
>   Several scenarios of unsuccessful connection to external IP are enhanced.
>
> — CISUP: Map the post answer Address Complete Message (Connect) ANM(CON) to CPG

- Multiple ApplyChargings (ACs) support

  — This is enhanced to support up to three ACs

    Up to three ACs can be accepted and handled simultaneously during an INAP call. For multiple ACs, corresponding Apply Charging Reports (ACRs) can be sent to the Service Control Point (SCP) if required.

Function '*CISUP: Map the post answer ANM(CON) to CPG*' is for the China ISUP originator only. The other functions are agent independent, that is, they are supported on the originating agents when the originating agent to/from INAP interworking is ALREADY supported. For example, China ISUP, IBN lines, SIP-T (no ISUP), China PRI.

Value

This feature enhances the external IP capabilities and supports multiple ApplyChargings to comply with the following China INAP requirements:

- GF017-1995 China INAP Specification
- YDN107.2-1999, INAP test spec - SSP part
- Supplementary Specification of China IN CS-1 INAP (draft)
- Test specification of Supplementary Specification of China IN CS-1 INAP (draft)

The external IP has direct connection through China ISUP to SCP. The SSP does not provide assisting SSP functionality.

Technical reference

00002900

DEPENDENCIES

The following order code is required for this functionality to be operational:

DSSP0001 Basic CS1 SSP

INAP0002 INAP Line Cap

CAPABILITIES AND VALUE

CS1R Line Triggering CFD/3WC

This feature provides support for interaction of Intelligent Networking (IN) triggering with:

- Line features that allow a multi-leg call: Call Forward Universal (CFU), Call Forward Don't Answer (CFD), Call Forward Busy (CFB) and Three Way Call (3WC).

Interaction with IN triggering depends on whether the original call is currently under IN control, as follows:

— If the original call is not currently under IN control, these line features are allowed to trigger at TDP-2 and TDP-3

— If the original call is currently under IN control, triggering from these features is optional. By default, triggering is not allowed

Notes:

TDP-2 is not supported on the third leg of a 3WC.

TDP-2 is not supported on a call forward call unless the digits used follow a successful translations route.

- Line features that perform call origination: Ring AGain (RAG), Network RAG, Automatic Callback (ACB) and Automatic Recall (AR).

If the line feature that performs call origination originates a new call leg, IN triggering at TDP-2 and TDP-3 is supported when the original call triggers as an IN call.

When the original call was an IN call that triggered at TDP-2 or TDP-3, the new call leg also triggers at TDP-2 or TDP-3.

This feature supports the following Event Detection Points (EDPs) for CFU, CFD, CFB and 3WC:

- EDP-2 (Collected Info) armed as EDP-R (Request)
- EDP-4 (Route_Select_Failure) armed as EDP-R or EDP-N (Notification)
- EDP-5 (o_Called_Party_Busy) armed as EDP-R or EDP-N
- EDP-6 (o_No_Answer) armed as EDP-R or EDP-N
- EDP-7 (o_Answer) armed as EDP-N
- EDP-9 (o_Disconnect) armed as EDP-R or EDP-N (not for 3WC)
- EDP-10 (o_Abandon) armed as EDP-R or EDP-N

Value

By introducing support for more line triggering features, this feature allows network operators to implement more of the services required by their end users.

This feature also removes the need for dedicated looparounds, thereby realising operating cost and footprint savings.

Technical reference

59033609

SSP Line Triggering Support

This feature enables the triggering of Intelligent Network (IN) calls from lines. In addition, this feature supports Event Detection Points (EDPs) on line-to-line, line-to-trunk and additional trunk-to-line interworkings without the need for trunk looparounds.

This feature supports all EDPs and TDPs (except EDP-8 on the line agent) on line-to-line, trunk-to-line and line-to-trunk interworkings.

Previously, it was possible to arm EDPs on calls terminating to line agents. With this feature, EDPs can be armed and detected on calls originating from, or terminating to, the following types of line:

- Standard IBN lines
- V5.2 lines

Value

By removing the need for trunk looparounds, this feature increases the capacity of the CS2000 and reduces operational costs for the network operator.

Technical reference

59013599

CS1-R Line Triggering Enhancements

This feature provides support for interaction of Intelligent Networking (IN) triggering with:

- Call Completion to Busy Subscriber (CCBS)
- Meet Me Conference (MMC)
- Conference (CNF)
- Consultation Hold (CHD)
- Automatic Recall of Diallable DN (ARDDN)

Value

By introducing support for more line triggering features, this feature allows network operators to implement more of the services required by their customers.

Technical reference

59038655

HARDWARE REQUIREMENTS

This feature requires a SCP to be connected to the CS2000 where INAP calls are generated.

DEPENDENCIES

The following order code is required for this functionality to be operational:

DSSP0001 Basic CS1 SSP

INAP0003   INAP ANSI7+ Capability

This order code provides ANSI ISUP+ to CS-1R (Capability Sets-1 Refined) interworking, allowing calls to the Service Switching Point (SSP) on ANSI ISUP+ trunks to trigger Intelligent Network (IN) functionality.

ANSI ISUP+ (also known as IBN7) is Nortel Networks' proprietary implementation of ANSI ISUP. It is an enhanced version of the ANSI ISUP standard, with extensions to support various proprietary features.

CAPABILITIES AND VALUE

INAP ANSI7+ Capability

This feature provides ANSI ISUP+ to CS-1R interworking, giving access to IN functionality.

Value

This feature allows network operators to offer IN capability on ANSI ISUP+ trunks, extending IN service coverage across CS2000 nodes.

DEPENDENCIES

The following order code is required for this functionality to be operational:

DSSP0001 Basic CS1 SSP

INAP0004　　INAP ETSI ISUP Capability

This order code provides ETSI ISUP V1 and V2 to INAP interworking, allowing incoming calls to the Service Switching Point (SSP) on ETSI ISUP V1 and V2 trunks to trigger Intelligent Network (IN) functionality.

CAPABILITIES AND VALUE

INAP ETSI ISUP Capability

This feature provides ETSI ISUP (and many national variants) to INAP interworking, giving access to IN functionality.

Parameters in incoming ETSI ISUP messages are mapped to INAP operations, and the latter are mapped to outgoing terminating protocol messages.

Value

Allows network operators to offer IN capability on ETSI ISUP trunks, extending IN service coverage across CS2000 nodes.

Technical reference

AG5512

DEPENDENCIES

The following order code is required for this functionality to be operational:

DSSP0001 Basic CS1 SSP

INAP0005　　INAP PRI Capability

This order code provides ETSI Primary Rate Interface (PRI) to CS-1R (Capability Sets-1 Refined) interworking, allowing calls to the Service Switching Point (SSP) on PRI trunks to trigger Intelligent Network (IN) functionality.

CAPABILITIES AND VALUE

INAP PRI Capability

Provides PRI to CS-1R interworking, giving access to IN functionality.

Value

Allows Virtual Private Networking (VPN) users, via PRI signalling, to access IN capabilities offered for CS2000.

Allows network operators to offer IN capability on ETSI PRI trunks.

Technical reference

AU3029

DEPENDENCIES

The following order code is required for this functionality to be operational:

DSSP0001 Basic CS1 SSP

ISSP0002 IN Triggers Processing

CAPABILITIES AND VALUE

Point of Re-entry Control for Post CS-1R Continue Operation Translations

This feature provides the customer with the capability to specify the point in UXLA (Universal Translation) where translations commence following the receipt of a CS-1R Continue operation for TDP-3 and TDP-2 triggering calls. This functionality allows for post Continue processing to bypass restrictions/translation limitations that may be associated with various stages of IBN/universal translations.

This feature also provides the customer with the capability to modify the Network Class of Service (NCOS) value associated with a trunk call following the receipt of an SCP-originated Continue operation based on SSP datafill.

Re-triggering is permitted following Point of Re-entry control (following a CS-1R Continue operation).

In addition to post Continue functionality, existing post Connect PoR control is enhanced to support overlap in-pulsing of digits. This is specific to Connect Cut&Paste functionality.

Value

By enhancing functionality, this feature increases the network operator's customer satisfaction and thereby provides the network operator with the potential for increased revenue.

Technical reference

59020332

SSP Support of Overdecadic Digits

This feature addresses the ability to support overdecadic digits (B, C, D and E only) for CS2000 SSP (both IP and ATM networks) in the following areas:

- Triggering at TDP2 and TDP3 using overdecadic digits (B, C, D and E only) and the transmission of these digits in the CS-1R InitialDP operation. This feature enhances the overdecadic digit support of D and E in InitialDP operation (overdecadic digit B and C are already supported).

- Processing of overdecadic digits received in the CS-1R Connect operation from the Service Control Point (SCP). Support of B, C, D and E digits in Connect message is provided by this feature.

This feature supports prefix or interspersed overdecadic digits.

Value

By increasing functionality and efficiency, this feature increases the network operator's customer satisfaction and thereby provides the network operator with the potential for increased revenue.

Technical reference

59023445

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

ISSP0005   Originating Basic Call State Machine EDPs

EDPs are detection points in the Service Switching Point (SSP) which have been dynamically set by the Service Control Point (SCP) to monitor for the occurrence of a specified event, such as the terminating party being busy or not answering. EDPs are detected on a per call basis as opposed to Trigger Detection Points (TDPs) which are static data entries in lookup tables.

This order code provides the following Event Detection Points:

- EDP-2, Collect Information. EDP-2 is the ETSI INAP/CS-1R specified EDP for calls that have collected a required number of digits. In the case of an EDP-2 detection, the SCP informs the SSP of the number of digits it requires to provide a destination address to route the call successfully.

- EDP-4, Route Select Failure. EDP-4 is the ETSI INAP/CS-1R specified EDP for calls that encounter Route Select Failure. In the case of an EDP-4 detection, the SCP may provide an alternative routing address to attempt to complete the call.

- EDP-5, Called Party Busy. EDP-5 is the ETSI INAP/CS-1R specified EDP for calls that encounter a called party busy event. EDP-5 can also be used in IN Call Completion services. In the case of an EDP-5 detection, the SCP may provide an alternative routing address to attempt to complete the call.

- EDP-6, No Answer. EDP-6 is specified by ETSI INAP/CS-1R as the EDP to route calls to an alternative DN when there is no answer at the original destination. In the case of an EDP-6 detection, the SCP may provide an alternative routing address to attempt to complete the call.

- EDP-7, Answer. EDP-7 is the ETSI INAP/CS-1R specified EDP for calls that have been answered. EDP-7 can be used in a service which requires that the SSP knows that a call has been answered.

- EDP-8, Mid Call. EDP-8 is the ETSI INAP/CS-1R specified EDP for detecting when a mid call event is initiated by the called party. In the case of an EDP-8 detection, the SCP may provide an alternative routing address to attempt to complete the call (EDP-8 is only supported on ISUP and PRI trunks).

- EDP-9, Disconnect. EDP-9 is the ETSI INAP/CS-1R specified EDP for calls that have been disconnected. EDP-9 can also be used in IN Call Completion services.

• EDP-10, Abandon. EDP-10 is the ETSI INAP/CS-1R specified EDP for detecting when a call has been abandoned on leg 1 of an Intelligent Networking (IN) call.

DEPENDENCIES

The following order code is required for this functionality to be operational:

DSSP0001 Basic CS1 SSP

3.5 Line Services

ILIN0002 Standard Line Features

The following standard line features are supported in ISN05. Please refer to the Applicability Matrix in the Appendix for supported line gateways.

CAPABILITIES AND VALUE

Call Waiting

The Call Waiting (CWT) feature notifies a subscriber in a stable call (for instance, an answered call) when another call arrives. The subscriber can place the current party on hold and answer the call that is waiting.

Cancel Call Waiting

The Cancel Call Waiting (CCW) feature permits an Integrated Business Network (IBN) subscriber to block any call waiting attempts during the duration of a call. The subscriber can activate CCW before or after the call setup.

Call Waiting Ringback

The Call Waiting Ringback (CWR) feature informs the caller via audible ringback tone if the destination is available for Call Waiting. If the called station is not available for Call Waiting, the caller receives standard ringback or a busy tone, as appropriate.

3-Way Call

The 3-Way Call (3WC) subscriber establishes a three-way call simply by calling the first Directory Number (DN); flashing the switchhook to put the first party on hold; and, after hearing the special dial tone, dialling the second party's DN. When the second party answers, the switchhook is again flashed to bring the holding party into the conversation.

Call Forward Unconditional

The Call Forward Unconditional (CFU) feature allows a station user to reroute incoming calls to another telephone number. This number can be in the Meridian Digital Centrex (MDC) customer group, the local calling area, or a foreign exchange. The user can also forward the call to an attendant.

Call Forward Busy

The Call Forward Busy (CFB) feature forwards to a pre-determined station all calls to a busy station. The station is defined earlier and can be any remote station.

Call Forward No Answer

The Call Forward No Answer (CFD) feature allows calls directed to a base station that does not answer within a prescribed time to be routed to another pre-defined remote station.

Call Forward Call Waiting Calls

Currently, a call that has been Call Waited activates several warning tones to the alert busy station, but then remains connected until the call is answered, abandoned by the originator, or the busy station user hangs up (whereupon the waiting call then rings as an incoming call).

This feature provides the following added benefit to subscribers that have both the Call Waiting and the Call Forward, No Answer (CFD) services assigned to their lines: Call Waiting calls that are not answered within a set period of time (that is, 12 to 60 seconds) automatically forward to a predetermined destination.

Call Forward No Answer Variable Timing

The Call Forward No Answer Variable Timing (CFDVT) feature allows the subscriber to specify the CFD timer value, that is, how long ringing should continue before CFD rerouting takes place.

Call Forward Indication

This feature provides station users with an indication that their set is forwarded. After the audible notification occurs, the user receive dial tone for digit collection.

Last Number Redial

The Last Number Redial (LNR) feature allows a subscriber to redial the last number dialled. The subscriber uses an access code instead of the full number to redial the last number dialled.

Speed Calling, Individual Short List

The Speed Calling, Individual Short List (SCS) feature allows a customer to specify a list of frequently called numbers that can be called by dialling a one-digit speed calling code instead of the complete number.

Speed Calling, Individual Long List

The Speed Calling, Individual Long List (SCL) feature allows a customer to specify a list of frequently called numbers that can be called by dialling a two-digit speed calling code instead of the complete number.

Automatic Call Back

The Automatic Call Back (ACB) option allows a subscriber to place a call to the last station that the subscriber called. If the destination line is busy, ACB monitors the line until the line becomes idle and can accept the call.

Automatic Recall/Automatic Recall of Diallable DN

The Automatic Recall (AR) feature allows a subscriber to return a call to the last station that called the subscriber. If the destination line is busy, AR monitors the line until it becomes idle and can accept the call.

The system can activate the AR feature as a two-level procedure and uses three announcement types. The type of interconnecting call determines the type of announcement: DN announcement, private DN announcement and invalid DN announcement. From the DN announcement, the subscriber hears the directory number of the last incoming call. The announcement instructs the subscriber to dial a digit to activate AR or hang up to abort AR.

The Automatic Recall of Diallable DN (ARDDN) feature allows a subscriber to dial a feature code that sets up a call to the DN where the subscriber placed the last incoming call. The ARDDN feature delivers a diallable DN to the AR option subscriber.

Level 1 (AR) and level 2 (ARRDN) are supported in ISN04.

Automatic Recall (AR) supports Open Dial Plan (ODP) subscribers on IBN lines. The subscriber Directory Number (DN) can range from a two digit national DN to a fifteen digit (including national country code) DN. The Calling Line Identifiers (CLIs) that are called back can be up to 18 digits (including any prefix digits added during reverse translations). ODP support for AR is controlled by office parameter ACBAR_TLR in table ISERVOPT (technical reference 59038837).

Call Completion to Busy Subscriber

The Call Completion to Busy Subscriber (CCBS) feature allows a subscriber dialling an in-use terminating line to be called back to notify the subscriber that the desired terminator's line is no longer in use and can be called.

Message Waiting Indicator - Audible (MWT)

The Message Waiting Indicator - Audible (MWT) feature allows callers to a subscriber to leave recorded messages at a message desk when the subscriber is not available. The feature provides notification via an incoming message accompanied by one reminder ring, unless the line is busy. An optional intermittent dial tone is also available as an additional reminder.

Subscribers can retrieve their messages by dialling the voice messaging center. The service is deactivated when the last message is retrieved.

E.164/ODP support is provided with ETSI ISUP/ETSI TCAP connectivity to the Voice Mail Server.

Secondary DN/Teen Service

The Secondary DN/Teen Service (SDN) feature allows secondary DNs to be added to an existing line.

Gateway dependency to support multiple physical ringing cadences.

Enhanced Secondary DN (ESDN)

The ESDN service allows multiple DNs (up to 6) to be assigned to a single line without the expense of additional equipment.

Subscriber Activated Call Barring

The Subscriber Activated Call Barring (SACB) feature enables subscribers to control originations from their lines by identifying call classes that restrict completion to certain dialled numbers.

Note: This feature has E.164 / Open Dial Plan limitations. It is only available to subscribers' Directory Numbers up to 10 digits. Prompt and collect functionality is required. Gateway dependency to support inband digit collection.

Call Forward Intragroup

The Call Forward Intragroup (CFI) feature allows a station to restrict the forwarding of calls to other telephone numbers in a customer defined group. The CFI option is only associated with the primary Directory Number (DN) key of the set.

Call Forward With Announcement

The Call Forward With Announcement (CFWANN) option provides an announcement to the originator of a call if the system forwards the call to a remote Directory Number (DN).

Speed Calling Group

The Speed Calling Group feature allows members of a speed-calling group to dial frequently called numbers by dialling a two-digit speed calling code instead of the complete number.

The speed calling list has one line designated as the controller. Only the controller can add to, change or delete numbers from the list. A speed calling user can only originate calls with speed calling and cannot affect the contents of the speed calling list.

Automatic Recall/Automatic Recall of Diallable DN AMA Billing Enhancements

Automatic Recall (AR) is a CLASS feature that can be assigned to an IBN or POTS line via SERVORD. Once assigned to a line, whenever a call attempt to that line is unanswered, the user can dial a feature code to hear an announcement giving the number of the party that last called the user's line.

Automatic Recall of Diallable DN (ARDDN) is a feature that enhances the original AR functionality by ensuring that the number heard in the announcement is in a format which the user can dial to initiate a direct callback.

Once the user has heard the announcement, this feature allows a call to be initiated to that number by pressing **1** on the keypad. This feature also enhances billing functionality to enable the customer to distinguish calls that are originated from the AR feature.

Value

By enhancing functionality, this feature increases the network operator's customer satisfaction and thereby provides the network operator with the potential for increased revenue.

Technical reference

59039985

DEPENDENCIES

The following order code is required for this functionality to be operational:

ILIN0100 International Line Features

ILIN0003   CLASS Line Features

The following Custom Local Area Signalling Services (CLASS) features are supported in ISN04. In some cases, support for these features may be limited to certain gateways (please refer to Table 1.0 in the Appendix). Other specific limitations are noted as required.

CAPABILITIES AND VALUE

Delivery of Diallable Number

Delivery of Diallable Number (DDN) delivers the caller's number to the subscriber's Customer Premises Equipment (CPE) for display. Reverse translations are used to provide the exact digits that the subscriber would have to dial in order to reach the caller. The feature supports variable-length DNs of up to 24 digits, and is therefore appropriate for use across the public network.

Calling Number Delivery

Calling Number Delivery (CND) identifies the 10-digit DN of the calling party so that the subscriber can choose whether or not to answer the call. The calling number is displayed on a telephone set or on an adjunct to the set that is capable of displaying the incoming DN after the first ringing cycle. Number recognition allows the subscriber to answer the call with a personalised greeting. The date and time of the incoming call are also displayed. This information is useful in conjunction with voice messaging and sets that provide call logging because it allows the subscriber to know exactly when, and in what order, calls are received.

Calling Number Delivery Blocking

Calling Number Delivery Blocking (CNDB) per call allows end users to specify on a call-by-call basis whether they would like their station numbers to be transmitted to the called parties.

