

UNIVERGE SV9500

FP95-115 V5

Data Programming Manual - CCIS

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UNIVERGE SV9500 CCIS - FEATURE LIST (1 / 5)

LEGEND * - There are some restrictions. X - Applicable — - Not Applicable N - Not Available A - Administration Station for Hotel System G - Guest Station for Hotel System XX - Feature developed by NEC Corporation of America Countries - Asia, Latin America, Middle East, Russia SP Controlled Std.SIP - Connection test is required in advance. SIP Handler-Controlled Std.SIP (Single/Multi Line) - Connection test is required in advance. SIP Handler-Controlled Std.SIP (Multi Line) - North America ONLY																								
INDEX	FEATURE NAME	PIR/ Peripheral Box	MARKET INFORMATION				Analog			Dterm / DT				PHS	PCS	Vo WLAN	SP Controlled Std.SIP	SIP Handler-Controlled Std.SIP (Single Line)	SIP Handler-Controlled Std.SIP (Multi Line)	Hotel	FCCS	Location Diversity	SR-MGC (E)	REMARKS *1: This list does not include availability of the cradle type of SIP Multiple Line terminal. Features available on the cradle type of SIP Multiple Line terminal differ depending on the application installed in it.
			North America	Australia	Countries	EMEA	PIR	UG50	MC	Digital Terminal	UG50	IP Terminal *1	Soft Phone											
[A-45]	Attendant Camp-On with Tone Indication - CCIS	PIR	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	X	X	X	X	-	-	
[A-46]	Attendant-Controlled Conference - CCIS	PIR VS32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	
[A-71]	Automatic Recall - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	
[A-87]	Automatic Number Identification (ANI) - CCIS		X	N	N	N	N	N	N	X	X	X	X	-	-	-	-	X	X	A	X	X	-	
[A-126]	ANI-CCIS (16 Digit)		X	N	N	N	N	N	N	X	X	X	X	-	-	-	-	X	X	A	X	X	-	
[B-9]	Busy Verification - CCIS	PIR	X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	X	X	A	-	X*	-	*: Depends on Data setting of Backup node for SFC in User profile data
[B-10]	Brokerage Hotline - CCIS		X	X	X	X	-	-	-	X	X	X	X	-	-	-	-	-	-	A	X	X*	-	*: Depends on Data setting of Backup node for SFC in User profile data
[C-44]	Call Back - CCIS		X	X	X	X	X	X	-	X	X	X	X	N	N	N	N	X	X	A	-	X*	-	*: Depends on Data setting of Backup node for SFC in User profile data
[C-45]	Call Forwarding - All Calls - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A	-	X*	-	*: Forwarding destination needs to be set by logical number in User profile data.
[C-46]	Call Forwarding - Busy Line - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X*1	X	X	A	-	X*2	-	*1: Std. SIP terminal can't hear Tone (ex. SST) *2: Forwarding destination needs to be set by logical number in User profile data.
[C-47]	Call Forwarding - Don't Answer - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X*1	X	X	A	-	X*2	-	*1: Std. SIP terminal can't hear Tone (ex. SST) *2: Forwarding destination needs to be set by logical number in User profile data.
[C-48]	Call Forwarding - Intercept - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A	X	X	-	
[C-49]	Call Forwarding - Override - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A	-	-	-	
[C-50]	Call Transfer - All Calls - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X*	X	N	A	-	X	-	*: Depends on the terminal
[C-51]	Called Station Status Display - CCIS		X	X	X	X	-	-	-	X	X	X	X	-	-	-	-	N	N	A	-	-	-	
[C-52]	Calling/Called Number Display - CCIS		X	X	X	X	X	-	-	X	X	X	X	X	X	X	X*1	X*3	X*3	A	-	X*2	-	*1: Depends on the terminal. Only available in case of the Caller ID supporting terminal. *2: Except for the case when the logical number digit in User profile data is lower than the digits of station number display area (digits), physical number is displayed according to the accommodated location captured by backup node. *3: Only the Called Number Display is available.
[C-53]	Call Processing Indication - CCIS		X	X	X	X	-	-	-	-	-	-	-	X	X	X	X	-	-	A	X	X	-	

UNIVERGE SV9500 CCIS - FEATURE LIST (2 / 5)

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			North America	Australia	Countries	EMEA	PIR	UG50	MC	Digital Terminal	UG50	IP Terminal *1	Soft Phone											
[C-54]	Call Transfer - Attendant - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	X	N	A	-	X*	-	*: Depends on Data setting of Backup MGC
[C-55]	Centralized Billing - CCIS		X	X	X	X	-	-	-	-	-	-	-	X	X	X	X	-	-	A	X	X	-	
[C-56]	Centralized Day/Night Mode Change - CCIS		X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	A	X	X	-	
[C-57]	Centralized System Management Report - CCIS		X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
[C-58]	Consultation Hold - All Calls - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X*	X	N	A	-	-	-	*: Depends on the terminal
[C-94]	Call Forwarding Assignment - Attendant - CCIS		N	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	A	X	X	-	
[C-163]	CCIS Networking via IP	IPTRK PHC PKG P2P	X	X	X	X	-	-	-	-	-	-	-	X	X	X	N	-	-	A	X*	N	-	*: This feature is not available Peer-to-Peer FCCS Network via IPTRK.
[C-178]	CCIS Alternate Routing - Backup		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A	-	-	-	
[C-201]	Call Forwarding - I'm Here - CCIS		X	X	X	X	X	X	X	X	X	X	X	X*1	X*1	X*2	X*2	X	X	A	X	X*3	-	*1: Terminals which use virtual accommodated location can't be a forwarding station. SFI=243 and RES=0 setting required with ASFC/ASFCN for using existing CF-I'm Here features. *2: Reconfiguration and User Authentication cannot be performed. *3: Even if registered at back up node, it's also available.
[C-202]	CLI Suppression - CCIS		X	X	X	X	-	-	-	X	X	X	X	X	X	N	X	X	X	A	X	-	-	
[D-70]	Deluxe Traveling Class Mark - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	
[D-71]	Dial Access to Attendant - CCIS	PIR	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A	-	X*	-	*: Depends on Data setting of Backup MGC
[D-72]	Digital Display - Station - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A	-	X*	-	*: Except for the case when the logical number digit in User profile data is lower than the digits of station number display area (digits), physical number is displayed according to the accommodated location captured by backup node.
[D-73]	Digital Display - Trunk - CCIS	PIR	X	X	X	X	-	-	-	-	-	-	-	X	X	X	X	-	-	A	X	-	-	
[D-74]	Direct-In Termination - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A	-	X*	-	*: Set logical number of the user data to the called party.
[D-75]	Distinctive Ringing - CCIS		X	X	X	X	X	X	X	X	X	X	X	X*	X*	X*	N	N	N	A	-	X*	-	*: Depends on the terminal

UNIVERGE SV9500 CCIS - FEATURE LIST (3 / 5)

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INDEX	FEATURE NAME	PIR/ Peripheral Box	MARKET INFORMATION				Analog			Dterm / DT				PHS	PCS	Vo WLAN	SP Controlled Std.SIP	SIP Handler-Controlled Std.SIP (Single Line)	SIP Handler-Controlled Std.SIP (Multi Line)	Hotel	FCCS	Location Diversity	SR-MGC (E)	REMARKS *1: This list does not include availability of the cradle type of SIP Multiple Line terminal. Features available on the cradle type of SIP Multiple Line terminal differ depending on the application installed in it.
			North America	Australia	Countries	EMEA	PIR	UG50	MC	Digital Terminal	UG50	IP Terminal *1	Soft Phone											
[D-76D]	Do Not Disturb - D - CCIS		X	X	X	X	X	X	X	X*	X*	X*	X*	X	X	N	N	N	N	A	-	X	-	*: When the terminal re-registrates while DO NOT DISTURB is set, the associated LED of DND key will light and the soft key will flash (Only available for IP terminals and SIP Multiple Line terminals and will not be available for Digital terminals).
[D-91]	Dialed Number Display - Recall - CCIS		X	N	N	N	-	-	-	-	-	-	-	-	-	-	-	-	-	A	X	X	-	
[D-93D]	Dual Hold - D - CCIS		X	X	X	X	-	-	-	X	X	X	X	-	-	-	-	X	X	A	-	-	-	
[E-8]	Executive Right-of-Way - CCIS		X	X	X	X	X	X	X	X	X	X	X	N	N	N	N	X	X	A	-	X*	-	*: Depends on Data setting of Backup node for SFC in User profile data
[E-9]	Elapsed Time Display - CCIS		X	X	X	X	-	-	-	X	X	X	X	-	-	-	-	-	-	A	-	-	-	
[E-20]	E911 - ANI Unified Number of Digits - CCIS		X	N	N	N	N	N	N	X	X	X	X	N	N	N	N	X	X	A	X	X	-	
[F-12]	Flexible Numbering of Stations - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	
[H-10D]	Hands-free Answerback - D - CCIS		X	X	X	X	-	-	-	X	X	X	X	-	-	-	-	-	-	X	-	-	-	
[H-11]	House Phone - CCIS		X	X	X	X	X	X	X	-	-	-	-	-	-	-	N	-	-	X	X	X	-	
[H-12]	Hotline - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	N	A	-	X*	-	*: Depends on Data setting of Backup node for SFC in User profile data
[I-16]	Incoming Call Identification - CCIS		X	X	X	X	-	-	-	-	-	-	-	N	N	N	N	-	-	N	-	-	-	
[I-17]	Individual Attendant Access - CCIS	PIR	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A	-	X*	-	*: Depends on Data setting of Backup MGC
[I-18]	Inter-Position Transfer - CCIS		X	X	X	X	-	-	-	-	-	-	-	N	N	N	N	-	-	X	X	X	-	
[I-19]	Individual Trunk Access - CCIS		N	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X*	-	*: Depends on Data setting of Backup MGC
[L-25]	Look Ahead Routing - CCIS		X	X	X	X	X	X	X	X	X	X	X	X*1	X*1	X	X	X	X	A	X	X	-	*1: Alternate routing may not be performed depending on the value of Timer for Alternate Routing when using a terminal in which T310 timer has been set.
[L-29]	LDN Night Connection - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	
[M-34]	Message Reminder - CCIS		X	X	X	X	-	-	-	X	X	X	X	N	N	N	N	N	N	A	-	X*	-	*: Depends on Data setting of Backup node for SFC in User profile data
[M-35]	Message Waiting Lamp Setting - Attendant - CCIS		X	X	X	X	X*	X*	X*	X	X	X	X	-	-	-	-	X	X	A	X	X	-	*: Available only with the terminal equipped with the message waiting lamp.
[M-36]	Message Waiting Lamp Setting - Station - CCIS		X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	X	X	A	-	-	-	
[M-37]	Miscellaneous Trunk Access - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A	-	-	-	
[M-38]	Miscellaneous Trunk Restriction - CCIS		X	X	X	X	X	X	X	X	X	X	X	-	-	-	-	X	X	A	-	-	-	

UNIVERGE SV9500 CCIS - FEATURE LIST (4 / 5)

LEGEND

- * - There are some restrictions.
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INDEX	FEATURE NAME	PIR/ Peripheral Box	MARKET INFORMATION				Analog			Dterm / DT				PHS	PCS	Vo WLAN	SP Controlled Std.SIP	SIP Handler- Controlled Std.SIP (Single Line)	SIP Handler- Controlled Std.SIP (Multi Line)	Hotel	FCCS	Location Diversity	SR-MGC (E)	REMARKS *1: This list does not include availability of the cradle type of SIP Multiple Line terminal. Features available on the cradle type of SIP Multiple Line terminal differ depending on the application installed in it.
			North America	Australia	Countries	EMEA	PIR	UG50	MC	Digital Terminal	UG50	IP Terminal *1	Soft Phone											
[M-40]	Multiple Call Forwarding - All Calls - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X*1	X	X	A	-	X*2	-	*1: Std. SIP terminal can't hear Tone (ex. SST) *2: Forwarding destination needs to be set by logical number in User profile data.
[M-41]	Multiple Call Forwarding - Busy Line - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X*1	X	X	A	-	X*2	-	*1: Std. SIP terminal can't hear Tone (ex. SST) *2: Forwarding destination needs to be set by logical number in User profile data.
[M-42]	Multiple Call Forwarding - Don't Answer - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X*1	X	X	A	X	X*2	-	*1: Std. SIP terminal can't hear Tone(ex. SST) *2: Forwarding destination needs to be set by logical number in User profile data.
[M-43]	Multiple Console Operation - CCIS		X	X	X	X	-	-	-	-	-	-	-	-	-	-	-	-	A	X	X	-		
[M-67]	Message Center Interface - CCIS		X	X	X	X	X	X	X	X	X	X	N	N	N	N	X	X	X	X	X	-		
[N-15]	Night Connection - Fixed - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	-	-	X	X	A	N	N	-		
[N-16]	Night Connection - Flexible - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A	N	N	-		
[N-36]	Name Display - OAI - CCIS		N	X	X	X	-	-	-	X	-	X	X	N	N	N	N	X	X	A	-	X*	-	*: Depends on Data setting of Backup node Display on the called terminals depend on the name information in User profile data.
[N-37]	Name Display - System - CCIS		X	X	X	X	-	-	-	X*1	X*1	X*1	X	-	-	-	-	N	N	A	-	X*2	-	*1: LCD is required. *2: - Depends on Data setting of Backup node - Display on the called terminals depend on the name information in User profile data.
[N-38]	Node Number Suppression - CCIS		N	X	N	N	-	-	-	-	-	-	-	-	-	-	-	-	A	X	X	-		
[O-11]	Off-Hook Queuing - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	N	N	X	X	A	-	-	-	*: Depends on the terminal	
[O-12]	Outgoing Trunk Queuing - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	N	N	X	X	A	-	-	-	*: Depends on the terminal	
[P-28]	Paging Access - CCIS		X	X	X	X	X	X	X	X	X	X	N	N	N	N	X	X	X	X	X	-		
[R-22]	Restriction from Outgoing Calls - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	A	-	-	-		
[S-52]	Serial Call - CCIS	PIR	X	X	X	X	-	-	-	-	-	-	X	X	X	N	-	-	A	-	-	-		
[S-53D]	Service Display - D - CCIS		X	X	X	X	-	-	-	X*	X*	X*	X*	-	-	-	-	-	X	-	-	-	*: LCD is required.	
[S-55]	Single-Digit Station Calling - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-		
[S-56]	Station-Controlled Conference - CCIS	PIR VS32	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X*	X	X	X	X	-	*: Std.SIP terminal cannot be the conference leader	
[S-57]	Station-to-Station Calling - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-		
[S-58]	Station-to-Station Calling - Operator Assistance - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X*1	X	X	X	X	-	*1: Depends on the terminal *2: Depends on Data setting of Backup node	
[S-59]	Step Call - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	N	N	X	X	A	-	-	-		

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[S-73]	Supervisory Call - CCIS	PIR	X	X	X	X	-	-	-	-	-	-	-	X	X	X	X	-	-	A	X	-	-	
[T-26]	Toll Restriction - 3/6-Digit - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	-	-	-	
[T-27]	Trunk Answer from Any Station - CCIS		X	X	X	X	-	-	-	-	-	-	-	X	X	X	X	-	-	A	X	X	-	
[U-5]	Uniform Numbering Plan - CCIS		X	X	X	X	X	X	X	X	X	X	X	X	X	N	N	X	X	A	-	-	-	
[V-7]	Voice Call - CCIS		X	X	X	X	-	-	-	X	X	X	N	-	-	-	-	-	-	A	-	X*1	-	*: Depends on Data setting of Backup node for SFC in User profile data *1: Voice call cannot be made to the called Desktop terminal which uses headset

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CHAPTER 1

INTRODUCTION

1. General

This manual covers data assignment for UNIVERGE SV9500 System (in the remainder of this manual, denoted as “the system”) under the following headings:

CHAPTER 1 INTRODUCTION

Explains the configuration of this manual.

CHAPTER 2 GENERAL INFORMATION FOR CCIS

Explains the functional outline of CCIS

CHAPTER 3 ASSIGNMENT OF BASIC OFFICE DATA

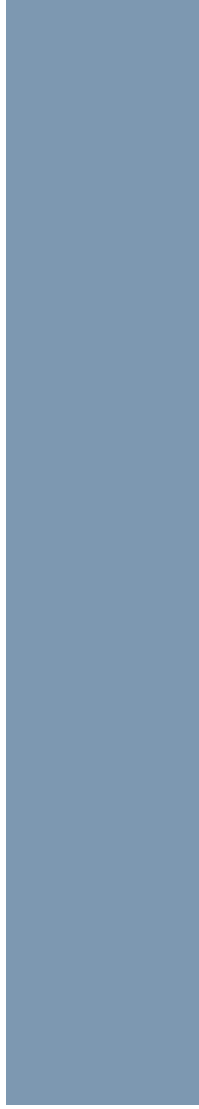
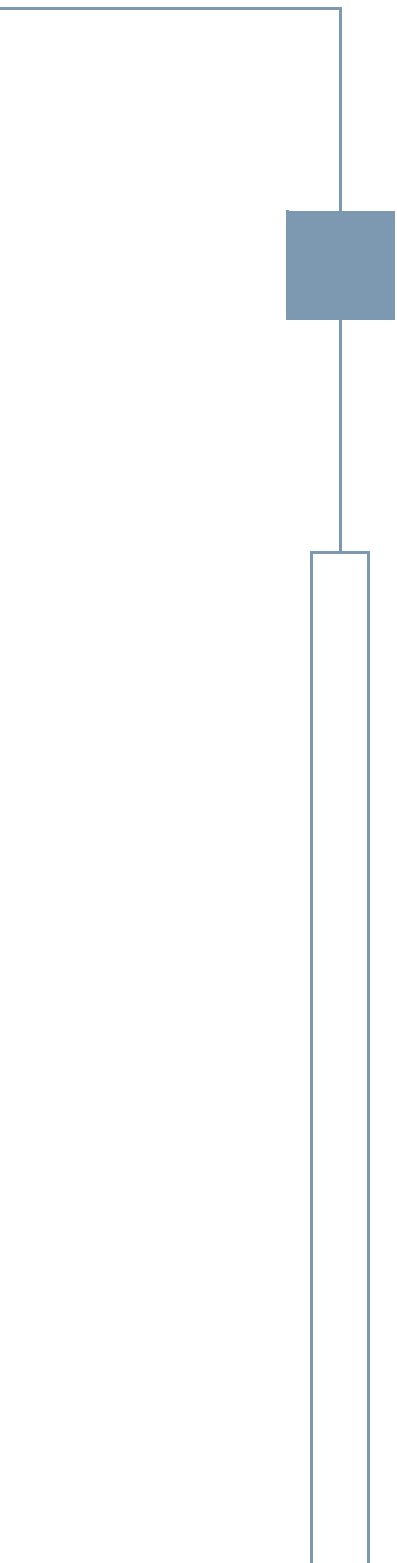
Explains CCIS basic data assignment (minimum requirements).

CHAPTER 4 CCIS FEATURE

Provides details on each CCIS feature.

2. How to Use This Manual

This manual may be used when assigning each CCIS service data available for the system. First, assign the basic office data for CCIS by referring to Chapter 3. Then assign each CCIS service feature data as shown in Chapter 4.



CHAPTER 2

GENERAL INFORMATION FOR CCIS

1. GENERAL

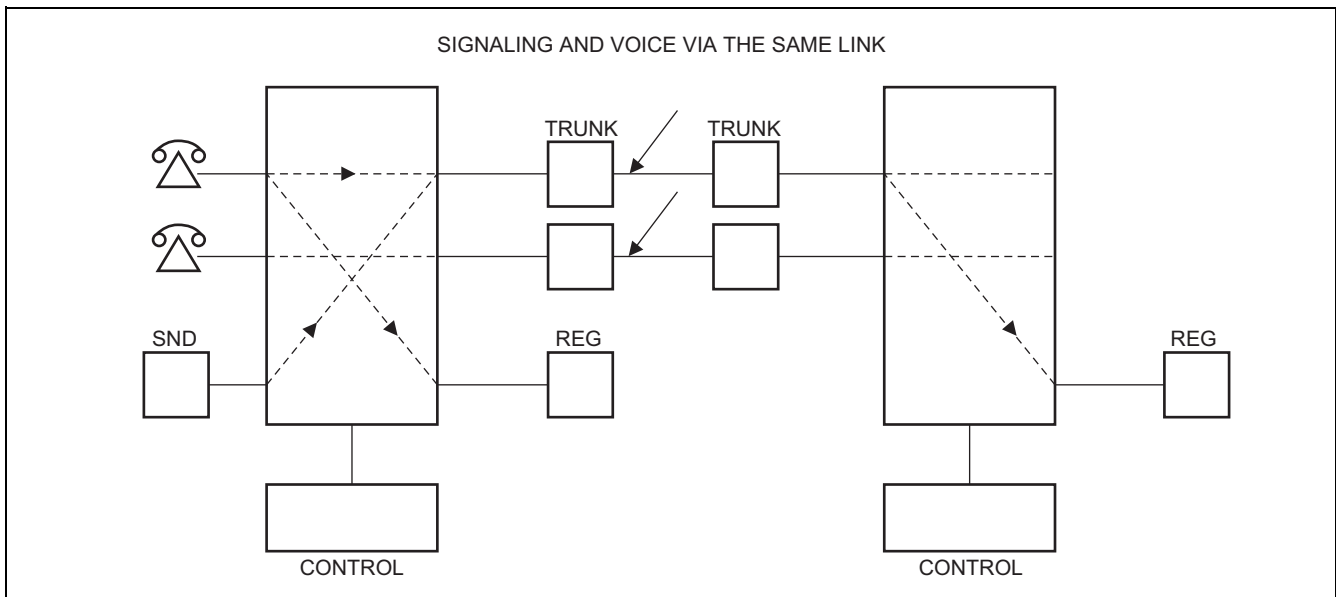
This chapter describes the functional outline of CCIS, hardware required for CCIS, and service features which can be provided by CCIS.

2. DESCRIPTION OF CCIS

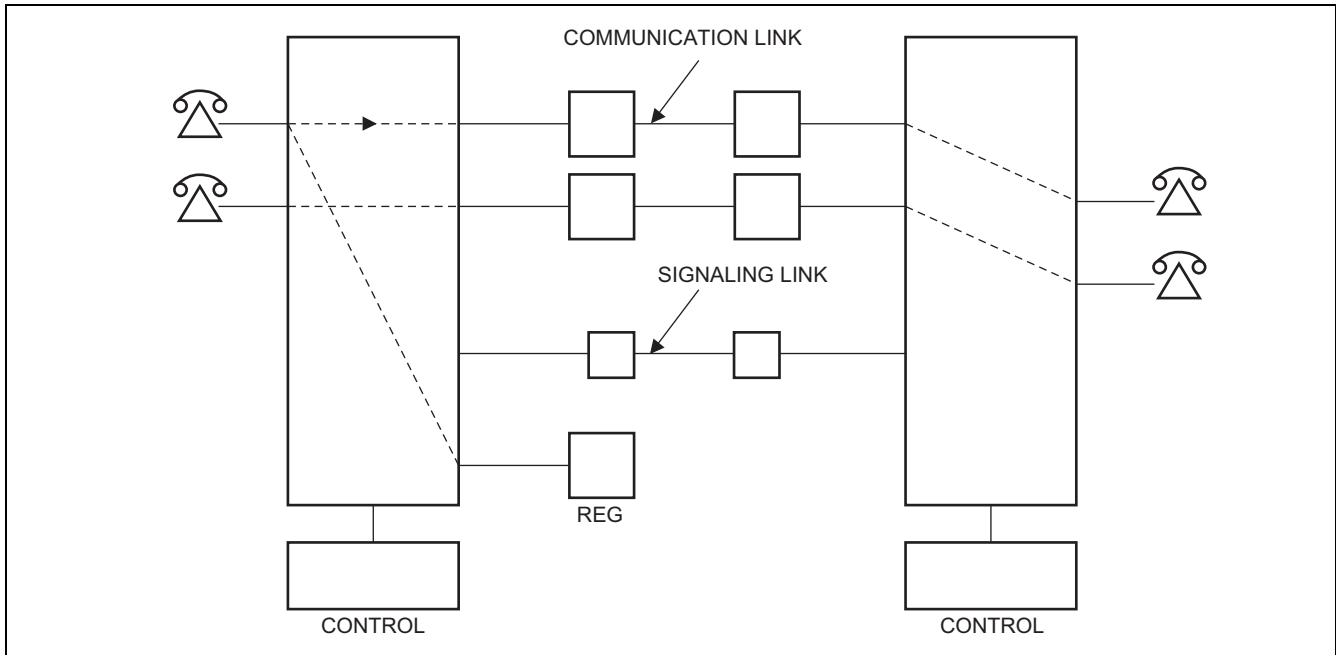
The modular architecture and wide range of voice and data features available with the digital Telephony Server's have been developed with emphasis on continued enhancement within a single Telephony Server. In order to meet the growing demand for further enhancement on a network level, NEC developed a networking system employing Common Channel Interoffice Signaling (CCIS). The CCIS system links together individual Telephony Servers (nodes) to form a transparent voice and data network which acts as a single large Telephony Server, even though terminals within the network are, in fact, connected to different Telephony Server's. Common Channel Interoffice Signaling (CCIS) derives its name from the fact that a signaling channel (link), separate from voice and data channels, is provided between nodes for the sole purpose of signal exchange. This signaling link is used in common by all voice and data links for exchange of information relating to addressing (e.g. dialed digits, calling/called number); and supervisory functions (e.g. call setup and termination.); and network accounting and management (e.g. centralized billing and fault reporting.) This is unlike conventional tie line networks which exchange signaling information over the same links as are for voice transmission (Associated Channel Interoffice Signaling.)

The block diagrams in the figure below and the figure entitled "Common Channel Interoffice Signaling" illustrate the difference between Common Channel Interoffice Signalling (CCIS) and Associated Channel (In-band) Interoffice Signaling (ACIS).

Associated Channel (In-Band) Interoffice Signaling



Common Channel Interoffice Signaling



Some advantages of the separate signaling link provided by CCIS are:

(a) Network Transparency

Because CCIS allows data relating to service features and station/trunk status to be exchanged between nodes at a high rate of speed (64 Kbps), service is provided to all users as though the CCIS network was a single Telephony Server.

(b) Centralized Facilities

Centralized Management: Fault messages from all nodes can be directed to one centralized (management) node.

Centralized Billing: Billing information for all nodes in the network can be processed at one central location.

Centralized Attendant Service: It is not necessary in a CCIS network to have an Attendant Console at each node in the network. Attendant services can be provided to multiple nodes from one or more central location(s).

(c) Better Utilization of Trunking Facilities

Because network signaling is carried over separate signaling links, more efficient use can be made for network trunks (reduced call holding time, reduced connection time, etc.). In another word, the number of trunk circuits, which required to provide a specified traffic capacity, can be reduced.

(d) Network Reliability

Alternate Routing provides the CCIS network with maximum reliability. If the signaling link between two nodes should fail, signaling is sent over an alternate route, via another node, without loss of service. Directly-connected redundant links can also be provided to assure the reliability of the network.

(e) Reduction in Personnel

Because management, cost accounting, and services, such as Attendant operation, can be centralized, the number of people necessary to administer the network can be reduced.

(f) Reduced Hardware

Signaling over a common channel; better utilization of trunking facilities; and centralized management and services all result in a vast reduction in hardware when a CCIS network, rather than a conventional Tie line network, is used.

3. SYSTEM CONFIGURATION

3.1 Outline

This Section describes the hardware configuration and its specification, the names of interface equipment and other related subjects. The figure entitled "Hardware Configuration of No. 7 CCIS System" shows No. 7 hardware configuration, respectively. The control signal circuit used for CCIS is classified into the digital circuit and analog circuit. The CCH card can be used for both digital and analog control signal circuit and the CCT card is used for digital one. CCH sends control signals to and receives from the distant office. Also, for network synchronization, PLO/OSC or TSW (Phase Lock Oscillator/Oscillator or Time Division Switch) are used. For the analog control signal circuit, CCH circuit card is used with MODEM.

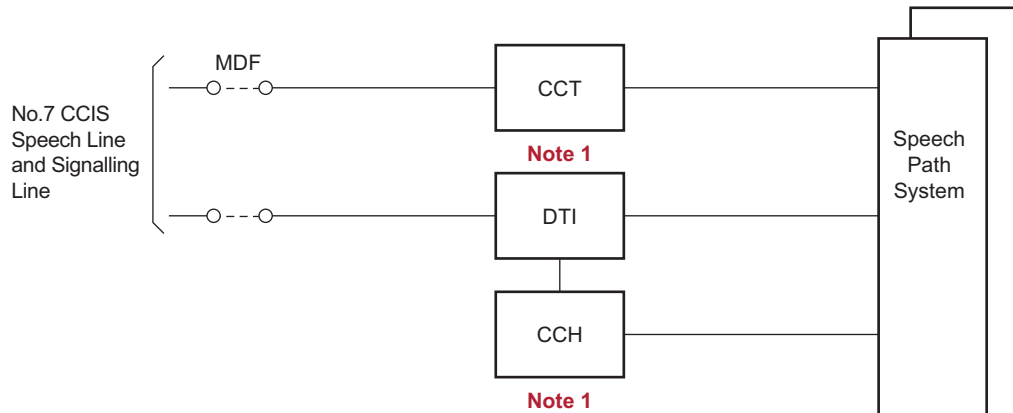
The table below shows the CCIS interface specifications and their applications.

CCIS Interface Specifications

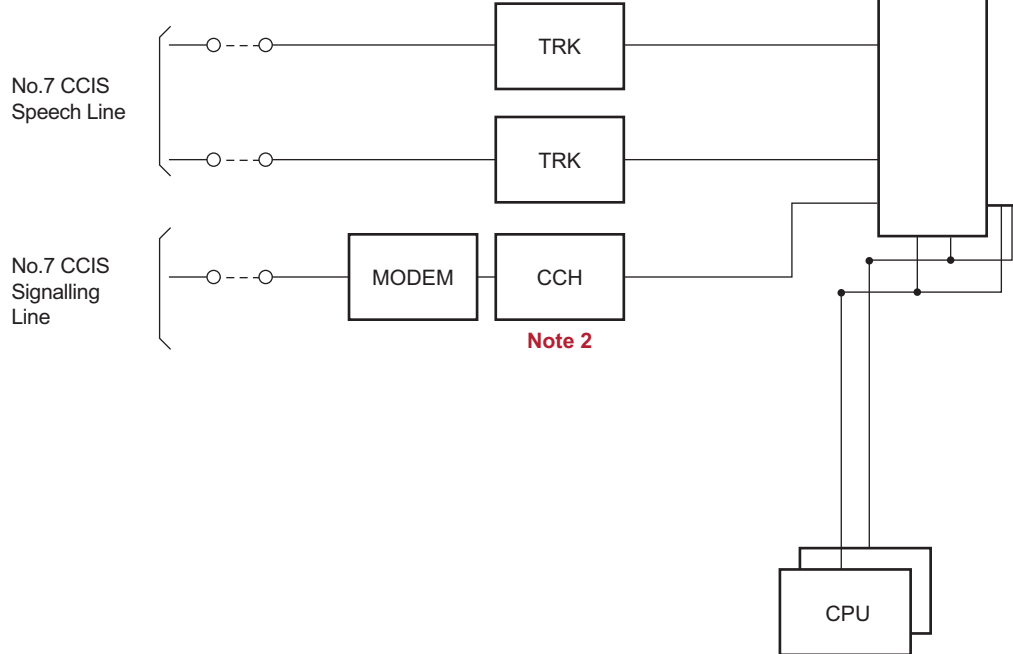
TYPE OF FACILITY	SIGNALING RATE	INTERFACE SPECIFICATION	INTERFACE EQUIPMENT	APPLICATION
Voice Frequency Circuit	4.8 kbps	RS-232C, V. 24, V. 28	MODEM V27 or equivalent	Used for a CCIS Tie Line (4ODT) Network.
1.544 Mbps	48-64 kbps	T1-D3	T1 Channel	Used with T1 (1.5M DTI) lines.
2.048 Mbps	64 kbps	E1	E1 Channel	Used with E1 (2M DTI) lines.
AT&T IS DDS	56 kbps	V. 35, V. 28/V.11	NEC DCP DSU or equivalent	Used if network has extensive Tie Lines, with heavy traffic conditions, and AT&T IS Digital Data Service is available.

Hardware Configuration of No. 7 CCIS System

<CCIS Digital Line>



<CCIS Analog Line>



Note 1: When using one channel of the DTI as the Control Link.

Note 2: When using Analog MODEM as the Control Link.

4. NETWORK CONFIGURATION

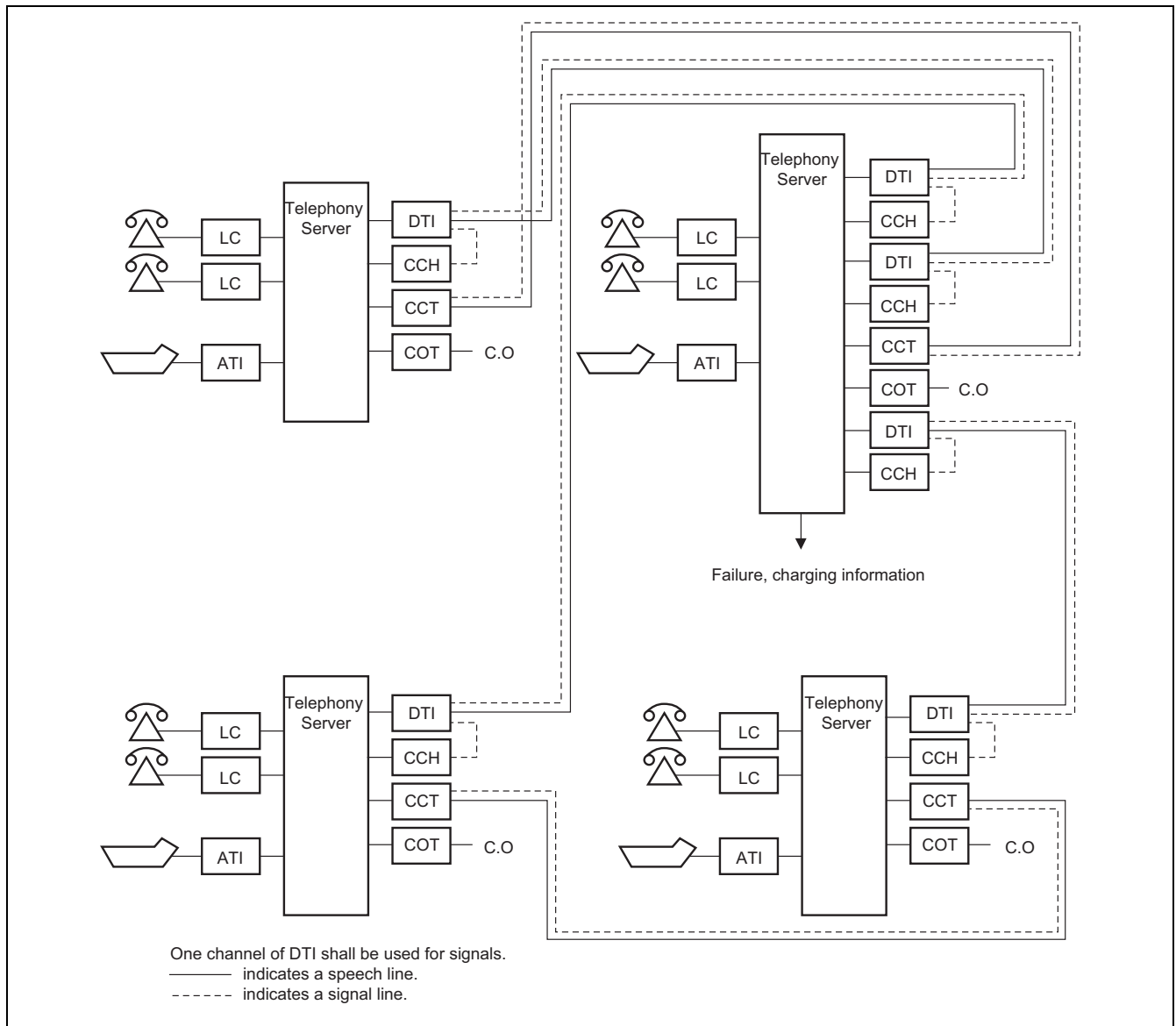
With application of No. 7 CCIS added to the Telephony Server, a network of multiple functions as if it were a single Telephony Server.

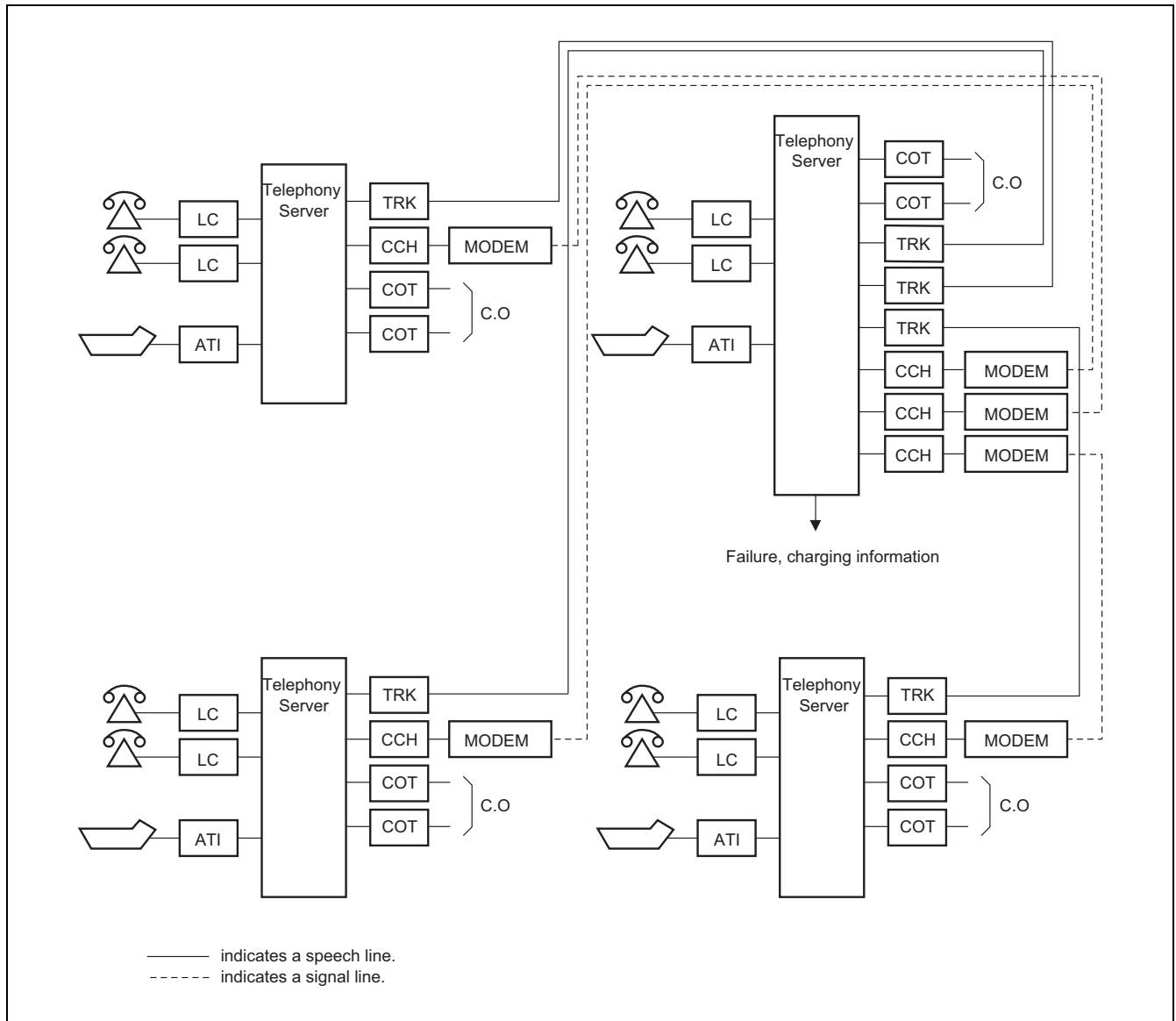
Since calls can be freely transferred between one Telephony Server and another, most of the existing station services can be applied to inter-Telephony Server call connections.

Further, using the CENTRALIZED BILLING-CCIS service and the CENTRALIZED SYSTEM MANAGEMENT REPORT-CCIS service, billing information and fault information can be processed at one center point instead of processing at each Telephony Server concerned.

The figure below shows an example of Telephony Server interoffice network for CCIS Digital Line, and the figure entitled "Example of Network Configuration for CCIS Analog Line" shows an example of network configuration for CCIS Analog Line.

Example of Network Configuration for CCIS Digital Line



Example of Network Configuration for CCIS Analog Line **Note 1****Note 1:** Not available in North America.

4.1 Types of Network

CCIS networks can be divided into the following types, depending upon the numbering plan used:

Main-Satellite Networks

Main-Remote/Campus Networks

Both networks provide uniformity of services throughout the CCIS network, and, because of numbering plan flexibility, station users are not conscious of the distance between nodes.

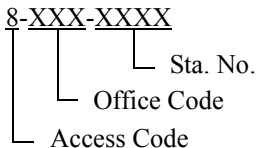
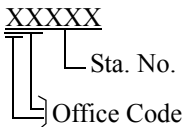
☐ Main/Satellite Network (Opened Numbering):

In this type of network, offices are connected by means of a numbering plan consisting of a three-digit office code, which denotes the location, and four-digit station numbers. An example of a Main/Satellite Network is shown in the figure entitled "Nationwide Corporation".

☐ Main-Remote/Campus Network (Closed Numbering):

In these types of networks, offices are connected by means of a numbering plan consisting of four or five digit station numbers. The first one or two digit(s) of these station numbers are used to denote the location. An example of a Main-Campus Network is shown in the figure entitled "University/Campus Environment". The figure entitled "Manufacturing/Plant Environment" shows an example of a Main-Remote Network. In this network, a part of the Main Office is installed as a Remote Office at a nearby site, either within or outside the premises of the Main Office. An advantage of this network is that it requires far less cabling than would be necessary if stations were connected to a single Telephony Server. Network numbering specifications are summarized in the table below.

Network Specifications

TYPE OF NETWORK:	MAIN-SATELLITE NETWORK (Opened Numbering)	MAIN-REMOTE/CAMPUS NETWORK (Closed Numbering)	REMARKS
NUMBERING PLAN:	Office Code: Three digits Sta. No.: Four digits	Office Code: First one or two digits of station number. Sta. No.: Max. five digits	
ACCESS METHOD			
NETWORK SIZE:	Large (Nationwide)	Small (Premises)/ Medium (Local Area)	

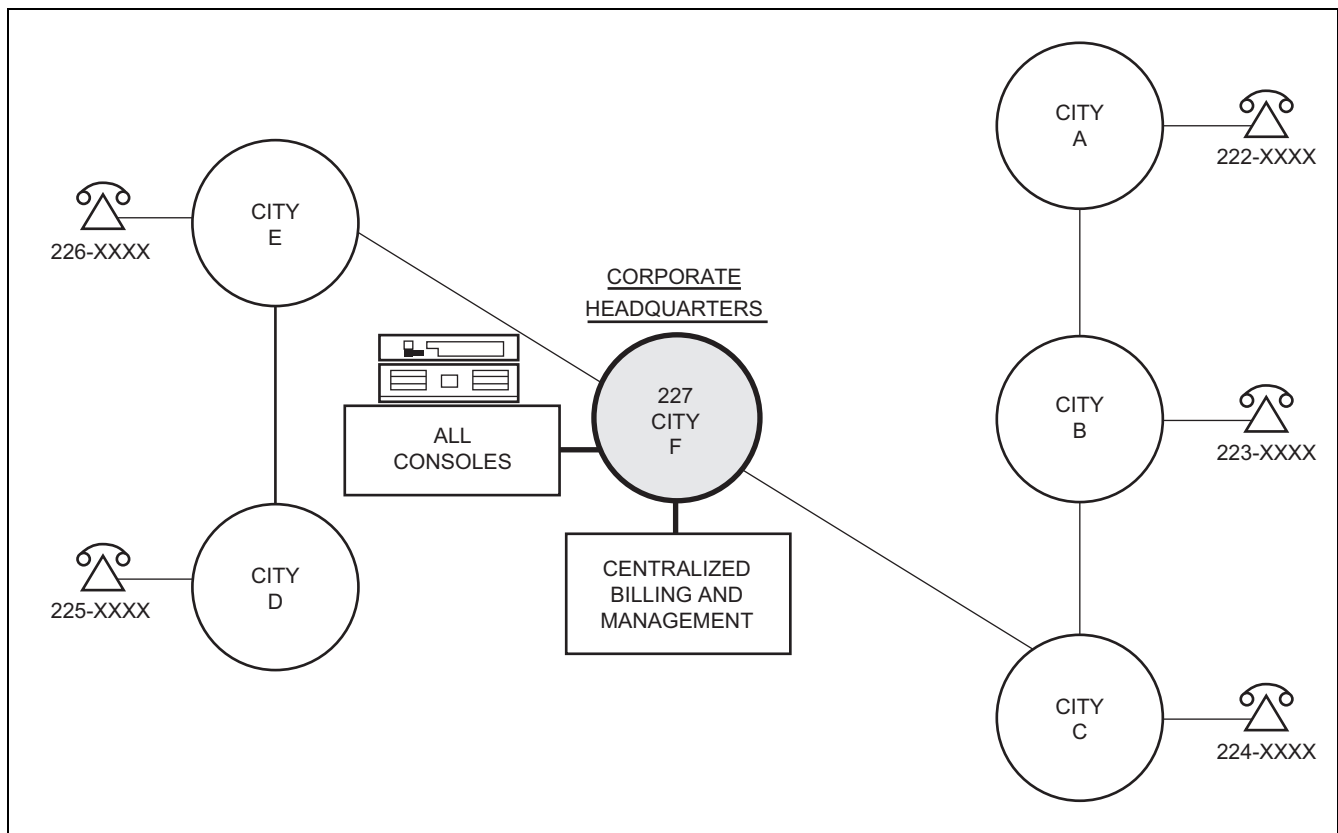
4.2 Examples of Network Configuration

4.2.1 Main-Satellite Configuration

The figure below shows an example of a Main/Satellite configuration for a nationwide corporate network. This type of network results in cost savings and increased efficiency by providing:

- Leased lines versus toll lines.
- Centralized Attendant Service.
- One central location for call accounting.
- A central maintenance console (PCPro) for network management, control and remote maintenance.
- Seven-digit on-net numbering.
- Feature transparency.

Nationwide Corporation

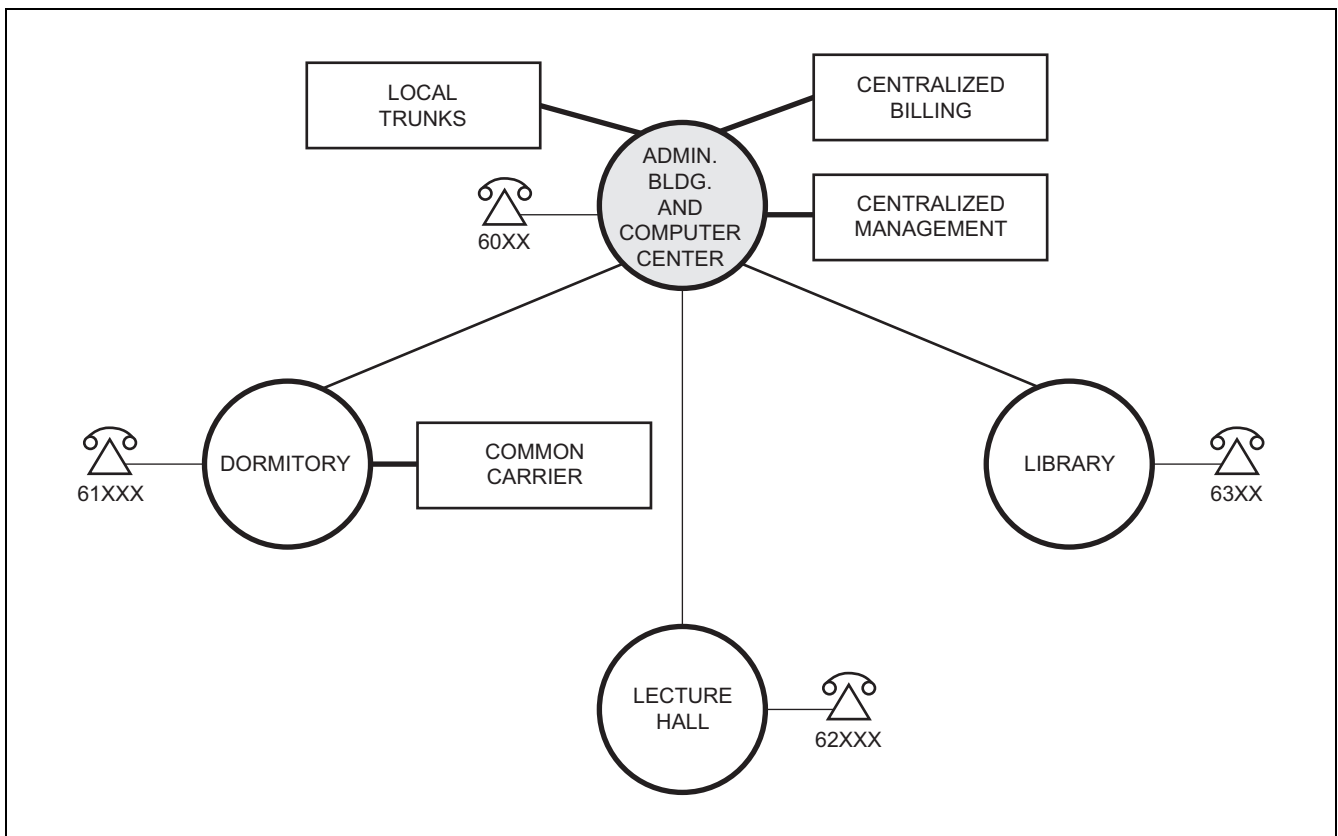


4.2.2 Campus Configuration

The figure below shows an example of a Campus network. This type of network provides:

- A uniform numbering plan: the first one or two digit(s) of the station number indicate(s) the location. In this numbering plan, four and/or five-digit station numbering can be used.
- Network access to Common Carrier services.
- Centralized Attendant service and network maintenance.

University/Campus Environment

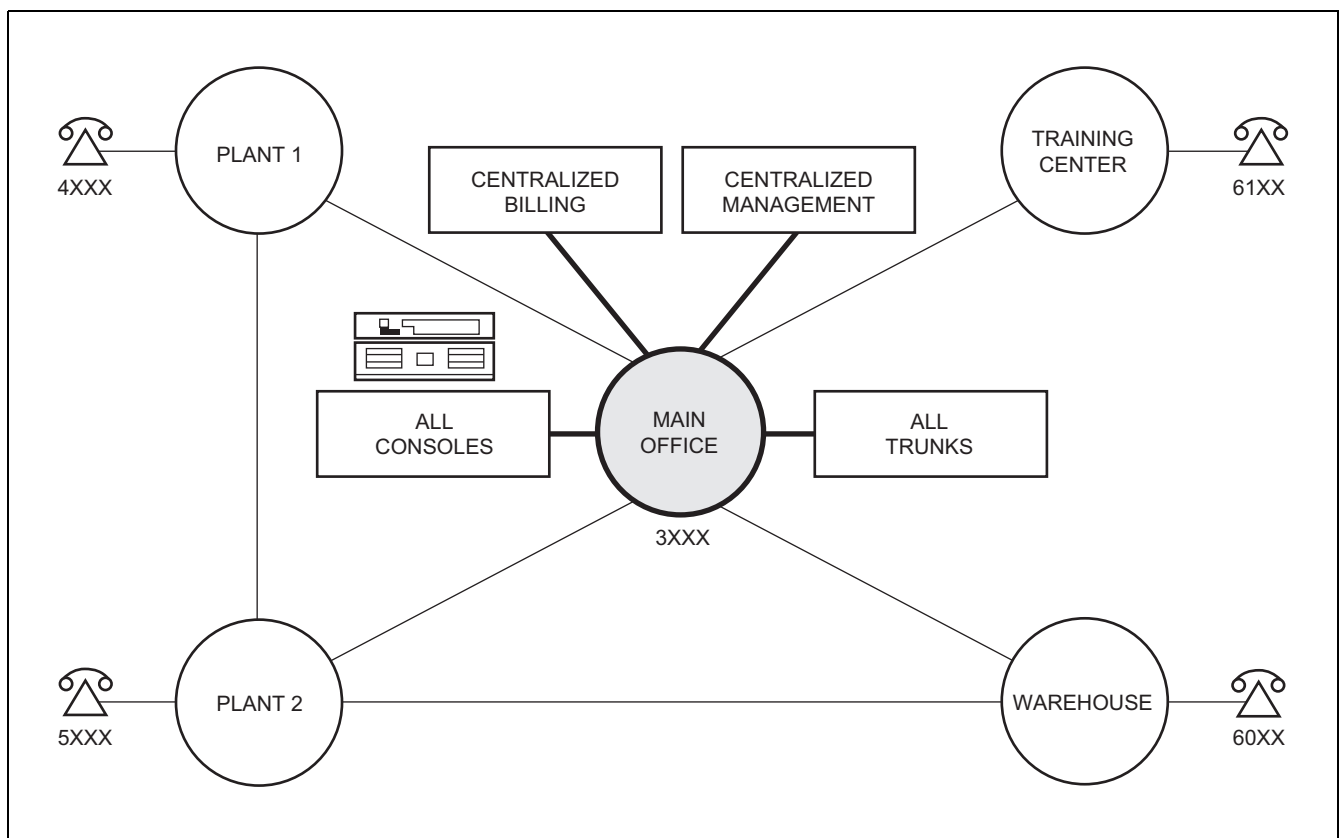


4.2.3 Main-Remote Configuration

The figure below shows an example of a Main/Remote configuration for a manufacturing/plant environment. This type of network provides the following advantages:

- A central trunk location for trunking efficiency.
- Centralized management capability.
- Centralized attendant service.
- Centralized billing for inter-departmental accounting.
- Four digit inter-building and intra-city numbering.
- Feature transparency.
- Reduced calling.

Manufacturing/Plant Environment



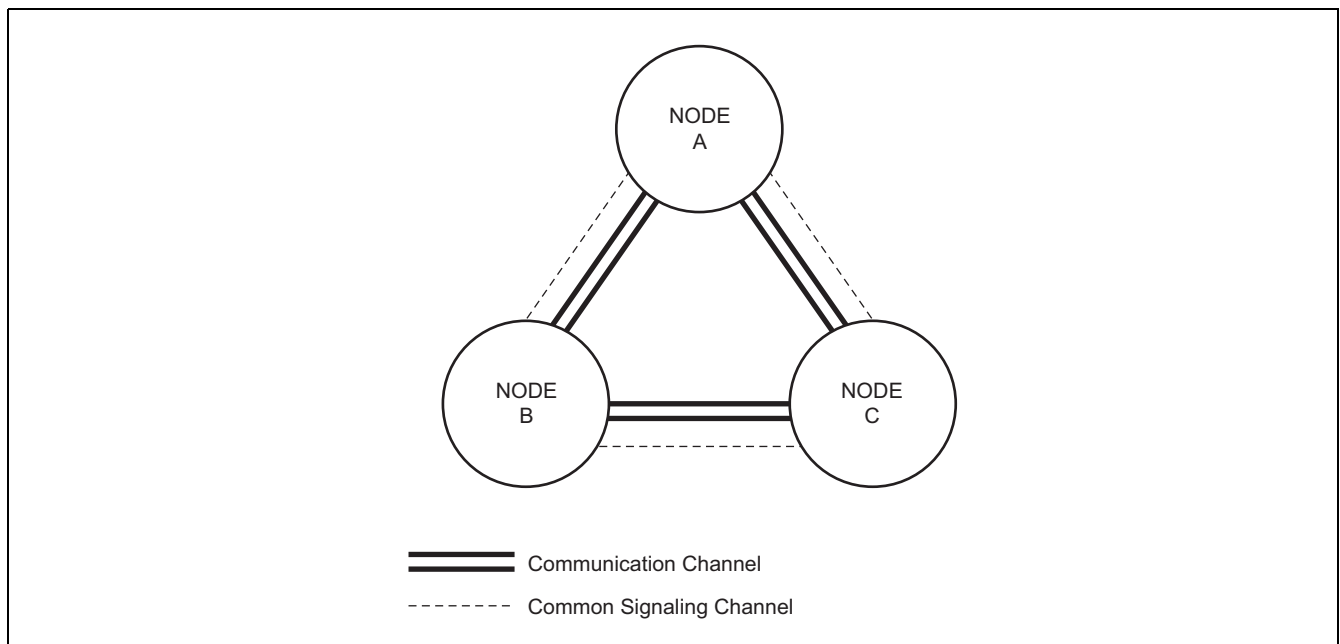
4.3 CCIS Network Modes

The signaling channels of a CCIS network can be connected in one of two ways: Associated Mode or Quasi-Associated Mode.

4.3.1 Associated Mode

An Associated Mode network is configured with a signaling channel (data link) between all nodes in the network. Signaling functions for all inter-node calls are carried over these dedicated signaling channels. In an Associated Mode Network, if one of the signaling links should fail, signaling can easily be rerouted via another node. An example of an Associated Mode network is shown in the figure below.

Associated Mode Network

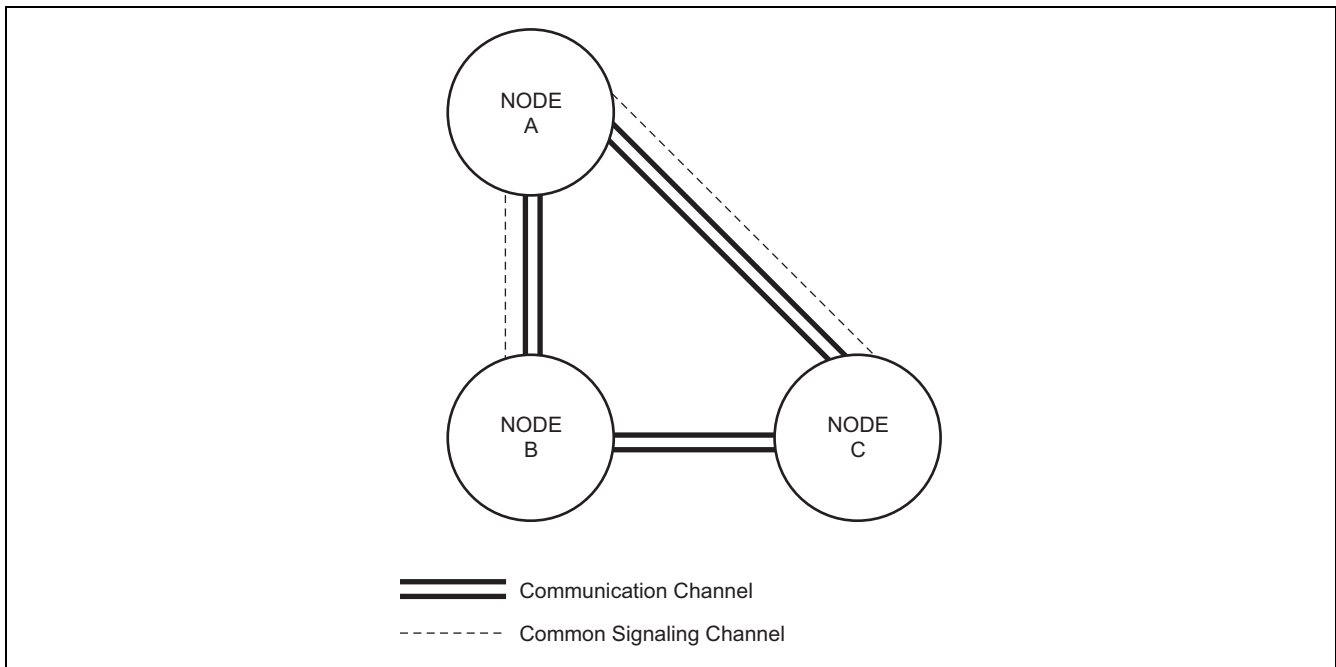


4.3.2 Quasi-Associated Mode

In the figure below, nodes A and B, and A and C are connected in the Associated Mode. Nodes B and C are connected in the Quasi-Associated Mode.

In this configuration, signaling data between nodes B and C is routed via node A, while the communication channels are established directly between nodes B and C. This type of network reduces the hardware necessary to establish the signaling links.

Quasi-Associated Mode Network



4.4 CCIS Network Redundancy

To provide maximum network reliability, two levels of redundancy are provided for the signaling links.

(1) Signaling Channel Redundancy

Redundancy of the inter-node signaling links is provided directly between the nodes by adding one more link than is necessary for the signaling traffic. This is the N+1 method. If one link fails, signaling is automatically routed via an alternate link.

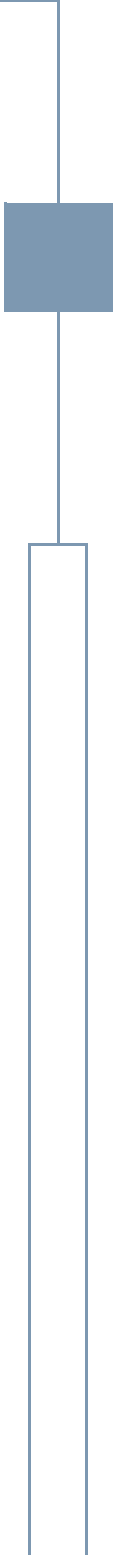
(2) Alternate Signaling Path Redundancy

An alternate method of providing network signaling redundancy is to configure the network so that an alternate path is provided between the nodes.

In the network shown in the figure entitled "Associated Mode Network", if the signaling link(s) directly connecting nodes B and C should fail, the signaling would automatically be reconnected via node A without loss of service. (Node A would be designated as the Signaling Transfer Point [STP]).

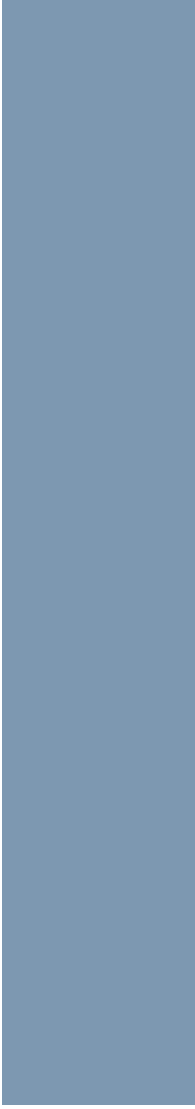
5. DIGITAL NETWORK AND NETWORK SYNCHRONIZATION

To set up a digital network, it is necessary to establish clock level synchronization among the offices composing the network.



CHAPTER 3

BASIC DATA ASSIGNMENT



1. GENERAL

This chapter explains how to program office data which is necessary for establishing a CCIS Tie Line Connection. For easy understanding, office data programming is explained using an example of a CCIS network in this chapter. Accordingly, when programming data at your site, some minor data modifications may be unavoidable.

Note: When the destination node does not support CCIS features, the CCIS features do not work. Confirm that the destination node supports the CCIS features beforehand.

☐ 1.5M CCT/2M CCT

This circuit card provides an interface between 24/30 trunks and the Telephony Server at 1.5/2 Mbps. Being equipped with a Common Channel Handler (CCH), this circuit card can be used as an interface for a Common Channel Interoffice Signaling (CCIS) network.

☐ CCH

This circuit card provides two Common Channel Handlers (CCH). By using together with 1.5M DTI/2M DTI to establish the digital CCIS line or used as an interface for the analog CCIS.

☐ 1.5M DTI/2M DTI

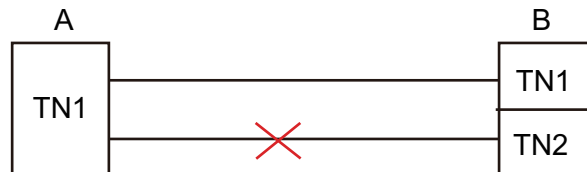
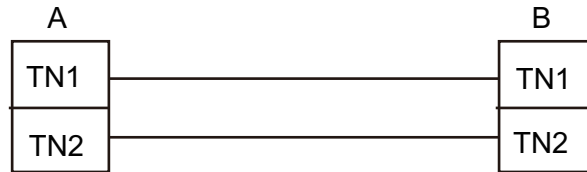
This circuit card provides an interface for a digital CCIS line, using together with the CCH card.

2. CONSIDERATION FOR BASIC DATA ASSIGNMENT

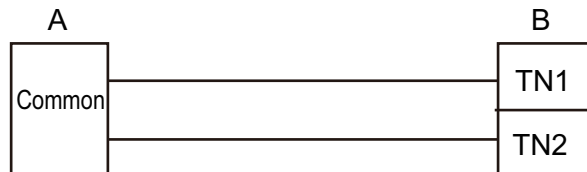
You need to consider the following cases for the tenant data assignment. Do not assign the mismatched tenant data between nodes.

- Use a common tenant between nodes
- Separate tenants in a system, and assign the same office data to each tenant

(a) When you select “Separate” in Node A for the tenant data table development in each command.



(b) When you select “Common” in Node A for the tenant data table development in each command.



Note: In the following commands, you can select whether to separate tenants or not. For more information of separating tenants or available commands to separate, refer to the section entitled “Tenant Data” in CHAPTER 2 ASSIGNMENT OF BASIC OFFICE DATA of Data Programming Manual - Business.

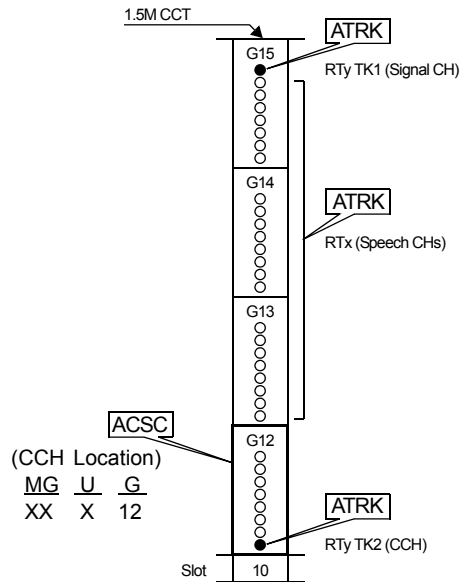
ANPD	ANPDL	ANPDN
ASPA	ASPAL	ASPN
AMND	AMNDL	AMNDN
AFRS	AFRSL	AFRSN
ARSC	-	ARSCN
ATRK	-	-

3. DATA ASSIGNMENT

3.1 Port Allocation and Related Command Note

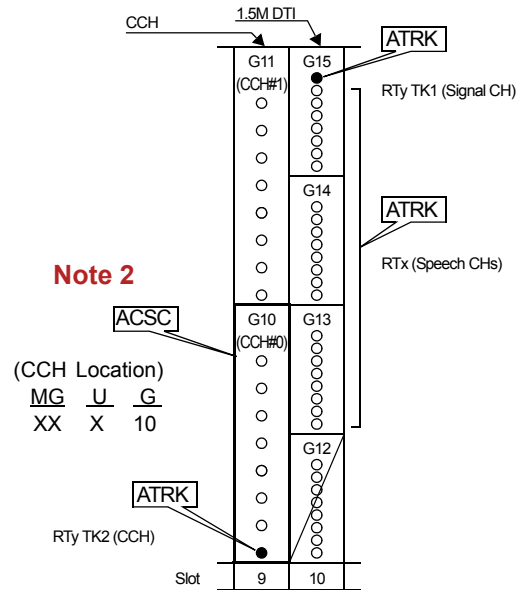
(Reference 1) **Note 1**

- 1.5M CCT is mounted in slot 10 (PIR).
- Last TS (CH) is used for CCIS signal CH.
- RTx = Speech CH, RTy = Signal CH.



(Reference 2) **Note 1**

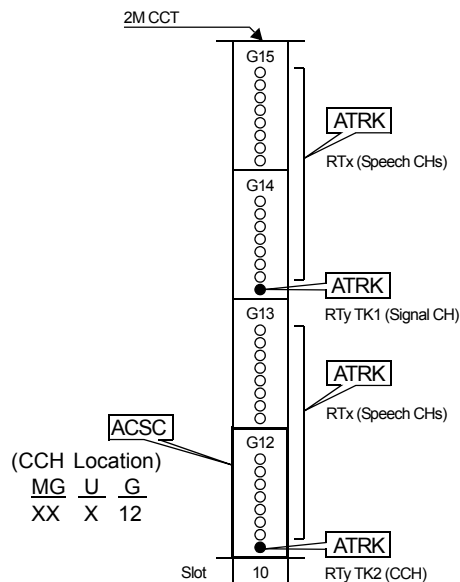
- 1.5M DTI is mounted in slot 10 (PIR).
- CCH is mounted in slot 9 (PIR).
- Last TS (CH) is used for CCIS signal CH.
- RTx = Speech CH, RTy = Signal CH.



Note 2

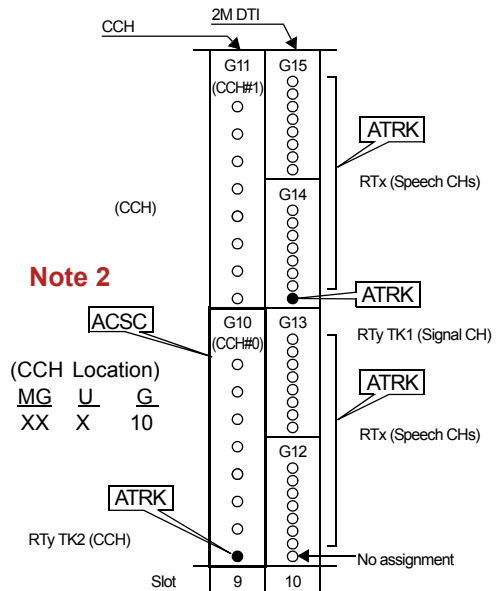
(Reference 3) **Note 1**

- 2M CCT is mounted in slot 10 (PIR).
- TS16 is used for CCIS signal CH.
- RTx = Speech CH, RTy = Signal CH.



(Reference 4) **Note 1**

- 2M DTI is mounted in slot 10 (PIR).
- CCH is mounted in slot 9 (PIR).
- TS16 is used for CCIS signal CH.
- RTx = Speech CH, RTy = Signal CH.



Note 2

Note 1: Register control signal channels on the Time Slot 16 or either one of the channels between 1-30 (In the above examples, the Time Slot 16 is chosen.), and also on the head of the Highway Block where the CCT/DTI card is accommodated. Either one of these two Trunk Numbers can be smaller than that of the other.

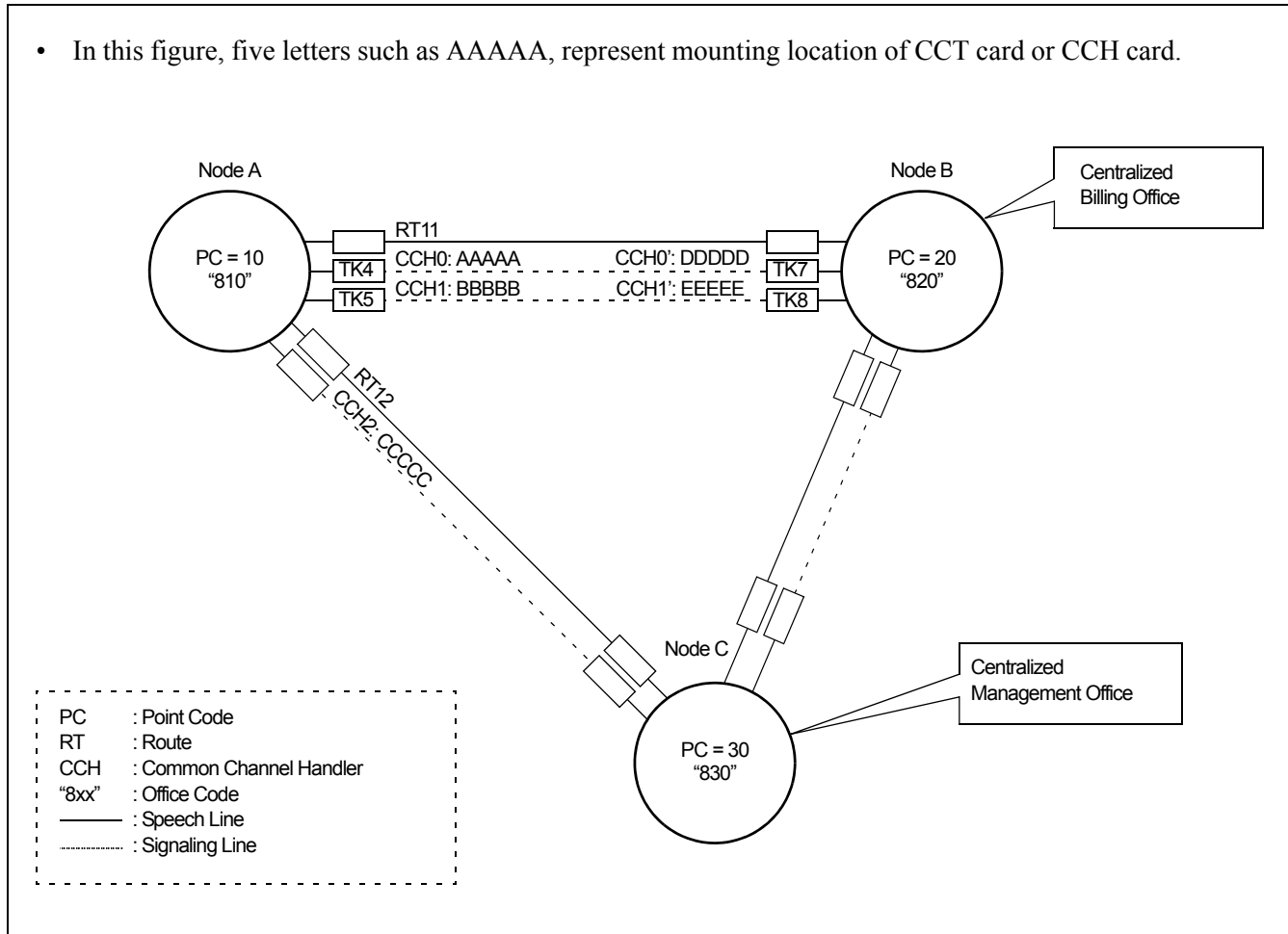
Note 2: Only one CCH (CCH#0/CCH#1) can be assigned. This example is applicable when CCH#0 is used.

3.2 Basic Data Assignment Procedure

This section explains “How to program necessary data associated with a CCIS network” using the following example. Note that Node A is your office.

Example of a CCIS Network

- In this figure, five letters such as AAAAAA, represent mounting location of CCT card or CCH card.



STEP 1:

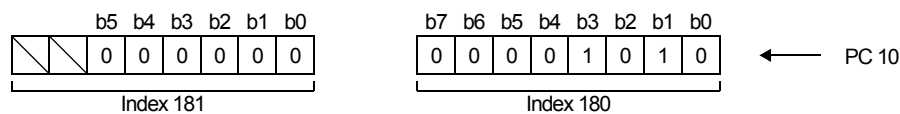
Point Code & Miscellaneous Data Assignment	COMMAND NAME
	ASYD

- ☐ Since Point Code is used to identify each office in a CCIS network, any identical PCs are not allowed in the same network. The following three kinds of point codes may be programmed in the system. The first PC, Originating Point Code (OPC), is mandatory. The remaining two Point Codes can be assigned as required.

- Originating Point Code (OPC): assigned by Indexes 180 and 181.
- Centralized Billing Point Code (DPC 20): assigned by Indexes 182 and 183.
- Centralized Management Point Code (DPC 30): assigned by Indexes 184 and 185.

1) Originating Point Code (OPC):

The OPC is a self-office code, which should be assigned without exception. 16 bits can be used for specifying OPC. Note that available PC ranges from 1 to 16367 (PCs 16368~16383 are used for Loop Back Test). Node A whose OPC is 10, for example, should be assigned as follows.



2) Centralized Billing Point Code (DPC 20):

The DPC 20 is used when billing information of the Telephony Server (Node A) should be sent to the Centralized Billing Office. When OPC 10 Index 182 is assigned as "20", for example, billing information of Node A can be obtained at Node B whose PC is 20. When this Centralized Billing feature is not necessary, skip these Indexes.

Note: Assign Indexes 182, and 183 in DPC 20 = 00 Hex to Centralized Billing Office.

3) Centralized Management Point Code (DPC 30):

The DPC 30 is used when system messages of the Telephony Server (Node A) should be transmitted to the Centralized Management Center, from which all Telephony Servers in the network can be managed. When Index 184 in DPC 20, and OPC 10 is set to "30", for example, system messages can be automatically sent to Node C whose PC is 30 in this case.

Note: Assign Indexes 184, and 185 in DPC 30 = 00 Hex to Centralized Management Office.

☐ Miscellaneous Data

- 1) Index 186:
b6 must be assigned as 1 (CCIS is in service). The remaining data should be determined depending on customer's requirements.

b7	b6	b5	b4	b3	b2	b1	b0	
0	1	0	1	0	0	1	1	← Example (Index 186)

b0: 0/1 = CCIS Link Reconnection is not available/available.

When either of the two parties that are engaged in a station-to-station/station-to-trunk/trunk-to-trunk connection via CCIS link transfers the call to another station, CCIS Link Reconnection will be provided. By establishing new link after the call transfer, the most proper routing can be provided for the two parties which are eventually connected.

Note: For the PAD value/Echo Canceller Control of the two parties which are eventually connected, the parameter of Remote Office PC for Self-office PC is required to be assigned as Remote Office PC in APDCL/APDCN command. For details, refer to 14.8 PAD/EC Control IP/PHC Support in Chapter 2 of Data Programming Manual - Business.

Link Reconnection is available in the following cases.