Calling Name Delivery

Calling Name Delivery (CNAMD) displays the name associated with the incoming DN party. The name is displayed after the first ringing cycle. Name display generally results in quicker recognition than number display, and allows the subscriber to answer the call with a personalised greeting. With this service, the subscriber has more specific information on which to base the decision to answer or not. The date and time of the incoming call are also displayed. This service requires a telephone set or an adjunct to the set capable of displaying an alphanumeric set of characters.

Network Wide Calling Name Delivery

This feature provides the Calling Name Display functionality for all public call scenarios. Public calls are all calls where the originating / terminating subscribers are are not within the same private customer group.

Calling Name Delivery Blocking

The Calling Name Delivery Blocking (CNAB) feature allows end-users to specify on a call-by-call basis whether they would like their station name to be transmitted to the called parties.

Anonymous Call Rejection

Anonymous Call Rejection (ACRJ) allows a subscriber to have calls rejected unless the caller's name and/or number is provided for display. Rejected calls are routed to an explanatory announcement.

Selective Call Acceptance

Selective Call Acceptance (SCA) allows subscribers to ensure that selected calls get through. An incoming call from a DN that is not on the SCA list is routed to a treatment stating that the called party does not wish to receive the call. This is especially convenient, for example, to subscribers who do not wish to be interrupted by unwanted calls but want to ensure that important calls get through.

Note: SLE only supports DNs of up to 10 digits.

Selective Call Forward

Selective Call Forward (SCF) allows subscribers to ensure that selected calls reach them when they are away from home or the office. Calls from DNs that are not on the SCF list can be picked up at home or the office, or receive whatever treatment the subscriber has arranged, such as answering machine or voice mail. If the SCF destination is busy, the originator receives the busy tone.

Note: SLE only supports DNs of up to 10 digits.

Selective Call Rejection

Selective Call Rejection (SCRJ) allows the subscriber to selectively program a list from which calls are to be rejected or blocked. Incoming calls that are on the list are routed to a treatment informing the caller that the called party does not wish to receive the call.

Note: SLE only supports DNs of up to 10 digits.

Distinctive Ringing/Call Waiting

The Distinctive Ringing/Call Waiting (DRCW) option allows the system to identify terminating calls with a distinct alert pattern. If the line is available, the system issues a distinct ring. If the line is busy, the system issues a distinct call waiting tone. The caller receives standard audible ringback tone. When a call originates from a directory number (DN) on the DRCW list, the system identifies the call by a distinct alert. The system gives standard terminating treatment to call attempts from DNs the system cannot identify or are not on the DRCW screening list.

Message Waiting Indicator - Visible (MWT)

The Message Waiting Indicator - Visible (MWT) feature allows callers to a subscriber to leave recorded messages at a message desk when the subscriber is not available. This feature provides a Message Waiting display or a flashing lamp on sets with this facility.

This feature allows a subscriber to combine the visible Message Waiting indicator with the following audible indication types:

- Stuttered Dial Tone. On active message waiting a stuttered dial tone is applied when the user goes off-hook.

- Ring Splash. On active message waiting a ring burst is applied to the user's phone.

Subscribers can retrieve their messages by dialling the voice messaging centre. The service is deactivated when the last message is retrieved.

This feature provides the following interworking:

- The controlling user is Voice Mail System (VMS) connected to the Call Server over:

   — PRI (PVG, PDTC)

   — TCAP (LPP, USP)

- The receiving user is an IBN line

Technical reference

59039138

Fixed Calling Number Delivery Blocking

The Fixed Calling Number Delivery Blocking (FCNDB) feature is referred to as SUPPRESS. The SUPPRESS option allows a party to stop directory number (DN) from being displayed at call destination for all calls (as opposed to the CNDB feature, which is on a per call basis).

Technical reference

59033945

Spontaneous Call Waiting With Identification (SCWID)

The Spontaneous Call Waiting With Identification option SCWID allows subscribers to receive calling party information in conjunction with a call waiting tone.

Technical reference

59033945

CEPT Calling Number Delivery Blocking Override

The CEPT Calling Number Delivery Blocking Override (CNDBO) is an option of the Calling Number Delivery (CND) service. This feature overrides the Calling Line Identification Display (CLID) restrictions at the terminating end of a call. The CNDBO feature can also display calling party numbers for calls that terminate on emergency services agents. CNDBO does not affect delivery of the calling name.

DEPENDENCIES

The following order code is required for this functionality to be operational:

ILIN0100 International Line Features

ILIN0004   Enhanced Line Features

In some cases, support for these features may be limited to certain gateways (please refer to Table 1.0 in the Appendix). Other specific limitations are noted as required.

CAPABILITIES AND VALUE

Private Numbering Plan

Private Numbering Plans allow subscribers to communicate across one or more networks by defining, managing, and using digit sequences which have different structures and meanings than those provided by the Public Numbering Plan.

Direct Inward Dialling

This service allows incoming calls from the exchange network to reach a specific customer-group terminal without attendant assistance.

Direct Outward Dialling

With this service, a station user can place external calls to the exchange network without attendant assistance by dialling the Direct Outward Dialling (DOD) access code, receiving a second dial tone, then dialling the external number (that is, outside the customer group).

Call Transfer

The Call Transfer (CXR) feature allows a user to flash from a normal call and dial a third party. From there, the controlling user may:

- Flash again so that both original parties hear ringback
- Wait until the second party answers to flash, so that all three are in a three-way call
- Hang up immediately so that only the second party can hear ringback

Call Park

The PRK option allows a business set user to park a call against the directory number (DN) of the user. Retrieval of the parked call can occur from any station. When the call is parked, the user can originate and receive calls on that DN.

Call Pickup

Call Pickup allows a terminal to answer incoming calls to another terminal within a predefined call-pickup group. Call-Pickup Group can be provided on individual terminals within a customer group

Consultation Hold

This feature allows a user to talk privately to a third party before transferring the call or setting up a three-way call.

Call Hold

The Call Hold (CHD) feature allows a subscriber to place a call on hold, for whatever reason, and then continue the conversation either from the same set or from a more convenient location. Call Hold is activated by flashing the switchhook, dialling an access code, and then hanging up. The call is resumed when the handset is picked up.

The feature is deactivated when the held station hangs up or when the holding station hangs up after reconnecting with the held station. A short ring serves as a reminder if the holding station fails to reconnect with the held station before hanging up.

Permanent Hold

The Permanent Hold (HLD) option allows a single-line set to put an active call on hold and return the handset to the handset cradle. The party on hold hears a ringback tone, a recorded announcement, music, or silence.

Automatic Line

Automatic Line (AUL) is a DN feature that can be assigned to individual DN entries including the primary DN.

When an off-hook is reported from a DN entry to which Automatic Line (AUL) has been assigned, a connection is automatically established to a predetermined location.

Warm Line

The Warm Line (WML) feature allows a connection to be made automatically between an originating party and a pre-determined DN. The connection is made after a pre-determined time period when the originating party goes off-hook.

Make Set Busy

The Make Set Busy (MSB) option allows each IBN station to appear busy to incoming calls. The system applies a temporary splash of ringing (500 ms) to the line to inform the station user of a diverted call. The MSB option causes the system to divert the incoming call. The line or directory number appears busy to both external and intragroup incoming calls.

Ring Again

The Ring Again (RAG) service enables a subscriber to reach a station that is busy at the time the call is placed. The originator is free to place or receive calls normally, with a RAG call against a target. If the originator is not idle when the target becomes idle, the target can place and receive calls normally. In the case of receiving calls, priority is given to the RAG call, if that can be completed.

Call Forward Validation

This service enables Call Forward Universal (CFU) to automatically validate the directory number entered as the forward-to DN when a Meridian Digital Centrex station or IBN station activates CFU.

Call Forward Remote Activation

This feature allows an end user to activate or deactivate call forwarding from a remote telephone set on the same switch or a different switch.

Directed Call Park

The Directed Call Park option allows the system to put calls on hold or to park calls against any valid Directory Number. At a later date, any station can retrieve these calls. The station can have up to 100 calls parked at the same time.

Technical reference

59033945

Directed Call Pickup

The Directed Call Pickup (DCPU) option allows a station to answer a ringing line in the same customer group before the called party answers the ringing line.

Technical reference

59033945

MADN Single Call Arrangement / Multiple Call Arrangement

A Multiple Appearance Directory Number (MADN) appears on more than one analogue set. These DNs are assigned to analogue sets that form a MADN group. MADN groups can have a maximum of 32 members in Single Call Arrangements (SCAs) or Multiple Call Arrangements (MCAs) or Extension Bridging (EXB).

The SCA allows one set to be active, originating or terminating, on the MADN at one time. The MCA allows more than one set to be active on the MADN at the same time. The number of members in the MADN group restricts the number of calls that can occur at the same time.

Technical reference

59033945

MADN Ring Forward (Automatic and Manual)

NEW!

MADN Ring Forward (MRF) provides Multiple Appearance Directory Number (MADN) Single-Call Arrangement (SCA) group members on CICM lines with the following two new ringing options:

•**Abbreviated**
The line appearance rings from call termination until a timer expires.

•**Delayed**
The line appearance rings after a timer expires.

These new options are added to the following existing options:

•**Always**
The appearance rings from the time the call completes on the MADN group until it is answered or abandoned.

•**Never**
The appearance never rings when calls complete on the MADN group.

Automatic MRF is controlled by a timer which is set on a per-MADN-group basis. Automatic MRF can also be pre-empted manually by an EBS user operating a feature key on the EBS to 'push' the ringing for an incoming call to the appearances of the MADN designated for delayed ringing.

Value

These ringing options enable MADN group members to ensure that if a member (with the abbreviated option) whose set rings does not answer the call, the ring will be forwarded to another member (with the delayed option) after a datafillable amount of time. As a result, users are assured of thorough telephone-answering coverage.

Technical reference

00007253

Call Restrict Area

The Call Restrict Area option prevents users from originating calls to a block prefix range of numbers.

Technical reference

59033945

Do Not Disturb

The Do Not Disturb option allows an attendant to restrict calls to a station or group of stations. While call diversion is active, the attendant overrides the option to complete a call to the affected subscriber(s).

Technical reference

59033945

Group Intercomm

The Group Intercomm option allows call termination on a member of a designated intercom group that uses abbreviated dialling to access group members. The size of the group determines the dealing as follows:

- one digit (0-9) for groups of up to 10 members
- two digits (00-99) for groups of up to 100 members
- three digits (000-999) for groups of up to 1000 members
- four digits (0000-9999) for groups of up to 10000 members

Technical reference

59033945

MultiCarrier

The MultiCarrier option allows users to access multiple carriers by dialling the carrier prefix.

Technical reference

59033945

Simultaneous Ring

The Simultaneous Ring option allows simultaneous incoming call notification for the members of a user-defined SimRing group. A SimRing group comprises a single Pilot Directory Number (PDN) and up to four Non-Pilot Member DNs (NPMDNs). Simultaneous notification occurs when the SimRing group PDN receives a call. The first DN that answers the call connects to the calling party. When the calling party connects to a member DN, the other notified member DNs stop ringing.

A SimRing subscriber can use the SimRing user interface to:

- Activate or deactivate the SimRing feature on the line
- Edit the NPMDN list

Technical reference

59033945

Announcement Before Routing (ABR)

This feature provides a subscriber with an announcement when the subscriber makes a call. After the subscriber dials the telephone number, one of four verbal announcements begins. Operating company personnel provision the announcements. After the announcement finishes, the call routes.

CEPT International Call Waiting (ICWT)

This feature provides Call Waiting for IBN lines according to the Conference of European Postal and Telecommunications (CEPT) standards.

CEPT I3WC (International Three Way Call, including Consultation Hold)

This feature allows a subscriber to hold the existing call (both originating and terminating calls) and setup a consultation call to another subscriber. When the second party answers, the controller can then bring the holding party into the conversation by dialling the R-code for three-way call.

CEPT CFx (Call Forwarding)

The CEPT CFx (Call Forwarding) services allow calls to a subscriber line to be rerouted to another Directory Number (DN).

Notes:

1) Programmable services allow the subscriber to activate/deactivate the service and to program the DN.

2) Fixed services can be deactivated by the subscriber.

A number of call forward variants are supported, depending on the circumstances in which incoming calls are to be rerouted, as follows:

- CFF (Call Forward Fixed) allows a subscriber to reroute incoming calls to another DN.

- CFBP (Call Forward Busy Programmable) allows a subscriber to reroute all calls immediately to another DN if the subscriber line is busy.

- CFDP (Call Forward Don't Answer Programmable) allows a subscriber to reroute an incoming call if it has not been answered within a predefined period.

CEPT Calling Number Delivery

CEPT Calling Number Delivery identifies the Directory Number (DN) of the calling party so that the subscriber can choose whether or not to answer the call. The calling number is displayed on a telephone set or on an adjunct to the set that is capable of displaying the incoming DN after the first ringing cycle.

CEPT Calling Number Delivery Blocking

CEPT Calling Number Delivery Blocking allows end users to specify on a call-by-call basis whether they would like their station numbers to be transmitted to the called parties.

CEPT Memo Box: Call FWD to Voice Mail

The CEPT Memo Box feature allows users to forward their phone to the voice mail service.

CEPT Hot Line/Warm Line

The automatic line (AUL) option connects to a set location when a Directory Number (DN) or an assigned AUL option line reports an off-hook. When the user assigns the AUL option, the system establishes the set location. The Warm Line (WML) option is assigned to lines that route to a predefined DN if no digits are dialled within a modifiable time-out period.

CEPT Wake Up Call

The CEPT Wake Up Call (IWUC) option allows a subscriber to set a time for the phone to ring.

Technical reference

59019097

CEPT International Line Restriction

The CEPT International Line Restriction (ILR) option allows a subscriber to control originations from the line by identifying call classes that restrict completion to certain dialled numbers without a personal identification number (PIN). The call classes to be restricted are specified at the time that the ILR option is assigned. There are two enhancements for ILR: Fraud Prevention Blocking (FPB) and Suspend (SUS).

Technical reference

59019295, 00002641

CEPT Call Transfer

The CEPT Call Transfer (ICT) feature allows a subscriber to hold the existing call (both originating and terminating calls) and setup a consultation call to another subscriber. The controller can then be withdrawn from the connection by dialling an R-code for call transfer. The call then returns to a basic call.

CEPT Call Completion to Busy Subscriber

The CEPT Call Completion to Busy Subscriber (CCBS) feature allows a subscriber dialling an in-use terminating line to be called back to notify the subscriber that the desired terminator's line is no longer in use and can be called. Specifically, this feature provides:

- Single digit activation of CCBS
- Announcements identifying how to activate CCBS
- Announcements identifying successful activation of CCBS

CEPT Call Forward Remote Activation

The CEPT Call Forward Remote Activation (CFRA) feature allows a subscriber to activate, programme and deactivate call forwarding of their telephone set from another location. The subscriber calls the Direct Inward System Access (DISA) service in order to use the CFRA service.

CEPT Message Waiting Indicator - Visible

The CEPT Message Waiting Indicator - Visible (MWT) feature allows callers to leave messages when the subscriber is not available. When there are messages queued, this feature provides a Message Waiting display or a flashing lamp on sets with this facility. Subscribers can retrieve their messages by dialling the voice messaging centre. When the last message is retrieved, the service is deactivated.

This feature also allows a subscriber to combine the visible Message Waiting indicator with the following audible indication types:

- Stuttered Dial Tone (STD). On active message waiting a stuttered dial tone is applied when the subscriber goes off-hook.
- Ring Splash. On active message waiting a ring burst is applied to the subscriber's phone.
- An announcement. On active message waiting an announcement is applied to the subscriber's phone.

CEPT Spontaneous Call Waiting with Identification

The CEPT Spontaneous Call Waiting With Identification option SCWID allows subscribers to receive calling party information in conjunction with a call waiting tone.

LDI Display for CLASS phones

This Long Distance Indicator (LDI) feature identifies long distance calls and provides the LDI indicator information to subscribers with Custom Local Area Signaling Services (CLASS) phones. The feature works with Calling Number Delivery (CND), Calling Name Delivery (CNAMD) and Diallable Number Delivery (DDN) features that use the Multiple Data Message (MDM) format.

Value

By allowing the subscriber to identify long distance calls, this feature enables network operators to offer an enhanced service to their customers, thus increasing customer satisfaction and providing the potential for increased revenue opportunities.

Technical reference

00002558

China PSTN Line Service compliance

This feature enhances IBN line services to comply with the China PSTN line service requirements in the China specification YDN065 and YDT1128 (partial). This feature fulfils the China PSTN line service requirements based on the existing IBN line services which are listed in below:

- CEPT SC: Abbreviated Dialling
- CEPT WML: Hot Line Service with Time-Out
- CEPT ILR: Outgoing Call Barring
- CEPT CDND: Don't Disturb Service
- CLF: Malicious Call Tracing
- CEPT IWUC: Alarm-Call Service
- CEPT CFU: Call Forwarding Unconditional

- CEPT CFD: Call Forwarding on No Answer

- CEPT CFB: Call Forwarding on Busy

- CEPT CDTA: Absent-Subscriber Service

- CEPT ICWT, CEPT SCWID: Call Waiting

- CEPT CCBS: Call Back

- CEPT I3WC: Three Party Services

- CEPT I6WC: Conference Service

- CND: Calling Identity Delivery

- CNDB, SUPRESS: Calling Identity Delivery Restriction

- AUL: Hot Line

- CEPTPW: Password

- CEPTRA: Call Forwarding Remote Access, Outgoing Call Barring Remote Access

This feature also introduces a downloadable China toneset CHINALGC, which can be specified for the PCM-30 Line Group Controller (PLGC) in table LTCINV to support the Analogue Display Services Interface (ADSI) CPE Alerting System (CAS) tone. The toneset CHINALGC has the following tones definitions:

- Test and Diagnostic Tones

- Dual-Tone Multi-Frequency (DTMF) Tones

- Simple Supervisory Tones

- Periodic Supervisory Tones

The operating company can change the field TONESET of the PLGC datafill in table LTCINV to specify the toneset CHINALGC. For the toneset change, the PLGC is requested to perform BSY and RTS manipulation in the MAPCI interface to take effect, the toneset parameters can then be downloaded from the CM as part of XPM's static data upon RTS.

Value

This feature enhances IBN line services to comply with the China PSTN line service requirements in the China specification YDN065 and YDT1128 (partial).

Technical reference

00002755

ACRJ functionality for HongKong

Currently, for ISUP trunk to line calls, if the line has the Anonymous Call Reject (ACRJ) feature activated, the call is rejected if the calling party number Presentation Indicator (PI) is "restricted"(01), otherwise the call is allowed.

This activity enhances ACRJ functionality for HKISUP by checking the Incomplete Indicator (NI) and the new office parameter NI_INCOMPL_ACRJ in table OFCVAR as well.

- When NI_INCOMPL_ACRJ is OFF, ACRJ functionality is NOT enhanced

- When NI_INCOMPL_ACRJ is REJECT, calls with NI=1 in calling party number parameter are rejected

- When NI_INCOMPL_ACRJ is ACCEPT, calls with NI=1 in calling party number are allowed

Value

This feature enhances ACRJ functionality for HongKong ISUP (HKISUP).

Technical reference

00002761

GIC Support

This feature introduces support for Group Intercom (GIC) and Group Intercom All Calls (GIAC) for CICM lines.

GIC allows a user to call another member of a pre-designated group by depressing the GIC key and dialling an abbreviated code. The user can then page the called party via the loudspeaker of the set by hitting the GIC key a second time (setting up a one-way speech path). The called party can pick up the handset to establish a two-way speech path.

With GIAC the originator or controller can conference in GIC members as each terminator answers.

Value

Provides an intercom facility for groups of users attached to CICM lines.

Technical reference

00007244

DEPENDENCIES

The following order code is required for this functionality to be operational:

ILIN0100 International Line Features

ILIN0005   Network Line Features

The following network line features are supported in ISN05. The features allow network operators to offer their customers additional services, thereby creating the potential for generating greater revenue. In some cases, support for these features may be limited to certain gateways (please refer to Table 1.0 in the Appendix). Other specific limitations are noted as required.

CAPABILITIES AND VALUE

Denied Origination

The Denied Origination (DOR) feature prevents a line from originating calls. If the user attempts to originate a call from that line, the call receives Originating Suspended Service (ORSS) treatment.

Denied Termination

The Denied Termination (DTM) feature prevents a line from receiving calls. Calls that attempt to terminate to a line with the DTM option receive Denied Terminating (DNTR) treatment.

Suspend / Resume

The Suspend / Resume (SUS/RES) feature allows all service to be denied to a line. The subscriber is blocked from originating or receiving any calls. Removal of the option allows regular line service to resume.

Requested Suspend Service

The Requested Suspend Service (RSUS) feature is used when the subscriber requests suspension of service. When activated, the treatments to which originations from and terminations to the subscriber line are to be routed must be specified.

Plug Up

Plug Up allows users to originate calls but not receive them. Calls attempting to terminate to the users line are routed to treatment.

Wake-Up Call Request

The Wake-Up Call Request (WUCR) feature allows subscribers using access codes to program a time at which they wish to be called back by a reminder call. The call must be requested within a 24-hour period and each subscriber is allowed only one outstanding reminder call request within the next 24-hour period. If the first call is not answered, a second call is placed at a later time. If the second call is not answered, the event is recorded and no further attempt is made.

Note: Under ISN04, this service is restricted. This is a time zone issue.

Hunting

Hunting is a call-completion service that increases the likelihood of an incoming call being completed within a customer-defined group of lines. When attempting to terminate a call to a busy line to which hunting is assigned, the switch offers the call to a sequence of other lines, searching for an idle line on which to complete the call. This group or sequence of lines is called a hunt group.

Directory Number Hunting (DNH)

Each DNH group has its own unique directory number (DN). The hunt group can be accessed by dialling any DN in the hunt group, but the number of lines hunted depends on the hunting option (that is, circular or sequential) assigned to the DNH group.

Distributed Line Hunting (DLH)

Only a pilot DN is associated with this hunt group. Hunting starts after the first idle line found by the previous hunt and continues until the starting point of the hunt is reached. DLH is assigned to groups requiring an equal distribution of calls.

Multiline Hunting (MLH)

Only a pilot DN is associated with this type of hunt group. Hunting is sequential (that is, it starts at the first line assigned to the pilot DN and ends at the last line).

Circular Hunting (CIR)

Circular hunting hunts all lines in the hunting group regardless of the starting point. Sequential hunting starts at the number dialled and ends at the last number in the group.

Preferential Hunting (PRF)

The preferential hunt (PRH) option allows preferential hunting. A PRH group of up to 19 members can be assigned in a Directory Number Hunting (DNH) group. Each PRH member must be a member of the DNH group. Calls made to a busy DN of the pilot of the PRH group hunt over the members of the PRH group. The call returns to search the DNH group.

Code Restrictions (NCOS-Based Call Barring)

This feature enables a common set of Network Class of Service (NCOS) code restrictions to be shared across customer groups.

Essential Line

This Essential Line (ELN) feature allows calls to be originated even during overload conditions in the Communication Server.

Secondary Language

The Secondary Language (SL) service allows a line to receive basic announcements in a secondary language (a language other than the assigned primary language).

Fax

The Fax service allows subscribers to send or receive faxes at 14.4 kbps.

Authorisation Code

An Authorisation Code is an exact set of from 2 to 12 digits assigned to and used by station users. Authorisation Codes provide:

- Cost control
- Control of access to separate networks
- The ability to raise or lower the Network Class of Service (NCOS) of a call

The Station Specific Authorisation Codes feature allows a set of authorisation codes to be dialled from a specific station for purposes of recording billing information and overriding station NCOS restrictions.

Technical reference

59033945

Meet-Me Conference (6 port)

The Meet-Me Conference feature allows conferees to hold a conference on a conference bridge by dialling a directory number at a specified time. The dial-in number is set up by an attendant in advance of the conference.The following types of Meet-Me Conferences are supported:

- FlashOnly
- CodeOnly
- CNF6AddOn
- Code6AddOn

This feature has Open Dial Plan limitations in ISN04. It is only available to subscribers up to 10 digits.

Technical reference

59033945

Station Controlled Conference (6 port)

The Station Controlled Conference (CNF) feature allows a station to have a conference call to a maximum of 6 parties without the help of an attendant. The members of the conference can belong to the same customers group or different customer groups. Members can also belong to a station or a trunk. The JOIN option works with CNF to add a held party to a conference without having to hang-up and redial the help party. CNF is a prerequisite to adding JOIN to the business set.

This feature has Open Dial Plan limitations in ISN04. It is only available to subscribers up to 10 digits.

Technical reference

59033945

Direct Inward System Access (DISA)

The Direct Inward System Access (DISA) feature permits outside callers to access network facilities by dialling directly into the CS2000 without attendant assistance. The caller dials a 7- or 10-digit directory number (or an INWATS number for an automatic answer) and then enters an authorisation code and the called number.

Technical reference

59033945

Distinctive Ringing

The Distinctive Ringing (DRING) option assigns a cadence of rings to a business set for each line. DRING can add different ring patterns for different call types.

The following example adds DRING to a business set line:

- Ring code 2 on external calls
- Ring code 3 on group intercom calls
- Normal ringing on other calls

Technical reference

59033945

Bridged Night Number

The Bridged Night Number (BNN) option allows a subscriber to advertise a different number for a night service without the need for a third wire. The user can assign BNNs to Directory Number Hunt (DNH), Multi-Line Hunt (MLH) and Distributed Line Hunt (DLH) groups.

The user can assign several BNNs, on an individual basis, to a main hunt group. If necessary, the hunt can take place with the BNNs. If the BNNs form a group, the hunt is in sequence. If the BNN group has the Circular Hunt (CIR) option assigned, the hunt is not in sequence.

Technical reference

59033945

Line Overflow to DN

The Line Overflow to DN option enables a call to be routed to a specified Directory Number (DN) when all lines in a hunt group are busy. The specified DN can be part of a hunt group.

Technical reference

59033945

Line Overflow to Route

When all lines in a hunt group are busy, the Line Overflow to Route option allows a hunt to continue to a specified route.

Technical reference

59033945

Networked Centrex

The Networked Centrex option extends the operational scope of Centrex services beyond a single CS2000 for example, forwarding a call to a line served by a different CS2000.

Technical reference

59033945

Uniform Call Distribution

This feature allows incoming calls queued to a message desk to be distributed evenly to a number of predestined stations known as Unified Call Distribution (UCD) stations or UCD positions.

The UCD agent activates this feature by dialling the UCD activate access code and the UCD group's primary number.

The UCD agent deactivates this feature by dialling the UCD deactivate access code.

Technical reference

59035140

Line Reversal and Cut-Off on Disconnect for International Integrated

This feature adds Line Reversal and Cut-Off on Disconnect functionality to lines on the International CS2000 platform.

To assign Line Reversal a customer assigns the following SERVORD options to analogue lines that are assigned with the line card code GWLPOT:

- LROA for Line Reversal on Answer
- LRS for Line Reversal on Seizure

To use Cut-Off on Disconnect (COD) a customer can do one of the following:

- Assign the COD SERVORD option on a per-line basis
- Enable the office-wide assignment of cut-off on disconnect. This involves using the GLOBAL_CUTOFF_ON_DISCONNECT parameter in the OFCENG table to enable COD on all lines on the switch (except EBS, ISDN and multi-party line)

Enhanced Meet-Me Conference

Enhanced Meet-Me Conference (EMMC) allows a user from an IBN line or trunk to set up a conference with up to 30 conferees by dialling a specific directory number (DN).

EMMC supports two types of conference: scheduled or timeless. A scheduled conference has a predetermined conference date/time and elapsed time, so that the conference can only be started within the reserved period of time. With a timeless conference the conference DN is reserved for an unlimited time, so that the conference can be started whenever it is needed.

There are two roles for conferees: chairperson and invited participant. The chairperson is the conference organizer who reserves the conference through the operator and who invites others to the conference. The invited participants are those who are invited to the conference by the chairperson. A directory number, conferencing time and password is given to each invited participant. The chairperson also has another password which is different from that of the invited participants. The use of passwords protects an EMMC from accidental or malicious intrusion.

The user begins an Enhanced Meet-me Conference by dialling the designated DN, inputting the correct password for verification, and then entering the conference to talk with other conferees. During the dialling phase, after dialling the conference bridge DN, all conferees (invited participants and chairperson) are required to input passwords. Only the ones with correct passwords can enter the conference. Conferees are guided by prompts and announcements when they dial password.

During conference processing, each new participant arriving on the bridge is announced with an audible confirmation tone to all the current participants. Similarly, a burst of dial tone is provided each time a conferee leaves the conference. When all conferees have left the conference, all the conference circuits are freed.

Value

This feature allows conferences to be scheduled or timeless. It also enhances the security of conferences by protecting accidental or malicious intrusion.

Technical reference

00002901

DEPENDENCIES

The following order code is required for this functionality to be operational:

ILIN0100 International Line Features

ILIN0006   Voice Mail Support

CAPABILITIES AND VALUE

Voice Mail Support

Voice Mail (VM) is a service offered to residential end-users that provides integrated access to a voice-messaging service from an End Office using simplified dialling.

This feature assumes a 3-3-4 dial plan. E.164/Open Dial Plan support is provided with ETSI ISUP/ETSI TCAP connectivity to the Voice Mail Server.

Value

This feature provides a facility for voice mail services.

Technical reference

NTP 297-2051-104

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

ILIN0009   Regulatory Line Features

CAPABILITIES AND VALUE

Calling Line Flash (CLF) (for Malicious Call Identification)

This service allows a subscriber to activate tracing for an incoming call. This causes information such as the calling and called party numbers, the calling party category, and the time and date of an incoming malicious call to be recorded at the terminating local exchange so that appropriate action can be taken.

Carrier Selection

This service allows a subscriber to choose a preferred carrier to route different classes of calls. Every network provider is assigned a unique Carrier Identification Code (CIC) by the regulatory authority. A CIC can then be assigned to a subscriber DN whose calls are then always routed over this carrier, unless a different carrier is selected for a particular call by the explicit dialling of a Carrier Access Code.

Emergency Call Routing

This call type is always possible. An Emergency Call is marked as a priority call and uses special translations to route to the nearest emergency bureau. The CS2000 supports routing to more than one emergency bureau.

Sub Community Routing for Emergency Calls

This feature provides the ability to add a prefix to all calls routed to emergency services based in a sub community. The prefix that is added depends on the sub community of the user and also on the emergency number dialled.

Denied Incoming Call Forwarding

This feature provides the ability to reject any incoming calls that have been forwarded. This feature works within one node as well as network wide for incoming ANSI and ETSI ISUP calls.

Automatic Collect Call

This feature enables automatic collect calling in Brazil. An Automatic Collect Call (ACC) is a direct-dialled local or national long-distance call, which is placed within the public network using a special dialling sequence and is completed without operator assistance. Charges for the call are applied to the called party on acceptance of the call. The called party can refuse the call by hanging up within a specified time after being requested to accept the call. Both the calling party and the called party can terminate the call at any time.

The ACC Barring/Blocking (ACCB) option in this feature provides the ability to prevent ACC calls from terminating to certain lines.

ACC calls can originate from or terminate to the following protocols:

- Brazilian ISUP
- ETSI PRI

ACC and ACCB are only supported for V5.2 lines.

Priority Class of Service (PCOS)

PCOS (for Germany) allows selected users to have privileged access to the network in the event of catastrophic failure. After a switch is set into the catastrophic state by a technician, unrestricted calls are possible only from lines with the ELN option. Restrictions and service degradations may apply to calls from other lines.

Local Number Portability

Number Portability (NP) is a network capability or feature that allows a subscriber to change network operators and be served by a switch belonging to a different operator, while retaining the same DN as before the change.

Calling Number Delivery enhancements for ISDN PRI

This feature implements the specific Calling Party Number (CGPN) Presentation Indicator (PI) mapping to terminating PRI agent requirements of the Hong Kong market. In doing so, this feature implements a flexible PI mapping scheme for use in other markets.

The flexible PI mapping scheme introduces the following tables which make PI mapping rules datafillable:

- Calling Party Number Builder (CGPNBLDR)
- Address-Type screening (CGBLDADD)
- Digit length screening (CGBLDDGL)
- Digit screening (CGBLDDIG)
- NI screening (CGBLDNI)
- PI screening (CGBLDPI)

Option CGPNBLDR is added to table TRKOPTS to allow PI mapping on a per trunk basis.

In addition, the new option CLIDLVPI in table TRKOPTS activates/deactivates the modification of CLI delivery logic on a per trunk basis. When activated, if CLIDELV field in table TRKOPTS in set to SCRN_PI, the Calling Line Identification (CLI) delivery logic for the outgoing PRI trunk is modified as follows:

- When the PI is set to 00, the CLI is delivered
- When the PI is set to 01 or 10, the CLI is NOT delivered - the PI is delivered

This feature supports interworkings from the following originators, terminating on ANSI PRI, ETSI PRI and Hong Kong PRI (CR13) agents:

- ANSI ISUP
- ETSI ISUP V1/V2 (no variants)
- Hong Kong ISUP (CR14/CR15)

- ANSI PRI - NOT to ETSI PRI
- ETSI PRI - NOT to ANSI PRI
- Hong Kong PRI (CR13)
- CS-1

Value

This feature adapts the CS2000 to meet the requirements of the Hong Kong market.

Technical reference

59040499

DRS Treatment for Malicious/E999 Call, MCT Alarm Control Enhancements

This feature enables the CS2000 to:

- Generate a Malicious Call Trace (MCT) presentation log for called number for calls terminating to ANSI ISUP, ANSI PRI and RI/R2 CAS trunks
- Generate an enhanced MCT 106 log on Information Request Indicators for calls outgoing via Hong Kong ISUP (CR14 or CR15). The enhanced MCT 106 log contains a new field, the Calling Party Category (CPC)
- Release the call immediately when the incoming Hong Kong ISUP receives a Delayed Release (DRS) message. This functionality is controlled by the new office parameter DRS_IMMEDIATE_RELEASE in table OFCVAR

Value

This feature adapts the CS2000 to meet the requirements of the Hong Kong market.

Technical reference

59040504

Call Forward Prevention

This feature provides:

- Call Forward Restriction (CFR). This enables calls forwarded from ETSI ISUP and IBN7 ISUP trunks to be restricted if any of the following information is present in the incoming Initial Address Message (IAM) message:

  — Original Called Party (OCN)

  — Redirecting Number (RDN)

  — The optional Redirection Information parameter is present and the Redirecting Indicator field is set to No Redirection

  The new CFR option in table TRKOPTS is used to activate/deactivate this restriction on a per trunk basis.

- Call Forward Prevention (CFP) on originating line agent. This provides the ability prevent the subscriber from programming numbers with specific leading digits as forwarded-to Directory Numbers (DNs) on an office-wide basis. The specific leading digits are previously datafilled by the network operator. This feature supports all programmable Call Forward types for POTS, RES and CENTREX agents.

CFP also provides the CFPOVR line option in table LNCFPBAR to selectively override the restriction on up to 10 sets of leading digits from being blocked. The line option also provides a mechanism to limit the maximum number of programming attempts within a certain time period.

CFP600 log is generated each time an attempt to program a forward-to DN is denied because the DN is restricted. CFP601 log is generated when the number of times the forward-to DN has been changed reaches the limit applicable to the line, and for all subsequent change attempts.

Value

This feature adapts the CS2000 to meet the requirements of the Hong Kong market.

Technical reference

59040504

Emergency Service Call

This feature supports Emergency Service Call functionality. Lines with emergency service have the following capabilities:

- A special treatment to the calling party before audible ringing
- Called party control
- Re-ring capability if the calling party hangs up
- An alarm in the terminating office when the emergency call is answered
- Log generationThis feature provides:

This feature provides called party control for intra-office analogue POTS line calls according to the requirements of the China market, as follows:

- If the called party goes on-hook first, the connection is released and the called party is freed. If the calling party remains off-hook for longer than the lock-out time, the calling party is given the disconnect treatment. If the calling party goes on-hook within the lock-out time, the calling party is set to idle.
- If the calling party goes on-hook first and the calling party re-answers, the call continues.
- If the calling party goes on-hook first and does not re-answer, the connection is not released until the called party goes on-hook. The called party maintains control of the call indefinitely.

Value

This feature adapts the CS2000 to meet the requirements of the China market.

Technical reference

89008399

DEPENDENCIES

The following order code is required for this functionality to be operational:

ILIN0100 International Line Features

ILIN0100   International Line Features

CAPABILITIES AND VALUE

International Packet IBN Line SOCs

This feature introduces new Software Optionality Controlled (SOC) functionality to control CS2000 IBN line usage. The limit for ILIN0100 is set by purchasing line usage through Nortel customer service. When a new GWC hosted IBN line is provisioned on the core, ILIN0100 usage is updated. When CS2000 IBN line usage is provisioned beyond this limit, SOC logs are generate to indicate this.

The maximum line usage that can be purchased for SOC option ILIN0100 is 130,000.

Note: ILIN0100 must be ordered for any lines based solution. In addition, at least one of the following must also be ordered:

- ILIN0002 Standard Line Features
- ILIN0003 CLASS Line Features
- ILIN0004 Enhanced Line Features
- ILIN0005 Network Line Features
- ILIN0009 Regulatory Line Features

Technical reference

59040404

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

Order codes ILIN0100 replaces order code MDC00058, *Line Capacity Increase*, for IBN line usage control.

SULN0002   BRI Base

CAPABILITIES AND VALUE

China BRI Supplementary Services using Keypad protocol

This feature introduces the following Supplementary Services using Keypad protocol:

- Make Set Busy (**MSB):** provides the same function as Do Not Disturb (DND). It provides a subscriber with the ability to control the termination of calls.
- Calling Line Identification Restriction (**CLIR**): provides the calling party with the ability to prevent presentation of its number to the called party.
- Connected Line Identification Restriction (**COLR**) (partial support): enables the connected party to prevent the presentation of its number to the calling party.
- Outgoing Call Barring (**OCB**): enables certain types of calls to be rejected when they are originated by the served user. The served user can choose one of the following three barring programs:

  — DABE code-1: Deny all but emergency calls. All calls are restricted except emergency calls such as police, fire department, ambulance, etc.

  — DIND code-2: Deny national and international direct dial calls. All calls except local and international operator assisted calls are restricted.

— DIDD code-3: Deny international direct dial calls. All international calls except international operator assisted calls are restricted.

- Call Waiting Activation/Deactivation (**CWACT**): allows the subscriber to activate and deactivate call waiting via feature access codes (i.e. *74, #74).

Value

The feature introduces additional BRI Supplementary Services to support the use of Keypad protocol according to YDN 065- 1997, *China MPT/MII standards*. This feature thereby allows the CS2000 to better meet the needs of the China market.

Technical reference

00002751

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

3.6   Lawful Interception Services

CMON0002   CMON X25 LI

CAPABILITIES AND VALUE

ETSI compliance feature - Lawful Interception on SDM

In order to meet ETSI Lawful Intercept (LI) requirements, this feature supports the provision of information to the LEA from the SDM using two interfaces. These interfaces are logically separated based on the kind of information provided:

- HI1 Interface

    The Handover Interface port 1 is a bidirectional interface used to pass requests from the LEA to the NWO/AP/SvPs. The information passing through this interface includes LI monitor order activation and deactivation.

- HI2 Interface

    The Handover Interface port 2 is a unidirectional interface used to pass Intercept Related Information (IRI), such as data associated with the communication service of the target and standard network signalling information from the NWO/AP/SvP's IIF to the Law Enforcement Monitoring Facility (LEMF).

Value

This feature ensures that the Lawful Intercept (LI) information sent to Law Enforcement Agencies (LEAs) meets the ETSI LI requirements. This feature thereby allows network operators to deliver these services into markets for which Lawful Interception is a regulatory requirement.

Hardware requirements

The delivery of Intercept Related Information (IRI) records over FTP requires an Ethernet card and a correct Ethernet connection. When IRI records are delivered over FTAM, X.25 hardware and software are needed.