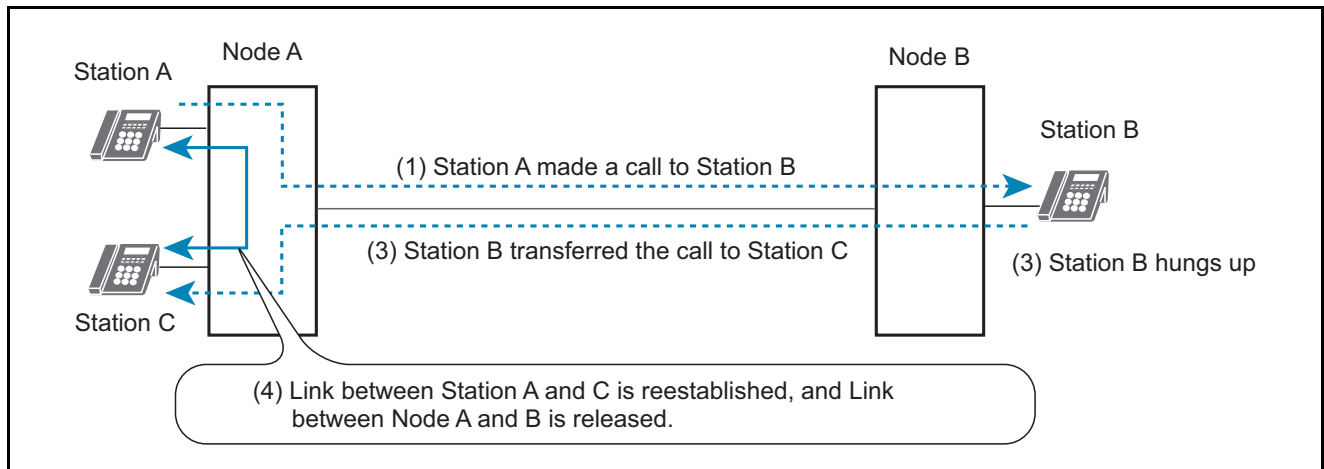
<CASE 1>

STEP 1: A call between Station A and B is established.

STEP 2: Station B transfers the call to Station C.

STEP 3: After connecting to Station C, Station B hangs up.

STEP 4: Link between Station A and C is reestablished. At this time Link between Node A and B is released.



<CASE 2> Note 1

Note 1: When either of the two parties that are eventually connected (after a call transfer) is AT-TCO, Link Reconnection cannot be provided. (At this point, even if the ATTCO transfers the call to a station in the same node and station-to-station connection is established, this function is not available.) In addition, this function is not provided when either of the two parties that are eventually connected has a held party.

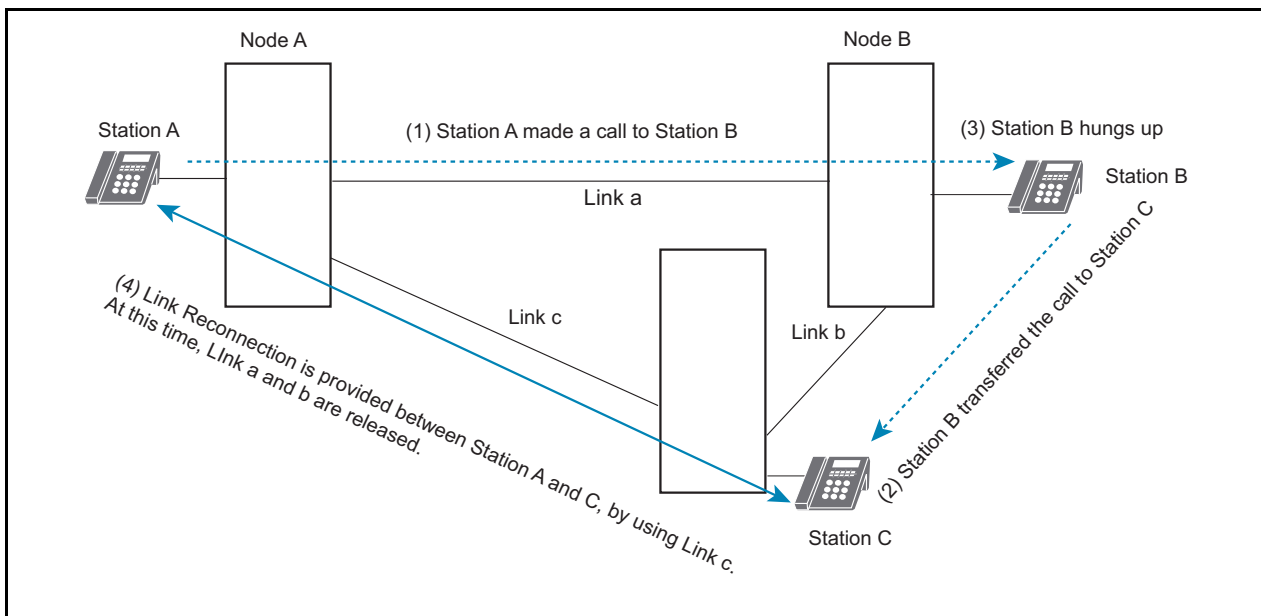
Note: CCIS Link Reconnection of this case is only available in CCIS over IP through IPTRK card (Point-to-Multipoint) network.

STEP 1: A call between Station A and Station B is established.

STEP 2: Station B transfers the call to Station C.

STEP 3: After connecting to Station C, Station B hangs up.

STEP 4: Link c (between Station A and C) is reestablished. at this time, Link a and b are released.



Link Reconnection is not available in the following cases.

<CASE 3> Note 2, Note 3, Note 4

Note 2: In case a call is connected to the announcement trunks used for Delay Announcement-UCD service and ACD Delay Announcement service, Link Reconnection function is not provided. (At this time, if the call is eventually connected to UCD station/ACD agent position after the UCD station/ACD agent position becomes idle state, this function is provided.)

Note 3: If the FCCS network is included in a connection which is supposed to provide Link Reconnection, it may prevent Link Reconnection from being provided.

Note 4: During a Link Reconnection process to migrate to a connection within a node, an LCD on the terminal may display elapsed time for a moment. In this case, momentary no tone may occur as the voice path is also being re-established.

STEP 1: A call between Station A and Station B is established.

STEP 2: Station B transfers the call to ATTCON C.

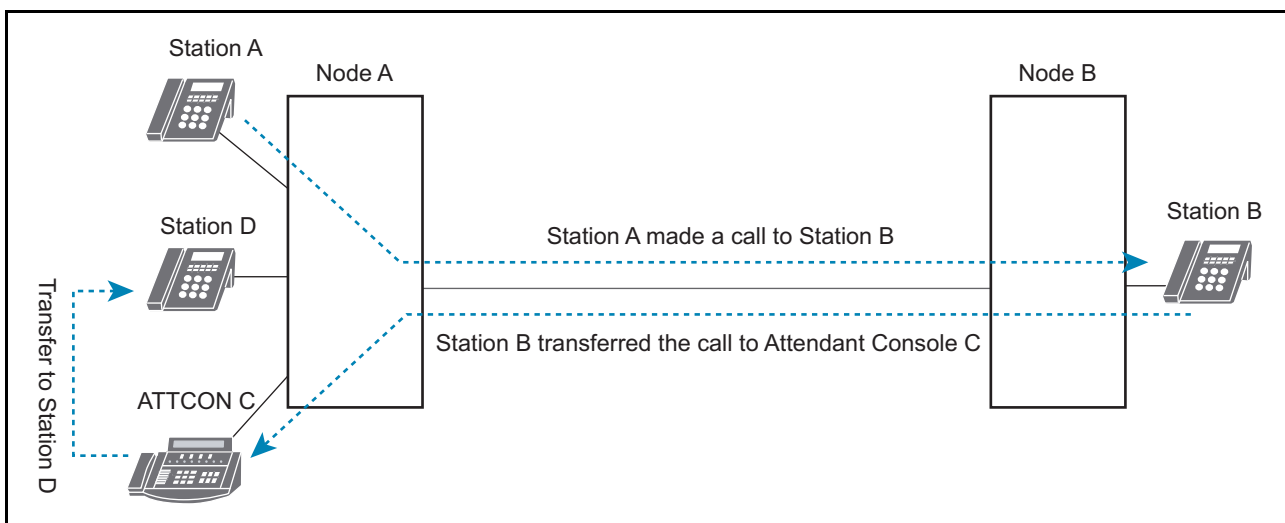
STEP 3: After connecting to ATTCON C, Station B is released.

STEP 4: At this time, Link between Station A and ATTCON C is not reestablished.

STEP 5: ATTCON C transfers the call to Station D.

STEP 6: After connecting to Station D, ATTCON C is released.

STEP 7: Link Reconnection (between Station A and D) is not provided.



2) Index 187:Assign 00 Hex always.

STEP 2:

Assignment of System Data for LDM	COMMAND NAME
	ASYDL

System Data 1, Index 586, Bits 0-7. Modify the upper limit of polling buffer usage rate (01% - 99%) if required. The default value is 50%.

b7	b6	b5	b4	b3	b2	b1	b0
Tens				Unit			

Note: If the usage rate exceeds this limit, the Centralized Billing Office will not receive any billing information sent from local offices.

Note: When the Centralized Billing Office cannot receive any billing information for 20 seconds, billing information created at local offices is not to be sent to the Centralized Billing Office. In this case, when there is no other destination for a local office to output the billing information than the Centralized Billing Office-CCIS, the information will be deleted. As long as this incapability of sending information persists, the transmission status is to be checked in order from the oldest.

Note: This setting applies to “Centralized Billing -CCIS [C-55]” and “Centralized Billing -FCCS”.

STEP 3:

Route Data Assignment	COMMAND NAME
	ARTD

☐ Assign the following three routes for this feature:

- Speech Path Route (Traffic Route)
- Signaling Route
- Dummy Route (Flag Route).

Assign each route data in accordance with the table shown below. Note that data assignment in this table is a typical example.

ROUTE	CDN															
	2	4	5	6	7	8	13	15	28	30	43	49	50	98	112	
Speech	2	2	3	4	1	2	0	12	1	4	1	0/1	1	1	1	
Signaling	2	2	0	4	1	0	0	13	0	7	0	0	0	0	0	
Dummy	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	

The other data than above should be set “0” (default data).

Note: When the opposite office in CCIS network is NEAX2000IPS, set 1 (Select from the trunk which becomes idle last) for ARTD CDN49 TRKS, except the system with IPTRK/PHC.

STEP 4:	Numbering Plan Data	COMMAND NAME
		ANPD & ASPA

- ☐ Assign Numbering Plan Data referring to the following example using the ANPD command.

TN: 1 1stDC: 8 CI: N/H/B NND: 3 BLF 0

- ☐ Assign Special Access Code, using the ASPA command referring to the following example. Note that “LCR: Least Cost Routing” must be selected in the ASPA command to activate CCIS features.

(for accessing Node B)			
TN: 1	ACC: 820	<u>CI: “N: Normal”/”H: Hooking”</u>	SRV: “LCR: Least Cost Routing”
RT: 31	2nd DT: 0	AH: 0	SUB: 0
(for accessing Node C)			
TN: 1	ACC: 830	<u>CI: “N: Normal”/”H: Hooking”</u>	SRV: “LCR: Least Cost Routing”
RT: 31	2nd DT: 0	AH: 0	SUB: 0
Note: In this example, RT31 is dummy route.			

- ☐ Assign Reverse Numbering Plan Data using ARNP command. This assignment is required for speech path route only (not for a signalling route number and a dummy route number). In the Open Numbering Network, office code of the Self-node (including ACC for the originating call) must be assigned to RT0. The number of digits for office code must be identical in the network. This data is used for originating office code display on SMDR, Desktop terminal, DESK CONSOLE/ATT and so on.
- ☐ In addition to these commands, other commands related to “LCR” such as AFRS, AUNE, AOPR and AMND are required. For more detailed information on the LCR feature, see Data Programming Manual - Business.

STEP 5:	Restriction Data	COMMAND NAME
		ARSC & ARRC

- ☐ Assign route restriction data as to the already assigned route as required.

STEP 6:

Assignment of Trunk Data	COMMAND NAME
	ATRK & MBTK

- ☐ Assign trunk(s) to desired LENS using the ATRK command. In this instance, the MBTK command is not required for the signaling trunk.

Note: See 3.1 "Port Allocation and Related Command Note."

STEP 7:

Assignment of DPC	COMMAND NAME
	ADPC

- ☐ Assign the associated PC on an RT (for speech path) number basis. In the case of the example illustrated in the figure entitled "Example of a CCIS Network", appropriate data is as follows.

RT	PC
11	20
12	30

STEP 8:

Assignment of Common Channel Signaling Controller (CSC)	COMMAND NAME
	ACSC

- ☐ Assign the location of the CCH using the ACSC command. The following is sample data assignment. In this sample, Node A is equipped with three DTI cards. Note that if the system employs one CCIS link, enter the same data in CSCG130 and CSCG131.

CSCG	MG	U	G	CICG		CSCG	MG	U	G	CICG	
130 (Basic/ Primary Route)	AA	A	AA	0	← CCH 0	131 (Alternate Route)	CC	C	CC	0	← CCH 2
	BB	B	BB	1			CC	C	CC	1	
	BB	B	BB	2			CC	C	CC	2	
	BB	B	BB	3			CC	C	CC	3	
	BB	B	BB	4	← CCH 1		CC	C	CC	4	
	BB	B	BB	5			CC	C	CC	5	
	BB	B	BB	6			CC	C	CC	6	
	BB	B	BB	7			CC	C	CC	7	

Note: In the case of actual data entry, enter corresponding LENS instead of letters such as "AAAAA".

Note: Refer to 3.1 "Port Allocation and Related Command Note."

STEP 9:

Assignment of Circuit Identification Code1	COMMAND NAME
	ACIC1

- ☐ Assign the CSCG for Basic/Primary Route. The odd numbered CSCG for Alternate Route assignment.

PC	CSCG
20	130

STEP 10:

Assignment of Circuit Identification Code2	COMMAND NAME
	ACIC2

- ☐ Assign Circuit Identification Codes (CICs), which correspond to “trunk” number. Although trunk number and the CIC number may not be identical, the same CIC number must be given to one speech line between two nodes as illustrated in the figure entitled "CIC Number Assignment".

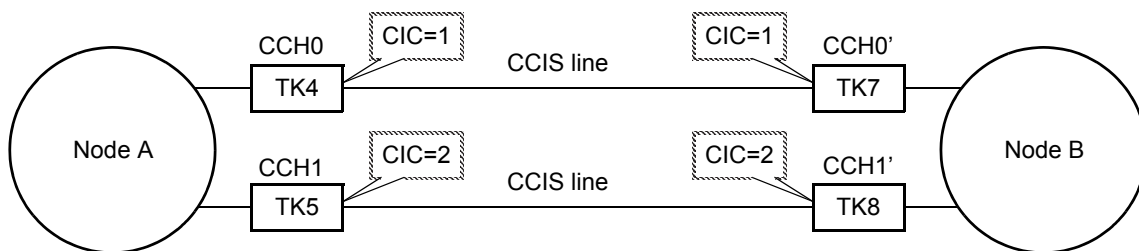
PC	CIC	LENS					
20	1	X	X	X	X	X	X
	2	X	X	X	X	X	X
	N	X	X	X	X	X	X

Relationship between CICG and CIC

CICG	CIC (1 ~ 999)					
0	8	16	24	–	992	
1	1	9	17	25	–	993
2	2	10	18	26	–	994
3	3	11	19	27	–	995
4	4	12	20	28	–	996
5	5	13	21	29	–	997
6	6	14	22	30	–	998
7	7	15	23	31	–	999

CIC Number Assignment

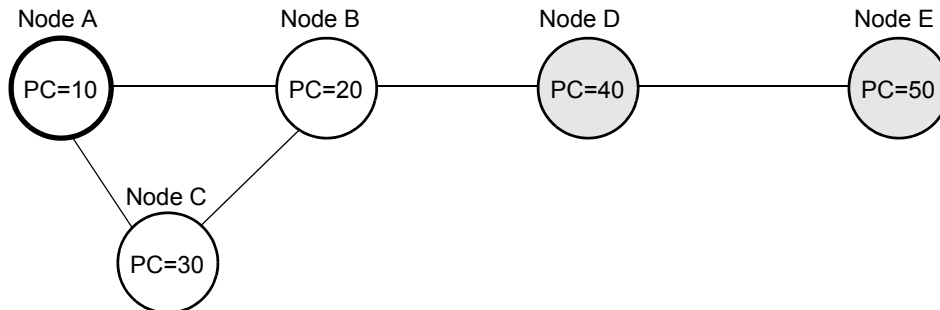
The CIC number must be identical between two nodes as shown below.



- When your network includes a tandem connection, be sure to assign PCs of the all nodes in the network. As the figure below shows, assign PCs 40 and 50 in addition to Node B (PC=20), which is directly connected to Node A.

Example of a CCIS Network (Tandem)

A sample office data assignment sheet for Node A is as follows.



Sample Office Data Assignment for Node A

ACIC1
command



PC	CSCG
20 (for Node B)	130
40 (for Node D)	130
50 (for Node E)	130



CHAPTER 4

CCIS FEATURE

1. How many digits are available for CCIS features in the CCIS over IP Network?

The list below shows how many digits each CCIS feature allows to send, receive or forward a call through the CCIS over IP network.

No.	Service Name	up to & including		Remarks
		8 digits	16 digits	
1	Attendant Camp-On with Tone Indication - CCIS [A-45]	X	N/A	
2	Attendant - Controlled Conference – CCIS [A-46]	X	X	
3	Automatic Recall – CCIS [A-71]	X	X	Note 1
4	Automatic Number Identification (ANI) – CCIS [A-87]	X	X	
5	ANI – CCIS (16 Digit) [A-126]	X	X	
6	Busy Verification – CCIS [B-9]	X	N/A	
7	Brokerage Hotline – CCIS [B-10]	X	X	
8	Call Back – CCIS [C-44]	X	X	
9	Call Forwarding – All Calls – CCIS [C-45]	X	X	
10	Call Forwarding – Busy Line – CCIS [C-46]	X	X	
11	Call Forwarding – Don't Answer – CCIS [C-47]	X	X	
12	Call Forwarding – Intercept – CCIS [C-48]	X	X	
13	Call Forwarding – Override – CCIS [C-49]	X	X	
14	Call Transfer – All Calls – CCIS [C-50]	X	X	
15	Called Station Status Display – CCIS [C-51]	X	X	
16	Calling/Called Number Display – CCIS [C-52]	X	X	
17	Call Processing Indication – CCIS [C-53]	X	X	
18	Call Transfer – Attendant – CCIS [C-54]	X	X	
19	Centralized Billing – CCIS [C-55]	X	X	Note 1
20	Centralized Day/Night Mode Change – CCIS [C-56]	X	X	Note 1
21	Centralized System Management Report – CCIS [C-57]	X	X	Note 1
22	Consultation Hold – All Calls – CCIS [C-58]	X	X	Note 1
23	Call Forwarding Assignment – Attendant – CCIS [C-94]	X	N/A	
24	CCIS Alternate Routing – Backup [C-178]	X	X	
25	Call Forwarding - I'm Here - CCIS [C-201]	X	X	
26	CLI Suppression - CCIS [C-202]	X	X	
27	Deluxe Traveling Class Mark – CCIS [D-70]	X	X	
28	Dial Access to Attendant – CCIS [D-71]	X	X	
29	Digital Display – Station – CCIS [D-72]	X	X	

No.	Service Name	up to & including		Remarks
		8 digits	16 digits	
30	Digital Display – Trunk – CCIS [D-73]	X	X	
31	Direct-In Termination – CCIS [D-74]	X	X	
32	Distinctive Ringing – CCIS [D-75]	X	X	Note 1
33	Do Not Disturb – D – CCIS [D-76D]	X	X	
34	Dialed Number Display – Recall – CCIS [D-91]	X	X	
35	Dual Hold D – CCIS [D-93D]	X	X	Note 1
36	Executive Right-of-Way – CCIS [E-8]	X	N/A	
37	Elapsed Time Display – CCIS [E-9]	X	X	Note 1
38	E911 – ANI Unified Number of Digits – CCIS [E-20]	X	X	Note 1
39	Flexible Numbering of Stations – CCIS [F-12]	X	X	Note 1
40	Hands-free Answerback – D – CCIS [H-10D]	X	N/A	
41	House Phone – CCIS [H-11]	X	X	
42	Hotline – CCIS [H-12]	X	X	
43	Incoming Call Identification – CCIS [I-16]	X	X	
44	Individual Attendant Access – CCIS [I-17]	X	X	
45	Inter-Position Transfer – CCIS [I-18]	X	X	Note 1
46	Individual Trunk Access – CCIS [I-19]	-	N/A	
47	Look Ahead Routing – CCIS [L-25]	X	X	Note 1
48	LDN Night Connection – CCIS [L-29]	X	X	
49	Message Reminder – CCIS [M-34]	X	N/A	
50	Message Waiting Lamp Setting – Attendant – CCIS [M-35]	X	N/A	
51	Message Waiting Lamp Setting – Station – CCIS [M-36]	X	N/A	
52	Miscellaneous Trunk Access – CCIS [M-37]	X	X	Note 1
53	Miscellaneous Trunk Restriction – CCIS [M-38]	X	X	Note 1
54	Multiple Call Forwarding – All Calls – CCIS [M-40]	X	X	
55	Multiple Call Forwarding – Busy Line – CCIS [M-41]	X	X	
56	Multiple Call Forwarding – Don't Answer – CCIS [M-42]	X	X	
57	Multiple Console Operation – CCIS [M-43]	X	X	Note 1
58	Message Center Interface – CCIS [M-67]	X	N/A	
59	Night Connection – Fixed – CCIS [N-15]	X	X	
60	Night Connection – Flexible – CCIS [N-16]	X	X	
61	Name Display – OAI – CCIS [N-36]	X	X	
62	Name Display – System – CCIS [N-37]	X	X	

No.	Service Name	up to & including		Remarks
		8 digits	16 digits	
63	Node Number Suppression – CCIS [N-38]	X	X	Note 1
64	Off-Hook Queuing – CCIS [O-11]	X	X	
65	Outgoing Trunk Queuing – CCIS [O-12]	N/A	N/A	
66	Paging Access – CCIS [P-28]	X	X	
67	Restriction from Outgoing Calls – CCIS [R-22]	X	X	
68	Serial Call – CCIS [S-52]	X	N/A	
69	Service Display – D – CCIS [S-53D]	X	X	Note 1
70	Single-Digit Station Calling – CCIS [S-55]	X	X	
71	Station-Controlled Conference – CCIS [S-56]	X	X	
72	Station-to-Station Calling – Operator Assistance – CCIS [S-57]	X	X	
73	Step Call - CCIS [S-59]	X	X	
74	Supervisory Call – CCIS [S-73]	X	N/A	
75	Toll Restriction – 3/6-Digit – CCIS [T-26]	X	X	Note 1
76	Trunk Answer from Any Station – CCIS [T-27]	X	X	
77	Uniform Numbering Plan – CCIS [U-5]	X	X	
78	Voice Call – CCIS [V-7]	X	N/A	

X: Available N/A: Not Available

Note 1: The feature is available irrespective of the number of digits.

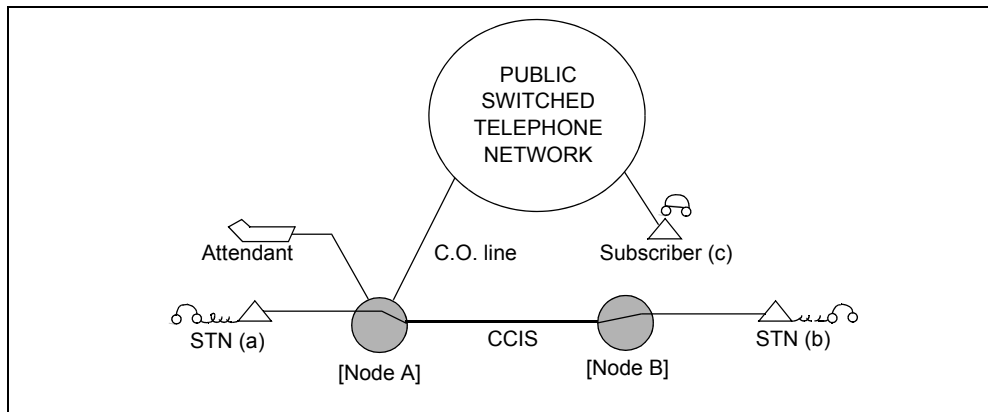
A-45 Attendant Camp-On with Tone Indication - CCIS

General Description

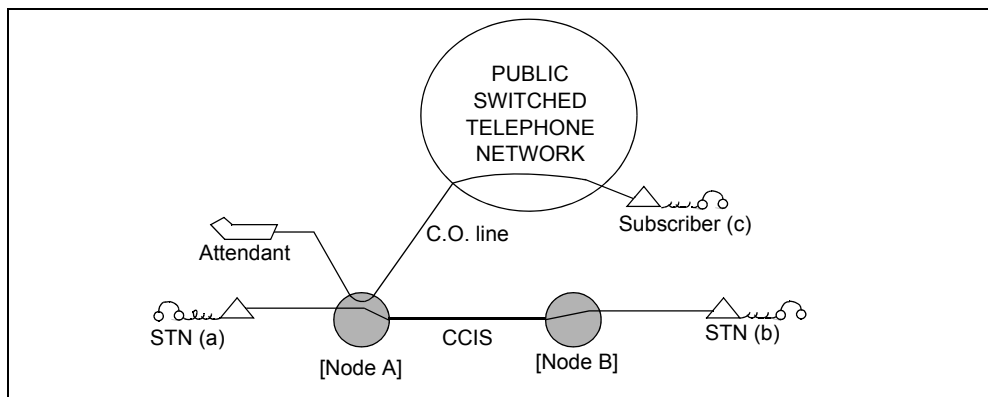
This feature allows Inter-Office Attendant Camp-On for when the Attendant and the Called Party belong to a different System in the CCIS Network.

Operating Procedure

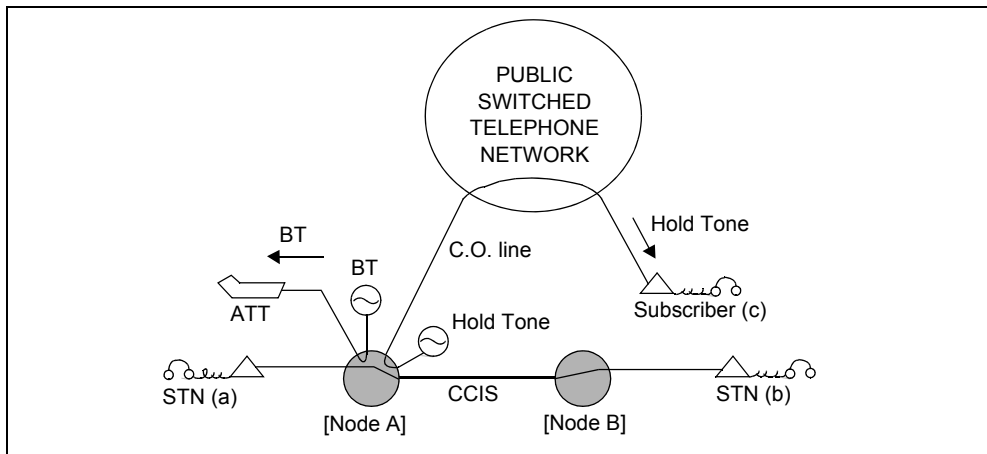
1. Stations (a) and (b) are talking through a CCIS Line.



2. Subscriber (c) places a call to Node A through a Central Office Line. An Attendant in Node A answers the call.

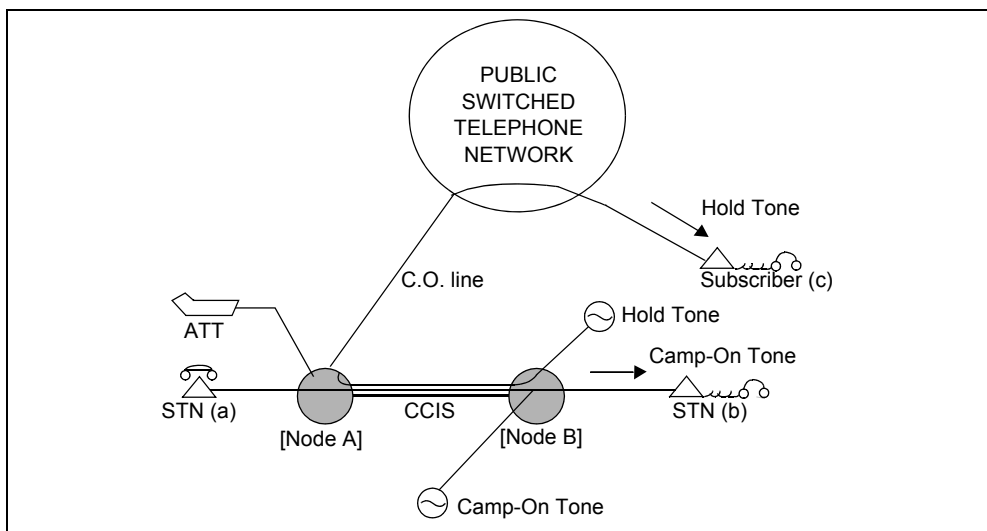


3. The Attendant dials the number for Station (b); Subscriber (c) receives a hold tone. The Attendant receives Busy Tone.



4. The Attendant presses the RELEASE key (Attendant Camp-On Service setting) **Note 1**. While talking with Station (a), Station (b) receives camp-on tone, and the Attendant can now handle other calls.

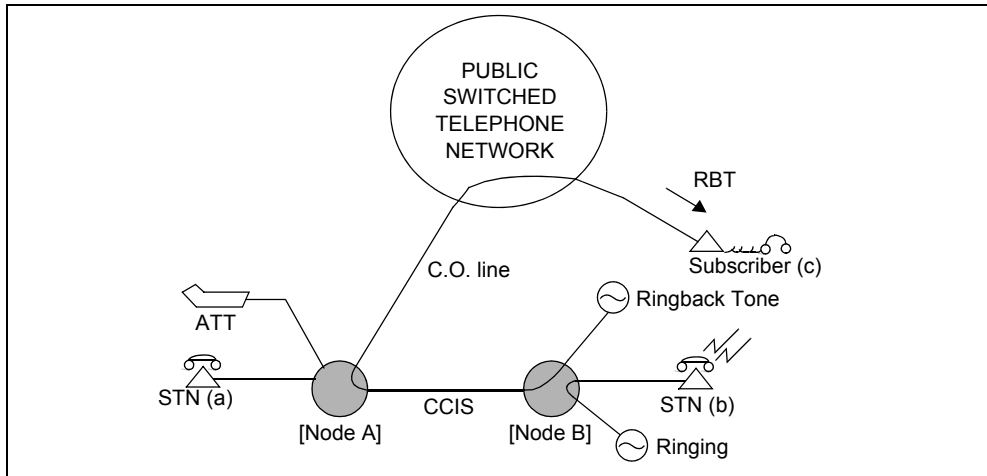
Note 1: If the Attendant presses the BV key instead of the RELEASE key, the Attendant bridges into the Station (b) side and, as a result, a Three-way Connection is set up. In this case, both (a) and (b) are bridged into the connection. The Attendant sets Camp-On by pressing the RELEASE key.



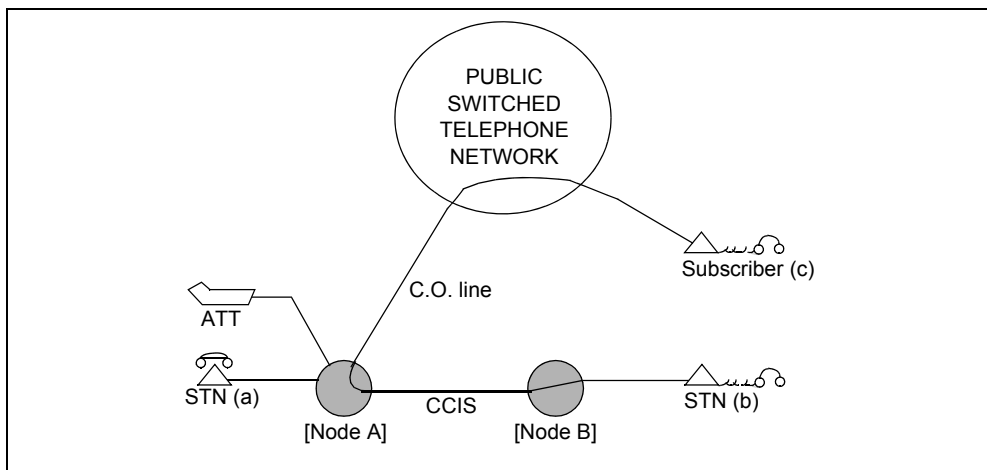
5. Stations (a) and (b) both go on-hook **Note 2**. (b) is rung, and (c) receives Ringback Tone.

Note 2: Instead of on-hook by Stations (a) and (b), if (b) switch hook flashes and dials the Call Hold Access Code, (b) can answer Subscriber (c) (Central Office Line Party), and (a) is held on the line.

If (b) switch hook flashes and dials the Call Hold Access Code once again, (b) can return to the connection with (a). In this case, Subscriber (c) is held on the C.O.line.



6. Station (b) answers; Station (b) and Subscriber (c) are connected with each other.



Service Conditions

1. Only one Incoming Call can be camped on to a particular station at any given time. Multiple CAMP-ON is not allowed.
2. Calls that remain camped-on for longer than the predetermined time will initiate AUTOMATIC RECALL - CCIS [A-71].
3. CAMP-ON may be denied if the busy station is:
 - a.) Dialing or in the LINE LOCKOUT [L-3] mode.
 - b.) Listening to a tone.
 - c.) Being rung.
 - d.) The TIE Line is idle at the time the operator has pressed the RELEASE key.
 - e.) Already camped-on by a previous call.
 - f.) Protected from CAMP-ON by CLASS OF SERVICE - INDIVIDUAL [C-15].
 - g.) Being connected to an A.C Loop.
 - h.) Activating any conflicting feature, such as:

CALL BACK - CCIS	[C-44]
CALL HOLD	[C-6]
CALL TRANSFER - CCIS	[C-50] [C-50D] [C-54]
BUSY VERIFICATION - CCIS	[B-9]
BOSS - SECRETARY-OVERRIDE-D	[B-6]
CALL WAITING - TERMINATING	[C-12]
CONSULTATION HOLD - ALL CALLS - CCIS	[C-58] [C-58D]
DIAL ACCESS TO ATTENDANT - CCIS	[D-71]
EXECUTIVE RIGHT-OF-WAY - CCIS	[E-8D]
NON-EXCLUSIVE HOLD -D	[N-7D]
OUTGOING TRUNK QUEUING - CCIS	[O-12] [O-12D]
OFF-HOOK QUEUING - CCIS	[O-11]
VOICE CALL-D - CCIS	[V-7D]
PRIVACY RELEASE	[P-18]
4. When a call that arrives at a Camped-on station is forwarded to a busy station using CALL FORWARDING - BUSY LINE [C-2], you cannot change the Camped-on station by assigning the system data (ASYD SYS1 Index 69, bit5=0/1: Set to the Forwarded-from station/Set to the Forwarded-to station). In this case, only the Forwarded-from station can be the Camped-on station.

Programming

- STEP 1: **ASFC** - Release the Restrictions of SFI 11 (Data Line Security) to the SFC of the station receiving the Camp-On Service. This must also be assigned to SFC = 0 at the Satellite Systems.
SFI 4 = 1 for SFC 0.
- STEP 2: **ARSC** - Release the Incoming Restrictions between the Incoming Restrictions of the station receiving Camp-On and the Incoming Trunk Route. (at RRI = 0, 1)

A-46 Attendant-Controlled Conference - CCIS

General Description

This feature allows the Attendant to establish a Conference among as many as eight parties. The Conference Group can consist of any combination of stations and/or Trunks in a CCIS Network.

Operating Procedure

To activate ATTENDANT-CONTROLLED CONFERENCE - CCIS:

1. A station calls the Attendant to request a Conference by dialling "0". Calling the ATTCON using the ASAT Number is not supported.
2. The Attendant connects the calling station to the Conference Leader by dialing the Circuit Number of the Conference Leader connected to the Conference Unit.
3. The Attendant sequentially calls all desired parties and connects by pressing START, dialing the Pilot Number of the Conference, and pressing RELEASE.

Using the MMCB:

4. When all parties are connected, the Conference Leader with a Pushbutton Telephone can dial "0" to prevent additional stations from entering the Conference Group, thereby assuring privacy. If the Leader presses "0" again, more parties can be added.
5. If the Conference Leader dials "#", all Conferees will be disconnected. Otherwise, the Conference is terminated only after all parties have hung up.

Using the CFT card:

6. When all parties are connected, the Conference Leader with a Pushbutton telephone can dial "0" to prevent additional stations from entering the Conference Group, thereby assuring privacy. If the Leader presses "0" again, more parties can be added.
7. If the Conference Leader dials "#", all Conferees will be disconnected. Otherwise, the Conference is terminated only after all parties have hung up.

For either:

8. To release from a Conference Circuit individually, a user hangs up. The remaining Conferees can continue without interruption.

Service Conditions

1. Conference Units are designed to provide adequate amplification, but the condition of the Central Office Connections will affect transmission.
2. Conference Unit Extension Numbers should be placed in a STATION HUNTING - TERMINAL [S-9] Group. Only the Pilot Number of this group should be published.
3. Each Conference Unit can provide up to an eight-party conference.
4. Override Services, such as BUSY VERIFICATION [B-3] [B-9], ATTENDANT OVERRIDE [A-7] or EXECUTIVE RIGHT-OF-WAY [E-1] [E-8], are denied to stations engaged in a Conference Call.
5. The following additional hardware is required:
 - a.) External Conference Unit MMCB, Model Number 37008
 - b.) 16LC card
6. The CFT card may be used rather than the External Conference Unit MMCB. The MMCB also requires a 16LC card that is not required by the CFT card.

Interactions

1. The Attendant Console must first be provided.
2. NEC provides a 16LC card that provides momentary-open for all 16 Circuits. This is required to provide a Release Signal when Line Circuits are connected to External Equipment such as Conference and Page Units. This keeps Reorder Tone from being sent to the Conference Unit.
3. The last port of a 16LC card provides battery reversal upon release. Therefore, when a station disconnects, Reorder Tone is not returned to the External Conference Unit.

Programming

STEP 1: **ASDT** - Assign Tenant Number station number, LENS, and the Telephone Equipment Class (TEC) to the station connected to the Conference Unit. Also, assign the Service Feature Restriction Class (SFC) and Route Restriction Class (RSC) to the telephone.

The RSC should allow connections to the Incoming and Outgoing Routes that will be connected to a Conference.

TN: Tenant Number

STN: Station Number

LENS: Line Equipment Numbers (six digits)

TEC: Telephone Class (1-31)

1: DP (10 PPS)

2: PB

→ 3: DP/PB

11: VMM

12: Dterm

13: Data Terminal via Dterm

14: Hotline

15: CAS Line

16: Data Terminal via Data Module

18: Virtual Line Appearance (for Dterm Multi-Line)

19: TMM

20: PSM

23: ISDN Terminal

27: Eight Conference Equipment

RSC: Route Restriction Class (0-15)

For assignment of RSC, ARSC.

SFC: Service Feature Restriction Class (0-15)

For assignment of SFC, ASFC.

STEP 2: **ASHP** - Assign a Pilot Hunting Group using the last circuit of eight line circuits on 16LC card or eight circuits on one 16LC card. These ports are connected to an External Conference Unit, MMCB Model 37008.

A-71

Automatic Recall - CCIS

General Description

This feature works as a time reminder. When an Attendant-handled call through CCIS remains on hold, camped-on or ringing unanswered for a fixed interval, the Attendant is automatically alerted.

Operating Procedure

No manual operation is required.

Service Conditions

1. AUTOMATIC RECALL timing is preset in System Data at 30 seconds. For other selectable timing choices, see VARIABLE TIMING PARAMETERS [V-1] in Data Programming Manual - Business.
2. If the Attendant re-enters a held or camped-on Trunk, timing is reset when the Trunk is returned to the previous condition.
3. In addition to the standard visual indication for Incoming Calls, the ATTENDANT CONSOLE [A-3] buzzer will sound to Signal RECALL, provided no calls are being processed.
4. This feature is denied on INCOMING CENTRAL OFFICE CALL TO TIE LINE CONNECTION [I-3], except in the following conditions:
 5. When the Incoming Signaling is a Loop Start.
 6. When ATTENDANT LOOP RELEASE [A-6] is activated.
 7. When an Attendant answers AUTOMATIC RECALL - CCIS [A-71], the Dialed Number of the calling station/trunk number can be displayed (as programmed in System Data).
8. The indication on the Attendant Console follows DIGITAL DISPLAY - STATION [D-5]. When the Dialed Number is displayed, the display is as follows:
 - a.) Tenant Number: Blank Space
 - b.) Trunk Route Restriction Class: Blank Space
 - c.) Telephone Number: Dialed Number (Last Digits).
9. AUTOMATIC RECALL - CCIS will appear on the Attendant's HOLD key.

Interactions

1. This feature is available on calls extended to a branch Office via a CENTRALIZED ATTENDANT SERVICE (CAS) [C-20] position.
2. System Data 2, Index 6, Bit 7. On a per tenant basis, allow this bit for CALL FORWARDING - DON'T ANSWER [C-47] via the Attendant Console. During this operation, the call will ring at the called station for the time interval set in System Data 1, Index 141. The call is then forwarded and rings at the forwarded station for the time interval set in Index 145. If the call is still not answered, it will be recalled to the Attendant Console via AUTOMATIC RECALL [A-8].
3. System Data 1, Index 70, Bit 0 (Called Number Display). This bit does not affect the display on the Attendant Console for recalled calls. It is used for DID's that have Call Forwarded to the Attendant, or should the Attendant re-enter the Loop on an extended call before AUTOMATIC RECALL [A-8] has taken place.

4. When a Trunk Call recalls back to the Attendant Console, the Destination Telephone Number will display and the Source (SRC) LED will be lit. By pressing the SRC key, the display will change to the Originating Route and Trunk Number. By pressing the Destination (DEST) key, the display will change to the Destination station.
5. The station will continue to ring, even as the call recalls to the Attendant Console. When Conference is allowed and a Conference Card is programmed and installed, if the station should answer at the same time the Attendant answers the recalling call, a three-way conversation will then take place. The Attendant can press the SRC, DEST, or TALK keys to achieve the desired conversation, or press the RELEASE key to get out of the conversation.
6. Station calls extended by the Attendant to another station within the same system (Node) will recall to the Attendant. Station calls extended by the Attendant over CCIS will not recall. Trunk Calls will recall in both instances.

Programming

STEP 1: **ASYD** - System Data 1, Index 145. Automatic Recall Timer.

Note: When "00 HEX" is assigned to this data, default data is automatically set to 32 seconds. For details, refer to Command Manual.

System Data 1, Index 73, Bit 6. Is the Dialed Number Display for AUTOMATIC RECALL in service?
0/1: No/Yes.

System Data 2, Index 2, Bit 5.

Must be programmed as data "1". Attendant Loop Release in service.

A-87 Automatic Number Identification (ANI) - CCIS

General Description

This service is an enhancement from AUTOMATIC NUMBER IDENTIFICATION (ANI), which can be executed only within the Self Office. This enhanced service allows ANI at the Primary Office, with respect to an EMERGENCY CALL terminated from the secondary office via the CCIS Line.

Note: This feature is only available in North America.

Operating Procedure

No manual operation is necessary.

Service Conditions

1. The ANI function for Enhanced 911 Outgoing Connections is applied to:
 - a.) Least Cost Route (LCR) Call from a station by MF Signalling.
 - b.) LCR Call from an Attendant by MF Signalling.
 - c.) LCR Call by MF Signalling from a station or Attendant Console Called via CCIS.
2. ANI Sending Number by E991-ANI - CCIS is NXX-XXXX, which is the same as the previous Enhanced 911-ANI Service.
3. Method of obtaining ANI Sending Number (example):
 Caller's station number: 12345 (Closed Numbering)
 ANI assigned data:
 RT: XX
 AT: 0 (0 = STA/ATT)
 (1 = not assigned Special ATT Number)
 CC: 1 (0 = Main Central)
 (1 = Satellite Central)
 COC: 826 (Remote Office Code)
 Skip: 4 (Number of digits to be skipped from the top of the STN)
 Add: 3 (Number of digits to be added to ANI information)
 DG: 789 (ANI information)
 - a.) Number of skip digits deleted from STN:
 8 2 6 1 2 3 4 5
 - b.) The number created by combining the ANI information and the above number becomes the ANI Sending Number:
7 8 9 2 3 4 5
 - c.) Sending ANI information:
 KP-0-789-2345-ST
4. Sending digit patterns in Enhanced 911 ANI - CCIS:
 - a.) Outgoing Call from Station/ATTCON of Main Office.
 - If OG Call is from a station and ANI Data is assigned:
 KP-0-N**-****-ST

ANI sending number

Information digit

- If OG Call is from a station and ANI Data is unassigned:

KP - 2 - ST

_____Information digit

- If OG Call is from an ATTCON and Individual ATT Access Code is assigned, and also ANI Data is assigned:

KP - 0 - N**_**** - ST

_____ANI sending number

_____Information digit

- If OG Call is from an ATTCON and Individual ATT Access Code is unassigned, and ANI Data is assigned:

KP - 0 - N**_**** - ST

_____ANI sending number

_____Information digit

- If OG Call is from an ATTCON and ANI Data is unassigned:

KP - 1 - ST

_____Information digit

b.) Outgoing Call from Station/Attendant of Remote Office, and Call Termination via CCIS of Main Office.

- If the Outgoing Call is from a station and ANI Data is assigned:

KP - 0 - N**_**** - ST

_____ANI sending number

_____Information digit

- If the Outgoing Call is from a station and ANI Data is unassigned:

KP - 2 - ST

_____Information digit

- If the Outgoing Call is from an Attendant and ANI Data is assigned:

KP - 0 - N**_**** - ST

_____ANI sending number

_____Information digit

- If the Outgoing Call is from an Attendant and ANI Data is unassigned:

KP - 1 - ST

_____Information digit

c.) Outgoing Call from Station/Attendant of Remote Office, and Call Termination to a TIE Line of Main Office.

KP - 2 - ST

_____Information digit

5. An independent Route is required for Enhanced 911 Interface.
6. After Caller's Number is sent out to the Remote Office by Enhanced 911-ANI, it takes some time before a speech path is established.
7. Enhanced 911-ANI - CCIS Service Data are assigned only at Main Office. No specific data are assigned at the Remote Office
8. Both ANI Service and Enhanced 911-ANI UNIFIED NUMBER OF DIGITS [E-18] Service must have been assigned.
9. The Central Office Code (COC) consists of one to five digits. If Office Number and station number are used, the maximum total number of digits is still five.

Example 1:

Office Number: 82

Station Number: 2xxx, 3xxx

The COC digits are 822 or 823. Then assign ANI information.

Example 2:

Office Number: 82, 826

Station Number: 34xxx, 4xxx

The COC digits are 823 or 826. Then assign ANI information.

10. After digits have been sent out, DDD Seizure Tone is not sent.
11. Other interactions are the same as those of Outgoing Call by MF Signalling.
12. A RST card is used for this service.
13. When a Desktop terminal uses this feature, the Calling Number transmitted is the Prime Line.

Interactions

If “911” is to be exclusively used as an Emergency Number, then dial “9” Access Codes cannot be used solely for LCR Access. If “9-911” is used exclusively for an Emergency Call, then no numbering conflict will exist.

Programming

STEP 1: **ARTD** - Assign Route:

RT: 1

1-OSGS	:7	2-ONSG	:4	3-ISGN	:7	4-INSG	:4	5-TF	:3
6-TCL	:5	7-L/T	:1	8-RLP	:2	10-SMDR	:1	13-AC	:1
15-LSG	:5	19-ANI	:1	30-PAD	:4	43-BT	:1	82-RSAX	:13
84-CSEG	:15	70-TCMN	:1						

Note: To change the data for existing route (RT), initialize the circuit card.

STEP 2: **ATRK** - Assign LENS for the following trunks.

RT 905 TK 1 (dependent on Register Location)

RT 905 TK 2 (dependent on Register Location)

RT 904 TK 1 (dependent on Register Location)

RT 904 TK 2 (dependent on Register Location)

STEP 3: **AAND** - Assign ANI Data.

RT: 0

AT: 0 (0 = Station; 1 = Individual-Attendant)

KT: 0 (0/1 = OFF/ON, expansion of station number lengths)

CC: 1 (0 = Main Central. 1 = Satellite Central)

COC: (Central Office Code, CCIS Office Code or first digit of CCIS Remote station number. ARNP RT 0)

STNL: 0 (Number of digits in the Caller's Number, assign 0)

SKIP: (Number of skip digits. Strips Office Code from being sent out in front of the station number.)

ADD: 3 (Number of digits to be added to the ANI information.)

DC: 753 (ANI Sending Number.)

Note: The Office Code of the Central Office + the first n digits of the station number to parameter COC should not exceed five. Combinations of the COC and the first n digits of station number must be made in conformity with the Numbering Plan of the Remote Office.

Note: Basic LCR programming and Route Restrictions are required. Refer to LEAST COST ROUTING-3/6-DIGIT [L-5] in Data Programming Manual - Business. Programming for Enhanced 911 CCIS is only necessary at the Main Node.

A-126

ANI-CCIS (16 Digit)

General Description

This feature allows an Office receiving ANI information from Central Office through an Analog Trunk (Caller ID or MF) to extend to another Office through CCIS when the Tandem Connection is established.

Note: This feature is available in North America only.

Operating Procedure

No manual operation is required.

Service Conditions

1. The maximum digits of ANI information sent to another Office through CCIS are 16.
2. When the Tandem Connection is established through CCIS, the maximum digits of ANI information which the Connected Office may output to the SMDR Port or MCI are 16.
3. In regard to other conditions, refer to the Service Conditions of Call Transfer - All Calls - CCIS [C-50].

Programming

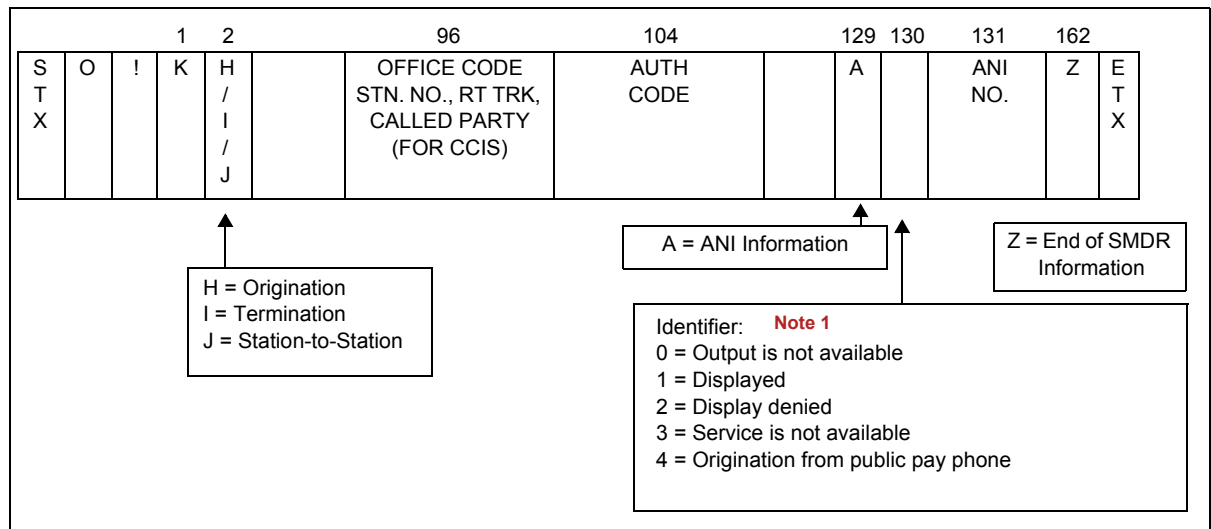
Also see TRUNK LINE APPEARANCE [T-23] in Data Programming Manual - Business for information on how to accommodate Central Office Line on a Desktop terminal Line/Feature key

STEP 1: **ASYD** - System Data 1, Index 241, Bit 6. 0/1 = When the length of Caller ID exceeds the limit, only the former/latter part of data appears on the LCD.

System Data 1, Index 390, Bit 0. Caller ID display pattern on the LCD. 0/1 = Calling Number/Calling Name has priority.

System Data 1, Index 390, Bit 2. When using Desktop terminal two-line LCD, the lower LCD can be used for displaying Caller ID. 0/1 = Out/In service.

When Calling Number is output to SMDR, the following expanded format is used.



Note 1: For 0, 2 and 3, the ANI number is not output.

System Data 1, Index 288, Bit 5. Expanded SMDR Output for SMDR A Apparatus. 0/1 = Out/In Service.

System Data 1, Index 290, Bit 5. Expanded SMDR Output for SMDR B Apparatus. 0/1 = Out/In Service.

System Data 1, Index 292, Bit 5. Expanded SMDR Output for SMDR C Apparatus. 0/1 = Out/In Service.

System Data 1, Index 294, Bit 5. Expanded SMDR Output for SMDR D Apparatus. 0/1 = Out/In Service.

System Data 1, Index 296, Bit 0. Output of Calling Number (ANI information). 0/1 = Out/In Service. Assign data "1".

System Data 1, Index 300, Bit 0. 0/1 = Billing information is sent to the Main Node in Expanded SMDR format if CENTRALIZED BILLING - CCIS [C-55].

STEP 2: **ASFC** - Assign a Service Feature Restriction Class that allows SFI 14 to stations allowed Station Message Detail Recording (SMDR).

STEP 3: **ARTD** - Assign Route Class Data for the Central Office Trunk.

15-LSG :3 50-DPLY :1 (**Note 1**)

When Calling Number is output to SMDR:

10-SMDR :1

Assign Route Class Expansion Data.

CI: ISDN transmitting information

29-TELP :1

16-Digit Caller Number Service, Attribute Information Notification Service and Calling Sub-Address Transfer Service.

When My Line is Prime Line, Call ID Change Display key is effective while terminating or in conversation.

When My Line is not Prime Line, Call ID Change Display key is effective while in conversation.

However, display pattern returns to the original setting when answering, holding, or transferring the call.

Note: To change the data for existing route (RT), initialize the circuit card.

Note 1: Up to 8 digits of a Caller ID can be shown on the display.

STEP 4: **ATRK** - Assign Trunk Data for the Central Office Trunk.

STEP 5: **MBTK** - Cancel the make busy of the Central Office Trunk.

STEP 6: **AKYD** - Assign Call ID Change Display key. Assign Feature key Call ID Change Display [113].

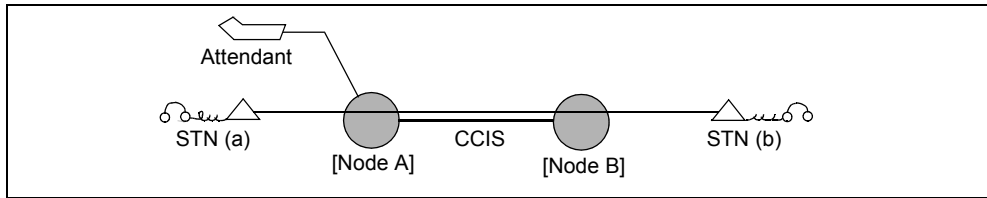
B-9 Busy Verification - CCIS

General Description

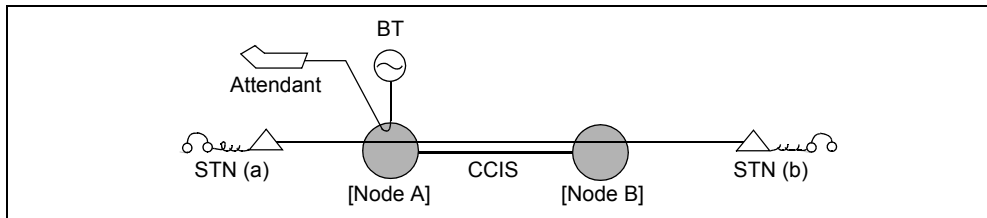
This feature allows Inter-Office Attendant BUSY VERIFICATION when the Attendant and the Called Party respectively belong to a different System in the CCIS Network.

Operating Procedure

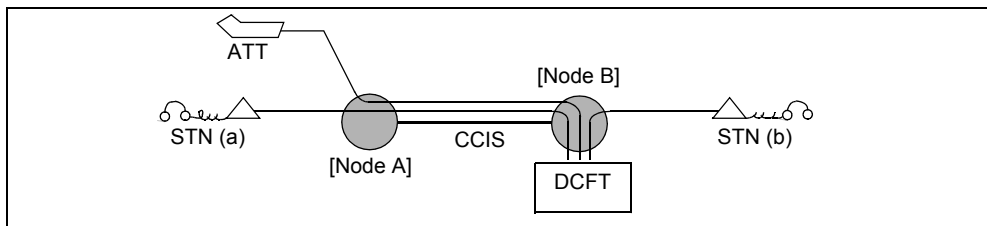
1. Station (a) and (b) are in connection on a station-to-station call.



2. The Attendant in Node A presses the loop key. The Loop Lamp and DEST Lamp on the Attendant Console illuminate.
3. The Attendant dials the number for Station (b). Receives Busy Tone.



4. The Attendant presses the BUSY VERIFICATION Feature key. The Attendant and both STN (a) and STN (b) receive Warning Tone. STN (a), STN (b) and the Attendant are connected in a Three-way Connection.



5. The Attendant presses the CANCEL key and can now handle other calls.

Service Conditions

1. This service may be used during station-to-station calls and station-to-trunk calls. (COT, FX, WATS, CCSA, or TIE Lines)
 2. BUSY VERIFICATION is performed in the Office to which the called station belongs.
 3. In a Three-way Call in the mode where the Conference Button is pressed, the Attendant cannot perform BUSY VERIFICATION.
 4. BUSY VERIFICATION cannot be established to a BUSY station when the station is:
 - a.) Dialing
 - b.) Listening to a tone
 - c.) Being rung
 - d.) Being connected to an BUSY VERIFICATION Loop
 - e.) Activating a conflicting feature, such as:

ATTENDANT CAMP-ON WITH TONE INDICATION	[A-1] [A-45]
BOSS - SECRETARY OVERRIDE - Dterm	[B-5D]
CALL HOLD	[C-6]
CALL TRANSFER	[C-50] [C-54] [C-11]
CALL WAITING-TERMINATING	[C-12]
CONSULTATION HOLD-ALL CALLS	[C-58] [C-58D] [C-17]
DIAL ACCESS TO ATTENDANT	[D-71] [D-2]
EXECUTIVE RIGHT-OF-WAY	[E-8] [E-8D] [E-1]
NON-EXCLUSIVE HOLD -D	[N-7D]
PRIVACY RELEASE	[P-18]
THREE-WAY CALLING	[T-2] in the mode where the Conference Button is pressed.
VOICE CALL -D	[V-7D][V-2]
 - f.) In a Modem Pooling Connection,
 - g.) In a Data Call through a Data Adapter,
 - h.) In a Data Call through a Data Module.
- In each of the above instances, the Attendant will receive Reorder Tone.
5. Before the Attendant is added to an existing connection, a Tone Burst (0.08 seconds) is applied to alert the Calling Parties of the Attendant's presence.
 6. BUSY VERIFICATION - CCIS and ATTENDANT LOCKOUT [A-5] are mutually exclusive features.
 7. BUSY VERIFICATION - CCIS can only be activated by the Attendant Console.
 8. It is possible to disable the continuous sending of Warning Tone during a BUSY VERIFICATION - CCIS Connection, via System Data. Normally, the Two-burst Warning Tone is repeated about every 15 seconds.
 9. When using this feature through the CCIS network, the number of digits to be delivered to the network must be eight or less. If the number of digits is nine or more, this feature does not work.

Interactions

1. This feature is allowed whenever the Destination Telephone Set is engaged in any state other than:
 - a.) A Three-way Connection
 - b.) An activated PRIVACY feature
 - c.) Connected to a Route programmed to have Line/Trunk, Privacy, CDN 44:PRV
 - d.) Listening to a tone (Dial Tone, Reorder Tone, Service Set Tone, Busy Tone, Ringback Tone).
2. With ATTENDANT OVERRIDE [A-7], the following Trunk types may be verified (busy or idle status):
 - a.) One-way Incoming Trunks,
 - b.) One-way Outgoing Trunk,
 - c.) Bothway Trunk.
3. Trunks in a station-to-trunk, TRUNK-TO-TRUNK CONNECTION [T-10], and ATTENDANT-CONTROLLED CONFERENCE [A-2] Connection may be verified when busy.
4. ATTENDANT LOCKOUT [A-5]: The Attendant is prevented from verifying a busy station line that is connected to a Loop held at the Attendant Console. Since the LOCKOUT feature applies only to calls held on an Attendant Console Loop, BUSY VERIFICATION - CCIS of those station lines will be denied, and the Attendant will hear Reorder Tone.
5. CALL FORWARDING - CCIS (ALL CALLS [C-45], BUSY LINE [C-46] or DON'T ANSWER [C-47]): If an Attendant attempts to busy-verify an idle or busy station line that has activated the CALL FORWARDING - CCIS feature, BUSY VERIFICATION - CCIS of the forwarded-to station will occur. If an Attendant attempts to busy-verify an idle or busy station that is CALL FORWARDED to the Attendant Console, BUSY VERIFICATION - CCIS will not be allowed.
6. CALL HOLD [C-6]: When two stations have established a connection and one of the stations has a third party on hold, the two talking parties can be busy-verified, but the party on hold cannot be busy-verified.
7. CALL WAITING [C-12] [C-31]: If an Attendant attempts to busy-verify a station line that already has a waiting call, BUSY VERIFICATION will be denied. Also, if an Attendant attempts to busy-verify a station line that is waiting for another station line, BUSY VERIFICATION will be denied.
8. DICTATION ACCESS [D-3]: BUSY VERIFICATION - CCIS will be denied to a station that is connected to a dictation Trunk, and the Attendant will hear Reorder Tone.
9. PAGING ACCESS - CCIS [P-28]: BUSY VERIFICATION - CCIS is denied when a station is connected to a Paging Trunk.
10. DATA PRIVACY ON DEMAND [D-17]: When this feature is activated by a user, the Attendant Console is denied BUSY VERIFICATION toward that station. This prevents disturbance of any ongoing data transmission.
11. STATION HUNTING (CIRCULAR [S-7], SECRETARIAL [S-8] or TERMINAL [S-9]): If an Attendant attempts to busy-verify a busy station in a Hunt Group, station hunting will take precedence over BUSY VERIFICATION - CCIS and the call will hunt. If all stations in the Hunt Group are busy, the called station will be busy-verified.
12. UNIFORM CALL DISTRIBUTION (UCD) [U-1]: An Attendant can busy-verify any station in a UCD Group, other than the Pilot, without causing a hunt. However, if BUSY VERIFICATION - CCIS is attempted to the Pilot station, UCD Hunting will take precedence over BUSY VERIFICATION - CCIS.
13. SIP Handler Controlled SIP terminals cannot hear Warning Tones.

Programming

STEP 1: **ASYD** - System Data 1, Index 60, Bit 5.

Is the Two-burst Warning Tone to be disabled? 0/1: No/Yes.

System Data 1, Index 68, Bit 4. Trunk Select (TKSL) key must be enabled.

Assign data "1".

System Data 1, Index 158. ATTCN Busy Verification Warning Tone Timer: the interval between Busy Verification Tones. ROM data is 14 sec.

System Data 2, Index 0, Bit 3, assign as data "1".

System Data 2, Index 0, Bit 4. On a per Tenant basis, assign data "1" to enable Busy Verification.

STEP 2: **ASFC** - For stations that permit BUSY VERIFICATION, assign a Class of Service that allows SFI 4 [Executive Right-of-Way (Called)] and SFI 11 (Attendant Camp-On). SFI 3[Executive Right-of-Way (Calling)] must be allowed for the Attendant's Service Feature Restriction Class (normally SFC 0) at all locations allowing the Attendant to use this feature.

STEP 3: **ATRK** - Assign the LENS as Route 909, Digital Conference Trunk. LENS consists of the following:

XX	X	XX	X
Module	Unit	Group	Level
Group			

Group and Level numbers for the Digital Conference Trunk are 210, 213, 216, 221, 224, 227, 232, and 235.

STEP 4: **ARTD** - When a station is connected to a Trunk, CDN 44:PRV of the Route must be assigned as data "0" for ATTENDANT OVERRIDE [A-7] to be allowed.

Note: To change the data for existing route (RT), initialize the circuit card.

B-10 Brokerage Hotline - CCIS

General Description

This feature provides a Hotline function between two stations at different Nodes in the CCIS Network, using a Line/Feature key of a Desktop terminal.

Operating Procedure

To access a BROKERAGE HOTLINE - CCIS from a Desktop terminal:

1. Lift the handset or press the SPEAKER key.
2. Press the Line/Feature key associated with a predetermined station in another Office. The destination station is automatically dialed; Ringback Tone is heard. The destination station answers.
3. After conversation is completed, hang up or press the RELEASE key.
4. To immediately make another BROKERAGE HOTLINE - CCIS Call, press another Line/Feature key associated with another station without going off-hook.

Service Conditions

1. A 16-Button Desktop terminal with an 24-Button Add-On Module attached is used for applications requiring at least 15 but fewer than 39 destinations. In this case, one of the 16 line buttons of the Desktop terminal must be assigned as the My-Line. The RELEASE key on the 24-Button Add-On Module can be used as the RELEASE key. Therefore, a maximum of 39 BROKERAGE HOTLINEs - CCIS can be used to access distant destinations.
2. Two 16-Button Desktop terminals connected via a 24-Button Add-On Module are used if between 40 and 52 destinations are required. One of the 16 Buttons on each Desktop terminal must be assigned as a My-Line. One of the remaining 15 Buttons on the Desktop terminals must be assigned as a RELEASE key. Therefore, a total of 52 BROKERAGE HOTLINEs - CCIS can be used to access distant destinations.
3. An AC Adapter is required for the 24-Button Add-On Module.
4. A BROKERAGE HOTLINE cannot be assigned to a Hunt group or UNIFORM CALL DISTRIBUTION [U-1] group.
5. When a BROKERAGE HOTLINE - CCIS Call is made, the Desktop terminal display shows the Destination Telephone Number but does not show the SERVICE DISPLAY - CCIS [S-53] of the BROKERAGE HOTLINE.
6. The My-Line of a Desktop terminal cannot be assigned as a BROKERAGE HOTLINE - CCIS.
7. The destination, by definition, must be a station or an Attendant Console at a different Node in the CCIS Network.
8. When the Destination is an Attendant Console, the BROKERAGE HOTLINE - CCIS Call terminates at an ATND key.
9. ATTENDANT CAMP-ON WITH TONE INDICATION [A-1] [A-45], CALL BACK [C-1] [C-44], and EXECUTIVE RIGHT-OF-WAY [E-1] [E-8] can be prohibited to the BROKERAGE HOTLINE - CCIS Connection through CLASS OF SERVICE - INDIVIDUAL [C-15].
10. When a destination station is busy, CALL BACK - CCIS [C-44], CALL WAITING - ORIGINATING [C-31], EXECUTIVE RIGHT-OF-WAY - CCIS [E-8], and MESSAGE REMINDER - CCIS [M-34] can be activated.
11. If the destination station is busy and is a member of a Hunt Group, the appropriate station hunting feature ([S-7] [S-8] [S-9]) will be activated.

12. If the destination station is busy and is a Pilot member of a UCD Group, the UCD function will be activated. If all stations in the UCD Group are busy, Ringback Tone will be heard, or if programmed, DELAY ANNOUNCEMENT - UCD [D-31] or OVERFLOW - UCD [O-13] will be invoked.
13. CALL FORWARDING - ALL CALLS [C-5] [C-45], CALL FORWARDING - BUSY LINE [C-2] [C-46], and CALL FORWARDING - DON'T ANSWER [C-3] [C-47] will take place if the destination station has set Call Forwarding.
14. A SIP Handler Controlled SIP terminal cannot be used as a Hotline station but it can be used as a destination of a Hotline station.

Programming

STEP 1: **ASDT** - Assign to a line circuit on 16LC card the following data:

TN: Tenant Number
STN: Station Number
LENS: Line Equipment Numbers (six digits)
TEC: Telephone Class (1-31)
1: DP (10 PPS)
2: PB
3: DP/PB
11: VMM
12: Dterm
13: Data Terminal via Dterm
→ 14: Hotline
15: CAS Line
16: Data Terminal via Data Module
18: Virtual Line Appearance (for Dterm Multi-Line)
19: TMM
20: PSM
23: ISDN Terminal
27: Eight Conference Equipment
RSC: Route Restriction Class (0-15)
SFC: Service Feature Restriction Class (0-15)

STEP 2: **AHLS** - Assign the station number programmed above for the following parameters:

HOT TN: Hotline Tenant Number
HOT STN: Hotline Station Number
TYPE: 2
CON ADC: Speed Calling Code

STEP 3: **AKYD** - Assign to a Desktop terminal a Line Appearance of the Hotline station number.

TN: 1

STN: Station Number

TP: Type of Dterm (0-3)

KYN: Key Number (1-16)

KYI: Service Index

0: Key Not Used

1: Feature Key

→ 2: Multi Line Key

KD: 0

RG: Ringing Assignment per Multi Line Appearance

0: No Ringing.

1: Ringing in Day mode only.

2: Ringing in Night mode only.

3: Not Used

4: Ringing in Day and Night Mode - 30 second delay.

5: Ringing in Day and Night Mode - 20 second delay.

6: Ringing in Day and Night Mode - 10 second delay.

7: Ringing in Day and Night Mode.

STEP 4: **ASPD** - Enter Tenant Number (TN), Abbreviated Digit Code (ADC), and Called Number (CD).

STEP 5: **ASFC** - Primary station and Hotline must be allowed access to ASPD, SFI = 12 (Speed Calling System).

C-44

Call Back - CCIS

General Description

This feature allows an Inter-Office Call Back when the calling station and the called station respectively belong to a different System in the CCIS Network.

Call Back-CCIS works in the same operation with [C-1] Call Back feature by assigning the system data ASYDL/ASYDN SYS1 Index 895 bit5=1 on the CCIS node where called station belongs.

Operating Procedure

- To set (using an access code)
 1. Dial the desired Telephone Number. Receive Busy Tone.
 2. Perform a hooking.
 3. Receive Special Dial Tone.
 4. Dial the CALL BACK - CCIS access code.
 5. Receive Service Set Tone.
 6. Hang up and wait.
- To set (using the CALL BACK Feature key)
 1. Dial the desired Telephone Number. Receive Busy Tone.
 2. Press the CALL BACK Feature key.
 3. Receive Service Set Tone.
 4. Hang up and wait.
- To call back and answer (when ASYDL/ASYDN SYS 1 Index 895 Bit 5= 0 is set)
 1. The called station hangs up the phone.
 2. The calling station and the called station ring at the same time.
 3. The calling station lifts the handset.
 4. The calling station receives Ring Back Tone.
 5. The called station lifts the handset.
 6. The call is established.
- To call back and answer (when ASYDL/ASYDN SYS 1 Index 895 Bit 5= 1 is set)
 1. The called station hangs up the phone.
 2. The calling station rings.
 3. The calling station lifts the handset.
 4. The calling station receives Ring Back Tone.
 5. The called station rings.
 6. The called station lifts the handset.
 7. The call is established.

- To cancel (using an access code)
 1. Lift the handset.
 2. Dial the cancellation access code.
 3. Receive Service Set Tone.
 4. Hang up the phone.
- To cancel (using the CALL BACK Feature key)
 1. Lift the handset.
 2. Press the CALL BACK Feature key.
 3. Receive Service Set Tone.
 4. Hang up the phone.

Service Conditions

1. If CALL BACK is not answered within 30 seconds, or the timer interval in ASYD Index 139, ringing will stop and the CALL BACK will automatically be cancelled.
2. CALL BACK to a busy station cannot be established if the station is in the LINE LOCKOUT [L-3] mode.
3. There is no time limit for CALL BACK once activated. It will remain in status memory until it is manually cancelled or it ends normally.
4. CALL BACK can be set only to one station at a time.
5. A station cannot set CALL BACK and OUTGOING QUEUING [O-2] at the same time.
6. When the calling station is called back, STATION HUNTING [S-7, S-8, S-9] and CALL PICKUP [O-7] programming will be ignored.
7. CALL BACK activation is denied if a call is waiting at the calling or called station line (CALL WAITING FEATURE [C-12, C-31]).
8. CALL BACK [C-1] is assigned via CLASS OF SERVICE [C-15].
9. There is no limit to the number of stations that can access this feature simultaneously.
10. A station that has set CALL BACK - CCIS can originate and receive calls while this feature is active.
11. Reorder Tone will be returned to a station attempting to set CALL BACK - CCIS if:
 - a.) The calling or called station has set CALL BACK - CCIS, OUTGOING TRUNK QUEUING [O-2, O-12], or has a Call Waiting or camped-on.
 - b.) The calling or called station is activating CALL HOLD [C-6].
12. If the Calling Party waits off-hook after setting CALL BACK - CCIS, Service Set Tone will be heard until the Called Party becomes idle. Ringback tone will then be heard until the called party answers.
13. If the Called Party goes on-hook while the calling station is busy, both parties will be rung simultaneously when the calling station becomes idle.
14. If the Calling Party goes on-hook while the called station is busy, both parties will be rung simultaneously when the calling station becomes idle.
15. If any of the following features have been activated by the Calling or Called Party, CALL BACK - CCIS is denied:

CALL BACK	[C-1] [C-44]
ATTENDANT CAMP-ON WITH TONE INDICATION	[A-1] [A-45]
CALL HOLD	[C-6]
CALL WAITING - TERMINATING	[C-12]
BUSY VERIFICATION	[B-3] [B-9]

BOSS - SECRETARY OVERRIDE	[B-5]
EXECUTIVE RIGHT-OF-WAY	[E-1] [E-8]
OFF-HOOK QUEUING	[O-7] [O-11]
OUTGOING TRUNK QUEUING	[O-2] [O-12]

16. Depending on the setting of ASYDL/ASYDN SYS 1 Index 895 Bit 5 in the node where the called station is accommodated, the call back behaves differently as shown below:

- When ASYDL/ASYDN SYS 1 Index 895 Bit 5=0 is set

The calling station and the called station ring at the same time.

- When ASYDL/ASYDN SYS 1 Index 895 Bit 5=1 is set or the called station is accommodated in SV9300/SV8300/NEAX2000 IPS

When the called station hangs up the phone, the calling station rings. After that, when the calling station lifts the handset, the called station rings (same operation as CALL BACK [C-1]).

17. When a Call Forwarding feature is enabled in a called station:

Note: When a calling station which sets CALL BACK-CCIS is accommodated in SV9300/SV8300/NEAX2000 IPS, CALL BACK-CCIS behaves in the same manner as when ASYDL/ASYDN SYS1 Index 895 bit5=0.

(Additional Explanation)

In a case where the calling station and the called station are accommodated in the following nodes respectively:

Calling station accommodating node: SV9500

Called station accommodating node: SV9300

When CALL FORWARDING - ALL CALLS [C-5] or LOGGED OUT IP STATION - CALL DESTINATIONS [L-53] is enabled in the called station, CALL BACK-CCIS is set to the call forwarding destination. When CALL FORWARDING - BUSY LINE [C-2] is enabled in the called station, CALL BACK-CCIS is set to the called station.

- When ASYDL/ASYDN SYS1 Index 895 bit5=0:

If CALL FORWARDING -ALL CALLS [C-5] or LOGGED OUT IP STATION - CALL DESTINATION [L-53] is enabled in the called station, CALL BACK-CCIS is not set to the call forwarding destination. The called station rings instead.

If CALL FORWARDING -BUSY LINE [C-2] is enabled in the called station, CALL BACK-CCIS can be set in the following condition.

	State	Call Forwarding Destination	
		Busy	Idle
Called Station	Busy	X	N
	Idle	N	N

X: CALL BACK-CCIS can be set to the called station.

N: CALL BACK-CCIS cannot be set.

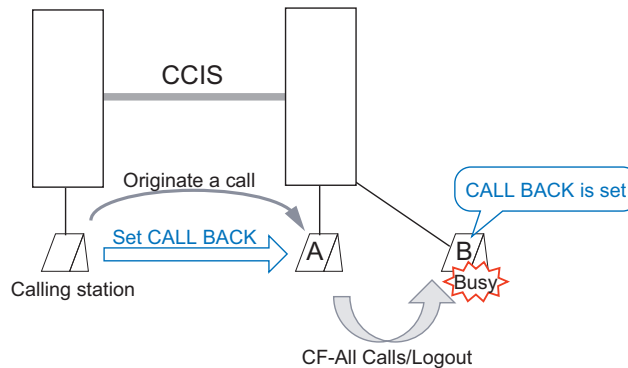
If CALL FORWARDING - PS INCOMING INCOMPLETE [C-155] is enabled in the called station, CALL BACK-CCIS cannot be set.

- When ASYDL/ASYDN SYS1 Index 895 bit5=1:

When the call forwarding destination is a station within the node, CALL BACK-CCIS works as follows. When the call forwarding destination is a station outside the node, CALL BACK-CCIS is restricted and does not work.

(a) Call Forwarding-All Calls/Logged Out IP Station-Call Destination

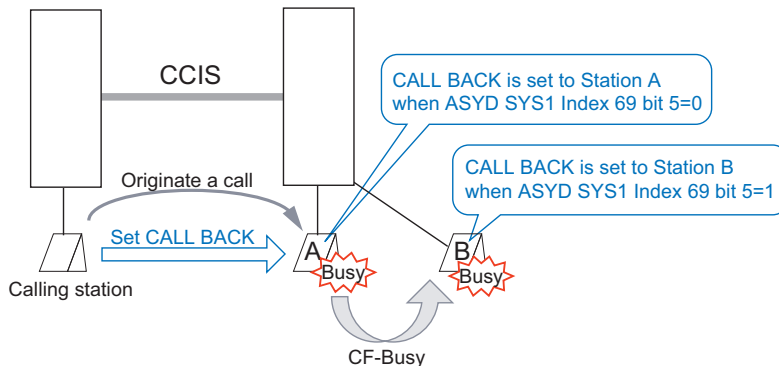
When called station (Station A) sets Call Forwarding-All Calls/Logout and the forwarded destination (Station B) is in busy, CALL BACK is set at Station B:



Note: Take note that CALL BACK-CCIS does not work on a called station having set Call Forwarding-All Calls to any station across the node.