Technical reference

00002965

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

INLI0002   Int'l Lawful Interception

CAPABILITIES AND VALUE

International Lawful Interception

The Lawful Interception (LI) service enables network operators to fulfill their legal obligation concerning 'Lawful Interception of Telecommunication'. Based on national law, the Law Enforcement Agency (LEA) can request lawful interception of a target telecommunication from the network operator.

The LI services described here is the International Lawful Interception Base, whose implementation is based on the German requirements TR FÜV Version 3.0 and enhanced in SN07 to also support ETSI ES 201 671. This LI Base has been adopted by several international markets including Germany, Belgium, Holland, Australia, Italy and Singapore.

The LI service monitors incoming and outgoing calls of a target access, transparent to the parties involved in the call. The intercepted voice and in-band data of the call is delivered as call content to remote LEA recorder equipment via two separate links, or a common combined link, over a public transit network using standardised CCS7 trunk protocols. The LI service also produces Call Data Records (CDRs) at certain stages of the intercepted call and delivers these to a remote LEA responder via the Supernode Data Manager (SDM) over a public data network using standardised protocols and methods such as FTAM over X.25 or FTP over TCP/IP. These CDRs are used to convey call events as well as data transferred between agents in the call.

Currently, the LI service provides the following functionality on VoIP solutions:

- Monitoring of basic calls to and from the following target agents:
  - IBN lines
  - ETSI PRI (- with national variants on PVG)
  - V5.2 on PVG

  Orders can be activated against these agents so that all calls originated by and terminated on these agents are monitored.

- The following agents are supported as 'other parties', i.e. agents that are not themselves the subject of a monitoring order, but who are connected to target agents:
  - All agents that can be a target
  - ETSI ISUP V2 (with national variants) on PVG
  - ETSI ISUP V1 (Base) on PVG
  - Australian ACIF-G500 ISUP
  - ANSI ISUP on PVG
  - CA.30 on PVG
  - IBN7 on PVG

- — SIP-T
- Monitoring of a number of analogue services and ETSI PRI supplementary services
- For each call that the target participates in:
  - — For call content delivery, two speech paths to the LEA are established (one for each direction) or a single combined speech path is established (combining each direction) using ETSI ISUP V2, ETSI ISUP V@ (and some national variants), ETSI ISUP V1, CA.30, SIP-T
  - — Call-associated data (Call Data Records) is sent to the LEA using FTAM over X.25

Hardware requirements

This feature requires the following hardware:

- SDM with Motorola UMFIO X.25 functionality.
- Furthermore, license keys are required from Motorola to activate X.25 connectivity.
- UAS configured with sufficient CG6000 replication cards for LI to provide up to a maximum of 512 simultaneous CCCs per Communication Server.
- The number is determined by legal requirements
- Int'l LI currently supports IP networks with gateways configured for G.711 A-law encoding with 10 msec packetization

Value

This feature enables network operators to penetrate markets for which Lawful Interception is a regulatory requirement.

Technical reference

59024510, 59024902, 59028707, 59035800, 59035246, 59036326, 59036331

LI for Incremental ETSI PRI Services

This feature provides International LI for the following ETSI PRI services:

- Partial Reroute (PR) early and late release
- Explicit Call Transfer (ECT)

Value

This feature enables LI to support the above services, thereby allowing network operators to deliver these services into markets for which Lawful Interception is a regulatory requirement.

Technical reference

59038816

LI for Incremental Analogue Services (Phase 4)

This feature provides International LI for the following analogue services:

- Uniform Call Distribution (UCD) (used for call queuing)
- Message Waiting Indicator (MWI)
- Quality of Service (QoS) transparency

- Call Forward Call Waiting Calls (CFCW)
- Calling Name Delivery (CNAMD) via QSIG Feature Transparency (QFT)

Value

This feature enables LI to support the above services, thereby allowing network operators to deliver these services into markets for which Lawful Interception is a regulatory requirement.

Technical reference

59038821

LI - German Regulatory

This feature provides the following LI enhancements to meet German regulatory requirements:

- Call Content Channel (CCC) Bearer Capability (BC) signalling compliant to TRFUeV
- SuperNode Data Manager (SDM) LI Operations, Administration and Maintenance (OAM) security: This provides the capability to log information concerning the SDM status and a mechanism to deliver this data to a remote server via File Transfer Protocol (FTP).

Value

This feature enables LI to support the above services, thereby enabling network operators to deliver these services into markets for which Lawful Interception is a regulatory requirement.

Technical reference

59038826

LI - Portugal

This feature provides the following LI enhancements to meet market requirements for Portugal:

- Provisioning interface for the Portuguese market
- Call Content Channel (CCC) delivery in mono mode
- LI support for the Portugal ISUP variant
- LI support for the Query on Release feature

Value

This feature enhances LI functionality to meet the requirements of the Portugal market.

Technical reference

89007367

LI - Call Content delivery in Mono Mode for Portugal

This feature enhances the International LI implementation to allow optional Mono Mode delivery, that is, it combines bearer information and transmits it to the Law Enforcement Agency (LEA) using only one (ISUP) Call Content Channel (CCC) link.

Value

This feature enhances LI functionality to meet the requirements of the Portugal market.

Technical reference

89007355

LI - ASN.1 Encoded Call Data Delivery via FTP TCP/IP

This feature provides the functionality to deliver Call Data Records (CDRs) to the Law Enforcement Agency (LEA) using FTP over TCP/IP. FTAM over X.25 is also available.

Value

This feature enables LI to support the above services, thereby enabling network operators to deliver these services into markets for which Lawful Interception is a regulatory requirement.

Technical reference

89007360

Private Network Interception Selection

This feature expands the Lawful Interception (LI) software to include Private Network Interception (PNI) support for the CS2000 environment implementing the Internet Transparency (ITRANS) solution released in SN06. The ITRANS program requires that the LI software become more flexible to preserve the expected call topologies for intra and inter Network Address Translator (NAT) calls.

PNI provides the ability to activate or deactivate the interception of call content where both media agents are intra-NATed (that is, the media gateways of both call agents are behind the **same** NAT). For <u>intra</u>-NATed specific calls, the Media Proxy (MP) is not required, thus changing the call topology. Because both media gateways share the same IP address domain, the ITRANS software optimises the Media Proxy's resources and a connection is made directly between call agents. The media path remains in the private network.

Value

This feature presents the opportunity to choose whether or not to intercept the call content of "private network" calls.

Technical reference

00003513

ETSI 201 671 Compliance

In order to meet ETSI Lawful Intercept (LI) requirements, this feature provides information to the LEA from the CM using three interfaces. These interfaces are logically separated based on the kind of information provided.

- HI1 Interface

    The Handover Interface port 1 is a bidirectional interface used to handover request from the LEA to the NWO/AP/SvP's. The information include order of activation, deactivation and modification, and the corresponding notification, and also sends the other information to the LEA.

- HI2 Interface

   The Handover Interface port 2 is a unidirectional interface used to handover Intercept Related Information (IRI), such as data associated with the communication service of the target, standard network signalling information from the NWO/AP/SvP's IIF to the Law Enforcement Monitoring Facility (LEMF).

- HI3 Interface

   The Handover Interface port 3 is a bi-directional interface used to handover Content of the Communication (CC) of the intercepted telecommunication service to the LEMF.

Value

This feature ensures that the Deutches Network Broadcast Delivery (DNBD) information provided by the CM to the LEA meets the ETSI compliancy requirement of ES 201 671(V2.1.1). This feature thereby allows network operators to deliver these services into markets for which Lawful Interception is a regulatory requirement.

Technical reference

00003514

DEPENDENCIES

The following order code is required for this functionality to be operational:

CMNO0018 Lawful Interception SDM NCL (CS2E0080)

3.7 Automatic Call Distribution (ACD)

SACD0002   ACD Base Features

CAPABILITIES AND VALUE

Abandon Call Clearing

This feature eliminates unnecessarily held connections to the CS2000 ACD node. A call is removed and the recorded announcement or music is stopped if a caller abandons while in an incoming-call queue.

If a caller abandons after the call is presented to an agent position, the position receives a new call or, if no calls are enqueued, returns to an idle state and is placed at the end of the idle-agent queue.

For calls entering the CS2000 ACD node via trunks, abandoned calls can be detected only if the incoming trunk has disconnect supervision.

Therefore, trunks without disconnect supervision, such as pulsing-type trunks (Direct Dial Inward (DDI)) or ring signalling-type trunks (incoming central office, foreign exchange, or Wide Area Telephone Services (WATS) either should provide disconnect supervision or should not be used in DMS applications.

ACD Call Transfer with Time

This feature enables a call that has been answered by an ACD agent and then requires transfer to another ACD group to be inserted in the new group's highest priority queue, based on the total time the call has previously been enqueued and talking with an agent in the original group.

For example, if a call was initially enqueued for 10 seconds, followed by 20 seconds in the talking state with an agent before transfer, it is subsequently placed in a queue for a new group with calls that have been enqueued for 30 seconds.

Automatic Not Ready

An ACD agent using a 2500-type set can activate and deactivate the Not Ready feature using dialled access codes.

This allows an agent to perform post-call processing of a call before the next ACD call is presented. Non-ACD calls continue to be presented to the set.

When an agent logs-in, Not Ready is activated automatically. The agent must deactivate it before ACD calls will be presented to the set.

Also, because a 2500 set must be off-hook to activate this feature, Not Ready cannot be activated when the set is ringing.

Automatic Overflow

The customer can specify both a maximum number of calls that can be queued and a maximum anticipated waiting time for incoming calls to avoid lengthy delays that discourage callers.

If the number of calls in any one of an ACD group's incoming-call queues equals the specified maximum number or if the first call in an incoming-call queue has waited longer than the specified maximum waiting time, a new incoming call will be rerouted according to the customer's directions. Calls already enqueued remain enqueued until answered.

Calls can be rerouted to a specified directory number, including the directory number of another ACD group. If the call is not answered after being rerouted, the caller hears a busy tone.

Incoming-call queue thresholds are specified for an entire ACD group. If an ACD group reroutes the overflow calls to one of its own directory numbers, calls to that number receive busy tone.

Call Queue Slots (Queue Slot Announcement Allocation)

This feature allows the telephone operating company to control the number of queue slots available for the ACD groups. The operating company can control queue slots in a customer group or for separate ACD groups. The operating company can specify which recorded announcements a customer can access.

When an agent becomes available, the system searches the call transfer queue. The system searches the call transfers queue first for any calls that are marked for that agent. If the calls are not transferred, the search continues through the incoming call queue of the group. The call transfer queue has a maximum call size that determines

the number of calls that can transfer to the group. The call transfer queue is part of the normal incoming call queue of the ACD group. The incoming call queue and the call transfer queue share queue slots.

Call Delay Announcement

The CS2000 ACD Call-Delay Announcement feature aims to minimise the number of callers who abandon when all agents are busy.

Each time a call is placed in an incoming-call queue, the current waiting time of the oldest enqueued call is calculated. Based on this waiting time, the new call will receive one of the following treatments:

- If the waiting time is less than a customer-specified threshold, the caller hears ringback tone until the actual waiting time exceeds the threshold. The caller then receives a recorded announcement advising of the delay.

- If the waiting time is greater than or equal to the specified threshold, the caller immediately hears the recorded announcement.

In either case, second and third recorded announcements may follow later. Silence, music, or ringing may follow each announcement.

When an ACD agent becomes available, the call is immediately presented to the agent.

Force Announcements

This feature improves the level of customer service and satisfaction by enabling a recorded message to be presented to every incoming and overflowed call, regardless of priority level.

The message can be created to:

- Reassure all callers that someone will answer the call, thus reducing the number of people who hang up

- Increase call centre efficiency. Callers can be requested to have an account number, policy number, or other information ready for when an agent answers

- Make callers aware of sales, buying incentives or other events the call centre wishes to advertise

- Reduce the confusion that comes when callers overflow from one queue to another by explaining what is taking place

The recorded message can be a verbal announcement, music, or a combination of both.

This feature is transparent to ACD agents and enhances the Call-Delay Announcement and Second and Third Recorded Announcements features.

Activation/Deactivation

This feature is datafilled by the operating company in table ACDGROUP. The ACD group supervisor can then use Load Management commands to assign the appropriate announcement, music, and silence sequence to the ACD group.

Load Management commands are enhanced to enable the audio group to change incoming-calls forced announcement, overflowed-calls forced announcement, and announcement from original ACD group after overflow.

Forced Announcement for New and Overflowed Calls Support is an RT-100 Version 32.0 feature that provides Load Management control of audio routes. Through Management Information System (MIS) downstream processors call centre administrators can configure these routes on an ACD group basis.

Interactions/Restrictions

This feature does not apply to calls rerouted as a result of night treatment or controlled interflow.

ACD queue timing does not start until the incoming and overflow announcements are completed. The time the call takes to receive the announcement is not tracked.

Incoming Call Queue

Each CS2000 ACD group has four incoming-call queues with incremental priorities of 0 through 3, with 0 the highest and 3 the lowest.

When all agents are busy, incoming calls for any of the ACD directory numbers are placed in the incoming-call queue of the appropriate priority on an order-of-arrival basis.

As agents become available, calls are removed from the queues based on the established priority.

To avoid lower-priority calls remaining unanswered indefinitely, the customer can choose to have a lower priority call promoted to the next higher priority level after a specified delay.

Night Service (Night Treatment)

When all the agents in a CS2000 ACD group have activated Make Set Busy (logged out for the day), the ACD group is considered to be in Night Service.

Calls arriving after all agents have logged out receive the customer-specified night treatment, typically one of the following:

- A night announcement advises callers that the ACD location is closed. Callers are then disconnected or placed on silent hold until they abandon

- Calls are automatically forwarded to an ACD group at another location or to a night-service number. Calls rerouted to another ACD group will receive a busy signal if that group is unable to answer the call

At the onset of Night Service, calls in the incoming-call queue remain enqueued until abandoned.

The Supervisor Control of Night Service feature eliminates calls remaining unanswered after the onset of Night Service by rerouting newly arriving calls while the remaining queued calls are answered.

Night Service Recorded Announcement & Forward

With this optional feature, which enhances the existing ACD Night Service treatment, a recorded message (specified in datafill) can be given to out-of-hours callers before their calls are forwarded to a night-service number (or to an ACD group at another location).

Typically callers can be told that if they stay on hold at the end of the message, their calls will be transferred to another location for attention. Alternatively, they can be asked to call back during regular business hours.

Each ACD group can have a different recorded message.

Feature Interactions/Restrictions

This feature is not supported by ACD Management Reports.

When this option is datafilled for an ACD group, the night-service route specified should not be another recorded message.

If the audio-route list used for a Night Service announcement is configured to provide continuous broadcast, the call will not be forwarded.

The audio group specified for the NSAUDIO option must be datafilled and assigned to the ACD feature in Table AUDIO.

Priority Promotion & Overflow

Priority Promotion allows calls that the system queues at a lower priority to have the priority escalated. The calls can increase priority after a defined amount of time. This feature does not allow low priority calls to be unanswered for excessive periods.

Ring Threshold

The Ring Threshold option does not allow calls to be unanswered after the system presents the call to an agent position. Each time the system presents a call to an agent, a timer starts. If the ACD group does not have agents logged in when the timer expires, the system transfers the call to the night service route.

Time Delay & Basic Overflow (Overflow of Queued Calls)

This feature allows calls that wait in queue to overflow to another ACD group. The calls overflow after a specified waiting time. Another name for this feature is Timed Delayed Queue Overflow. An ACD group must have an assigned enhanced overflow feature to provide this capability.

The ACD groups that use the timed overflow feature must define a timer. The timer determines how long calls wait before the calls overflow. Timing can be set to begin when calls first arrive in the incoming call queue. Timing can be set to begin when the calls become priority 0 calls through priority promotion. When the system selects a call to overflow to another group, the original group can answer the call. When the system selects a call to overflow to another group, the overflow group can answer the call. The group that answers the call is the group that becomes available first.

This feature interacts with night service. When a supervisor for an ACD group activates night service, calls that overflow to the group remain in queue. Calls originally placed to the group remain in queue. The system continues to present calls to any agents that remain active in the group.

Incoming Call Queue Overflow

Base ACD provides the ability to reroute calls to an overflow route when:

- An ACD queue is full
- Calls exceed the specified parameters
- All agents are logged out, as in night service

This feature allows incoming calls to overflow to:

- Another ACDDN in the same or a different customer group

- The DN of a non-ACD station in the same or a different customer group

Second and Third Delay Announcements

When calls are queued for Automatic Call Distribution (ACD) and Uniform Call Distribution (UCD) groups, announcements may be given periodically to assure callers that their calls will be answered as soon as an agent is available.

This feature enhances that capability by allowing customer groups to specify delay periods between announcements and the type of treatment that callers are given during those delays and after the last announcement is given.

Delay periods between the first and second announcements and between the second and third announcements are specified in seconds up to a maximum of 1,800 seconds.

The treatments that can be applied during these delay periods are ringing, silence, or music. The delay period and treatment selected for the second delay can differ from those selected for the first.

This feature also allows the user to determine the type of treatment the caller receives after the last announcement. The available treatments are silence or music. These treatments are given until either the call is answered or the caller abandons the call.

Queue to Make Set Busy

This option prevents the loss of calls for an ACD group if all agents activate Make Busy at the same time. For example, if all agents in an ACD group activate Make Busy at the same time during a shift change, and the ACD group has the QTOMSG option assigned, the system will place calls in the incoming call queue of the ACD group. The calls remain in the queue until an agent logs back in, the caller abandons the call, or the call overflows to a treatment.

Agents who are not in an idle-agent queue are grouped as follows:

- Agent positions busy with calls in progress
- Agent positions unavailable to handle calls (Not Ready activated)
- Agent positions in process of logging off (Make Set Busy activated)

To remove a position from the idle-agent queue, the agent presses the Make Set Busy key. The corresponding lamp turns on, and the agent position becomes ineligible to receive new ACD or non-ACD calls.

Variable Wrap-up

The Variable Wrap-up feature enables the provision of a pause of variable length after a call centre agent releases a call and before the next call is presented to that agent. This feature thereby allows a call centre operator to provide their agents with sufficient time to complete activities related to a completed call before being presented with the next call.

As a result, incoming calls to call centre are presented to the first available agent who is ready to answer a call, rather than one who is involved in activities related to a previous call.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

SACD0006   ACD Agent Features

CAPABILITIES AND VALUE

Agent Queue

Agent Queue ensures an even distribution of the workload among the agents in the group.

If agent answering positions are available but no incoming calls are waiting, available agents are placed in an agent queue on a first-in, first-out basis. The agent who has been waiting the longest receives the first incoming call.

Agents who are not in an idle-agent queue are grouped as follows:

- Agent positions busy with calls in progress
- Agent positions unavailable to handle calls (Not Ready activated)
- Agent positions in process of logging off (Make Set Busy activated)

To remove a position from the idle-agent queue, the agent presses the Make Set Busy key. The corresponding lamp turns on, and the agent position becomes ineligible to receive new ACD or non-ACD calls.

Agent Login (ACD 2500 Set Login/Logout)

An agent can use a 2500-type set to login to an ACD group by dialling an activation code, identification code, and, if required, a password.

The agent can also logout of an ACD group by dialling a deactivation code.

ACD Not Ready (code for IBN) (ACD 2500 Set Not Ready)

An ACD agent using a 2500-type set can activate and deactivate the Not Ready feature.

This allows an agent to perform post-call processing of a call before the next ACD call is presented. Non-ACD calls continue to be presented to the set.

On 2500 sets, the Not Ready feature is activated and deactivated by dialled access codes.

When an agent logs in, Not Ready is automatically activated, and the agent must deactivate it before ACD calls are presented to the set.

This feature differs from the Not Ready feature provided for Business Sets in that a call in progress is not released when the feature is activated.

Also, because a 2500 set must be off-hook to activate the feature, Not Ready cannot be activated when the set is ringing.

Call Park by ACD Agent

This feature allows ACD agents to park calls. If the call is not retrieved within a customer-defined interval, the call is recalled to the agent who parked it.

If that agent is unavailable, the call is queued at the beginning of the incoming call queue for presentation to the next available agent. The receiving agent is notified via display that the call is a Call Park recall.