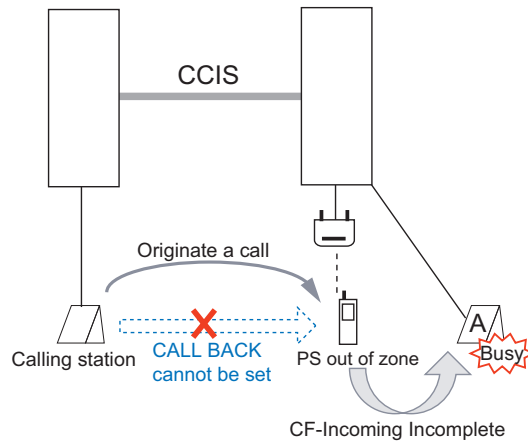
(b) Call Forwarding-Busy Line

When called station (Station A) sets Call Forwarding-Busy Line and the forwarded destination (Station B) is in busy, CALL BACK target is determined depending on the system data setting (ASYD SYS1 Index 69 bit5=0/1):



(c) Call Forwarding-PS Incoming Incomplete

When called PS/VoWLAN dual terminal/WLAN Handset (out of zone) sets Call Forwarding-PS Incoming Incomplete and the forwarded destination (Station A) is in busy, calling station cannot set CALL BACK:



18. When using this feature through the CCIS network, the number of digits to be delivered to the network must be eight or less. If the number of digits is nine or more, this feature does not work. In CCIS Network via IP (by PHC), a maximum of 16 digits to be delivered is available. For the data setting, refer to the “Programming” of “1. CCIS Networking via IP (By PHC)” in CCIS Networking via IP [C-163] service.

Note: When the related System Data (ASYDL/ASYDN SYS1 Index 1131 bit 4) are set invalid at any of the nodes in a CCIS network, and nine or more digits are used, this service does not work. When the System Data in the intermediate node is invalid, the message “CALL BACK” will still be displayed for a few seconds on the station that CALL BACK - CCIS [C-44] is set to. However, the service will not actually be set.

Note: When different software versions coexist in a CCIS network, and nine digits or more are used, this service cannot be activated.

Note: When using nine or more digits, System Data (ASYD SYS1 Index 390 bit2=1: Caller ID display on the bottom line of Desktop terminal LCD) should be assigned.

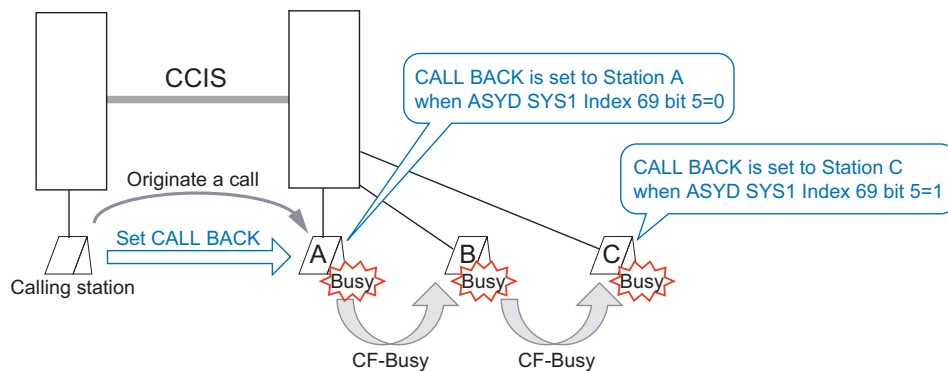
19. CALL BACK-CCIS setting to/from ISDN terminal, PS, VoWLAN dual terminal, and WLAN Handset (MH Series) is not supported.

*The following conditions are applied to when ASYDL/ASYDN SYS1 Index 895 bit5=1 is assigned.

20. When the busy called station hangs up, CALL BACK-CCIS set station is called back and lifts the handset, then called station starts ringing (the same operation with [C-1] CALL BACK).
21. The nodes where both calling and called stations belong require assignment of SYS1 Index 895 bit5=1. Also intermediate nodes do, if exist.
22. CALL BACK procedure when the called station uses an analog telephone:
When the called station goes off-hook while the calling station is called back, the called station hears Ringback Tone. Then, when the calling station answers the call back, both stations are connected to.
23. CALL BACK procedure when the called station uses a Desktop terminal:
 - (a) When the called station goes off-hook while the calling station is called back, the called station cannot seize My Line of the Desktop terminal.
 - (b) The station accommodating the called station as its Sub Line cannot seize the called station's line until the calling station answers the call back. Calling station keeps ringing.
24. CALL BACK procedure in multiple-hop Call Forwarding

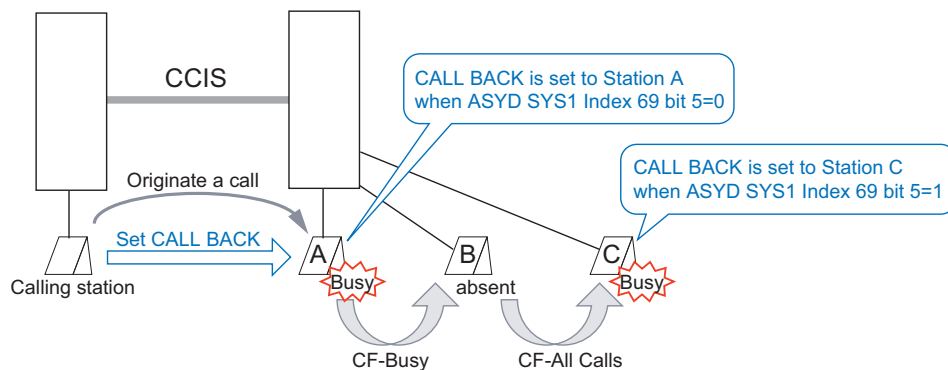
- (a) Call Forwarding-Busy Line → Call Forwarding-Busy Line → Busy

CALL BACK target station is determined by system data setting (SYS1 Index 69 bit5), whether the first forwarded station (Station A) or station in busy state (Station C) is to call back.



- (b) Call Forwarding-Busy Line → Call Forwarding-All Calls → Busy

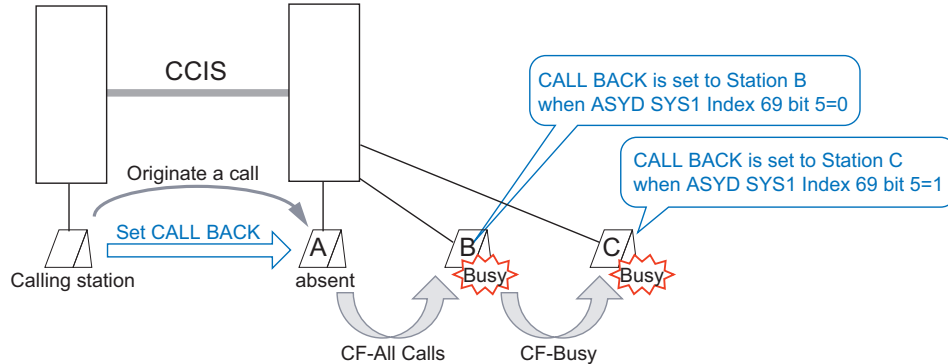
CALL BACK target station is determined by system data setting (SYS1 Index 69 bit5), whether the first forwarded station (Station A) or station in busy state (Station C) is to call back:



- (c) Call Forwarding-All Calls/Logout → Call Forwarding-Busy Line → Busy

CALL BACK target station is determined by system data setting (SYS1 Index 69 bit5), whether the Call Forwarding-Busy Line setting station (Station B) or the last forwarded destination in busy state (Station C) is to call back.

**Call Forwarding-All Calls setting station (Station A) is skipped.*



25. CALL BACK procedure on encountering link block:

- When CCIS/IPPAD/FCCS speech channels are all busy when the called station is released: Calling station is not called back and CALL BACK-CCIS setting continues. When the speech channel becomes idle, call back is executed after the calling/called stations go off-hook and on-hook. For additional information, CCIS/FCCS speech channel is reserved on executing call back, so any pattern of call back would not come across all busy after executing call back.
- When IPPAD channels are all busy when calling back the called station: In the patterns to require IPPAD seizure on Sub-Line/Call Pickup answering, line cannot be seized and the call back comes across busy because the answering operation cannot be executed. When the called station answers on My Line, the call back can be executed as IPPAD has been already reserved.

26. CALL BACK procedure in IP network failure/Bandwidth over:

After setting CALL BACK-CCIS, if IP network failure or bandwidth over occurs, CALL BACK cannot be executed to the calling station and CALL BACK-CCIS setting continues.

However, when called stations go off-hook and on-hook is done in IP network failure/Bandwidth over, CALL BACK is canceled.

After IP network recovering, when the calling/called stations go off-hook and on-hook, CALL BACK is executed.

27. CALL BACK procedure when Telephony Server is initialized:

- When the node where calling station belongs is initialized after setting CALL BACK-CCIS: CALL BACK-CCIS setting on the calling station is canceled. CALL BACK-CCIS setting on the called station is canceled by on-hook and off-hook operation.
- When the node where called station belongs is initialized after setting CALL BACK-CCIS: CALL BACK-CCIS setting on the called station is canceled. CALL BACK-CCIS setting on the calling station is canceled by on-hook and off-hook operation.

28. Call Forwarding after setting CALL BACK-CCIS:
 - (a) When Call Forwarding-All Calls/Busy Line/Logged Out is set after setting CALL BACK, the called station is supposed to be the called back target (Call Forwarding turns invalid).
 - (b) When Call Forwarding-Don't Answer is set on the calling/called station of CALL BACK, Call Forwarding is not activated for the called back call.
29. Depending on the network configuration, if a station has CALL BACK-CCIS set, My Line may light red in the following situations:
 - (a) When the station goes on-hook after setting CALL BACK-CCIS.
 - (b) When a station which has set CALL BACK-CCIS recovers from busy status.

Interactions

1. OUTGOING TRUNK QUEUING [O-2] and CALL BACK - CCIS cannot be accessed simultaneously.
2. System Data 1, Index 139. No Answer Timer is also used for station-to-station call, DID, or TIE Line Call for CALL FORWARDING - DON'T ANSWER [C-47] and CALL HOLD [C-6].
3. CALL WAITING - ORIGINATE [C-31] automatic setting and CALL BACK - CCIS are mutually exclusive.
4. CALL BACK - CCIS cannot be activated toward the Attendant Console.
5. CALL BACK - CCIS cannot be activated when using CONSULTATION HOLD [C-17].
6. CALL HOLD [C-6]: Activation of CALL BACK - CCIS is not allowed if the calling or called station has a party on CALL HOLD [C-6]. CALL BACK - CCIS can be activated to a Desktop terminal that is holding a call or is being held via EXCLUSIVE HOLD [E-4D] or NON-EXCLUSIVE HOLD [N-7D].
7. When CALL FORWARDING - ALL CALLS [C-5] has been set from Station A to Station B, and Station B is busy, the Call Back feature will be set to Station A.
8. For the CALL BACK-CCIS setting to the station in STATION HUNTING group, CALL BACK is set to the station dialed by the calling station.
9. To operate this feature from a SIP Handler Controlled SIP terminal, perform the one digit dial hooking operation while hearing Busy Tone (BT) and dial the access code for this feature. To receive IP-DTG tone, enable IP-DTG with the AUACL/AUACN command.

Programming

[1] Programming on Calling Station

- STEP 1: **ASYD** - System Data 1, Index 139. No Answer Timer for CALL BACK - CCIS. Assign 00H. (RAM Data is 3FH = 30 seconds.)
System Data 2, Index 0, Bit 0. Is CALL BACK - CCIS enabled on a per tenant basis? 0/1: No/Yes.
System Data 2, Index 4, Bit 0. Are CALL BACK - CCIS and OUTGOING TRUNK QUEUING - CCIS [O-12] Access Codes the same or separate? 0/1: Separate/Same.
System Data 3, Index 3, bit 5. Enable Ringer pattern 5 for CALL BACK - CCIS. See DISTINCTIVE RINGING [D-10] in Data Programming Manual - Business.
System Data 3, Index 7. Assign data 42H for four seconds on, two seconds off.
System Data 1, Index 69, Bit 5. ATTENDANT CAMP-ON WITH TONE INDICATION 0/1 = Set to Forwarded-from Station/Set to Forwarded-to Station
- STEP 2: **ANPD** - Reserve a number level for feature access and cancel. Select Normal Service (N), Hooking Service (H), or Busy Service (B) from the combo box for Connection Indexes. Assign NND in accordance with a predetermined Numbering Plan.
- STEP 3: **ASPA** - Assign an access code to CALL BACK - CCIS entry, SRV = "SSC: Service Code", SID = 3 and a Connection Status Index (CI) for "B: Busy". For CALL BACK CCIS cancel, SRV = "SSC: Service Code", SID = 6. Assign a CI for "N: Normal".
- STEP 4: **ASFC** - Assign SFI 2 to stations allowed Call Back- CCIS.
- STEP 5: **AKYD** - For some Desktop terminal sets, CALL BACK - CCIS may be assigned to a programmable Line/Feature key. Assign Feature key Call Back.
- STEP 6: **ADSL** - Assign CB key; Assign SN3 (Called Station Busy) and Feature key Call.
This command is used for assigning a function to each soft key.
- STEP 7: **ATNR** - Allow Tenant Restriction Index (TRI) 0, station-to-station calling for inter and intra-tenant connections.

[2] Programming on Called Station

- STEP 1: **ASYD** - System Data 1, Index 69, Bit 5. CALL BACK-CCIS target when forwarded destination is busy. 0/1: Call Forwarding set station/Call Forwarding destination station
- STEP 2: **ASYDL/ASYDN** - System Data 1, Index 895, Bit 5 = 1: To activate CALL BACK-CCIS in the same operation with CALL BACK [C-1]
- STEP 3: **ASFC** - Assign SFI 2 to stations allowed CALL BACK-CCIS.

C-45 Call Forwarding - All Calls - CCIS

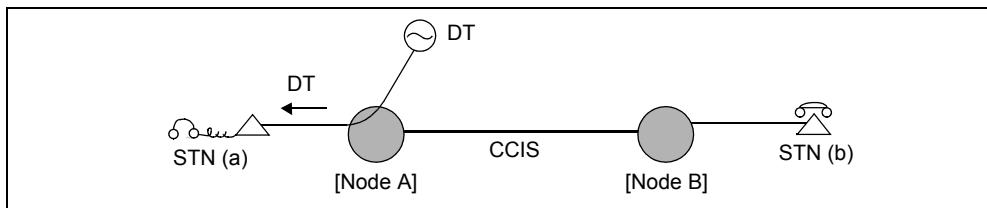
General Description

This feature allows Inter-Office CALL FORWARDING - ALL CALLS when the transferring station and the transferred station, respectively, belong to a different System in the CCIS Network.

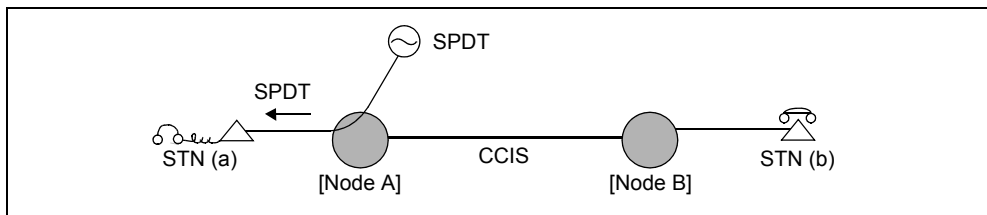
Operating Procedure

When setting Call Forwarding - All Calls Service with entry Access Code: **Note 1**

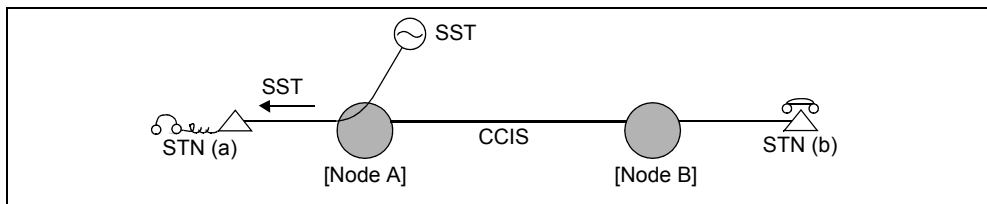
1. Station A goes off-hook. Receives Dial Tone.



2. Station A dials the entry Access Code for CALL FORWARDING - ALL CALLS. Receives Special Dial Tone.

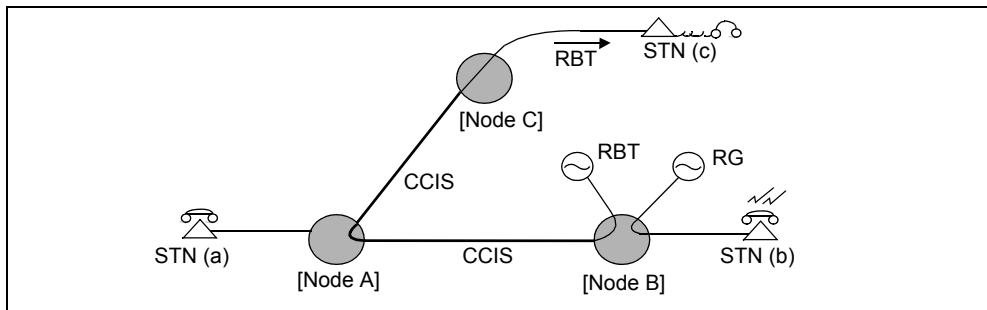


3. Station A dials the number for the designated Station B. Receives Service Set Tone.

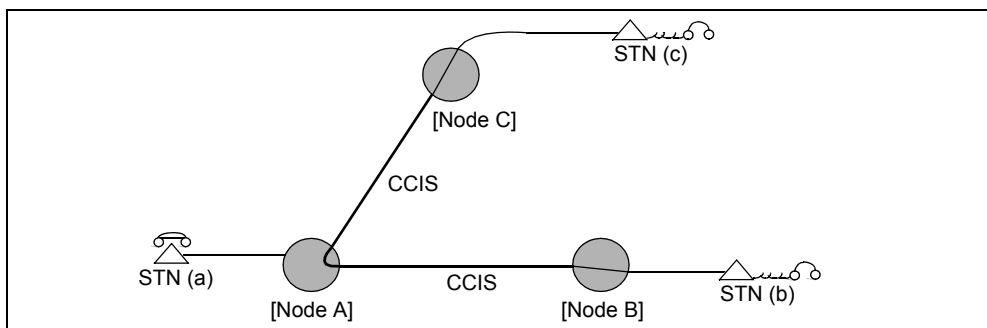


4. Station A hangs up.

- Station A is called from Station C. The call is automatically transferred to Station B, which Station A has designated as the Call Destination. Station C receives Ringback Tone; Station B is rung.



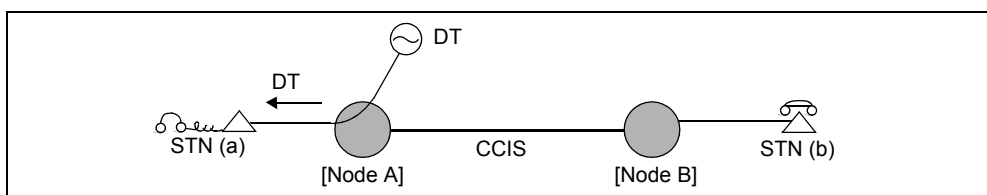
- Station B answers. Stations B and C are connected with each other.



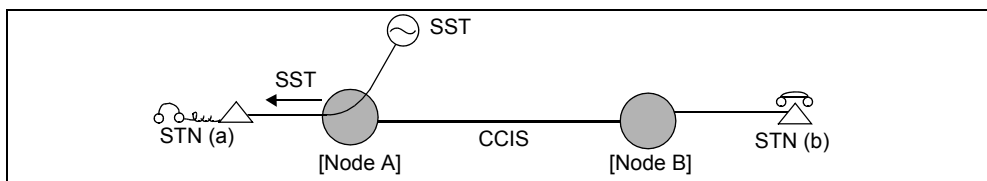
Note 1: A tone will not be provided when an access code is used to set this feature on SP Controlled Standard SIP terminal.

When canceling Call Forwarding - All Calls Service with entry Access Code: **Note 2**

- Station A goes off-hook. Receives Dial Tone.



- Station A dials the entry Access Code of Call Forwarding - All Calls. Receives Service Set Tone.

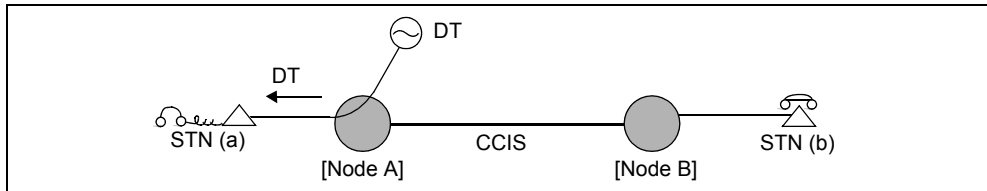


3. Station A hangs up.

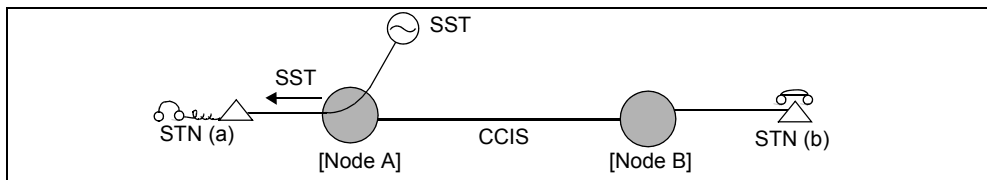
Note 2: Available from FP95-114 V4 Issue 2.0 with system data ASYDL, SYS1, Index 686, Bit 0=1.

When canceling Call Forwarding - All Calls Service with cancel Access Code:

1. Station A goes off-hook. Receives Dial Tone.



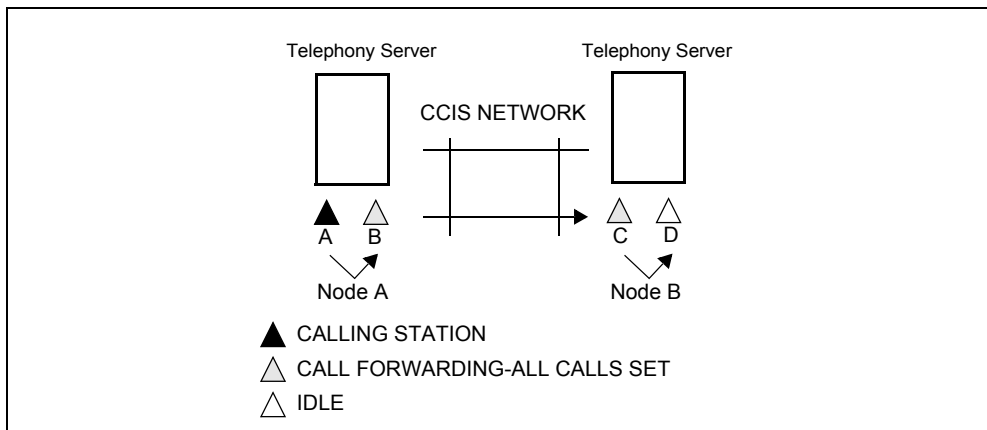
2. Station A dials the cancel Access Code of Call Forwarding - All Calls. Receives Service Set Tone.



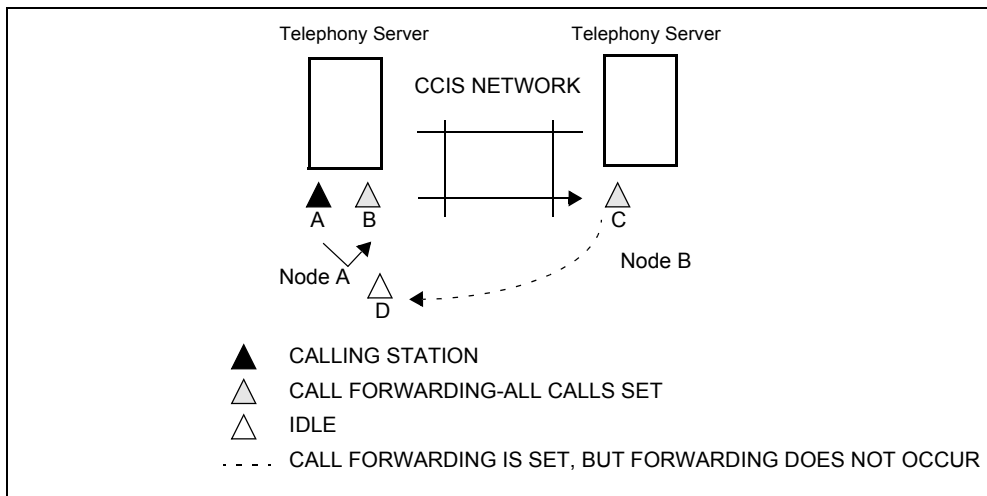
3. Station A hangs up.

Service Conditions

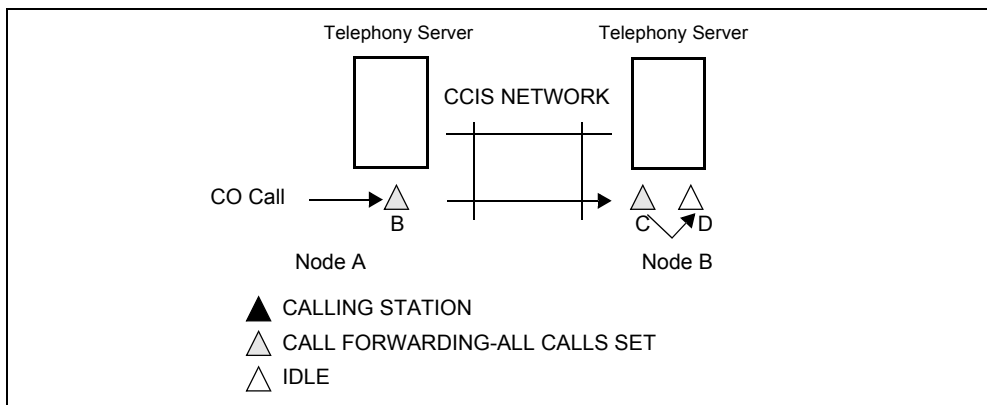
1. You can specify up to 24 digits as a whole number of a forwarded station.
2. Stations with this feature set may originate calls and access the CALL FORWARDING - ALL CALLS Cancel Code.
3. There is no limitation to the number of stations which can set CALL FORWARDING - ALL CALLS simultaneously.
4. When a call is directed to a forwarded station, a one-burst Ringing Signal will be sent to the station to indicate that it is CALL FORWARDED.
5. Stations activating CALL FORWARDING - ALL CALLS may be restricted from placing any calls except to the Attendant. (this is an optional, programmable feature). ASYD, System Data 2, Index 6, Bit 4.
6. When the operator answers a FORWARDED Call, System Data programming can provide a Called Telephone Number Display on the ATTENDANT CONSOLE [A-3].
7. CALL FORWARDING - ALL CALLS- CCIS is assigned to a station via CLASS OF SERVICE - INDIVIDUAL [C-15] programming.
8. When CALL FORWARDING - ALL CALLS - CCIS is used, the following conditions exist:
 - a.) Station A calls Station B. Station B is set to CALL FORWARDING - ALL CALLS - CCIS to Station C. Station C is set to CALL FORWARDING - ALL CALLS to Station D. CALL FORWARDING - ALL CALLS occurs to Station D.



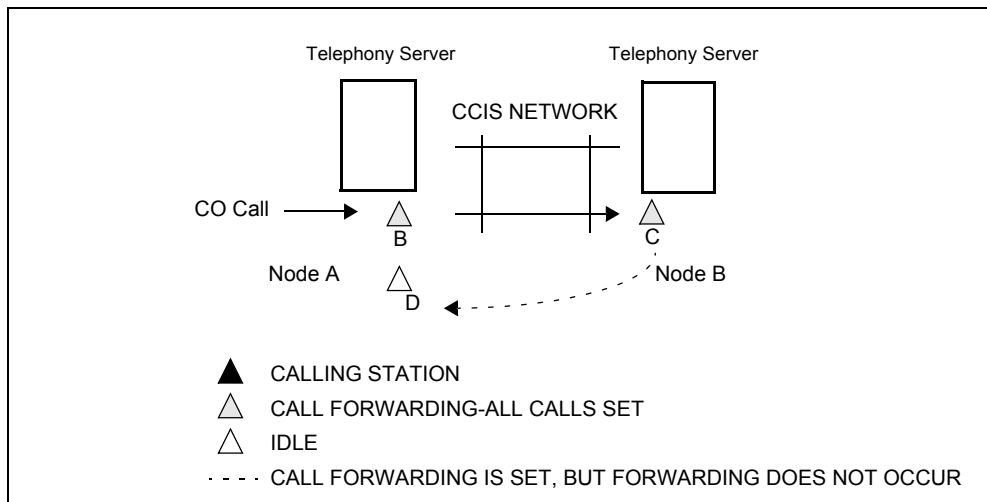
- b.) Station A calls Station B. Station B is set to CALL FORWARDING - ALL CALLS - CCIS to Station C. Station C is set to CALL FORWARDING - ALL CALLS - CCIS to Station D. CALL FORWARDING - ALL CALLS - CCIS does not occur to Station D. If Station C is idle, Station C will ring.



- c.) A Central Office Call is directed to Station B. Station B is set to CALL FORWARDING - ALL CALLS - CCIS to Station C. Station C is set to CALL FORWARDING - ALL CALLS to Station D. CALL FORWARDING - ALL CALLS occurs to Station D.



- d.) A Central Office Call is directed to Station B. Station B is set to CALL FORWARDING - ALL CALLS - CCIS to Station C. Station C is set to CALL FORWARDING - ALL CALLS - CCIS to Station D. CALL FORWARDING - ALL CALLS - CCIS does not occur to Station D. If Station C is idle, Station C will ring.



9. CALL FORWARDING - ALL CALLS - CCIS can be set or cancelled by a user or an Attendant.
10. Any number of stations can set CALL FORWARDING - ALL CALLS - CCIS to the same forwarded-to station.
11. The display of the Forwarded-to Telephone Number on the LCD of the Forwarding Desktop terminal can be allowed or denied in system programming, on a system-wide basis.
12. When a call is directed to a forwarded-to station, one burst of ringing can be sent to the forwarding single-line station to indicate that it is Call Forwarded.
13. When calls are forwarded to the Attendant Console, the INCOMING CALL IDENTIFICATION [I-2] feature allows the Attendant to identify the call as a forwarded call.
14. If ATTENDANT CAMP-ON WITH TONE INDICATION [A-1] [A-45] is directed to a station that is forwarded to a busy station in a Hunt Group, the call hunts for an idle station. If all stations in the Hunt Group are busy, the call is camped-on to the Forwarded-to station.
15. CALL FORWARDING - ALL CALLS - CCIS can be overridden, allowing the forwarded-to station to Initiate or Transfer Calls to the forwarding station.
 - a.) The idle forwarding station can be reached by the forwarded-to station, using CALL FORWARDING OVERRIDE - CCIS [C-49].
 - b.) A busy forwarding station receives Call Waiting treatment when the designated station calls directly or when EXECUTIVE RIGHT-OF-WAY - CCIS [E-8] is used.
 - c.) When CALL FORWARDING - ALL CALLS - CCIS is set to the Attendant Console, the Attendant cannot reach the forwarding station using the override capability
16. When EXECUTIVE RIGHT-OF-WAY [E-1] [E-8] is initiated to a station, which has set CALL FORWARDING - ALL CALLS - CCIS, EXECUTIVE RIGHT-OF-WAY - CCIS [E-8] terminates at the forwarded-to station.
17. If a called station has set Call Forwarding, and the forwarded-to station is listening to a tone being rung, or has set CALL WAITING [C-12], CALL BACK [C-44], OUTGOING TRUNK QUEUING [O-2] [O-12], or THREE-WAY CALLING [T-2], the calling station cannot use EXECUTIVE RIGHT-OF-WAY - CCIS [E-8] to access the forwarded-to station. If attempted, the calling station will receive Reorder Tone.

18. When OUTGOING TRUNK QUEUING - CCIS [O-12] is provided, the forwarding station can use one of the Call Forwarding features and OUTGOING TRUNK QUEUING - CCIS [O-12] at the same time. Ringback Tone is sent to the forwarding station and not to the forwarded-to station.
19. A call forwarded to a busy station that is allowed CALL WAITING [C-12] waits at the forwarded-to station, provided that the forwarded-to station is in a two-way conversation and no other call is waiting.
20. When a station that is Call Forwarded uses the CALL BACK - CCIS [C-44] feature, the automatic call back rings to the forwarding, not the forwarded-to, station.
21. If any of the following restrictions are in effect at a forwarded-to station, Incoming Trunk Calls to the forwarding station will not be Call Forwarded (Intercept Arrangements will apply):
 - a.) Fully restricted station
 - b.) Station restricted from Outgoing Calls
 - c.) Toll restricted station
22. When a station in a Hunt Group sets CALL FORWARDING - ALL CALLS - CCIS, it is temporarily removed from the Hunt Group.
23. When the Pilot station of a UNIFORM CALL DISTRIBUTION (UCD) [U-1] Group sets CALL FORWARDING - ALL CALLS - CCIS, only calls to the Pilot Number are Forwarded.
24. If the forwarding station is the Pilot station of a UCD Group and the forwarded-to station is idle, a call to the UCD Group is routed immediately to the forwarded-to station. If the forwarded-to station is busy, the calling station will receive Busy Tone.
25. If a station in a UCD Group sets CALL FORWARDING - ALL CALLS - CCIS, it is temporarily removed from the group.
26. When a call is forwarded, the Telephone Number recorded in the STATION MESSAGE DETAIL RECORDING (SMDR) [S-10] is the forwarded-to station.
27. When receiving an incoming call via CCIS line in consequence of multi-hop routing, transferring direction is restricted to CCIS line.
28. A tone will not be provided when an access code is used to set this feature on SP Controlled Standard SIP terminal.
29. The station number of forwarded-from station will not be displayed on the LCD of the forwarded-to station when the number of forwarded-from station is more than 7 digits.
30. By registering the Call Forwarding - All Calls Access Code + the desired Forwarding Destination Number to the CF Setting button of a Line/Feature key on a Desktop terminal, it is possible to enable and disable CALL FORWARDING-ALL CALLS-CCIS [C-45] just by pressing the CF Setting button. For a detailed explanation, see CALL FORWARDING (CF) BUTTON - ONE TOUCH [C-208] in Business Features chapter of Data Programming Manual - Business.

Note: CALL FORWARDING (CF) BUTTON - ONE TOUCH [C-208] is available from FP95-114 V4 Issue 2.0.

Interactions

1. Users are unaccustomed to hearing Ringback Tone when responding to their own station's ring. Be sure to inform them when providing Ringback Tone with CALL FORWARDING - ALL CALLS - CCIS in System Data 1, Index 69, Bit 1.
2. Call Forwarding can only be activated from an idle station.
3. When CALL WAITING [C-12, 31], ATTENDANT CAMP-ON WITH TONE INDICATION [A-45], and CALL BACK [C-44] is directed toward Station A with Call Forwarding set to Station B, Station B will receive Call Waiting Tone.
4. When a station in a Hunt Group initiates CALL FORWARDING - ALL CALLS - CCIS, calls normally destined for this station will not be received. The Hunt Group operates as if the station were busy.
5. A Non-Controlling UCD station is allowed to activate Call Forwarding. With this station call forwarded, only Directly-dialed Calls to this station are Call Forwarded. The member station is removed from the UCD Group under the conditions of this Call Forwarding feature.
6. When CALL FORWARDING - ALL CALLS - CCIS is in effect, the activating station may be used to originate calls. See System Data 2, Index 6, Bit 4.
7. When a station is Call Forwarded, the destination station is recorded STATION MESSAGE DETAIL RECORDING (SMDR) [S-10].
8. CALL FORWARDING - ALL CALLS - CCIS can be overridden allowing Station B to initiate or transfer calls back to station.

Programming

- STEP 1: **ASYD** - System Data 1, Index 4, Bit 6. One burst of ringing at forwarding station when CALL FORWARDING - ALL CALLS - CCIS is in service? 0/1: No/Yes.
System Data 1, Index 69, Bit 1. A burst of Ringback Tone to alert the person receiving a call that this is a CALL FORWARDING - ALL CALLS - CCIS Call. In service? 0/1: No/Yes. Normally assigned as data "0".
System Data 2, Index 6, Bit 4. Enable stations set for CALL FORWARDING - ALL CALLS - CCIS be allowed to use their phones normally. If data "0" is assigned, the station will only be able to call the Attendant Console. Assign on a per Tenant basis.

- STEP 2: **ASYDL/N** - SYS1, Index 686, Bit 0=1.
Disabling Call Forwarding - All Calls with entry Access Code is in service.

Note: Available from FP95-114 V4 Issue 2.0.

- STEP 3: **ANPD** - Reserve a Number Level for Feature Access and Cancel (**Note 3**). Select Normal Service (N), Hooking Service (H), or Busy Service (B) from the combo box for Connection Indexes. Assign NND in accordance with a predetermined Numbering Plan.
- STEP 4: **ASPA** - Assign an Access Code to CALL FORWARDING - ALL CALLS - CCIS entry, SID = 8 and to CALL FORWARDING - ALL CALLS cancel SID = 9 (**Note 3**). Assign Connection Status Index (CI) for "N: Normal".

Note 3: When SYS1, Index 686, Bit 0=1 (Disabling Call Forwarding - All Calls with entry Access Code is in service), Call Forwarding - All calls cancel is not required because the cancellation can be performed with the entry Access Code.

- STEP 5: **ASFC** - Assign a Service Feature Restriction Class that allows SFI 7 to the stations that activate Call Forwarding-All Calls - CCIS.
- STEP 6: **AKYD** - For Desktop terminals, CALL FORWARDING - ALL CALLS - CCIS may be assigned to a programmable Line/Feature key. Assign Feature Access Call Forwarding - All Calls [2].
- STEP 7: **ADSL** - Assign a FDA key. Assign SN 1 (Originating; DT Connection) and Feature key (Call Forwarding - All Calls [2]).
This command is used for assigning a function to each Soft key.
- STEP 8: **ATNR** - Allow Tenant-to-Tenant Connection for Inter and Intra-Tenant Connections. Assign Tenant Restriction Index (TRI) = 1. For this feature to be set by the Attendant Console, assign Inter and Intra-Tenant Connection via the Attendant Console. TRI = 3.
- STEP 9: **ACFS** - CALL FORWARDING can also be assigned in this command.

C-46 Call Forwarding - Busy Line - CCIS

General Description

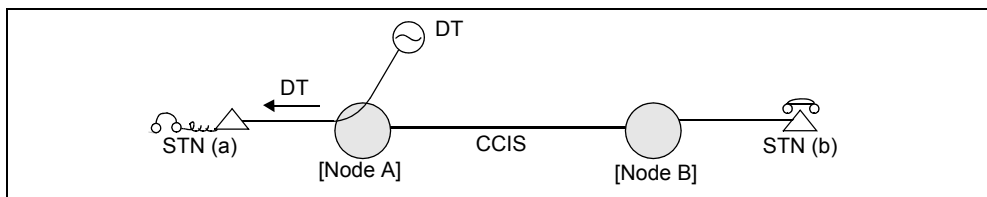
This feature allows Inter-Office Call Forwarding - Busy Line for a case where the transferring station and the transferred station respectively belong to a different System in the CCIS Network.

Operating Procedure

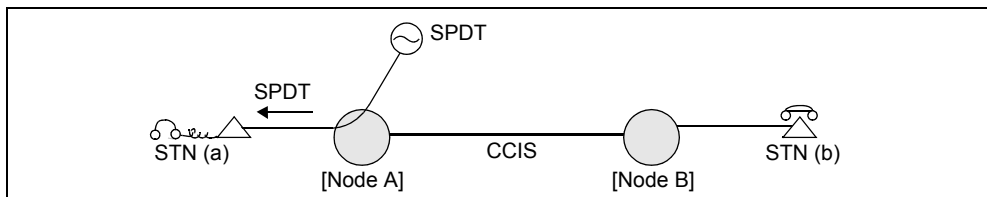
When setting Call Forwarding - Busy Line Service **Note 1**

Note 1: A tone will not be provided when an access code is used to set this feature on SP Controlled Standard SIP terminal.

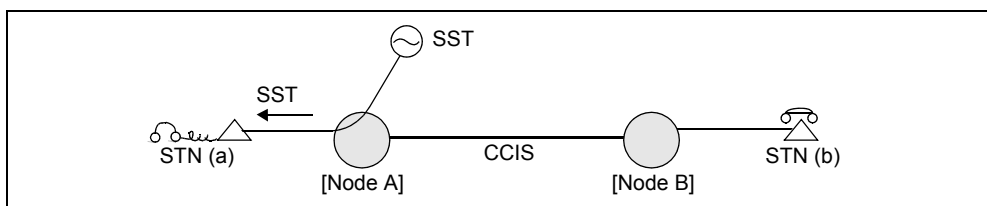
1. Station A goes off-hook. Receives Dial Tone.



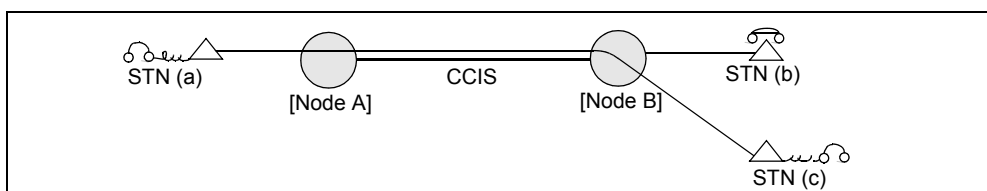
2. Station A dials the Access Code for Call Forwarding - Busy Line. Receives Special Dial Tone.



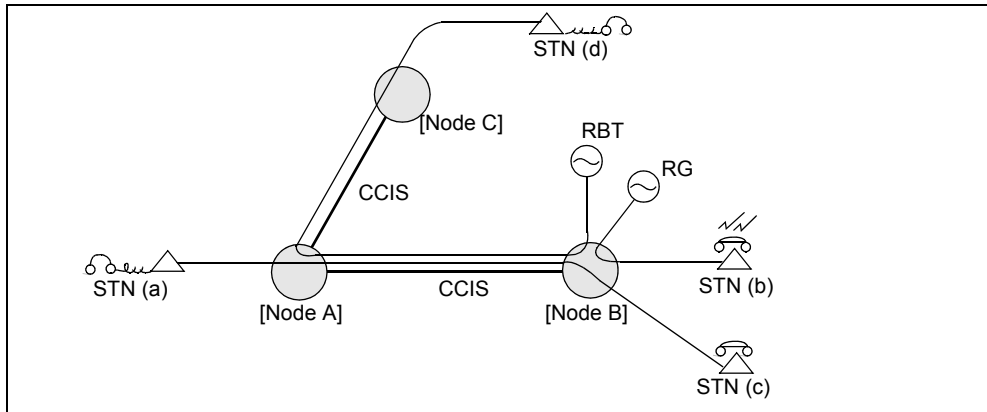
3. Station A dials the number for the designated Station B. Receives Service Set Tone.



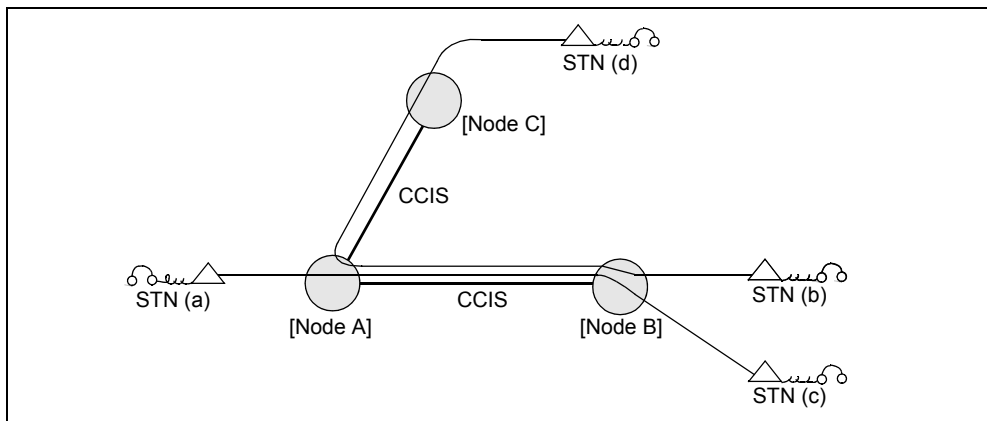
4. Station A hangs up.
5. Station A is engaging in a call with Station C through a CCIS Line.



6. Station A is called from Station D through a CCIS Line. The call is automatically transferred to Station B which Station A has designated as the Call Destination. Station D receives Ringback Tone. Station B is rung.

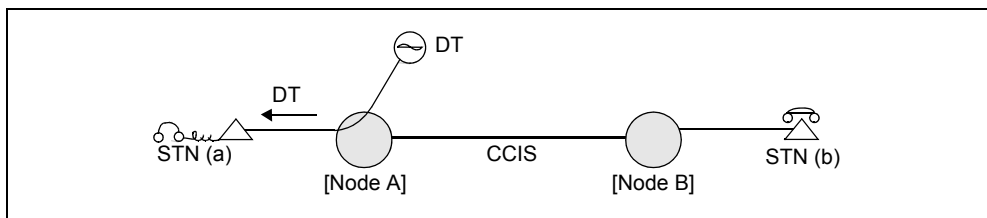


7. When Station B answers, Stations B and D are connected with each other.

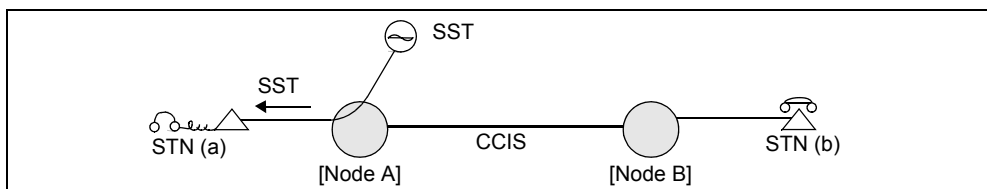


When cancelling CALL FORWARDING - BUSY LINE Service

1. Station A goes off-hook. Receives Dial Tone.

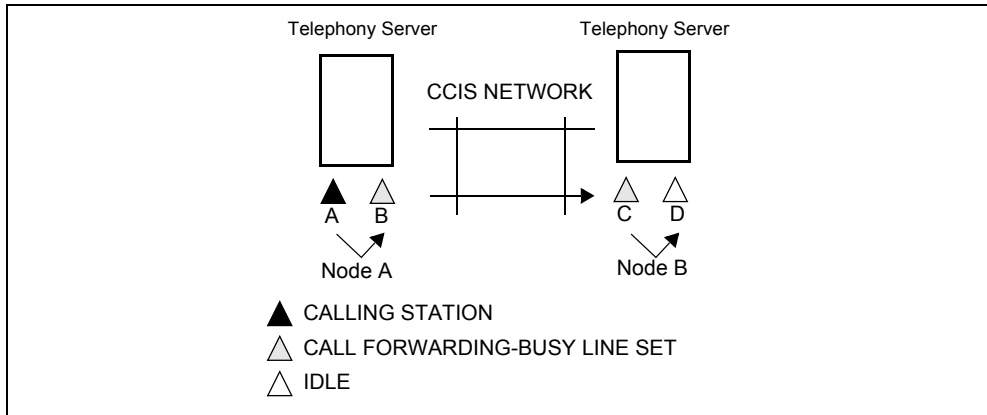


2. Station A dials the Cancel Code of CALL FORWARDING - BUSY LINE. Receives Service Set Tone.

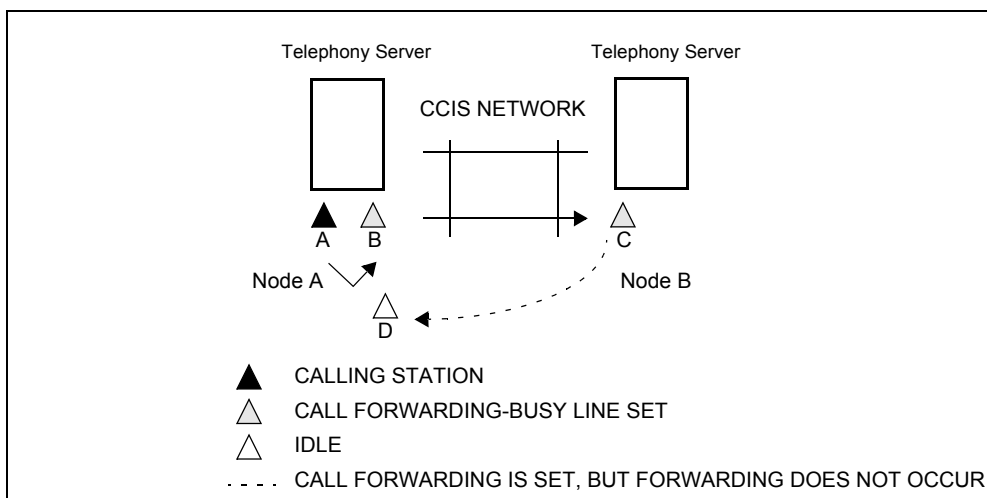


Service Conditions

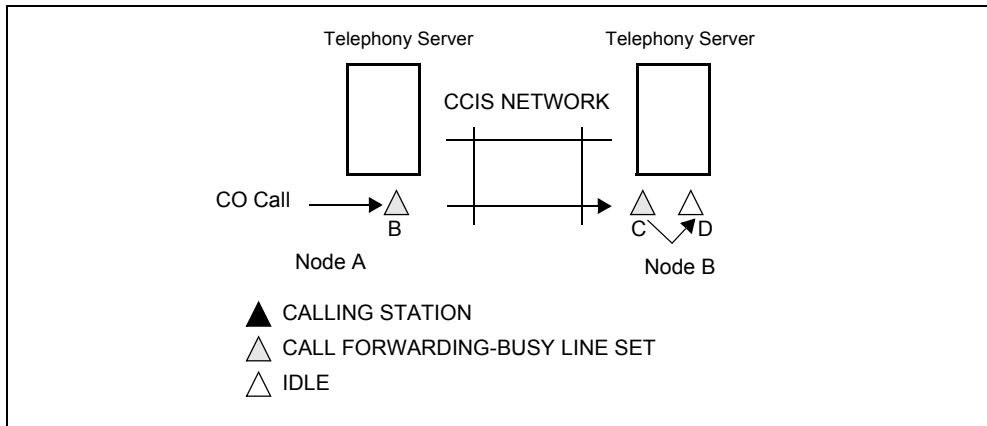
1. You can specify up to 24 digits as a whole number of a forwarded station.
2. When CALL FORWARDING - BUSY LINE - CCIS is used, the following conditions exist:
 - a.) Station A calls Station B. Station B is Call Forwarded to Station C. Station C is Call Forwarded to Station D. Call Forwarding does occur to Station D. CALL BACK - CCIS [C-44], CALL WAITING - TERMINATING [C-12], or EXECUTIVE RIGHT-OF-WAY - CCIS [E-8] can be set from Station A to Station C.



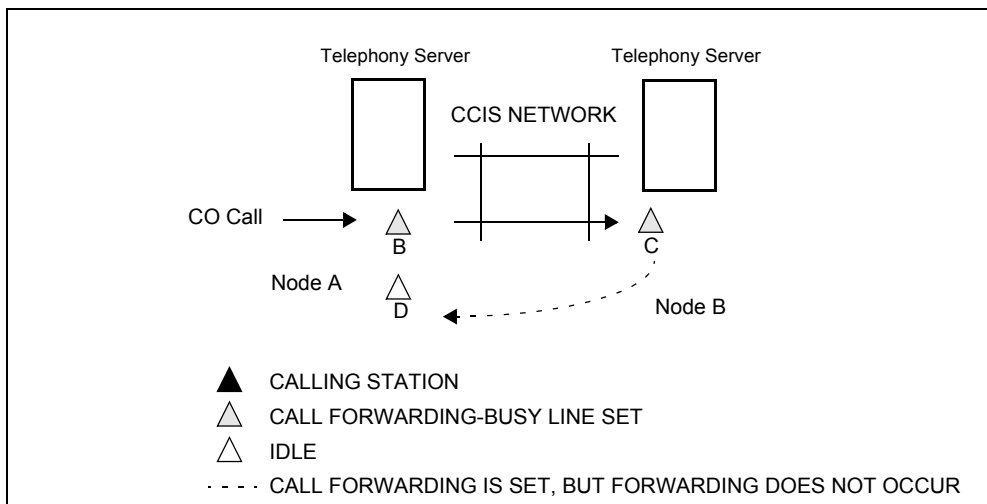
- b.) Station A calls Station B. Station B is Call Forwarded - CCIS to Station C. Station C is Call Forwarded - CCIS to Station D. Call Forwarding does not occur to Station D. If Station C is idle, Station C will ring. If Station C is busy, Busy Tone is returned from Station C. CALL BACK - CCIS [C-44], CALL WAITING - TERMINATING [C-12], or EXECUTIVE RIGHT-OF-WAY - CCIS [E-8] can be set from Station A to Station C.



- c.) A Central Office Call is directed to Station B. Station B is Call Forwarded to Station C. Station C is Call Forwarded to Station D. Call Forwarding does occur to Station D. If Station C is idle, Station C will ring. If Station C is busy, Station D will ring.



- d.) A Central Office Call is directed to Station B. Station B is Call Forwarded to Station C. Station C is Call Forwarded - CCIS to Station D. Call Forwarding does not occur to Station D. If Station C is idle, Station C will ring. If Station C is busy, Busy Tone is returned from Station C.



3. Registration memories for CALL FORWARDING - BUSY LINE and CALL FORWARDING - DON'T ANSWER [C-3] are common. Changing System Data will enable separation of the two, permitting separate Access Codes to be assigned.
4. CALL FORWARDING - BUSY LINE can be provided on a system and/or an individual basis.
5. CALL FORWARDING on a system basis allows any Incoming Calls which encounter a BUSY condition to be forwarded to a predetermined Station or ATTENDANT CONSOLE [A-3].
6. Individual CALL FORWARDING - BUSY LINE supersedes system CALL FORWARDING.
7. If all the Stations in the Terminating Hunt Group are busy, the Forwarding Call will hear Busy Tone and will not return to the Calling Party's Hunt Group.
8. When MULTIPLE CALL FORWARDING - BUSY LINE [M-24] Service is activated, hunting will be performed at the last destination of the Forwarded Call, even though the multiple Jumped Stations are in a Hunt Group.

9. When the Pilot Station of a Pilot Hunt Group activates CALL FORWARDING - BUSY LINE to a Station (not a member of a Hunt Group) and system parameters specify that Call Hunting will be activated at the Forwarded Station, the System will send Busy Tone if the Forwarded Station is busy. If the system parameters specify hunting at the Forwarding Station, and the Forwarded Station is busy, the call will hunt in the Forwarding Station's Hunt Group.
10. When a Station activates CALL FORWARDING - ALL CALLS [C-5] to a Pilot in a Hunt Group, and the Pilot activates CALL FORWARDING - BUSY LINE to another Pilot Hunt Group, if system parameters define the call to hunt to the Forwarded Hunt Group and the Pilot Station is busy, the Calling Party will hunt at the Called Station's Hunt Group. If system parameters define the call to hunt to the Forwarding Hunt Group and the Pilot Station is busy, the Calling Party will then hunt to the Forwarding Station's Hunt Group.
11. If the Called Station is the Pilot of a UCD Group and activates CALL FORWARDING - BUSY LINE the Calling Station will queue to the UCD Group and will not Call Forward.
12. CALL FORWARDING - BUSY LINE - CCIS is assigned to a Station via CLASS OF SERVICE - INDIVIDUAL [C-15] programming.
13. There is no limit to the number of Stations that can simultaneously set CALL FORWARDING - BUSY LINE - CCIS.
14. CALL FORWARDING - BUSY LINE - CCIS can be set by any number of Stations to the same Forwarded-to Station.
15. The display of the Forwarded-to Telephone Number on the LCD of the Forwarding Desktop terminal can be allowed or denied in system programming on a system-wide basis.
16. When calls are forwarded to the Attendant Console, INCOMING CALL IDENTIFICATION [I-2] allows the Attendant to identify the call as a Forwarded Call.
17. When a call is Call Forwarded to the Attendant Console, the Attendant can identify the Called Station at the Attendant Console.
18. When a Station sets CALL FORWARDING - BUSY LINE - CCIS to the Attendant Console, and the system is in the Night mode, the Calling Party will receive Reorder Tone, or transfer to the ATTENDANT NIGHT TRANSFER [A-19] Station, if provided.
19. When ATTENDANT CAMP-ON WITH TONE INDICATION [A-45] is directed to a Station which has set CALL FORWARDING - BUSY LINE - CCIS, and the Forwarded-to Station is busy, the call is camped-on to the Called Station.
20. If ATTENDANT CAMP-ON WITH TONE INDICATION [A-45] is directed to a Station which is forwarded to a busy Station in a Hunt Group, the call hunts for an idle Station. If all Stations in the Hunt Group are busy, the call is camped-on to the Forwarded-to Station.
21. If a Calling Station, Attendant Console, or Trunk receives Busy Tone after dialing a Station which has set CALL FORWARDING - BUSY LINE - CCIS because both the Called and Forwarded-to Stations are busy, and if the Calling Station activates BUSY VERIFICATION - CCIS [B-9], CALL BACK - CCIS [C-44], CALL WAITING - TERMINATING [C-12], or EXECUTIVE RIGHT-OF-WAY - CCIS [E-8], these services will be activated to the Forwarded-to Station.
22. If any of the following restrictions are in effect at a Forwarded-to Station, Incoming Trunk Calls to the Forwarding Station will not be Call Forwarded (Intercept Arrangements will apply):
 - a.) Fully restricted Station
 - b.) Station restricted from Outgoing Calls
 - c.) Toll Restricted Station
23. CALL FORWARDING - BUSY LINE - CCIS supersedes the Station Hunting features [S-7, S-8, S-9].

24. If a Forwarded-to Station is a member of a UCD Group and that Station is busy, the call will ring at an idle Station within the group. If all members of the group are busy, the call remains in queue waiting for a member to become available, or (if programmed) until DELAY ANNOUNCEMENT - UCD [D-31] or OVERFLOW - UCD [O-13] is invoked.
25. If a member of a UCD Group, other than the Pilot Station, sets CALL FORWARDING - BUSY LINE - CCIS, only calls to that Extension Number are forwarded.
26. When a call is forwarded, the number recorded in the STATION MESSAGE DETAIL RECORDING (SMDR) [S-10] is the Forwarded-to Telephone Number.
27. CALL FORWARDING - BUSY LINE - CCIS Data remains programmed even if the system is reinitialized without data memory clear or should a power failure occur.
28. CALL FORWARDING - BUSY LINE - CCIS can also be accessed from a Desktop terminal via the dial pad or SPEED CALLING - ONE TOUCH [S-26D]. If this feature is accessed via the dial pad, it must also be cancelled via the dial pad.
29. If separate Access Codes are programmed into System Data for CALL FORWARDING - BUSY LINE - CCIS and CALL FORWARDING - DON'T ANSWER - CCIS [C-47], separate Feature keys must be programmed on each Desktop terminal to equip it for both features.
30. If the Station is in a Hunt Group, the call will hunt.
31. SPLIT CALL FORWARDING [S-99] is available only when the Calling Party is the Station or the CCIS Line.
32. When a call terminates to a busy Station setting CALL FORWARDING - BUSY LINE - CCIS, depending on the Calling Station Service Feature Restriction Class, it can be selected to make the Station busy (not to activate Calling Forwarding - Busy Line) and to activate services as ATTENDANT CAMP-ON [A-1], BUSY VERIFICATION [B-3], CALL WAITING - TERMINATING [C-12], STEP CALL [S-13], etc.
33. This service is not available when the Called Party is the Attendant Console, monitoring Station, or the Paging Station. However, the service is available when these Stations are designated as the Transfer Destination of Call Forwarding - Busy Line Service.
34. This service is available only when the Called Party is busy and has set Call Forwarding - Busy Line. In case Call Forwarding - Busy Line is set as the second jump or later in the Multiple Call Forwarding Link, this service is not available.
35. This service is available in the following occasions:
 - a.) when the destination of the Call Forwarding - Busy Line Service is the Calling Station,
 - b.) when the Calling Party is the Attendant Console or the Night Station, and the Destination Call Forwarding - Busy Line Service is also the Attendant Console or the Night Station.
36. When receiving an incoming call via CCIS line in consequence of multi-hop routing, transferring direction is restricted to CCIS line.
37. A tone will not be provided when an access code is used to set this feature on SP Controlled Standard SIP terminal.
38. The station number of Forwarded-from Station will not be displayed on the LCD of the Forwarded-to Station when the number of Forwarded-from Station is more than 7 digits.
39. The forwarding destination for this feature can be set on a route basis since FP95-114 V4 Issue 2.0 (earlier than FP95-114 V4 Issue 2.0, it can be set per tenant only). For details, see CALL FORWARDING DESTINATION PER TRUNK ROUTE - INCOMING CALL [C-209] in Data programming Manual-Business.

Interactions

1. If Access Codes for CALL FORWARDING - BUSY LINE - CCIS and CALL FORWARDING - DON'T ANSWER - CCIS [C-47] are the same, only one key needs to be assigned in AKYD.
2. When CALL WAITING [C-12, 31], ATTENDANT CAMP-ON WITH TONE INDICATION [A-45], or CALL BACK [C-44] is directed toward Station A with Call Forwarding set to Station B, Station B will receive Call Waiting Tone.
3. A Non-Controlling UCD Station is allowed to activate CALL FORWARDING - BUSY LINE - CCIS. When this Station sets CALL FORWARDING - BUSY LINE - CCIS, only calls dialed directly to this Station are Call Forwarded.
4. If an Attendant attempts BUSY VERIFICATION [B-9] to Station A that has CALL FORWARDING - BUSY LINE - CCIS set to Station B and Station B is busy, BUSY VERIFICATION proceeds again with Station A. If Station A has set Call Forwarding to the Attendant Console, BUSY VERIFICATION [B-9] is allowed at Station A.
5. When CALL FORWARDING - BUSY LINE - CCIS is in effect, the activating station may be used to originate calls.
6. When a call is forwarded, the Destination Station is recorded for STATION MESSAGE DETAIL RECORDING (SMDR) [S-10].

Programming

- STEP 1: **ASYD** - System Data 1, Index 5, Bit 0. Access Codes for CALL FORWARDING - BUSY LINE - CCIS and CALL FORWARDING - DON'T ANSWER - CCIS [C-47] are same or separate? 0/1: Same/Separate.
System Data 1, Index 69, Bit 5. Hunting Group when Target Station is busy (Station Hunting after Call Forwarding -Busy Line) 0/1: Hunt in Transferring Party's Group/Hunt in Transferred Party's Group.
System Data 1, Index 69, Bit 7. Is Multiple-jump CALL FORWARDING - BUSY LINE - CCIS in service? 0/1: No/Yes.
- STEP 2: **ANPD** - Reserve a Number Level for Feature Access and Cancel. Select Normal Service (N), Hooking Service (H), or Busy Service (B) from the combo box for Connection Indexes. Assign NND in accordance with a predetermined Numbering Plan.
- STEP 3: **ASPA** - Assign an Access Code to CALL FORWARDING - BUSY LINE - CCIS entry, SID = 10 and to CALL FORWARDING - BUSY LINE - CCIS cancel SID = 11. Assign Connection Status Index (CI) for "N: Normal".
- STEP 4: **ASFC** - Assign a Service Feature Restriction Class that allows SFI 9 to the Stations receiving Call Forwarding - Busy Line- CCIS.
- STEP 5: **AKYD** - For Desktop terminals, CALL FORWARDING - BUSY LINE - CCIS may be assigned to a programmable Line/Feature key. Assign a Feature key Call Forwarding - Busy Line.
- STEP 6: **ADSL** - Assign a FDB key; Assign SN = 1 (Originating; DT Connection) and a Feature key Call Forwarding - Busy Line.
This command is used for assigning a function to each soft key.
- STEP 7: **ATNR** - Allow Tenant-to-Tenant Connection for Inter and Intra-Tenant Connections. Assign Tenant Restriction Index (TRI) = 1. For this feature to be set by the Attendant Console, assign Inter and Intra-Tenant Connection via the Attendant Console, TRI = 3. This allows a telephone in one Tenant to be forwarded to a telephone in the same or different Tenant.
- STEP 8: **ACFO** - For Tenant-wide CALL FORWARDING - BUSY LINE - CCIS of an Incoming DID and DIT Calls, assign CALL FORWARDING = 1 for a destination (CFI) of either the Attendant Console or a Station.
-

C-47 Call Forwarding - Don't Answer - CCIS

General Description

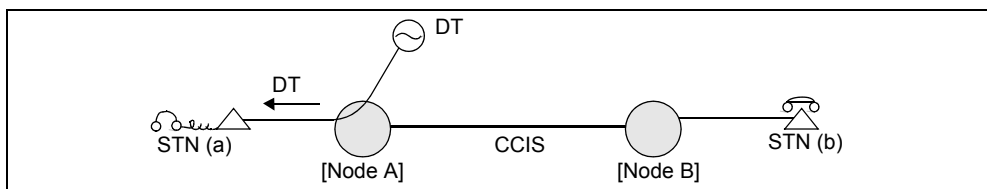
This feature allows Inter-Office Call Forwarding - Don't Answer for a case where the Transferring Station and the Transferred Station respectively belong to a different System in the CCIS Network.

Operating Procedure

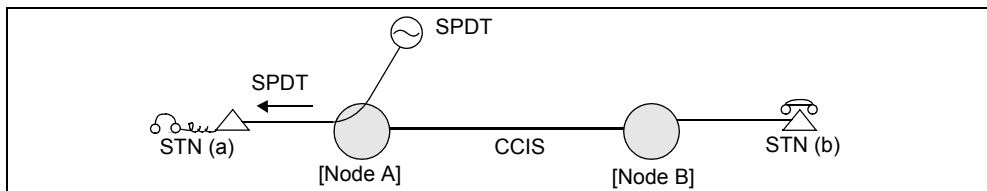
When setting **Note 1**

Note 1: A tone will not be provided when an access code is used to set this feature on SP Controlled Standard SIP terminal.

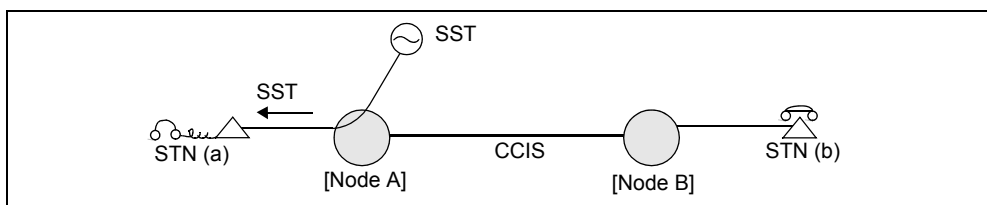
1. Station A goes off-hook Receives Dial Tone.



2. Station A dials the Access Code for CALL FORWARDING - DON'T ANSWER Receives Special Dial Tone.

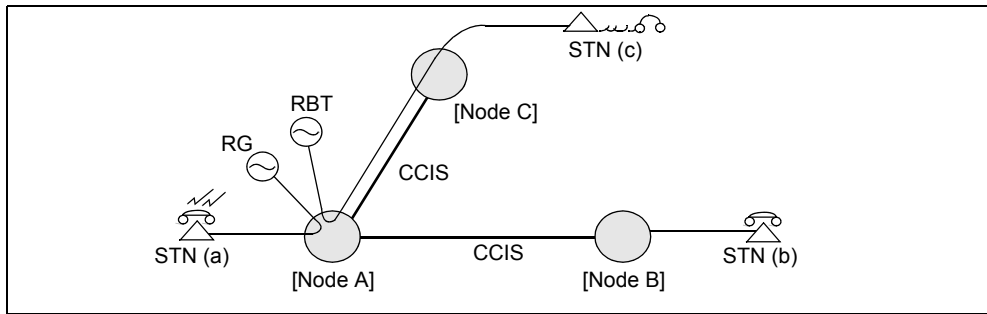


3. Station A dials the number for the designated Station B Receives Service Set Tone.

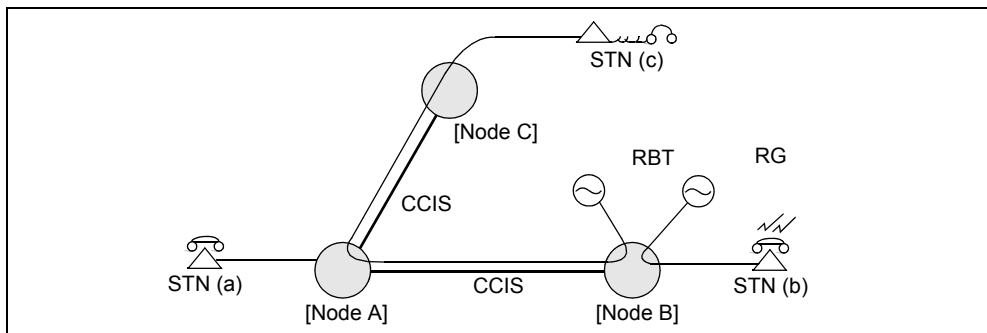


4. Station A hangs up.

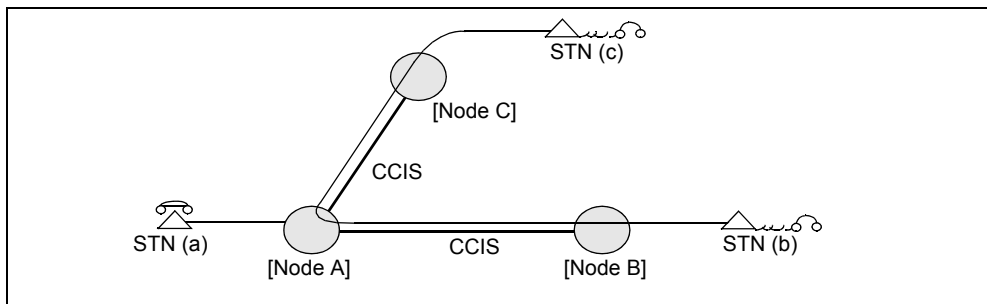
5. Station A is called from Station C; Station C receives Ringback Tone Station A is rung.



6. Station A does not answer the call within a predetermined amount of time. The ringing at Station A stops and the call is automatically transferred to Station B, which A has designated as the Transfer Destination; Station B is rung.

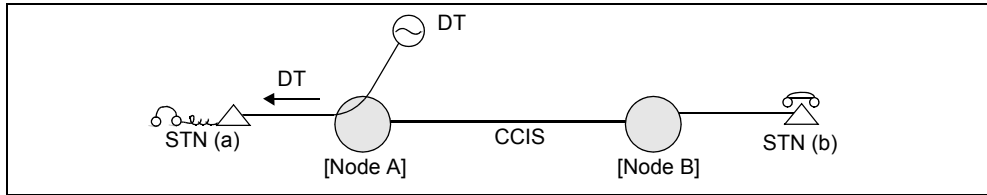


7. Station B answers the call; Stations B and C are connected with each other.

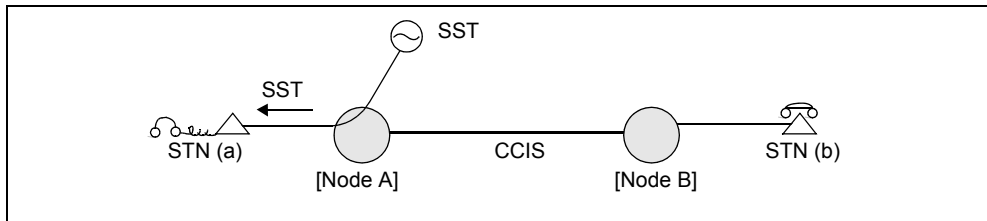


When cancelling

1. Station A goes off-hook. Receives Dial Tone.



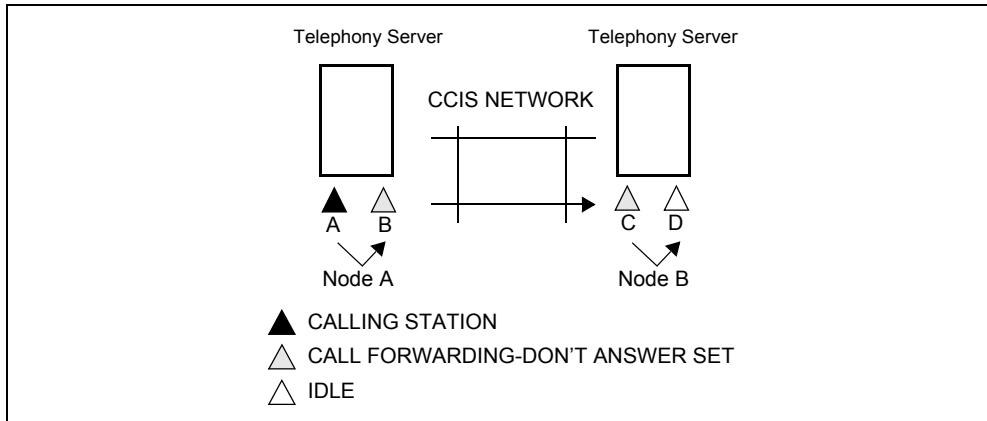
2. Station A dials the Cancel Code of CALL FORWARDING - DON'T ANSWER. Receives Service Set Tone.



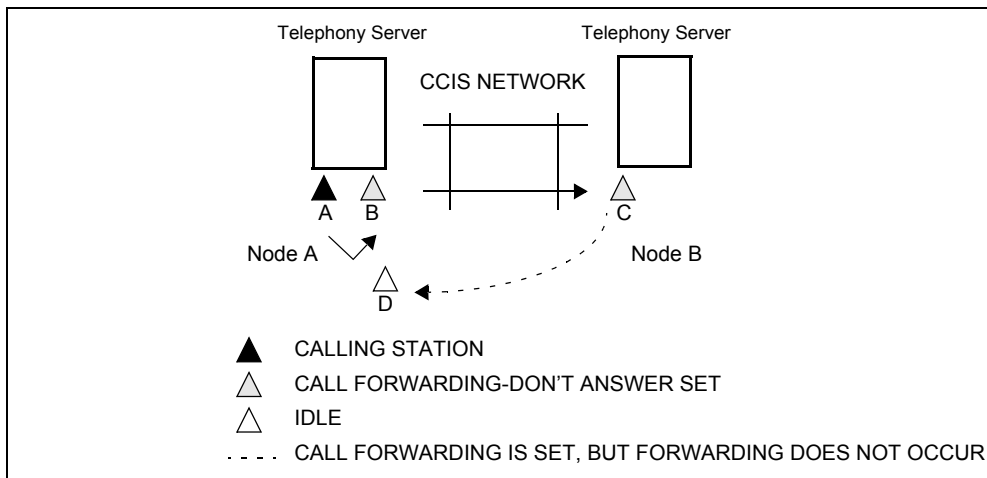
3. Station A hangs up.

Service Conditions

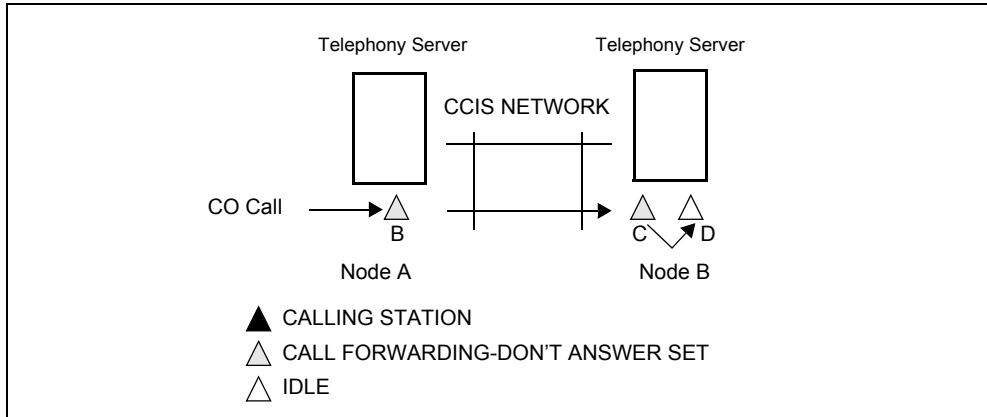
1. When CALL FORWARDING - DON'T ANSWER - CCIS is used, the following conditions exist:
 - a.) Station A calls Station B. Station B is Call Forwarded to Station C. Station C is Call Forwarded to Station D. Call Forwarding does occur to Station D. If Station C is idle, it will ring beyond the Don't Answer Timer.



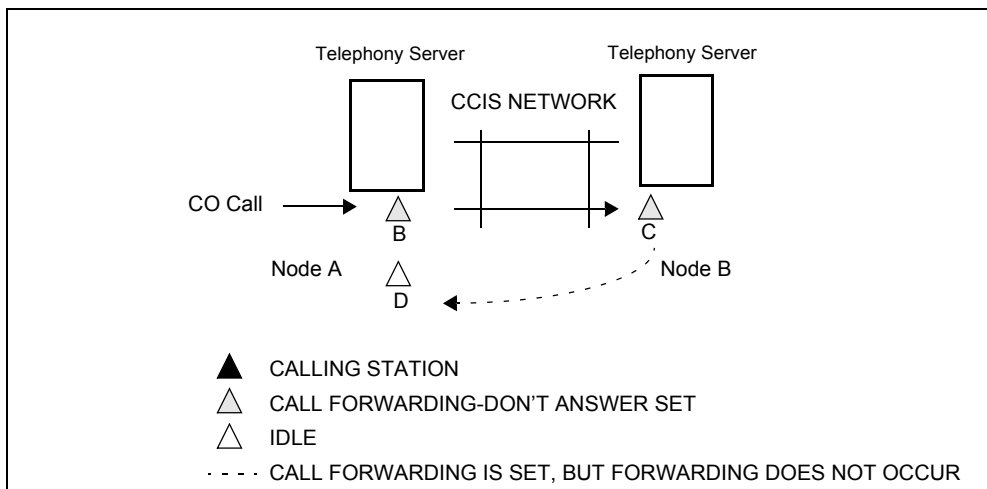
- b.) Station A calls Station B. Station B is Call Forwarded to Station C. Station C is Call Forwarded to Station D. Call Forwarding does not occur to Station D. If Station C is idle, it will ring beyond the Don't Answer Timer.



- c.) A Central Office Call is directed to Station B. Station B is Call Forwarded to Station C. Station C is Call Forwarded to Station D. Call Forwarding does occur to Station D.



- d.) A Central Office Call is directed to Station B. Station B is Call Forwarded to Station C. Station C is Call Forwarded to Station D. Call Forwarding does occur to Station D. If Station C is idle, Station C will ring beyond the Don't Answer Timer.