The initial application for this feature is in the hospital environment. An ACD agent parks a call against a specific DN and pages a doctor, denoting the DN against which the call is parked. The doctor can then retrieve the call from any station via code access, or by pressing a key for Directed Call Park retrieval, plus the parking DN announced by the agent.

This feature also introduces two enhancements to the Transfer to Incalls Key feature:

- The partitioning of the Call Transfer Queue (CTQ) on a per-agent basis using the Personal Agent Queue (PAQ) option.

- The PAQ parameter specifies the number of transferred calls that an agent can have queued within the CTQ at any given time.

- The ability to recall calls that have been transferred to an agent's Incalls key. The recall-on-transfer functionality mirrors that provided for recall-on-parked calls, as previously described.

Feature Interactions/Restrictions

ACD distinctive ringing takes precedence over recall distinctive ringing.

When a call is transferred from an agent within an ACD group datafilled for transfer recall to an agent within an ACD group datafilled with a ring threshold timer, the transferring agent's recall timer is compared with the transferred-to agent's ring threshold timer, and the smaller of the two is used.

In addition to current restrictions that apply to the Call Park and Directed Call Park features, the following restrictions also apply:

- The call must be parked against a valid DN within the same customer group as the ACD group

- The PAQ is a subset of the CTQ, which is a subset of the ACD incoming call queue. Therefore, any calls placed in the PAQ directly affect the maximum number of calls that can be queued for a particular ACD group

- Calls routed outside of the switch cannot be recalled

- This feature does not apply to calls using the Conference feature

- Calls cannot be recalled in ACD groups that have exceeded their call waiting or call queue thresholds. Recalled calls to such groups are blocked and given treatment if no overflow route exists

- Remote Load Management enhancements are not provided by this feature

- The PAQ option is datafilled on a per-login ID basis. Calls are queued in the PAQ on a per-set (ACD agent position) basis. If an agent logs out of one position with calls present in the PAQ and into another position, the calls queued against the original position will not follow the agent to the new position

- Recall identification is only provided for the original recalled agent

Call Name/Number Display

When an ACD agent uses the Incalls key on a Business Set with display to answer an incoming call, this feature provides display of the directory number the caller dialled and the associated ACD group name.

This information allows ACD agents to identify the called ACD group and to appropriately answer and process the call.

The number of digits and the ACD group names displayed are datafilled on a customer-group basis.

The number of digits can be between 0 and 7, and the names associated with each directory number can be up to 15 characters. If 0 is specified as the number of digits to be displayed, only the associated ACD group name is displayed.

If no name is datafilled to correspond with a directory number, only the directory number is displayed.

The information provided by this feature is displayed on the bottom line of a Business Set with display. Because the length of the display is limited, it is possible that both the directory number and ACD group name will not fit.

Names and numbers are never truncated. If they both do not fit, only the name is displayed.

Feature Interactions/Restrictions

If Calling Name Display and/or Network Calling Name Display are also assigned, the name and directory number of the calling party and the call-redirection information, if applicable, are limited to the top line of the display.

When a call is transferred from one ACD group to another, the directory number and name of the ACD group to which the call is being transferred are displayed.

Call Source Identification

To help the agent distinguish the type of incoming call and anticipate the incoming caller's needs, agent positions equipped with Business Sets with display will display the following information about the incoming call:

- For calls originating within the same customer group, the caller's extension is displayed
- For calls originating from other customer groups served by the same CS2000 ACD node, the calling party's directory number is displayed
- If the inter-group office parameter is set, the six-character Common Language Location Identifier (CLLI) of the trunk group is displayed for calls originating from trunks

Secondary DNs

Each agent position can have one or more assigned Secondary Directory Numbers (SDNs) that are non-ACD, standard line appearances. An agent uses the SDN to place and receive non-ACD calls. When the agent is active on the SDN, the agent can continue to receive ACD calls.

Observe from Analogue Handset

This feature enables a supervisor with a 500- or 2500-type set to use existing Observe Agent features to observe (audio monitor) an agent who is active on either an ACD or non-ACD call.

The supervisor can observe an active ACD agent call, and if desired, can conference in on that call. This feature allows the supervisor to monitor the quality of service received by callers and can also be used in agent training, enabling new agents to audit the call-handling techniques of experienced agents.

An optional warning tone is available to alert the agent that observation is taking place.

Feature Activation/Deactivation

To activate this feature, the supervisor:

- Receives dial tone
- Dials a three-digit operating-company assigned access code
- Dials the extension number of the agent to be observed, and
- Observes the agent's call

To invoke a conference call from the observe mode and talk with both the agent and caller, the supervisor:

- Flashes the switchhook (or presses the link button) - hears dial tone,
- Dials a three-digit operating-company assigned access code,
- Speaks to both agent and customer

To terminate either the Observe Agent or the Conference capabilities, the supervisor goes on hook.

Using a separate but similar protocol, the supervisor can also observe agents on non-ACD calls.

Interactions/Restrictions

In order to activate the Observe Agent feature, the supervisor must not have any other feature active. Nor can any other features be activated while this feature is in effect.

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

ACD00005   ACD MIS

NEW!

CAPABILITIES AND VALUE

ACD/MIS over IP off of CS2K / CS2Kc

NEW!

The Automatic Call Distribution Management Information System (ACD MIS) is used for communication between CS2000 call centres and their management sites. ACD MIS messages are sent from call centres to management sites to provide information for use in performance monitoring and report generation; messages are sent to call centres to control their operation.

The MIS message transport mechanism is transparent to the ACD appplications that use it. In releases prior to ISN08 this was X.25. This feature provides support for MIS messaging across a backbone packet network using TCP/IP, enabling packet network implementations of distributed ACD call centres.

Value

ACD MIS transport over IP enables ACD agents to be located anywhere on the IP LAN, rather than being restricted by the requirement for X.25 links.

Technical reference

00007250

3.8 Gateway Services

SGAT0002 Int'l CLI Screening

CAPABILITIES AND VALUE

Translations and Routing Enhancements

This feature introduces the Global selector (GBL) into all routing tables to provide retranslation via table CALLCNTL. GBL has two optional selectors:

- CCNTLRX provides the ability to:

    — Retranslate a call by indexing it into the table CALLCNTL

    — Determine whether Callcode, Destination digits, Network Class of Service (NCOS) and Customer Group values obtained from the second leg of a call can be updated in the Automatic Message Accounting (AMA) record

    — Provide an index into table DIGMAN in order to manipulate Called Party Number (CdPN) prior to retranslation

- OUTP is used as a trigger to index into the new table OUTPULSE.

The table OUTPULSE allows manipulation of:

- CdPN
- The call parameters Nature Of Address (NOA), Transit Network Selector (TNS) and National/International Indicator (NII)
- The billing parameter Callcode

after the final route is selected, on a per-call basis.

In addition, this feature introduces the NS selector into routing tables to enhance non-standard routing. The NS selector has the functionality to prefix, delete or skip up to 22 digits from the number to be outpulsed.

Value

This feature enhances the CS2000 translations capabilities adding flexibility and simplification. It enables the CS2000 to better serve the requirements of the international marketplace.

Technical reference

59028782

CLI Screening Support for International Numbering

This feature provides the ability to screen international and national addresses, and expands the capacity of the Calling Line Identity (CLI) screening database.

This feature provides the network operator with the ability to:

- Specify a precedence order to determine which address to screen.
- Specify a precedence order to determine which address to capture in the Automatic Message Accounting (AMA) billing record.
- Screen an address based on the Nature of Address (NOA) and the digits of the specified address.

- Set the Customer Group, Network Class of Service (NCOS), and Bearer Capability, on a per CLI per service basis.
- Capture more detailed information about calls that fail CLI screening.
- Set Network Class of Service and Customer Group on a per CLI per service basis.
- Set the Bearer Capability on a per CLI per service basis.
- Define a greater number of CLI services.
- Define a greater number of CLI service profiles.

Value

The feature provides the following enhancements to the CLI screening via translations functionality:

- Provides support for International (INTL) CLI formats (Numbering Plan Indicator (NPI), Nature of Address (NOA), and Type of Number (TON), not just digits).
- Provides customer control over the number to be screened (for example, CLI or redirection number).
- Provides an increase to the numbers of CLI services that can be supported.
- Provides the ability to set the Bearer Capability on a per CLI per service basis.
- Provides the ability to set Network Class of Service and Customer Group on a per CLI per service basis.

This feature allows network operators to use CLI screening, thereby enabling the operator to compete in the European market.

This functionality could be **dependent** on the dial plan method used (i.e. padded vs. open), and this will be verified during testing.

Technical reference

59023556

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

SGAT0003   Serving Country Code

CAPABILITIES AND VALUE

Serving Country Code

This feature allows the CS2000 to convert the incoming Calling Party Number (CgPN) into an international format by prefixing it with a Serving Country Code (SCC). This occurs when a call is made between subscribers in two different countries. Similarly, the country code is deleted from the outgoing Called Party Number (CdPN) and CgPN depending on the value of the SCC.

The SCC denotes a code associated with a trunk and indicates the country to which the trunk serves. The SCC is a 1-4 digit country code, with each digit in the range of 0-9.

This feature is supported on the following protocols:

- IBN7
- ETSI ISUP V1, V2, V3 and national variants

- Japan ISUP and its variants
- ETSI PRI and its national variants
- French PRI
- INS1500 PRI
- TS14 PRI
- Q Interface Signalling
- Red Book Telephone User Part
- British Telephone User Part
- French TUP

Value

Allows the CS2000 to convert the incoming Calling Party Number (CgPN) into an international format by prefixing it with a Serving Country Code. This occurs when a call is made between subscribers in two different countries. This feature adapts the CS2000 to better suit international marketplaces.

This functionality could be **dependent** on the dial plan method used (i.e. padded vs. open), and this will be verified during testing.

Technical reference

59023331

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

3.9 Dynamic Quality of Service

CS2Q0001 Quality of Service/Dynamic QoS

CAPABILITIES AND VALUE

DQoS support for Cable

This feature supports Dynamic Quality of Service (DQoS), which is a means to control reservation and usage of network resources in the Hybrid Fibre Coax (HFC) portion of a Voice over Internet Protocol (VoIP) over coaxial cable telephony network. The methodology and protocols that define DQoS are specified in Cable Labs' PacketCable Dynamic Quality-of-Service specification, PKT-SP-DQOS-I02-000818.

Value

This feature saves operational costs for the network operator by making more efficient use of network resources.

Technical reference

GWCDQOS

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

CS2Q0002 Virtual Call Admissions Control

CAPABILITIES AND VALUE

GWC-EM Internet Transparency VCAC Provisioning

Virtual Connections Admissions Control (VCAC) is a Quality of Service (QoS) mechanism that allows the Communication Server 2000 (CS 2000) to cancel post-dial, pre-ringing calls that would overload a segment of the packet network.

VCAC introduces Limited Bandwidth Links (LBLs) to the CS2000 Management tools (network panel) and a topological hierarchy that links LBLs and Network Address Translators (NATs) to form a tree of Internet Transparency (ITrans) middleboxes.

This feature builds on the provisioning functionality to add support for:

- Datafilling of Limited Bandwidth Link (LBL) middleboxes in addition to NATs
- Datafilling of Resource Usage (RU) data for use in the VCAC (Virtual Connections & Admissions Control) function of LBLs
- Manual or automatic assignment of a Gateway Controller (GWC) to carry out the RU capacity counting function on behalf of an LBL
- 'Chaining' of middleboxes (NATs/LBLs) in a hierarchical network topology
- Downloading of MP/NAT/LBL/RU information to GWCs as necessary.

The functionality is optional and is controlled via Software Optionality Control (SOC).

Value

Virtual Call Admission Control provides a solution to limiting the amount of VoIP calls allowed over the access network to a specific "site" so that the number of VoIP calls does not exceed the allowed bandwidth and cause voice quality degradation.

Technical reference

00002512

Virtual Call Admissions Control on Communication Server 2000

This feature implements the call processing and maintenance parts of Virtual Connections Admissions Control (VCAC).

The functionality is optional and is controlled via Software Optionality Control (SOC).

Value

This feature extends the Internet Transparency Framework, implemented for Network Address Translation (NAT) traversal.

Technical reference

00002739

GWC-EM Internet Transparency VCAC Provisioning Support for CentrexIP Gateways

The Internet Transparency ("ITrans") solution, provides a means for CS2000 to enable IP-telephony across and between Virtual Private Networks (VPNs). This is achieved by taking into account the presence of NAT (Network Address Translator) middleboxes between Media Gateways (MGs) and the 'outside world', and inserting publicly-addressable Media Proxy (MP) devices into the media path where required.

This feature allows VCAC to function on Centrex IP Client Manager (CICM) gateways. When a CICM user logs in to a CICM terminals, a message containing the "discovered" adjacent middlebox is sent to the GWC.

The functionality is optional and is controlled via Software Optionality Control (SOC).

Value

This feature allows the user to provision a set of root (top level) middlesboxes. allowing the Gateway Controller Element Manager (GWC-EM) to send all the underlying middlesboxes to the GWC. This ensures that, when a CICM user logs in, the middlebox is available in the GWC.

Technical reference

00004981

Network Wide VCAC

NEW!

Call Admission Control (CAC) is necessary in packet networks to address problems that might otherwise be caused by network congestion. CAC is applied to call attempts that would encounter bandwidth restrictions, and that should therefore not be set up in the first place.

This feature introduces Network Wide Virtual Call Admission Control (VCAC) for an entire CS2000 configuration (optionally including the MCS5200). Network Wide VCAC is provided by a single Session Policy Controller (SPC) on an independent hardware platform instead of individually by GWCs (as was the case in releases before ISN08) and is supported for Centrex IP, H.323, IAD and SIP endpoints. Network Wide VCAC also supports composite middleboxes (a middlebox that is a NAT and LBL at the same time).

Value

Reduces potential for congestion in packet networks.

Technical reference

00007394

DEPENDENCIES

There are no additional order codes required for this functionality to be operational.

INTR0001　　Internet Transparency

NEW!

CAPABILITIES AND VALUE

Media Portal 5 and 30 minute OMs – Provide Peg Counts/OMs on Usage of the RTP Portal and % Blocking that has Occurred for Traffic Management.

NEW!

This feature gives the CS 2000 GWC the capability to generate 5 and 30 minute peg counts on the usage of the RTP Media Portal. The GWC will count the number of successful and unsuccessful attempts against each RTP Media Portal and against all RTP Media Portals supported by the GWC and report them via the Integrated Element Management System (IEMS).

Value

This feature allows Telco traffic engineers to better manage the network by monitoring the usage of the RTP Portal and the percentage blocking, so that more portals may be added before blocking occurs.

Technical reference

00007327

RTP Portal QoS reporting to GWC

This feature enables a GWC to collect QoS (Quality of Service) information from the RTP Media Portal. Information is collected on a per-call basis and includes details such as packet loss, latency, and jitter.

Value

Enhances the CS2000's ability to collect QoS data to include the RTP Media Portal.

Technical reference

00007324

IW SPM/MG4K IPservice interworking to CICM, H.323, SIP / MCS

This feature enables the Interworking SPM (IW-SPM) to interwork with the RTP Media Portal to support H.323, CICM, and MCS interworking. This functionality allows carrier networks to communicate with private enterprise networks hidden behind Network Address Translation (NAT) devices, via the insertion of a media proxy.

Value

Enables the IW-SPM (supporting legacy peripherals) to interwork over IP networks when packet network media streams have to traverse NATs.

Technical reference

00007460

Chapter 4 Glossary of Abbreviations and Acronyms

3WC   Three Way Calling (line service)

A

AAL2   ATM Adaption Layer for VBR real-time

ABI   Analogue Bridging Interface

ABR   Announcement Before Routing

AC   Access Code

ACB   Automatic Callback

ACC   Automatic Collect Call, Anchor Context Controller

ACCB   ACC Barring/Blocking

ACCS   Automated Calling Card Service

ACD   Automatic Call Distribution

ACDNR   Automatic Call Distribution Not Ready

ACEES   Attendant Console End-to-End Signalling

ACI   Additional Call Information

ACIF   Australian Communication Industry Forum

ACK   ACKnowledgement

ACL   Access Control List

ACM   Address Complete Message, Answering Message

ACRJ   Anonymous Call Rejection (line service)

ADSI   Analogue Display Services Interface

ADSL   Asymmetrical Digital Subscriber Line

AFG   Access Feature Grouping

AID   Access Information Domain

AIN   Advanced Intelligent Network

AMA   Automatic Message Accounting

AMADNS   Automatic Message Accounting Data Networking System,
               Automatic Message Accounting Data Networking Standard

AN   Access Network

ANI   Automatic Number Identification

ANM   ANswer Message

ANSI   American National Standards Institute

ANSI ISUP+ IBN7	Nortel Networks proprietary protocol based on ANSI ISUP; also known as
AOC	Advice Of Charge (ISDN service)
AOCD	Advice Of Charge - During call
AOCE	Advice Of Charge - End of call
APC	Asia Pacific and CALA
APDU	Application Protocol Data Unit
APG	Anchor Packet Gateway
API	Application Programming Interface
APM	APplication transport Mechanism
APM-ASE	APplication transport Mechanism - Application Service Element
APP	Application transport mechanism Parameter
APS	Attendant Pay Station, Audio Provisioning Server
AR	Automatic Recall/Call Return
ARDDN	Automatic Recall of Diallable DN
ARS	Automatic Route Selection
ASK	Amplitude Shift Keying
ASIC	Application Specific Integrated Circuits
ASUI	Additional SetUp Information message
ATA	ASCII Terminal Access (OAM&P application)
ATM	Asynchronous Transfer Mode
AUL	Automatic Line (line service)

B

BAF	Bellcore AMA Format
BBHCA	Billing Busy Hour Call Attempt
BC	Bearer Capability, Basic Call
BCIE	Bearer Capability Information Element
BCLID	Bulk Calling Line ID
BCM	Backward Charging Message, Business Communication Manager
BCR	Bearer Capability Routing
BCS	Batch Change Supplement
Bellcore	Bell Communications Research
BERP	Bit Error Rate Performance
BERT	Bit Error Rate Testing
BGID	Business Group IDentification
BHCA	Busy Hour Call Attempts
BLF	Busy Lamp Field
BNN	Bridged Night Number

BNS	Billing to the Nearest Second
BRA	Basic Rate Access
BRISC	BNR Reduced Instruction Set Computing
BTUP	British Telephone User Part

C

C7UP	CCS7 ISUP
CALA	Caribbean And Latin America
CAMA	Centralised Automatic Message Accounting
CAP	Competitive Access Provider
CATV	CAble TV
CBI	CLI Blocking Indicator
CBK	Code BlocKing
CBWF	Call Back When Free
CC	Call Centre, Country Code
CCB	Call Condense Block
CCBHNG	Call Condense Block HuNG
CCBS	Call Completion to Busy Subscriber
CCC	Call Content Channel
CCF	Call Control Function
CCITT/ITU	(former:) International Telephone and Telegraph Consultative Committee (renamed:) International Telecommunications Union
CCNR	Call Completion No Reply
CCPC	Calling/Called Party Category
CCR	Call Control and Routing
CCS7	Common Channel Signalling System No. 7 (also called SS7)
CCW	Cancel Call Waiting (line service)
CD	Call Diversion, Call Deflection
CDC	Customer Data Change
CDN	Controlled Directory Number, CalleD party Number
CDP	Charge Determination Point
CdPN	CalleD Party Number
CDR	Call Detail Record
CEPT	Conference of European Postal and Telecommunications
CFB	Call Forward Busy (line service)
CFBF	Call Forward Busy Fixed (line service)
CFBP	Call Forward Busy Programmable (line service)
CFBL	Call Forward Busy Line (line service)
CFCW	Call Forward Call Waiting Calls (line service)

CFD	Call Forward Don't Answer, Call Forward No Answer (line service)
CFDA	Call Forward Don't Answer (line service)
CFDF	Call Forward Don't Answer Fixed (line service)
CFDP	Call Forward Don't Answer Programmable (line service)
CFDVT	Call Forward No Answer Variable Timing (line service)
CFF	Call Forward Fixed (line service)
CFGDA	Call Forward Group Don't Answer (line service)
CFI	Call Forward Intragroup (line service)
CFN	ConFusioN Message
CFNR	Call Forwarding No Reply (line service)
CFO	Call Forward to Operator (line service)
CFRA	Call Forward Remote Access (line service)
CFRNB	Call Forward to Restricted Numbers Blocking (line service)
CFT	Call Forward Timed (line service)
CFTANN	Call Forward To ANNouncement (line service)
CFU	Call Forward Universal, Call Forward Unconditional (line service)
CFUP	Call Forward Universal Programmable (line service)
CFV	Call Forward Validation (line service)
CFW	Call ForWarding (line service)
CFWANN	Call Forward With Announcement (line service)
CG	CallGap
CGN	CallinG party Number
CGP	Charge Generation Point (for NAOC)
CgPN	CallinG Party Number
CH	Consultation Hold
CI	Command Interface, Command Interpreter, Charge Indicator
CIC	Circuit Identification Codes
CICM	Centrex IP Client Manager
CID	Caller IDentification
CIR	Circular Hunt
CLASS	Custom Local Area Signalling Services
CLC	Calling Line Category
CLEC	Competitive Local Exchange Carrier
CLF	Calling Line identification with Flash (MCID)
CLI	Calling Line Identity, Calling Line Identification, Calling Line Identifier
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
CLLI	Common Language Location Identifier
CM	Central Module, Computing Module

CMR	CLASS Modem Resource
CMS	Call Management Services
CMTS	Cable Modem Termination System
CNA	Connection Not Admitted Message
CNAB	Calling Name Delivery Blocking (line service)
CND	Calling Number Delivery (line service)
CNDB	Calling Number Delivery Blocking (line service)
CNDBO	Calling Number Delivery Blocking Override (line service)
CNIP	Calling Name Presentation
CNIR	Calling Name Restriction
CNN	CoNnected Number
CO	Central Office
COD	Cut-Off on Disconnect
CODEC	COder DECoder
COLP	COnnected Line identification Presentation
COLR	COnnected Line identification Restriction
CON	CONnection message
COS	Class Of Service
COT	Customer Originated Trace, COntinuity Tones
CPA	Called Party Address
CPC	Calling Party Category
CPD	Call Processing busy Deload
CPE	Customer Premises Equipment
CPG	Call ProGress message
CPH	Call Party Handling
CPM	Common Peripheral Module
CPN	Calling Party Number
CPS	Carrier Pre-Selection
CQM	Circuit group Query Message
CQR	Circuit group Response message
CRG	ChaRGing information message
CRR	Call Request Retrieval
CRT	Cathode Ray Tube
CS	Carrier Selection
CS-1	Capability Set 1
CS-1R	Capability Set 1-Refined
CS2	Capability Set 2
CSE	Customer Service Expert
CSP	Carrier Selection Parameter

CST	Customer Service Time
CSV	Comma-Separated Values
CT	CounTry code
CTI	Computer Telephony Integration
CTM	Conference Trunk Module
CTR	ConnectToResource
CTQ	Call Transfer Queue
CUG	Closed User Group
CUSTGRP	CUSTomer GRouP
CW, CWT	Call Waiting (line service)
CWACT	Call Waiting Activation/Deactivation
CWR	Call Waiting Ringback
CXR	Call Transfer (line service)

D

DCE	Distributed Computing Environment
DCF	Deny Call Forwarding
DCME	Digital Circuit Multiplication Equipment
DCR	Dynamically Controlled Routing
DDD	Direct Distance Dialling
DDI	Direct Dialling Inward
DDMS	DMS Data Management System (OAM&P application)
DDN	Delivery of Diallable Number (line service)
DEL	Direct Exchange Line
DFCWA	DisconnectForwardConnectionWithArgument
DFT	DPNSS Feature Transparency
DID	Direct Inward Dial
DIRP	Device Independent Recording Process,
	Device Independent Recording Package
DISA	Direct Inward System Access
DLCM	Dual Line Call Management
DLH	Distributed Line Hunt
DMI	Digital Manipulation Index
DMO	Data Modification Orders
DN	Directory Number
DNBD	Deutsche Network Broadcasting Delivery
DND	Do Not Disturb
DNH	Directory Number Hunt
DNINV	Directory Number INVentory

DNTR	Denied Termination
DOCSIS	Data Over Cable System Interface Specification
DOD	Direct Outward Dialling
DOR	Denied Origination
DP	Dial Pulse (used in standard analogue telephones), Detection Point
DPNSS	Digital Private Network Signalling System No. 1
DPT	Dynamic Packet Trunk
DQoS	Dynamic Quality of Service
DRAM	Dynamic Random Access Memory,
	Digital Recorded Announcement Machine
DRING	Distinctive Ringing
DS	Digit Signal
DSL	Gigital Subscriber Line
DSCWID	Spontaneous Call Waiting Identification with Disposition,
	Deluxe Spontaneous Call Waiting IDentification
DTM	Denied Termination (incoming call barring)
DTMF	Dual-Tone Multi-Frequency (tones used in standard analogue telephones)

E

EAMA	Enhanced AMA
EBAF	Extended Bellcore Automatic Message Accounting Format
ECT	Explicit Call Transfer
EDC	Extended Distance Capability
EDP	Event Detection Point
EDRAM	Enhanced Digital Recorded Announcement Machine
EIU	Ethernet Interface Unit
EM	Element Manager
EMK	Emergency Key
EMMC	Enhanced Meet-Me Conference
ENET	Enhanced Network
EPG	Endpoint Group
ERM	Event Record Manager
ESA	Emergency Stand-Alone
ESP	Essential Service Protection
ETA	Enhanced Terminal Access (OAM&P application)
ETC	EstablishTemporaryConnection
ETSI	European Telecommunications Standards Institute
EUR	European
EXB	EXtension Bridging

F

FA	Foreign Access code
FAA	FAcility Accepted message
FAM	Final Address Message
FAR	FAcility Request message
FCI	FurnishChargingInformation
FCNDB	Fixed Calling Number Delivery Blocking
FD	Forward Disconnect
FIAUDIO	Forced Incoming AUDIO
FIE	Facility Information Elements
FLIS	Fibre Link Interface Shelf
FLPP	Fiberised Link Peripheral Processor
FMA	First Market Application
FNN	Full National Number
FNO	Free Number Origination
FNT	Free Number Termination
FOT	FOrward Transfer message
FPE	Feature Processing Environment
FPH	Freephone Service
FPS	Fixed Price Service
FRJ	Facility ReJected message
FSM	Finite State Machine
FST	Flexible Signalling Trunk
FT	Feature Transparency, Fault Tolerant
FTAM	File Transfer, Access and Management
FTP	File Transfer Protocol
FTUP	France Telephony User Part

G

GF	Generic Function, Generic Functional
GTT	Global Title Translation
GigE	Gigabit Ethernet
GK	GateKeeper
GUI	Graphical User Interface
GUIDE	Graphical User Interface for Data Engineering
GW	Gateway
GWC	Gateway Controller

H

HC	Hop Counter
HDB	History Data Block
HDLC	High-level Data Link Control
HFC	Hybrid Fibre Coax
HLC	High Layer Compatibility
HOBIC	HOtel Billing Information Centre
HOT	HOTel (line option)
HSET	HeadSET
HSL	High Speed Link
HTR	Hard-To-Reach
HTRF	HTR Flag

I

I3WC	International Three Way Call
I/O	Input/Output
I-ISUP	Interconnect ISUP
IAA	Inter-Administration Accounting
IA-C	International Access-Cable
IAD	Integrated Access Device
IAM	Initial Address Message
IBN	Integrated Business Network (support for proprietary value-added services)
IBN7	Integrated Business Network CCS7: CCS7 signalling for IBN. Proprietary variant of ANSI CCS7. Also referred to as ANSI ISUP+.
ICM	Intelligent Call Management
ICWT	International Call Waiting
IDDD	International Direct Digit Dialling
IDLC	Integrated Digital Loop Carrier
IE	Information Element
Ie-ISUP	Australian ACIF-G500 ISUP
IEC	Inter-Exchange Carriers
IEMS	Integrated Element Management System
IETF	Internet Engineering Task Force
IFAM	Initial and Final Address Message
ILCM	International Line Concentrating Module (on-switch LCM for analogue lines)
IMS	Interactive Multimedia Server
IN	Intelligent Networking, Intelligent Network
INAP	Intelligent Network Application Protocol,

	Intelligent Networks Applications Part (CCS7 protocol)
INF	INFormation message
INR	INformation Request message
IOC	Input/Output Controller
IOM	Input/Output Module
IP	Intelligent Peripheral, Internet Protocol
IPF	Integrated Processor and F-Bus Interface
IPSec	IP Security
IRI	Intercept Related Information
ISDN	Integrated Services Digital Network
ISO	International Organization for Standardization
ISPT	Instituto Superiore delle Poste e delle Telecomunicazioni
ISUP	ISDN User Part (CCS7 protocol)
ITA	Internet Transparency Agent
ITP	Internet Telephony Processor
ITrans	Internet Transparency
ITU	International Telecommunication Union
ITU-T	International Telecommunication Union - Telecommunications
IUA	ISDN User Adaptation
IUP	Interconnect User Part (previously BTUP)
IV	Incoming
IVR	Interactive Voice Response
IW-SPM	Interworking Spectrum Peripheral Module

K

kbit/s	Kilobits per second
KEM	Key Expansion Module
KSET	Key SET
KSMOH	Key Set Music On Hold

L

LAC	Local Area Calling
LAN	Local Area Network
LBL	Limited Bandwidth Link
LCID	Last Caller IDentify
LCM	Line Concentrating Module
LCME	Line Concentrating Module Enhanced (for ISDN)
LDI	Long Distance Indicator
LE	Local Exchange

LEA	Law Enforcement Agency
LEMF	Law Enforcement Monitoring Facility
LEN	Line Equipment Number
LGC	Line Group Controller
LGCO	Line Group Controller Overseas
LGCOi	Line Group Controller Overseas (ISDN-ready)
LI	Lawful Interception
LIS	Link Interface Shelf
LIU7	Link Interface Unit for CCS7
LLC	Low Layer Compatibility
LMS	Local Message Switch
LNP	Local Number Portability
LNR	Last Number Redial (line service)
LOB	Line Of Business
LPP	Link Peripheral Processor
LROA	Line Reversal On Answer
LROS	Line Reversal On Seizure

M

MADN	Multiple Appearance Directory Number
MANB	MANual Busy
MAP	Maintenance and Administration Position
MBG	Multi-location Business Group
Mbit/s	Megabits Per Second
MBS	Meridian Business Set
MBSCAMPO	Meridian Business Set CAMP-On
MCDN	Meridian Customer Defined Network
MCID	Malicious Call IDentification
MCT	Malicious Call Trace
MDC	Meridian Digital Centrex
MDM	Multiple Data Message
MDR	Message Detail Recordings
MF	MultiFrequency
MFC	MultiFrequency Compelled
MFT	Meridian Feature Transparency
MG	Media Gateway
MGC	Media Gateway Controller
MGCP	Media Gateway Control Protocol (used to control UAS)
MHS	Message Handling System

MIF	Initial Address Message (SSUTR2)
MIS	Management Information System
MLH	Multiline Hunt
MLIU	MultiLink Interface Unit
MMI	Man Machine Interface
MOLI	MObile Location Information
MONA	Meridian OffNet Access
MoU	Memorandum Of Understanding
MoU1	Memorandum Of Understanding 1
MoU2	Memorandum Of Understanding 2
MP	Media Proxy
MPC	Multiple Point Code
MPDT	Message Protocol and Downloadable Tones
MSB	Make Set Busy (Station Activated Do Not Disturb)
MSN	Multiple Subscriber Number
MSS	Management for Succession Solutions
MSU	MTP Signalling Unit
MTA	Multimedia Terminal Adapter
MTM	Maintenance Trunk Module
MTP	Message Transfer Part
MTP	Multiple Time Zone
MWI	Message Waiting Indicator
MWT	Message WaiTing, Message Waiting Indicator - Audible

N

NAE	Network Address Extension
NAC	Network Access Code
NACD	Networked Automatic Call Distribution
NAOC	Network Advice of Charge (ISDN service)
NAPT	Network Address and Port Translator
NAT	Network Address Translator
NAR	Network Access Registers
NAT	Network Address Translation/Translator
NCAS	Non Call Associated Signalling
NCCI	New Common Carrier Interface
NCCL	New Common Carrier Local
NCI	Nuisance Caller Identification
NCL	Non-computing Computing module Load
NCAS	Non-Call Associated Services

NCOS	Network Class of Service
NCS	Network-based Call Signalling
NDI	Designated Installation Number (SSUTR2)
NDS	Designated Supplementary Number (SSUTR2)
NEED	Nodal End-to-End Data
NETCGID	Network Customer Group Identifier
NETID	Network Identifier
NETINFO	NETwork INFOrmation
NFCI-LBL	National Call Forward Indicator - Link By Link
NGSS	Next Generation Session Server
NI	Incomplete Indicator
NIC	Network Identification Code
NIT	Non-Initializing Terminals
NIU	Network Interface Units
NMA	Network Monitoring and Analysis
NN	National Number, Network Number
NOA	Nature Of Address
NOC	Nature Of Connection
NSN	National Significant Number
NP	Network Processor, Number Portability
NPA	Numbering Plan Area
NPI	Numbering Plan Indicator
NPMDN	Non-Pilot Member Directory Number
NPR	Number Presentation Restriction
NRA	Network Ring Again
NRC	Network Reliability Council
NRL	Non-Resident Load
NSC	Number Services Code
NSN	National Significant Number
NSS	Network Switching Systems
NT1	Networking Termination 1
NTC	Notification of Time and Charge
NTS	Number Translation Service
NTT	Nippon Telegraph and Telephone
NUC	Nailed Up Connection
NWM	NetWork Management
Nxx	office code

O

OA&M	Operations, Administration and Maintenance
OAM&P	Operations, Administration, Maintenance and Provisioning
OAU	Office Alarms Unit
OCB	Outgoing Call Barring
OCI	Originating Charge Information
ODP	Open Dial Plan
OFC	OFfice Code
OG	OutGoing
OM	Operational Measurement
OMDD	Outbound Measurements Data Delivery
ONP	One Night Process
OPC	Origination Point Code
ORSS	Originating Suspended Service
OS	Operations System
OSF	Open Systems Foundation
OSS	Operations Support System (centralised OAM&P application)
OSSAIN	Operator Services System Advanced Intelligence Network

P

PA	PlayAnnouncement
PABX	Private Automatic Branch eXchange
PAM	Pluggable Application Module
PAQ	Personal Agent Queue
PBX	Private Branch Exchange
PC	Prefix Code
PCA	Payment Ceiling Advice
PCL	Product Computing module Load
PCOS	Priority Class of Service
PCM	Pulse Code Modulation
PCUI	PromptAndCollectUserInformation
PDN	Primary Directory Number, Pilot Directory Number
PDTC	PCM-30 Digital Trunk Controller
PEC	Product Equipment Code
PI	Progress Indicator, Presentation Indicator
PIN	Personal Identification Number
PINX	Private Integrated Network eXchange
PLD	PCM-30 Line Drawer
PLGC	PCM-30 Line Group Controller

PLP	Plug Up
PM	Peripheral Module
PN	Presentation Number
PNP	Private Numbering Plan
PNI	Private Network Interception
PNRF	Ported Number Recognition Function
POI	Point Of Interconnect
POTS	Plain Ordinary Telephone Service (basic telephony)
PPL	Peripheral firmware Load
PRA	Primary Rate Access
PRCC	PCM-30 Remote Cluster Controller
PRH	Preferential Hunting
PRI	Primary Rate Interface (ISDN)
PRLCM	PCM30 Remote Line Concentrating Module
PRP	PreRoute Peg
PRR	Partial ReRoute
PRS	Premium Rate Service
PRSM	Post-Release Software Manager
PRSU	Post-Release Software Unit
PS	Pulse Signal
PSTN	Public Switched Telephone Network
PTM	Packet Telephony Manager
PTOP	Point TO Point
PTT	Postal, Telegraph and Telephone
PUMA	Product Upgrade MAnager
PVG	Packet Voice Gateway

Q

QFT	QSIG Feature Transparency
QoS	Quality of Service
QSIG	Q (point of the ISDN model) Signalling
QTD	Query Time and Date

R

R2	Binary Raster Operation
RAG	Ring AGain
RAN	Recorded ANnouncement
RBC	Remote Bearer Control
RBTUP	Red Book TUP

RBWF	Ring Back When Free
RCC	Remote Cluster Controller
RCF	Remote Call Forward
RCFEA	Remote Call Forward Equal Access
RCI	Routing Control Indicator
RCO2	Remote Cluster Controller Offshore
REL	RELease message
REMNACD	REMote Network Automatic Call Distribution
RES	Residential Enhanced Service
RGN	Redirecting Number
RISC	Reduced Instruction Set Computing
RLT	Release Link Trunk
RMM	Remote Maintenance Module
RNG	Ring message
ROP	Route OPtimisation
RSB	Residential and Small Business
RSC	Remote Switching Centre
RSC-S	Remote Switching Centre-S
RSF	Route Select Failure
RSUS	Requested Suspend Service
RTE	RouTE
RTIF	Remote Terminal Interface
RTP	Real Time Protocol
RTS	Return To Service
RTU	Right-to-Use

S

SA	Secure Association
SACB	Subscriber Activated Call Barring (line service)
SAM	Service Application Module, Subsequent Address Message
SAM21	Service Application Module with 21 slots
SAR	Segmentation and Reassembly
SASUI	Send Additional SetUp Information message
SBA	SuperNode Billing Application
SBC	Screen Based Consoles
SBLF	Set-based Busy Lamp Field
SC	Shelf Controller
SCA	Selective Call Acceptance, Single Call Arrangement
SCAI	Switch-to-Computer Application Interface

SCCP	Signalling Connection Control Part
SCE	Service Creation Environment
SCF	Selective Call Forward, Service Control Function
SCL	Speed Calling, Individual Long List (line service)
SCM	Signalling Carriage Mechanism
SCMP	Series Completion
SCP	Service Control Point
SCS	Speed Calling, Individual Short List (line service)
SCU	Service Control Unit
SCWID	Spontaneous Call Waiting With Identification
SDH	Synchronised Digital Hierarchy
SDL	Signalling Data Link
SDM	SuperNode Data Manager
SDMC	SuperNode Data Manager Carrier
SDN	Secondary DN (Teen Service)
SDP	Session Dependent Protocol
SE	Small Enhanced
SEM	Secondary Element Manager
SERVORD	Service Order
SIM	Service Information Message
SIP-T	Session Initiation Protocol for Telephony
SLE	Screening List Editing, Selective List Editing
SLM	System Load Module
SLS	Signalling Link Selector
SMDI	Simplified Message Desk Interface
SMDR	Station Message Detail Recording
SMP	Service Management Point
SMS	Service Management System
SN	Subscriber Number, SuperNode
SNMP	Simple Network Management Protocol
SNP	Service Number Portability
SNPE	Serving Numbering Plan Area
SNSE	SuperNode Small Enhanced, SuperNode Size Enhanced
SNTP	Simple Network Time Protocol
SOC	Software Optionality Control
SPAP	Signal Processing Application Peripheral
SPIROU	French ISUP
SPM	Subscriber Premises Meter, Spectrum Peripheral Module
SPRING	Subscriber Programmable Ring

SRF	Specialised Resource Function
SRG	Survivable Remote Gateway
SRU	Small Remote Unit
SS	Steady Signal
SS7	Signalling System No. 7 (also called CCS7)
SSF	Service Switching Function
SSH	Secure Shell
SSP	Service Switching Point
SSPE	Signalling SPEcification
SSUTR2	Sous Systeme UTilisatueR
ST	Signalling Termination
STD	Stuttered Dial Tone
STM-1	Synchronous Transport Module level 1
STP	Signalling Transfer Point
STR	Special Tone Receiver
SUB	SUBaddressing
SUS	Suspend (deny service to line)
svcgrp	Service Group
SWACT	SWitch in ACTivity
SWIM	SoftWare Inventory Management

T

TAPI	Telephony Applications Programming Interface
TAS	Technical Assistance Service
TBOA	Tone Burst on Answer
TBI	Toll Break In
TCAP	Transaction Capabilities Application Part
TCM	Tariff Change Message
TCP/IP	Transmission Control Protocol/Internet Protocol
TDM	Time Division Multiplexing
TDP	Trigger Detection Point
TEI	Terminal Endpoint Identifier
TID	Terminal Identifier
TLS	Transport Layer Security
TMR	Transmission Medium Requirement
TNM	Total Network Management
TNS	Transit Network Selector
TOD	Time of Day
TON	Type Of Number

TOPS	Traffic Operator Position System
TP	Terminal Portability
TRAVER	TRAnslations VERification
TSO	Two-Stage Outpulsing
TTP	Trunk Test Position
TTT	Transmission Test Trunk
TUP	Telephone User Part (CCS7 protocol)

U

UAR	User Activity Record
UAS	Universal Audio Server
UCD	Uniform Call Distribution
USI	User System Information
USR	User-to-User Information message
USP	Universal Signalling Platform, Universal Signalling Point
UTR	Universal Tone Receiver
UUI	User-to-User Information, User-to-User Information message
UUS	User-to-User Signalling
UUS1	User-to-User Signalling service 1
UXLA	Universal Translation

V

VBR	Variable Bit Rate
VCAC	Virtual Call Admissions Control
VFG	Virtual Facility Group, Virtual Function Group
VID	Virtual IDentifier
VM	Voice Mail (line service)
VMG	Virtual Media Gateway
VMS	Voice Mail Server, Voice Mail Services, Voice Messaging System
VMWI	Voice Mail Waiting Indication
VoATM	Voice over ATM
VoIP	Voice over IP
VP	Voice Platform
VPN	Virtual Private Network
VRDN	Virtual Router Distribution Node
VRRP	Virtual Router Redundancy Protocol
VRU	Voice Response Unit
VSLE	Visual Screen List Editing
VSNPA	Virtual Serving Numbering Plan Area

W

WAN	Wide Area Network
WATS	Wide Area Telephone Services
WML	Warm Line (line service)
WLC	World Line Card
WUC	Wake-Up Call
WUCR	Wake-Up Call Request (line service)

X

XA-Core	eXtended Architecture Core
XLA	Translation
XLAS	Translations

Appendix: Applicability Matrix

The table below provides information about the applicability of order codes to solutions and services.