2. You can specify up to 24 digits as a whole number of a forwarded station.
3. For countries except North America, when an original call is placed from a station, this feature is available only if the call is routed to the called station (station to which this feature is set) directly.
4. CALL FORWARDING - DON'T ANSWER can be provided on either a system or an individual basis.
5. Individual CALL FORWARDING - DON'T ANSWER supersedes system CALL FORWARDING.
6. CALL FORWARDING on a system basis allows Direct Incoming Trunk calls that encounter a DON'T ANSWER condition to be forwarded to a predetermined Station or the ATTENDANT CONSOLE [A-3].
7. The operator answering a CALL FORWARDING Call can identify the Called Telephone Number on the ATTENDANT CONSOLE [A-3] display.
8. CALL FORWARDING - DON'T ANSWER - CCIS is assigned to a Station via CLASS OF SERVICE - INDIVIDUAL [C-15] programming.
9. There is no limit to the number of Stations that can simultaneously set CALL FORWARDING - DON'T ANSWER - CCIS.

10. CALL FORWARDING - DON'T ANSWER - CCIS can be set from any number of Stations to the same Forwarded-to Station.
11. The display of the Forwarded-to Telephone Number on the LCD of the Forwarding Desktop terminal can be allowed or denied in system programming on a system-wide basis.
12. If a Station transfers a call to another Station that has set CALL FORWARDING - DON'T ANSWER - CCIS and releases from the call, Recall Service will override CALL FORWARDING - DON'T ANSWER - CCIS if the call is unanswered after a predetermined time period (unless Blind Transfer Station is in service).
13. When calls are forwarded to the Attendant Console, the INCOMING CALL IDENTIFICATION [I-2] feature allows the Attendant to identify the call as a Forwarded Call.
14. When a Station-to-Station call within the same Node is CALL FORWARDING - DON'T ANSWER [C-3] to the Attendant Console, the call terminates on the NANS key. When the call is CALL FORWARDING-DON'T ANSWER - CCIS to the Attendant Console, it terminates on the NANS key.
15. When the system is in Night mode, CALL FORWARDING - DON'T ANSWER - CCIS to the Attendant Console will continue ringing at the Called Station, or transfer to the ATTENDANT NIGHT TRANSFER [A-19] Station, if provided.
16. When an Attendant extends a call to a Station in another Node in the CCIS Network, and that Station has set CALL FORWARDING - DON'T ANSWER - CCIS, the call will be forwarded if the Called Station does not answer within a predetermined time period.
17. If separate Access Codes are programmed into System Data for CALL FORWARDING - DON'T ANSWER - CCIS and CALL FORWARDING - BUSY LINE - CCIS [C-46], separate Feature keys must be programmed on each Desktop terminal to equip it for both features.
18. When OUTGOING TRUNK QUEUING - CCIS [O-12] is provided, a Station can use this feature and one of the other Call Forwarding features at the same time. When a Trunk becomes available, Ringback Tone will be to the Forwarding, not the Forwarded-to, Station.
19. If any of the following restrictions are in effect at a Forwarded-to Station, Incoming Trunk Calls to the Forwarding Station will not be forwarded (Intercept Arrangements will apply):
 - a.) Fully restricted Station
 - b.) Station restricted from Outgoing Calls
 - c.) Toll Restricted Station
20. If a member of a UNIFORM CALL DISTRIBUTION (UCD) [U-1] Group sets CALL FORWARDING - DON'T ANSWER - CCIS, only UCD Calls to that Extension Number are forwarded.
21. When a call is forwarded, the number recorded in the STATION MESSAGE DETAIL RECORDING (SMDR) [S-10] is the Forwarded-to Telephone Number.
22. CALL FORWARDING - DON'T ANSWER - CCIS can also be accessed from a Desktop terminal via the dial pad or SPEED CALLING - ONE TOUCH [S-26D]. If this feature is accessed via the dial pad, it must also be cancelled via the dial pad.
23. When an Attendant extends a call to a Station in the same Node which has set CALL FORWARDING - DON'T ANSWER - CCIS, the Called Station will ring for 30 seconds. If the call is not answered, it will forward across CCIS.
24. When receiving an incoming call via CCIS line in consequence of multi-hop routing, transferring direction is restricted to CCIS line.
25. A tone will not be provided when an access code is used to set this feature on SP Controlled Standard SIP terminal.
26. The station number of Forwarded-from Station will not be displayed on the LCD of the Forwarded-to Station when the number of Forwarded-from Station is more than 7 digits.

27. The forwarding destination for this feature can be set on a route basis since FP95-114 V4 Issue 2.0 (earlier than FP95-114 V4 Issue 2.0, it can be set per tenant only). For details, see CALL FORWARDING DESTINATION PER TRUNK ROUTE - INCOMING CALL [C-209] in Data programming Manual-Business.

Interactions

1. If Access Codes for CALL FORWARDING - BUSY LINE - CCIS and CALL FORWARDING - DON'T ANSWER - CCIS are the same, only one key needs to be assigned in AKYD.
2. ACFO is applicable to DID, DIT, and TIE Line Calls only.
3. A Non-Controlling UCD Station is allowed to activate CALL FORWARDING - DON'T ANSWER - CCIS. When this Station sets Call Forwarding, calls directed to this Station will be forwarded. The member Station is not removed from the UCD Group under the conditions of the Call Forwarding feature used. When it is the Station's turn to ring, that call is affected by CALL FORWARDING - DON'T ANSWER - CCIS.
4. CALL FORWARDING - DON'T ANSWER - CCIS to an Attendant Console will not operate when the system is in Night mode. If ATTENDANT NIGHT TRANSFER [A-19] is provided, the call is forwarded to the ATTENDANT NIGHT TRANSFER Station.
5. If the CALL FORWARDING - DON'T ANSWER - CCIS Target Station is a Desktop terminal which has activated DO NOT DISTURB [D-21D], Call Forwarding is not activated. The Forwarding Station will ring beyond the timer set in System Data 1, Index 145.
6. When the CALL FORWARDING - DON'T ANSWER - CCIS feature is set from Station A to Station B, and if Station A is idle and Station B is busy, Station A will ring beyond the timer set in System Data 1, Index 145.
7. When a call is Call Forwarded, the Destination Station is recorded for STATION MESSAGE DETAIL RECORDING (SMDR) [S-10].

Programming

- STEP 1: **ASYD** - System Data 1, Index 5, Bit 0. Access Codes for CALL FORWARDING - BUSY LINE - CCIS and CALL FORWARDING - DON'T ANSWER - CCIS are same or separate? 0/1: Same/ Separate.
- System Data 1, Index 69, Bit 2. Is there a Short Tone to alert person receiving the call that this is a CALL FORWARDING - DON'T ANSWER - CCIS Call? 0/1: No/Yes.
- System Data 1, Index 139. Assign the No Answer time for Station-to-Station, DID, and TIE Line Calls. For 30 seconds, assign 00H (RAM Data is 3FH).
- System Data 1, Index 141. Assign the No Answer Timer for Incoming Calls via the Attendant Console. It will then be forwarded to the next Station according to System Data 1, Index 145 timer. For ten seconds, assign 00H (RAM Data is 35H).
- System Data 1, Index 145. Assign the time an Incoming Call via the Attendant Console will ring at the CALL FORWARD - DON'T ANSWER - CCIS Station before recalling to the Attendant Console. For 30 seconds, assign 00H (RAM Data is 9FH).
- System Data 2, Index 6, Bit 7. Enable CALL FORWARDING - DON'T ANSWER - CCIS via Attendant Console Transfer.
- STEP 2: **ANPD** - Reserve a Number Level for Feature Access and Cancel. Select Normal Service (N), Hooking Service (H), or Busy Service (B) from the combo box for Connection Indexes. Assign NND in accordance with a predetermined Numbering Plan.
-

- STEP 3: **ASPA** - Assign an Access Code to CALL FORWARDING - DON'T ANSWER - CCIS entry, SID = 12, and to CALL FORWARDING - DON'T ANSWER - CCIS cancel SID = 13. Assign Connection Status Index (CI) for "N: Normal".
- STEP 4: **ASFC** - Assign a Service Feature Restriction Class that allow SFI 8 to the Stations receiving Call Forwarding-Don't Answer - CCIS.
- STEP 5: **AKYD** - For Desktop terminals, CALL FORWARDING - DON'T ANSWER - CCIS may be assigned to a programmable Line/Feature key. Assign a Feature key Call Forward - Don't Answer [22]
- STEP 6: **ADSL** - Assign a FDN key. Assign SN 1 (Originating; DT Connection) and a Feature key Call Forwarding - Don't Answer [22].
This command is used for assigning a function to each Soft key.
- STEP 7: **ATNR** - Allow Tenant-to-Tenant Connection for Inter and Intra-Tenant Connections. Assign Tenant Restriction Index (TRI) = 1. For this feature to be set by the Attendant Console, assign Inter and Intra-Tenant Connection via the Attendant Console, TRI = 3.
- STEP 8: **ACFO** - For Tenant-wide CALL FORWARDING - DON'T ANSWER - CCIS, assign CALL FORWARDING = 2 for a destination (CFI) of either the Attendant Console or a Station.

C-48 Call Forwarding - Intercept - CCIS

General Description

This feature allows calls to an inoperative number, through a CCIS Trunk, to be intercepted and routed to a Recorded Announcement. This announcement will inform the caller that an inoperative number was dialed and will give the Listed Directory Number for information.

Operating Procedure

This feature is set in system programming and no manual operation is required.

Service Conditions

1. This feature requires an Announcement Trunk and an Announcement Machine at each node.
2. Only one call at a time can be connected to each Announcement Trunk. If a second call arrives while the first call is being processed, the caller will receive Ringback Tone until the Trunk becomes idle. This is when M (Multiple Connection) is "1" in AAED command.
3. If disconnect timing is programmed in System Data and the Calling Party forgets to hang up, the system will automatically disconnect from the call after 30 seconds. If no disconnect timing is programmed, the Calling Party will control disconnect.
4. This feature is provided on a per Tenant basis.
5. Calls to Restricted Numbers will receive Reorder Tone.
6. Only one common message can be provided for all intercept conditions.
7. The following call conditions are routed to CALL FORWARDING - INTERCEPT - CCIS:
 - Vacant Level
 - Unassigned Telephone Number

Interactions

1. The Trunk Number will only be required when a Multiple Connection is assigned.
2. The COT Trunk Circuit is used to interface a customer-provided Announcement Machine.
3. The Digital Announcement Trunk (DAT) Card may be used for announcements instead of an External Announcement Machine. In this case, the COT Card is not required.
4. The type of connection to the Announcement Machine depends on whether the machine provides a battery reversal at the end of the message. Battery reversal allows for the recycling of the message so that a Calling Station will always be connected to the beginning of the message. Therefore, the Calling Party will continue to hear Ringback Tone until connected to the beginning of the announcement.
5. See ANNOUNCEMENT SERVICE [A-15] in Data Programming Manual - Business.

Programming

STEP 1: **ARTD** - Assign the Announcement Route as shown below:

RT: 1

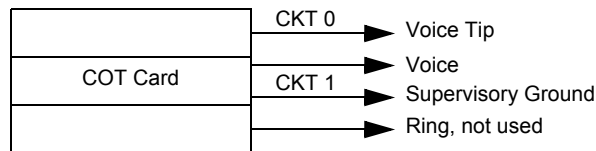
1-OSGS	:2	2-ONSG	:3	5-TF	:1	6-TCL	:1	7-L/T	:1
8-RLP	:2	15-LSG	:4	44-PRV	:1				

Note: To change the data for existing route (RT), initialize the circuit card.

STEP 2: **ATRK** - Assign the LENS, Announcement Trunk Route Number (1-255), Trunk Number (1-255), and Tenant Number (1-15).

STEP 3: **MBTK** - Assign the Make Idle status to the Announcement Trunk.

Note: If supervision is required, use the first two circuits of the COT Card. Move the switch on the COT Card to PGT.



STEP 4: **ARRC** - If TIE Line or REMOTE ACCESS TO SYSTEM [R-2] Connection to the Announcement Service Trunk is required, allow trunk-to-trunk connection using ARI-D-RES, Direct Connection. Also, allow trunk-to-trunk connection between CCIS Route and Announcement Route.

STEP 5: **AAED** - Used to assign Announcement Equipment.

DEAD LEVEL

Assign:

TN: Tenant Number

EQP: Announcement Equipment Number = 0 (Dead Level). Example: If Level 6 is not assigned, an announcement is heard instead of Reorder Tone.

C: Duration of connection, 0/1: Disconnection occurs in 30 seconds/the connection is held until the Station releases. See the requirements of the Announcement Equipment.

R: Sending RBT, 0/1: Sending RBT/Not sending RBT. Normally assign data "0".

A: Answer Signal Sending, 0/1: No answer from Incoming Trunk/answer from Incoming Trunk. Normally assign data "0". No Answer Signal is sent to the Central Office. therefore Calling Party will not be billed for the call.

M: Multiple Connection 0/1: Single Connection/Multiple Connection. See the requirements of the Announcement Equipment.

SS: Synthesizer, 0/1: Out of Service/In Service

RT: Route Number

TK: Trunk Number (If M = 1)

UNUSED NUMBER

Assign:

TN: Tenant Number;

EQP: (Announcement Equipment Number) = 1 (Unused Number). Example: If extension 7836 is not in the system, the announcement is heard instead of Reorder Tone.

C: Duration of connection, 0/1: Disconnection occurs in 30 seconds/the connection is held until the station releases. See the requirements of the Announcement Equipment.

R: Sending RBT, 0/1: Sending RBT/Not sending RBT. Normally assign data "0".

A: Answer Signal Sending, 0/1: No answer from Incoming Trunk/answer from Incoming Trunk. Normally assign data "0". No Answer Signal is sent to the Central Office, therefore Calling Party will not be billed for the call.

M: Multiple Connection 0/1: Single Connection/Multiple Connection. See the requirements of the Announcement Equipment.

SS: Synthesizer, 0/1: Out of Service/In Service

RT: Route Number

TK: Trunk Number (If M = 1)

STEP 6: **ACFR** - Assignment of Call Forwarding Restriction. Upon determining which types of Call Class Indexes (CCI) will be answered via CALL FORWARDING - INTERCEPT - CCIS (CCSA and DID Calls), allow those CCIs a Transfer Service Feature Index of 1, Call Forward - All Calls, Don't Answer, Busy.

STEP 7: **ARSC** - Assign RSC 0 for the Attendant. Allow Stations to access the Announcement Trunks.

C-49 Call Forwarding - Override - CCIS

General Description

This feature allows a Forwarded-to Station (Station A) to ring the Station (Station B), which has set CALL FORWARDING - ALL CALLS - CCIS [C-45] to it. If the Called Station (Station B) has set CALL FORWARDING - BUSY LINE - CCIS [C-46] to the Calling Station (Station A), the Calling Station will receive Busy Tone and can activate CALL BACK - CCIS [C-44].

Operating Procedure

No manual operation is required.

Service Conditions

1. This feature is allowed to all Stations in the CCIS Network, except the ATTENDANT CONSOLES [A-3].
2. Any Station that has set CALL FORWARDING - ALL CALLS [C-5] can activate any feature if the Station is allowed the feature in Class of Service.

Programming

No programming is required. This is inherent to the system when CALL FORWARDING is programmed.

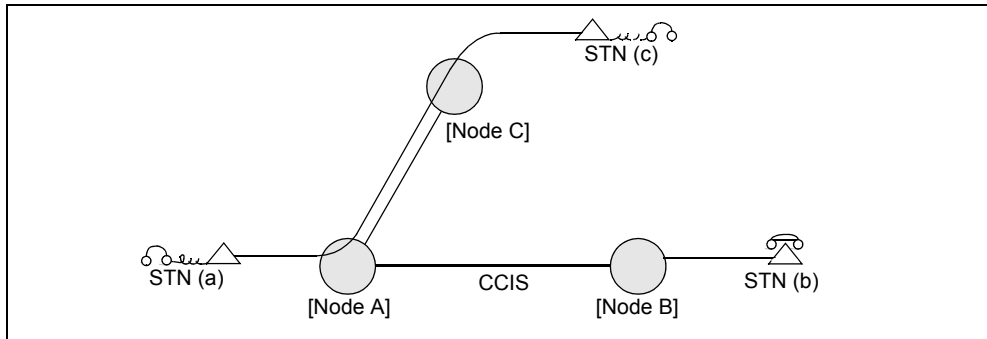
C-50 Call Transfer - All Calls - CCIS

General Description

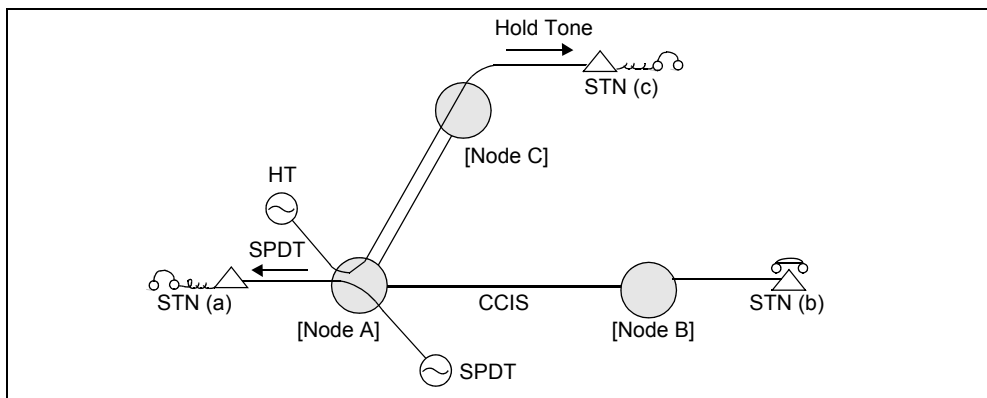
This service feature allows Inter-Office CALL TRANSFER - ALL CALLS when the Transferring Station and the Transferred Station respectively belong to a different System in the CCIS Network.

Operating Procedure

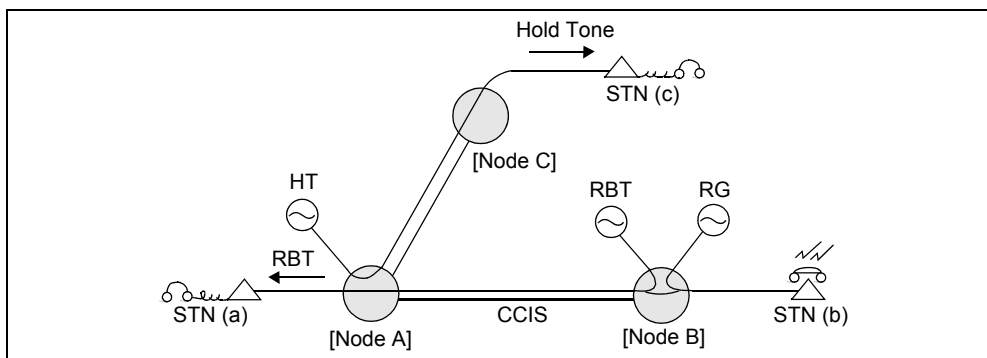
1. Station A and C are in connection on a Station-to-Station Call.



2. Station A switch hook flashes. Receives Special Dial Tone. Station C receives a hold tone.



3. Station A dials the number for B. Receives Ringback Tone. Station B is rung. **Note 1**



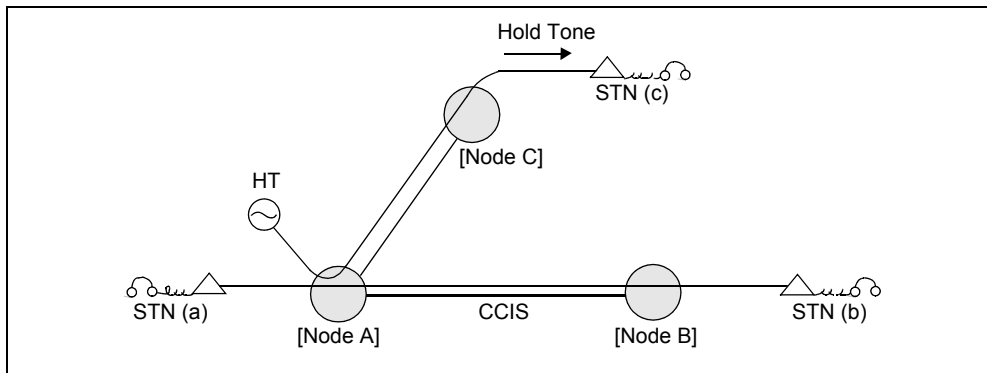
Note 1: The status of Station A can be restored to normal with a switch hook flash in one of the following cases:

When Station A has received Busy Tone.

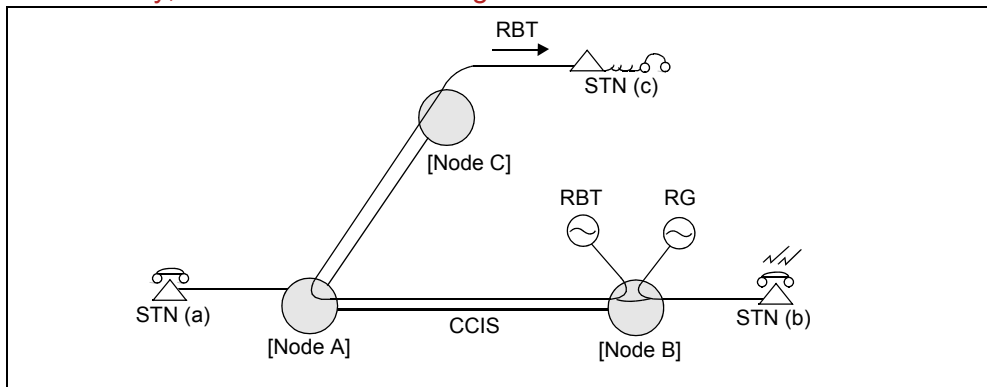
When Station B is under a Call Restriction or when Station A cannot access Station B for some other reason.

When Station B does not answer the call.

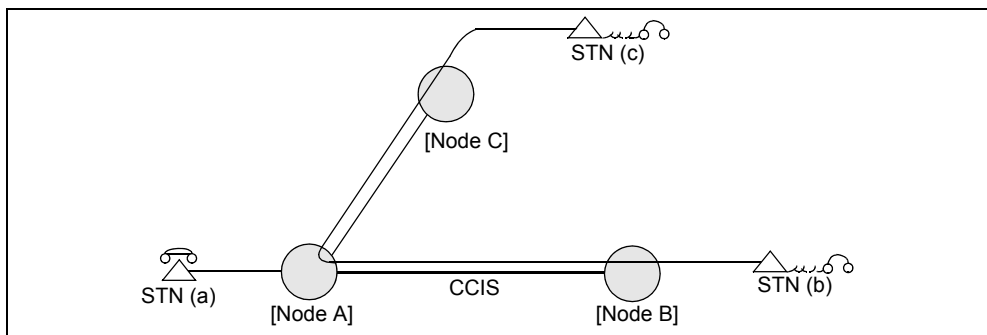
4. Station B answers the call (**Note 2**) Stations B and A are connected with each other. Station A tells Station B that a call is being transferred to B.



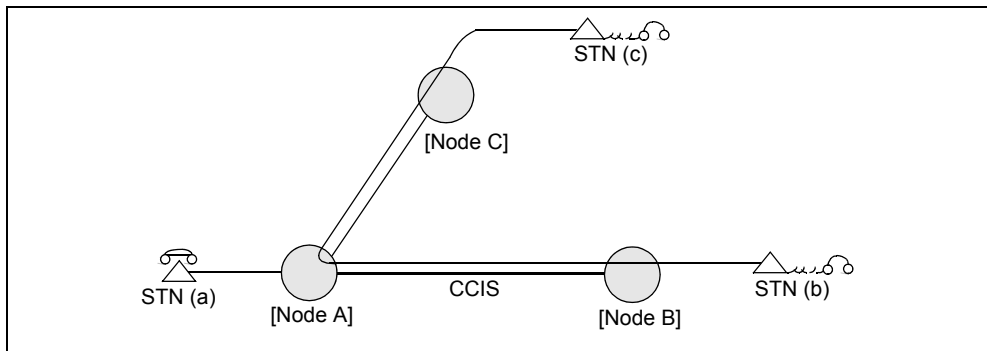
Note 2: (i) If Station A hangs up before Station B answers the call; Station B is rung continuously; Station C receives Ringback Tone.



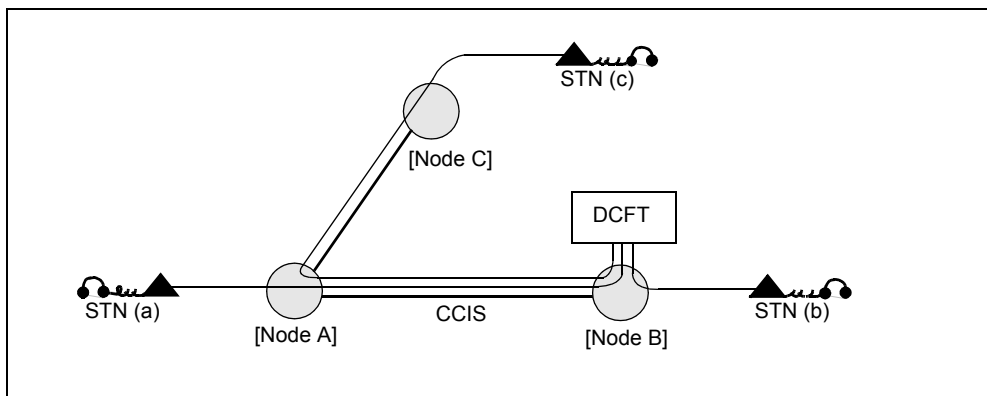
(ii) Station B answers the call; Stations B and C are connected with each other.



5. Station A hangs up (**Note 3**) Stations B and C are connected with each other.



Note 3: If Station A switch hook flashes instead of hanging up, a Three-way Connection is set up.



Service Conditions

- When TRUNK-TO-TRUNK CONNECTION [T-10] is provided, an Incoming or Outgoing Network or TIE Line Call may be transferred to an Outgoing Network Trunk, provided that the Trunk is Ground Start. The user who transfers the call gives line control to the two remaining parties upon hanging up. Therefore, if the Trunk is Loop Start, CALL TRANSFER - ALL CALLS - CCIS from Trunk-to-Trunk will not function.
- The THREE-WAY CALLING [T-2] feature allows a maximum of three parties on one connection. The three parties can be:
 - three Stations,
 - two Stations and one Trunk, or
 - one Station and two Trunks.
- The maximum number of simultaneous THREE-WAY CALLING [T-2] Connections is dependent upon the quantity of Conference Trunks (Route 909s) programmed in the system.
- Reorder Tone is returned regardless of whether the held line is Trunk or Station call the Transferring Station under the following conditions:
 - The Transferring Station is restricted.
 - The Transferring Station dials an unequipped number or the Route is restricted.
 - The Transferring Station dials an invalid first digit.

5. If a Station is in an established THREE-WAY [T-2] Conference, it cannot activate any features. If the Station switch hook flashes to activate a feature, the switch hook flash is ignored and the THREE-WAY Conference remains connected.
6. The user who has transferred the call can hang up before the Called Party answers the call. The Called Party will continue to ring and recall is not effected.
7. Outgoing Calls with Answer Supervision may be transferred immediately after the call answered (no time delay).
8. Outgoing Calls with No Answer Supervision can be transferred only after the time periods assigned in ASYD, Indexes 156 or 157 have elapsed since the last digit was dialed.
9. If a Station is in CONSULTATION HOLD [C-58] or in an established THREE-WAY Connection, any attempt to override the connection using one of the following features will be denied:

ATTENDANT CAMP-ON WITH TONE INDICATION	[A-1] [A-45]
BOSS - SECRETARY OVERRIDE	[B-5]
BUSY VERIFICATION	[B-3] [B-9]
CALL WAITING - TERMINATING	[C-12]
EXECUTIVE RIGHT-OF-WAY	[E-1] [E-8]
10. A Station engaged in either a SERIAL CALL - CCIS [S-52] or SUPERVISORY CALL - CCIS [S-73] is not allowed CALL TRANSFER - ALL CALLS - CCIS.
11. When a Control Station (second party) transfers a Station or Trunk call to another Station (third party) and the Control Station goes on-hook during ringing, if the third party's line is busy, the Control Station will be rung back right away. If the third party does not answer the call in time (30 seconds), the Control Station will be rung back after the time expires.

Note: When the Control Station does not answer the call rung back, operations are different depending on the third party's state.

- If the third party's line is busy and the Control Station is rung back, but it does not answer:
Ringing the Control Station is stopped, and then the line held by the Control Station is disconnected regardless of whether the held line is Trunk or Station line. If the Control Station is a PS Station, the PS Station is kept ringing.
- If the third party does not answer the call and the Control Station is rung back, but it does not answer:
The Control Station is kept ringing regardless of whether the held line is Trunk or Station line.

Interactions

1. This feature is denied whenever the Transferring Station is engaged in any state other than a simple Two-party Connection.
2. See TRUNK-TO-TRUNK CONNECTION [T-10] in Data Programming Manual - Business for additional programming if the call is to be transferred off- network.

3. Features that cannot be activated while a user has a party in CONSULTATION HOLD [C-58] are:

EXECUTIVE RIGHT-OF-WAY	[E-1][E-8]
TRUNK ANSWER FROM ANY STATION (TAS)	[T-8]
CALL BACK (Activate or Cancel)	[C-1] [C-44]
CALL PICKUP - DIRECT	[C-30]
CALL FORWARDING (Activate or Cancel)	[C-2,3,5] [C-45,46,47]
OUTGOING TRUNK QUEUING Cancel	[O-2] [O-12]
SPEED CALLING - STATION Entry	[S-21]
MESSAGE REMINDER	[M-19] [M-34]
4. Upon establishing a CONSULTATION HOLD [C-58] Connection and dialing a third party, if the user receives busy or Reorder Tone instead of Ringback Tone, the user flashes once to disconnect the tone and reconnect the second party.
5. Upon establishing a CONSULTATION HOLD [C-58] Connection and dialing a MISCELLANEOUS TRUNK ACCESS [M-2] Code, if no Dial Tone is given (after the Trunk is seized), if a mistake is made in dialing, or if Intercept Announcement or a Permanent Tone is given, the user must go on-hook and is rung back.
6. The user who establishes CONSULTATION HOLD [C-58] will be reconnected to the party in soft hold when the third party disconnects.
7. Reorder Tone is returned to the user when the user's line is restricted via Route CLASS OF SERVICE [C-15] or the user dials the number of an unassigned Station or of a Station residing in an inaccessible Tenant via TENANT SERVICE [T-12].
8. A CALL TRANSFER to a Station with Call Forwarding set will forward according to the conditions of the forwarding feature set.
9. A CALL TRANSFER to a Station in a Station Hunt [S-7, 8, 9] Group will hunt according to the conditions of the Hunt Group.)
10. A CALL TRANSFER to a Desktop terminal that has DO NOT DISTURB [D-21D] set, will receive Reorder Tone, or follow CALL FORWARDING - BUSY LINE or ALL CALLS if set.
11. A CALL TRANSFER Call may be answered by CALL PICKUP - GROUP/DIRECT [C-7, 30].
12. When a SIP Handler Controlled SIP terminal is talking with the transferring destination and the transferring destination is released, the SIP Handler Controlled SIP terminal returns to the state putting the previous call on Call Hold (the Call Hold state is not cancelled automatically). An operation to cancel the Call Hold state is needed to talk with the previous call.

Programming

- STEP 1: **ASYD** - System Data 1, Index 69, Bit 0. Return Transferred Call to origin of Call Transfer after the elapse of the Recall Timer.
System Data 1, Index 69, Bit 2. Short Tone on recall of CALL TRANSFER. Ringback Tone is briefly heard by the person answering the recall.
System Data 1, Index 140. Assign the Recall Timer for a Station-to-Station CALL TRANSFER. For 30 seconds, assign data 00H. (TC 3 = 2 seconds, TC 7 = 8 seconds) ROM Data 3FH for 30 seconds.
System Data 2, Index 1, Bits 0 and 1. Assign data "11" to allow CONSULTATION HOLD [C-58].
- STEP 2: **ATNR** - Allow Tenant-to-Tenant Connection for Inter and Intra-Tenant Connections. Assign Tenant Restriction Index (TRI) 0 and 4 on an Intra and Inter-Tenant basis.
- STEP 3: **ARSC** - The Station receiving the call must be assigned a Route Restriction Class (RSC) that will allow the Station to be connected to the Trunk, if a Trunk is involved in the Transferred Connection.
-

C-51 Called Station Status Display - CCIS

General Description

This feature provides for the status of a Called Station to appear on the LCD display of a Calling Desktop terminal using CCIS.

Operating Procedure

Lift the handset or press the SPEAKER key and dial the desired Station. The LCD display indicates the status of the Called Station.

Service Conditions

1. If the Called Station is idle, the display flashes its number until the call is answered.
2. If the Called Station is busy, the LCD displays:

BUSY	XXXX
(Time Display)	

3. If the Called Station is in DO NOT DISTURB [D-21D], the LCD displays:

REST	XXXX
(Time Display)	

4. If the Calling Station encounters a restricted Station, the LCD displays:

REST	XXXX
(Time Display)	

Programming

No programming is required.

C-52 Calling/Called Number Display - CCIS

General Description

This feature allows an LCD on an Attendant Console (hereinafter called ATT) or a Desktop terminal (hereinafter called station) to display a peer ATT/station's telephone number.

Operating Procedure

No manual operation is required.

Service Conditions

<Important Notices>

1. When you try to originate a call to an ATT/station to which a call from your ATT/station is restricted, your ATT/station displays *RESTxxxx*.
* *xxxx* represents the called ATT/station's telephone number.

<Interactions with Other Features>

1. When a peer ATT/station forwards a call from you without answering, your ATT/station's LCD works as the following (Call Forwarding - Busy Line [C-2], Call Forwarding - Don't Answer [C-3], Call Forwarding - All Calls [C-5], Call Forwarding - All Calls - CCIS [C-45], Call Forwarding - Busy Line - CCIS [C-46], Call Forwarding - Don't Answer - CCIS [C-47], Call Forwarding Ps Incoming Call Incomplete [C-155], Logged Out IP Station - Call Destination [L-53]):
 - a.) If a peer ATT/station belongs to the same node with your ATT/station, your ATT/station switches the displayed number from the peer's to a forwarded party's once the peer forwards the call.
 - b.) If a peer ATT/station belongs to the different node from your ATT/station, your ATT/station does not switch the displayed number from the peer's to a forwarded party's until the forwarded party answers.
 - c.) If an ATT/station uses Software Line Appearance [S-33] or PS Line Appearance on Dterm [P-71] for the call, the peer's telephone number displayed on your LCD remains without switching to a forwarded party's number; but if a station with Call Pickup set answers the forwarded call, your LCD displays the station's telephone number.
2. When a peer ATT/station transfers a call with you during conversation, your ATT/station's LCD works as the following (Call Transfer - All Calls [C-11], Call Transfer - All Calls - CCIS [C-50]):
 - a.) Your ATT/station switches the displayed number from the peer's to a forwarded party's when the forwarded party answers.

<Hardware/Software>

1. An ISDN terminal does not display a peer's telephone number when originating a call.
2. When receiving a call from an ISDN terminal or via ISDN lines, an ATT/station displays the ISDN-using peer's telephone number as well as its calling party subaddress.
3. If you use an Attendant Console (ATT):
 - a.) Originating a Call: your ATT displays the upper six digits of the peer ATT/station's telephone number only when the peer answers the call.
 - b.) Receiving a Call: your ATT displays the upper six digits of the peer ATT/station's telephone number only when you answer the call.
4. If you use a Desktop terminal (station):
 - a.) Originating a Call: your station displays the upper 16 digits (**Note 1**) of the peer ATT/station's telephone number.

- b.) Receiving a Call: your station displays the upper 16 digits (**Note 1**) of the peer ATT/station's telephone number.
- c.) If a peer ATT/station has a telephone number of 17 digits or longer and a physical station number of 16 digits or shorter, your station displays the physical station number instead of the incomplete telephone number (upper 16 digits). **Note 1**

Note 1: As for a call via a CCIS network, a station can display up to 16 digits of a peer ATT/station's telephone number only if in the system with particular system data assigned; otherwise, up to eight digits. See CCIS Networking via IP [C-163].

- d.) Your station does not display a peer ATT/station's telephone number when receiving a call forwarded from a different node from yours: a forwarded call by Call Forwarding - All Calls - CCIS [C-45]; Call Forwarding - Busy Line - CCIS [C-46]; Call Forwarding - Don't Answer - CCIS [C-47].

The following table shows what your station displays when receiving a forwarded/transferred call: a "Calling Party" cell shows where a call originally comes from; a "Forwarding Party" cell shows an ATT/station which first receives the call and forwards to you; a green cell where the preceding two cells meet represents your station's LCD displaying for the forwarded/transferred call.

* Suppose that your station belongs to Node A which is connected with Node B through a CCIS network.

Note: As for Service Display -D [S-25D] for forwarded calls (ones displayed at the far left on the following LCDs), what is displayed depends on the type of the station.

**If Your Station Receives a Call Forwarded by
Call Forwarding - All Calls [C-5] or Call Forwarding - All Calls - CCIS [C-45]**

Calling Party Forwarding Party	Forwarded from Node A (same node with your station)	Forwarded from Node B (different node from your station)
Called via C.O. line	CF ALL 00000000 DDD	CF ALL DDD
Called from Node A	CF ALL 00000000 11111111	CF ALL 11111111
Called from Node B	CF ALL 11111111	CF ALL 11111111
00000000: forwarding station's telephone number 11111111: calling station's telephone number		

**If Your Station Receives a Call Forwarded by
Call Forwarding - Busy Line [C-2] or Call Forwarding - Busy Line - CCIS [C-46]**

Forwarding Party Calling Party	Forwarded from Node A (same node with your station)	Forwarded from Node B (different node from your station)
Called via C.O. line	CF BUSY 00000000 DDD	CF BUSY DDD
Called from Node A	CF BUSY 00000000 11111111	CF BUSY 11111111
Called from Node B	CF BUSY 11111111	CF BUSY 11111111
00000000: forwarding station's telephone number 11111111: calling station's telephone number		

**If Your Station Receives a Call Forwarded by
Call Forwarding - Don't Answer [C-3] or Call Forwarding - Don't Answer - CCIS [C-47]**

Forwarding Party Calling Party	Forwarded from Node A (same node with your station)	Forwarded from Node B (different node from your station)
Called via C.O. line	CF NANS 00000000 DDD	CF NANS DDD
Called from Node A	CF NANS 00000000 11111111	CF NANS 11111111
Called from Node B	CF NANS 11111111	CF NANS 11111111
00000000: forwarding station's telephone number 11111111: calling station's telephone number		

**If Your Station Receives a Call Transferred by
Call Transfer - All Calls [C-11] or Call Transfer - All Calls - CCIS [C-50]**

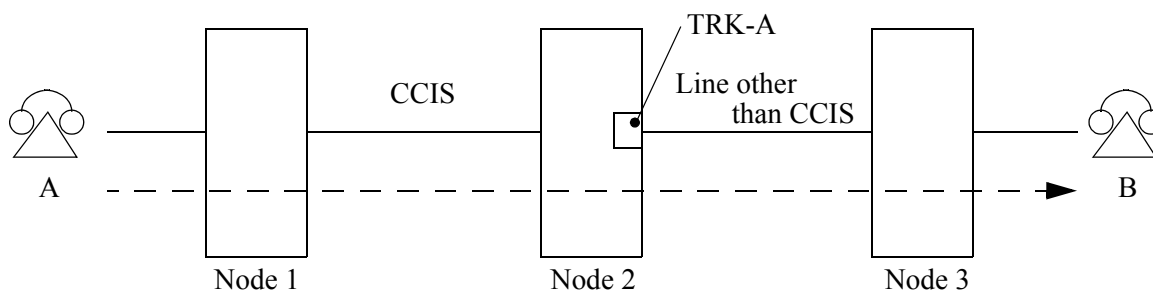
Forwarding Party Calling Party	Forwarded from Node A (same node with your station)	Forwarded from Node B (different node from your station)
Called via C.O. line	TRANSFER 00000000	00000000
Called from Node A	TRANSFER 00000000	00000000
Called from Node B	TRANSFER 00000000	00000000
00000000: forwarding station's telephone number		

5. If an ATT/station does not receive a calling party number from a peer ISDN terminal belonging to a different node, the ATT/station displays a B-channel's number used by the peer for the call; if an ATT/station receives a calling party number, it displays the number.

<Interactions with Network Features>

1. If your originating call passes through a line other than CCIS, your ATT/station displays the trunk classification (such as *TIE*) of the line instead of the party's telephone number when the party answers.

Note: This condition also applies when your call to an ATT/station is forwarded to a party passing through a line other than CCIS with the following features as well as regardless of whether the forwarding ATT/station belongs to the same node with you or not: Call Forwarding - Busy Line [C-2], Call Forwarding - Don't Answer [C-3], Call Forwarding - All Calls [C-5], Call Forwarding PS Incoming Call Incomplete [C-155], Logged Out IP Station - Call Destination [L-53].



In this case, station A displays the trunk classification of TRK-A when station B answers.

<Conditions Specific to This Feature>

1. An ATT/station continues to display an original peer ATT/station's telephone number even if another ATT/station replaces the original one.
2. The display of the Telephone Number of the Station that has answered the call routed by the Attendant has priority over this service. This is not applicable to Inter-Office Telephone Number display in the above case.

Programming

ASYD - System Data 1, Index 78, Bit 0 = 1: Calling and Intermediate Station Number Indication is in service.

System Data 1, Index 78, Bit 1 = 1: Kind of Service Class indication is in service.

System Data 1, Index 82, Bits 4-7: Number Display Pattern.

C-53 Call Processing Indication - CCIS

General Description

This feature provides a visual indication at the ATTENDANT CONSOLE [A-3] of all CCIS Calls being handled by the ATTENDANT CONSOLE [A-3] through the CCIS Network.

Operating Procedure

Refer to Desk Console USER'S GUIDE.

Service Conditions

1. The status of calls being processed by the Attendant is indicated by the Status Lamps (BUSY, ATND, or HOLD) corresponding to the particular Loop key.
2. The ATTENDANT CONSOLE [A-3] is equipped with six dedicated Switched Loop keys. Each Loop key has five associated Indicator Lamps (HOLD, ATND, BUSY, RING, ANSWER) which display the status of the call on that Loop. The Indicator Lamps may be ON, OFF or FLASHING (400 milliseconds. On and 400 milliseconds. Off).
3. When the ATTENDANT LOOP RELEASE [A-6] feature is activated, the status of the call is removed from the ATTENDANT CONSOLE [A-3] until alerted by the AUTOMATIC RECALL [A-8] feature.

Interactions

The ATTENDANT CONSOLE [A-3] must first be provided.

Programming

No programming is required. These indications are inherent in the system. These indications are enabled when the ATTENDANT CONSOLE [A-3] is programmed. For additional information, see DIGITAL DISPLAY - STATION [D-5], DIGITAL DISPLAY TRUNK [D-6], and ATTENDANT LOOP RELEASE [A-6] in Data Programming Manual -Business.

C-54 Call Transfer - Attendant - CCIS

General Description

This feature allows a user to transfer a call through the CCIS Network to an Attendant Console located in a Main or Satellite Node, while connected to a CCIS Network Call.

Operating Procedure

To transfer a call to an Attendant Console:

1. While engaged in a Central Office Trunk Call, switch hook flash. Receive Special Dial Tone.
2. Dial the Operator Access Code.
3. The Attendant Console Recall Lamp flashes and the buzzer sounds. The Station receives Ringback Tone.

To answer from the Attendant Console:

1. Refer to Desk Console USER'S GUIDE.

If the Station wishes to return to the Central Office Trunk call while the Attendant Console is being called:

1. Switch hook flash. The Recall Lamp is extinguished at the Attendant Console and the buzzer stops.
2. The Station returns to the Central Office Trunk Call.

Service Conditions

1. This feature is available when the Attendant Console is in a different Node in the CCIS Network.
2. This feature is available for Incoming or Outgoing Central Office. Trunk Calls and Station-to-Station Calls.
3. When the Attendant Console is in NIGHT CONNECTION - CCIS mode, the Transferring Station will receive Reorder Tone.
4. When a HOTLINE - CCIS [H-12] set is equipped with a dial, the user can switch hook flash to get the Special Dial Tone, then dial "0". Ringback Tone is provided and the Attendant Console is notified of the call.
5. This feature cannot be used when NIGHT CONNECTION - FIXED - CCIS [N-15] or NIGHT CONNECTION - FLEXIBLE - CCIS [N-16] is activated. In this case, CALL TRANSFER - ALL CALLS - CCIS [C-50] would be used to transfer a call. If CALL TRANSFER - ATTENDANT - CCIS is attempted, Reorder Tone will be returned.
6. If the SPLITTING [S-4, S-4D] or ATTENDANT LOCKOUT [A-5] feature is activated, CALL TRANSFER - ATTENDANT - CCIS can be implemented.
7. A Station-to-Station or station-to-trunk connection, within the same Node as the NIGHT ATTENDANT TRANSFER [A-19] station, cannot be transferred to the NIGHT ATTENDANT TRANSFER [A-19] Station. However, a Station-to-Station or station-to-trunk connection, in which one party is located in the same system as the NIGHT ATTENDANT TRANSFER [A-19] Station, can be transferred to the NIGHT ATTENDANT TRANSFER [A-19] Station.

Interactions

1. A HOTLINE [H-1] Station may transfer a call to the Attendant Console.
2. A call transferred to a Station with a Call Forwarding feature set will forward according to the conditions of the feature, unless the Station is CALL FORWARDING - ALL CALLS - CCIS to the Attendant Console. CALL FORWARDING - OVERRIDE [C-26] supersedes CALL FORWARDING - ALL CALLS - CCIS.

3. A call transfer to a Station in a Station Hunt Group will hunt according to the conditions of the Station Hunting feature used.
4. A call transfer to a Desktop terminal that has DO NOT DISTURB [D-21D] set will receive Reorder Tone, or follow CALL FORWARDING - BUSY LINE or ALL CALLS if set.
5. When a SIP Handler Controlled SIP terminal is talking with the transferring destination, Attendant Console, and the transferring destination is released, the SIP Handler Controlled SIP terminal returns to the state putting the previous call on Call Hold (the Call Hold state is not cancelled automatically). An operation to cancel the Call Hold state is needed to talk with the previous call.

Programming

- STEP 1: **ASYD** - System Data 2, Index 1, Bits 0 and 1. Assign data “11” to allow CONSULTATION HOLD [C-58] for all types of connections.
- STEP 2: **ATNR** - Allow Tenant-to-Tenant Connection for Inter and Intra-Tenant Connections. Assign Tenant Restriction Index (TRI) 0, and 4 on an Inter and Intra-Tenant basis.

C-55

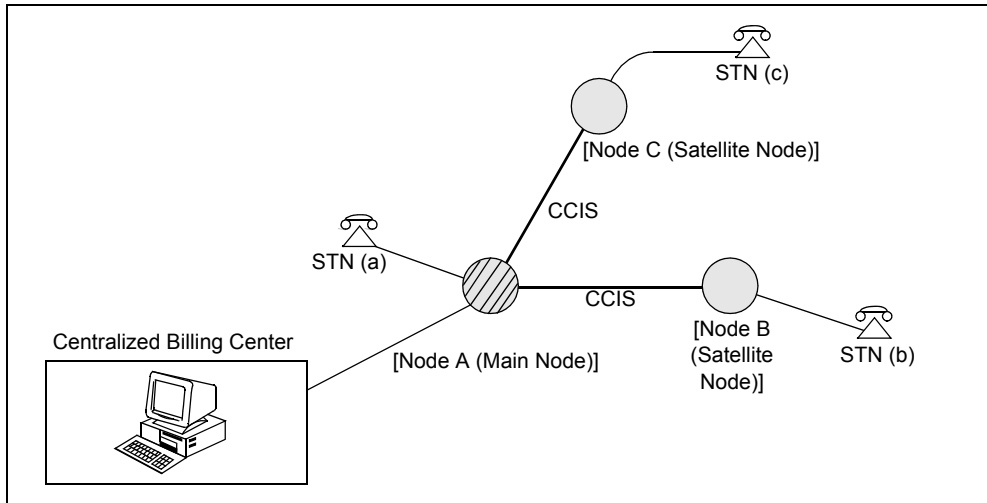
Centralized Billing - CCIS

General Description

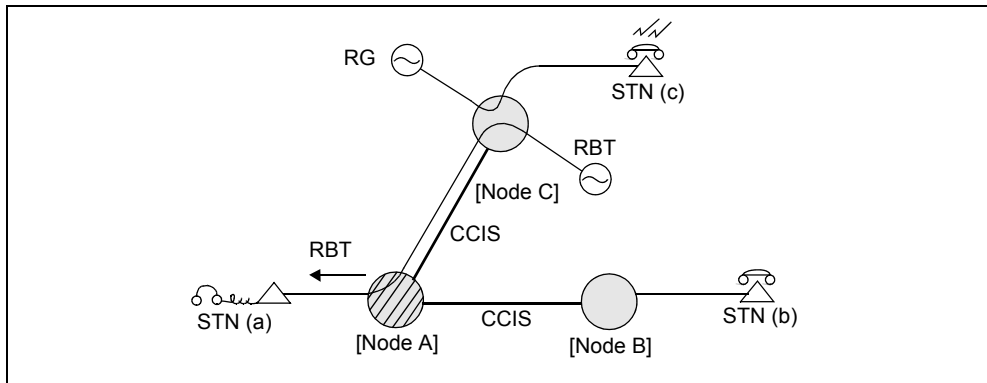
This service is used for collecting billing information from each Office within the CCIS network and directing it to associated Offices, thus providing the billing information to the CENTRALIZED BILLING CENTER.

Operating Procedure

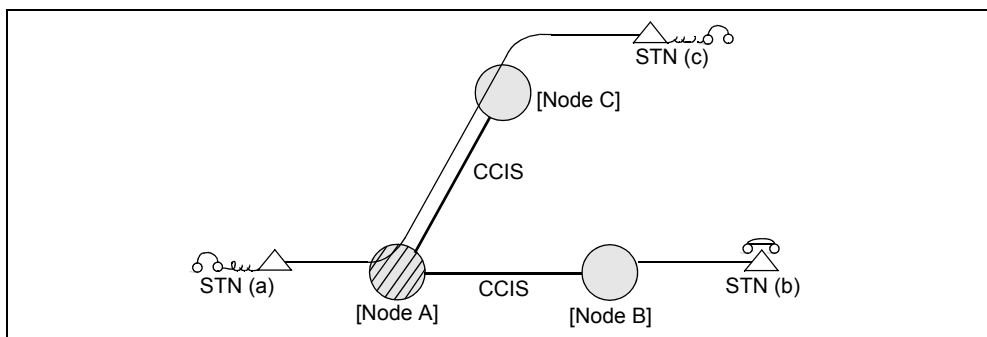
To operate:



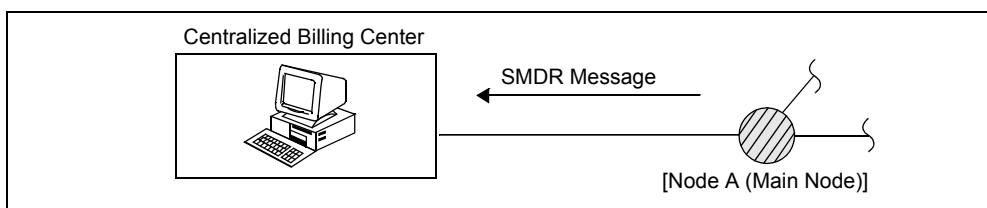
1. Station A in Node A (Main Node) dials Station C in Node C. Station A receives Ringback Tone and Station C is rung.



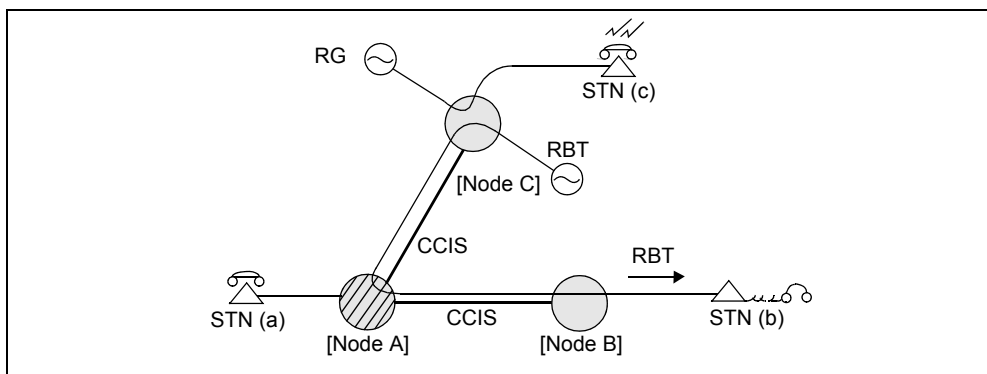
2. Station C goes off-hook. Stations A and C are connected with each other in conversation.



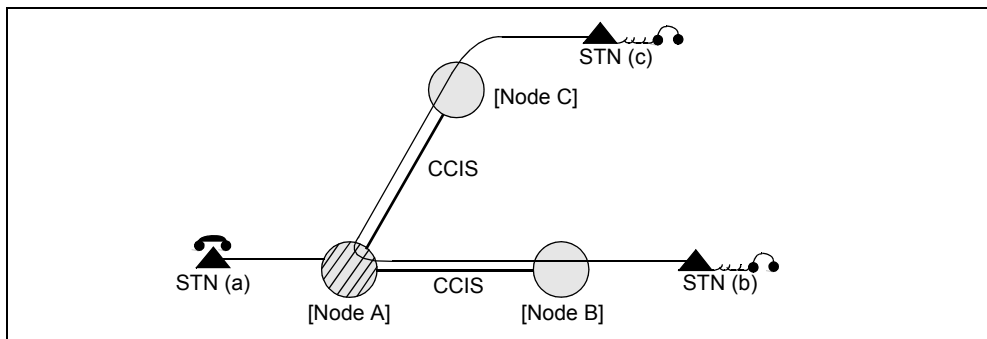
3. Stations A and C go on-hook. SMDR information is sent out to the CENTRALIZED BILLING CENTER.



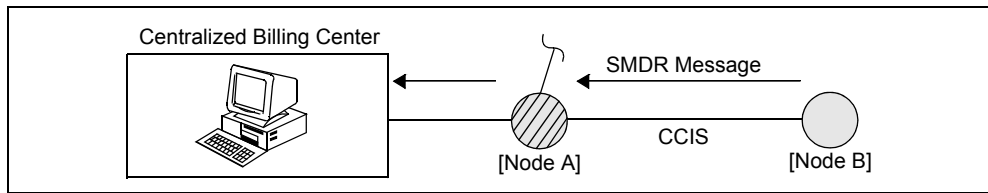
4. Station B dials Station C in Node C. Station B receives Ringback Tone and Station C is rung.



5. Station C goes off-hook. Stations B and C are connected in conversation.



6. Stations C and B go on-hook. SMDR information is sent to the Billing Center through the CCIS Line.



Service Conditions

1. Information storage capacity of the Office should be 700 calls.
2. If billing information in excess of the above mentioned storage capability is generated at a time when the billing information cannot be transmitted to the associated Center Office because of a fault condition, the newly generated billing information cannot be processed.
3. When using CENTRALIZED BILLING - CCIS, it is recommended that the speed of the CCIS Signalling Link be higher than 9600 bps.
4. When the Centralized Billing Office cannot receive any billing information for 20 seconds, billing information created at local offices is not to be sent to the Centralized Billing Office. In this case, only Centralized Billing Office is set as an output destination of the billing information created at the local offices, the information will be deleted. As long as this incapability of sending information persists, the transmission status is to be checked in order from the oldest.
5. After the Center Office receives billing information from a Local Office, it returns ACK to the Local Office. If the Local Office fails to receive ACK due to a network failure, the Local Office sends billing information again. So redundant billing information may be output when ACK packet loss caused by a network failure occurs.

Programming

This feature requires the Station Message Detail Recording (SMDR) [S-10] data and the CCIS basic data, in addition to the following data programming.

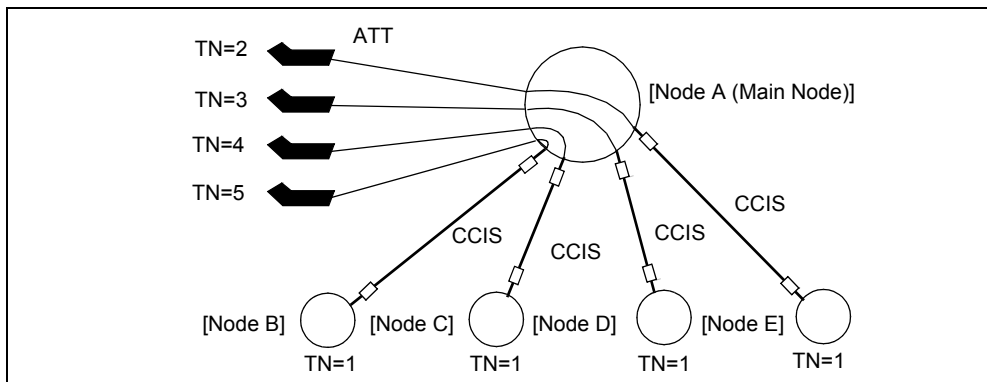
- STEP 1: **ASYD** - System Data 1, Index 182 and 183. Assign the Point Code of the CENTRALIZED BILLING CENTER node.

C-56 Centralized Day/Night Mode Change - CCIS

General Description

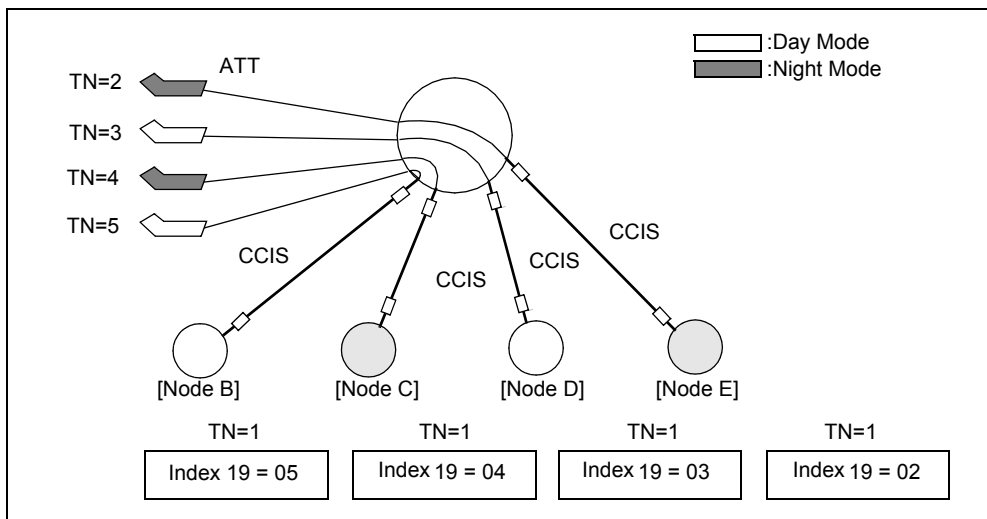
This feature switches the DAY/NIGHT Mode of Satellite Nodes which are linked to the Main Node via CCIS, in accordance with the DAY/NIGHT Mode Switching at the Main Node.

Operating Procedure



Note: Node B - Node E are Satellite Nodes.

1. Press the NIGHT key on the Attendant Console for each Tenant. The NIGHT Lamp illuminates. The mode of Satellite Node for each Tenant changes from Day mode to Night mode.



Note: To confirm Night mode, see Night Connection - Fixed - CCIS [N-15].

Service Conditions

1. A Main Node can control DAY/NIGHT mode Changeover for a maximum of 16 Remote Nodes.
2. DAY/NIGHT mode Changeover will be performed in one-minute increments. If consistency between the DAY/NIGHT mode at the Main and Satellite Nodes is lost, the status is restored to the Main Node within 16 minutes.
3. At the Main Node, from 1 to 15 Tenants can use the system.
4. At a Satellite Node, only TN = 1 is possible.
5. When a Satellite Node is equipped with DAY/NIGHT mode changeover features, changeover of the Satellite Node DAY/NIGHT mode is not performed from the Main Node.
6. The Satellite Node cannot have an Attendant Console programmed.
7. Selecting DAY/NIGHT option from the System does not change the NEAX 2000 IVS²/IPS DAY/NIGHT status.

Programming

- STEP 1: **ASYS** - System Data 1, Index 4, Bit 4 = 1 for RSC Mate Check.
System Data 1, Index 18, Bit 6: Day/Night change of Satellite Node (for Main Node only). Assign data "1" at the Main Node.
System Data 1, Index 18, Bit 7: Day/Night change is executed by the Main Node (for Satellite Node only). Assign data "1" at the Satellite Node whose Day/Night mode is to be changed in accordance with key operation at the Main Node.
System Data 1, Index 19, Bits 0-3: Tenant Number (TN 1-15) of the Main Node to which the Satellite Node belongs (for Satellite Node only).
System Data 1, Index 75, Bit 0: Route Restriction Pattern (ARSC/ARSCN). Bit 1: Service Feature Restriction Pattern (ASFC/ASFCN).
System Data 1, Index 75. Assign 1 (Day/Night Data) to Bit 0 [Route Restriction Pattern (ARSC/ARSCN)], Bit 1 [Service Feature Restriction Pattern (ASFC/ASFCN)], Bit 2 [Tenant Restriction Pattern (ATNR)], Bit 3 (Toll Restriction Pattern (ATDP/ATDPL/ATDPN), and Bit 4 Class Restriction Pattern (AEFR/AEFRN).
System Data 1, Index 186, Bit 1 = 1 for RSC Check on Tandem Call.
System Data 1, Index 229 = 09 (for Main and Satellite Nodes).
- STEP 2: **ARDN** - Assign Point Code of Satellite Node (Index = 0-15, PC = 1-16367). (Main Node only.)
- STEP 3: **ARSC/ARSCN** - Assign data on Day/Night mode basis.
- STEP 4: **ASFC/ASFCN** - Assign data on Day/Night mode basis.
- STEP 5: **ATDP/ATDPL/ATDPN** - Assign data on Day/Night mode basis.
- STEP 6: **ATNR** - Assign data on Day/Night mode basis.
- STEP 7: **AEFR/AEFRN** - Assign data on Day/Night mode basis (EPN Version).

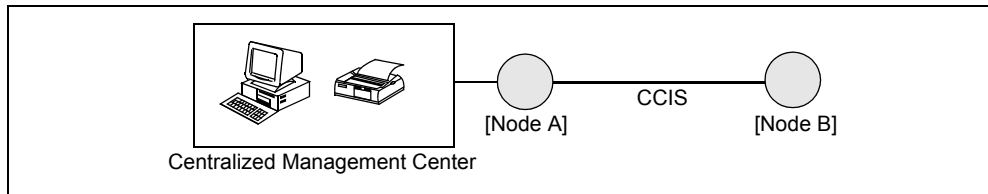
Note: To list up Day/Night information, use LDNI.

C-57 Centralized System Management Report - CCIS

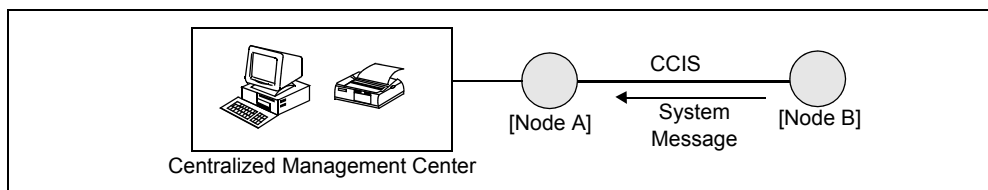
General Description

This feature provides automatic reporting of fault information of Satellite Nodes to the Centralized Management Center with an external indication of the detected fault.

Operating Procedure



1. On the ACT side CPU of Node B, set the MBR switch up (ON). System Messages are sent out to Node A, and the CPU is changed over.
2. Return the MBR switch down (OFF). System Messages are sent out to Node A.



3. The System Messages of Node B are printed out from the Printer in Node A.

Note: If System Data (Index 188) is assigned in such a way that MJ/MN alarm at a Local Office is to be displayed on the Display Panel at the Center Office, an MJ/MN alarm that is generated in Node B is indicated as an MJ/MN alarm on the Display Panel in Node A and the corresponding System Message is given out.

Service Conditions

1. When the fault information cannot be sent from the Satellite Node to the Main Node, fault information buffer capacity is 64 messages.
2. A maximum of 511 messages can be stored in the Main Node.
3. An Alarm Lamp Indication of a fault that occurs at a Remote Node is made only at the Local Office. At the Center Office, fault indication is made to PCPro and to the External Equipment. However, no frametop alarm indication is given.
4. At the Main Node, the System Message will be printed automatically, when the command is executed.
5. When the Center Node provides the Printer for Fault Data Automatic Printout Function (System Data 1, Index 86, Bit 4) and the Printer directly connected to PCPro together, the former Printer has priority over the latter one. At that time, the printer connected to PCPro is used to print the collected fault data when the Printer for Fault Data Automatic Printout Function cannot print for any reason.

Programming

This feature requires the Station Message Detail Recording (SMDR) [S-10] data and the CCIS basic data, in addition to the following data programming.

STEP 1: **ASYD** - System Data 1, Index 180 and 181: Assignment of the Local Office Point Code (OPC).
 System Data 1, Index 184 and 185: Assignment of the Center Office Point Code (DPC) (When the Self Office is the Center Office, (DPC = 0)).

C-58 Consultation Hold - All Calls - CCIS

General Description

This feature permits a user within the CCIS Network to hold any Incoming or Outgoing Public Network, Intra-Office, or CCIS Call while originating a call to another Station within the CCIS Network.

Operating Procedure

To hold the original call and place a second call from a Single Line Telephone:

1. Switch hook flash. Receive Special Dial Tone.
2. The original call is placed on hold.
3. Dial the second Telephone Number. Receive Ringback Tone.
4. The second Station answers; CONSULTATION HOLD is established.

To return to the original call from a Single Line Telephone:

1. Under any of the following conditions, the Calling Station can return to the original call by pressing the switch hook:
 - a.) The second Station called for CONSULTATION HOLD is busy.
 - b.) The Calling Station cannot gain access to the second station because of a restriction, or for any other reason.
 - c.) The second Station does not answer.
2. If a CONSULTATION HOLD Call is established and the second party hangs up, the Calling Station will automatically be returned to the original call.
3. If the Originating Station switch hook flashes, a THREE-WAY CALL [T-2] will be established.

To hold the original call and place a second call from a Desktop terminal:

1. Press the TRANSFER key. Receive Special Dial Tone.
2. The original call is placed on hold.
3. Dial the second Telephone Number. Receive Ringback Tone.
4. The second Station answers. CONSULTATION HOLD is established.

To return to the original call from a Desktop terminal:

1. Under any of the following conditions, the Calling Station can return to the original call by pressing the TRANSFER key.
 - a.) The second Station Called for CONSULTATION HOLD is busy.
 - b.) The Calling Station cannot gain access to the second Station because of a restriction, or for any other reason.
 - c.) The second Station does not answer.
2. If the second Station hangs up, the Calling Station will automatically be returned to the original call.
3. If the Originating Station presses the TRANSFER key while connected to the second Station, the second Station is put on hold and the Calling Party returns to the original call.

Service Conditions

1. When TRUNK-TO-TRUNK CONNECTION [T-10] is provided, an Outgoing Exchange Network or TIE Line Call can be made by the user.
2. The party placed in CONSULTATION HOLD - ALL CALLS - CCIS will hear MUSIC ON HOLD [M-7], if provided.

Interactions

1. This feature is denied whenever the Destination Telephone Set is engaged in any state other than simple Two-party connection.
2. CONSULTATION HOLD - ALL CALLS - CCIS must always be made available when features require hooking services.
3. Indexes 156 and 157 also are used for SMDR, establishing an arbitrary connection timing when No Answer Supervision is used.
4. If a party is involved in a CONSULTATION HOLD - ALL CALLS - CCIS state or in an established THREE-WAY CALLING [T-2] Connection, attempts to override the connection are denied. These features are:

ATTENDANT CAMP-ON WITH TONE INDICATION	[A-1] [A-45]
ATTENDANT OVERRIDE	[A-7]
BUSY VERIFICATION	[B-3] [B-9]
CALL WAITING - TERMINATING	[C-12]
EXECUTIVE RIGHT-OF-WAY	[E-1] [E-8]
5. Features that cannot be activated while a user has a party in CONSULTATION HOLD - ALL CALLS - CCIS are:

CALL BACK, Activate or Cancel	[C-44]
CALL PICKUP - DIRECT	[C-30]
CALL FORWARDING, Activate or Cancel	[C-45,46,47]
EXECUTIVE RIGHT-OF-WAY	[E-1]
MESSAGE REMINDER	[M-34]
OUTGOING TRUNK QUEUING, Cancel	[O-12]
SPEED CALLING - INDIVIDUAL, Entry	[S-21]
TRUNK ANSWER FROM ANY STATION (TAS)	[T-27]

All other features may be activated as long as the user's line CLASS OF SERVICE - INDIVIDUAL [C-15] allows that feature.
6. If the user receives busy or Reorder Tone instead of Ringback Tone upon establishing a CONSULTATION HOLD - ALL CALLS - CCIS Connection and dialing a third party, the user flashes once to disconnect the tone and reconnect the second party.
7. Upon establishing a CONSULTATION HOLD - ALL CALLS - CCIS Connection and dialing a MISCELLANEOUS TRUNK ACCESS [M-2] Code, if no Dial Tone is given (after the Trunk is seized), if a mistake is made in dialing, or if an Intercept Announcement or a Permanent Tone is given, the user must go on-hook and is rung back.
8. A user who established CONSULTATION HOLD - ALL CALLS - CCIS is reconnected to the party in soft hold when the third party disconnects.
9. When using CALL TRANSFER - ALL CALLS - CCIS [C-50] from a Station (second party) to another Station or Trunk (third party), the Control Station can transfer the call during ringing (Blind Transfer). When the Control Station goes on-hook, the Station in soft hold is connected to the Third party's Connection and hears Ringback Tone. A 30-second timer is set when the controlling station goes on-hook. If the timer times out before the third party answers, the Control Station is rung back.

Programming

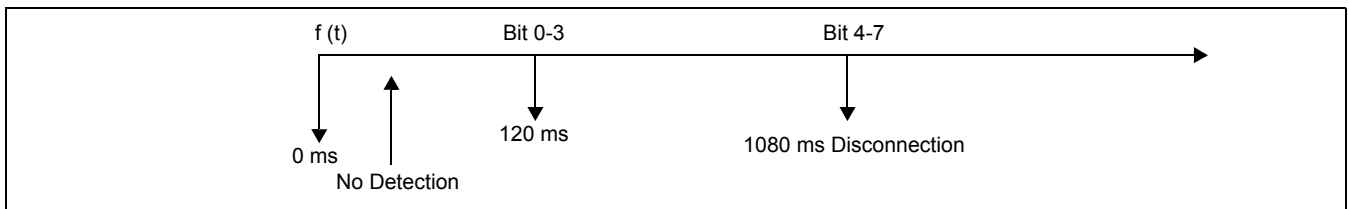
ASYD - System Data 1, Index 156. Trunk Soft Hold Timer A, used with Second Dial Tone Trunks. Assign data 00H for 30 seconds. (Data 31H may be used for a value of two seconds if CALL TRANSFER - ALL CALLS [C-50] is to be used immediately after connecting to the Trunk.) This is the time between trunk connections when switch hook flash is allowed on a non-senderized trunk connection.

System Data 1, Index 157. Trunk Soft Hold Timer A, used with Senderized Trunks. Assign data 00H for a value of 18 seconds. (Data 31H may be used for a value of 2 seconds if CALL TRANSFER - ALL CALLS [C-50] is to be used immediately after connecting to the Trunk.) This is the time between trunk connection and when switch hook flash is allowed on a senderized trunk connection. It is also used to determine when SMDR billing will begin.

System Data 2, Index 1, Bits 0 and 1. CONSULTATION HOLD allowed or denied. 00: denied; 01: Originating and Terminating Calls allowed, Tandem Call denied; 11: All calls allowed. Normally assign data "11".

System Data 3, Index 2, Bits 0-3. Switch hook flash begin timer. To calculate this value: $(1-FH) \times 120 \text{ milliseconds} = \text{Timer}$.

System Data 3, Index 2, Bits 4-7. Switch hook flash end timer. To calculate this value: $(1-FH) \times 120 \text{ milliseconds} = \text{Timer}$. For both begin and end timers, assign 91H for 120-1080 milliseconds.



C-94 Call Forwarding Assignment - Attendant - CCIS

General Description

This feature allows the Attendant of an Attendant Console to set/cancel the following Call Forwarding Services to a Station within the CCIS Network.

CALL FORWARDING - ALL CALLS	[C-5]
CALL FORWARDING - ALL CALLS - CCIS	[C-45]
CALL FORWARDING - BUSY LINE	[C-2]
CALL FORWARDING - BUSY LINE - CCIS	[C-46]
CALL FORWARDING - DON'T ANSWER	[C-3]
CALL FORWARDING - DON'T ANSWER - CCIS	[C-47]
CALL FORWARDING - ALL CALLS - OUTSIDE	[C-28]
CALL FORWARDING - DON'T ANSWER - OUTSIDE	[C-74]

Operating Procedure

To set Call Forwarding:

1. Attendant presses an Idle Loop key.
2. Attendant dials the Call Forwarding-All Calls, Call Forwarding- Busy Line, or Call Forwarding-Don't Answer Entry Code. Receives Special Dial Tone.
3. Attendant dials the two-digit Tenant Number of the Transferring Station.
4. Attendant dials the Office Code (including Access Code) of the Transferring Station and the Telephone Number of the Transferring Station.
5. Attendant dials the Telephone Number of the Target-Station.

Note: When the Transfer Target Station is in the CCIS Network, dial the Office Code (including Access Code and the station number of the Target Station).

6. Attendant dials "#". Receives Service Set Tone.
7. Attendant presses the RELEASE key.

To cancel Call Forwarding:

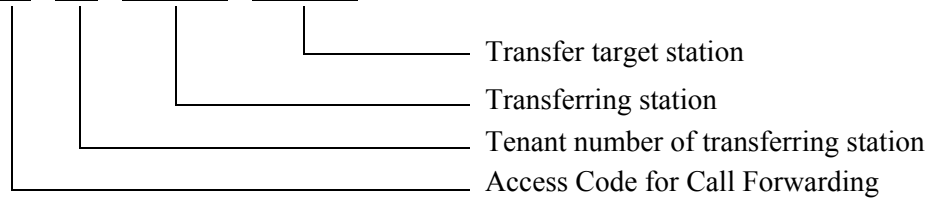
1. Attendant presses an Idle Loop key.
2. Attendant dials the Call Forwarding-All Calls, Call Forwarding- Busy Line, or Call Forwarding-Don't Answer Entry Code. Receives Special Dial Tone.
3. Attendant dials the Tenant Number of the Transferring Station.
4. Attendant dials the Office Code (including Access Code) of the Transferring Station and the Telephone Number of the Transferring Station. Receives Service Set Tone.
5. Attendant presses the RELEASE key.

Service Conditions

1. A Transferring Station, accommodated in the CCIS Network, dials the Office Code inclusive of Access Code and the Telephone Number. A method for setting a Call Forwarding by this service can be selected from the following patterns on each Tenant basis by the System Data. (ASYD, System Data 2, Index 15, Bit 4).

- a.) Pattern 1 (ASYD, System Data 2, Index 15, Bit 4= 0)

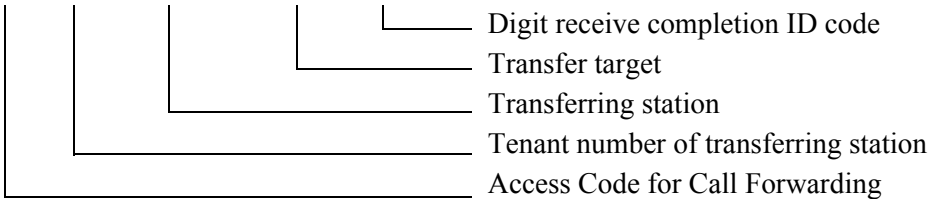
XX - XX - XXXXXX - XXXXXX



This pattern is used when a Unified Numbering Plan is in use within the CCIS Network.

- b.) Pattern 2 (ASYD, System Data 2, Index 15, Bit 4 = 1)

XX - XX - XXXXXX - XXXXXX - #



This pattern is used when a Unified Numbering Plan is not in use within the CCIS Network.

2. Since the Numbering Plan at the Transfer Destination cannot be identified in this case, dialing the digit receive completion ID Code (#) must be dialed.
3. If the Transferring Telephone Number of the Transfer Target Telephone Number dialed by the Attendant is a wrong number, the Attendant receives Reorder Tone. For example:
 - a.) When an unobtainable number has been dialed.
 - b.) When the Transferring Station or the Transfer Target Station is restricted from the service.
 - c.) When the number dialed is double registered.
4. A Transferring Telephone Number is a maximum of eight digits.
5. When the Transferring Station is an ATTCN, service can be set by its Individual Attendant Number but the call is not transferred to the designated Target Station.

Programming

- STEP 1: **ASYD** - System Data 2, Index 15, Bit 4: The Office which determines the Target Number. 0/1: Service executing Office/Office accommodating the Transferring Station.
- STEP 2: **ASAT** - Assign an Individual Attendant Access Number for each Attendant Console.
- STEP 3: **ANPD** - Assign the Minimum Necessary Number of Digits for the first number of the Access Code for Call Forwarding.
- STEP 4: **ASPA** - Assign the Access Code for Call Forwarding.
CI = "N: Normal", SRV = "SSC: Service Code", SID = 8, Call Forwarding - All Calls (Entry)
CI = "N: Normal", SRV = "SSC: Service Code", SID = 9, Call Forwarding - All Calls (Cancel)
CI = "N: Normal", SRV = "SSC: Service Code", SID = 10, Call Forwarding - Busy Line (Entry)
CI = "N: Normal", SRV = "SSC: Service Code", SID = 11, Call Forwarding - Busy Line (Cancel)
CI = "N: Normal", SRV = "SSC: Service Code", SID = 12, Call Forwarding - Don't Answer (Entry)
CI = "N: Normal", SRV = "SSC: Service Code", SID = 13, Call Forwarding - Don't Answer (Cancel)
- STEP 5: **ARNP** - RT 0: Self Office Identification Code for CCIS. If RT 0 is assigned, Service Set Tone will not be heard.

C-163

CCIS Networking via IP

1. CCIS Networking via IP (By PHC)

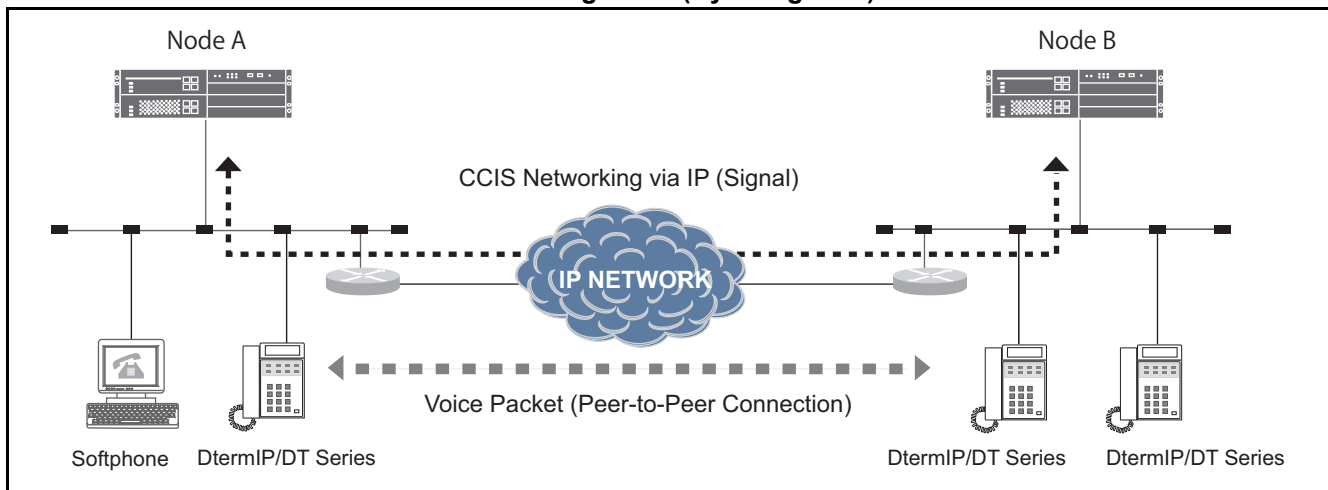
Note: When the setting of this system data is changed, initialize the Internal PHC module with the ADPM command.

Note: When the destination node does not support CCIS features, the CCIS features do not work. Confirm that the destination node supports the CCIS features beforehand.

General Description

The “CCIS Networking via IP” feature can be activated by using Internal PHC. At this time, the voice data between the IP stations controlled by the different Telephony Server(s) can be sent/received in a Peer-to-Peer connection, while the control signals are handled by the Internal PHC accommodated in each Telephony Server. This feature is also available in 16-IMG system since Feature Package 8800 (Release 15).

PHC CCIS Networking via IP (By using PHC) - Overview



Service Conditions

<Important Notices>

1. Internal PHC can be connected to the only Internal PHC (in the destination node). Therefore, IPTRK card cannot be the connecting destination of Internal PHC.
2. A maximum of 64 links are available at the same time per system. If you assign ASYDL System Data 1, Index 1020, Bit 7=1 (Expansion of Links to Internal PHC is enabled), a maximum of 252 links are available at the same time. **Note 1**

Note 1: Available for FP95-112 V2 or later.

3. A maximum of 999 speech channels can be controlled in a system.

4. To use Internal PHC, the system data assignment of ASYDL, System Data 1, Index 880, Bit 2=1 is required.
5. Since Telephony Server needs to control calls, the LENS data of the virtual-trunks for Speech Channels is required. For registration of the virtual-trunks for Speech Channels, any circuit card is not physically required. However, the virtual-trunks must be allocated to the LENS of vacant slot on which the station/trunk is not mounted, on a per HW block basis. For more details, see “STEP 5: ATRK” in the Programming section.
6. After the registration of the virtual-trunks data (by ATRK command) is completed, be sure to reset the registered virtual-trunks by using SCVT command.
7. Speech Channel for Internal PHC can also be assigned on Virtual PIR. This condition is also available in 16-IMG system. For details on Virtual PIR, refer to “Virtual PIR Data” in Chapter 2 of Data Programming Manual - Business.
8. Coexistence with the conventional CCIS is available. However, the routes used for this feature and the conventional CCIS cannot be directed toward the same Point Code.
9. [While in Consultation Hold is activated between nodes] One of the parties presses the “HOLD” key and the other presses the “CONF” key at the same time, MUSIC ON HOLD [M-7] may be not provided.
10. When a conversation is established between the stations belonging to different nodes and these two stations press each “HOLD” key at the same time, MUSIC ON HOLD [M-7] may be not activated.
11. If a three-way connection is established between the nodes, the parties in the conversation can only release the call.
12. When a call is held by the station in different node, the held party can only release the call.
13. To prevent the system from receiving abnormal UDP packets due to packet loss of release message, etc., Health Check function can be executed. Assign the System Data below:

ASYDL, System Data 1, Index 803, Bit 3 = 0 (CCIS over IP Health Check is used).

Health Check function can be executed at longer time intervals than the conventional one (ASYDL, System Data 1, Index 803, Bit 3 = 0) by assigning the System Data below:

ASYDL/ASYDN, System Data 1, Index 831, Bit 6 = 1 (CCIS over IP Health Check Enhancement is used).

ASYDL, SYS1, Index803, Bit 3 (Conventional Health Check)	ASYDL/ASYDN, SYS1, Index831, Bit 6 (Health Check Enhancement)	Action
0	0	Conventional Health Check is activated.
0	1	Health Check Enhancement is activated.
1	0	Health Check is not activated.
1	1	Health Check is not activated.

Note: [For UMGi/RNIP system] ASYDL/ASYDN, SYS1, Index 831, Bit 6 data is out of service.

14. If a call is terminated via CCIS over IP (PHC) and the number of digits for the received number is smaller than the Maximum Necessary Digits (MND parameter on AMND/AMNDL/AMNDN) set on the terminating node, the Inter-digit timer [ASYD, System Data 1, Index 129, Bits 0 - 3 (default: six seconds)] works on the terminating node.

In this case, if Alternating timer (ASYDL, System Data 1, Index 671, Bits 0 - 3) set on the originating node is shorter than Inter-digit timer set on the terminating node, the following events occur (because the Alternating timer of the originating node expires prior to the Inter-digit timer of the terminating node).

- CCIS Alternate Routing-Backup works if the Alternate Routing data is assigned on the originating node.
- The calling party hears ROT if no Alternate Routing data is not assigned.

To use the Inter-digit timer, set the Alternating timer (on the originating node) that is longer than the Inter-digit timer of the terminating node.

15. By assigning System data (ASYDL/ASYDN SYS1 Index 1131 bit 4=0), a maximum of 16 digits is allowed to configure and display station numbers. The following are the conditions.

- If station numbers are configured within 8 digits, the prior displaying conditions apply.
- If station numbers have more than 16 digits, the first 16 digits are displayed.
- If you call a busy station, your station may keep displaying only upper eight digits of the dialing number for a couple of seconds; then, it will display all the digits.
- For the information on CCIS features which can use this function, refer to “1. How many digits are available for CCIS features in the CCIS over IP Network?”; as for other features which can use this function are as below:

Blind Transfer To Attendant [B-17]

Blind Transfer To Station [B-18]

Calling Party Information Transfer [C-112]

Call Forwarding - PS Incoming Incomplete [C-155]

ISDN Roaming [I-41] (up to 13 digits)

Logged Out IP Station - Call Destination [L-53]

Q.931a Roaming Over IP Trunk [Q-6] (up to 13 digits)

Transfer Message (TRM) [T-44]

Wireless-PHS roaming function (up to 12 digits)

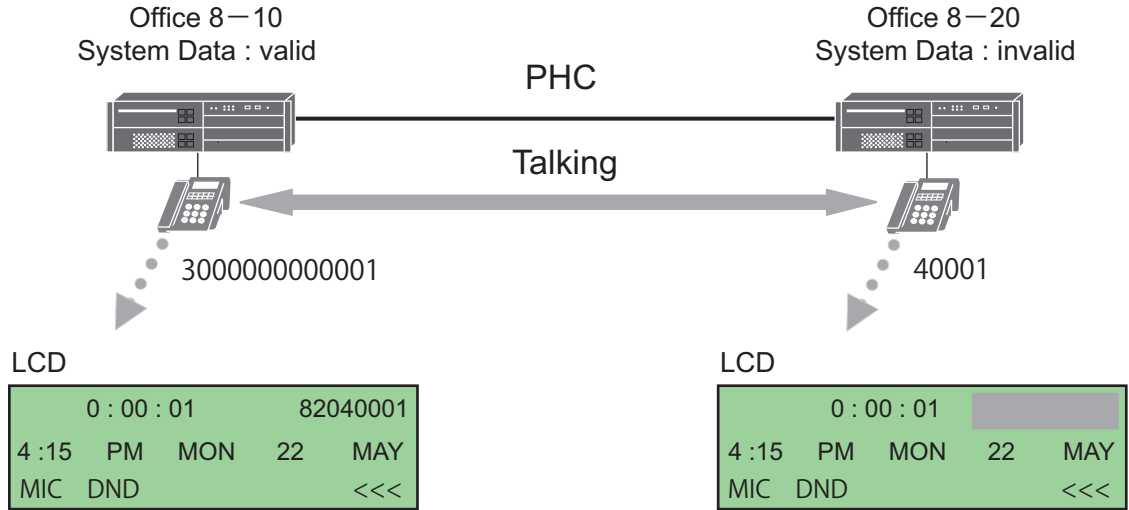
- When CLI Suppression - CCIS [C-202] is in service, station numbers are not displayed irrespective of System Data status.

- In the following configurations, station numbers exceeding 9 digits are displayed as a blank.

Example 1: When this feature is not in service at the opposite office; **Note 1**

The station's Extension Number at Office 8-10: 30000000000001

The station's Extension Number at Office 8-20: 40001

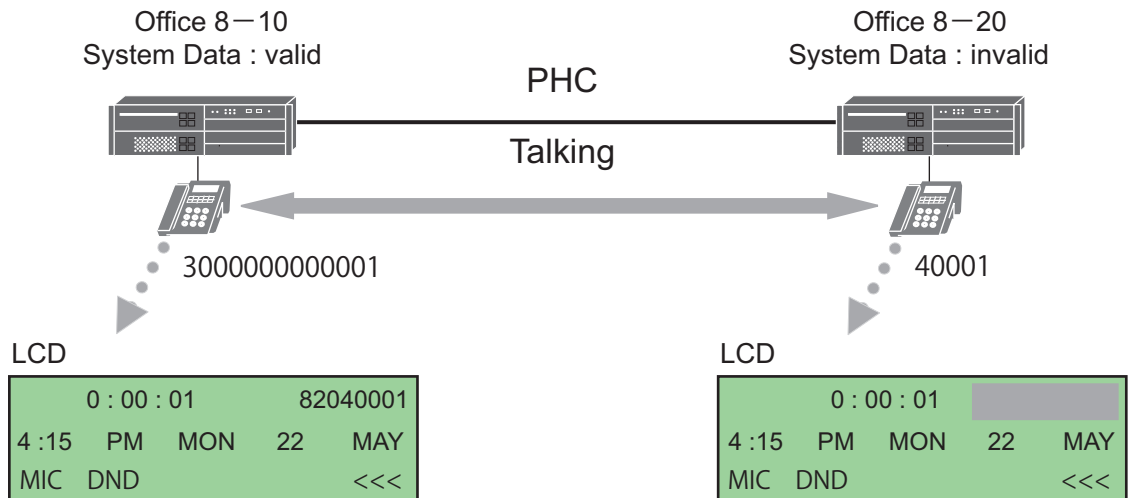


Example 2: When the software version of the opposite office does not support this feature;

Note 1, Note 2

The station's Extension Number at Office 8-10: 30000000000001

The station's Extension Number at Office 8-20: 40001



Note 1: Even though Extension Number of the station belonging to an opposite office is once displayed as a blank, the display feature is reactivated and shows the number again, when the inter-office connection is reconfigured to an intra-office one by the remote station.

Note 2: When the software version of a relay office does not support this feature, Extension Numbers are not displayed correctly.

- This feature is available to CCIS Networking via IP (PHC) only. Accordingly, the number of digits for Extension Number used in CCIS network including IPTRK or legacy CCIS is limited to a maximum of 8 digits.
 - Call Back - CCIS [C-44] is not available to the CCIS network via IP consisting of nodes with different software versions. To avoid this, configure the number of digits to be delivered within 8 digits.
16. This feature is available for the terminal/trunk that is directory controlled by the Telephony Server (such as MC and IP Enabled Dterm). MG, etc. cannot use this feature.
 17. For a call via CCIS Networking via IP (By PHC), overflow tone is not provided.
 18. When using this feature, a maximum of four (4) nodes can be connected as “tandem” nodes.
 19. The maximum number of simultaneous link connections (64 links/252 links) can be specified by system data (ASYDL, System Data 1, Index 1020, Bit 7). **Note 3**

Note 3: Available for FP95-112 V2 or later.

<Interactions with Other Features>

1. When a station blind-transfers the call, the number of the transfer destination party may not appear on the LCD display of the transferring station until the transferred party answer the call.
2. When all the Speech Channels of the Self Node are busy, the alternate routing according to the AOPRL/AOPRN command table is provided. Details on alternate routing patterns are shown in the table below.

Available Alternate Routing Patterns (PHC)

×: Available NA: Not Available ▲: Alternate Routing to the other point code is only available

	From PHC	To PHC
Analog (C.O./Tie) Line	×	×
CCIS	▲	▲
ISDN (C.O./Tie) Line	×	×
FCCS	NA	NA
FCCS Networking via IP	NA	NA
CCIS Networking via IP (Point-to-Point)	▲	▲
CCIS Networking via IP (Point-to-Multipoint)	NA (Available since FP 8600)	NA (Available since FP 8600)
PHC	×	×

3. When a PS is used in a mixed network of CCIS networking via IP (PHC) and DTI-FCCS, or Digital/Analog Stations/Trunks and FCCS networking via IP (Peer-to-Peer), you need to assign ASYDL, SYS1, Index 702, Bit 2=1 and ASYDL, SYS1, Index 810, Bit 0=1. However, if a PS is recalled by the other party through CCIS networking via IP (PHC) and the PS becomes Out of Zone, the other party hears RBT and then ROT.
4. When SV9500 is used with the setting of ASYDL, SYS1, Index 810, Bit 3=1 (IPTRK card and Internal PHC coexist in a system.), SV9500 has the following restrictions. At this time, specific data settings are required.

Note: When Internal PHC and IPTRK coexist in the same system, CCIS features are not supported in North America.

- a.) IPTRK cannot control “Speech Signal” of a call whose “Control Signal” is controlled by Internal PHC.
- b.) Internal PHC cannot be directly connected to IPTRK in other nodes.
- c.) A maximum number of virtual speech channels is 4095 per system where Internal PHC and IPTRK card coexist.
- d.) IPTRK-CCIS and CCIS Networking via IP (PHC) cannot be connected in tandem.
- e.) The table below show the possibility of coexistence of Multiple Protocol Handlers in a Telephony Server in Tandem.

	IPTRK-CCIS (Point-to-Point) Note 3	IPTRK-CCIS (Point-to-Multipoint)	P2P-CCIS (PHC)
Conventional CCIS	Fully Supported	Fully Supported	Fully Supported
IPTRK-CCIS (Point-to-Point) Note 3		Fully Supported	Fully Supported
IPTRK-CCIS (Point-to-Multipoint)			Partially Supported Note 1, Note 2

Note 1: Internal PHC and IPTRK card (Point-to-Multipoint connection) can coexist in a Telephony Server in tandem, but the following features are unavailable:

- Call Back - CCIS [C-44]
- Centralized Billing - CCIS [C-55]
- Centralized Day/Night Mode Change - CCIS [C-56]
- System Message
- Call Forwarding Assignment - Attendant - CCIS [C-94]
- Message Reminder - CCIS [M-34]
- Message Waiting Lamp Setting - Attendant/Station - CCIS [M-35/M-36]
- Message Center Interface - CCIS [M-67]

Note 2: For the order of alternating routes, specify IPTRK-CCIS as first route and then P2P-CCIS (PHC) as second route. At this time, when a trunk of P2P-CCIS (PHC) is seized, the IPTRK-CCIS route is used for controlling signals.

Note 3: “Point-to-Point” connection is not available in North America.

- f.) The table below show the possibility of coexistence of Multiple CCIS networks in the Same Point Code (for the Same Destination).

	IP-TRK-CCIS (Point-to-Point)	IP-TRK-CCIS (Point-to-Multipoint)	P2P-CCIS (PHC)
Conventional CCIS	Not Supported	Not Supported	Not Supported
IP-TRK-CCIS (Point-to-Point)		Not Supported	Not Supported
IP-TRK-CCIS (Point-to-Multipoint)			Not Supported

5. THREE-WAY CALLING [T-2] is available via CCIS Networking via IP (PHC). At this time, IPPAD card is required in addition to the Conference Trunk (CFT). The following are conditions when this feature is used via CCIS Networking via IP (PHC).
- At least one virtual Speech Trunk for PHC is necessary to seize the Conference Trunk (CFT).
 - When pressing the CONF key, some idle ports of IPPAD are necessary (ex. when using IP terminals, a maximum of 3 ports are required). If there is shortage of the idle port, THREE-WAY CALLING is not established.
 - THREE-WAY CALLING cannot be established by the interruption via EXECUTIVE RIGHT-OF WAY [E-1].
 - When a participant station held a three-way call in progress, the other two parties does not hear music on hold. When the station returns to the three-way call, the other two parties hear the Warning tone.
 - The participant parties (other than the originating party) cannot perform switch hook flash during the Three-Way Conference.
6. IP Service PAD Control is available for the CCIS over IP (PHC) call. At this time, data programming for PAD control is performed on the system basis. For detailed information on data programming, see the Programming section.

This PAD Control can be activated under the following conditions:

- PAD Control data for IPPAD Cards must be assigned by ACRD.
- PAD Control data for IP Terminals must be assigned by ASYDL, System Data 1 Index 812 and 813.
- The following data setting related to PAD Control does not work under the CCIS over IP (PHC).
 - APAD/APADN command
 - AIVCL command
 - AFRPD command
 - ARTD/ARTDN command
 - ACRD command (used for IP Terminal)
 - ASYD, System Data 1, Index 4, Bit 5
- This PAD Control is not available for the Attendant Console.
- This PAD Control is activated when each applicable terminal answers the call via PHC.

7. Link Reconnection can be provided when more than three links are used for the two nodes in tandem connection.
 - a.) Signaling for this Link Reconnection is performed as in the case of No.7 CCIS System. For details, refer to CHAPTER 3 BASIC DATA ASSIGNMENT.
 - b.) To provide Link Reconnection, assign "1" to the LKRCN parameter of APIPL/APIPN/APIP2L/APIP2N commands at both nodes (call originating node and destination node). If the destination node is NEAX IPS system, assign "0" to the LKRCN parameter of APIPL/APIPN/APIP2L/APIP2N commands.
8. The following table shows the availability of various CCIS features when this service is used:

X: Available N: Not Available

Feature name	Availability
Attendant console features	
SUPERVISORY CALL - CCIS [S-73]	X
DIAL ACCESS TO ATTENDANT - CCIS [D-71]	X
INDIVIDUAL ATTENDANT ACCESS - CCIS [I-17]	X
SERIAL CALL - CCIS [S-52]	X
STEP CALL - CCIS [S-59]	X
ATTENDANT CAMP-ON WITH TONE INDICATION - CCIS [A-45]	X
Attendant Console Monitor Function	X
BUSY VERIFICATION - CCIS [B-9]	X
CENTRALIZED ATTENDANT SERVICE (CAS) [C-20]	X
CALL TRANSFER - ATTENDANT - CCIS [C-54]	X
STATION-TO-STATION CALLING - OPERATOR ASSISTANCE - CCIS [S-58]	X
Display features	
NAME DISPLAY - OAI - CCIS [N-36]	X
CLI SUPPRESSION - CCIS [C-202]	X
DIGITAL DISPLAY - STATION - CCIS [D-72] (Incoming side)	X
DIGITAL DISPLAY - STATION - CCIS [D-72] (Outgoing side)	X
Forwarding features	
CALL FORWARDING - ALL CALLS - CCIS [C-45]	X
CALL TRANSFER - ALL CALLS - CCIS [C-50]	X
CALL FORWARDING - DON'T ANSWER - CCIS [C-47]	X
CALL FORWARDING - BUSY LINE - CCIS [C-46]	X
CALL FORWARDING I'M HERE - CCIS [C-201]	X
Call termination from outer office features	
Dial-In CCIS	X
DIRECT-IN TERMINATION - CCIS [D-74]	X
DISTINCTIVE RINGING - CCIS [D-75]	X

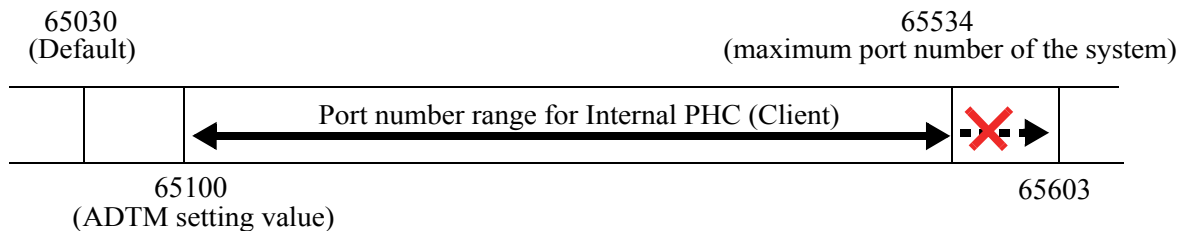
X: Available N: Not Available

Feature name	Availability
Station features	
HOT LINE - CCIS [H-12]	X
Privacy feature through CCIS	X
CALL BACK - CCIS [C-44]	X
STEP CALL - CCIS [S-59]	X
Step Call - CCIS Restriction	X
EXECUTIVE RIGHT OF WAY - CCIS [E-8]	X
Desktop terminal features	
DO NOT DISTURB -D- CCIS [D-76D]	X
MESSAGE REMINDER - CCIS [M-34]	X
VOICE CALL - CCIS [V-7]	X
CCIS features (Others)	
LOOK AHEAD ROUTING - CCIS [L-25]	X
H0 Switching	N
CENTRALIZED SYSTEM MANAGEMENT REPORT - CCIS [C-57]	X

<Hardware/Software>

1. When using this Internal PHC, the following conditions must be considered.
 - a.) Both Physical PIR and Virtual PIR can be assigned as accommodated location of Internal PHC.
 - b.) For 16-IMG System, an Internal PHC can be accommodated per LMG.
 - c.) When Internal PHC is initialized, it takes approximately eight seconds to restart the Internal PHC.
 - d.) The following Internal PHC Communication Port Numbers can be changed via ADTM. After changing the Port Numbers, the appropriate Internal PHC must be reset via ADPM.
 - Internal PHC Server Port (Default value is 57000)
 - Internal PHC Client Port (Default value is 65030)

Note: When Expansion of Links to Internal PHC is enabled (ASYDL System Data 1, Index 1020, Bit 7=1), the Internal PHC Client Port number must be less than 65032. The port numbers are used in ascending order from the port number assigned with the ADTM command till the maximum number of simultaneous links assigned with the AGIP command multiplied by two (for example, when the number of maximum simultaneous links is 252, port 504). In this case, however, a port number greater than the maximum allowable port number (65534) on the system cannot be used. If you set the Client Port number to a value equal to or greater than 65032, the largest port number used for TCP connection exceeds 65534 and the number of available ports will be insufficient.



- e.) For Internal PHC, there are two connection modes explained in the table below. Up to 64 links can be connected at the same time per system for either mode. When the number of the connection requests exceeds the number of simultaneous link connection, the connection requests will be canceled and System Message [33-R] will be sent. Also, when Expansion of Links to Internal PHC (**Note 1**) is enabled (ASYDL System Data 1, Index 1020, Bit 7=1), the maximum number of simultaneous links will be 252.

Note 1: Available for FP95-112 V2 or later.

Connection Mode	Description
Fixed Connection mode	This mode disconnects the connection links only when the connection errors are detected. At this time, the connection links are not reestablished until the CCIS messages are transmitted again.
Automatic Disconnection mode	This mode disconnects the connection links by the timeout. When the number of the connection requests exceeds the pre-assigned threshold, this mode is automatically applied.

Note: Up to 64 links/252 links (ASYDL System Data 1, Index 1020, Bit 7=1) can be connected at the same time per system. A maximum number of concurrent signaling links can be changed by AGIP command, and if the number of the connection requests exceeds the pre-assigned threshold, Automatic Disconnection mode is automatically applied. Also, when the number of the connection requests exceeds the maximum number of simultaneous link connections (64 links/252 links), System Message [33-R] will be sent.

f.) If the Expansion of Links to Internal PHC feature (**Note 2**) is disabled while it is in use (ASYDL System Data 1, Index 1020, Bit 7 =1), the following occurs:

- Already established TCP connections can still be maintained even if more than 64 links are connected simultaneously.
- When a simultaneous connection limit of 64 is reached, new connection requests are discarded and the System Message [33-R] will be sent.

Note 2: Available for FP95-112 V2 or later.

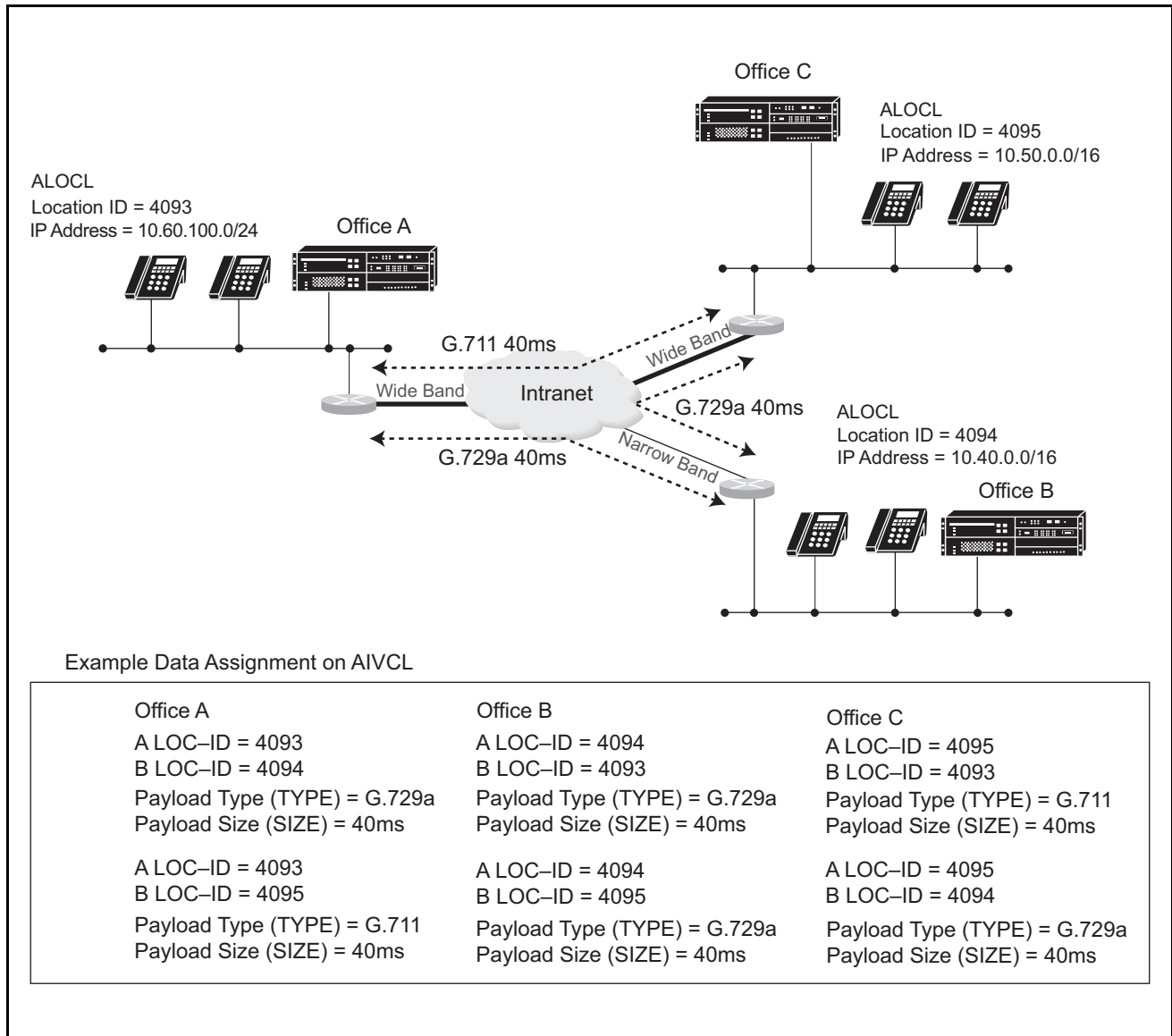
g.) The following Initialization can be performed by ADTM command and ADPM command.

PCPro Command	Menu	Description
ADTM	Restart	All the IP Ports including PHC communication port are disconnected and then generated again. Calls in progress are maintained.
ADPM	Reset	PHC communication port is disconnected and then generated again. When Internal PHC Server/Client Port Numbers are changed, Internal PHC must be reset. Calls in progress are maintained.
	Initialize	PHC communication port is disconnected and then generated again. When the AGIP data setting is modified, it is required to initialize Internal PHC. Calls in progress are maintained; however, CCIS signals cannot be sent/received during the initialization (approximately eight seconds).

<Interactions with Networks>

1. When using PA-32IPDA (IPPAD) cards with Payload Type other than G.711, VCT is required.
2. In CCIS network via PHCs, it is necessary to set the same payload value at both the Self Office and the Destination Office. When using FAX, make sure to set the same value at both offices.

3. In a communication via PHC, payload type/size, jitter buffer and Type of Service (ToS) can be assigned on a Location ID basis. For details, refer to the following figure.



- This enhancement is available only for calls established via PHC.
- When using this enhancement, the same payload type and size must be assigned at the Destination Office as well.
- Different payload sizes cannot be set to the same payload type via AIVCL command or AMGVL command. If you need to set different payload sizes, LOC-ID needs to be assigned to each using payload size.
- When using this enhancement, it is necessary to assign Location ID per Network Address within the terminal's Self Office. At the Destination Office, a separate Virtual-Location ID must be assigned per Network Address. Example data assignments for Location IDs and Payload Types are indicated below.

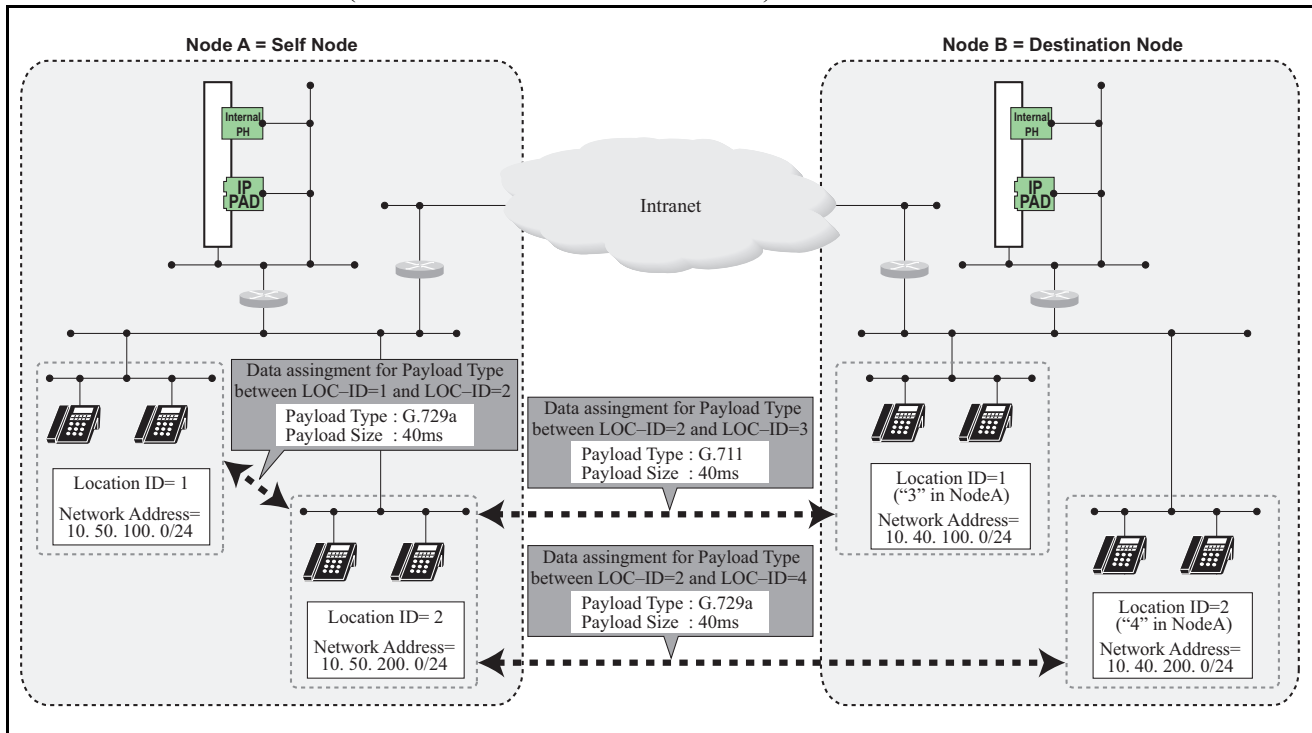
[Example: LOC-ID and Network Address Within Node A]

LOC-ID=1 10. 50. 100. 0/24

LOC-ID=2 10. 50. 200. 0/24

LOC-ID=3 10. 40. 100. 0/24 ("LOC-ID=1" when within Node B)

LOC-ID=4 10. 40. 100. 0/24 ("LOC-ID=2" when within Node B)

**[Example Data Assignment: Node A]**

ALOCCL Command	
IP ADDRESS	10. 50. 100. 0
NETWORK ADDRESS	Automatically displayed by assigning Mask Bit
MASK BIT	24
LOC-ID	1
IP ADDRESS	10. 50. 200. 0
NETWORK ADDRESS	Automatically displayed by assigning Mask Bit
MASK BIT	24
LOC-ID	2

[Example Data Assignment: Node B]

ALOCL Command	
IP ADDRESS	10. 40. 100. 0
NETWORK ADDRESS	Automatically displayed by assigning Mask Bit
MASK BIT	24
LOC-ID	1
NETWORK ADDRESS	10. 40. 200. 0
NETWORK ADDRESS	Automatically displayed by assigning Mask Bit
MASK BIT	24
LOC-ID	2

[Example Location ID Assignment for Calls Established via PHC: Node A]

ALOCL Command	
IP ADDRESS	10. 40. 100. 0
NETWORK ADDRESS	Automatically displayed by assigning Mask Bit
MASK BIT	24
LOC-ID	3
IP ADDRESS	10. 40. 200. 0
NETWORK ADDRESS	Automatically displayed by assigning Mask Bit
MASK BIT	24
LOC-ID	4

[Example Location ID Assignment for Calls Established via PHC: Node B]

Virtual-Location ID must be assigned for Node A from Node B side as well.

[Example Data Assignment via AIVCL Command for Node A]

	LOC-ID(A)	LOC-ID(B)	CODEC	Payload Size
Node A Side (Communication Within Self Node)	1(Node A)	2(Node A)	G.729a	40ms
Node A Side (Communication With Destination Node)	2(Node A)	3(Node B)	G.711	40ms
	2(Node A)	4(Node B)	G.729a	40ms

Note: Payload type assignment per Location ID is necessary for Node B side as well.

Note: Precautions for assigning Location ID for Node A's Destination Office:

- Even if Node A and its Destination Office has the same network address, if the user wishes to use a different payload type per terminal, a different Location ID must be assigned.
- For further information, refer to the table below.

[Example Data Assignment to Use Different Payload Types for Terminals Within LOC-ID:4]

Network address for LOC-ID:4 is subdivided to assign multiple LOC-IDs.

ALOCL Command	
IP ADDRESS	10. 40. 200. 0
NETWORK ADDRESS	Automatically displayed by assigning Mask Bit
MASK BIT	25
LOC-ID	4
IP ADDRESS	10. 40. 200. 128
NETWORK ADDRESS	Automatically displayed by assigning Mask Bit
MASK BIT	25
LOC-ID	5

Note: When adding new LOC-ID, payload must be assigned between Node A's LOC-ID (1 or 2) and the newly added LOC-ID (5 in the above example) via AIVCL command.

[Example Data Assignment via AIVCL Command Within Node A]

	LOC-ID(A)	LOC-ID(B)	CODEC	Payload Size
Node A Side (Communication Within Self Node)	1(Node A)	2(Node A)	G.729a	40ms
Node A side (Communication With Destination Node)	2(Node A)	3(Node B)	G.711	40ms
	2(Node A)	4(Node B)	G.729a	40ms
	2(Node A)	5(Node B)	G.711	40ms

Note: Payload type assignment per Location ID is necessary for Node B side as well.

- e.) It is not necessary to harmonize Location IDs assigned to Network addresses among the Nodes.
- f.) This enhancement is also available for PHC calls established between IP terminal and Media Gateway Primary-Rate Interface (MG-PRI). At this time, AMGVL command is used instead of AIVCL command. For further information, refer to the Peripheral Equipment Description (IP Devices) and the Command Manual.
- g.) Even if PAD value and Echo Canceler value are assigned via AIVCL command or AMGVL command, these values are not applied to calls established via PHC.
- h.) When jitter buffer is not specified via AIVCL command or AMGVL command, the default value (minimum: 10ms, maximum: 300ms) is automatically applied.

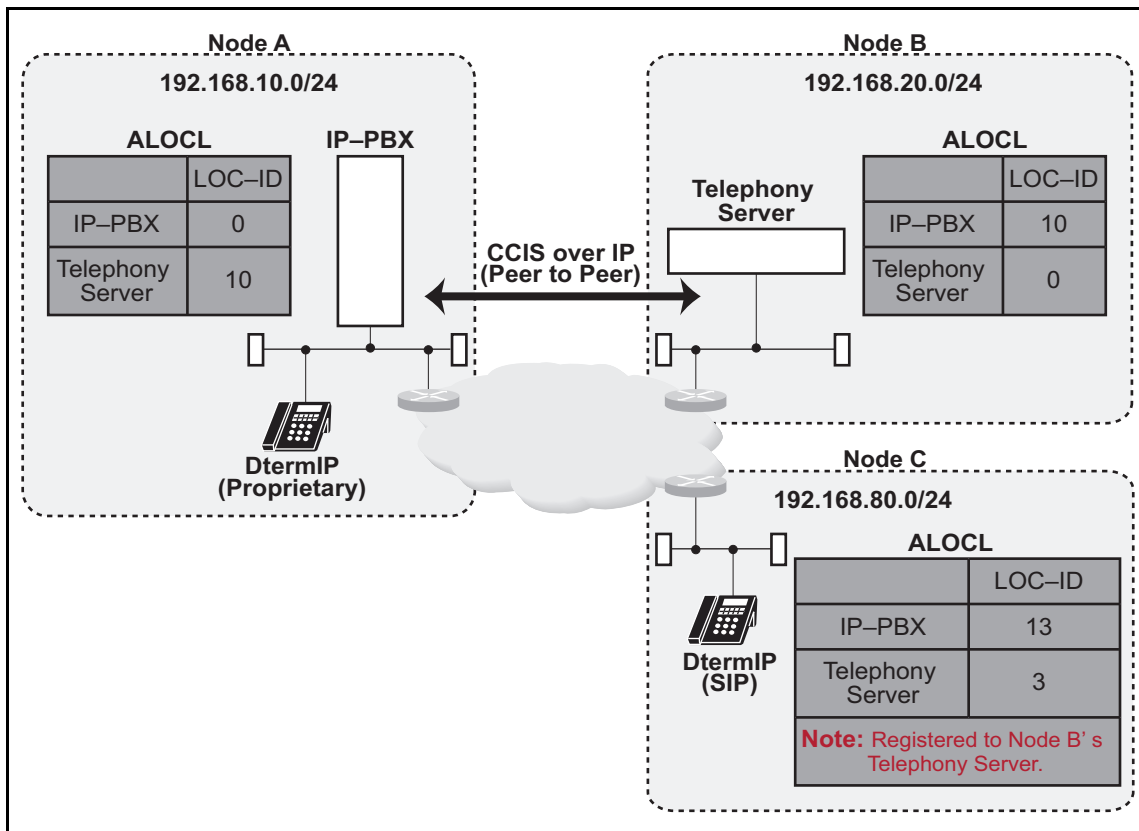
- i.) When ToS value is not specified via AIVCL command or AMGVL command, the default value (IP PRECEDENCE, Priority (PRECEDENCE/DSCP): 5) is automatically applied.
- j.) Type of Service (ToS) data for control signal packets is assigned via AGIP command (same way as before).
- k.) When no payload type and size are specified via AIVCL command or AMGVL command, the default values assigned via the following System data are automatically applied. For details, refer to the Programming section.

The default payload type for PHC call: ASYDL, System Data 1, Index 819, Bits 0-3

The default payload size for PHC call: ASYDL, System Data 1, Index 819, Bits 4-7

Note: G.711 cannot be used between A-law system and μ -law system.

- l.) Location IDs to be used for this enhancement are assigned to Network addresses for each IP terminals. Thus, Location IDs assigned to Point Codes are invalid.
- m.) Data assignment via AIVCL command for DtermIP (Proprietary) controlled by IP-PBX, as well as for DtermIP (SIP) registered to Telephony Server, is done in the same manner as data assignment between DtermIP (Proprietary) and Telephony Server. Examples are shown below.

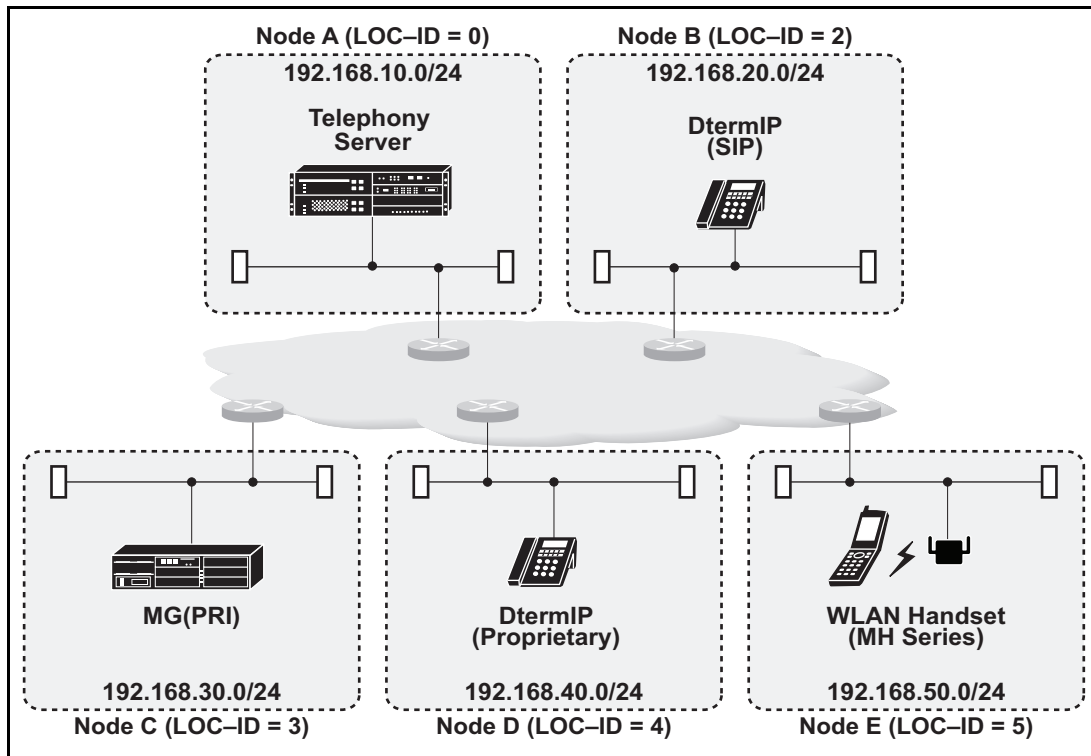


[Example Data Assignment via AIVCL Command for Call Established via PHC]

	LOC-ID (A)	LOC-ID (B)	CODEC	Payload Size
IP-PBX Side	0 (Node A)	10 (Node B) Note 1	G.729a	40ms
Telephony Server Side	3 (Node C)	10 (Node A)	G.729a	40ms

Note 1: Assign data to Telephony Server, not to LOC-ID=13.

- n.) Data assignment via AIVCL command for communication by Telephony Server within its Self Node should be assigned to each LOC-ID that the terminal belongs to. Examples are shown below.

**[Example Data Assignment via AIVCL Command for Communication Within Self Node]**

	LOC-ID (A)	LOC-ID (B)	CODEC	Payload Size
Communication Between MG and DtermIP(SIP)	3	2	G.729a	40ms
Communication Between DtermIP(Proprietary) and DtermIP(SIP)	4	2	G.729a	40ms
Communication Between WLAN Handset and DtermIP(SIP)	5	2	G.729a	40ms

<Conditions Specific to This Feature>

None.

<Conditions Specific to UMGi/RNIP System>

Internal PHC must be accommodated in the CCN.

<Other Conditions>

None.

Programming

[1] Assign necessary System Data

STEP 1: **ASYD/ASYDL/ASYDN** - Assign all the System Data, necessary for the CCIS network, as well as the following:

ASYD, SYS 1, Index 180 and 181: Assignment of Self Node PC (Point Code) number.

ASYD, SYS 1, Index 186, b0: 0/1 = Link Reconnection function is not used/used.

ASYD, SYS 1, Index 186, b6 = 1 (CCIS is in service)

ASYDL, SYS 1, Index 512: FPC (Fusion Point Code) of Self Node in hexadecimal. **Note 2**

ASYDL, SYS 1, Index 513: LDM (Local Data Memory) memory block usage

ASYDL, SYS 1, Index 514: NDM (Network Data Memory) memory block usage **Note 2**

ASYDL, SYS 1, Index 671, b0-b3: Alternate routing timer (response message “no-receiving” timer) as a result of IP network failure.

ASYDL, SYS 1, Index 672, b0: 0/1 = Telephone Number is displayed on the top line of LCD/on the middle line of LCD. **Note 3**

ASYDL, SYS 1, Index 677, b3: 0/1 = Display the Call Forwarding Information to a maximum of 16 digits on LCD is not used/used.

ASYDL, SYS 1, Index 803, b3: 0/1 = CCIS over IP Health Check is used/not used.

ASYDL, SYS 1, Index 810, b0: 0/1 = MOH from the Destination Office/the Self Office. **Note 4**

ASYDL/ASYDN, Index 831, b6: 0/1 = CCIS over IP Health Check Enhancement is not used/used. **Note 5**

ASYDL, SYS1, Index 1020, b7: 0/1 = Expansion of Links to Internal PHC is disabled/enabled. **Note 6, Note 7**

ASYDL/ASYDN, SYS1, Index 1131, b4: 0/1 = 16 Digits Dial Plan Support for CCIS over IP (PHC) is used/not used. **Note 3**

Note 2: This data is required for the FCCS network.

Note 3: It is necessary to set to 1 for displaying an incoming call station number consisting of nine digits or more without loss.

Note 4: When there is a Pure-IP node environment solution in a CCIS over IP (PHC) network, assign “1”.

Note 5: [For UMGi/RNIP system] ASYDL/ASYDN, SYS1, Index 831, b6 data is out of service.

Note 6: When the setting of this system data is changed, initialize the Internal PHC module with the ADPM command.

Note 7: Available for FP95-112 V2 or later.

When Internal PHC and IPTRK card (for Point-to-Multipoint connection) coexist in a system, the following data assignment is required in addition to the above system data

ASYDL, SYS 1, Index 810, b3 = 1 (PHC and IPTRK (for Point-to-Multipoint connection) coexist in a system.)

ASYDL, System Data 1, Index 880, Bit 2: When using Internal PHC, assign as data “1.”

ASYDL, System Data 1, Index 819, Bits 0 - 3: Assign the default payload type for PHC call referring to the following table.

ASYDL, System Data 1, Index 819, Bits 4 - 7: Assign the default payload size for PHC call referring to the following table.

		Index 819, Bits 0 - 3						
		0	1 Note 8	2	3	4 Note 9	5 Note 9	6 ~
		G.711	G.729a	G.723.1 (5.3k)	G.723.1 (6.3k)	G.711A	G.711μ	-
Index 819, Bits 4 - 7	0	40ms	40ms	30ms	30ms	40ms	40ms	-
	1	10ms	10ms	-	-	10ms	10ms	-
	2	20ms	20ms	-	-	20ms	20ms	-
	3	30ms	30ms	30ms	30ms	30ms	30ms	-
	4	40ms	40ms	-	-	40ms	40ms	-
	5	-	-	-	-	-	-	-
	6	-	-	60ms	60ms	-	-	-
	7 ~	-	-	-	-	-	-	-

Note: Depending on ASYD, System Data 1, Index 64, Bit 0 data setting, the System determines whether G.711A or G.711μ is used.

Note 8: If using T.30 FAX, assign “01H (G.729a - 40ms)”

Note 9: When different CODE modulation schemes (μ -Law/A-Law) are used between the two offices, assign 04 (G.711A) or 05 (G.711 μ) Hexadecimal to Bits 0-3 as the default payload type. If a payload type other than the default value is used, use AIVCL or AMGVCL referring to the following figure.

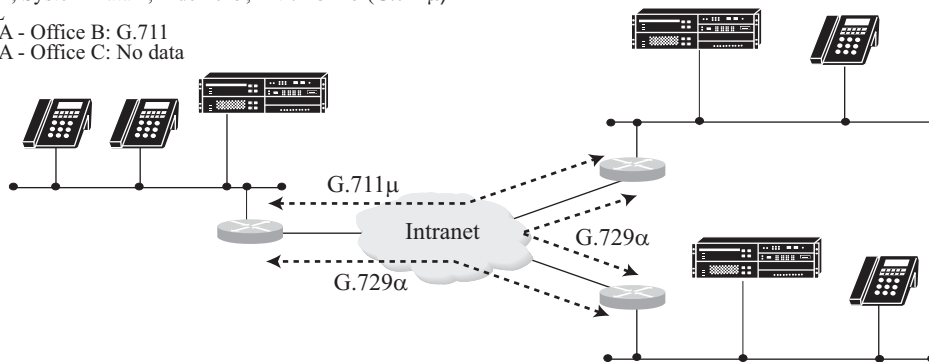
Example data assignment for the network having different CODE modulation schemes.

Office A: A-Law

ASYD, System Data 1, Index 64, Bit 0 = 1 (A-Law System)
 ASYDL, System Data 1, Index 819, Bit 0 - 3 = 5 (G.711 μ)
 AIVCL
 Office A - Office B: G.711
 Office A - Office C: No data

Office C: μ -Law

ASYD, System Data 1, Index 64, Bit 0 = 0 (μ -Law System)
 ASYDL, System Data 1, Index 819, Bit 0 - 3 = 5 (G.711 μ)
 AIVCL
 Office B - Office A: No data
 Office B - Office C: No data



Office B: A-Law

ASYD, System Data 1, Index 64, Bit 0 = 1 (A-Law System)
 ASYDL, System Data 1, Index 819, Bit 0 - 3 = 5 (G.711 μ)
 AIVCL
 Office B - Office A: G.711
 Office B - Office C: No data

[2] Assign the Route/Trunk Data

- STEP 1: **ARTD** - Assign Route Class Data of CCIS Speech/Signal Channels and dummy routes.
- STEP 2: **ARTI** - Assign Trunk Application Data of Speech and Signal Channels.
 Speech Channels: CDN68 (VIR) = 1 (In Service)
 Signal Channels: CDN67 (PHG) = 1 (In Service)
- STEP 3: **ALRTN** - Assign the logical route number to the physical route.
- STEP 4: **ARSC/ARSCN** - Assign Route Restriction Class (RSC) data, associated with the speech channel route and the dummy route. When Internal PHC is used in the Node within FCCS Network, be sure to use ARSCN command at the Network Control Node (NCN).
- STEP 5: **ATRK** - Assign the Speech/Signal channel trunks associated with the Speech and Signal routes designated by ARTD command.

[Speech Channel]

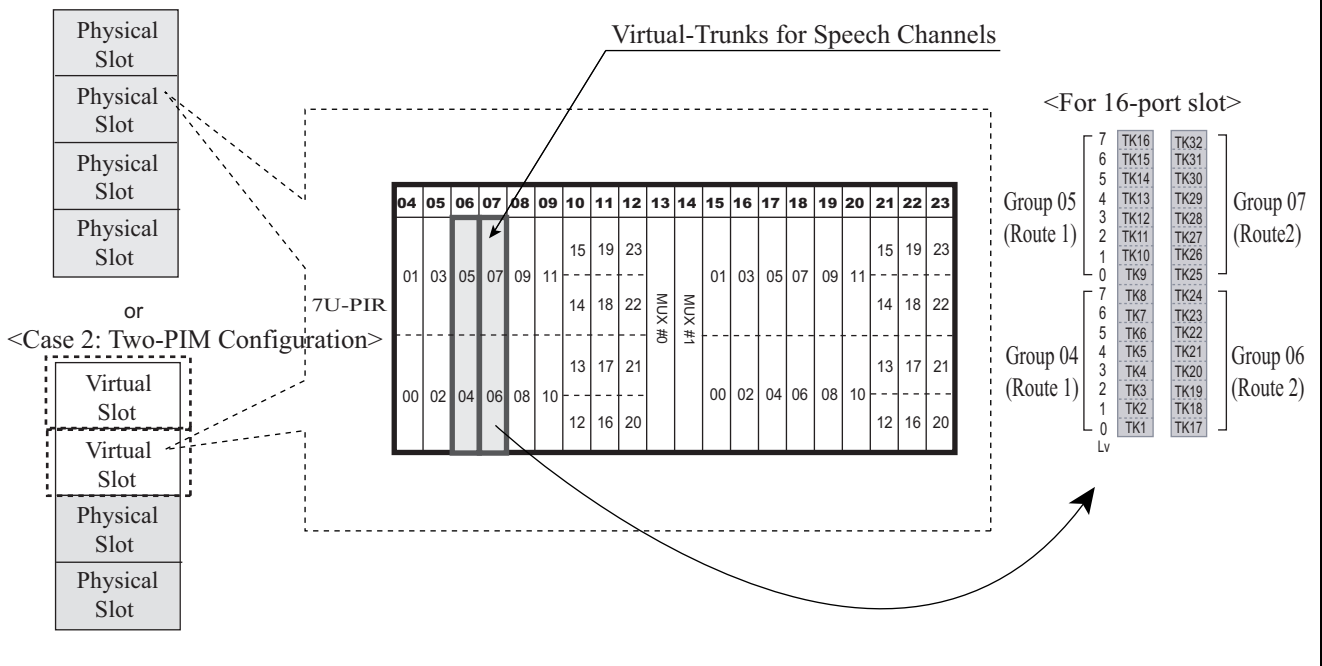
Assign the virtual-trunks for Speech Channels to the LENS (Physical LENS) of the slot accommodating no station/trunk, on a per HW block basis. Refer to the figure below.

Note: No card is physically required for Speech Channel trunks. However, the LENS of virtual-trunks for Speech Channels are required for the Telephony Server (The calls via PHC must be controlled by the Telephony Server).

Speech Channel Trunk Data

The following shows the "LENS data" for assigning the virtual Speech Channel trunks. For registration of the virtual-trunks for Speech Channels, any circuit card is not physically required. However, the virtual-trunks must be allocated to the LENS of vacant slot on which the station/trunk is not mounted. In the case of the system configuration (Case 2), the virtual-trunks for Speech Channels can be accommodated in virtual-PIMs. At this time, the Unit data assignment (AUNT, etc.) for the virtual-PIMs is also required.

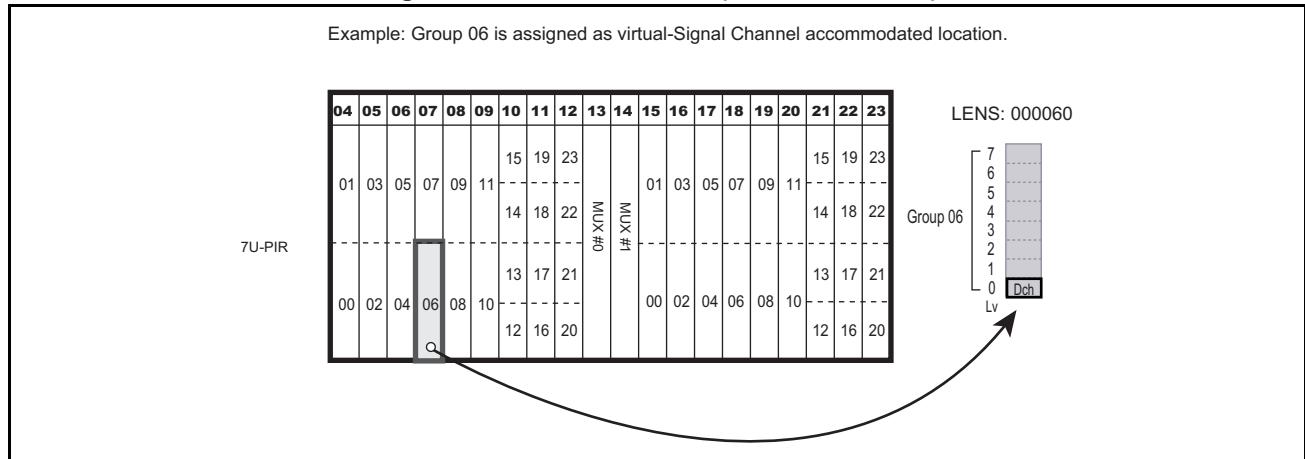
- No station/trunk can be accommodated in the slot to be used for the virtual-trunks for Speech Channels.
- The LENS (MG 00, U 0, G 00, LV 0) is cannot be specified as the accommodated location of the virtual-trunk.
- The virtual-trunk can be accommodated to the groups G00 through G23.

<Case 1: Four-PIM Configuration>

Note: This figure shows an example where a 7U-PIR is used. 8U-PIR does not have Slot 23.

[Signal Channel]**For Internal PHC:**

Assign Internal PHC Signal Channel to the 1st LENS (port) of an even-numbered Group or odd-numbered Group (Group 0-23). One Group is always used per Internal PHC Signal Channel. Refer to the figure below.

Signal Channel Trunk Data (for Internal PHC)

Note: This figure shows an example where a 7U-PIR is used. 8U-PIR does not have Slot 23.

STEP 1: **MBTK** - Make idle the assigned Speech Channel Trunks.

STEP 2: **SCVT** - Initialize the assigned virtual trunks.

[3] Assign the LCR-related data

STEP 1: **ANPDL/ANPDN** - Reserve a number level for trunk access. When Internal PHC is used in the Node within an FCCS Network, be sure to use ANPDN command at the Network Control Node (NCN).

TN: Tenant Number

1stDC: 1st Digit Code (0-9, *, #)

CI: Select Normal Service (N), Hooking Service (H), or Busy Service (B) from the combo box for Connection Indexes.

NND: Number of Necessary Digits

STEP 2: **ASPAL/ASPAN** - Define the LCR access code, using the first digit code assigned by ANPDL command. When Internal PHC is used in the Node within FCCS Network, be sure to use ANPDN command at the Network Control Node (NCN).

TN: Tenant Number

ACC: Define the LCR access code using the first digit code assigned in STEP 8.

CI: Connection Status Index ("N: Normal"/"H: Hooking"/"B: Busy")

SRV: Select "LCR: Least Cost Routing"/"LCRS: Register Sender LCR".

LGRT: Assign a dummy route number.(Physical route number must be assigned.)

Note: When LGRT is registered, assign the following data:
If the system is configured as a standalone, register the Physical Route Number.
If FCCS network is configured, register the Logical Route Number.

STEP 3: **AFRSL/AFRSN** - Define a dummy route, its corresponding access code (Number Pattern Code) and an OPR (Outgoing Route Selection Pattern Number) table to be developed when the access code is dialed. When Internal PHC is used in the Node within FCCS Network, be sure to use AFRSN command at the Network Control Node (NCN).

TN: Tenant Number

LGRT: Assign a dummy route assigned by ASPA/ASPAL/ASPAN command. (Physical route number must be assigned.)

NPC: Assign the LCR access code (including office/area code).

OPR: Assign the route selection table (define the table number between 0-4000) to be used when the access code, specified in "NPC", is dialed.

Note: When LGRT is registered, assign the following data:
If the system is configured as a standalone, register the Physical Route Number.
If FCCS network is configured, register the Logical Route Number.

STEP 4: **AOPRL/AOPRN** - Develop the OPR (Outgoing Route Selection Pattern Number), a list table defining the route selection order. When Internal PHC is used in the Node within FCCS Network, be sure to use AOPRN command at the Network Control Node (NCN).

TDPTRN: Time of Day Change Pattern

OPR: Assign the OPR table number assigned in Step 10.

RA: Define the trunk group (Speech channel route) seizure order from 0 to 7. (An OPR table can specify the first-priority route and a maximum of 7 other alternative routes, regarding an NPC ("NPC" specified in AFRSL/AFRSN command). 0 is the first-priority route, while 7 is the last priority route.)

E: When the route assigned in "RT/LGRT" below, is the last selection, assign "0". Otherwise, assign "1".

LGRT: Assign a Speech channel route number associated with "RA" above. (Physical route number must be assigned.)

SKIP: Assign the number of digits to be deleted when the access code (NPC) is dialed.

PNL: Assign the number of digits (prefixed digits) to be added after the number conversation in accordance with "SKIP" above is processed. When no digit is to be added, assign "0". When 1 to 4 digits is (are) to be added, assign any number between 1 and 127, and for 5 to 24 digits, assign between 128 and 999. When any of 1 to 999 is assigned here, be sure to develop the actual added number using the AADCL/AADCN command.

The following parameters also must be assigned when using the AOPRL/AOPRN command.

IPTRK: Assign the data as "1". (IP network is used)

PC: Assign the destination Point Code. Note that this parameter is valid when the IPTRK parameter is set as "1".

Note: When LGRT is registered, assign the following data:
If the system is configured as a standalone, register the Physical Route Number.
If FCCS network is configured, register the Logical Route Number.

STEP 5: **APIPL/APIPN** - Assign each IP address of PHC. When Internal PHC is used in the Node within FCCS Network, be sure to use APIPN command at the Network Control Node (NCN).

PC: Enter the Point Code of Destination Node.

CNT: Count No. [1-8]

IP ADDRESS: Assign the IP address of the destination.

MODE: Select the TCP connection mode out of the following:

- Permanent Virtual Connection
- Switched Virtual Connection

“Switched Virtual Connection” refers to a mode that uses a timer (specified in the “TIMER” parameter below) for the established TCP link maintain/disconnect monitor. When no signal message has been detected on the link for the timer period, the TCP connection is automatically set to be disconnected. If not, the connection is maintained. On the other hand, “Permanent Virtual Connection” refers to the mode that keeps the TCP connection always in a maintained state.

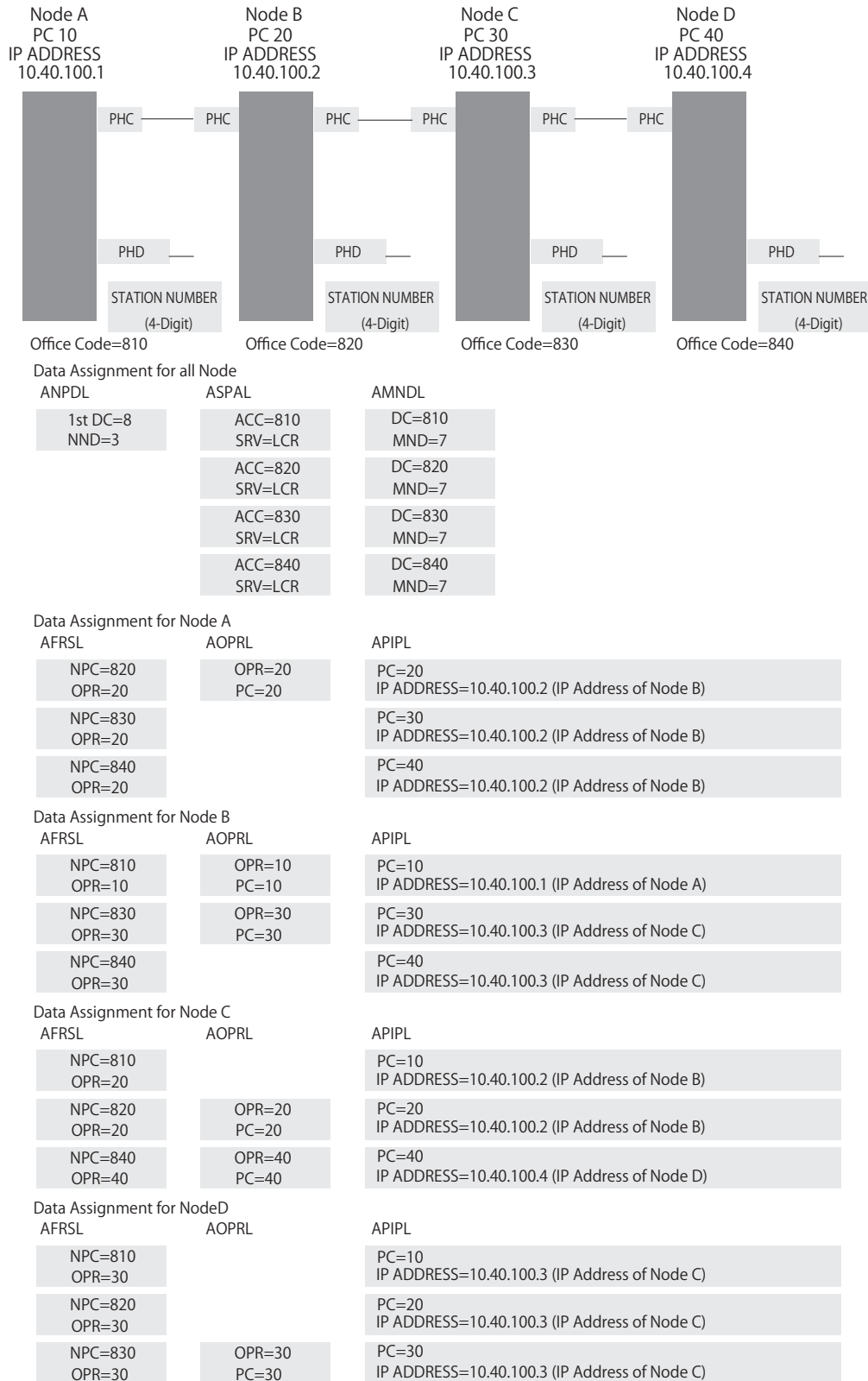
TIMER: Define the timer when “Switched Virtual Connection” is selected in “MODE” above.
0 = 15 minutes (default setting)
1 - 127 = 1 - 127 minutes

LKRCN: Assign the data as “1” to provide Link Reconnection when more than 3-link configuration between two nodes in CCIS over IP (Point to Multipoint). **Note 10**

Note 10: When destination node is the Telephony Server, be sure to set “1.” When destination node is NEAX2400 IPS system, set “0” to this parameter.

Note: When Internal PHC and IPTRK card (for Point-to-Multipoint connection) coexist in a system, the APIP2L/APIP2N command must be used instead of the APIPL/APIPN command.

Note: In the case of the network below, the following data assignment is required.



STEP 6: **AMND** - Assign the number of necessary digits to be received by the Register circuit.

TN: Tenant Number

DC: Assign the Self Node LCR access code (including office/area code).

MND: Assign necessary number of digits to be received by the Register circuit.

STEP 7: **ARNPL** - Assign ACC (access code), and each individual speech channel route to be seized when the ACC is dialed.

LGRT: Speech Channel Route Number to be seized when the “ACC” below is dialed.(Physical route number must be assigned.)

ACC: Assign LCR access code (including office/area code).

Note: When LGRT is registered, assign the following data:
If the system is configured as a standalone, register the Physical Route Number.
If FCCS network is configured, register the Logical Route Number.

[4] Assign the CCIS-related data.

Since the system cannot be determined which node is to be called until a call is made, the CCIS-related data should be assigned for the Self Node. As to the ACIC1/ACIC3L command, the data must be assigned to the whole destination nodes and also to the Self Node.

STEP 1: **ADPC/ADPCL/ADPCN** - Assign the Destination Point Code data.

RT/LGRT: Assign the speech channel route number assigned in ARTD command.

PC: Assign the Point Code of Self Node.

STEP 2: **ACSC** - Assign the CSCG (Common Channel Signaling Controller Group) data for basic route and alternate route. When a basic CSCG table is assigned using an even number, be sure to assign the alternate route CSCG table, using it's consecutive odd number.

CSCG: Assign desirable CSCG table number. For the basic signal route, use an even number within the range from 2 to 254 (excepting 128). For the alternate route, use an odd number adding 1 to the basic route table number.

GROUP (CICG): Develop the CSCG table, attaching a number (0-7) to each CIC Group (CICG).

Each CICG is defined in the parameter “CCH” below, using the first group LENS (5 digits) of the Internal PHC accommodated slot.

CCH: Assign the 1st Group LENS (2-digit MG + 1-digit U + 2-digit G) of the Internal PHC accommodated slot.

Note: When Internal PHC and IPTRK Card (for Point-to-Multipoint connection) coexist in a system, the ACSC2L/ACSC2N command must be used instead of the ACSC command.

STEP 3: **ACIC1** - Define the Self Node Point Code and the CSCG table number.

PC: Assign the Self Node Point Code.

CSCG: Assign CSCG table number (for the basic route).

Note: When Internal PHC and IPTRK card (for Point-to-Multipoint connection) coexist in a system, the ACIC3L/ACIC3N command must be used instead of the ACIC1 command.

STEP 4: **ACIC1** - Define all the Destination Point Codes and the CSCG table to be used for each connection.

PC: Assign all the Destination Point Code.

CSCG: Assign CSCG table number same as the number assigned in Step 19.

Note: When Internal PHC and IPTRK card (for Point-to-Multipoint connection) coexist in a system, the ACIC3L/ACIC3N command must be used instead of the ACIC1 command.

STEP 5: **ACIC2** - Assign the speech channels to be used regarding the Self Node Point Code.

PC: Assign the Self Node Point Code.

CIC: Define a CIC number (1-999) for each speech channel. **Note 11**

LENS: Assign the LENS of each speech channel defined by the "CIC" number above.

Note 11

Note: When Internal PHC and IPTRK card (for Point-to-Multipoint connection) coexist in a system, the ACIC4L command must be used instead of the ACIC2 command. For the ACIC4L command, assign any number (Circuit Identification Code Number) with a range from 1 to 4095 to the parameter "CIC".

Note 11: There is a principle when a CIC number is assigned to each speech channel. See the figure below:

Relationship between CIC (ACIC2 command) and CIG (ACSC command)

Each speech channel must be assigned using the proper CIC number corresponding to the CIC Group (CIG assigned in the ACSC command) that actually controls the speech channel. The relationship between CIC and CIG is explained below:

GROUP (CIG) by ACSC Command	CIC Number by ACIC2 command							
0		8	16	24	32	40	. . .	992
1	1	9	17	25	33	41	. . .	993
2	2	10	18	26	34	42	. . .	994
3	3	11	19	27	35	43	. . .	995
4	4	12	20	28	36	44	. . .	996
5	5	13	21	29	37	45	. . .	997
6	6	14	22	30	38	46	. . .	998
7	7	15	23	31	39	47	. . .	999

Each CIC is assignable to a dedicated CIG as shown here. Assign every CIC to the corresponding CIG that actually controls the speech channel.

[5] Assign the IP-related data.

STEP 1: **AGIP** - Assign a series of IP-related data regarding each PHC as follows:

For Internal PHC

LENS: Assign the LENS (5 digits: 2-digit MG + 1-digit U + 2-digit G) of a Group used as virtual.

Signal Channel accommodated location.

KIND: Select Internal PHC[CCIS].

ToS CONTROL: Select either IP Precedence or DiffServ, depending on the connected router (Usually Diffserv is selected).

QoS1 (QoS data for Signal Route): When IP Precedence is selected, assign 0 - 7.

When DiffServ is selected, assign 00 - 3F (hexadecimal).

IRT: Assign the Route number for Speech Channel (a maximum of eight routes can be assigned).

Note: Physical Route Number must be assigned in either Stand-alone System or FCCS System.

NETID (Network ID): Assign "0" (fixed).

APR (Frame Type of APR): When the check box "Detail" is checked to ON, select either "IEEE" or "DIX (Standard Setting)."

CSLINK_NUM: Select the maximum number of client/server connections. For the details, see AGIP in Command Manual.

Note: When KIND=Internal PHC [CCIS] is selected, up to 64 simultaneous connections are possible. For FP95-112 V2 or later, up to 252 links can be connected by ASYDL System Data 1, Index 1020, Bit 7 = 1.

Note: When the number of the connection requests exceeds the threshold assigned here, Automatic Disconnection mode is automatically applied.

[6] Assign the PAD Control data.

STEP 1: **ASYDL** -

SYS1, Index 812, Bit 0-4: PAD value for IP terminals.

0 = PAD Control is not used.

1 = 2 dB

2 = 4 dB

3 = 6 dB

4 = 8 dB

5 = 10 dB

6 = 12 dB

7 = 14 dB

8 = 16 dB

9-15 = PAD OFF (0 dB)

SYS1, Index 812, Bit 7: PAD control for PHC incoming/outgoing call

0/1 = Out/In service (By assigning this bit as data “1”, 5 dB is automatically applied for the conventional terminal such as Dterm, Analog telephone.)

SYS1, Index 813, Bit 0-3: PAD value for Analog MC.

0 = PAD Control is not used.

1 = PAD OFF (0dB)

2 = 3 dB

3 = 6 dB

[7] When assigning payload type and size for PHC call on a Location ID basis, the following data programming is required.

STEP 1: **ALOCL** - Assign the Location ID data.

TYPE: Select “Network Address”.

IP ADDRESS: Assign the Network Address. For the Telephony Server (IPPAD), assign “0.0.0.0.”

MASK BIT: Assign the MASK BIT in the range 1-31 except when IP ADDRESS 0.0.0.0 is determined. When NETWORK ADDRESS = 0.0.0.0, MASK BIT = 32 is automatically assigned.

Note: LOC-ID = 0 is predetermined to the location ID of Telephony Server (IPPAD).

STEP 2: **AIVCL** - Assign the IP service Voice Control data.

A LOC-ID: Location ID of the self-location. (0-4095)

B LOC-ID: Location ID of the target location. (0-4095)

Note: LOC-ID=0 is used for the Location ID of Telephony Server (IPPAD).

[Setting of Jitter Buffer]

Select the Setting of Jitter Buffer check box to assign the following Jitter Buffer data.

Note: If the check box is not selected, the default setting (JB MIN = 1 (10ms), JB MAX = 30 (300ms)) will be provided.

JB MIN: Jitter Buffer minimum value

JB MAX: Jitter Buffer maximum value

[Setting Type of Voice Packet Service]

Select the Setting Type of Voice Packet Service check box to assign the following ToS for Voice Packet data.

Note: If the check box is not selected, the default settings (IP PRECEDENCE, Priority (PRECEDENCE/DSCP) = 5, Low Delay = 0, Through Put = 0, Reliability = 0, Min Cost = 0) will be provided.

Choose either IP PRECEDENCE or DIFFSERV from the drop-down list box.

When IP PRECEDENCE is chosen:

Priority (PRECEDENCE/DSCP): Specify the precedence in the range 0-7 (low-high).

Low Delay: Place a checkmark in the checkbox to set Low Delay to ON.

Through Put: Place a checkmark in the checkbox to set High Throughput to ON.

Reliability: Place a checkmark in the checkbox to set High Reliability to ON.

Min Cost: Place a checkmark in the checkbox to set Cost Precedence to ON.

When DIFFSERV is chosen:

Priority (PRECEDENCE/DSCP): Specify the DCSP in the range 0-63.

[Setting of Payload]

Select the Setting of Payload check box to assign the following Payload data.

PRI1-PRI4: Select the Payload Type and Payload Size in order of precedence [PRI1(high) → PRI4 (low)].

TYPE (Payload Type):

- G.711
- G.729a
- G.723.1 (5.3K → 6.3K)
- G.723.1 (6.3K → 5.3K)

SIZE (Payload Size):

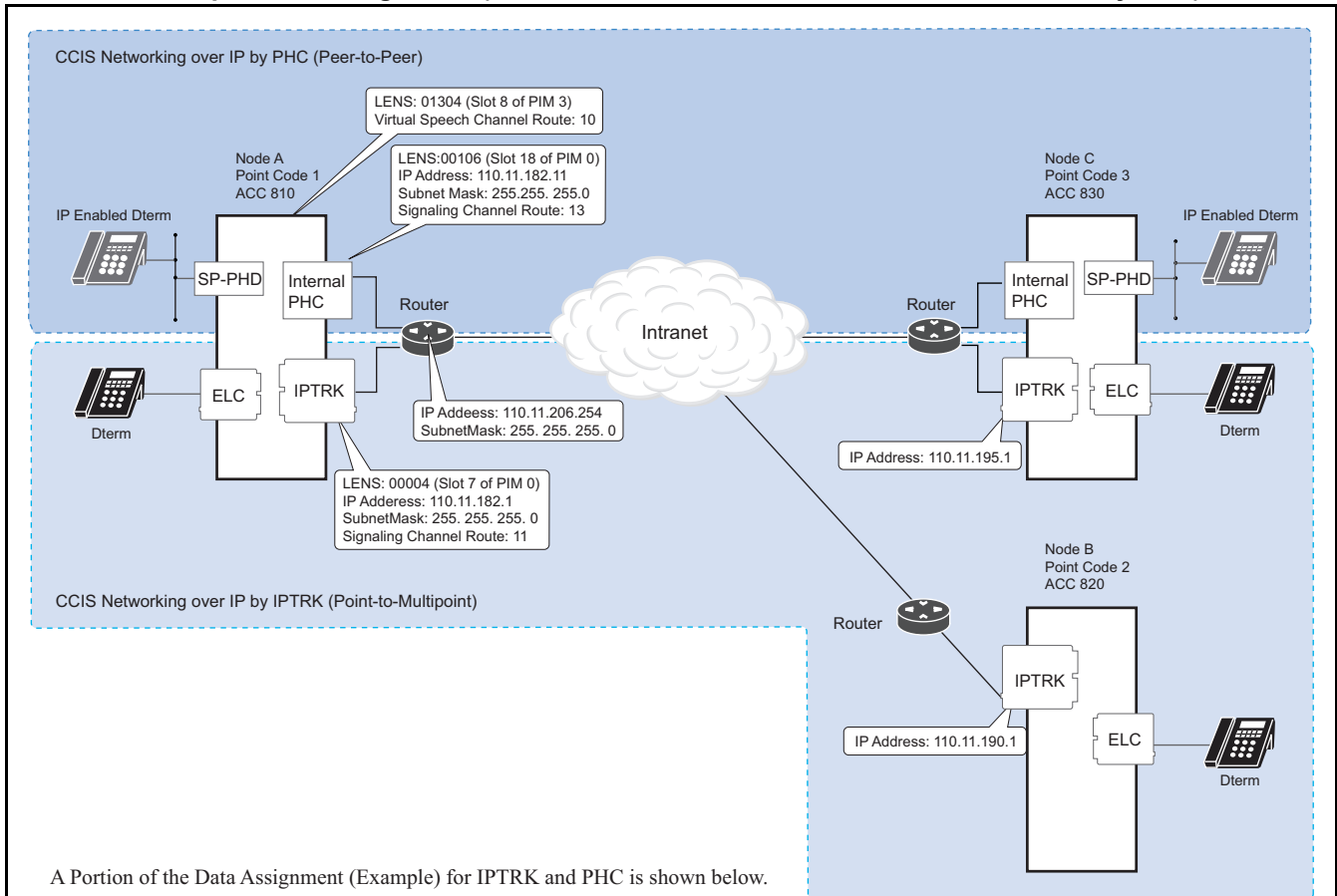
- 10ms
- 20ms
- 30ms
- 40ms
- 60ms

Note: For details on the Payload setting, refer to the Command Manual.