Solutions include:

- Packet Trunking/Transit AAL2 or IP
- Integrated Packet Access - Cable
- Integrated Packet Access - Wireline & Universal Access

Nortel Networks is committed to providing high quality products that meet the needs of the customer and the particular market, and to the support of open standards. Therefore, some options may be provided specifically for certain solutions.

Items highlighted in magenta were introduced at the ISN08 release.

| Order Code | Order Code Name / Feature Name | Solution Applicability | | | Services |
		Packet Trunking / Transit (AAL-2) or (IP)	Integrated-Packet Access/ Cable	Integrated-Packet Access/ Wireline & Universal Access	VPN, H323, CICM
9KEM0080	MG9K Element Manager NCL			●	●
ACD00005	ACD MIS				●
ACSI0003	V5.2	●	●	●	●
AMG20080	Nortel Media Gateway 3200	●			
APS00100	Audio Provisioning Server NCL	●	●	●	●
ATA00001	ASCII Term Acc Two	●	●	●	●
BASE0011	CO Data Change Capture	●	●	●	●
BASE0014	BASE DIRP Enh to 72 vol	●	●	●	●
BASE0015	BASE IOM Disk Enhancement	●	●	●	●
BASE0100	XA-Core Max Power	● XA-Core	● XA-Core	● XA-Core	● XA-Core
BILL0001	Billing	●	●	●	●
BILL0002	Carrier Connect AMA	●	●	●	●
BILL0003	AMA Reject Calls	●	●	●	●
BILL0004	VPN AMA Billing	●	●	●	●
BILL0006	SMDR DE Extension	●	●	●	●
BILL0007	AMA Time to Answer	●	●	●	●
BILL0008	AMA Redirection Information	●	●	●	●
BILL0009	AMA Call Completion Reason	●	●	●	●
BILL0010	AMA Generation Management Reports	●	●	●	●
BILL0012	BC Billing for BTUP	●	●	●	●
BILL0013	AMA Support Up To 30 Digits	●	●	●	●

(Continued...)		Solution Applicability			Services
Order Code	Order Code Name / Feature Name	Packet Trunking / Transit (AAL-2) or (IP)	Integrated-Packet Access/ Cable	Integrated-Packet Access/ Wireline & Universal Access	VPN, H323, CICM
BPRD0001	CS2000 Platform	●	●	●	●
BSTP0711	Basic STP	●	●	●	●
CBM00080	Core and Billing Manager	●	●	●	●
CCA00080	3PC Peel / Linux NCL	● CS2K Compact	● CS2K Compact	● CS2K Compact	● CS2K Compact
CICE0080	CentrexIP Client Manager Element Manager	●	●	●	●
CICM0080	Centrex IP Client Manager Gateway	●	●	●	●
CIPI0601	CIPI CentrexIP RTU	●	●	●	●
CIPI0602	CIPI CICM Shelves	●	●	●	●
CLDN0003	PBX CLI Management	●	●	●	●
CLDN0004	CLI Screening Via Translations	●	●	●	●
CMON0002	CMON X25 LI	●	●	●	●
CNCD0004	CNCD RTB OFT	●	●	●	●
CNCD0006	Billing Filtering	●	●	●	●
CNOM0001	CNOM PH 1	●	●	●	●
CNOM0002	CNOM OM 02	●	●	●	●
CPUS0001	XA-Core Processors	● XA-Core	● XA-Core	● XA-Core	● XA-Core
CPUS0003	Mult-Core 3+1	● XA-Core	● XA-Core	● XA-Core	● XA-Core
CS2B0001	Communication Server 2000 Base	●	●	●	●
CS2B0002	GWC Support and Control	●	●	●	●
CS2B0004	H.323 GateKeeper	●	●	●	●
CS2B0005	DPT Trunk SOC	●	●	●	●
CS2B0008	CS2B CS to CS Calls	●	●	●	●
CS2B0009	Call Server to Apps Server Calls	●	●	●	●
CS2B0010	CS 2000-Compact Geographic Survivability	●	●	●	●
CS2C0001	Communication Server 2000 Common		●		
CS2E0080	IEMS CS2000 Manager (SDM and SAM21 EMS) NCL	●	●	●	●
CS2M0080	CS2000 Management Components	●	●	●	●
CS2Q0001	Dynamic Quality of Service		●	●	●
CS2Q0002	Virtual Call Admissions Control		●	●	●
CS2W0002	CS2W Inter-Communication Server	●	●	●	●
DSSP0001	Basic CS-1R SSP	●	●	●	●
DSSP0007	Trunk Trigger Subscription	●	●	●	●
DSSP0008	CS-1R Service Filtering	●	●	●	●
DSSP0010	AMA FCI	●	●	●	●

(Continued...)		Solution Applicability			Services
Order Code	**Order Code Name / Feature Name**	**Packet Trunking / Transit (AAL-2) or (IP)**	**Integrated-Packet Access/ Cable**	**Integrated-Packet Access/ Wireline & Universal Access**	**VPN, H323, CICM**
DSSP0013	Call Information Request and Report	●	●	●	●
DSSP0014	CS-1R TDP-2	●	●	●	●
DSSP0015	Call Party Handling	●	●	●	●
DSSP0017	CS-1R Call Gapping	●	●	●	●
DSSP0018	Point of Re-entry Control	●	●	●	●
DSSP0019	CS-1R Correlation ID	●	●	●	●
DSSP0021	SSP - Strip Leading Digits	●	●	●	●
DSSP0022	SSP - OCI Retention and Capture in AMA for Follow-on Calls	●	●	●	●
DSSP0028	Apply Charging	●	●	●	●
ENTA0001	Enhanced Term Access	●	●	●	●
GSS00033	Global Server SW Rel 3.3 NCL	●	●	●	●
GSSB0002	GSSB 3rdparty MS Win2k OS	●	●	●	●
GSSB0003	GSSB (3p) MSWin2k Res kit	●	●	●	●
GSSB0004	GSSB Win Term Srvs Client	●	●	●	●
GSSB0006	GSSB Ghost Enterprise SW	●	●	●	●
GWCW0080	International Gateway Controller NCL	●	●	●	●
IBIL0002	Australasia Billing Enhancements	●	●	●	●
IBIL0003	VPN AMA Enhancements	●	●	●	●
IBIL0004	NOA/NPI Capture in AMA	●	●	●	●
IBIL0005	SSUTR2 IC Charge Message Billing	●	●	●	●
IBIL0006	CPC AMA	●	●	●	●
IEMS0080	Integrated Element Management System NCL	●	●	●	●
IIND0004	Tone Burst on Answer for Indirect Access	●	●	●	●
ILIN0002	Standard Line Features				
	Call Waiting (CWT)		●	●	●
	Cancel Call Waiting (CCW)		●	●	●
	Call Waiting Ringback (CWR)				
	3-Way Call (3WC)		●	●	●
	Call Forward Unconditional (CFU)		●	●	●
	Call Forward Busy (CFB)		●	●	●
	Call Forward No Answer (CFD)		●	●	●
	Call Forward Call Waiting Calls (CFCW)		●	●	●
	Call Forward No Answer Variable Timing (CFDVT)		●	●	●
	Call Forward Intragroup		●	●	●

(Continued...)		Solution Applicability			Services
Order Code	Order Code Name / Feature Name	Packet Trunking / Transit (AAL-2) or (IP)	Integrated-Packet Access/ Cable	Integrated-Packet Access/ Wireline & Universal Access	VPN, H323, CICM
	Call Forward Indication		●	●	●
	Call Forward With Announcement		●	●	●
	Last Number Redial (LNR)		●	●	●
	Speed Calling, Individual Short List (SCS)		●	●	●
	Speed Calling, Individual Long List (SCL)		●	●	●
	Speed Calling User Group (SCU)			●	●
	Automatic Call Back		●	●	●
	Call Return/Automatic Recall (AR)		●	●	●
	Automatic Recall/Automatic Recall of Diallable DN (ARDDN)		●	●	●
	Call Completion to Busy Subscriber (CCBS)		●	●	●
	Message Waiting Indicator - Audible (MWT)		●	●	●
	Secondary DN/Teen Service (SDN)		●	●	●
	Enhanced Secondary DN (ESDN)			●	●
	Subscriber Activated Call Barring (SACB)		●	●	●
ILIN0003	CLASS Line Features				
	Calling Number Delivery (CND)		●	●	●
	Delivery of Diallable Number (DDN)		●	●	●
	Calling Name Delivery (CNAMD)		●	●	●
	Network Wide Calling Name Delivery (CNAMD) via QFT/Wide Area Centrex		●	●	●
	Calling Number Delivery Blocking (CNDB)		●	●	●
	Calling Number Delivery Blocking Override (CNDBO)		●	●	●
	Fixed Calling Number Delivery Blocking (SUPPRESS)		●	●	●
	Calling Name Delivery Blocking (CNAB)		●	●	●
	Anonymous Call Rejection (ACRJ)		●	●	●
	Selective Call Acceptance (SCA)		●	●	●
	Selective Call Forward (SCF)		●	●	●
	Selective Call Rejection (SCRJ)		●	●	●
	Distinctive Ringing/Call Waiting (DRCW)		●	●	●
	Spontaneous Call Waiting with Identification (SCWID)		●	●	●

(Continued...)		Solution Applicability			Services
Order Code	Order Code Name / Feature Name	Packet Trunking / Transit (AAL-2) or (IP)	Integrated-Packet Access/ Cable	Integrated-Packet Access/ Wireline & Universal Access	VPN, H323, CICM
	Message Waiting Indicator - Visual (MWT)		●	●	●
ILIN0004	Enhanced Line Features				
	Private Numbering Plan (PNP)			●	●
	Direct Inward Dialling (DID)			●	●
	Direct Outward Dialling (DOD)			●	●
	Call Transfer (CXR)		●	●	●
	Call Park (PRK)			●	●
	Directed Call Park (DCPK)		●	●	●
	Call Pickup (CPU)		●	●	●
	Directed Call Pickup (DCPU)		●	●	●
	Consultation Hold		●	●	●
	Call Hold (CHD)		●	●	●
	Permanent Hold		●	●	●
	Automatic Line (AUL)		●	●	●
	Warm Line (WML)		●	●	●
	Make Set Busy (MSB)		●	●	●
	Ring Again (RAG)			●	●
	Call Forward Validation (CFWVAL)		●	●	●
	Call Forward Remote Activation (CFRA)		●	●	●
	MADN Single Call Arrangement / Multiple Call Arrangement		●	●	●
	MADN Ring Forward (Automatic and Manual)				●
	Call Restrict Area (CRA)		●	●	●
	Do Not Disturb (DND)			●	●
	Group Intercomm		●	●	●
	Multicarrier (CARR)		●	●	●
	Simultaneous Ring (SIMRING)		●	●	●
	Announcement Before Routing (ABR)			●	●
	CEPT International Call Waiting (ICWT)		●		
	CEPT International Three Way Call, including Consultation Hold (ICWC)		●		
	CEPT Call Forward Features				
	Call Forward Universal Programmable CFU		●		
	Call Forward Fixed		●	●	●
	Call Forward Busy Programmable CFBP		●	●	●

(Continued...)		Solution Applicability			Services
Order Code	Order Code Name / Feature Name	Packet Trunking / Transit (AAL-2) or (IP)	Integrated-Packet Access/ Cable	Integrated-Packet Access/ Wireline & Universal Access	VPN, H323, CICM
	Call Forward Busy Fixed CFBF		●		
	Call Forward Don't Answer Programmable CFDP		●	●	●
	Call Forward Don't Answer Fixed CFDF		●		
	CEPT Calling Number Delivery CND		●		
	CEPT Calling Number Delivery Blocking CNDB		●		
	CEPT Calling Number Delivery Blocking Override CNDBO		●		
	CEPT SUPPRESS		●		
	CEPT Call Completion to Busy Subscriber		●		
	CEPT Call Forward Remote Access		●		
	CEPT Visual Message Waiting Indicator		●		
	CEPT Spontaneous Call Waiting Indication		●		
	CEPT Memo Box: Call FWD to Voice Mail			●	●
	CEPT Call Waiting Conference			●	●
	CEPT Consultation on Hold			●	●
	CEPT Hot Line/Warm Line			●	●
	CEPT Wake Up Service			●	●
	CEPT Subscriber Activated Call Blocking			●	●
	CEPT Call Transfer			●	●
	GIC Support				●
ILIN0005	Network Line Features				
	Denied Origination (DOR)		●	●	●
	Denied Termination (DTM)		●	●	●
	Suspend/Resume (SUS/RES)		●	●	●
	Requested Suspend Service (RSUS)		●	●	●
	Plug Up (PLP)		●	●	●
	Wake-Up Call Request (WUCR)		●	●	●
	Hunting				
	Directory Number Hunting (DNH)		●	●	●
	Multi LIne Hunting (MLH)		●	●	●
	Circular Hunting (CIR)		●	●	●
	Preferential Hunting (PRF)		●	●	●
	Bridged Night Number (BNN)		●	●	●

(Continued...)		Solution Applicability			Services
Order Code	Order Code Name / Feature Name	Packet Trunking / Transit (AAL-2) or (IP)	Integrated-Packet Access/ Cable	Integrated-Packet Access/ Wireline & Universal Access	VPN, H323, CICM
	Line Overflow to DN (LOD)			●	●
	Line Overflow to Route (LOR)			●	●
	Code Restrictions (NCOS-Based Call Barring)		●	●	●
	Essential Line (ELN)		●	●	●
	Secondary Language (SL)		●	●	●
	Voice Band Data (Group 3 Fax and Modem)		●	●	●
	Authorisation Code			●	●
	Conference Call Features				
	Meet-me Conference (6 pty)		●	●	●
	Meet-me Conference (30 pty)		●	●	●
	Station Controlled Conference (6 pty)		●	●	●
	Station Controlled Conference (30 pty)		●	●	●
	Conference Call Chaining (3-port)				
	Add On				
	Direct System Inward Access (DISA)			●	●
	Distinctive Ringing (DRING)			●	●
	Networked Centrex (cust groups dispersed between CS2K's or CS2K & MMP)			●	●
	Uniform Call Distribution		●	●	●
	Line Reversal on Answer (LROA)		●	●	●
	Line Reversal and Cut-Off on Disconnect		●	●	●
ILIN0006	Voice Mail Support		●	●	●
ILIN0009	Regulatory Line Features				
	Calling Line Flash (CLF) (for Malicious Call Identification)		●	●	●
	Carrier Selection		●	●	●
	Emergency Call Routing		●	●	●
	Sub Community Routing for Emergency Calls		●	●	●
	Denied Incoming Call Forwarding		●	●	●
	Automatic Collect Call (ACC) / Automatic Collect Call Blocking (ACCB)		●	●	●
	Priority Class of Service (PCOS), Germany only		●	●	●
	Local Number Portability, non-IN		●	●	●

(Continued...)		Solution Applicability			Services
Order Code	**Order Code Name / Feature Name**	**Packet Trunking / Transit (AAL-2) or (IP)**	**Integrated-Packet Access/ Cable**	**Integrated-Packet Access/ Wireline & Universal Access**	**VPN, H323, CICM**
	Calling Number Delivery enhancements for ISDN PRI			●	●
	Hong Kong Calling Number Delivery Enhancements			●	●
	Hong Kong 999 & Malicious Call Hold			●	●
	Hong Kong Call Forwarding Prevention			●	●
	Emergency Service Call			●	●
ILIN0100	Int'l Packet IBN Line SOC				
INAP0002	INAP Line Cap	●	●	●	●
INAP0003	INAP ANSI7+ Capability	●	●	●	●
INAP0004	INAP ETSI ISUP Capability	●	●	●	●
INAP0005	INAP PRI Capability	●	●	●	●
INEM0100	INEM IEMS Base				
INEM0200	INEM IEMS Base HA (High Availability)				
INFT0010	INFT Fault NB SCC2				
INFT0020	INFT Fault NB Syslog				
INFT0030	INFT Fault NB SNMP				
INFT0040	INFT Fault NB NTSTD				
INFT0100	IEMS Fault Base	●	●	●	●
INLI0002	Int'l Lawful Intercept	●	●	●	●
INPR0010	INPR Performance NB XML				
INPR0020	INPR Performance NB CSV				
INSC0010	Security Centralised Authentication				
INSC0030	Security Extended Authentication/ Authorisation				
INTR0001	Internet Transparency	●	●	●	●
ISP70001	Base ISUP (ANSI IBN7)	●	●	●	●
ISSP0002	IN Triggers Processing	●	●	●	●
ISSP0005	Originating Basic Call State Machine EDPs	●	●	●	●
IXLS0002	Service Number Portability and Number Port Provisioning	●	●	●	●
IXLS0003	NCOS/CUST GRP allocation	●	●	●	●
IXLS0005	CPC Routing	●	●	●	●
IXLS0006	Called Number Parameter	●	●	●	●
IXLS0007	ETSI ISUP V2 Carrier Selection Parameter	●	●	●	●
IXLS0008	Charge Category Based Routing	●	●	●	●
IXLS0012	ISUP Reroute on Congestion	●	●	●	●