The following figure shows an example data assignment when Internal PHC and IPTRK card coexist in a system (**Note 12**). When these cards coexist in a system, the assignment for both Internal PHC and IPTRK card are required. At this time, for Internal PHC data assignment, the APIP2L/APIP2N, ACSC2L/ACSC2N, ACIC3L/ACIC3N and ACIC4L commands must be used instead of the APIPL/APIPN, ACSC, ACIC1 and ACIC2 commands.

Note 12: Not supported in North America.

Example Data Assignment (When Internal PHC and IPTRK Card coexist in a System)



A Portion of the Data Assignment (Example) for IPTRK and PHC is shown below.

 From PCPro	For CCIS Networking over IP by IPTRK (Point-to Multipoint)		For CCIS Networking over IP by PHC (Peer-to-Peer)	
	ARTD	RT=10 (Speech) RT=11 (Signal)	ARTD	RT=12 (Speech) RT=13 (Signal)
	ADPC/ADPCL/ADPCN	RT=10, PC1 (Self) RT=11, PC1 (Self)	ADPC/ADPCL/ADPCN	RT=12, PC1 (Self) RT=13, PC1 (Self)
	ACIC1	PC=1/2/3 CSCG=130	ACIC3L/ACIC3N	PC=1/3 CSCG=130
	ACIC2	CIC=1, LENS=000040 CIC=2, LENS=000041 :	ACIC4L	CIC=1, LENS=013040 CIC=2, LENS=013041 :
	ACSC	CSCG=130 LENS=00004	ACSC2L/ACSC2N	CSCG=130 LENS=00106
	APIPL/APIPN	PC=2 IP ADDRESS=110.11.190.1 PC=3 IP ADDRESS=110.11.195.1	APIP2L/APIP2N	PC=3 IP ADDRESS= 110.11.195.1

2. CCIS Networking via IP (By IPTRK)

Note: When the destination node does not support CCIS features, the CCIS features do not work. Confirm that the destination node supports the CCIS features beforehand.

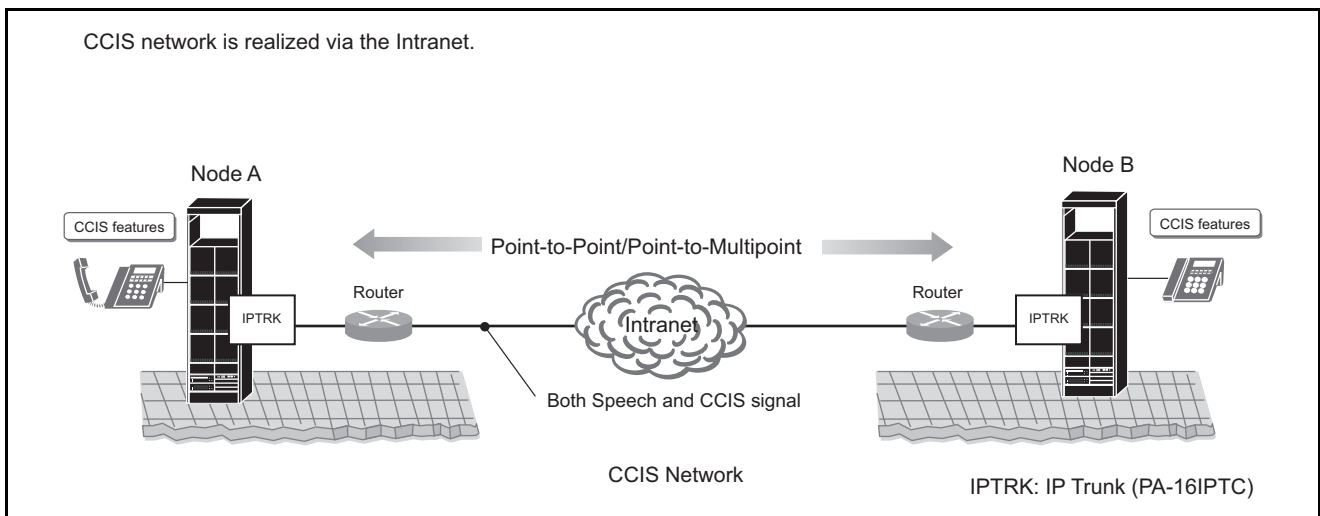
General Description

This feature allows the system to realize the CCIS network over Intranet by using IPTRK. To establish/release a call, the following two connection patterns can be selected:

- **Point-to-Point Connection:** For both speech and CCIS signal channels, an IPTRK card is used. At this time, the IPTRK cards in Self Node and each of its connected node(s) must be in 1-to-1 ratio.
- **Point-to-Multipoint Connection:** For both speech and CCIS signal channels, an IPTRK card is used. At this time, the IPTRK card, accommodated in the Self Node, can be connected to multiple destinations (i.e. IPTRK cards of plural nodes).

Point-to-Point Connection is functionally a kind of form within Point-to-Multipoint Connection.

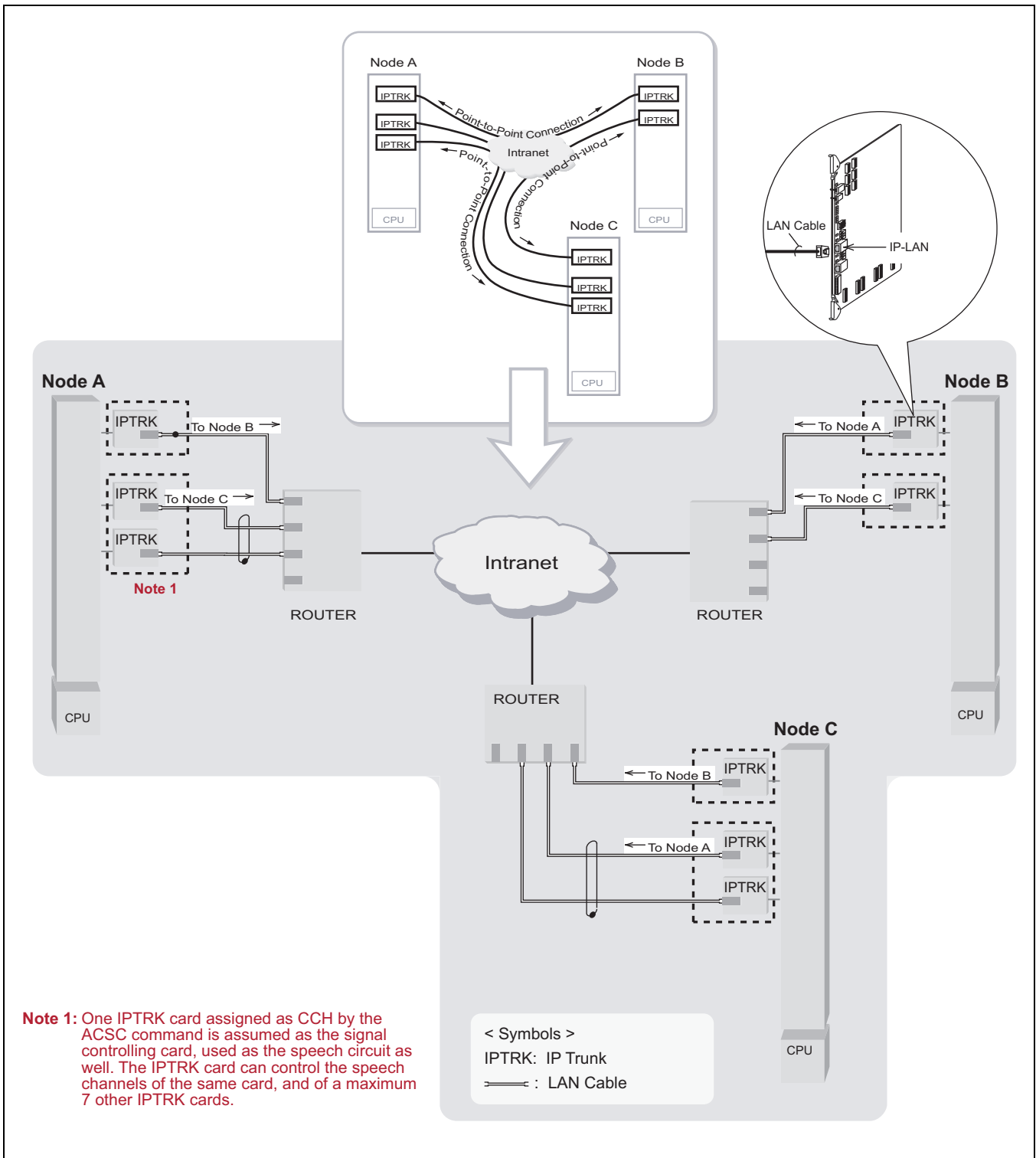
CCIS Networking via IP (By using IPTRK) - Overview



- **Required Hardware (Point-to-Point Connection)**

This feature is made available by using the following hardware equipment. As shown, both signal and speech paths can be provided by every point-to-point connection of IPTRK cards between the nodes.

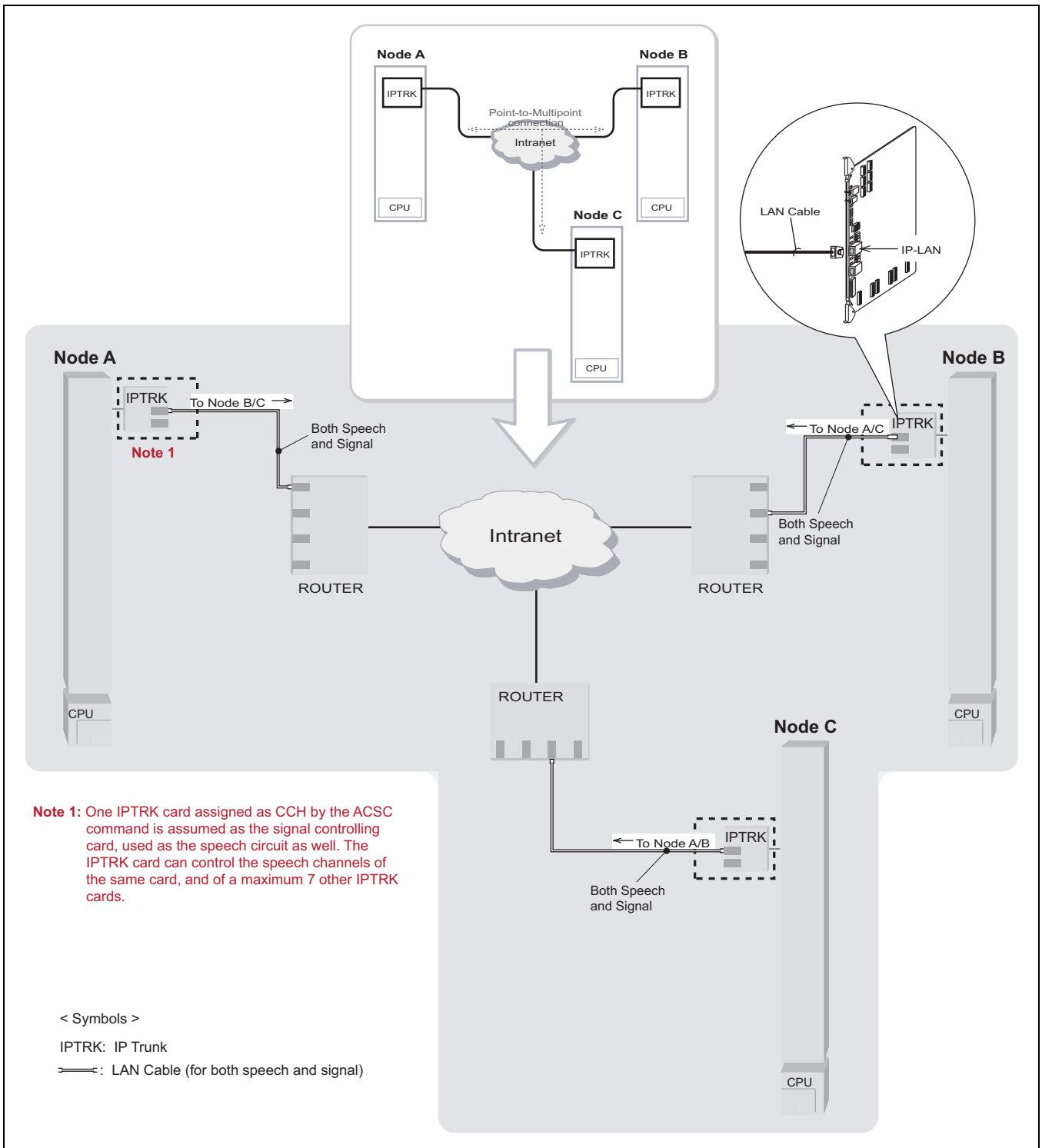
Required Hardware (Example) for CCIS Networking via IP [IPTRK: Point-to-Point]



- Required Hardware (Point-to-Multipoint Connection)**

This feature (allowing IPTRK card for both speech and CCIS signal channels) is made available by using the following hardware equipment. Once this feature is set, each IPTRK card can make a Point-to-Multipoint Connection with IPTRKs of plural nodes.

Required Hardware (Example) for CCIS Networking via IP [IPTRK: Point-to-Multipoint]



Operating Procedure

No manual operation is required.

Service Conditions

This feature's service conditions are as follows:

1. To send/receive speech and CCIS signals, each node shall use IPTRK card(s). At this time, the IPTRK cards in the Self Node and each of its connected node can be either in 1-to-1 ratio, respectively (denoted in this manual as "point-to-point connection"), or in 1-to-n [n=2 or more] relations (denoted in this manual as "point-to-multipoint connection").
2. Allowed IPTRK cards per UNIT are 2 in the maximum. Accordingly, a total of 16 IPTRK cards can be accommodated per System.
3. Only voice and FAX (G3) information can be sent/received via IPTRK card.
4. When accommodating multiple IPTRK cards, assign CCH to all the cards by ACSC command. (It is not necessary to assign the trunk data for a time slot as a controlling channel.)
5. Tandem Path Through function is not provided.
6. This feature supports QoS (Quality of Service) function (Actually, IP routers control the QoS).
7. When a system message indicates "TCP link failure" due to the data congestion on the router or IP network, a call cannot be made via IPTRK card. When a call is attempted despite this, the caller hears Busy Tone (BT).
8. When a system message, related to "TCP link failure" (23-S/23-T), is created during a call origination or speech, that call's speech channel is automatically restored via patrol function.
9. Any CCIS service features are available for "CCIS Networking via IP" except the following features:

Inter-node Service Features (CCIS) Not to Be Provided

No.	Service Feature Name	
1	A-44	Asynchronous Data Switching - CCIS
2	C-94	Call Forwarding Assignment - Attendant - CCIS Note 13
3	D-41	Data Communication - CCIS
4	D-65	Data Interface - Automatic Answer - CCIS
5	D-66	Data Line Security - CCIS
6	D-67	Data Line Privacy - CCIS
7	D-68	Data Privacy on Demand - CCIS
8	D-69	Data Transparency - CCIS
9	D-86	Data Hotline - CCIS
10	I-19	Individual Trunk Access - CCIS
11	M-39	Modem Pooling - CCIS
12	O-11	Off - Hook Queuing - CCIS Note 13
13	O-12	Outgoing Trunk Queuing - CCIS Note 13
14	S-54	Simultaneous Voice and Data Transmission - CCIS
15	S-60	Synchronous Data Switching - CCIS

Note 13: These features are not available only for the point-to-multipoint connection.

10. This feature does not support Broad Band Services H0/H1. Therefore, when assigning the IPTRK routes by the ARTD command, be sure to enter "BOB = 0."
11. This feature can use Link Reconnection function. At this time, service conditions are the same as those for the normal CCIS network.

12. Billing information for CCIS network is output after Link Reconnection is performed.
13. Echo Canceler does not have sufficient effect on a conference call via IPTRK depending on the kind of telephone set (mostly analog telephone).
14. During IPTRK-related tandem connection, sometimes speech quality becomes poor, or mutual connection failure occurs. DTMF and FAX relay cannot be used either.
15. PS Roaming via IPTRK is available. The data assignment is the same as “CCIS Networking via IP.” When using the IP trunks on the IPTRK card assigned as “CCH”, register all of these trunks to the same LP. Otherwise, PS Roaming cannot be established.
16. This feature does not support Event-Based CCIS.
17. When this feature is provided in Point-to-Multipoint Connection, the following “Health Check” function is available:
 - a.) A call is currently in progress between IPTRKs of Node A and Node B.
 - b.) While the call is in progress, Node A sends “Health Check Request” message to monitor the counterpart IPTRK state (at Node B).
 - c.) In a response, Node B returns “Result: Normal” message, and the Health Check proves successful.
 - d.) While the call is still in progress, the IPTRK of Node B is unexpectedly reset or encounters call release message packet loss.
 - e.) Node A sends “Health Check Request” message to Node B again.
 - f.) Node B returns “Result: Abnormal” message or no message is returned to Node A.
 - g.) Node A regards the counterpart IPTRK as in the abnormal state. As a result, Node A forcibly releases the call.

Without this function, the IPTRK of Node B still continues to receive UDP packets from IPTRK of Node A and, possibly, also from another IPTRK (of Node A or other node) when the next call is made just at this timing. When this function is to be executed, be sure to assign the System Data below:

ASYDL, SYS1, Index 803, b3 = 0 (CCIS over IP Health Check is used).

Health Check function can be executed at longer time intervals than conventional one (ASYDL, SYS1, Index 803, b3 = 0) by assigning the System Data below:

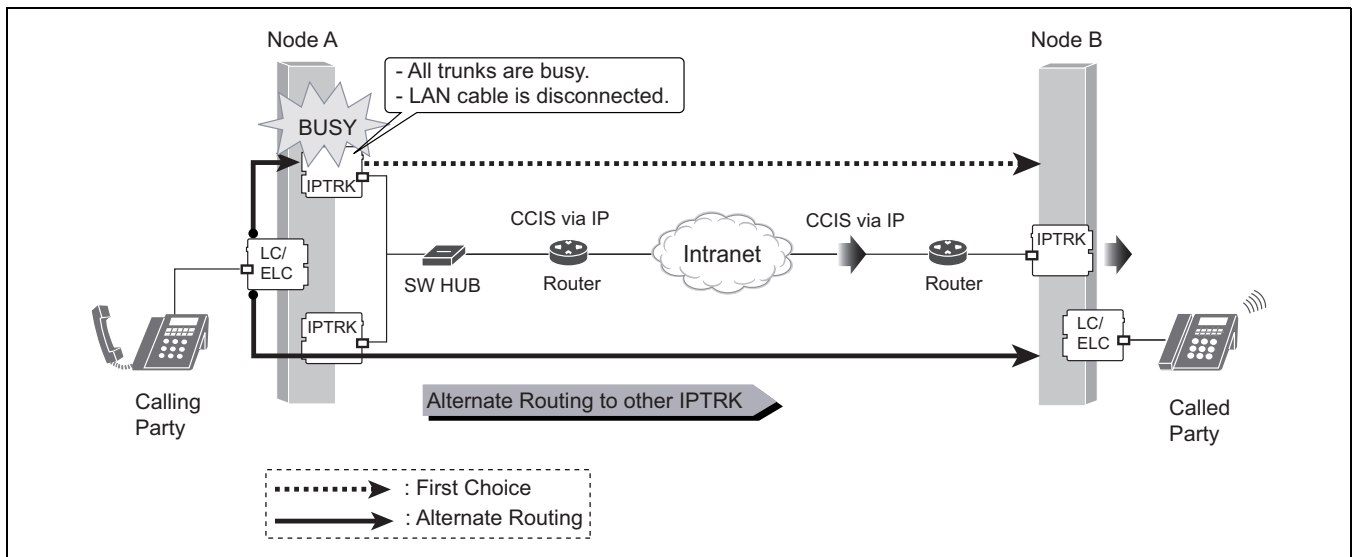
ASYDL/ASYDN, SYS1, Index 831, b6 = 1 (CCIS over IP Health Check Enhancement is used). **Note**

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ASYDL, SYS1, Index803, b3 (Conventional Health Check)	ASYDL/ASYDN, SYS1, Index831, b6 (Health Check Enhancement)	Action
0	0	Conventional Health Check is activated.
0	1	Health Check Enhancement is activated.
1	0	Health Check is not activated.
1	1	Health Check is not activated.

Note 14: [For UMGi/RNIP system] ASYDL/ASYDN, SYS1, Index 831, b6 data is out of service.

18. The following trunk and terminal are available to connect to IPTRK.
 - Analog/Digital Station
 - Attendant Console
 - ISDN Terminal
 - PCS/PHS Terminal
 - Analog Tie/C.O.Trunk
 - CCIS Trunk
 - ISDN Tie/C.O.Trunk
 - CCIS over IPTRK
19. This feature does not support any Hotel service.
20. This feature automatically routes “CCIS via IP” calls over alternate routes. When the multiple IPTRK cards are used by the system and speech channels provided by one of the cards are all busy (or the card cannot be used for some reasons), alternate routing to another IPTRK card is available.



In addition to the above case, alternate routing to C.O. line or tie line is available. Details on alternate routing patterns are shown in the table below.

Alternate Routing To Be Provided/Not Provided

X: Available NA: Not Available

	FROM CCIS Networking via IP	TO CCIS Networking via IP
Analog C.O. line	X	X
Analog Tie Line	X	X
CCIS Line	X	X
Public ISDN Line	X (via Sub Address-Addressing only)	NA
Private ISDN Line	X	X

21. When the UBM (CGC) message is received from the other node, the call can be routed to the following TDM-based signal lines as alternate routes: ISDN (C.O./Tie Line), ACIS (C.O./Tie Line).
22. When the IPPAD is all busy or has some failure, the alternate routing to the TDM-based signal lines is not available.
23. Even if the system message, related to “TCP link failure”, is issued during a call in progress (Peer-to-Peer connection), the conversation (speech channel) will be maintained as usual.
24. If a call is terminated via CCIS over IP (IPTRK) and the number of digits for the received number is smaller than the Maximum Necessary Digits (MND parameter on AMND/AMNDL/AMNDN) set on the terminating node, the Inter-digit timer (ASYD, SYS1, Index 129, b0-3 (default: six seconds)) works on the terminating node.

In this case, if Alternating timer (ASYDL, SYS1, Index 671, b0-3) set on the originating node is shorter than Inter-digit timer set on the terminating node, the following events occur (because the Alternating timer of the originating node expires prior to the Inter-digit timer of the terminating node).

- CCIS Alternate Routing - Backup works if the Alternate Routing data is assigned on the originating node.
- The calling party hears ROT if no Alternate Routing data is not assigned.

To use the Inter-digits timer, set the Alternating timer (on the originating node) that is longer than the Inter-digit timer of the terminating node.

Programming

Data programming regarding CCIS Networking via IP (By using IPTRK) is explained in the following sequence:

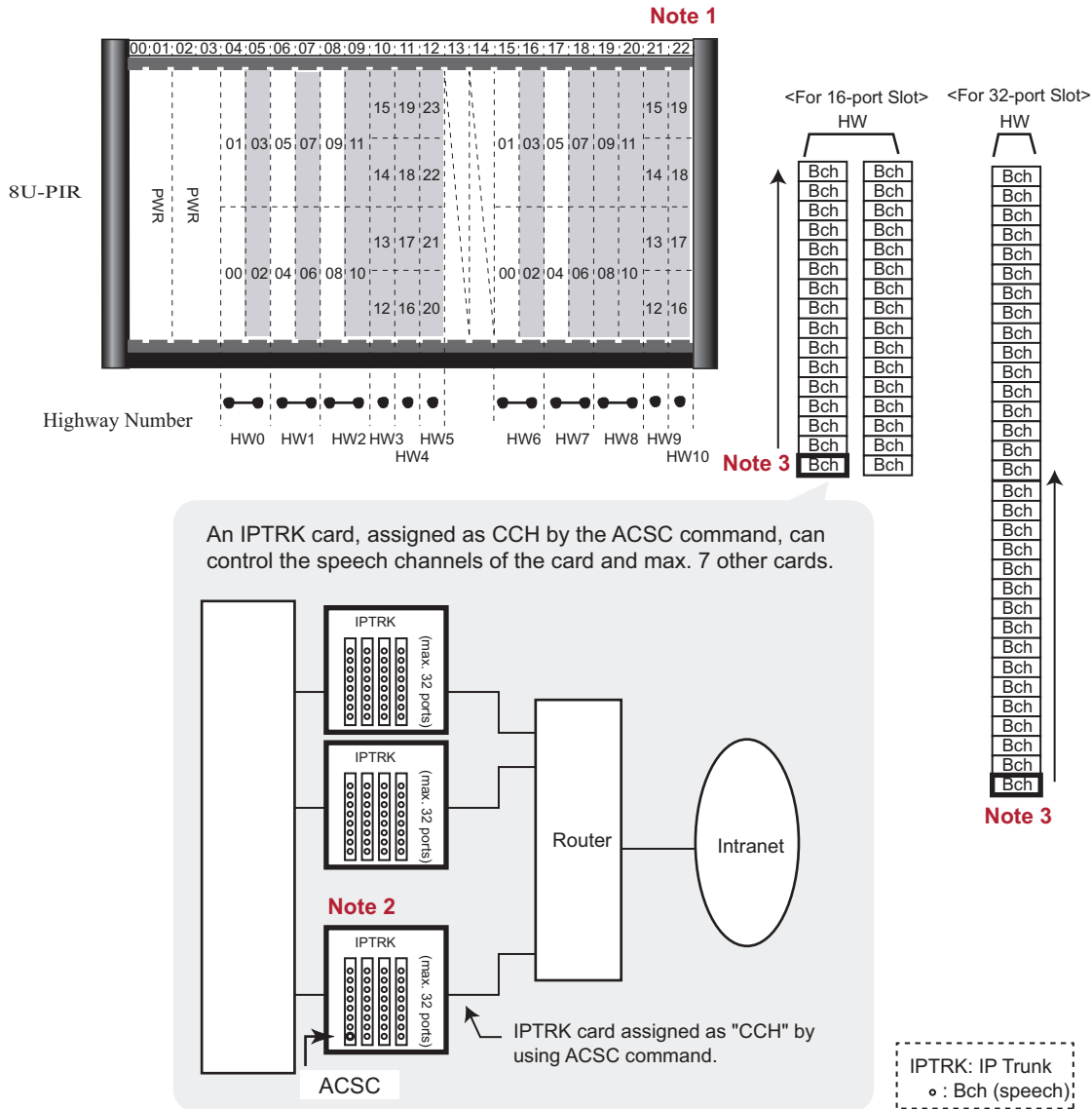
- Prior Considerations
- Step-by-Step Data Programming
- Example Data Assignment 1: Point-to-Point Connection
- Example Data Assignment 2: Point-to-Multipoint Connection
- Example Data Assignment 3: Point-to-Point Connection (Coexistence with Conventional CCIS)
- Example Data Assignment 4: Point-to-Multipoint Connection (Coexistence with Conventional CCIS)

< Prior Considerations >

Before starting the data programming, take the following into considerations:

1. Be sure to assign “CDN 51 (IPTRK) = 1” to speech channel routes on the ARTI command.
2. The port (speech channel) allocations on the IPTRK card is explained in the figure on the next page. By mounting a sub board, the card can use a total of 32 ports (by not mounting a sub board, 16 ports are available). Be sure to assign a speech channel in the 1st Time Slot of the controlling IPTRK card (the signal channel is logical assignment, therefore, no data assignment is required by the ARTD/ATRK command). Meanwhile, the CICG data for the ACSC command is to be assigned using the first Group LENS of the controlling IPTRK card accommodated highway.

Port accommodation on the IPTRK card is shown below. As CCIS signal channel is logical assignment, a single time slot need not be exclusively kept by a signal channel.



Note 1: IPTRK card can be accommodated in the shaded slots (max. 2 cards per UNIT). "HW" indicates "Highway Block."

Note 2: This example shows the port accommodation when the sub board is mounted.

Note 3: Be sure to assign a speech channel in the 1st Time Slot of the controlling IPTRK.

3. Coexistence with the conventional CCIS is available for both Point-to-Point and Point-to-Multipoint Connections. For detailed conditions or data assignment, refer to <Example Data Assignment 3: Point-to-Point Connection (Coexistence with Conventional CCIS)> and <Example Data Assignment 4: Point-to-Multipoint Connection (Coexistence with Conventional CCIS)> at the end of this section.

4. When assigning the data for Point-to-Multipoint connection, consider the following:
- a.) When assigning the LCR-related data, be sure to use the LDM/ NDM commands (ANPDL/ ANPDN, ASPAL/ASPDN, ARNPL, AFRSL/AFRSN, AOPRL/AOPRN, etc.). For Point-to-Multipoint Connection, ANPD, ASPA, ARNP, AUNE, AFRS, and AOPR commands cannot be used.
 - b.) When assigning the data using the AOPRL/AOPRN command, define the following data for each OPR (Outgoing Route Selection) table:
IPTRK (IP Trunk): 1 = CCIS Networking via IP (Point-to-Multipoint Connection) is used.

Note 15

PC (Point Code): Designate the Point Code (Adjacent Node) to be connected directly using the IPTRK card. (1-16367) **Note 16**

Note 15: When CCIS Networking via IP (Point-to-Point Connection) is used or IP network is not used, "0" is assigned here.

Note 16: This parameter is valid only when "IPTRK = 1" is selected.

- c.) In Point-to-Multipoint Connection, since it cannot be determined which destination node is to be called until the call is made, be sure to develop all the CCIS-related data for the Self Node. As to the ACIC1 command, the data must be assigned to the whole destination nodes and also to the Self Node.
Refer to Example Data Assignment 2 and 4 at the end of this section.
- d.) Assign IP address of each connected IPTRK card (destination IP address) by using the APIPL/ APIPN command. (Note that this data is not required when the feature is provided in Point-to-Point Connection.)

PC: Enter the Point Code of Destination Node. [1-16367]

CNT: Count No. [1-8] (CNT = 2-8 is not used.)

IP ADDRESS: Assign IP Address of each connected IPTRK card. [Max. 8 Addresses]

MODE: Select a radio button out of the following two options.

Permanent Virtual Connection / Switched Virtual Connection **Note 17**

Note 17: Normally, "Switched Virtual Connection" is selected.

TIMER: [0-127] **Note 18**

0 = 15 minutes (default setting)

1-127 = 1-127 minutes

Note 18: This parameter is valid when "Switched Virtual Connection" is selected in the "MODE" parameter.

< Step-by-Step Data Programming >

This page shows a summary of data assignment necessary for this feature.

Attention: *When any office data is once assigned/modified, be sure to initialize the IPTRK card (by flipping its MB key OFF → ON → OFF). The circuit card can be initialized also by using the MBPM command, but at this time, be sure to designate the whole Groups where speech channels have been assigned.*

[1] Assign necessary System Data

STEP 1: **ASYD/ASYDL/ASYDN** - Assign all the System Data, necessary for the CCIS network, as well as the following:

ASYD, SYS 1, Index 180 and 181: Assignment of Self Node PC (Point Code) number.

ASYD, SYS 1, Index 186, b0: 0/1 = Link Reconnection function is not used/used

ASYD, SYS 1, Index 186, b6 = 1 (CCIS is in service)

The following data are required for Point-to-Multipoint Connection:

ASYDL, SYS 1, Index 513: LDM (Local Data Memory) memory block usage

ASYDL, SYS 1, Index 810: MOH from the Destination Office/the Self Office

Calculation is [2 X n sec. (n = 0-15 [MTC], assigned by these bits)]. For example, "3 Hex." is assigned in these bits, the timer is set as "2 X 3 = 6 seconds". When "0 Hex." is assigned, this timer does not work, and then, "ACM/UMB Signal No-Receiving Timer (SYS 1, Index 189, b4-b7)" is created.

ASYDL, SYS 1, Index 803, b3: 0/1 = CCIS over IP Health Check is used/not used.

ASYDL/ASYDN, Index 831, b6: 0/1 = CCIS over IP Health Check Enhancement is not used/used.

[2] Assign the Route/Trunk data

STEP 1: **ARTD** - Assign the Speech routes to be used by this feature.

STEP 2: **ARTI** - Assign the following Route Application Data regarding the Speech routes assigned in STEP 2:
CDN 51 (IPTRK) = 1

STEP 3: **ATRK** - Assign speech channel trunks associated with the Speech Route designated by ARTD command. At this time, be sure to assign even the 1st time slot of the controlling IPTRK card as a speech channel. As to the signal channels, no data assignment is required (signal channel is logical assignment).

Note: The assigned trunks above must be made idle by using the MBTK command. Furthermore, when the FCCS network is also involved, it would be necessary to assign the ALRTN command, too (ALRTN specifies the relationship between the Route data assigned above and the Logical Route data used on the FCCS network). For the data assignment when the FCCS network is involved, refer to the Data Programming Manual - FCCS.

[3] Assign the LCR-related data

STEP 1: **ANPD/ANPDL/ANPDN** - Reserve a number level for trunk access. Select Normal Service (N) or Hooking Service (H) from the combo box for Connection Indexes. When this feature is provided in Point-to-Multipoint Connection, be sure to use ANPDL or ANPDN command.

TN: Tenant Number.

- 1stDC: 1st Digit Code to be used as LCR access code.
- CI: Select Normal Service (N) or Hooking Service (H) from the combo box for Connection Indexes.
- NND: Number of digits necessary to configure LCR access code.
- STEP 2: **ASPA/ASPAL/ASPAN** - Define the LCR access code, using the first digit code assigned by ANPD/ANPDL/ANPDN command. When this feature is provided in Point-to-Multipoint Connection, be sure to use ASPAL or ASPAN command.
- TN: Tenant Number.
- ACC: Define the LCR access code using the first digit code assigned in STEP 5.
- CI: Connection Index. Assign "N: Normal"/"H: Hooking".
- SRV: Select "LCR: Least Cost Routing"/"LCRS: Register Sender LCR".
- RT/LGRT: Assign a dummy route number.
- STEP 3: **AMND** - Assign the number of necessary digits to be received by the Register (ORT/IRT) circuit.
- TN: Tenant Number
- DC: Assign the LCR access code (including office/area code).
- MND: Assign necessary number of digits to be received by the Register circuit.
- STEP 4: **ARNP/ARNPL** - Assign ACC (access code), and each individual route to be seized when the ACC is dialed. When this feature is provided in Point-to-Multipoint Connection, be sure to use ARNPL command.
- RT/LGRT: Route Number to be seized when the "ACC" below is dialed.
- ACC: Assign LCR access code (including office/area code).
- STEP 5: **AFRS/AFRSL/AFRSN** - Define a dummy route, its corresponding access code (Number Pattern Code) and an OPR (Outgoing Route Selection Pattern Number) table to be developed when the access code is dialed. When this feature is provided in Point-to-Multipoint Connection, be sure to use AFRSL or AFRSN command.
- TN: Tenant Number
- RT/LGRT: Assign a dummy route assigned in STEP 6.
- NPC: Assign the LCR access code (including office/area code).
- OPR: Assign the route selection table (define the table number between 0-4000) to be used when the access code, specified in "NPC", is dialed.
- STEP 6: **AOPR/AOPRL/AOPRN** - Develop the OPR (Outgoing Route Selection Pattern Number), a list table defining the route selection order. When this feature is provided in Point-to-Multipoint Connection, be sure to use AOPRL or AOPRN command.
- TDPTRN: Time of Day Change Pattern.
- OPR: Assign the OPR table number assigned in STEP 9.
- RA: Define the trunk group (route) seizure order from 0 to 7. (An OPR table can specify the first-priority route and a maximum of 7 other alternative routes, regarding an NPC ["NPC" specified in STEP 9]. 0 is the first priority route, while 7 is the last priority route.)
- E: When the route, assigned in "RT/LGRT" below, is the last selection, assign "0". Otherwise, assign "1".
- RT/LGRT: Assign a Route number associated with "RA" above.
- SKIP: Assign the number of digits to be deleted when the access code (NPC) is dialed.

PNL: Assign the number of digits (prefix digits) to be added after the number conversion in accordance with “SKIP” above is processed. When no digit is to be added, assign “0”. When 1 to 4 digits is (are) to be added, assign any number between 1 and 127, and for 5 to 24 digits, assign between 128 and 999. When any of 1 to 999 is assigned here, be sure to develop the actual added number using the AADC/AADCL/AADCN command.

The following parameters also must be assigned when using the AOPRL/AOPRN command.

IPTRK: When CCIS Networking via IP (Point-to-Point Connection) is used, assign “0”. When CCIS Networking via IP (Point-to-Multipoint Connection) is used, assign “1”.

PC: Assign the Point Code (Adjacent Node) to which an IPTRK card is directly connected using the route (the route specified in “LGRT” above). Note that this parameter is valid when the “IPTRK” parameter is set as “1”.

STEP 7: **ARSC/ARSCN** - Assign Route Restriction Class (RSC) data, associated with the speech channel route, assigned in STEP 2, and the dummy route, assigned in STEP 6.

[4] Assign the Uniform Numbering data.

STEP 1: **ASPA/ASPAL/ASPAN** - If the “ACC” parameter (LCR access code data) in STEP 6 is assigned by including the connected node’s office/area code, assign the Self Node LCR access code as well, following the parameters below. At this time, when this feature is provided in Point-to-Multipoint Connection, be sure to use ASPAL or ASPAN command. Meanwhile, if “ACC” in STEP 6 is assigned without including the office/area code, skip to STEP 13.

TN: Tenant Number

ACC: Define the Self Node LCR access code using the first digit code assigned STEP 5.

CI: Assign “N: Normal”/”H: Hooking”.

SRV: Select “LCR: Least Cost Routing”/”LCRS: Register Sender LCR”.

RT/LGRT: Assign a dummy route number assigned in STEP 6.

STEP 2: **AUNE/AUNEL** - Assign the Uniform Numbering Data. When this feature is provided in Point-to-Multipoint Connection, be sure to use AUNEL command.

TN: Tenant Number

RT/LGRT: Assign the dummy route number assigned in STEP 12.

NPC: Assign the Self Node LCR access code (including office/area code).

SKIP: Assign the number of digits to be deleted (= the number of digits of “NPC”).

PNL: When any number is to be added after the number conversion in “SKIP” above is processed, assign any number between 1 and 127. If this is the case, be sure to develop the actual added number using the AADC/AADCL/AADCN command. When addition of any number is not necessary, assign “0”.

STEP 3: **AMND/AMNDL/AMNDN** - Assign the number of necessary digits to be received by the Register circuit.

TN: Tenant Number

DC: Assign the Self Node LCR access code (including office/area code).

MND: Assign necessary number of digits to be received by the Register circuit.

STEP 4: **ARRC/ARRCN** - Assign the tandem connection data as regards the incoming route and dummy route.

ICRT/ICLGRT: Assign the incoming route number.

OGRT/OGLGRT: Assign the dummy route number.

ARI-D_RES: Assign “1”. (Tandem connection without operator/station assistance between incoming route and dummy route is allowed.)

[5] Assign the CCIS-related data

STEP 1: **ADPC/ADPCL/ADPCN** - Assign the Destination Point Code data.

RT/LGRT: Assign the speech channel route number assigned in STEP 2.

PC: For Point-to-Point Connection, assign the Destination Point Code to which the IPTRK card is directly connected. For Point-to-Multipoint Connection, assign the Point Code of Self Node. (Refer to the Example Data Assignment at the end of this section.)

STEP 2: **ACSC/ACSCL/ACSCN** - Assign the CSCG (Common Channel Signaling Controller Group) data for both basic route and alternate route. When a basic route CSCG table is assigned using an even number, be sure to assign the alternate route CSCG table, using its consecutive odd number.

CSCG: Assign a desirable CSCG table number. For the basic signal route, use an even number within the range from 2 to 254 (excepting 128). For the alternate route, use an odd number adding 1 to the basic route table number.

GROUP (CICG): Develop the CSCG table, attaching a number (0 - 7) to each CIC Group (CICG).

Each CICG is defined in the parameter “CCH” below, using the first group of LENS (5 digits) of the controlling IPTRK card accommodated highway. **Note 19**

CCH: Assign the 1st Group of LENS (2-digit MG + 1-digit U + and 2-digit G) of the controlling IPTRK card accommodated highway. **Note 19**

Note 19: Even if only one controlling IPTRK card is provided, be sure to program a total of 8 CICGs. At this time, use the same LENS of the controlling IPTRK card for all CICGs.

STEP 3: **ACIC1/ACIC1N** - Define all the Destination Point Codes and the CSCG table to be used for each connection.

PC: Assign Point Codes of all destination nodes to be connected on the CCIS network. When this feature is provided using the Point-to-Multipoint Connection, also assign the Self Node Point Code. (Refer to the Example Data Assignment at the end of this section.)

CSCG: Assign the basic route CSCG table number assigned in STEP 13.

STEP 4: **ACIC2** - Assign the speech channels to be used regarding the adjacent node Point Code. For Point-to-Multipoint Connection, since it cannot be determined which node is to be called until a call is made, designate the node using the Point Code of Self Node.

PC: For Point-to-Point Connection, assign the Point Code of the node to which the IPTRK card is directly connected. For Point-to-Multipoint Connection, assign the Point Code of Self Node. (Refer to the Example Data Assignment at the end of this section.)

CIC: Define a CIC number (1 - 999) for each speech channel. **Note 20**

LENS: Assign the LENS of each speech channel defined by the “CIC” number above. **Note 20**

Note 20: There is a principle when a CIC number is assigned to each speech channel. See the figure below:

Relationship between CIC (ACIC2 command) and CIG (ACSC command)

Each speech channel must be assigned using the proper CIC number corresponding to the CIC Group (CIG assigned in the ACSC command) that actually controls the speech channel. The relationship between CIC and CIG is explained below:

GROUP (CIG) by ACSC Command	CIC Number by ACIC2 command							
0		8	16	24	32	40	• • •	992
1	1	9	17	25	33	41	• • •	993
2	2	10	18	26	34	42	• • •	994
3	3	11	19	27	35	43	• • •	995
4	4	12	20	28	36	44	• • •	996
5	5	13	21	29	37	45	• • •	997
6	6	14	22	30	38	46	• • •	998
7	7	15	23	31	39	47	• • •	999

Each CIC is assignable to a dedicated CIG as shown here. Assign every CIC to the corresponding CIG that actually controls the speech channel.

[6] Assign the IP-related data

STEP 1: **AGIP** - Assign a series of IP-related data regarding each IPTRK card as follows:

LENS: Assign the first Group LENS (5 digits: 2-digit MG + 1-digit U + 2-digit G) of the IPTRK card accommodated highway.

KIND: Select "IPTRK (CCIS)".

IPTRK_IP: Assign IP address of the IPTRK card.

DG_IP: Assign IP address of the connected router.

NETMSK: Assign the Net Mask address.

ToS CONTROL: Select either "IP Precedence" or "DiffServ"

QoS1 (QoS Data for Signal Route): When IP Precedence is selected, assign 0 - 7.

When DiffServ is selected, assign 00 - 3F (Hex.).

QoS2 (QoS Data for Speech Path): When IP Precedence is selected, assign 0 - 7.

When DiffServ is selected, assign 00 - 3F (Hex.).

MULT: Select either "Point-to-Point" or "Point-to-Multipoint".

DST_IP: Assign the destination IPTRK card IP address for Point-to-Point Connection. When Point-to-Multipoint Connection is to be used, no data assignment is required here (instead, the destination IP addresses are assigned by the APIPL/APIPN command).

IRT: Assign the Incoming Route number for Point-to-Multipoint Connection. When Point-to-Point Connection is used, no data assignment is required here.

Note: Physical Route Number must be assigned in either Stand-alone System or FCCS System.

NETID: Network ID. Assign "0" (fixed).

ARP (Frame Type of ARP): By checking the "Detail" box, this parameter becomes valid. After that, select "DIX".

CSLINK_NUM (Maximum Number of Client/Server Connection): Assign the number of TCP links used for message exchange, associated with "Permanent Virtual Connection" (for Permanent Virtual Connection, refer to the APIPL/APIPN command below).

The following parameters become valid when the "RTP" box is checked according to the necessity:

PKTLOSS (Amount of Packet Loss): 0 - 100%. Usually, default data "0 (8%)" is assigned.

JIT_MAX (Maximum Jitter Buffer): 0 - 60 X 10 msec. Usually, default data "0 (120 ms)" is assigned.

JIT_MIN (Minimum Jitter Buffer): 0 - 60 X 10 msec. Usually, default data "0 (40 ms)" is assigned.

MNGS (Interval of Jitter Adjustment): 0 - 255 times. Usually, default data "0 (5 times)" is assigned.

JIT_COUNT (Interval of Jitter Statistics): 0 - 255 sec. Usually, default data "0 (1 sec)" is assigned.

BASE_COUNT (Interval of Time-base Correction): 0 - 255 sec. Usually, default data "0 (10 sec)" is assigned.

JIT_FAST (Judging Rate of Fast Arrived Packet): 0 - 100%. Usually, default data "0 (100%)" is assigned.

TIME_FAST (Time-base Correction Judgement): 0 - 100%. Usually, default data "0 (80%)" is assigned.

STEP 2: **APIPL/APIPN** - Assign each IP address of connected IPTRK when this feature is provided in Point-to-Multipoint Connection. Note that this command data is not necessary if the feature is provided in Point-to-Point Connection.

PC: Enter the Point Code of Destination Node.

CNT: Count No. [1-8]

IP ADDRESS: Assign IP Address of each connected IPTRK card. (Max. 8 Addresses)

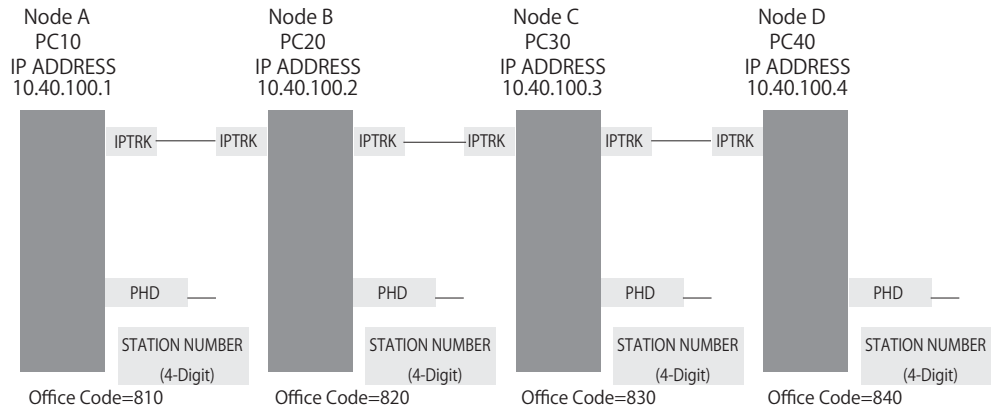
MODE: Select the TCP connection mode out of the following:

- Permanent Virtual Connection
- Switched Virtual Connection

Normally, "Switched Virtual Connection" is selected. "Switched Virtual Connection" refers to a mode that uses a timer (specified in the "TIMER" parameter below) for the established TCP link maintain/disconnect monitor. When no signal message has been detected on the link for the timer period, the TCP connection is automatically set to be disconnected. If not, the connection is maintained. On the other hand, "Permanent Virtual Connection" refers to the mode that keeps the TCP connection always in a maintained state.

TIMER: Define the timer when "Switched Virtual Connection" is selected in "MODE" above.
0 = 15 minutes (default setting)
1 - 127 = 1 - 127 minutes

Note: In the case of the network below, the following data assignment is required.



Data Assignment for all Node

ANPDL

1st DC=8
NND=3

ASPAL

ACC=810
SRV=LCR

ACC=820
SRV=LCR

ACC=830
SRV=LCR

ACC=840
SRV=LCR

AMNDL

DC=810
MND=7

DC=820
MND=7

DC=830
MND=7

DC=840
MND=7

Data Assignment for Node A

AFRSL

NPC=820
OPR=20

NPC=830
OPR=20

NPC=840
OPR=20

AOPRL

OPR=20
PC=20

APIPL

PC=20
IP ADDRESS=10.40.100.2 (IP Address of Node B)

PC=30
IP ADDRESS=10.40.100.2 (IP Address of Node B)

PC=40
IP ADDRESS=10.40.100.2 (IP Address of Node B)

Data Assignment for Node B

AFRSL

NPC=810
OPR=10

NPC=830
OPR=30

NPC=840
OPR=30

AOPRL

OPR=10
PC=10

OPR=30
PC=30

APIPL

PC=10
IP ADDRESS=10.40.100.1 (IP Address of Node A)

PC=30
IP ADDRESS=10.40.100.3 (IP Address of Node C)

PC=40
IP ADDRESS=10.40.100.3 (IP Address of Node C)

Data Assignment for Node C

AFRSL

NPC=810
OPR=20

NPC=820
OPR=20

NPC=840
OPR=40

AOPRL

OPR=20
PC=20

OPR=40
PC=40

APIPL

PC=10
IP ADDRESS=10.40.100.2 (IP Address of Node B)

PC=20
IP ADDRESS=10.40.100.2 (IP Address of Node B)

PC=40
IP ADDRESS=10.40.100.4 (IP Address of Node D)

Data Assignment for Node D

AFRSL

NPC=810
OPR=30

NPC=820
OPR=30

NPC=830
OPR=30

AOPRL

OPR=30
PC=30

APIPL

PC=10
IP ADDRESS=10.40.100.3 (IP Address of Node C)

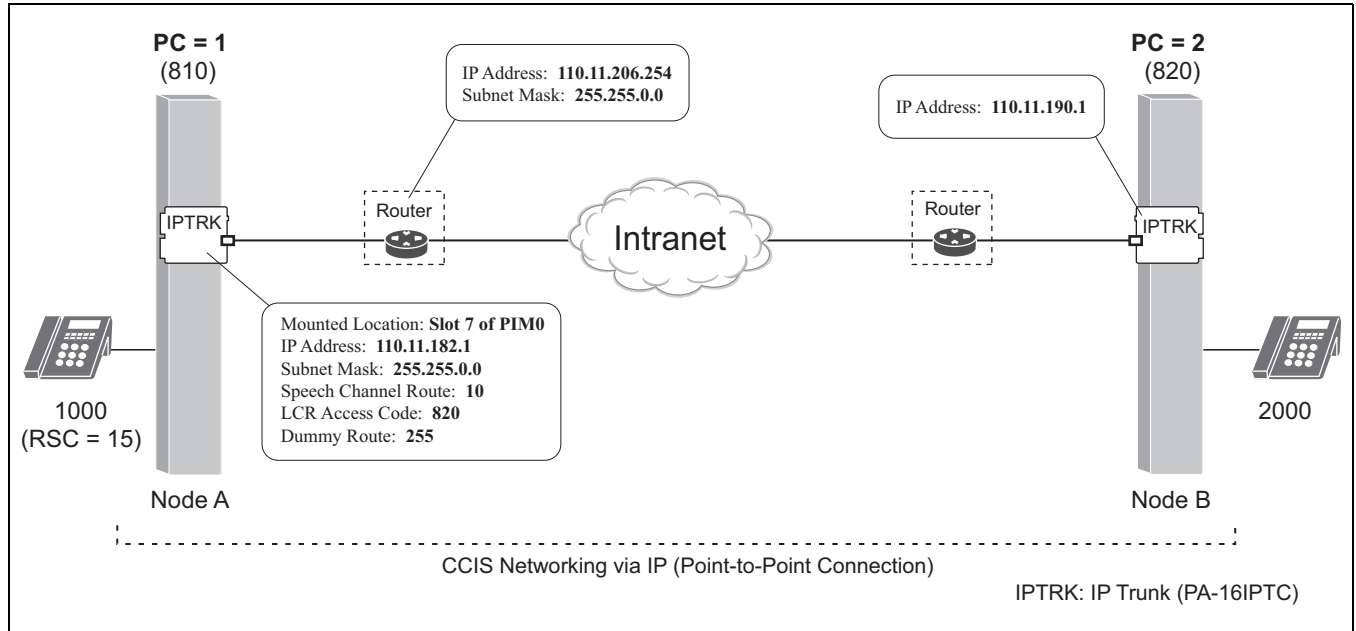
PC=20
IP ADDRESS=10.40.100.3 (IP Address of Node C)

PC=30
IP ADDRESS=10.40.100.3 (IP Address of Node C)

< Example Data Assignment 1: Point-to-Point Connection >

This page provides an example data assignment under the condition shown in the figure below. Note that this example covers the data programming required at Node A (PC = 1).

Note: Point-to-Point connection is not supported in North America.



[1] Assignment of System Data

ASYD Command

SYS 1, Index 180 = "01" Hex.

Index 186 = "40" or "41" Hex.

Also assign other system data, necessary for the CCIS network, as well as the above Indexes.

[2] Assignment of Route/Trunk Data (at Node A)

No.	Command	Data Programming	No.	Command	Data Programming
1	ARTD	RT = 10 (for Speech channel)	3	ATRK	RT = 10 TK = 1 LENS = 000040 TK = 2 LENS = 000041 TK = 3 LENS = 000042 : : : TK = 15 LENS = 000056 TK = 16 LENS = 000057 TK = 17 LENS = 000060 TK = 18 LENS = 000061 : : : TK = 30 LENS = 000075 TK = 31 LENS = 000076 TK = 32 LENS = 000077
2	ARTI	RT = 10 CDN 51 (IPTRK) = 1			
Note: The respective trunks, assigned by ATRK, are initially being in make-busy status. After assigning the trunks, be sure to lift this restriction, using the MBTK command.			Note 1: For IPTRK card with no sub board. Note 2: For IPTRK card with a sub board.		

[3] Assignment of LCR-related Data (at Node A)

No.	Command	Data Programming	No.	Command	Data Programming
1	ANPD	TN = 1 1stDC = 8 CI = N/H NND = 3	6	AOPR	TDPTN = 0 OPR = 1 RA = 0 E = 0 RT = 10 SKIP = 0 PNL = 0
2	ASPA	TN = 1 ACC = 820 CI = N/H SRV = LCR/LCRS RT = 255			7
3	AMND	TN = 1 DC = 820 MND = 7			
4	ARNP	RT = 10 ACC = 820			
5	AFRS	TN = 1 RT = 255 NPC = 820 OPR = 1			

[4] Assignment of Uniform Numbering Data (at Node A)

No.	Command	Data Programming	No.	Command	Data Programming
1	ASPA	TN = 1 ACC = 810 CI = N/H SRV = LCR/LCRS RT = 255	3	AMND	TN = 1 DC = 810 MND = 7
2	AUNE	TN = 1 RT = 255 NPC = 810 SKIP = 3 PNL = 0	4	ARRC	ICRT = 10 OGRT = 255 ARI-D_RES = 1

[5] Assignment of CCIS-related Data (at Node A)

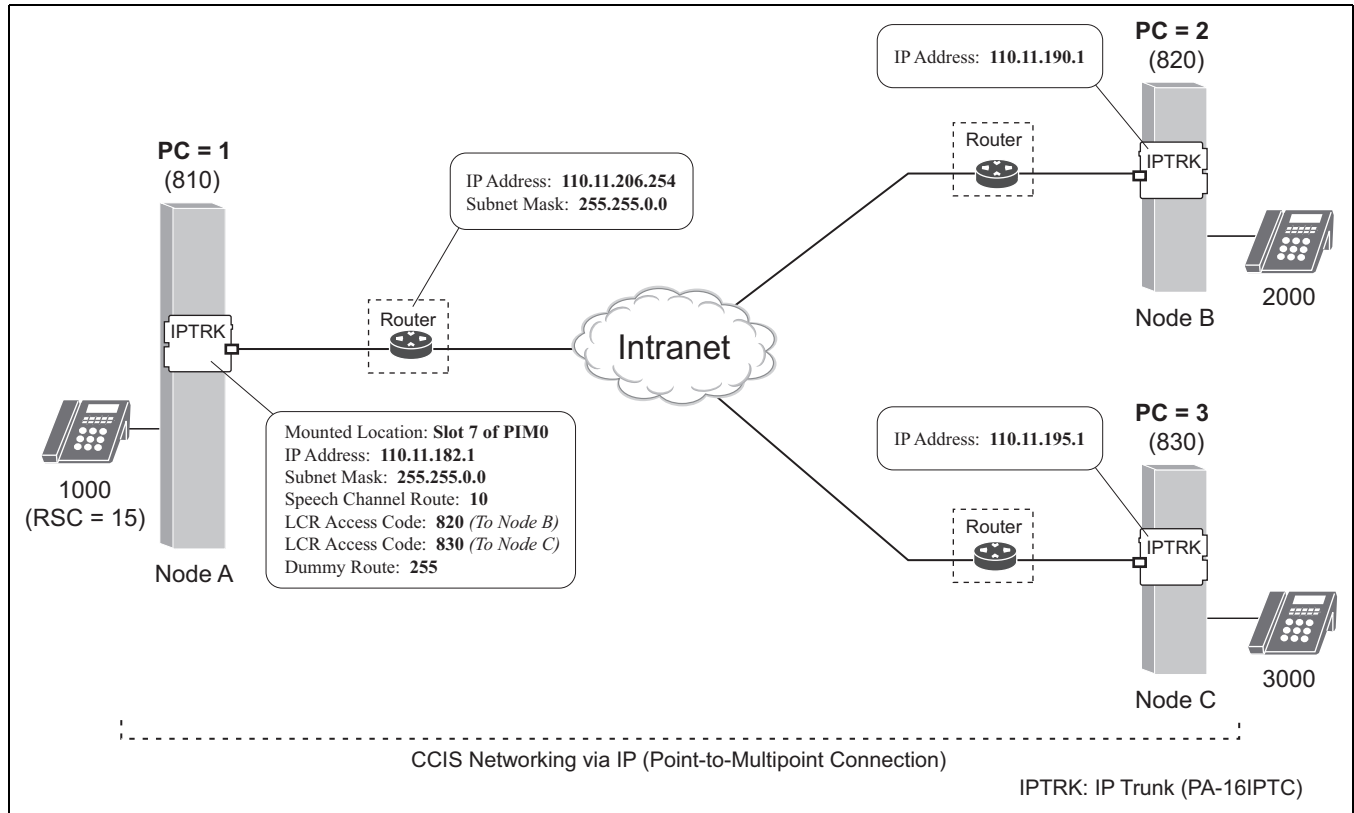
No.	Command	Data Programming	No.	Command	Data Programming
1	ADPC	RT = 10 PC = 2	3	ACIC1	PC = 2 CSCG = 130
2	ACSC	CSCG = 130 (Basic Route for CCH) CICG = 0 CCH = 00004 CICG = 1 CCH = 00004 CICG = 2 CCH = 00004 . . . CICG = 7 CCH = 00004 CSCG = 131 (Alternate Route for CCH) CICG = 0 CCH = 00004 CICG = 1 CCH = 00004 CICG = 2 CCH = 00004 . . . CICG = 7 CCH = 00004	4	ACIC2	PC = 2 CIC = 1 LENS = 000040 CIC = 2 LENS = 000041 . . . CIC = 16 LENS = 000057 CIC = 17 LENS = 000060 . . . CIC = 30 LENS = 000075 CIC = 31 LENS = 000076 CIC = 32 LENS = 000077 Note 1: For IPTRK card with no sub board. Note 2: For IPTRK card with a sub board.

[6] Assignment of IP-related Data (at Node A)

No.	Command	Data Programming
1	AGIP	LENS = 00004 KIND = IPTRK (CCIS) IPTRK_IP = 110.11.182.1 DG_IP = 110.11.206.254 NETMSK = 255.255.0.0 QoS Control = IP Precedence / Diffserv QoS1 = 0-7 / 00-3F QoS2 = 0-7 / 00-3F MULT = Point-to-Point DST_IP = 110.11.190.1 IRT = (Not Assigned) NETID = 0 * The rest of the data above (e.g. Frame Type of ARP data, Jitter Buffer detailed data, etc.) is to be assigned, according to your network condition.

< Example Data Assignment 2: Point-to-Multipoint Connection >

This page provides an example data assignment under the condition shown in the figure below. Note that this example covers the data programming required at Node A (PC = 1).



[1] Assignment of System Data

ASYD Command

SYS 1, Index 180 = "01" Hex.

Index 186 = "40" or "41" Hex.

Also assign other system data, necessary for the CCIS network, as well as the above Indexes.

[2] Assignment of Route/Trunk Data (at Node A)

No.	Command	Data Programming	No.	Command	Data Programming
1	ARTD	RT = 10 (for Speech channel)	3	ATRK	RT = 10 TK = 1 LENS = 000040 TK = 2 LENS = 000041 TK = 3 LENS = 000042 : : : TK = 15 LENS = 000056 TK = 16 LENS = 000057 TK = 17 LENS = 000060 TK = 18 LENS = 000061 : : : TK = 30 LENS = 000075 TK = 31 LENS = 000076 TK = 32 LENS = 000077
2	ARTI	RT = 10 CDN 51 (IPTRK) = 1			

Note: The respective trunks, assigned by ATRK, are initially being in make-busy status. After assigning the trunks, be sure to lift this restriction, using the MBTK command.

Note 1: For IPTRK card with no sub board.
Note 2: For IPTRK card with a sub board.

[3] Assignment of LCR-related Data (at Node A)

No.	Command	Data Programming		No.	Command	Data Programming	
1	ANPDL	TN = 1 1stDC = 8 CI = N/H NND = 3		6	AOPRL	TDPTN = 0	TDPTN = 0
						OPR = 1	OPR = 2
						RA = 0	RA = 0
						E = 0	E = 0
						LGRT = 10	LGRT = 10
2	ASPAL	TN = 1 ACC = 820 CI = N/H SRV = LCR/LCRS LGRT = 255	TN = 1 ACC = 830 CI = N/H SRV = LCR/LCRS LGRT = 255			SKIP = 0	SKIP = 0
						PNL = 0	PNL = 0
						IPTRK = 1	IPTRK= 1
						PC = 2	PC = 3
3	AMND	TN = 1 DC = 820 MND = 7	TN = 1 DC = 830 MND = 7	7	ARSC	Assign Route Restriction Class (RSC) data, associated with Route 10 and Route 255. For example, the RSC data, to which Station 1000 belongs in the figure above, are as follows:	
						TN = 1	TN = 1
						RT = 10	RT = 255
						RSC = 15	RSC = 15
						PRI = 0, RES = 1	PRI = 3, RES = 1
4	ARNPL	LGRT = 10 ACC = 820	LGRT = 10 ACC = 830			PRI = 1, RES = 1	
						PRI = 2, RES = 1	
5	AFRSL	TN = 1 LGRT = 255 NPC = 820 OPR = 1	TN = 1 LGRT = 255 NPC = 830 OPR = 2			PRI = 3, RES = 1/2	

[4] Assignment of Uniform Numbering Data (at Node A)

No.	Command	Data Programming	No.	Command	Data Programming
1	ASPAL	TN = 1 ACC = 810 CI = N/H SRV = LCR/LCRS LGRT = 255	3	AMND	TN = 1 DC = 810 MND = 7
2	AUNEL	TN = 1 LGRT = 255 NPC = 810 SKIP = 3 PNL = 0	4	ARRC	ICRT = 10 OGRT = 255 ARI-D_RES = 1

[5] Assignment of CCIS-related Data (at Node A)

No.	Command	Data Programming	No.	Command	Data Programming
1	ADPC	RT = 10 PC = 1 <= Self-Node PC	3	ACIC1	PC = 1 <= Self-Node PC CSCG = 130 PC = 2 CSCG = 130 <= All Destination-Node PC PC = 3 CSCG = 130
2	ACSC	CSCG = 130 (Basic Route for CCH) CICG = 0 CCH = 00004 CICG = 1 CCH = 00004 CICG = 2 CCH = 00004 . . CICG = 7 CCH = 00004 . . CSCG = 131 (Alternate Route for CCH) CICG = 0 CCH = 00004 CICG = 1 CCH = 00004 CICG = 2 CCH = 00004 . . . CICG = 7 CCH = 00004	4	ACIC2	PC = 1 <= Self-Node PC CIC = 1 LENS = 000040 CIC = 2 LENS = 000041 . . . CIC = 16 LENS = 000057 CIC = 17 LENS = 000060 . . . CIC = 30 LENS = 000075 CIC = 31 LENS = 000076 CIC = 32 LENS = 000077 Note 1: For IPTRK card with no sub board. Note 2: For IPTRK card with a sub board.

[6] Assignment of IP-related Data (at Node A)

No.	Command	Data Programming	No.	Command	Data Programming
1	AGIP	LENS = 00004 KIND = IPTRK (CCIS) IPTRK_IP = 110.11.182.1 DG_IP = 110.11.206.254 NETMSK = 255.255.0.0 QoS Control = IP Precedence / Diffserv QoS1 = 0-7 / 00-3F QoS2 = 0-7 / 00-3F MULT = Point-to-Multipoint DST_IP = (Not Assigned) IRT = 10 NETID = 0 * The rest of the data above (e.g. Frame Type of ARP data, Jitter Buffer detailed data, etc.) is to be assigned, according to your network condition.	2	APIPL	PC = 2 CNT = 1 IP ADDRESS = 110.11.190.1 MODE = Switched Virtual Connection TIMER = 0 PC = 3 CNT = 1 IP ADDRESS = 110.11.195.1 MODE = Switched Virtual Connection TIMER = 0 LOOK AHEAD = 0-3 0: Busy Enable (Restriction disable) 1: Restriction Enable (Busy disable) 2: Busy/Restriction Enable 3: Busy/Restriction Disable

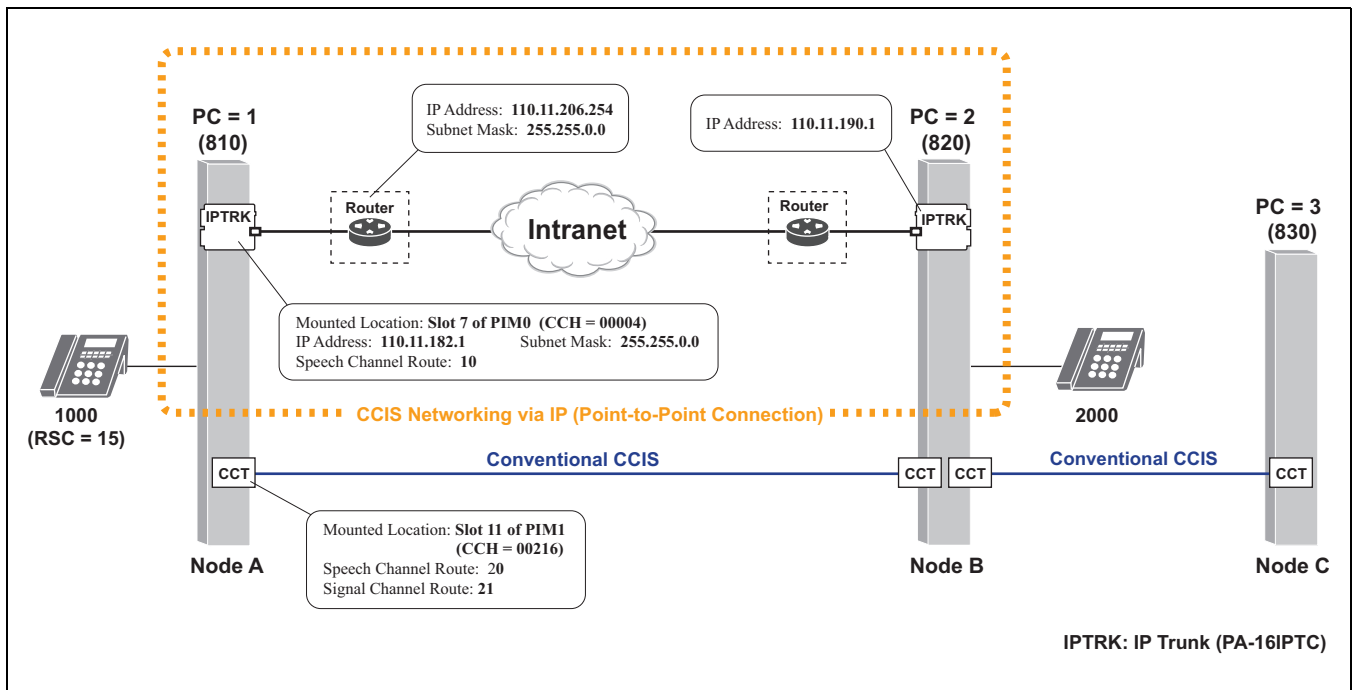
<Example Data Assignment 3: Point-to-Point Connection (Coexistence with Conventional CCIS)>

This page provides an example data assignment when CCIS Networking via IP coexists with the conventional CCIS as shown in the figure below. When developing the data programming, take the following into consideration:

- Assign different Route Numbers for CCIS Networking via IP and conventional CCIS.
- Develop the data for CCH (CICG) provided by both CCIS Networking via IP and conventional CCIS, on the same CSCG table (ACSC command).
- When a CICG (on the ACSC command) is assigned using the IPTRK card LENS, be sure to assign its corresponding CICs (ACIC2 command) using the speech channels provided by CCIS Networking via IP. On the other hand, when a CICG is assigned using the CCT/CCH card LENS, develop its corresponding CICs using the speech channels provided by conventional CCIS.

Note: Point-to-Point Connection is not supported in the North America.

For more details, refer to the data samples listed below. Note that this example covers the data programming required at Node A (PC = 1).



[1] Assignment of System Data

ASYD Command

SYS 1, Index 180 = "01" Hex.

Index 186 = "40" or "41" Hex.

Also assign other system data, necessary for the CCIS network, as well as the above Indexes.

[2] Assignment of Route/Trunk Data (at Node A)

No.	Command	Data Programming	No.	Command	Data Programming
1	ARTD	- CCIS Networking via IP RT = 10 (for Speech channel) - Conventional CCIS RT = 20 (for Speech channel) RT = 21 (for Signal channel)	3	ATRK Note 21	RT = 10 TK = 1 LENS = 000040 TK = 2 LENS = 000041 TK = 3 LENS = 000042 TK = 4 LENS = 000043 TK = 5 LENS = 000044 TK = 6 LENS = 000045 TK = 7 LENS = 000046 TK = 8 LENS = 000047 TK = 9 LENS = 000050 TK = 10 LENS = 000051 TK = 11 LENS = 000052 TK = 21 LENS = 000064 TK = 22 LENS = 000065 TK = 23 LENS = 000066 TK = 24 LENS = 000067 TK = 25 LENS = 000070 TK = 26 LENS = 000071 TK = 27 LENS = 000072 TK = 28 LENS = 000073 TK = 29 LENS = 000074 TK = 30 LENS = 000075 TK = 31 LENS = 000076 TK = 32 LENS = 000077
2	ARTI	RT = 10 CDN 51 (IPTRK) = 1 RT = 11 CDN 51 (IPTRK) = 1			RT = 20 TK = 1 LENS = 002170 TK = 2 LENS = 002171 TK = 3 LENS = 002172 TK = 4 LENS = 002173 TK = 5 LENS = 002174 TK = 6 LENS = 002175 TK = 7 LENS = 002176 TK = 8 LENS = 002177 TK = 9 LENS = 002180 TK = 10 LENS = 002181 TK = 11 LENS = 002182 TK = 21 LENS = 002194 TK = 22 LENS = 002195 TK = 23 LENS = 002196 RT = 21 TK = 1 LENS = 002160 TK = 2 LENS = 002197

Note 21: The respective trunks, assigned by ATRK, are initially being in make-busy status. After assigning the trunks, be sure to lift this restriction, using the MBTK command.

[3] Assignment of LCR-related Data (at Node A)

No.	Command	Data Programming	No.	Command	Data Programming
1	ANPD	TN = 1 1stDC = 8 CI = N/H NND = 3	6	AOPR	TDPTN = 0 OPR = 1 RA = 0 RA = 1 E = 1 E = 0 RT = 10 RT = 20 SKIP = 0 SKIP = 0 PNL = 0 PNL = 0
2	ASPA	TN = 1 ACC = 820 CI = N/H SRV = LCR/LCRS RT = 255			TDPTN = 0 OPR = 2 RA = 0 RA = 1 E = 1 E = 0 RT = 10 RT = 20 SKIP = 0 SKIP = 0 PNL = 0 PNL = 0
3	AMND	TN = 1 DC = 820 MND = 7	7	ARSC	Assign Route Restriction Class (RSC) data, associated with Route 10/20 and Route 255. For example, the RSC data, to which Station 1000 belongs in this sample, are as follows: TN = 1 RT = 10 RSC = 15 PRI = 0, RES = 1 PRI = 1, RES = 1 PRI = 2, RES = 1 PRI = 3, RES = 1/2 TN = 1 RT = 20 RSC = 15 PRI = 0, RES = 1 PRI = 1, RES = 1 PRI = 2, RES = 1 PRI = 3, RES = 1/2
4	ARNP	RT = 10 ACC = 820 RT = 20 ACC = 820			
5	AFRS	TN = 1 RT = 255 NPC = 820 OPR = 1			

[4] Assignment of Uniform Numbering Data (at Node A)

No.	Command	Data Programming	No.	Command	Data Programming
1	ASPA	TN = 1 ACC = 810 CI = N/H SRV = LCR/LCRS RT = 255	3	AMND	TN = 1 DC = 810 MND = 7
2	AUNE	TN = 1 RT = 255 NPC = 810 SKIP = 3 PNL = 0	4	ARRC	ICRT = 10 OGRT = 255 ARI-D_RES = 1 ICRT = 20 OGRT = 255 ARI-D_RES = 1

[5] Assignment of CCIS-related Data (at Node A)

No.	Command	Data Programming																																																																																																																																																															
1	ADPC	RT = 10 PC = 2				RT = 20 PC = 2																																																																																																																																																											
2	ACSC	CSCG = 130 (Basic Route for CCH) CICG = 0 CCH = 00216 CICG = 1 CCH = 00004 CICG = 2 CCH = 00216 CICG = 3 CCH = 00004 CICG = 4 CCH = 00216 CICG = 5 CCH = 00004 CICG = 6 CCH = 00216 CICG = 7 CCH = 00004								CSCG = 131 (Basic Route for CCH) CICG = 0 CCH = 00216 CICG = 1 CCH = 00004 CICG = 2 CCH = 00216 CICG = 3 CCH = 00004 CICG = 4 CCH = 00216 CICG = 5 CCH = 00004 CICG = 6 CCH = 00216 CICG = 7 CCH = 00004																																																																																																																																																							
		Note: Shaded area indicates CICG for CCIS Networking via IP.																																																																																																																																																															
3	ACIC1	PC = 2 CSCG = 130				PC = 3 CSCG = 130																																																																																																																																																											
4	ACIC2	PC 2 <table><tr><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th></tr><tr><td></td><td></td><td>8</td><td>002173</td><td>16</td><td>002177</td><td>24</td><td>002183</td><td>32</td><td>002187</td><td>40</td><td>002193</td><td>48</td><td>-</td><td>56</td><td>-</td></tr><tr><td>1</td><td>000040</td><td>9</td><td>000044</td><td>17</td><td>000050</td><td>25</td><td>000054</td><td>33</td><td>000060</td><td>41</td><td>000064</td><td>49</td><td>000070</td><td>57</td><td>000074</td></tr><tr><td>2</td><td>002170</td><td>10</td><td>002174</td><td>18</td><td>002180</td><td>26</td><td>002184</td><td>34</td><td>002190</td><td>42</td><td>002194</td><td>50</td><td>-</td><td>58</td><td>-</td></tr><tr><td>3</td><td>000041</td><td>11</td><td>000045</td><td>19</td><td>000051</td><td>27</td><td>000055</td><td>35</td><td>000061</td><td>43</td><td>000065</td><td>51</td><td>000071</td><td>59</td><td>000075</td></tr><tr><td>4</td><td>002171</td><td>12</td><td>002175</td><td>20</td><td>002181</td><td>28</td><td>002185</td><td>36</td><td>002191</td><td>44</td><td>002195</td><td>52</td><td>-</td><td>60</td><td>-</td></tr><tr><td>5</td><td>000042</td><td>13</td><td>000046</td><td>21</td><td>000052</td><td>29</td><td>000056</td><td>37</td><td>000062</td><td>45</td><td>000066</td><td>53</td><td>000072</td><td>61</td><td>000076</td></tr><tr><td>6</td><td>002172</td><td>14</td><td>002176</td><td>22</td><td>002182</td><td>30</td><td>002186</td><td>38</td><td>002192</td><td>46</td><td>002196</td><td>54</td><td>-</td><td>62</td><td>-</td></tr><tr><td>7</td><td>000043</td><td>15</td><td>000047</td><td>23</td><td>000053</td><td>31</td><td>000057</td><td>39</td><td>000063</td><td>47</td><td>000067</td><td>55</td><td>000073</td><td>63</td><td>000077</td></tr></table>																CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS			8	002173	16	002177	24	002183	32	002187	40	002193	48	-	56	-	1	000040	9	000044	17	000050	25	000054	33	000060	41	000064	49	000070	57	000074	2	002170	10	002174	18	002180	26	002184	34	002190	42	002194	50	-	58	-	3	000041	11	000045	19	000051	27	000055	35	000061	43	000065	51	000071	59	000075	4	002171	12	002175	20	002181	28	002185	36	002191	44	002195	52	-	60	-	5	000042	13	000046	21	000052	29	000056	37	000062	45	000066	53	000072	61	000076	6	002172	14	002176	22	002182	30	002186	38	002192	46	002196	54	-	62	-	7	000043	15	000047	23	000053	31	000057	39	000063	47	000067	55	000073	63	000077
CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS																																																																																																																																																		
		8	002173	16	002177	24	002183	32	002187	40	002193	48	-	56	-																																																																																																																																																		
1	000040	9	000044	17	000050	25	000054	33	000060	41	000064	49	000070	57	000074																																																																																																																																																		
2	002170	10	002174	18	002180	26	002184	34	002190	42	002194	50	-	58	-																																																																																																																																																		
3	000041	11	000045	19	000051	27	000055	35	000061	43	000065	51	000071	59	000075																																																																																																																																																		
4	002171	12	002175	20	002181	28	002185	36	002191	44	002195	52	-	60	-																																																																																																																																																		
5	000042	13	000046	21	000052	29	000056	37	000062	45	000066	53	000072	61	000076																																																																																																																																																		
6	002172	14	002176	22	002182	30	002186	38	002192	46	002196	54	-	62	-																																																																																																																																																		
7	000043	15	000047	23	000053	31	000057	39	000063	47	000067	55	000073	63	000077																																																																																																																																																		
		Note: Shaded area indicates CIC for CCIS Networking via IP.																																																																																																																																																															

[6] Assignment of IP-related Data (at Node A)

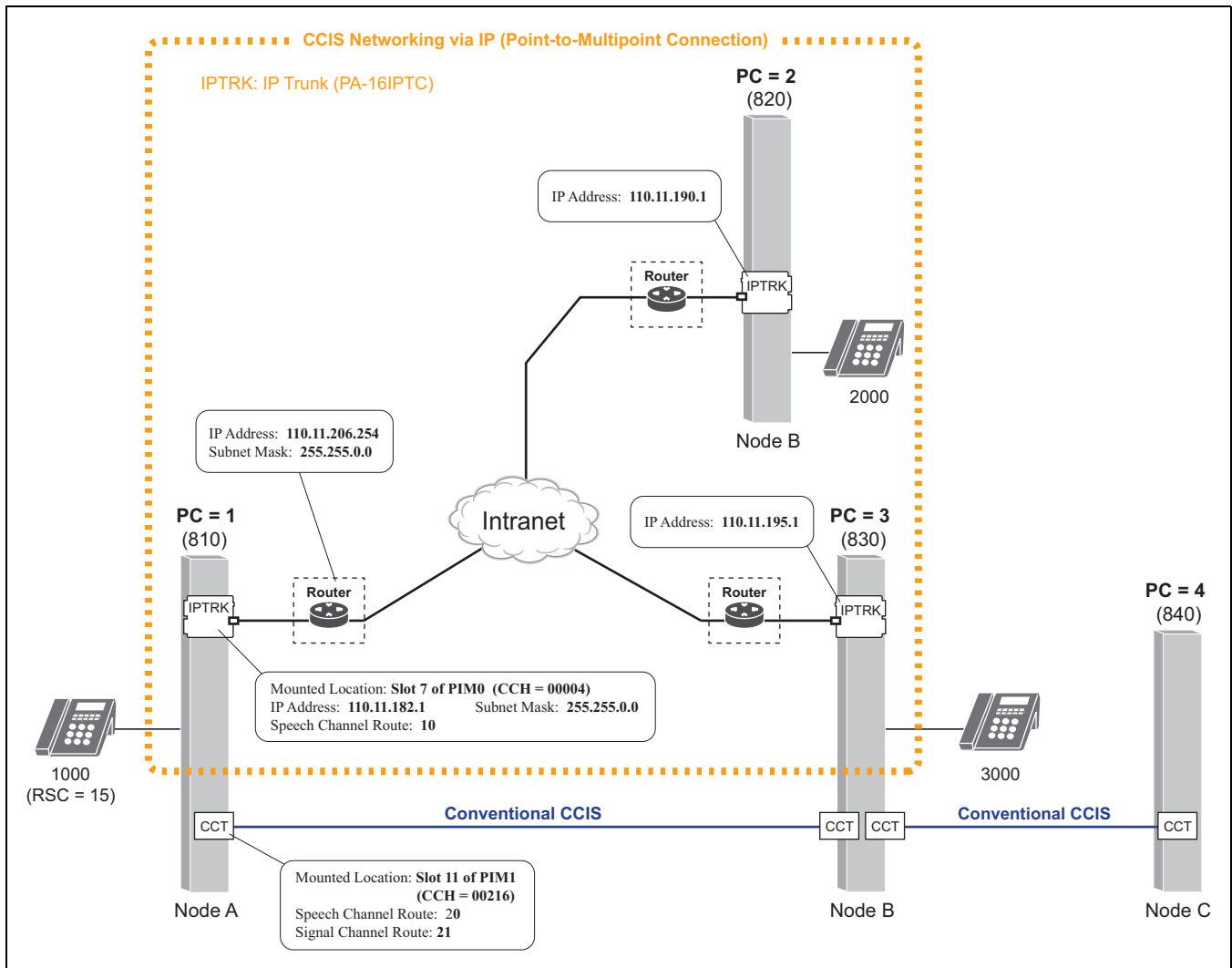
No.	Command	Data Programming
1	AGIP	LENS = 00004 KIND = IPTRK (CCIS) IPTRK_IP = 110.11.182.1 DG_IP = 110.11.206.254 NETMSK = 255.255.0.0 QoS Control = IP Precedence / Diffserv QoS1 = 0-7 / 00-3F QoS2 = 0-7 / 00-3F MULT = Point-to-Point DST_IP = 110.11.190.1 IRT = (Not Assigned) NETID = 0 * The rest of the data above (e.g. Frame Type of ARP data, Jitter Buffer detailed data, etc.) is to be assigned, according to your network condition.

< Example Data Assignment 4: Point-to-Multipoint Connection (Coexistence with Conventional CCIS) >

This page provides an example data assignment when CCIS Networking via IP coexists with the conventional CCIS as shown in the figure below. When developing the data programming, take the following into consideration:

- Assign different Route Numbers for CCIS Networking via IP and conventional CCIS.
- Develop the data for CCH (CICG) provided by both CCIS Networking via IP and conventional CCIS, on the same CSCG table (ACSC command).
- When a CICG (on the ACSC command) is assigned using the IPTRK card LENS, be sure to assign its corresponding CICs (ACIC2 command) using the speech channels provided by CCIS Networking via IP. On the other hand, when a CICG is assigned using the CCT/CCH card LENS, develop its corresponding CICs using the speech channels provided by conventional CCIS.
- Regarding CCIS Networking via IP (Point-to-Multipoint connection), since it cannot be determined which node is to be called until the call is made, the CCIS-related data (for CCIS Networking via IP) should be assigned for the self-node. As to the ACIC1 command, the data must be assigned to the whole destination nodes and also to the self-node.

For more details, refer to the data samples listed below. Note that this example covers the data programming required at Node A (PC = 1).



[1] Assignment of System Data

ASYD Command

SYS 1, Index 180 = "01" Hex.

Index 186 = "40" or "41" Hex.

Also assign other system data, necessary for the CCIS network, as well as the above Indexes.

[2] Assignment of Route/Trunk Data (at Node A)

No.	Command	Data Programming	No.	Command	Data Programming
1	ARTD	- CCIS Networking via IP RT = 10 (for Speech channel) - Conventional CCIS RT = 20 (for Speech channel) RT = 21 (for Signal channel)	3	ATRK Note 1	RT = 10 TK = 1 LENS = 000040 TK = 2 LENS = 000041 TK = 3 LENS = 000042 TK = 4 LENS = 000043 TK = 5 LENS = 000044 TK = 6 LENS = 000045 TK = 7 LENS = 000046 TK = 8 LENS = 000047 TK = 9 LENS = 000050 TK = 10 LENS = 000051 TK = 11 LENS = 000052 • • TK = 21 LENS = 000064 TK = 22 LENS = 000065 TK = 23 LENS = 000066 TK = 24 LENS = 000067 TK = 25 LENS = 000070 TK = 26 LENS = 000071 TK = 27 LENS = 000072 TK = 28 LENS = 000073 TK = 29 LENS = 000074 TK = 30 LENS = 000075 TK = 31 LENS = 000076 TK = 32 LENS = 000077
2	ARTI	RT = 10 CDN 51 (IPTRK) = 1			RT = 20 TK = 1 LENS = 002170 TK = 2 LENS = 002171 TK = 3 LENS = 002172 TK = 4 LENS = 002173 TK = 5 LENS = 002174 TK = 6 LENS = 002175 TK = 7 LENS = 002176 TK = 8 LENS = 002177 TK = 9 LENS = 002180 TK = 10 LENS = 002181 TK = 11 LENS = 002182 • • TK = 21 LENS = 002194 TK = 22 LENS = 002195 TK = 23 LENS = 002196 RT = 21 TK = 1 LENS = 002160 TK = 2 LENS = 002197

Note 1: The respective trunks, assigned by ATRK, are initially being in make-busy status. After assigning the trunks, be sure to lift this restriction, using the MBTK command.

[3] Assignment of LCR-related Data (at Node A)

No.	Command	Data Programming			No.	Command	Data Programming			
1	ANPDL	TN = 1 1stDC = 8 CI = N/H NND = 3			6	AOPRL	TDPTN = 0 OPR = 1 RA = 0 RA = 1 E = 0 E = 0 RT = 10 RT = 20 SKIP = 0 SKIP = 0 PNL = 0 PNL = 0 IPTRK = 1 IPTRK = 0 PC = 2 PC = 3		TDPTN = 0 OPR = 2 RA = 0 RA = 1 E = 1 E = 0 RT = 10 RT = 20 SKIP = 0 SKIP = 0 PNL = 0 PNL = 0 IPTRK = 1 IPTRK = 0 PC = 3	
2	ASPAL	TN = 1 TN = 1 ACC = 820 ACC = 830 CI = N/H CI = N/H SRV = LCR/LCRS SRV = LCR/LCRS LGRT = 255 LGRT = 255 TN = 1 ACC = 840 CI = N/H SRV = LCR/LCRS LGRT = 255					TDPTN = 0 OPR = 3 RA = 0 RA = 1 E = 1 E = 0 RT = 10 RT = 20 SKIP = 0 SKIP = 0 PNL = 0 PNL = 0 IPTRK = 1 IPTRK = 0 PC = 3			
3	AMND	TN = 1 DC = 820 MND = 7	TN = 1 DC = 830 MND = 7	TN = 1 DC = 840 MND = 7						
4	ARNPL	LGRT = 10 ACC = 820 LGRT = 20 ACC = 820	LGRT = 10 ACC = 830 LGRT = 20 ACC = 830	LGRT = 10 ACC = 840 LGRT = 20 ACC = 840	7	ARSC	Assign Route Restriction Class (RSC) data, associated with Route 10/20 and Route 255. For example, the RSC data, to which Station 1000 belongs in this sample, are as follows: TN = 1 TN = 1 RT = 10/20 RT = 255 RSC = 15 RSC = 15 PRI = 0, RES = 1 PRI = 3, RES = 1 PRI = 1, RES = 1 PRI = 2, RES = 1 PRI = 3, RES = 1/2			
5	AFRSL	TN = 1 LGRT = 255 NPC = 820 OPR = 1	TN = 1 LGRT = 255 NPC = 830 OPR = 2	TN = 1 LGRT = 255 NPC = 840 OPR = 3						

[4] Assignment of Uniform Numbering Data (at Node A)

No.	Command	Data Programming	No.	Command	Data Programming
1	ASPAL	TN = 1 ACC = 810 CI = N/H SRV = LCR/LCRS LGRT = 255	3	AMND	TN = 1 DC = 810 MND = 7
2	AUNEL	TN = 1 LGRT = 255 NPC = 810 SKIP = 3 PNL = 0	4	ARRC	ICRT = 10 OGRT = 255 ARI-D_RES = 1 ICRT = 20 OGRT = 255 ARI-D_RES = 1

[5] Assignment of CCIS-related Data (at Node A)

No.	Command	Data Programming																																																																																																																																																			
1	ADPC	RT = 10 <= CCIS Networking via IP PC = 1 <= Self-Node PC	RT = 20 <= Conventional CCIS PC = 3 <= Adjacent Node PC																																																																																																																																																		
2	ACSC	CSCG = 130 (Basic Route for CCH) CICG = 0 CCH = 00216 CICG = 1 CCH = 00004 CICG = 2 CCH = 00216 CICG = 3 CCH = 00004 CICG = 4 CCH = 00216 CICG = 5 CCH = 00004 CICG = 6 CCH = 00216 CICG = 7 CCH = 00004	CSCG = 131 (Basic Route for CCH) CICG = 0 CCH = 00216 CICG = 1 CCH = 00004 CICG = 2 CCH = 00216 CICG = 3 CCH = 00004 CICG = 4 CCH = 00216 CICG = 5 CCH = 00004 CICG = 6 CCH = 00216 CICG = 7 CCH = 00004																																																																																																																																																		
Note: Shaded area indicates CICG for CCIS Networking via IP.																																																																																																																																																					
3	ACIC1	PC = 1 CSCG = 130] <= Self-Node PC	PC = 2 CSCG = 130 PC = 3 CSCG = 130 PC = 4 CSCG = 130] <= All Destination-Node PC																																																																																																																																																		
4	ACIC2	<table><tr><th>PC</th></tr><tr><td>1</td></tr></table> <= Self-Node PC (for CCIS Networking via IP) <table><tr><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th></tr><tr><td></td><td></td><td>8</td><td>-</td><td>16</td><td>-</td><td>24</td><td>-</td><td>32</td><td>-</td><td>40</td><td>-</td><td>48</td><td>-</td><td>56</td><td>-</td></tr><tr><td>1</td><td>000040</td><td>9</td><td>000044</td><td>17</td><td>000050</td><td>25</td><td>000054</td><td>33</td><td>000060</td><td>41</td><td>000064</td><td>49</td><td>000070</td><td>57</td><td>000074</td></tr><tr><td>2</td><td>-</td><td>10</td><td>-</td><td>18</td><td>-</td><td>26</td><td>-</td><td>34</td><td>-</td><td>42</td><td>-</td><td>50</td><td>-</td><td>58</td><td>-</td></tr><tr><td>3</td><td>000041</td><td>11</td><td>000045</td><td>19</td><td>000051</td><td>27</td><td>000055</td><td>35</td><td>000061</td><td>43</td><td>000065</td><td>51</td><td>000071</td><td>59</td><td>000075</td></tr><tr><td>4</td><td>-</td><td>12</td><td>-</td><td>20</td><td>-</td><td>28</td><td>-</td><td>36</td><td>-</td><td>44</td><td>-</td><td>52</td><td>-</td><td>60</td><td>-</td></tr><tr><td>5</td><td>000042</td><td>13</td><td>000046</td><td>21</td><td>000052</td><td>29</td><td>000056</td><td>37</td><td>000062</td><td>45</td><td>000066</td><td>53</td><td>000072</td><td>61</td><td>000076</td></tr><tr><td>6</td><td>-</td><td>14</td><td>-</td><td>22</td><td>-</td><td>30</td><td>-</td><td>38</td><td>-</td><td>46</td><td>-</td><td>54</td><td>-</td><td>62</td><td>-</td></tr><tr><td>7</td><td>000043</td><td>15</td><td>000047</td><td>23</td><td>000053</td><td>31</td><td>000057</td><td>39</td><td>000063</td><td>47</td><td>000067</td><td>55</td><td>000073</td><td>63</td><td>000077</td></tr></table> Note: Shaded area indicates CIC for CCIS Networking via IP.		PC	1	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS			8	-	16	-	24	-	32	-	40	-	48	-	56	-	1	000040	9	000044	17	000050	25	000054	33	000060	41	000064	49	000070	57	000074	2	-	10	-	18	-	26	-	34	-	42	-	50	-	58	-	3	000041	11	000045	19	000051	27	000055	35	000061	43	000065	51	000071	59	000075	4	-	12	-	20	-	28	-	36	-	44	-	52	-	60	-	5	000042	13	000046	21	000052	29	000056	37	000062	45	000066	53	000072	61	000076	6	-	14	-	22	-	30	-	38	-	46	-	54	-	62	-	7	000043	15	000047	23	000053	31	000057	39	000063	47	000067	55	000073	63	000077
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[6] Assignment of IP-related Data (at Node A)

No.	Command	Data Programming	No.	Command	Data Programming
1	AGIP	LENS = 00004 KIND = IPTRK (CCIS) IPTRK_IP = 110.11.182.1 DG_IP = 110.11.206.254 NETMSK = 255.255.0.0 QoS Control = IP Precedence / Diffserv QoS1 = 0-7 / 00-3F QoS2 = 0-7 / 00-3F MULT = Point-to-Multipoint DST_IP = (Not Assigned) IRT = 10 NETID = 0 * The rest of the data above (e.g Frame Type of ARP data, Jitter Buffer detailed data, etc.) is to be assigned, according to your network condition.	2	APIPL	PC = 2 CNT = 1 IP ADDRESS = 110.11.190.1 MODE = Switched Virtual Connection TIMER = 0 LKRCN = 1 PC = 3 CNT = 1 IP ADDRESS = 110.11.195.1 MODE = Switched Virtual Connection TIMER = 0 LKRCN = 1

C-178 CCIS Alternate Routing - Backup

General Description

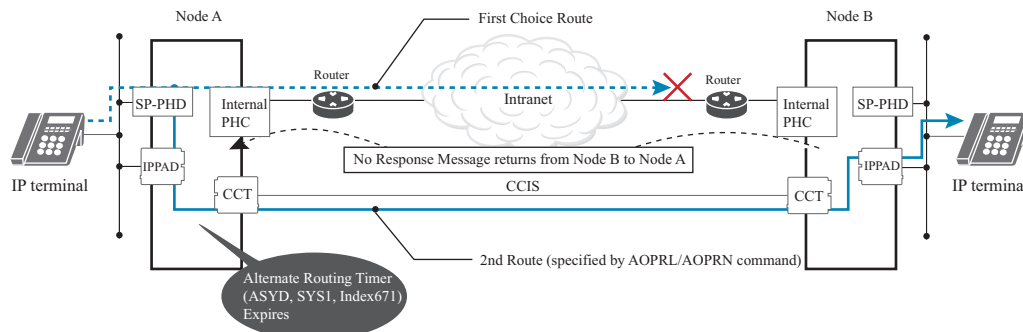
This feature automatically routes a CCIS via IP (by using IPTRK/PHC) Call over Alternate Routes. When a call is attempted using CCIS Networking via IP (Point-to-Multipoint Connection) and, as a result, no response message returns from the Destination Node, the call is automatically routed to another route according to the AOPRL/AOPRN command table after the Alternate Routing Timer expires.

CCIS Alternate Routing-Backup

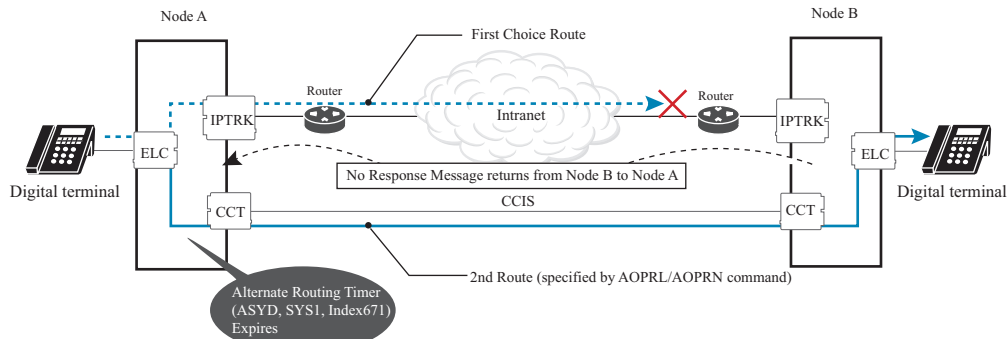
(Example: Alternate Routing from PHC/IPTRK (point-to-multipoint) to CCT)

1. Node A (originating node) sends call setup message to Node B (destination node) via PHC/IPTRK.
2. In the selected route between Node A and Node B, there is IP network failure, for example, IP router failure on the Node B side. As a result, Node A obtains no response message from Node B, while Node B stays uninformed of the call request.
3. An alternate routing timer, assigned beforehand by ASYDL command, SYS1, Index 671, b0-b3, expires.
4. Node A attempts a call again, this time using another route (2nd route) according to the AOPRL/AOPRN command table.
5. When the condition of 2nd route (CCIS line) is normal, the response message will be returned from Node B and the call would be established. When the 2nd route is also not available, the next route may be selected if the data is programmed on the AOPRL/AOPRN command.

- The figure below shows an example where the alternate routing is provided by using PHC.



- The figure below shows an example where the alternate routing is provided by using IPTRK.



Service Conditions

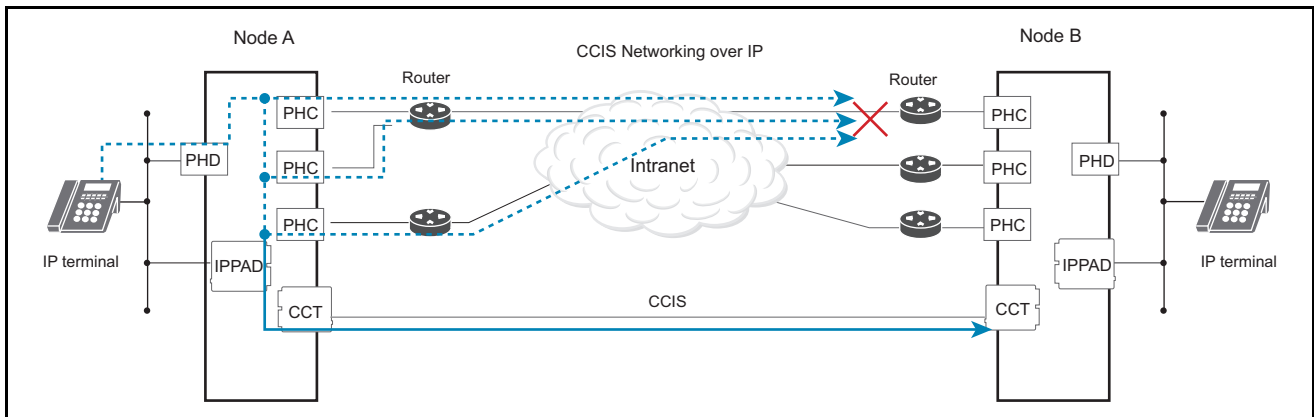
- Once this feature is activated, selectable options are a maximum of seven routes. If the last route is also not available, the caller hears Busy Tone.
- To use this feature, assign ASYDL, SYS1, Index 671, b0-b3 (alternate routing timer [response message no-receiving timer] in case of IP network failure). The timer can be defined in the range between 2 and 30 seconds. The timer also can be set as 0 second (by not flagging all bits), but in this case, the timer will be substituted by the “ACM/UBM Signal No-Receiving Timer” set by SYS1, Index 189, b4-b7. When ASYDL, SYS1, Index 671, b0-3 = 0: ACM/UBM Signal No-Receiving Timer will be valid. **Note 1** When ASYDL, SYS1, Index 671, b0-3 = a value other than 0: ACM/UBM Signal No-Receiving Timer will be invalid. **Note 2**

Note 1: When Index 671 b0-3 is set all 0, alternative routing will not take place. The call is processed as a no answer if the timer specified by ASYD SYS1, Index 189 b4-7(ACM/UBM Signal No-Receiving Timer) is expired.

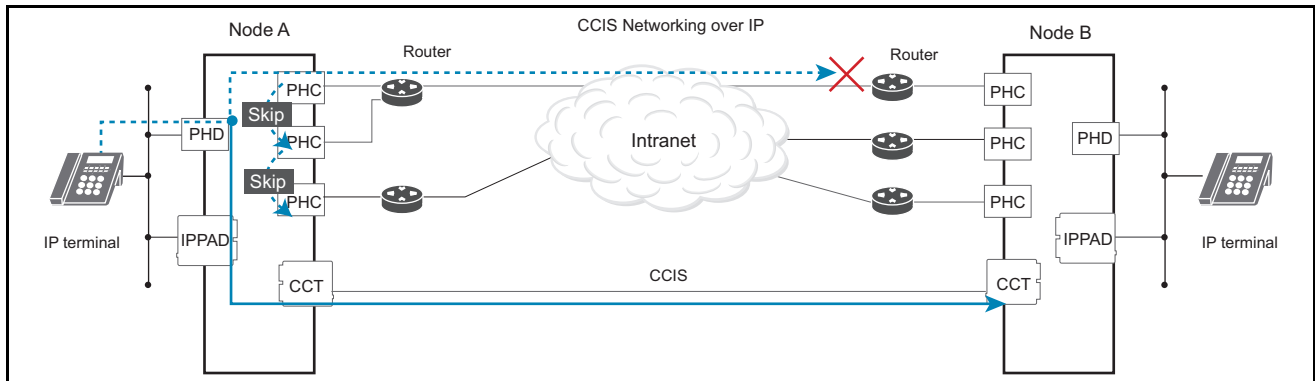
Note 2: When using [C-178] CCIS ALTERNATE ROUTING - BACKUP service, set alternate routing timer (ASYDL, SYS1, Index 671, b0-b3) or “ACM/UBM Signal No-Receiving Timer” (ASYD, SYS1, Index 189, b4-b7) to 8 seconds or more.

ASYDL, SYS1, Index 803, Bit 7 data setting determines whether to allow PHC/IPTRK (Point-to-Point/Point-to-Multipoint) as the alternative route.

- To allow the PHC/IPTRK as the alternative route, assign “0” to ASYDL command, SYS1, Index 803, b7. The figure below shows an example where alternate routing is provided by using PHC.



- To skip all the PHC/IPTRK and route the call to the trunk other than PHC/IPTRK, such as CCT, assign "1" to ASYDL command, SYS1, Index 803, b7. The figure below shows an example where alternate routing is provided by using PHC.

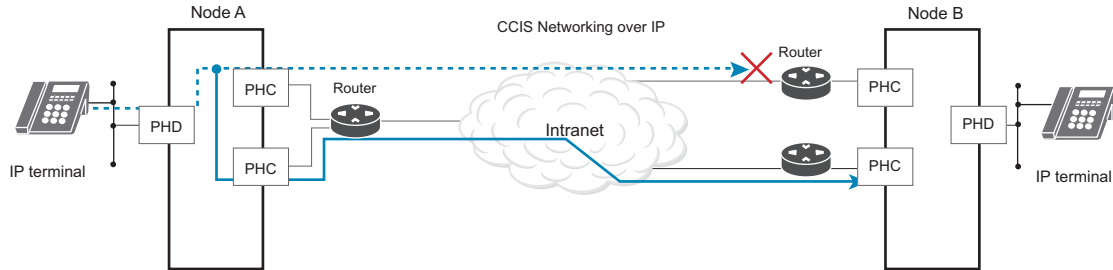


The call can be established by using alternative PHC/IPTRK (Point-to-Multipoint) at the destination node. The following figures show some PHC alternate routing patterns.

Alternate Routing Pattern (1/2)

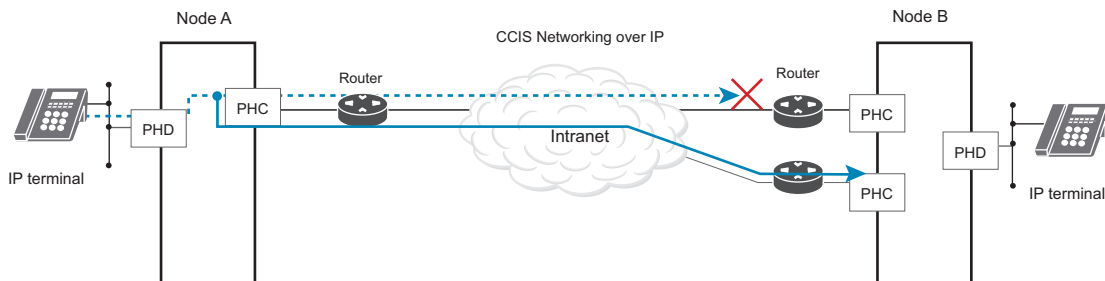
[Pattern 1]

When the alternative PHC/IPTRK exists at the originating node (without any trunk other than IPTRK):
Call is routed from the alternative PHC/IPTRK at the originating node to the alternative IP address at the destination node.

**[Pattern 2]**

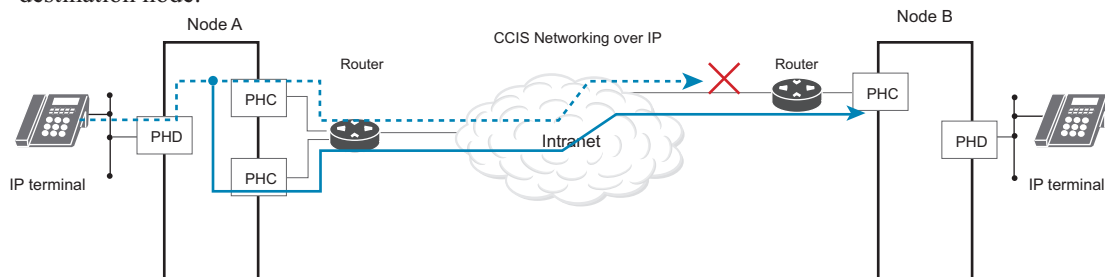
When the alternative PHC/IPTRK does not exist at the originating node and multiple target IP addresses exist at the destination node:

Call is routed from the original PHC/IPTRK at the originating node to the alternative IP address at the destination node.

**[Pattern 3]**

When the alternative PHC/IPTRK exists at the originating node and only one target IP address exist at the destination node:

Call is routed from the alternative PHC/IPTRK at the originating node to the original IP address at the destination node.



Alternate Routing Patterns [2/2]

[Pattern 4]

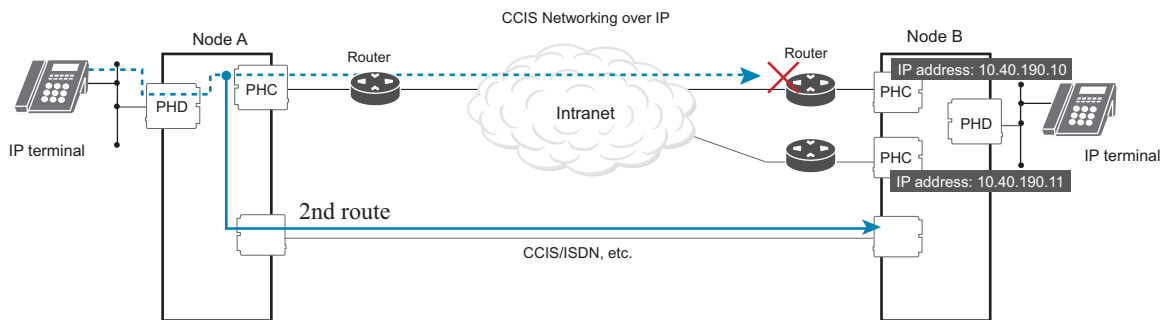
When any trunk other than PHC/IPTRK is assigned as alternative route at the originating node:

At this time, according to the system data ASYDL, SYS1, Index804, Bit7, high priority alternative route can be selected between the originating route and destination IP address.

a). In case the originating route is assigned as high priority (ASYDL, SYS1, Index804, bit7=0):

Example:

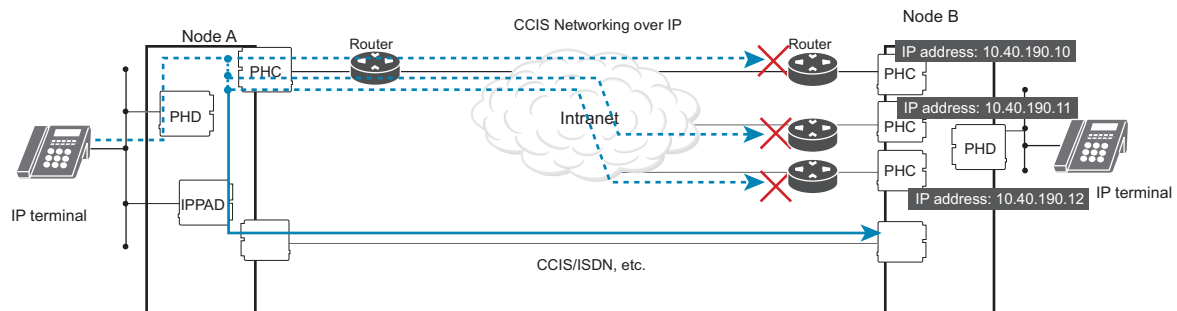
1. Call is originated from the PHC/IPTRK at Node A to the target IP address (10.40.190.10) at Node B.
2. No response message is returned from Node B to Node A.
3. An alternate routing timer (ASYDL, SYS1, Index671, b0-b3) expires.
4. Node A attempts a call again by using 2nd route (other trunk except PHC/IPTRK) at Node A according to the AOPRL/AOPRN command table.



b.) In case the destination IP address is assigned as high priority (ASYDL, SYS1, Index804, bit7=1):

Example:

1. Call is originated from the PHC/IPTRK at Node A to the original target IP address at Node B.
2. No response message is returned from Node B to Node A.
3. An alternate routing timer (ASYDL, SYS1, Index671, b0-b3) expires.
4. Node A attempts a call again from the original IPTRK at Node A to the alternative IP address at Node B.
5. At this time, if all alternative IP addresses at Node B are not available, the call is routed via other trunk.



3. The Alternate Route to be selected can be another IPTRK/PHC (Point-to-Multipoint) of a different Route Number. Determine whether to allow IPTRK/PHC as the Alternate Route or not by assigning ASYDL, System Data 1, Index 803, Bit 7 (0 = Allow IPTRK/PHC as Alternate Route/1 = Skip IPTRK/PHC Route).

4. Alternate Routing to MFC Trunks is not available.
5. This feature is provided for the calls:
 - directly made from a Station **Note 3**
 - made from a Station which also has a Held Station Call **Note 3**
 - originated as a result of Call Forwarding - All Calls/Busy Line/Don't Answer
 - mediated for Tandem Connection **Note 4**
 - made from a Station which also has a Held Trunk Call
 - directly made from an Attendant Console
 - made from an Attendant Console which also has a Held Station Call
 - made from an Attendant Console which also has a Held Trunk Call

Note 3: Alternate Routing-Backup may not be performed depending on "Timer for Alternate Routing (ASYDL, SYS1, Index 671, Bits 0-3) value when using (ISDN/PS) terminal in which T310 timer has been set.

Note 4: When the incoming trunk (at Tandem Node) is other than PHC/IPTRK (Point-to-Multipoint), alternate routing is provided according to the Tandem Node routing table. If the trunk is PHC/IPTRK (Point-to-Multipoint), it is provided according to the Originating Node table.

6. If a call is terminated via CCIS over IP (PHC or IPTRK) and the number of digits for the received number is smaller than the Maximum Necessary Digits (MND parameter on AMND/AMNDL/AMNDN) set on the terminating node, the Inter-digit timer (ASYD, SYS1, Index 129, b0-3 (default: six seconds)) works on the terminating node.
In this case, if Alternating timer (ASYDL, SYS1, Index 671, b0-3) set on the originating node is shorter than Inter-digit timer set on the terminating node, the following events occur (because the Alternating timer of the originating node expires prior to the Inter-digit timer of the terminating node).
 - CCIS Alternate Routing - Backup works if the Alternate Routing data is assigned on the originating node.
 - The calling party hears ROT if no Alternate Routing data is not assigned.

To use the Inter-digits timer, set the Alternating timer (on the originating node) that is longer than the Inter-digit timer of the terminating node.

7. This feature can be used in combination with Look Ahead Routing - CCIS [L-25] and PRI/PRA Failsafe Routing (DPM-ISDN) [P-49/50]. See Look Ahead Routing - CCIS [L-25] in this manual, or PRI/PRA Failsafe Routing (DPM-ISDN) [P-49/50] in Data Programming Manual - ISDN for details.
8. This feature does not support OAI/ACD related services.

Programming

STEP 1: ASYD/ASYDL/ASYDN - Assign all the System Data necessary for the CCIS Network, as well as the following:

ASYD, System Data 1, Index 180 and 181: Assignment of Self-Node Point Code (PC) Number.

ASYD, System Data 1, Index 186, Bit 0: 0/1 = Link Reconnection function is not used/used.

ASYD, System Data 1, Index 186, Bit 6 = 1 (CCIS is in service)

ASYDL, System Data 1, Index 512: FPC (Fusion Point Code) of self-node in hexadecimal. **Note 5**

ASYDL, System Data 1, Index 513: LDM (Local Data Memory) Memory Block Usage

ASYDL, System Data 1, Index 514: NDM (Network Data Memory) Memory Block Usage **Note 5**

ASYDL, System Data 1, Index 671, Bit 0-Bit 3: Alternate Routing Timer (response message “no-receiving” timer) as a result of IP Network Failure.

ASYDL, System Data 1, Index 803, Bit 7: When Alternate Routing is activated due to no response from Destination Node as a result of IP Network Failure:

0 = Allow PHC/IPTRK as a Alternate Route. / 1 = Skip all the PHC/IPTRK assigned as the alternate route.

Note 5: This data is required for the FCCS network.

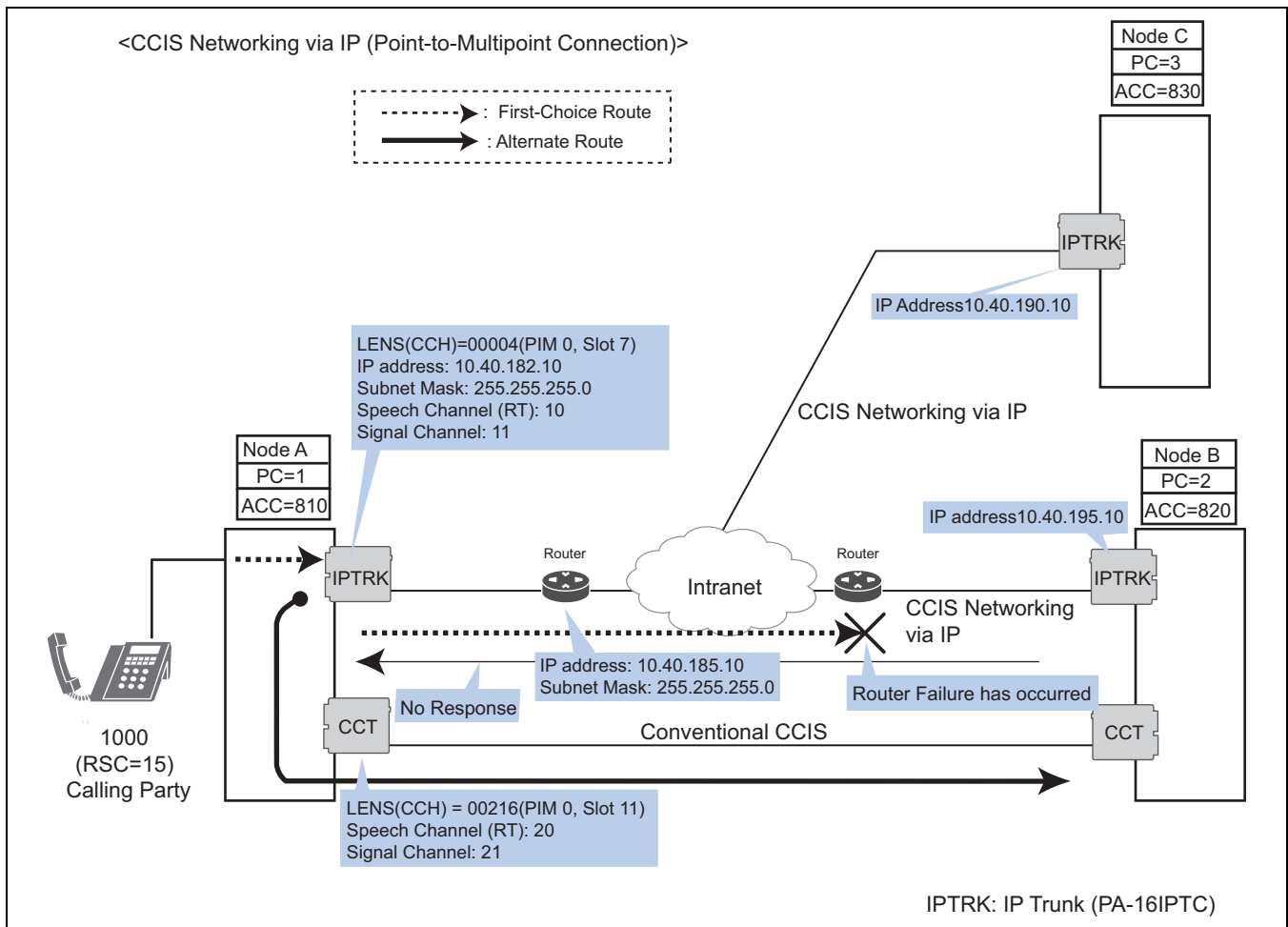
ASYDL, SYS1, Index 804, b6: 0/1 (Alternate routing is provided according to the originating office table/tandem office table)

ASYDL, SYS1, Index 804, b7: 0/1 (Giving a high priority to alternate routing by the originating route/ by the destination IP address)

<Example Data assignment>

The page provides an Example Data Assignment under the conditions shown in the following figure. The following example shows the necessary data assignment for the Alternate Routing from CCIS Networking via IP by using IPTRK (Point-to-Multipoint Connection) to the conventional CCIS. In addition to the data described in this example, the system data assignment shown above is also required. When developing the data programming, take the following into consideration:

- Assign different Route Numbers for CCIS Networking via IP and conventional CCIS.
- Develop the data for CCH (CICG) provided by both CCIS Networking via IP and conventional CCIS, on the same CSCG Table (ACSC command).
- When a CICG (on the ACSC command) is assigned using the IPTRK Card LENS, be sure to assign its corresponding CICs (ACIC2 command) using the Speech Channels provided by CCIS Networking via IP. On the other hand, when a CICG is assigned using the CCT/CCH card LENS, develop its corresponding CICs using the speech channels provided by conventional CCIS.
- Regarding CCIS Networking via IP (Point-to-Multipoint Connection), since it cannot be determined which node is to be called until the call is made, the CCIS-related data (for CCIS Networking via IP) should be assigned for the self-node. As for the ACIC1 command, the data must be assigned to all the whole destination nodes and also to the self-node. For more details, refer to the data samples listed below. Note that this example covers the data programming required at Node A (PC = 1).



[1] Assignment of Route/Trunk Data (at Node A)

No.	Command	Data Programming	No.	Command	Data Programming
1	ARTD	- CCIS Networking via IP RT = 10 (for Speech channel) - Conventional CCIS RT = 20 (for Speech channel) RT = 21 (for Signal channel) - Dummy Route RT = 255 (for Dummy)	3	ATRK	RT = 10 TK = 1 LENS = 000040 TK = 2 LENS = 000041 TK = 3 LENS = 000042 TK = 4 LENS = 000043 TK = 5 LENS = 000044 TK = 6 LENS = 000045 TK = 7 LENS = 000046 TK = 8 LENS = 000047 TK = 9 LENS = 000050 TK = 10 LENS = 000051 TK = 11 LENS = 000052 ⋮ TK = 21 LENS = 000064 TK = 22 LENS = 000065 TK = 23 LENS = 000066 TK = 24 LENS = 000067 TK = 25 LENS = 000070 TK = 26 LENS = 000071 TK = 27 LENS = 000072 TK = 28 LENS = 000073 TK = 29 LENS = 000074 TK = 30 LENS = 000075 TK = 31 LENS = 000076 TK = 32 LENS = 000077 RT = 20 TK = 1 LENS = 002170 TK = 2 LENS = 002171 TK = 3 LENS = 002172 TK = 4 LENS = 002173 TK = 5 LENS = 002174 TK = 6 LENS = 002175 TK = 7 LENS = 002176 TK = 8 LENS = 002177 TK = 9 LENS = 002180 TK = 10 LENS = 002181 TK = 11 LENS = 002182 ⋮ TK = 21 LENS = 002194 TK = 22 LENS = 002195 TK = 23 LENS = 002196 RT = 21 TK = 1 LENS = 002160 TK = 2 LENS = 002197
2	ARTI	RT = 10 CDN 51 (IPTRK) = 1			

Note: To change the data for existing route (RT), initialize or reboot the trunk device such as circuit card, MG, or VS32.

Note: The respective trunks, assigned by ATRK, are initially being in make-busy status. After assigning the trunks, be sure to lift this restriction, using the MBTK command.

[2] Assignment of LCR-related Data (at Node A)

No.	Command	Data Programming	No.	Command	Data Programming
1	ANPDL	TN = 1 1stDC = 8 CI = N/H NND = 3	6	AOPRL	(PC = 2) TDPTN = 0 OPR = 1 RA = 0 RA = 1 E = 1 E = 0 RT = 10 RT = 20 SKIP = 0 SKIP = 0 PNL = 0 PNL = 0 IPTRK = 1 IPTRK = 0 PC = 2 (PC = 3) TDPTN = 0 OPR = 2 RA = 0 RA = 1 E = 1 E = 0 RT = 10 RT = 20 SKIP = 0 SKIP = 0 PNL = 0 PNL = 0 IPTRK = 1 IPTRK = 0 PC = 3
2	ASPAL	(PC = 2) TN = 1 ACC = 820 CI = N/H SRV = LCR/LCRS LGRT = 255 (Dummy) (PC = 3) TN = 1 ACC = 830 CI = N/H SRV = LCR/LCRS LGRT = 255 (Dummy)			
3	AMND	(PC = 2) TN = 1 DC = 820 MND = 7 (PC = 3) TN = 1 DC = 830 MND = 7			
4	ARNPL	LGRT = 10 ACC = 820 LGRT = 10 ACC = 830	7	ARSC	Assign Route Restriction Class (RSC) data, associated with Route 10/20 (Speech Channel) and Route 255 (Dummy). For example, the RSC data, to which Station 1000 belongs in this sample, are as follows:
5	AFRSL	(PC = 2) TN = 1 LGRT = 255 NPC = 820 OPR = 1 (PC = 3) TN = 1 LGRT = 255 NPC = 830 OPR = 2			TN = 1 RT = 10/20 RSC = 15 PRI = 0, RES = 1 PRI = 1, RES = 1 PRI = 2, RES = 1 PRI = 3, RES = 1/2 TN = 1 RT = 255 RSC = 15 PRI = 3, RES = 1

[3] Assignment of CCIS-related Data (at Node A)

No.	Command	Data Programming																																																																																																																																																																																																																																																													
1	ADPC	RT = 10 <= CCIS Networking via IP PC = 1 <= Self-Node PC	RT = 20 <= Conventional CCIS PC = 3 <= Adjacent Node PC																																																																																																																																																																																																																																																												
2	ACSC	["CIC" No. = odd number: for CCIS Networking via IP] ["CIC" No. = even number: for Conventional CCIS] CSCG = 130 (Basic Route for CCH) CICG = 0 CCH = 00216 CICG = 1 CCH = 00004 CICG = 2 CCH = 00216 CICG = 3 CCH = 00004 CICG = 4 CCH = 00216 CICG = 5 CCH = 00004 CICG = 6 CCH = 00216 CICG = 7 CCH = 00004 CSCG = 131 (Alternate Route for CCH) CICG = 0 CCH = 00216 CICG = 1 CCH = 00004 CICG = 2 CCH = 00216 CICG = 3 CCH = 00004 CICG = 4 CCH = 00216 CICG = 5 CCH = 00004 CICG = 6 CCH = 00216 CICG = 7 CCH = 00004 Note: Shaded area indicates CICG for CCIS Networking via IP.																																																																																																																																																																																																																																																													
3	ACIC1	PC = 1 CSCG = 130] <= Self-Node PC	PC = 2 CSCG = 130 PC = 3 CSCG = 130] <= All Destination-Node PC																																																																																																																																																																																																																																																												
4	ACIC2	PC 1 <= Self-Node PC (for CCIS Networking via IP) <table><tr><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th></tr><tr><td></td><td></td><td>8</td><td>-</td><td>16</td><td>-</td><td>24</td><td>-</td><td>32</td><td>-</td><td>40</td><td>-</td><td>48</td><td>-</td><td>56</td><td>-</td></tr><tr><td>1</td><td>000040</td><td>9</td><td>000044</td><td>17</td><td>000050</td><td>25</td><td>000054</td><td>33</td><td>000060</td><td>41</td><td>000064</td><td>49</td><td>000070</td><td>57</td><td>000074</td></tr><tr><td>2</td><td>-</td><td>10</td><td>-</td><td>18</td><td>-</td><td>26</td><td>-</td><td>34</td><td>-</td><td>42</td><td>-</td><td>50</td><td>-</td><td>58</td><td>-</td></tr><tr><td>3</td><td>000041</td><td>11</td><td>000045</td><td>19</td><td>000051</td><td>27</td><td>000055</td><td>35</td><td>000061</td><td>43</td><td>000065</td><td>51</td><td>000071</td><td>59</td><td>000075</td></tr><tr><td>4</td><td>-</td><td>12</td><td>-</td><td>20</td><td>-</td><td>28</td><td>-</td><td>36</td><td>-</td><td>44</td><td>-</td><td>52</td><td>-</td><td>60</td><td>-</td></tr><tr><td>5</td><td>000042</td><td>13</td><td>000046</td><td>21</td><td>000052</td><td>29</td><td>000056</td><td>37</td><td>000062</td><td>45</td><td>000066</td><td>53</td><td>000072</td><td>61</td><td>000076</td></tr><tr><td>6</td><td>-</td><td>14</td><td>-</td><td>22</td><td>-</td><td>30</td><td>-</td><td>38</td><td>-</td><td>46</td><td>-</td><td>54</td><td>-</td><td>62</td><td>-</td></tr><tr><td>7</td><td>000043</td><td>15</td><td>000047</td><td>23</td><td>000053</td><td>31</td><td>000057</td><td>39</td><td>000063</td><td>47</td><td>000067</td><td>55</td><td>000073</td><td>63</td><td>000077</td></tr></table> PC 2 <= Adjacent Node PC (for Conventional CCIS) <table><tr><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th><th>CIC</th><th>LENS</th></tr><tr><td></td><td></td><td>8</td><td>002173</td><td>16</td><td>002177</td><td>24</td><td>002183</td><td>32</td><td>002187</td><td>40</td><td>002193</td></tr><tr><td>1</td><td>-</td><td>9</td><td>-</td><td>17</td><td>-</td><td>25</td><td>-</td><td>33</td><td>-</td><td>41</td><td>-</td></tr><tr><td>2</td><td>002170</td><td>10</td><td>002174</td><td>18</td><td>002180</td><td>26</td><td>002184</td><td>34</td><td>002190</td><td>42</td><td>002194</td></tr><tr><td>3</td><td>-</td><td>11</td><td>-</td><td>19</td><td>-</td><td>27</td><td>-</td><td>35</td><td>-</td><td>43</td><td>-</td></tr><tr><td>4</td><td>002171</td><td>12</td><td>002175</td><td>20</td><td>002181</td><td>28</td><td>002185</td><td>36</td><td>002191</td><td>44</td><td>002195</td></tr><tr><td>5</td><td>-</td><td>13</td><td>-</td><td>21</td><td>-</td><td>29</td><td>-</td><td>37</td><td>-</td><td>45</td><td>-</td></tr><tr><td>6</td><td>002172</td><td>14</td><td>002176</td><td>22</td><td>002182</td><td>30</td><td>002186</td><td>38</td><td>002192</td><td>46</td><td>002196</td></tr><tr><td>7</td><td>-</td><td>15</td><td>-</td><td>23</td><td>-</td><td>31</td><td>-</td><td>39</td><td>-</td><td>47</td><td>-</td></tr></table>		CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS			8	-	16	-	24	-	32	-	40	-	48	-	56	-	1	000040	9	000044	17	000050	25	000054	33	000060	41	000064	49	000070	57	000074	2	-	10	-	18	-	26	-	34	-	42	-	50	-	58	-	3	000041	11	000045	19	000051	27	000055	35	000061	43	000065	51	000071	59	000075	4	-	12	-	20	-	28	-	36	-	44	-	52	-	60	-	5	000042	13	000046	21	000052	29	000056	37	000062	45	000066	53	000072	61	000076	6	-	14	-	22	-	30	-	38	-	46	-	54	-	62	-	7	000043	15	000047	23	000053	31	000057	39	000063	47	000067	55	000073	63	000077	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS	CIC	LENS			8	002173	16	002177	24	002183	32	002187	40	002193	1	-	9	-	17	-	25	-	33	-	41	-	2	002170	10	002174	18	002180	26	002184	34	002190	42	002194	3	-	11	-	19	-	27	-	35	-	43	-	4	002171	12	002175	20	002181	28	002185	36	002191	44	002195	5	-	13	-	21	-	29	-	37	-	45	-	6	002172	14	002176	22	002182	30	002186	38	002192	46	002196	7	-	15	-	23	-	31	-	39	-	47	-
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[4] Assignment of IP-related Data (at Node A)

No.	Command	Data Programming	No.	Command	Data Programming
1	AGIP	LENS = 00004 KIND = IPTRK (CCIS) IPTRK_IP = 10.40.182.10 DG_IP = 10.40.185.10 NETMSK = 255.255.255.0 QoS Control = IP Precedence / Diffserv QoS1 = 0-7 / 00-3F QoS2 = 0-7 / 00-3F MULT = Point-to-Multipoint IRT = 10 NETID = 0 CSLINKNUM = Maximum number of client/server connections. APR = Select "DIX". * The rest of the data above (e.g Jitter Buffer detailed data, etc.) is to be assigned, according to your network condition.	2	APIPL	PC = 2 CNT = 1 IP ADDRESS = 10.40.195.10 MODE = Switched Virtual Connection TIMER = 0-127 (0: 15 min. (Default)/1-127: 1-127 min.) LKRCN=1 Link Reconnection can be provided when more than 3-link configuration between two nodes in CCIS over IP (Point to Multipoint). Note 1 PC = 3 CNT = 1 IP ADDRESS = 10.40.190.10 MODE = Switched Virtual Connection TIMER = 0-127 (0: 15 min. (Default)/1-127: 1-127 min.) LKRCN=1 Link Reconnection can be provided when more than 3-link configuration between two nodes in CCIS over IP (Point to Multipoint). Note 1

Note 1: When the destination node (counter node) is SV9300 or IPS, set "0" to this parameter.

C-201 Call Forwarding - I'm Here - CCIS

General Description

This service feature allows users to set Call Forwarding - I'm Here when Call Forwarding Station (Called Station) and Target Station respectively belong to a different system in the CCIS network.

Target Station using this feature can overwrite the existing destination number with new number (Reconfiguration). There is no need to cancel this feature before setting new destination number).

Call Forwarding Station (Called Station) using this feature can set Station ID Code for Privacy protection (User Authentication).

Operating Procedure

For information on how to set Station ID Codes, see Call Forwarding - I'm Here [C-81] in Data Programming Manual - Business.

To set CALL FORWARDING - I'M HERE - CCIS from Target Station

- When User Authentication is disabled:
 1. Lift the handset. Receive Dial Tone (DT).
 2. Dial CALL FORWARDING - I'M HERE Entry Access Code (from Target Station). Receive Special Dial Tone (SPDT).
 3. Dial the called station (Call Forwarding Station) number. Receive Service Set Tone (SST).
 4. Replace the handset.
- When User Authentication is enabled:
 1. Lift the handset. Receive Dial Tone (DT).
 2. Dial CALL FORWARDING - I'M HERE Entry Access Code (from Target Station). Receive Special Dial Tone (SPDT).
 3. Dial the called station (Call Forwarding Station) number. Receive Special Dial Tone (SPDT).
 4. Dial Station ID Code. Receive Service Set Tone (SST).
 5. Replace the handset.

Note: A tone will not be provided when an access code is used to set this feature on SP Controlled Standard SIP terminal.

To cancel CALL FORWARDING - I'M HERE - CCIS from Target Station

- When User Authentication is disabled:
 1. Lift the handset. Receive Dial Tone (DT).
 2. Dial CALL FORWARDING - I'M HERE Cancel Code (from Target Station), receive Special Dial Tone (SPDT).
 3. Dial the called station (Call Forwarding Station) number. Receive Service Set Tone (SST).
 4. Replace the handset.
- When User Authentication is enabled:

1. Lift the handset. Receive Dial Tone (DT).
2. Dial CALL FORWARDING - I'M HERE Cancel Code (from the Target Station), receive Special Dial Tone (SPDT).
3. Dial the called station (Call Forwarding Station) number. Receive Special Dial Tone (SPDT).
4. Dial Station ID Code. Receive Service Set Tone (SST).
5. Replace the handset.

Service Conditions

1. This feature does not support ISDN terminals and Attendant Consoles.
2. Closed Numbering/Open Numbering connection must be allowed between the Called Station's node and the Target Station's node.
3. A tone will not be provided when an access code is used to set this feature on SP Controlled Standard SIP terminal.
4. In the following cases, the calling party hears Reorder Tone (ROT).

(a) When Not using Station ID Code

- No signal is returned from the counter office for a certain period of time after hearing Special Dial Tone (SPDT) and entering the called station number. In this case, the station number of Call Forwarding destination may be set/overwritten.
- An error (busy, make-busy or lockout) is returned from the counter office for a certain period of time after hearing Special Dial Tone (SPDT) and entering the called station number. In this case, the station number of Call Forwarding destination is not set/overwritten.
- An error (overwriting of Call Forwarding destination number is not available) is returned from the counter office for a certain period of time after hearing Special Dial Tone (SPDT) and entering the called station number.

(b) When using Station ID Code

- No signal is returned from the counter office for a certain period of time after hearing Special Dial Tone (SPDT) and entering the called station number. In this case, the station number of Call Forwarding destination is not set/overwritten.
- No signal is returned from the counter office for a certain period of time after entering Station ID Code. In this case, the station number of Call Forwarding destination may be set/overwritten.
- An error (busy, make-busy or lockout) is returned from the counter office for a certain period of time after entering Station ID Code.
- An error (overwriting of Call Forwarding destination number is not available) is returned from the counter office for a certain period of time after entering Station ID Code.
- An error (Incorrect Station ID Code) is returned from the counter office for a certain period of time after entering Station ID Code.

Programming

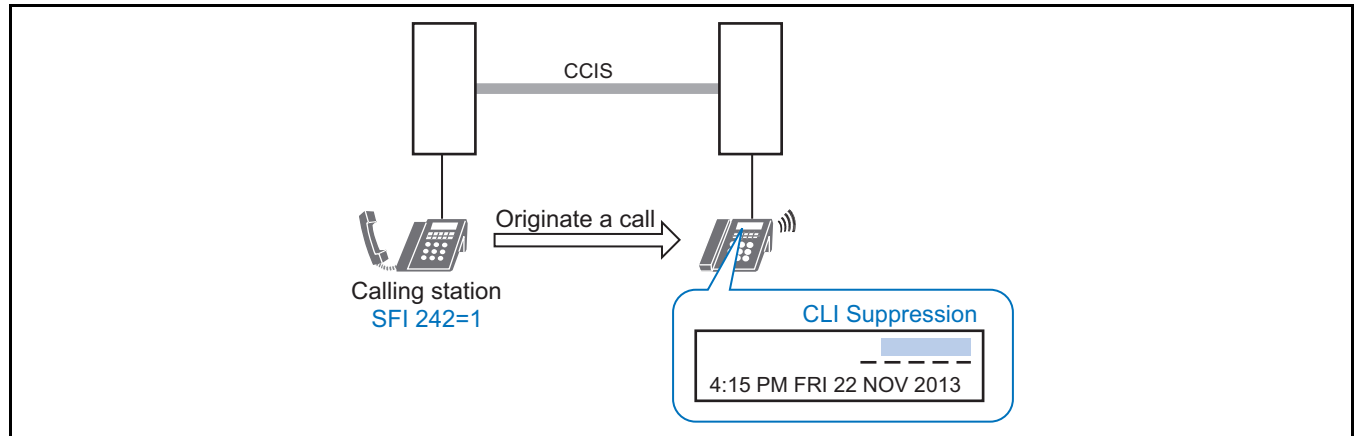
See Call Forwarding - I'm Here [C-81] in Chapter 3 of Data Programming Manual - Business.

C-202

CLI Suppression - CCIS

General Description

This feature prevents the stations from displaying own station number on the opposite party's LCD in CCIS calls. For example, when a chief executive station originates a call via CCIS, the station number will not be revealed to the opposite party.



Operating Procedure

No manual operation is required.

Service Conditions

1. CLI Suppression feature is applied to CCIS calls. Opposite party's station number is always displayed for incoming/outgoing calls in own node (CLI Suppression does not work on station-to-station calls).
2. When any calls turn station-to-station connection in consequence of link reconnection, station number is displayed on the opposite station.
3. The following terminals are supported in this feature:

Note: Basically this feature does not apply to the terminals without LCD. However, number display can be restricted on the opposite party using any supported terminal.

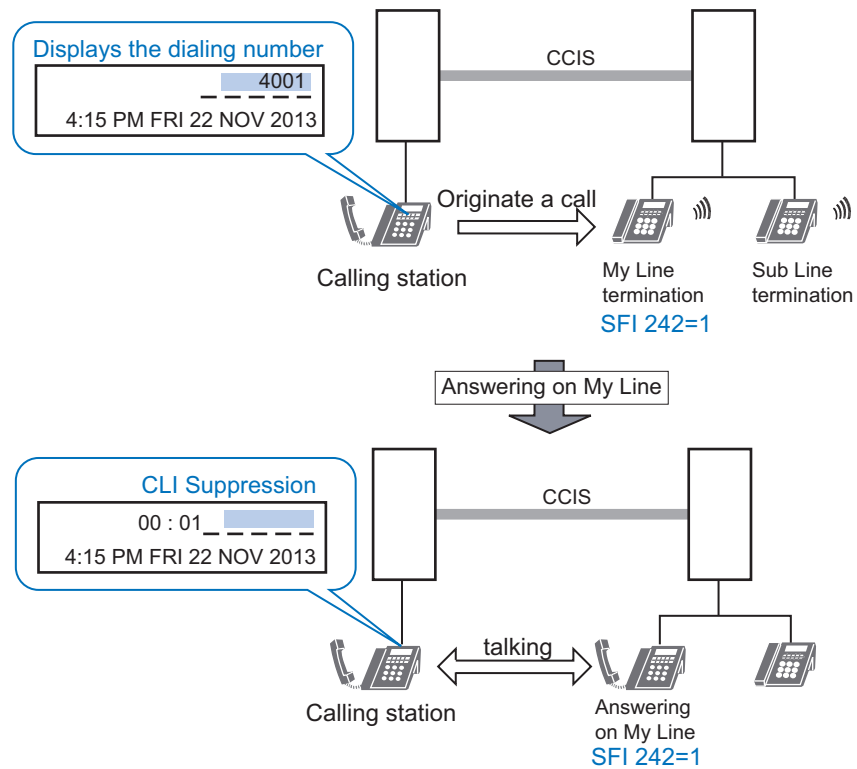
- Digital terminal
- IP terminal **Note 1**
- Softphone
- SIP Multiline terminal **Note 1**
- SIP Handler Controlled SIP Voice/Video terminal
- SP Controlled SIP Voice/Video terminal (**conditionally available* **Note 1**)
- WLAN Handset (MH Series) (**conditionally available* **Note 1**)
- PS (**conditionally available* **Note 1**)

Note 1: When originating a call from these terminals or from the subline of SIP Multiline terminal, CLI Suppression-CCIS is available on the terminated station, however, the originating station cannot switch the display after the connection is established. The LCD remains displaying the dialed number.

4. Display switching on originating station LCD depending on My Line or Sub Line termination:

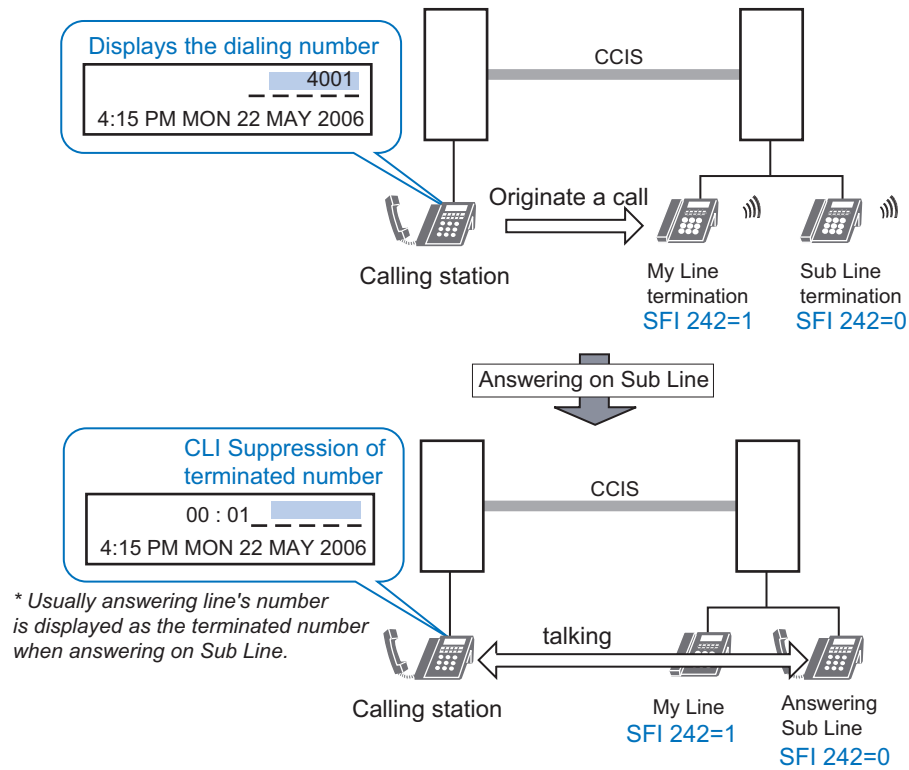
a.) Answering on My Line

When a station with SFI 242=1 answers My Line termination, LCD on the originating station switches from dialed number display to CLI Suppression.



b.) Answering on Sub Line

When a station answers on Sub Line, whether CLI Suppression is available or not is determined by the SFC setting on the answering line, not on the station. When a station having SFI 242=0 answers with the line of SFI 242=1, the LCD on the originating station switches from dialed number display to CLI suppression.



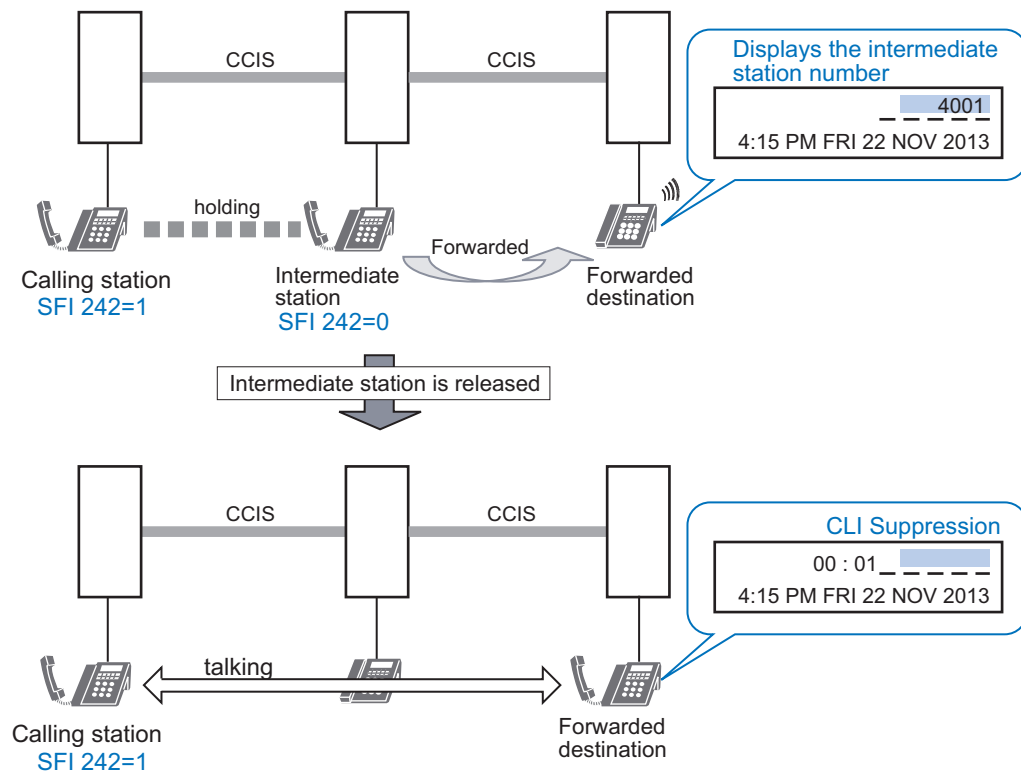
5. Display switching for Call Transfer-All Calls

In call transferring operation, number display switches depending on the SFI settings in originating station, intermediate station, and forwarded destination station. See the switching patterns below:

- a.) LCD on the transferred destination station switches from intermediate station number display to CLI Suppression of calling station number

Originating station: SFI242=1 (CLI Suppression-CCIS is available)

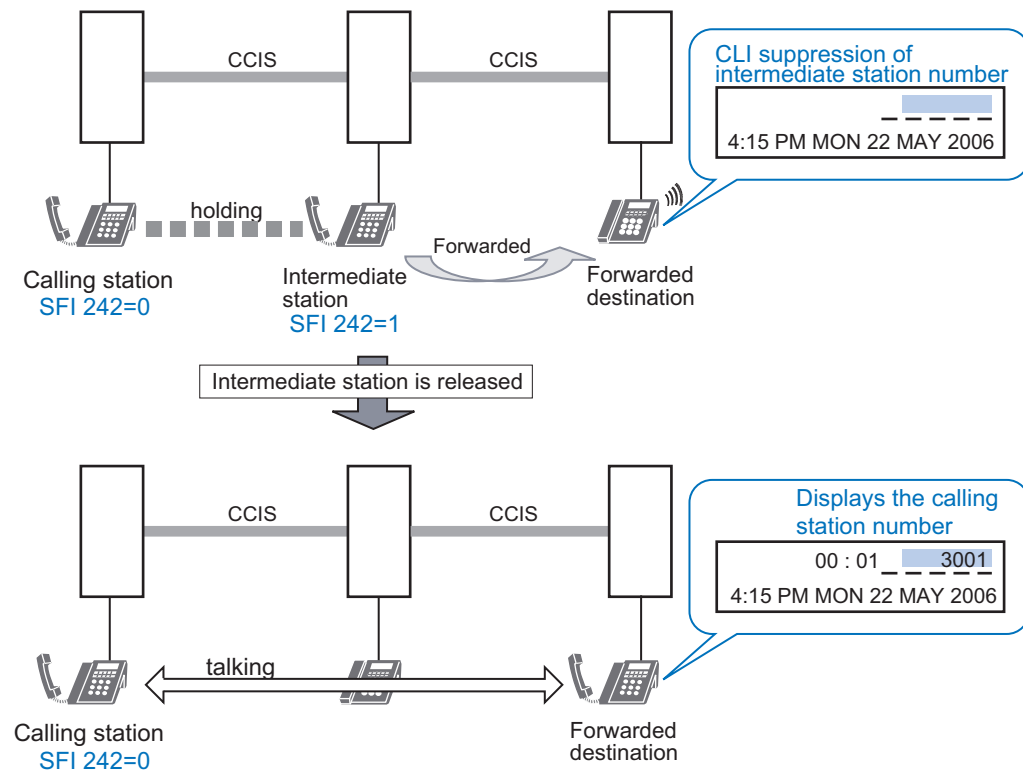
Intermediate station: SFI242=0 (CLI Suppression-CCIS is not available)



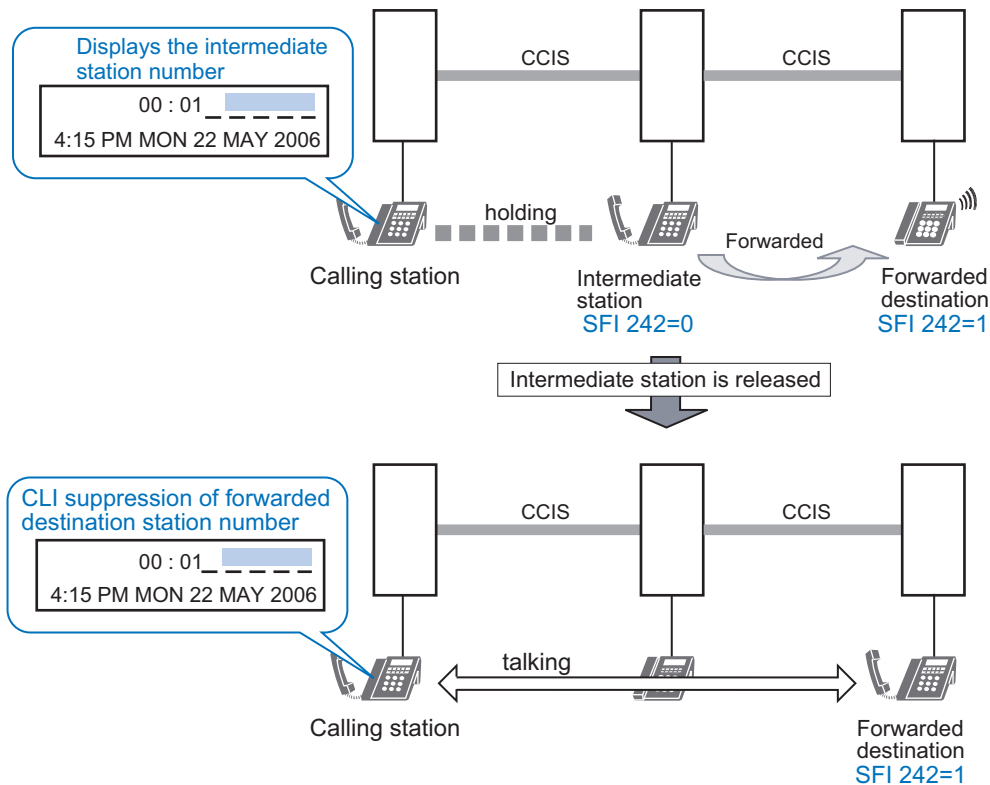
- b.) LCD on transferred destination station switches from CLI Suppression of intermediate station number to originating station number display

Originating station: SFI242=0 (CLI Suppression-CCIS is not available)

Intermediate station: SFI242=1 (CLI Suppression-CCIS is available)



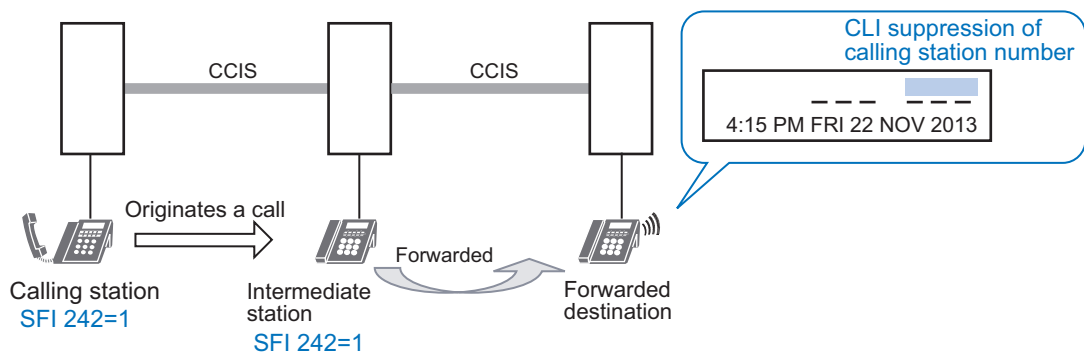
- c.) LCD on originating station switches from intermediate station number display to CLI Suppression of transferred destination station number
Intermediate station: SFI242=0 (CLI Suppression-CCIS is not available)
Transferred destination station: SFI242=1 (CLI Suppression-CCIS is available)



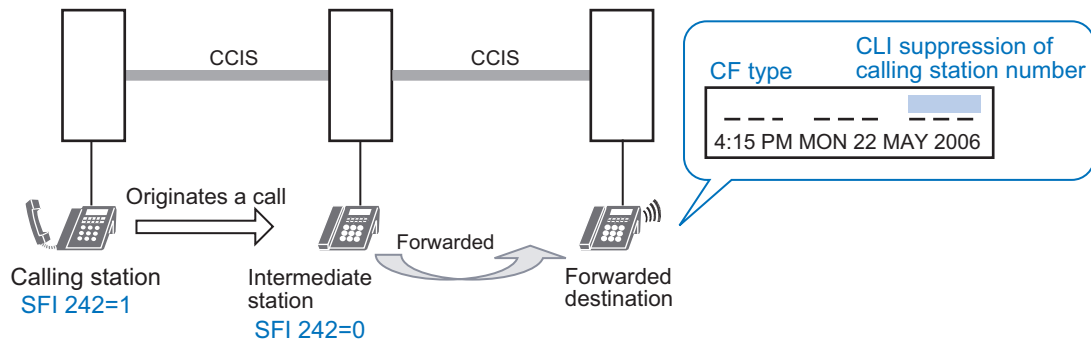
6. Display on the forwarded destination station in Call Forwarding-All Calls, Call Forwarding-Do not answer, and Call Forwarding-Busy features

Depending on the SFI setting on the originating station, LCD display on the forwarded destination station is determined. See the patterns below. **Note 2**

- a.) Originating station: SFI242=1 (CLI Suppression-CCIS is available)
Intermediate station: SFI242=1 (CLI Suppression-CCIS is available)



- b.) Originating station: SFI242=1 (CLI Suppression-CCIS is available)
 Intermediate station: SFI242=0 (CLI Suppression-CCIS is not available)



Note 2: In Call Forwarding calls via CCIS, the number of intermediate station is not displayed on the forwarded destination in any occasion. Call Forwarding type and intermediate station number are displayed on the destination station for the Call Forwarding in own node. However, when Call Forwarding is set to the station in own node, the following system data determines whether to display Call Forwarding type and intermediate station number.

- ASYD SYS1 Index 78 bit0: 0/1=Intermediate station number is not displayed/displayed
- ASYD SYS1 Index 78 bit1: 0/1=Call Forwarding type is not displayed/displayed

7. This feature is invalid to the incoming call termination to ATTCON. Station number is always to be displayed on ATTCON in CCIS calls.
8. Station number used in CCIS network is output to external output equipment even when CLI Suppression-CCIS feature is set to ON.