(Continued...)		Solution Applicability			Services
Order Code	Order Code Name / Feature Name	Packet Trunking / Transit (AAL-2) or (IP)	Integrated-Packet Access/ Cable	Integrated-Packet Access/ Wireline & Universal Access	VPN, H323, CICM
IXLS0014	Call Control	●	●	●	●
IXLS0015	Class of Service Screening	●	●	●	●
IXLS0016	CLI Delivery Control	●	●	●	●
LCS00019	AdventNet SNMP V3 Platform 3rd Party License	●	●	●	●
LCS00020	ILOG JView Platform 3rd Party License	●	●	●	●
LCS00022	LCS High Availability SW	●	●	●	●
LOC00005	Dial Plan Translation Enhancements	●	●	●	●
MG350080	Nortel Media Gateway 3500	●			
MG3E0080	Nortel Media Gateway 3500 EMS	●			
MG900001	MG9000 Base		●	●	
MG900002	MG9000 Emergency Standalone Functionality		●	●	
MG9E0001	MG9000 Element Manager		●	●	
MG9K0080	MG9K Media Gateway NCL			●	●
MS200080	Autocoders MediaServer 2010 IP 7.0 Load	●	●	●	●
NETK0024	Network AOC Tariff	●	●	●	●
NETK0041	ETSI ISUP V2 Hop Counter	●	●	●	●
NETK0083	Russia ISUP V2+	●	●	●	●
NGSF0001	Next Generation Session Server Shared FG	●	●	●	●
NGSF0002	Next Generation Session Server Trunk Gateway Software	●			
NGSS0080	Next Generation Session Server NCL	●			
NPE00001	Number Plan Evolution 1	●	●	●	●
NPE00002	Number Plan Evolution 2	●	●	●	●
NPE00003	E.164 NPE	●	●	●	●
NPE00004	Multiple NPA Support	●	●	●	●
NSUP0002	ETSI ISUP V1	●	●	●	●
NSUP0003	ETSI ISUP V2	●	●	●	●
NSUP0006	BC Billing for ETSI ISUP	●	●	●	●
NSUP0014	ETSI/UK ISUP Answer No Charge Support	●	●	●	●
NSUP0015	Bearer Capability Mapping	●	●	●	●
NSUP0016	CCBS SCCP Support for Local Number Portability	●	●	●	●
NSUP0018	Japan Unified ISUP	●			

(Continued...)		Solution Applicability			Services
Order Code	Order Code Name / Feature Name	Packet Trunking / Transit (AAL-2) or (IP)	Integrated-Packet Access/ Cable	Integrated-Packet Access/ Wireline & Universal Access	VPN, H323, CICM
NSUP0020	Network AOC/Payment Ceiling Supp Svcs		●		
NSUP0021	Int'l ISUP/TUP/Redbk TUP Variants	●			
NSUP0022	Int'l ISUP/TUP/CAS Variants	●			
NSUP0023	PCA SW Mtr Billing Support			●	
NSUP0024	China ISUP Call Control Enhancements	●	●	●	
NSW00008	ISN08 Non-Resident Load (NRL)	●	●	●	●
OAMI0002	Interconnect OMs and Answer Enhancements	●	●	●	●
OAMI0003	Interconnect OMs	●	●	●	●
OAMI0004	Equal Access - Serving Carrier ID	●	●	●	●
OAMI0006	Long Call Audit	●	●	●	●
P86S0070	Ethernet Routing Switch 8600 and Device Manager for Ethernet Routing Switch 8600	●	●	●	●
PBXA0002	PBX DPNSS	●	●	●	●
PBXA0004	PBX DPNSS Exec Intrusion	●	●	●	●
PBXA0008	PBX DPNSS Voice Mail Enhancements	●	●	●	●
PBXA0009	PBX DPNSS Route Optimisation	●	●	●	●
PBXA0019	PBX DPNSS - ANSI ISUP	●	●	●	●
PBXT0011	PRI Advice of Charge	●	●	●	●
PBXT0036	QSIG COLP-COLR	●	●	●	●
PNTK0001	Public Network Trunking	●	●	●	●
PNTK0002	BTUP Version 2+	●	●	●	●
PNTK0004	BTUP CLI for AMA	●	●	●	●
PNTK0008	INAP BTUP Capability	●	●	●	●
PNTK0009	PBX BI Control	●	●	●	●
PNTK0010	BTUP BC Routing	●	●	●	●
PRIT0002	PRI ETSI/ITU PRI Services	●	●	●	●
PRIT0003	ETSI PRI MoU 1 & 2 Basic Services	●	●	●	●
PRIT0004	PRI DN Billing	●	●	●	●
PRIT0006	PRI Non-ETSI Services	●	●	●	●
	Priority Class Of Service (PCOS)	●	●	●	●
	Emergency Calls (EMC)	●	●	●	●
	Random and Circular Hunting (RCH) supported PRI feature	●	●	●	●
PRIT0008	COLP/COLR	●	●	●	●
PRIT0011	INS1500 Japanese PRI	●	●	●	●
PRIT0012	QSIG	●	●	●	●

| (Continued...) | | Solution Applicability | | | Services |
Order Code	Order Code Name / Feature Name	Packet Trunking / Transit (AAL-2) or (IP)	Integrated-Packet Access/ Cable	Integrated-Packet Access/ Wireline & Universal Access	VPN, H323, CICM
PRVS0001	PRVS Provisioning	●	●	●	●
PSNW0008	ISN08 Peripheral firmware Load (PPL)	● XA-Core	● XA-Core	● XA-Core	● XA-Core
RBIL0005	Usage Sensitive Billing	●	●	●	●
RBIL0007	NDS Billing - Indirect Subscribers	●	●	●	●
RBIL0008	NDS Billing - Direct Subscribers	●	●	●	●
RMPC0080	RTP Media Portal Software Model			●	●
RMPD0080	RTP Media Portal DSM Platform SW Model			●	●
RMPF0080	RTP Media Portal Solaris 2.8 for N240			●	●
RMPP0080	RTP Media Portal Third Party Applications			●	●
RMPT0080	RTP Media Portal Solaris 2.8 for T1400			●	●
SACD0002	ACD Base Features			●	●
SACD0006	ACD Agent Features			●	●
SAM20080	Services Application Module NCL	●	●	●	●
SBM00001	Billing Appl Base	●	●	●	●
SBM00003	AMADNS DDI I/F	●	●	●	●
SBM00006	SBA - SMDR	●	●	●	●
SCFT00001	Secure File Transfer	●	●	●	●
SFT00001	Secure File Transfer	●	●	●	●
SGAT0002	Int'l CLI Screening	●	●	●	●
SGAT0003	Serving Country Code	●	●	●	●
SIWI0080	IW-SPM IP NCL	●	●	●	●
SMET0002	Software Metering	●	●	●	●
SMET0003	Hardware Metering	●	●	●	●
SOMD0001	Secure Operational Measurements Delivery Outbound	●	●	●	●
SPC00001	Session Policy Controller			●	●
SPFS0080	Succession Solutions Platform Software 3rd Party NCL	●	●	●	●
SSAS0001	Basic Platform	●	●	●	●
SSAS0002	Basic OAM&P Software	●	●	●	●
SSAS0004	IP High Speed Link	●	●	●	●
SSAS0005	SSOMs	●	●	●	●
SSAS0007	GUI Workstation	●	●	●	●
SSAS0011	Routeset 256 to 511	●	●	●	●
SSAS0012	Routeset 512 to 767	●	●	●	●
SSAS0013	Routeset 768 to 1023	●	●	●	●

(Continued...)		Solution Applicability			Services
Order Code	Order Code Name / Feature Name	Packet Trunking / Transit (AAL-2) or (IP)	Integrated-Packet Access/ Cable	Integrated-Packet Access/ Wireline & Universal Access	VPN, H323, CICM
SSAS0014	Routeset 1024 to 1279	●	●	●	●
SSAS0015	Routeset 1280 to 1535	●	●	●	●
SSAS0016	Routeset 1536 to 1791	●	●	●	●
SSAS0017	Routeset 1792 to 2047	●	●	●	●
SSAS0018	Routeset 2048 to 4000	●	●	●	●
SSAS0019	ITU & China High Speed Link	●	●	●	●
SSAS0021	OSS Electronic CLI	●	●	●	●
SSBM0001	Secure Shell Billing Manager Outbound	●	●	●	●
STA00001	Secure Terminal Access	●			
STRM0004	STORM NCL (DotHill)	● CS2K Compact	● CS2K Compact	● CS2K Compact	● CS2K Compact
STRM0006	STORM NCL (HP Server)	● CS2K Compact	● CS2K Compact	● CS2K Compact	● CS2K Compact
SULN0002	BRI Base	●	●	●	●
SW000008	ISN08 Int'l CS2000 PCL	●	●	●	●
SWC00008	ISN08 Int'l CS2000 - Compact SN08 PCL	●	●	●	●
TEL00004	C7 Routeset Increment	●	●	●	●
TEL00006	C7 Link Prot. Tester	●	●	●	●
TEL00007	C7 Link Flt. Locator	●	●	●	●
TEL00009	C7 Network Integrity Items	●	●	●	●
TEL00011	C-Side 14 Extended Messaging	●	●	●	●
TEL00012	Multiple Point Code	●	●	●	●
TEL00015	NI Interworking	●	●	●	●
TEL00016	TOD Clock Sync to SDM	●	●	●	●
TPNN0050	TPNN Uplink 3rd Party SW	●	●	●	●
UASA0080	Universal Audio Server NCL	●	●	●	●
UASB0003	UASB 3rdpty MS UNIX Svcs	●	●	●	●
UASB0006	UASB 3rd Party SNMPRI EMANAT	●	●	●	●
UASB0010	UASB 3rd Party MS DOS 6 2	●	●	●	●
UASF0001	UASF Announcement Feature	●	●	●	●
UASF0002	UASF Conference Feature	●	●	●	●
UASF0003	UASF Bearer Channel Tandem	●	●	●	●
UASM0001	Universal Audio Server EMS	●	●	●	●
UASR0001	UASR RightToUse Announcement	●	●	●	●
UASR0002	UASR RightToUse Conference	●	●	●	●
UASR0003	UASR RightToUse Bearer Channel Tandem	●	●	●	●
USP00100	Universal Signalling Point Server NCL	●	●	●	●

(Continued...)		Solution Applicability			Services
Order Code	Order Code Name / Feature Name	Packet Trunking / Transit (AAL-2) or (IP)	Integrated-Packet Access/ Cable	Integrated-Packet Access/ Wireline & Universal Access	VPN, H323, CICM
USP00701	Basic Universal Signalling Point	●	●	●	●
USP00703	Route Master Mediation	●	●	●	●
USPL0100	Universal Signalling Point NCL	● CS2K Compact	● CS2K Compact	● CS2K Compact	● CS2K Compact
USPL0701	USP Basic USP	● CS2K Compact	● CS2K Compact	● CS2K Compact	● CS2K Compact
VPNW0002	VPN over ETSI ISUP Support	●	●	●	●
VPNW0003	VPN over ANSI7+	●	●	●	●
VPNW0004	VPN QFT over ETSI ISUP	●	●	●	●
VPNW0007	VPN H.323	●	●	●	●
VPNW0008	VPN DPNSS Feature Transparency	●	●	●	●
VPNW0009	VPN MCDN Feature Transparency	●	●	●	●
W3PC0002	Compact SOS Processor	● Compact only	● Compact only	● Compact only	● Compact only

Appendix: Order Code History

The table below provides a history of the order codes which have been replaced in subsequent development releases due to changes in the software architecture. Whenever an order code is replaced, the old order code description is deleted from Chapters 2 and 3 of the *Software Portfolio* and a record of the event is included in this table. The records are listed in release order. The most recent changes are shown at the top of the table.

Order Code	Order Code Name	Replaced by Order Code	Replaced by Order Code Name	Replaced In Release
NETK0019	Network Advice Of Charge	NETK0024	Network AOC Tariff	ISN07
NETK0028	CGP Network AOC	NETK0024	Network AOC Tariff	SN07
NSUP0017	Payment Ceiling for Analogue Lines	NSUP0020	Intl ISUP/NAOC/PCA Supp Svcs	SN07
NSUP0004	French TUP (SSUTR2)	NSUP0021	Int'l ISUP/TUP/Redbk TUP Variants	ISN06
NSUP0009	CA.30 ISUP	NSUP0003	ETSI ISUP V2	ISN06
NSUP0010	Brazilian ISUP	NSUP0002	ETSI ISUP V1	ISN06
NSUP0013	SSUTR2 Charge Message Interworking to ISDN	NSUP0021	Int'l ISUP/TUP/Redbk TUP Variants	ISN06
DNAV0009	CLI Screen Int	SGAT0002	Int'l CLI Screening	ISN05
DSSP0002 DSSP0003 DSSP0004 DSSP0005 DSSP0006 DSSP0016 DSSP0025 DSSP0027	CS-1R EDP-4 CS-1R EDP-5 DSSP EDP-6 CS-1R EDP-7 CS-1R EDP-9 EDP-2 Collect EDP10 EDP8	ISSP0005	Originating Basic Call State Machine EDPs	ISN05
INT00006	ANSI7+ NETINFO Enhancement	VPNW0003	VPN over ANSI7+	ISN05
NSUP0012	Networked ISDN VPN Support	VPNW0002	Originating Basic Call State Machine EDPs	ISN05
MDC00058 MDC00001	Line Capacity Increase MDC Minimum	ILIN0100	International Line Features	ISN05
XLAS0037 XLAS0046	COS Screening COS Fail Annc	IXLS0015	Class of Service Screening	ISN05
XLAS0038	Serve Ctry Code	SGAT0003	Serving Country Code	ISN05
XLAS0039	CLI Delivery Ctrl	IXLS0016	CLI Delivery Control	ISN05
XLAS0049	Call Control	IXLS0014	Call Control	ISN05

Appendix: TDM Order Code Mapping

Some TDM order code functionality has been productized for Wireline VoIP with new order codes. These Wireline VoIP order codes may map to a single TDM order code, or map to multiple TDM order codes. The mappings are reflected in the table below. Order codes in **BOLD** represent controlled SOCs.

Wireline VoIP		DMS-100 MMP TDM	
Order Code	Order Code Name	Equivalent Order Code/s	Order Code Name
BPRD0001	CS2000 Platform	Similar to BAPL0001; Includes BAS00004, BAS00050, MDC00038, NI000050, RES00001, RES00052, RES00011, RES00049, RES00073, ISP700002, TEL00010, BAS00041, BAS00077, BAS00022, INT00010, INT00005, RES00100, RES00101	Base Platform Generic OAM 56Kb/s Trk Test Pt CDAR-1A Transparency NI 2/3 BRI Svcs Ph 1 Access Management Office Conversion Enhancement Universal Access to CLASS AR Limited to 1 SLE/ACBAR NO TCAP ISP7 Hop Counter Multiple CCS7 Network Address Enhanced Permanent Signal PBX Two Stage Outpulse SDM Table Access International 15 Digit Dialling DN Validation CNDBO (nodal) CNDBO (network)
IBIL0002	Australasia Billing Enhancements	AUS00014	Australasia Billing Enhancements
IBIL0003	VPN AMA Enhancements	AUS00019	VPN AMA Enhancements
IBIL0004	NOA/NPI Capture in AMA	RBIL0015	NOA/NPI Capture in AMA
IBIL0005	SSUTR2 Charge Message Billing	RBIL0003	RBIL SSUTR2 IC Charge Msg
IBIL0006	CPC AMA	RBIL0004	CPC AMA
OAMI0002	Interconnect OMs and Answer OM Enhancements	AUS00047	Answer OMs
OAMI0003	Interconnect OMs	AUS00044	Interconnect OMs
OAMI0004	Equal Access - Serving Carrier ID	AUS00037	Equal Access - Serving Carrier ID
OAMI0006	Long Call Audit	SVBA0003	Long Call Audit
CLDN0003	PBX CLI Management	AUS00041	PBX CLI Management
CLDN0004	CLI Screening Via Translations	DNAV0007, DNAV0006, INDA0002, DNAV0008, XLAS0009	CLI Screen Enhancements CLI Screening via Translations Indirect Access by CLI Account Code Validation Indirect Access by Authorization

Wireline VoIP		DMS-100 MMP TDM	
Order Code	Order Code Name	Equivalent Order Code/s	Order Code Name
IIND0004	ISUP Toneburst on Answer	INDA0008	Tone Burst on Answer
IXLS0002	Service Number Portability and Number Port Provisioning	**XLAS0006**	Service Number Portability and Number Port Provisioning
IXLS0003	NCOS/CUST Grp ALlocation	**XLAS0008**	NCOS/CUST Grp Allocation
IXLS0005	CPC Routing	XLAS0007	CPC Routing
IXLS0006	Called Number Parameter	XLAS0002	Called Number Parameter
IXLS0007	ETSI ISUP V2 Carrier Selection Parameter	XLAS0004 AUS00029	Carrier Selection Carrier Preselection
IXLS0008	Charge Category Based Routing	XLAS0010	Charge Category Based Routing
IXLS0012	ISUP Reroute on Congestion	XLAS0005	ISUP Reroute on Congestion
IXLS0014	Call Control	XLAS0049	Call Control
IXLS0015	Class Of Service Screening	XLAS0037 XLAS0046	COS Screening COS Failure Announcement
IXLS0016	CLI Delivery Control	XLAS0039	CLI Delivery Control
INAP0002	Line Capability	INCA0006	Line Capability
INAP0003	ANSI7+ Capability	INCA0003	ANSI7+ Capability
INAP0004	ETSI ISUP Capability	INCA0005	ETSI ISUP Capability
INAP0005	PRI Capability	INCA0002	PRI Capability
ISSP0005	Originating EDPs	DSSP0002 DSSP0003 DSSP0004 DSSP0005 DSSP0006 DSSP0016 DSSP0025 DSSP0027	CS-1R EDP-4 CS-1R EDP-5 CS-1R EDP-6 CS-1R EDP-7 CS-1R EDP-9 EDP-2 Collect EDP-10 EDP-8
NSUP0002	ETSI ISUP V1 & Variants	NETK0002 AUS00046 AUS00033 NETK0047 NETK0038 NETK0007 NETK0029 NETK0009 NETK0039	ETSI ISUP V1 ETSI ISUP M Bearer Capability ETSI ISUP V1 (M) Czech ISUP Portuguese ISUP Spanish ISUP V1 Mexican ISUP Italian ISUP Brazilian ISUP
NSUP0003	ETSI ISUP V2 & Variants	NETK0003 NETK0026 NETK0033 NETK0017 NETK0071 NETK0061 NETK0034 NETK0077 NETK0068 NETK0069	ETSI ISUP V2 Australia Ie ISUP SPIROU UK ISUP Spanish ISUP V2 Israel ISUP Turkey ISUP China ISUP Australia CA30 ISUP HKG CR14 CR15 ISUPS
NSUP0006	BC Billing for ETSI ISUP	**NETK0006**	BC BIlling for ETSI ISUP

Wireline VoIP		DMS-100 MMP TDM	
Order Code	Order Code Name	Equivalent Order Code/s	Order Code Name
NSUP0014	ETSI/UK ISUP Answer No Charge Support	NETK0021	Answer No Charge Support
NSUP0015	Bearer Capability Mapping	NETK0022	Bearer Capability Mapping
NSUP0016	CCBS SCCP Support for Local Number Portability	NETK0027	Network CCBS
NSUP0018	Japan Unified ISUP	NETK0051	Japan Unified ISUP
NSUP0021	TUP Variants	NETK0004 NETK0008 NETK0082 NETK0014	French (SSUTR2) TUP Basic Redbook TUP China TUP SSUTR2 Charge Msg i/w to ISDN
NSUP0022	CAS Variants	PNCT0001 PNCT0003	Public Network Trunk (CAS) Flex CAS Signalling
PRIT0002	ETSI/ITU PRI Services	PBXT0002 PBXT0051 PBXT0052	ETSI PRI CR13 PRI China PRI
PRIT0003	ETSI PRI MoU 1 & 2 Basic Services	PBST0006 PBXT0010	ETSI PRI MoU2 Base Services ETSI PRI Call Completion
PRIT0004	PRI DN Billing	PBXT0025	PRI DN Billing
PRIT0006	PRI Non-ETSI Services	PBXT0007 PBXT0008	PRI Non ETSI Services 1 PRI Non ETSI Services 2
PRIT0008	PRI COLP/COLR	PBXT0027	PRI COLP/COLR
PRIT0012	QSIG	PBXT0003 PBXT0018 PBXT0023 PBXT0016 PBXT0017 PBXT0033	QSIG QSIG AOC QSIG Centrex i/w QSIG PCOS QSIG Emerg Services QSIG CCBS/CCNR i/w
SGAT0002	Int'l CLI Screening	DNAV0009	CLI Screening Int'l
SGAT0003	Serving Country Code	XLAS0038	Serving Country Code