Interactions

1. Originating number is displayed for activating MESSAGE REMINDER (CLI Suppression turns invalid).
2. Only the name information corresponding to the station number is displayed when NAME DISPLAY feature is used.
3. In CALL PICKUP feature, SFC setting on the answering station determines the opposite party's display for CLI suppression.
4. In CALL PARK feature, SFC setting on the answering station determines the opposite party's display for CLI suppression.
5. For the incoming call termination from UCD queuing, SFC setting on the terminated station determines the opposite party's display for CLI suppression.
6. In MISSED CALL (CALL HISTORY), incoming number remains blank on the call history when the originating station assigns CLI suppression.
7. When a call is placed to SIP Handler Controlled SIP terminal using this feature, the SIP Handler Controlled SIP Terminal is notified of "Anonymous" as a calling party number.

Programming

STEP: **ASFC** - Assign SFI 242=1 (CLI Suppression-CCIS is in service)

D-70 Deluxe Traveling Class Mark - CCIS

General Description

This feature provides Call Connection Restrictions within the CCIS Network. The following three types of restrictions are allowed:

- a.) Deluxe Traveling Class Mark Restriction
- b.) Route Restriction
- c.) Numbering Restriction

Operating Procedure

Refer to the Data Specification.

Service Conditions

1. The Route Restriction Class (RSC) of the Calling Party is sent to the Called Office as a Deluxe Traveling Class Mark (TCM), which is used for Call Restriction.
2. A maximum of 15 Restriction Levels can be sent as a TCM.
3. The transmitted TCM is used to check restrictions on calls outside the CCIS Network.
4. Route Restriction is used to restrict a call based on the Caller's Restriction Class and the selected Route.
5. Numbering Restriction is used to restrict a call based on the number dialed. The following three types of Numbering Restrictions are used:
 - a.) Toll Restriction
 - b.) Toll Restriction - 3/6 Digit
 - c.) Unauthorized Code Restriction
6. The following additional Restriction features can be used by an Office within the CCIS Network:
 - a.) Time-of-Day Change
 - b.) Clocked Manual Override
 - c.) Attendant Manual Override

Interactions

DELUXE TRAVELING CLASS MARK - CCIS is required when used in an EPN or ETN environment. It is not required for CCIS.

Programming

ARTD - The CCIS TIE Line Voice/Data Routes over T-1 should be assigned as shown below. Assign CDN 40:TCM as data "1" for Traveling Class Mark.

RT: 1

2-ONSG	:2	4-INSG	:2	5-TF	:3	6-TCL	:4	7-L/T	:1
8-RLP	:2	13-AC	:1	15-LSG	:12	30-PAD	:7 (optional)		
40-TCM	:1	43-BT	:1	49-TRKS	:0/1	50-DPLY	:1	Note 1	

Note: To change the data for existing route (RT), initialize the circuit card.

Note 1: Up to 8 digits of a Caller ID can be shown on the display.

D-71 Dial Access to Attendant - CCIS

General Description

This feature allows access to an Attendant Console through the CCIS Network by dialing an Operator Call Code.

Operating Procedure

To access an Attendant Console:

1. Dial the Operator Call Code. Receive Ringback Tone.
2. The ATND Lamp on the Attendant Console flashes for INCOMING CALL IDENTIFICATION - CCIS.
3. The Attendant answers the call.

Service Conditions

1. The Attendant can complete these calls to Trunk facilities, if allowed by the Station's CLASS OF SERVICE [C-15]. Therefore, the Attendant can extend a Station Call to another Station in the CCIS network.

Interactions

1. Stations will terminate to the Attendant Console.
2. If Tenant A is not equipped with an Attendant Console, Stations in Tenant A may terminate at Tenant B's Attendant Console. Tenant B's Attendant Console must be programmed to accept the calls from Tenant A.
3. Stations may dial the ASAT Number to terminate at a specific Attendant Console. See INDIVIDUAL ATTENDANT ACCESS [I-6] in Data Programming Manual - Business.
4. When the system is in the Night mode, a Station dialing "0" can be answered by the assigned ATTENDANT NIGHT TRANSFER [A-19] Station, if provided. However, when the ASAT Number is dialed in the Night mode, Reorder Tone is returned. No connection is allowed to the ATTENDANT NIGHT TRANSFER [A-19] or Telephone Number.
5. A Remote Station in TN 2 will ring the ATTENDANT CONSOLE of TN 2 in the MAIN NODE.
6. A Remote Station in TN 2 will ring the Attendant Night Transfer Station of TN 2 in the MAIN NODE.

Programming

Main Node

- STEP 1: **ANPD** - Reserve a Number Level for Feature Access and Cancel. Select Normal Service (N) or Hooking Service (H) from the combo box for Connection Indexes. Assign the NND in accordance with a predetermined numbering scheme. Usually Level "0" is assigned for the Attendant Console.
- STEP 2: **ASPA** - For Access Code "0", assign SRV = "SSC: Service Code", SID = 2 for Operator Call. Assign for a Connection Index (CI) of "N: Normal" and "H: Hooking".
- STEP 3: **ATNR** - Allow Tenant-to-Tenant Connection for Inter and Intra-Tenant Connections. TRI=0 and TRI=4.
- STEP 4: **ASAT** - Assign a specific number to the Attendant Console.

Satellite Node

- STEP 1: **ANPD** - Reserve a Number Level for Feature Access and Cancel. Select Normal Service (N) or Hooking Service (H) from the combo box for Connection Indexes. Assign the NND in accordance with a predetermined numbering scheme. Usually Level “0” is assigned for the Attendant Console.
- STEP 2: **ASPA** - For Access Code “0”, assign SRV = “LCR: Least Cost Routing” to Main Node.
- STEP 3: **ATNR** - Allow Tenant-to-Tenant Connection for Inter and Intra-Tenant Connections. TRI=0 and TRI=4.

D-72 Digital Display - Station - CCIS

General Description

This feature provides the Attendant Console with a visual display of the Telephone Number, the Trunk Route Restriction CLASS OF SERVICE [C-15], and Tenant Number during Attendant-to-Station Connection within the CCIS Network.

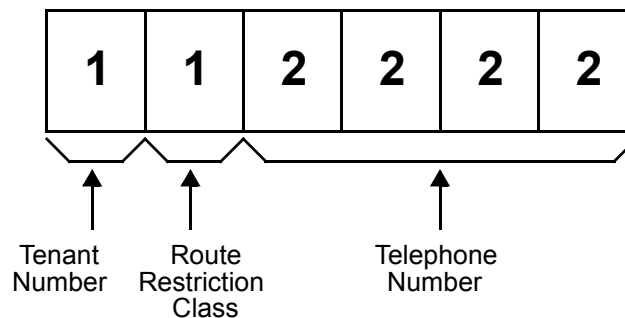
Operating Procedure

The DIGITAL DISPLAY is automatically activated whenever the Attendant Console answers an Incoming Call from a Station or originates a call to a Station.

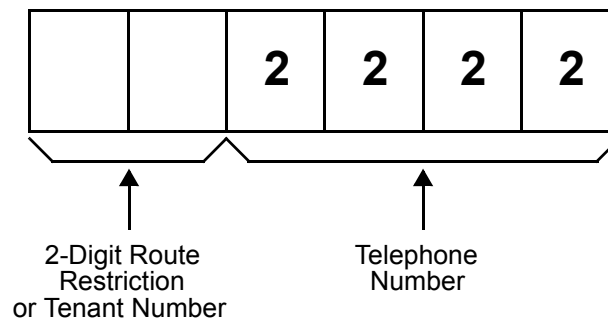
Service Conditions

1. The Tenant Number appears on the left side of the display, followed by the Trunk Route Restriction Class, then the station number. See Example 1.
2. If the Trunk Route Restriction Class and/or Tenant Number are not single digits, refer to Examples 2 and 3.
3. If the Station dialed by the Attendant Console is busy or in LINE LOCKOUT [L-3] mode, only the Telephone Number will be displayed.
4. The DIGITAL DISPLAY is limited to six digits. Since the CLASS OF SERVICE [C-15] and Trunk Route displays are in numerical form, a list must be provided for the Attendant to explain the restrictions of each CLASS OF SERVICE [C-15] Number and Trunk Identification Number.
5. The DIGITAL DISPLAY will occur automatically whenever a call is answered or originated by the Attendant.

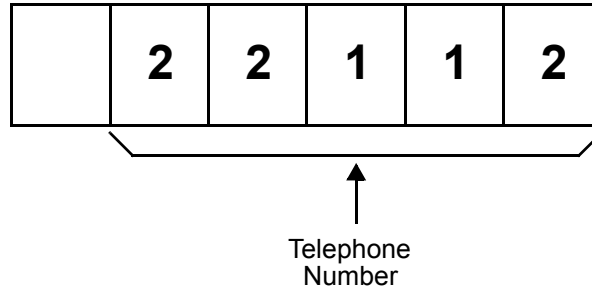
Example 1: Single-digit Trunk Route Restriction Class and Tenant Number, and four-digit station number:



Example 2: Two-digit Trunk Route Restriction Class of Tenant Number, and four-digit station number:



Example 3: When five-digit station numbering is used, only the station number is displayed:



Note: When the Telephone Number exceeds six digits, last six digits are displayed.

Interactions

1. CALL FORWARDING - CCIS [C-45, 46, 47]: Calls are forwarded from Station A to Station B. When the Attendant extends a call to Station A, Station B's number is indicated on the DIGITAL DISPLAY - STATION rather than Station A's number.
2. STATION HUNTING [S-7, 8, 9]: The Attendant Console extends a call to a busy telephone in a Hunt Group. The Terminating Telephone Number is indicated on the DIGITAL DISPLAY - STATION rather than the called Telephone Number.
3. DIGITAL DISPLAY STATION feature will occur whenever the Attendant performs any of the following actions:
 - a.) Extends an Incoming Call to a user.
 - b.) Originates a call to a user.
 - c.) Answers a recall or Call Forwarding Call.
 - d.) Re-enters a held Station Call.

Programming

ASYD - System Data 1, Index 82, Bits 4-7. Assign a hexadecimal value according to the length of station number choice.

Hexadecimal Station Information:

Index 82, Bits:

7	6	5	4	
0	0	0	0:	TN + RSC + four-digit station number
0	0	0	1:	TN + four-digit station number
0	0	1	0:	RSC + four-digit station number
0	0	1	1:	TN + five-digit station number
0	1	0	0:	RSC + five-digit station number
0	1	0	1:	Six-digit station number

D-73

Digital Display - Trunk - CCIS

General Description

This feature provides a visual indication at the Attendant Console of Incoming and Outgoing Trunk Calls through the CCIS Network. Trunk Identification Number, Trunk Route Number, and Number or Central Office Trunk Code, are displayed on a six-digit digital display.

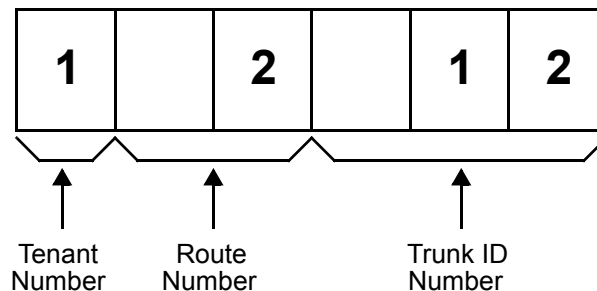
Operating Procedure

The digital display is automatically activated whenever the Attendant answers or originates a Trunk Call.

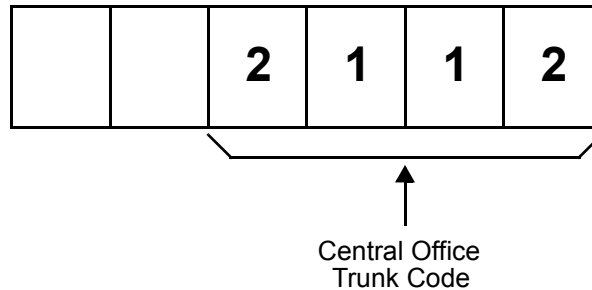
Service Conditions

1. All Trunks (WATS, FX, CCSA and TIE) will appear on the digital display.
2. The Tenant Number is displayed on the left side of the digital display, followed by the Trunk Route number, and then the Trunk Identification Number.
3. If the Trunk Route Number is three digits, the Tenant Number is not displayed.
4. The DIGITAL DISPLAY is limited to six digits. Because the Class of Service and Trunk Route displays are in numerical form, a list must be provided for the Attendant, giving an explanation of each Class of Service and Trunk Identification Number.
5. The DIGITAL DISPLAY - TRUNK - CCIS feature displays either Trunk Route information or a four-digit Central Office Code. These options are selected on a per trunk-Group basis.
6. When Trunk Route information is displayed, one digit identifies the Tenant, two digits identify the Trunk Group, and three digits identify the Trunk Number.
7. The DIGITAL DISPLAY - TRUNK - CCIS will appear automatically whenever the Attendant answers or originates:
 - a.) An Incoming Central Office call
 - b.) Incoming TIE Line Call
 - c.) Intercept Call
 - d.) Outgoing Central Office call
 - e.) Outgoing TIE Line Call
 - f.) Reenters a held trunk Call.

Example 1: Trunk



Example 2: Trunk



Interactions

1. For display purposes only, Route and Trunk Numbers and Central Office Codes may be used simultaneously in the same system and are applied on a per route basis, via ARTD, CDN 25:R/L.
2. If System Data 1, Index 68 Bit 2 is assigned for Individual Trunk Access to be the ACOC Code, then all Trunks in all Routes in the system must have the ACOC Code assigned. Trunk Routing display information:
 One digit identifies the Tenant
 Two digits identify the Trunk Group
 Three digits identify the Trunk Number.
3. DIGITAL DISPLAY - TRUNK - CCIS feature will occur whenever the Attendant answers/originates:
 Incoming Central Office-type (DID, two-way, one-way INC, FX, WATS) Calls
 Incoming TIE Line Calls
 Intercept Calls
 Outgoing Central Office-type (DOD, WATS, FX) Calls
 Outgoing TIE Line Calls
 Reenters Held Trunk Calls.
4. By pressing the Loop key of a Camped-On Call, the Attendant can determine both the Trunk and Telephone Numbers of the Camped on Call. See Attendant Camp-On with Tone Indication - CCIS [A-45].

Programming

STEP 1: **ASYD** - System Data 1, Index 68, Bit 1. Type of INDIVIDUAL TRUNK ACCESS, 0/1: Route and Trunk Number/Central Office Code.

Route and Trunk Number

STEP 2: **ATRK** - The Route and Trunk Number assigned here provides the system with the information on type of Routes and their associated Trunks, LENS, numbers of Tenants, and any CLASS OF SERVICE - INDIVIDUAL [C-15] Route Restriction information.

STEP 3: **ARTD** - In CDN 25:R/L, if data "0" is assigned, then Tenant, Route Number, and Trunk Number is displayed. If data "1" is assigned, then Central Office Code is displayed. The ACOC must be assigned.

Note: To change the data for existing route (RT), initialize or reboot the trunk device such as a circuit card or MG.

Central Office Code

STEP 4: **ACOC** - Each Trunk must be assigned a Central Office Code.

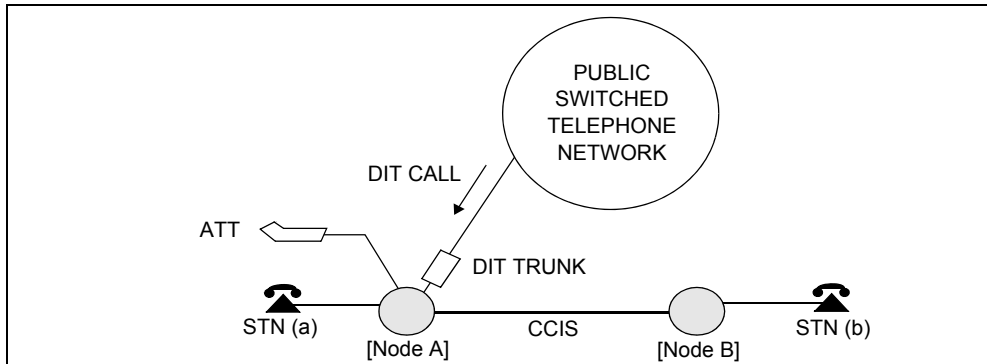
D-74 Direct-In Termination - CCIS

General Description

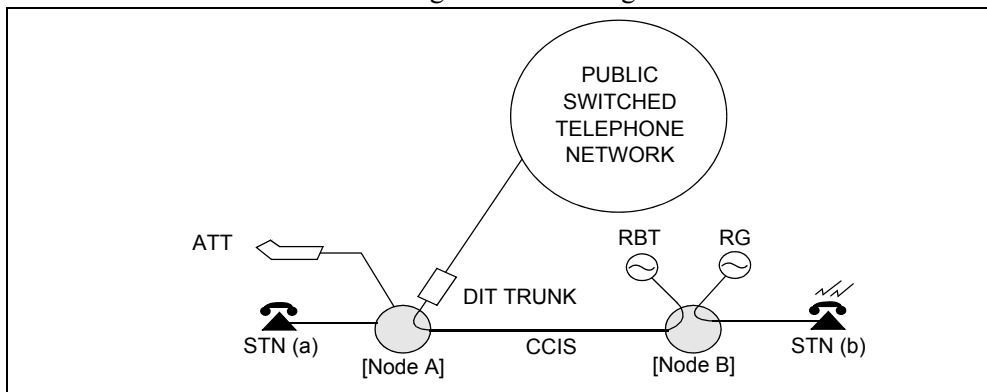
This feature allows Inter-Office Direct-In Termination for a case where an Incoming Call addressed to a Station in a System from a Central Office Line is to be terminated to a Station belonging to a different System in the CCIS Network.

Operating Procedure

1. A DIT Call terminates to Node A.



2. The DIT Call terminates to Node B through CCIS and rings Station B in Node B.



Service Conditions

1. Bothway Trunks can be used for DIRECT-IN TERMINATION, but incoming only Trunks are recommended.
2. It is not necessary to order special DID Trunks as is required with DIRECT INWARD DIALING [D-8]. However, care should be exercised in the application of Central Office Trunk Hunting.
3. When the connected CCIS Trunk (Originating Trunk accommodated in the Tandem Office) is busy, a DIT Call is handled according to the data assignment in ASYD, System Data 1, Index 11, Bit 7. When a Tandem Connection is established while the connected CCIS Trunk is in an idle state, the call is not terminated to an Attendant Console even if the Destination Station is busy. In this case, the call will wait until the Target Station becomes idle. (the Central Office Line Call terminated via the ISDN Network is to be released.)

4. To connect to extensions in the other offices, two options are selectable to send back ACK (indicates extension number has been received).
 - a.) ACK received from other office via CCIS is transferred to Central Office
 - b.) At the moment that self office occupies the CCIS trunk for connecting other offices, it sends ACK to Central Office.

Note: Calling party hears the RBT even when the line is busy, because the connection to called party is not actually confirmed yet.

Note: When office line is ISDN or via MG-COT, regardless of system data, calling party hears RBT from Central Office.

5. If there is no answer at a Station, the Calling Party will continue to receive Ringback Tone. There is no AUTOMATIC RECALL [A-8] to the Attendant.
6. Once a call is answered, it can be processed by the Called Station like any normal Trunk Call.
7. DIRECT-IN TERMINATION is mutually exclusive with NIGHT CONNECTION - FIXED [N-1].
8. If the Station is assigned to a STATION HUNTING [S-7, 8, 9] Group, the Incoming Call will follow the Hunt Group Station assignment. If the Station is in CALL FORWARDING mode, the Incoming Call is connected to the CALL FORWARDING Target Station.
9. Direct-In Termination Trunks can be programmed to terminate elsewhere in the Night mode.
10. DIRECT-IN TERMINATION must be assigned as Ground Start.

Programming

- STEP 1: **ASYD** - System Data 1, Index 142, DIT to Station Busy Supervision Timer.
Distinctive Ringing only for DIT and DID Calls.
System Data 1, Index 20, Bit 5. Dial-In CCIS tandem.
System Data 2, Index 11, Bit 7. Disposition of DIT Call when the connected CCIS Trunk (Originating Trunk accommodated in the Tandem Office) is busy. (See Service Conditions, Item 3.)
0/1=Forwarded to Attendant Console/Waiting
- STEP 2: **ACSA** - CSIA = 3: Direct-In Termination - Outside (DAY Only).
- STEP 3: **ACSI** - Assign Direct-In Termination - Outside Data.
CSI = 6: Night Connection - Outside
CSI = 7: Direct-In Termination - Outside (Day and Night Mode)
When assigning above data, ADC (Speed Calling Abbreviated Digit Codes) must be used.
- STEP 4: **ACFR** - Assign the DIT operation in Day and Night Modes.
Day only: TSFI = 3
Night only: TSFI = 2
Day and Night: TSFI = 2
TSFI = 3
The restriction is released according to each pattern.

STEP 5: **ARSC** - Assign allowable data into RRI = 0, 1 (connection parameter) with regard to the Route Restriction (RSC) of the DIT Connection Station.

STEP 6: **ARTD** - Assign Route Data paying attention to the following parameters.
CDN 12:DR = 0/1: Distinctive Ringing is not required/Distinctive Ringing is required CDN 15:LSG = 1 (Ground Start)

Note: To change the data for existing route (RT), initialize the circuit card.

STEP 7: **ARRC** - Assign Route to Route Restriction Data.

STEP 8: **ASPD** - Assign a Called Number (CD) to each Abbreviated Digit Code (ADC). (See SPEED CALLING - SYSTEM [S-3] in Data Programming Manual - Business.)

STEP 9: **ASFC** - Assign SFI 12(Speed Calling - System) = 1.

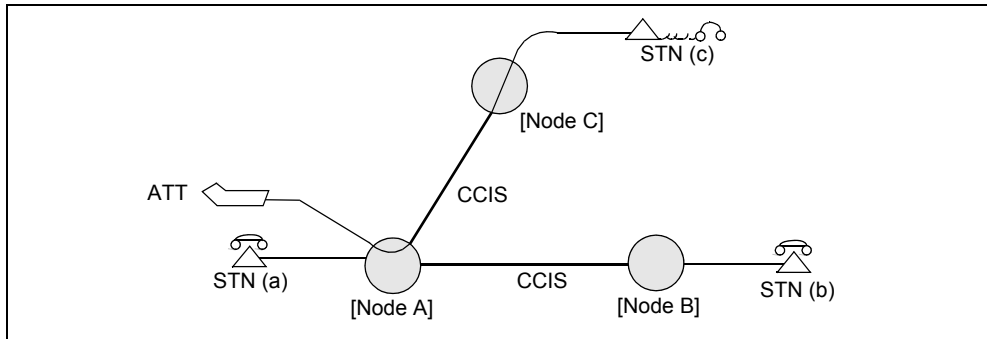
D-75 Distinctive Ringing - CCIS

General Description

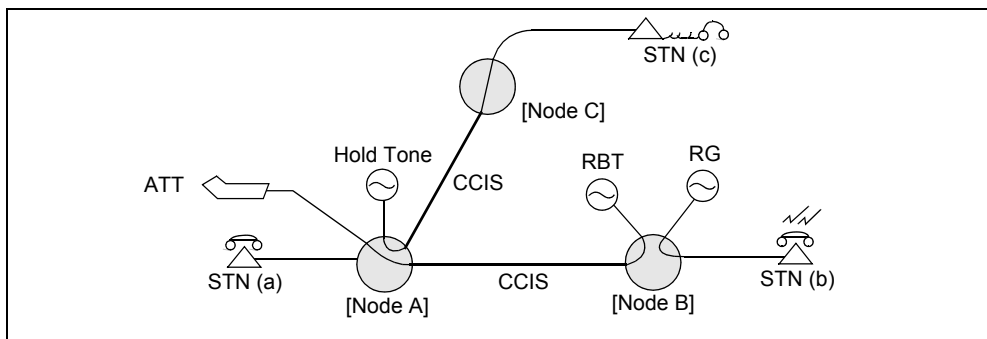
This feature allows Inter-Office Distinctive Ringing for a call terminated from a different System in the CCIS Network.

Operating Procedure

1. Station (c) and the Attendant in Node A are engaging in a call.



2. The Attendant dials the number for Station (b). Receives Ringback Tone. Station (c) receives hold Tone, and Station (b) is rung (Distinctive Ringing).



Service Conditions

1. Ring for Incoming Internal Calls on CCIS Network:
Two-seconds ON
Four-seconds OFF
Two-seconds RING
Four-seconds OFF
2. Ring for Incoming External Calls on CCIS Network:
One-second ON
Two-second OFF or two-second ON
Four-second OFF
3. This feature may be assigned to individual Trunk Routes via System Data programming.

Programming

STEP 1: **ASYD** - System Data 1, Index 72, Bit 6.
Distinctive ringing only for DIT and DID Calls.

Note: This system data is also available in the following case.
• Trunk line → CCIS → Intermediate Party (Station or Attendant Console) → Station

System Data 3, Index 0: Assign the timer value of the ringer used at the time of Local Line Incoming. (Ringer Pattern 0).

System Data3, Index 1: Assign the timer values of the ringer used at the time of station call. (Ringer Pattern 1).

System Data 3, Index 3, Bit 0: 2 Ringings (0.4 seconds-ON, 0.2 seconds-OFF, 0.4 seconds-ON) per Ringing Period for Ringer Pattern 0. 0/1 = Disabled/Enabled.

System Data 3, Index 3, Bit 1: 3 Ringings (0.4 seconds-ON, 0.2 seconds-OFF, 0.8 seconds-ON, 0.2 seconds-OFF, 0.4 seconds-ON) per Ringing Period for Ringer Pattern 1. 0/1 = Disabled/Enabled.

STEP 2: **ASFC** - Allow Burst Ringing (SFI = 48) to the SFC of the Incoming Station.

STEP 3: **ARTD** - Assign CDN 12:DR = 1 (follows the ringer pattern assigned by ASYD SYS 3, Index 0, Bit 0 and ASYD SYS 3, Index 3, Bit 0) to the Route Class of the Incoming Trunk in the CCIS Route.]

Note: To change the data for existing route (RT), initialize or reboot the trunk device such as circuit card or MG.

D-76D

Do Not Disturb - D - CCIS

General Description

This feature allows a Desktop terminal user to temporarily establish a DO NOT DISTURB status, during which time Incoming CCIS Calls will be denied access to the My Line of the Desktop terminal.

Operating Procedure

To set, press the DO NOT DISTURB (DND) key. The associated LED will light. The LCD displays:

DND SET
(Time Display)

To cancel, press the DO NOT DISTURB (DND) key. The associated LED will be extinguished. The LCD displays:

DND CANCEL
(Time Display)

Service Conditions

1. This service can only be set or cancelled while the Desktop terminal is idle.
2. Line Appearances programmed to ring will not do so while DND is set.
3. While DND is set, Outgoing Calls can be made from the My Line. Incoming Calls can be answered on all Lines except the My Line.
4. DND is not displayed on a Calling Desktop terminal's LCD when the Called Station is in DND mode (ASFC, SFI 114 = 1), and Reorder Tone is sent to the Calling Party. No indication will appear when the Called Station is a HOTLINE [H-12] in the DO NOT DISTURB mode.
5. If the DND Station is in a Hunt Group, that Station will be skipped in the Hunting Pattern.
6. The following features are denied to the DND Station:

ATTENDANT CAMP-ON WITH TONE INDICATION	[A-45]
ATTENDANT OVERRIDE	[A-7]
BOSS - SECRETARY OVERRIDE -D	[B-6]
BUSY VERIFICATION - CCIS	[B-9]
CALL WAITING - TERMINATING	[C-12]
CALL WAITING - ORIGINATING	[C-31]
EXECUTIVE RIGHT-OF-WAY - CCIS	[E-8]
VOICE CALL - CCIS	[V-7]
7. When the terminal performs re-registration while DO NOT DISTURB is set, the associated LED of DND key will light and the Soft key will flash. However, this is only available for IP terminals and SIP Multiple Line terminals and will not be available for Digital terminals.

Interactions

1. DATA INTERFACE - AUTOMATIC ANSWER - CCIS [D-65] may not be activated if the Desktop terminal is in the DND mode.

2. CALL FORWARDING-BUSY LINE - CCIS [C-45]: This feature can be activated to an idle station that has set DO NOT DISTURB - CCIS.

Programming

STEP 1: **AKYD** - When assigning Key Data for the Desktop terminal, assign the following:

TN: 1
STN: Station Number
TP: Type of Dterm (0-3)
KYN: Key Number (1-40)
KYI: Service Index
0: Key Not Used
—▶ 1: Feature Key
2: Multi line Key
KD: Not assigned for Feature Key
FKY: Feature Key Number
—▶ SO (Do Not Disturb).

STEP 2: **ADSL** - Assign a DND key. Assign SN = 0 (Idle) and a Feature key Do Not Disturb [50].

This command is used for assigning a function to each Soft key.

STEP 3: **ASFC** - Select an indication type (RST/DND) on the display of a Desktop terminal when it terminates to a Station that has been set to DO NOT DISTURB.

SFI 114 Calling Party DND Indication (Dterm) 0/1: RST/DND.

D-91 Dialed Number Display - Recall - CCIS

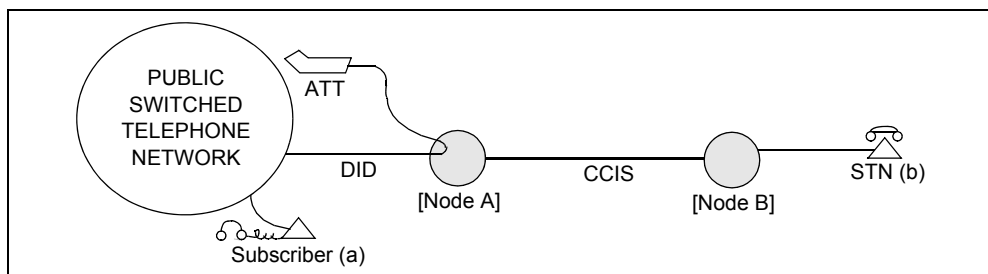
General Description

When the Attendant Console makes an Outgoing Call to a CCIS Line by means of a Tandem Connection, and the Attendant has left the call by pressing the RELEASE key before the Called Party answers, the Attendant Console will be recalled if the Called Party does not answer. This feature changes the display, when the Recall is answered, from Route and Trunk to Dialed Number.

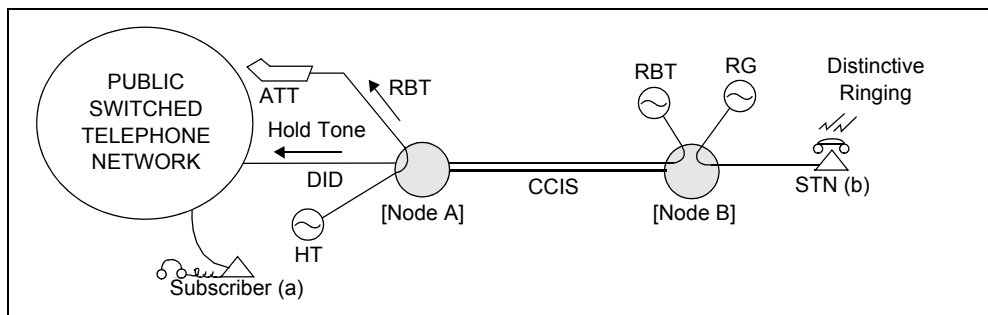
Note: This feature is available in North America only.

Operating Procedure

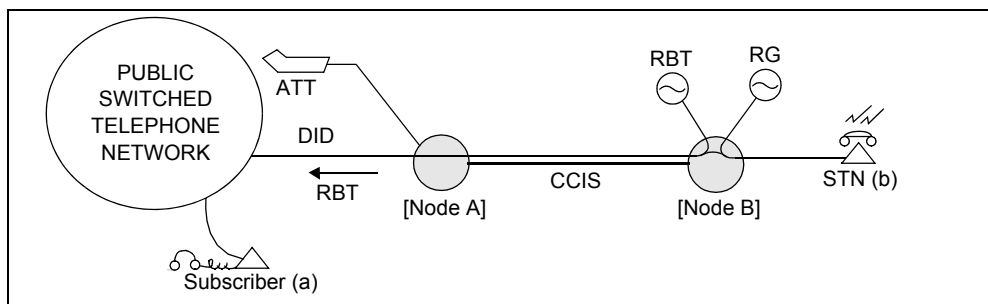
1. Subscriber (a) and the Attendant in Node A are engaging in a call through a DID Line.



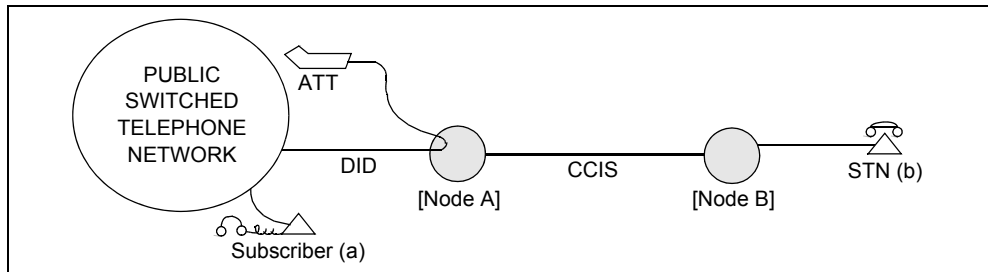
2. The Attendant dials the number for Station (b). Receives Ringback Tone. Subscriber (a) receives a hold tone, and Station (b) is rung (Distinctive Ringing).



3. The Attendant presses the RELEASE key. Subscriber (a) Receives Ringback Tone.



4. If, after a predetermined time has elapsed, Subscriber (a) is not connected with Station (b), the call is recalled to the Attendant Console in Node A and it answers. Press the DEST key. The Dialed Number of Station (b) is indicated. Station (b) continues to ring until the Attendant presses CANCEL key.



Service Conditions

1. If the Called Party answers after the Attendant has answered the recall, the display changes from Dialed Number to the answering Telephone Number. A Three-way Conference is made.

Programming

No programming is required.

D-93D

Dual Hold - D - CCIS

General Description

This feature allows two connected Desktop terminals to simultaneously be placed on Non-Exclusive Hold over a CCIS Link. This enables the Held Parties to answer or originate a call from a Sub Line Appearance or the idle Prime Line.

Operating Procedure

To place a call **in DUAL HOLD - CCIS**:

1. When two Desktop terminals are connected via CCIS, either Desktop terminal user can press the HOLD key and place the other Desktop terminal on NON-EXCLUSIVE HOLD -D [N-7D].
2. If the held Desktop terminal user wishes to originate or answer another call from a Multi line Appearance, the held Desktop terminal presses the HOLD key and places the CCIS Connection in a DUAL HOLD condition.

To answer a call **in DUAL HOLD - CCIS**:

1. The Desktop terminal user goes off-hook and presses the Held Line. If MUSIC ON HOLD [M-7] is heard (if provided), the other Desktop terminal has placed the connection on hold. MUSIC ON HOLD [M-7] will be heard until the connected Desktop terminal presses the Held Line and enters the call.

Service Conditions

1. While the call is in DUAL HOLD, AUTOMATIC RECALL -D [A-8D] will be initiated after the time-out.
2. DUAL HOLD - CCIS cannot be activated for calls established by:
 - BUSY VERIFICATION - CCIS [B-9]
 - ATTENDANT CAMP-ON WITH TONE INDICATION - CCIS [A-45]
 - EXECUTIVE RIGHT-OF-WAY - CCIS [E-8]

Programming

ASYD - System Data 1, Index 144. Recall Timer for NON-EXCLUSIVE HOLD. Assign data 00H for 30 seconds. ROM default is 3FH.

System Data 2, Index 12, Bit 0. Is Automatic Recall Ringing provided on a per Tenant basis? 0/1: Yes/No.

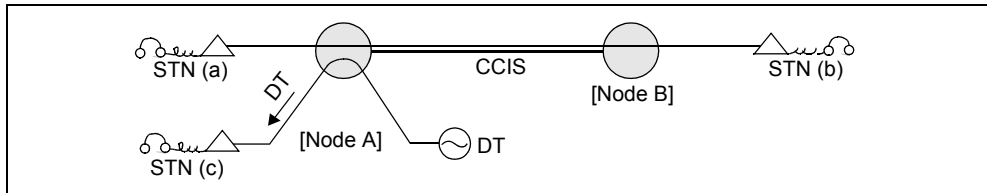
E-8 Executive Right-of-Way - CCIS

General Description

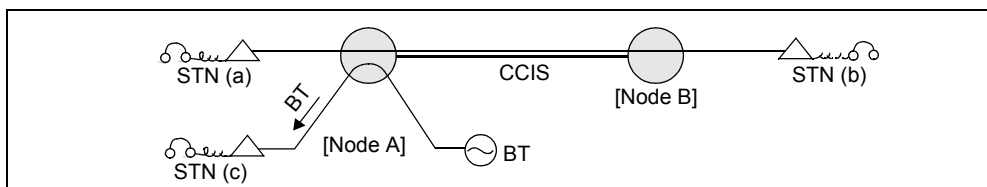
This feature allows Inter-Office Executive Right-of-Way when the bridging-in Station and the bridged Station respectively, belong to a different System in the CCIS Network.

Operating Procedure

1. While Stations A and B are engaging in a call, Station C goes off-hook and receives Dial Tone.

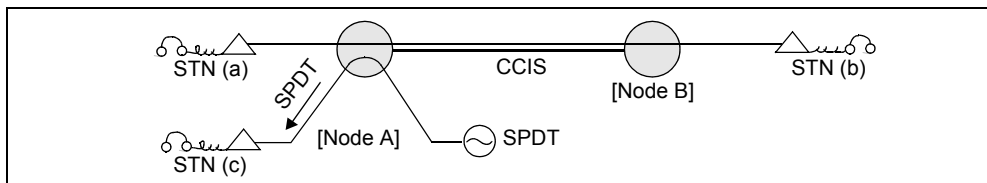


2. Station C dials the number for Station B and receives Busy Tone.

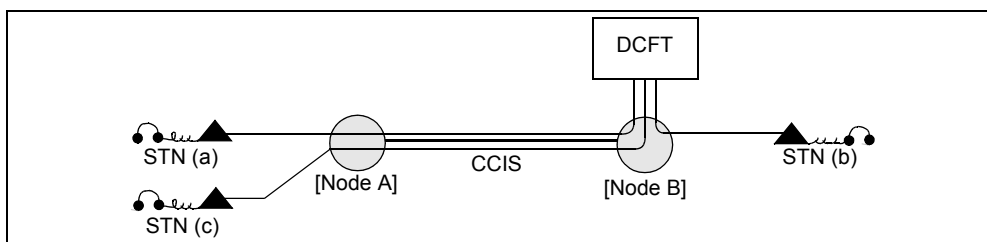


3. Station C switch hook flashes and receives Special Dial Tone.

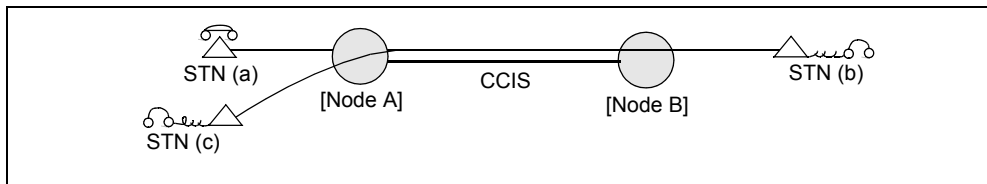
Note: The availability of Special Dial Tone is changed depending on the combination of the Step Call - CCIS Restriction (ASYD: Sys 2, Index 6, Bit 2) and SHF method (ASYD: Sys 1, Index 68, Bit 0). Refer to Step Call - CCIS [S-59] for the detail.



4. Station C dials the Executive Right-of-Way Access Code. Stations A, B and C receive Warning Tone. Station C is added to the connection between Stations A and B, making it a Three-Way Connection.



5. Station A hangs up. Stations C and B remain connected with each other until either or both go on-hook.



Service Conditions

1. Two Burst Tones are transmitted upon activation to alert connected parties that an EXECUTIVE RIGHT-OF-WAY Connection is being made.
 2. EXECUTIVE RIGHT-OF-WAY may be denied if the busy Station is:
 - a.) Dialing or in LINE LOCKOUT [L-3]
 - b.) Listening to a tone
 - c.) Being rung
 - d.) Protected from override via CLASS OF SERVICE - INDIVIDUAL [C-15]
 - e.) Protected by DATA LINE SECURITY [D-12]
 - f.) Being connected to an Attendant Loop
 - g.) Activating a conflicting feature such as:

ATTENDANT CAMP-ON WITH TONE INDICATION - CCIS	[A-45]
BUSY VERIFICATION - CCIS	[B-9]
CALL FORWARDING - ALL CALLS	[C-5]
CALL HOLD	[C-6]
CALL TRANSFER - CCIS	[C-50, 54]
CONSULTATION HOLD - ALL CALLS - CCIS	[C-58]
CALL PARK	[C-29]
CALL WAITING - TERMINAL	[C-12]
THREE-WAY CALLING	[T-2]
- In any of the above instances, the Calling Station will receive Reorder Tone.
3. If after the Three-way bridge is established, one party disconnects, the remaining two parties will still be connected.
 4. The maximum number of simultaneous EXECUTIVE overrides allowable is dependent on the number of Digital Conference Trunks included in the TSW/MUX Cards at the Called Office on the CCIS Network.
 5. This feature can be denied on DICTATION [D-3] and PAGING [P-1] Connections through programming in System Data.
 6. Interrupting calls in progress via PHC does not provide Warning Tone to the party connected with Called Party.

Note: Interrupting calls in progress via CCIS network does not provide the lamp indication of CONF key on the party connected with Called Party.

7. When using this feature against a Station that is engaged in Tandem connection other than CCIS-CCIS, SFI 4 and SFI 11 require to be set to 1 for SFC 0 by using ASFC/ASFCN.
8. When using this feature through the CCIS network, the number of digits to be delivered to the network must be eight or less. If the number of digits is nine or more, this feature does not work.

9. EXECUTIVE RIGHT-OF-WAY is denied if the called party connected via PHC trunk is hearing a hold tone. EXECUTIVE RIGHT-OF-WAY is available, however, if the called party is in tandem connection via non-PHC trunk beyond the connection via PHC trunk.
10. To operate this feature from a SIP Handler Controlled SIP terminal, perform the one digit dial hooking operation while hearing Busy Tone (BT) and dial the access code for this feature.

Programming

- STEP 1: **ASYD** - System Data 1, Index 4, Bit 4 = 1 (Temporary Class Conversion is required)
System Data 2, Index 0, Bit 1 (Assigns Executive Right-of-Way [1]).
- STEP 2: **ANPD** - Assigns Minimum Necessary Number of Digits for the first number of the Access Code for Executive Right-of-Way.
- STEP 3: **ASPA** - Assigns the Access Code for Executive Right-of-Way.
CI = "B: Busy"
SRV = "SSC: Service Code"
SID = 4
- STEP 4: **ASFC** - Assigns Executive Right-of-Way (Calling), SFI 3 to the SFC of the Station setting Executive Right-of-Way. Also assigns Executive Right-of-Way (Called), SFI 4 and Attendant Camp-On, SFI 11 to the SFC of the Station to which Executive Right-of-Way is set. At the Remote Node, assign SFI 3 [Executive Right-of-Way (Calling)], 4 [Executive Right-of-Way (Called)] and 11 (Data Line Privacy/Attendant Camp-On) to SFC 0.
When using this feature against a Station that is engaged in Tandem connection other than CCIS-CCIS, assign SFI 4 and SFI 11 to 1 for SFC 0.
- STEP 5: **ATRK** - Assigns the Trunk for Three-way Calling (assigned at RT = 909).
- STEP 6: **MBTK** - Make the above Trunk idle.
- STEP 7: **AKYD** - Assign an Override key on a Desktop terminal, if necessary. A Feature key Executive Right-of-Way [3].
- STEP 8: **ADSL** - Assign an Override key. Assign SN = 3 (Called Station Busy) and Executive Right-of-Way [3].
This command is used for assigning a function to each Soft key.

E-9 Elapsed Time Display - CCIS

General Description

This feature provides an LCD display of the time elapsed while a Desktop terminal is connected to any Trunk through the CCIS Network.

Operating Procedure

No manual operation is required.

Service Conditions

1. The elapsed time is displayed in the eight left-side positions of the LCD display.
2. The elapsed time can reach a maximum of 9 hours, 59 minutes and 59 seconds, after which the clock returns to zero.
3. A continuous time display will occur during CONSULTATION HOLD - ALL CALLS - CCIS [C-58], THREE-WAY CALLING [T-2], EXCLUSIVE HOLD -D [E-4D] and NON-EXCLUSIVE HOLD -D [N-7D].
4. When a call is transferred, the elapsed time of the party receiving the transfer begins at zero.
5. When the Desktop terminal returns to the original call from CALL TRANSFER - ALL CALLS - CCIS [C-50] or CALL HOLD [C-6], the elapsed time begins at zero.
6. The elapsed time is not displayed when the Station is in a specific condition, such as:
 - a.) Three-way Conference
 - b.) connecting to Trunk with a held Trunk.
7. In DtermIP, when hooking-off status on the phone is kept after the speech has been finished, LCD displays Hang Up message. Then, if the phone is put in on-hook status, LCD displays "00:00:00".

Programming

No programming is required.

E-20 E911 - ANI Unified Number of Digits - CCIS

General Description

This feature allows a Station or Attendant Console, called via CCIS, to perform E911-ANI Service. This feature is functionally identical to AUTOMATIC NUMBER IDENTIFICATION (ANI) [A-87].

Note: This feature is available in North America only.

Operating Procedure

The operating procedure is the same as that of a normal Outgoing Connection.

Service Conditions

1. The ANI function for E911 Outgoing Connections is applied to:
 - a.) Least Cost Route (LCR) Call from a Station by MF Signalling.
 - b.) LCR Call from an Attendant by MF Signalling.
 - c.) LCR Call by MF Signalling from a Station or Attendant Console called via CCIS.
2. ANI Sending Number by E911-ANI - CCIS is NXX-XXXX, which is the same as that by the previous E911-ANI Service.
3. Method of obtaining ANI Sending Number (example):

Caller's station number: 12345 (Closed Numbering)

ANI assigned data:

RT: XX

AT: 0 (0 = STA/ATT)
(1 = not assigned Special ATT Number)

CC: 1 (0 = Main Central)
(1 = Satellite Central)

COC: 826 (Remote Office Code)

Skip: 4 (Number of digits to be skipped from the top of the STN)

Add: 3 (Number of digits to be added to ANI information)

DC: 789 (ANI information)

 - a.) Number of skip digits deleted from STN:
8 2 6 1 2 3 4 5
 - b.) The number created by combining the ANI information and the above number becomes the ANI Sending Number:
7 8 9 2 3 4 5
 - c.) Sending ANI information:
KP-0-789-2345-ST
4. Sending digit patterns in E911-ANI - CCIS:
 - a.) Outgoing Call from Station/Attendant Console of the Main Office.
 - If OG Call is from a Station and ANI Data is assigned:
KP-0-N**-****-ST

ANI sending number
 Information digit
 - If OG Call is from a Station and ANI Data is unassigned:
KP-2-ST

Information digit

- If OG Call is from an ATTCON and Individual ATT Access Code is assigned, and also ANI Data is assigned:

KP-0-N**-****-ST

_____ANI sending number
_____Information digit

- If OG Call is from an ATTCON and Individual ATT Access Code is unassigned, and ANI Data is assigned:

KP-0-N**-****-ST

_____ANI sending number
_____Information digit

- If OG Call is from an ATTCON and ANI Data is unassigned:

KP-1- ST

_____Information digit

- b.) Outgoing Call from Station/Attendant Console of Remote office, and call termination via CCIS of Main Office.

- If OG Call is from a Station and ANI Data is assigned:

KP-0-N**-****-ST

_____ANI sending number
_____Information digit

- If OG Call is from a Station and ANI Data is unassigned:

KP-2- ST

_____Information digit

- If OG Call is from an Attendant Console and ANI Data is assigned:

KP-0-N**-****-ST

_____ANI sending number
_____Information digit

- If OG Call is from an Attendant Console and ANI Data is unassigned:

KP-1- ST

_____Information digit

- c.) Outgoing Call from Station/Attendant Console of Remote Office, and call termination to a TIE Line of Main Office.

KP-2-ST

_____Information digit

5. An independent Route is required for E911 Interface.
6. After Caller's Number is sent out to the Remote Office by E911-ANI, it takes some time until a speech path is established.
7. E911-ANI - CCIS Service Data are assigned only at Main Office. No specific data are assigned at the Remote Office.
8. Both AUTOMATIC NUMBER IDENTIFICATION (ANI) [A-78] Service and E911-ANI UNIFIED NUMBER OF DIGITS [E-18] Service must have been assigned.

9. The Central Office Code (COC) consists of one-to five digits. If Office Number and station number are used, the maximum total number of digits is still five. The Code is set in ARNP as RT 0.

Example 1:

Office number: 82

Station number: 2xxx, 3xxx

The COC digit is 82, then assign ANI information.

Example 2:

Office number: 826

Station number: 34xxx, 4xxx

The COC digit is 826, then assign ANI information.

10. After digits have been sent out, DDD Seizure Tone is not sent.
11. Other interactions are the same as those of Outgoing Calls by MF Signalling.
12. A RST card is used for this service.
13. When a Desktop terminal uses this feature, the Calling Number transmitted is the Prime Line.

Interactions

If “911” is to be exclusively used as an Emergency Number, then dial “9” Access Codes cannot be used solely for LCR Access. If “9-911” is used exclusively for an Emergency Call, then no numbering conflict will exist.

Programming

STEP 1: **ARTD** - Assign Route:

RT: 1

1-OSGS	:7	2-ONSG	:4	3-ISGN	:7	4-INSG	:4	5-TF	:3
6-TCL	:4/5	7-L/T	:1	8-RLP	:2	10-SMDR	:1	15-LSG	:4
19-ANI	:1	28-ANS	:1	30-PAD	:4	74-KPPT	:7	75-STC	:15
77-MT	:1								

Note: To change the data for existing route (RT), initialize the circuit card.

STEP 2: **ATRK** - Assign LENS for the following trunks.

RT 905 TK1 (dependent on Register Location)

RT 905 TK2 (dependent on Register Location)

RT 904 TK1 (dependent on Register Location)

RT 904 TK2 (dependent on Register Location)

STEP 3: **AAND** - Assign ANI Data. Assign AAND at the node with E911 Trunk.

RT: 0

AT: 0 (0 = Station/1 = Individual-Attendant)

KT: 0 (0/1 = OFF/ON, expansion of station number length)

CC: 1 (0 = Main Central/ 1 = Satellite Central)

COC: (Central Office Code, CCIS Office Code or first digit of CCIS remote station number. ARNP RT 0)

STNL: 0 (Number of digits in the Caller's Number, assign 0)

SKIP: (Number of skip digits. Strips Office Code from being sent out in front of the station number.

ADD: 3 (Number of digits to be added to the ANI information.)

DC: 753 (ANI Sending Number.)

Note: The Office Code of the Central Office + the first n digits of the station number to parameter COC should not exceed five. Combinations of the COC and the first n digits of station number must be made in conformity with the numbering plan of the remote office.

Basic LCR programming and Route Restrictions are required. Refer to LEAST COST ROUTING -3/6 DIGIT [L-5] in Data Programming Manual - Business. Programming for Enhanced 911 CCIS is only necessary at the Main Node.

F-12 Flexible Numbering of Stations - CCIS

General Description

This feature allows Voice and Data station numbers to be assigned to any instrument in the CCIS Network, based solely on Numbering Plan limitations.

Operating Procedure

Refer to the Command Manual.

Service Conditions

1. Careful consideration should be given to the Network Numbering Plan to avoid needless loss of Access Codes or duplication of Telephone Numbers.
2. There is no limit to the number of groups that can be assigned to the Network Numbering Plan.
3. TENANT SERVICE [T-12] is not provided (numbers cannot be duplicated in different Tenants).
4. BUSY LAMP FIELD - FLEXIBLE [B-2] Service cannot be provided.
5. Refer to Uniform Numbering Plan - CCIS [U-5] for Numbering Plan considerations.

Interactions

Caution should be exercised when programming this feature. Large quantities of potential Telephone Numbers are consumed. As programmed in the example, the system will be equipped with just one two-digit Station and one three-digit Station.

Programming

STEP 1: **ASYD** - System Data 1, Index 16. Enable one to five-digit station numbering for the system. Assign 1FH.

System Data 1, Index 92, Bit 3. Must be assigned as data "1".

STEP 2: **ANPD** - Reserve an Access Code for station numbering. For the NND parameter, assign the NND equal to the smallest digit planned for station numbering that will use the Busy Lamp Field Display Activated on ATT(BLF). Only the Stations with the NND assigned will appear on the BLF.

Note: Only three and four-digit station numbers will appear.

STEP 3: **ASPA** - Assign the station numbering in such a way that the system will be able to differentiate the station numbering using the Access Codes programmed. For the example shown, the following data is programmed:

Station 31:

TN: 1

ACC: 31

CI = "N: Normal"

"H: Hooking"

SRV = "STN: Station Number"

NND: 2

Station 321:

TN: 1

ACC: 321

CI = "N: Normal"

"H: Hooking"

SRV = "STN: Station Number"

NND: 3

Station 3221:

TN: 1

ACC: 322

CI = "N: Normal"

"H: Hooking"

SRV = "STN: Station Number"

NND: 4

The following Access Codes should also be assigned: 323, 324, 325, 326, 327, 328, 329, 320. CI: Normal (N), Hooking (H); SRV = STN; and NND: 4 will be assigned with each of the above.

STEP 4: **AMND** - Assign the digits to go over CCIS.

H-10D Hands-free Answerback - D - CCIS

General Description

This feature allows a Desktop terminal user to respond to a VOICE CALL - CCIS [V-7] without using the handset.

Operating Procedure

To answer:

1. Lift the handset and press the Line key to answer the call.
2. Press the FEATURE key and “1”. The MIC LED lights.
3. Press the FEATURE key and “5” to select hands-free operation.
4. Replace the handset. Respond to the call hands-free.

To answer a VOICE CALL - CCIS [V-7]:

1. Press the FEATURE key and “1”. the MIC LED lights.
2. Press the FEATURE key and “5” to select hands-free operation.
3. Respond to the call hands-free.

Service Conditions

1. The MIC may be left ON at all times.
2. Hands-free operation may be selected at all times.

Programming

No programming is required. See VOICE CALL [V-2] in Data Programming Manual -Business.

H-11

House Phone - CCIS

General Description

This feature allows selected Stations to call an Attendant Console through the CCIS Network, simply by going off-hook.

Operating Procedure

1. The HOUSE PHONE - CCIS user lifts the handset.
2. The Attendant is automatically called.

Service Conditions

1. Attendant Console indications will appear as follows:
 - a.) ATND Lamp flashes.
 - b.) Console buzzer sounds.
2. HOUSE PHONES may or may not be equipped with dials.
3. HOUSE PHONE - CCIS assignments are programmed into System Data via the PCPro.
4. There is no limit to the number of HOUSE PHONES - CCIS permitted in the network.
5. Speed Calling - System [S-3] is used for HOUSE PHONE - CCIS Calling if the Attendant is in another Office.

Interactions

1. AHLS is not needed if the House Phone (Hotline) is in the same Node as the Attendant Console. When a Station is programmed as TEC: 14, HOTLINE, it will automatically be connected to the Attendant Console.
2. If the House Phone is to be used for Outgoing Calls via the Attendant Console (ARSC RRI 2), assign a Route Restriction Class that will allow these connections. The same consideration should be made for Incoming Calls via the Attendant Console (RRI 0).

Programming

- STEP 1: **ASDT** - Assign the Station as a TEC = 14 for Hotline.
If the Attendant Console is in another Node:
- STEP 2: **ASPD** - Enter Tenant Number (TN), Abbreviated Digit Code (ADC), and Called Number (CD).
- STEP 3: **AHLS** - Assign the station number of the House Phone using the following parameters:
HOT TN:Hotline Tenant Number
HOT STN:Hotline Station Number
TYPE: 2
CON ADC:Speed Calling Code

H-12

Hotline - CCIS

General Description

This feature allows two Stations at different Nodes in the CCIS Network to be associated with one another on an automatic ringdown basis.

Operating Procedure

1. Station A lifts the handset.
2. Station B is rung.
3. Station B lifts the handset. The connection is established.

Service Conditions

1. If both phones in a Hotline - CCIS pair are equipped with dials, either one may transfer a Hotline - CCIS Call to another Station in the CCIS Network, using the Call Transfer - All Calls - CCIS [C-50] feature.
2. There is no limit to the number of Originating Hotline - CCIS Stations.
3. Hotline - CCIS assignments are programmed into System Data via PCPro.
4. Hotline - CCIS uses Speed Calling - System [S-3] memory. Therefore, a total of 1000 HOTLINE - CCIS Destinations, Hotline - Outside [H-9], and Speed Calling - System Codes are available.
5. Outgoing Trunk Queuing - CCIS [O-12] is not provided for a Hotline - CCIS Call.
6. A Hotline - CCIS Station can be assigned as a Line/Feature key on a Desktop terminal. See Trunk Line Appearance [T-23] in Data Programming Manual - Business.
7. The My-Line of a Desktop terminal cannot be assigned as a Hotline - CCIS.

Interactions

1. The connecting Station does not have to be a Hotline Station. If the connecting Station is busy, the Hotline Station will hear Reorder Tone, or Call Waiting - Originating [C-31] will be automatically set.
2. Call Back [C-1]: If the connecting Station of a Hotline Connection is busy, Call Back is allowed.
3. Consultation Hold - All Calls [C-58]: The Hotline Station may put the Destination Station on Consultation Hold - All Calls. In this state, the Hotline Station may make an Outgoing Call and is therefore affected by Class Of Service - Individual [C-15].
4. Call Waiting - Originating [C-31]: A Hotline is allowed to camp-on to a busy Destination Station. Assign SFI 5 (Call Waiting-Calling Side), SFI 6 (Call Waiting-Called Side) to SFC 0 and CDN 46:CW at the Remote Node.
5. If the connecting Station is also a Hotline, then the reverse connection must also be programmed.
6. A SIP Handler Controlled SIP terminal cannot be used as a Hotline Station but it can be used as a destination of a Hotline Station.

Programming

- STEP 1: **ASDT** - Assign the Station as a TEC = 14 for Hotline.
- STEP 2: **AHLS** - Assign the station number programmed above for the following parameters:
HOT TN:Hotline Station Number
HOT STN:Hotline Station Number
TYPE: 2
CON ADC: Speed Calling Code assigned in ASPD
- STEP 3: **ASPD** - Enter Tenant Number (TN), Abbreviated Digit Code (ADC), and Called Number (CD).

I-16 Incoming Call Identification - CCIS

General Description

This feature allows an Attendant to visually identify the type of service and/or Trunk Route which is arriving or waiting to be answered at the Attendant Console through CCIS.

Operating Procedure

No manual operation is required.

Service Conditions

1. A flashing lamp indicates a Call Waiting to be answered.
2. A steady lamp indicates an answered call.
3. A maximum of 12 lamp and Key Groups can be associated with Incoming Call Identification - CCIS.
4. Lamps and keys are assigned as follows:

LDN	Listed Directory Number
WATS	Wide Area Telephone Service
FX	Foreign Exchange
ATND	Attendant Call
RECALL	Transfer to Attendant
ICPT	Intercept
NANS	Station No Answer
BUSY	Call Forwarding Busy
TIE	TIE Line
5. More than one INCOMING CALL IDENTIFICATION Lamp can be lit at the same time on the Attendant Console. The Attendant can select any Incoming Call by pressing the associated key.
6. Calls can be answered via the ANSWER key for first-in, first-out priority.
7. The Attendant Console is limited to 12 unique INCOMING CALL IDENTIFICATION indications. However, more than one Incoming Trunk Route can be programmed for the same INCOMING CALL IDENTIFICATION.

Interactions

1. To fulfill the requirements of the feature description, Step 1 of Programming is not required. However, the CALL WAITING LAMP [C-13] should be programmed in relationship to the INCOMING CALL IDENTIFICATION.
2. System Data 2, Index 8, Bits 6 and 7 and Index 9, Bit 0-3 can be flagged to represent an Incoming Call, but the meaning of the Incoming Call can be reassigned via the AAKP.
3. The first six keys (LDN to CCSA) are fixed and cannot be changed. AAKP is used to program the remaining six optional keys.

Programming

STEP 1: **ASYD** - System Data 2, Index 8 and 9. Flag the type of Incoming Calls the Attendant Console should expect.

Index 8

Bit 0 - Listed Directory Number

Bit 1 - Incoming Station Call

Bit 2 - Attendant Recall

Bit 3 - FX

Bit 4 - WATS

Bit 5 - CCSA (DID)

Bit 6 - TIE Line

Bit 7 - Call Forwarding Busy Line

Index 9

Bit 0 - Call Forwarding Don't Answer

Bit 1 - Call Forwarding Intercept

Bit 2 - TF ASAT

Bit 3 - Supervisory Call

Note: System Data 2, Index 8, Bits 6 and 7, and System Data 2, Index 9, Bit 0-3 can be assigned different meaning via AAKP.

STEP 2: **ARTD** - Flag the type of Route in CDN 6:TCL, Trunk Class.

CDN 6 Value

1 - DDD Line (LDN)

2 - FX Line (FX)

3 - WATS Line (WATS)

4 - TIE Line (TIE)

5 - CCSA Line (CCSA)

6 - Toll Line

7 - CAS Line

8 - Paging

9 - Not used

10 - Not used

11 - general page

12 - Radio Page

Note: To change the data for existing route (RT), initialize the circuit card.

STEP 3: **AAKP** - This command may be used to change the meaning of the top six Call Identification keys of the Attendant Console. (See System Data 2, Indexes 8 and 9). The following functions may be assigned to Key Number (KYN) 1-6.

Function:

1 - CAS

2 - Off-Hook Alarm

3 - Priority Call 1

4 - Priority Call 2

5 - Priority Call 3

I-17 Individual Attendant Access - CCIS

General Description

This feature permits a user to call a particular Attendant Console in the CCIS Network, via an Individual Attendant Identification Number.

Operating Procedure

1. The user dials an Individual Attendant Identification Number.
2. The directed Attendant receives an INCOMING CALL IDENTIFICATION [I-16] indication and can answer using the normal operating procedure.

Service Conditions

1. The Attendant Identification Number must be published for each Attendant.
2. About the number of digits allowed to be delivered to CCIS Networking via IP (By PHC) for this feature, refer to “How many digits are available for CCIS features in the CCIS over IP Network?” on the top page of this chapter.

Interactions

1. The Attendant Consoles must first be programmed.
2. The ASAT Number should be the same number of digits as any other Telephone Number. ASAT assigns a Telephone Number to each Attendant Console.
3. An Attendant is allowed to call the ASAT Number of another Attendant Console for the purpose of conversation.

Programming

- STEP 1: **ASAT** - Assign a station number to each Attendant. The Attendant Number is the Trunk Number assigned in ATRK, Route 901.
- STEP 2: **ATNR** - Allow Stations in a Tenant either access or denial to the Tenant in which the Attendant Console is located.

I-18 Inter-Position Transfer - CCIS

General Description

This feature allows calls to be transferred from one Attendant Console to another through the CCIS Network.

Operating Procedure

To transfer from Console A to Console B:

1. Attendant A presses the START key.
2. Attendant A dials the Attendant Console B Identification Number, or “0” for all Attendant Consoles.
3. The call is indicated at Attendant Console B or all Attendant Consoles.
4. Attendant B presses the ANSWER key.
5. Attendant A presses the RELEASE key to transfer, or consults first and then releases.

Service Conditions

1. An Identification Number is assigned to each Attendant Console for INTER-POSITION TRANSFER - CCIS.
2. An Attendant Console can receive one INTER-POSITION TRANSFER Call at a time. An INCOMING CALL IDENTIFICATION - CCIS [I-16] Feature key is designated for receipt of these calls.
3. An Attendant cannot transfer a Two-party Connection to another Attendant.
4. An Attendant can extend an INTER-POSITION TRANSFER - CCIS Call to any other destination.
5. When NIGHT CONNECTION [N-15, N-16] is active in one system, an INTER-POSITION TRANSFER from the Attendant of another system can be answered by the Night Station.

Interactions

1. The Attendant Console must first be programmed.
2. An Attendant is allowed to call the ASAT Number of another Attendant Console for the purpose of conversation.
3. The ASAT Number may not be programmed in the place of a Telephone Number in ASID and ASGD commands. See OFF-HOOK ALARM [O-6], ATTENDANT NIGHT TRANSFER [A-19], and PRIORITY CALL [P-9] in Data Programming Manual - Business.

Programming

- STEP 1: **ASYD** - System Data 2, Index 6, Bit 5. Enable INTER-POSITION TRANSFER? 0/1: No/yes. Assign data “1”. (Assigned on a per Tenant basis.)
System Data 2, Index 9, Bit 3. Is INTER-POSITION TRANSFER considered an Incoming Call to the Attendant Console, which is counted as a Call Waiting? 0/1: No/Yes. See CALL WAITING LAMP [C-13] in Data Programming Manual - Business. (Assigned on a per Tenant basis.)
- STEP 2: **ASAT** - Assign a specific Attendant Number to each Attendant Console.
- STEP 3: **ATNR** - Allow Station-to-Station Connection on an Intra and Inter-Tenant basis.

I-19 Individual Trunk Access - CCIS

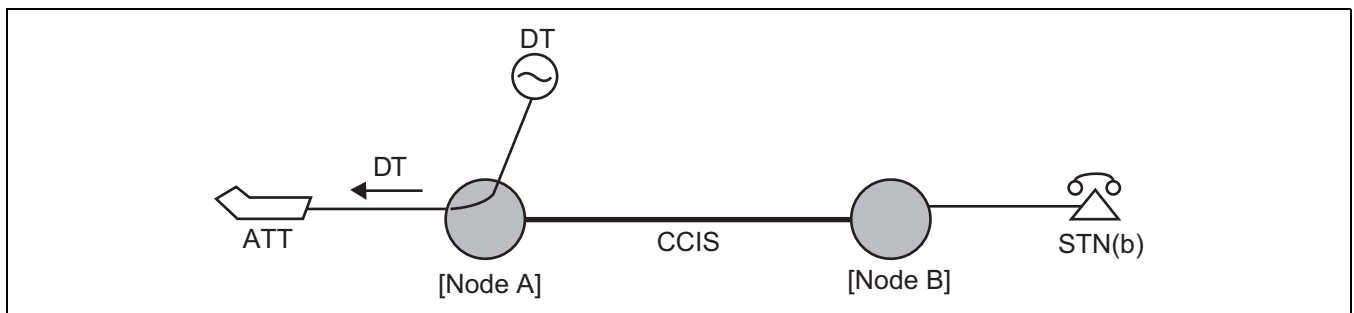
General Description

This feature allows the Attendant to perform an Individual Trunk Access for a CCIS Trunk in the same manner as making access to an ordinary trunk (ACIS trunk).

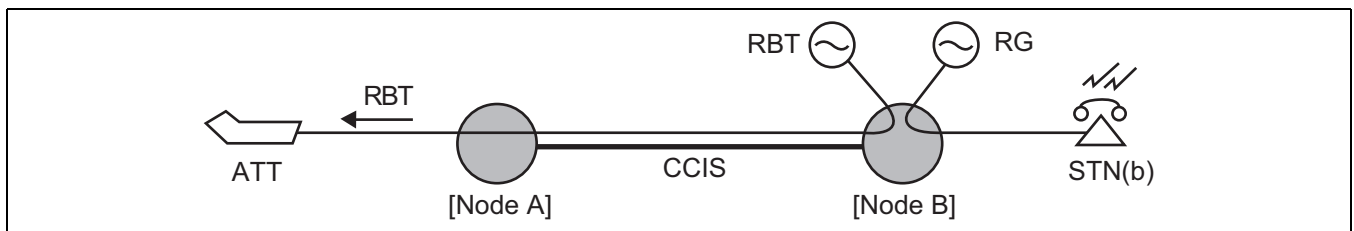
Note: This feature is not available in North America.

Operating Procedure

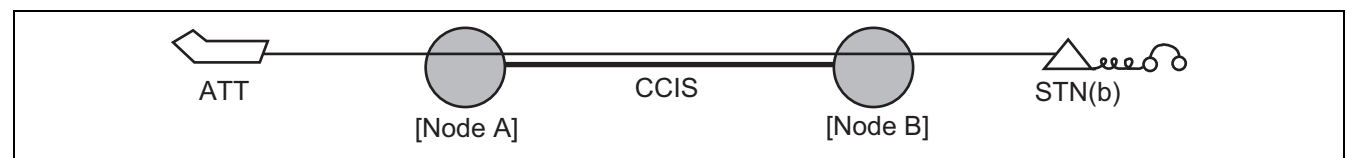
1. The attendant presses the TKSL key. The TKSL lamp lights.
2. The Attendant dials a CCIS Route Number (three digits).
3. The Attendant dials the number (three digits) for the designated Individual Trunk. The Attendant receives Dial Tone. The BL Lamp corresponding to the designated trunk lights.



4. The Attendant dials the number for Station (b). Receives Ringback Tone. Station (b) is rung.



5. Station (b) answers. The Attendant and Station (b) are connected with each other.



6. The Attendant releases the connection by pressing the TKSL key. The BL Lamp for the designated trunk goes out, and the TKSL Lamp on the Attendant Console goes out.

Service Conditions

1. A digital display will appear on the ATTENDANT CONSOLE [A-3] which will consist of either:
 - a.) TENANT [T-12] Number, Trunk Route Number, and Trunk Number.
OR
 - b.) Central Office Code Number.
This data is programmed on an individual route basis.
2. If the trunk is busy, the Attendant will receive a Busy Tone.
3. If the trunk is made busy, either by hardware or software control, the attendant can still access that trunk using the above operating procedure.
4. On a system basis, either of the above operating procedures can be programmed or the Central Office Code Number, which is assigned to each trunk instead of Trunk Route Number and Trunk Identification Number, can be assigned.

Programming

- **When using the TKSL key on the Attendant Console:**

STEP 1: **ASYD** - System Data 1, Index 68, Bit 1:

Operating mode for Individual Trunk Access service.

0: RT + TK Number

1: 4 digit Number by ACOC

Bit 4: (1) Use of TKSL key on the ATTCON.

STEP 2: **ARTD** - Assign the R/L (CDN 25)

Parameter of the Route Class accepting of the Trunk Individual Trunk Access.

- System Data 1 Index 68, Bit 1 = 0 ---> R/L = 0
- System Data 1 Index 68, Bit 1 = 1 ---> R/L = 1

Note: To change the data for existing route (RT), initialize the circuit card.

STEP 3: **ACOC** - Assign the Central Office Line Number when System Data 1, Index 68, Bit 1 = 1. The Individual Trunk Access is performed using this number.

- **When using the Access Code:**

STEP 1: **ASYD** - System Data 1, Index 68, Bit 1:

Operating mode for Individual Trunk Access service.

0: RT + TK Number

1: 4 digit Number by ACOC

STEP 2: **ANPD** - Assign minimum necessary number of digits for the first number of the Access Code for Individual Trunk Access.

STEP 3: **ASPA** - Assign the Access Code for Individual Trunk Access (CI = "N: Normal" and "H: Hooking", SID = 17).

STEP 4: **ARTD** - Assign the R/L (CDN 25)

Parameter of the Route Class accepting of the Trunk Individual Trunk Access.

- System Data 1 Index 68, Bit 1 = 0 ---> R/L = 0
- System Data 1 Index 68, Bit 1 = 1 ---> R/L = 1

Note: To change the data for existing route (RT), initialize the circuit card.

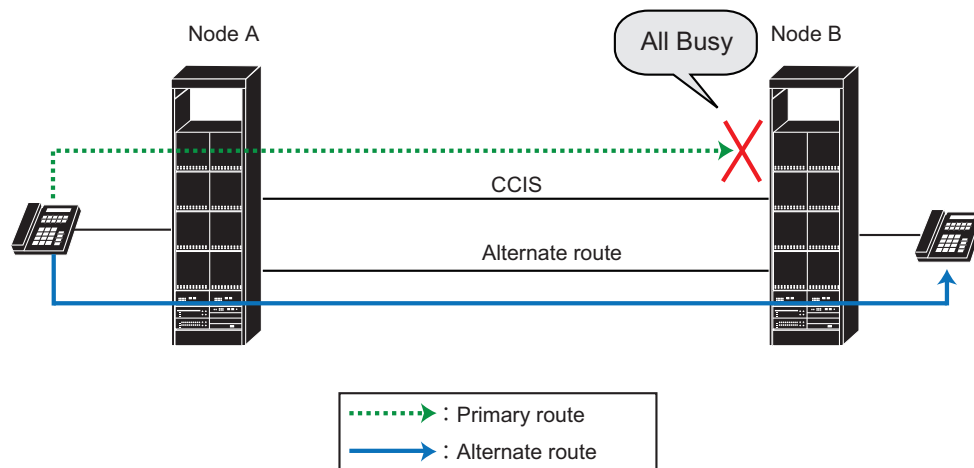
STEP 5: **ACOC** - Assign the Central Office Line Number when System Data 1, Index 68, Bit 1 = 1. The Individual Trunk Access is performed using this number.

L-25 Look Ahead Routing - CCIS

General Description

When your call via a CCIS network fails to reach a station in a different node because incoming route of the target node or outgoing route of a relaying node that the call attempted to take is busy, the call takes an alternate route predetermined as a detour by the AOPR/AOPRL/AOPRN command. The detour can be routed through a CCIS network as well as other lines such as a TIE line, a C.O. line, and an ISDN line. Alternate routing during tandem connection restriction is also available.

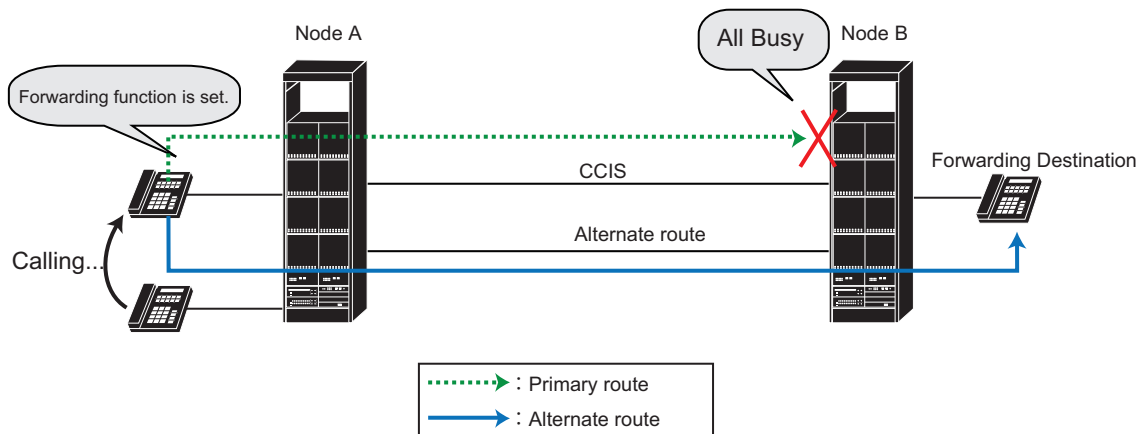
1. Alternate routing when the incoming route of the target node that the call attempted to take is busy:
 - a.) When calling from a station, or a station/trunk with held call, if the incoming route of the target node is busy, the call terminates using alternate routes.



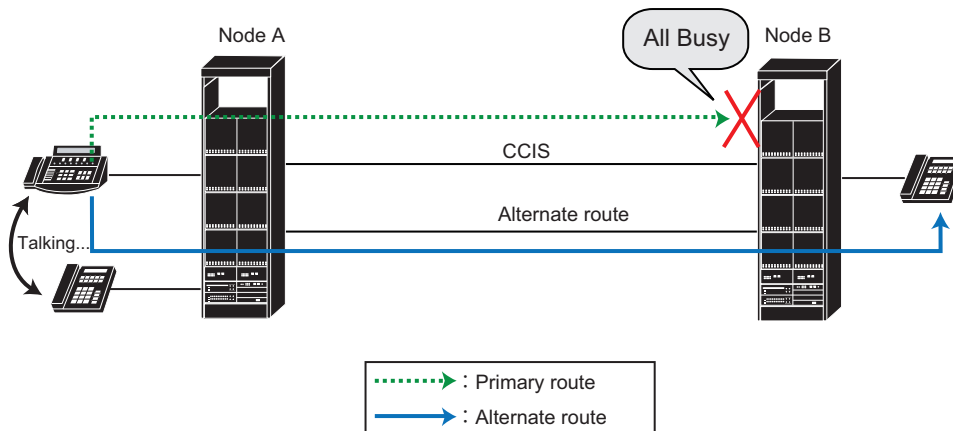
- b.) When calling from call forwarding functions, if the incoming route of the target node is busy, the call terminates at the forwarding destination using alternate routes.

Note: In this context, the “forwarding functions” refer to the following:

- CALL FORWARDING - ALL CALLS - CCIS [C-45]
- CALL FORWARDING - BUSY LINE - CCIS [C-46]
- CALL FORWARDING - DON'T ANSWER - CCIS [C-47]
- LOGGED OUT IP STATION - CALL DESTINATION [L-53]
- CALL FORWARDING PS INCOMING CALL INCOMPLETE [C-155]

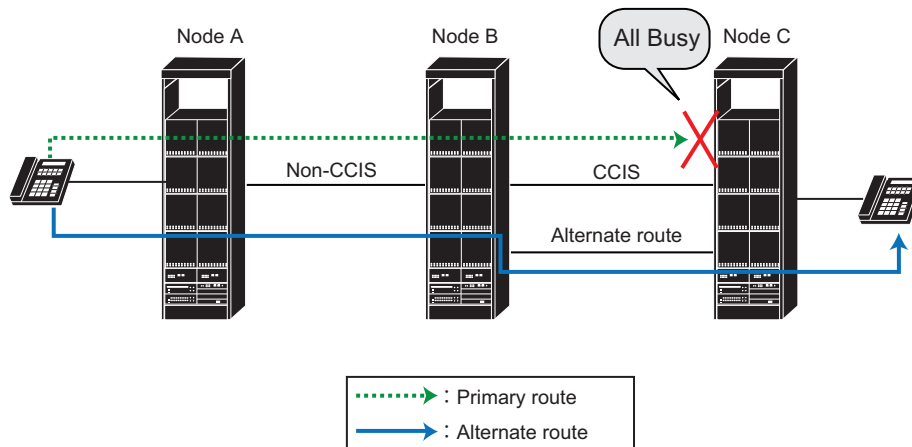


- c.) When calling from an Attendant Console, or a Attendant Console with held station/trunk, if the incoming route of the target node is busy, the call terminates using alternate routes.

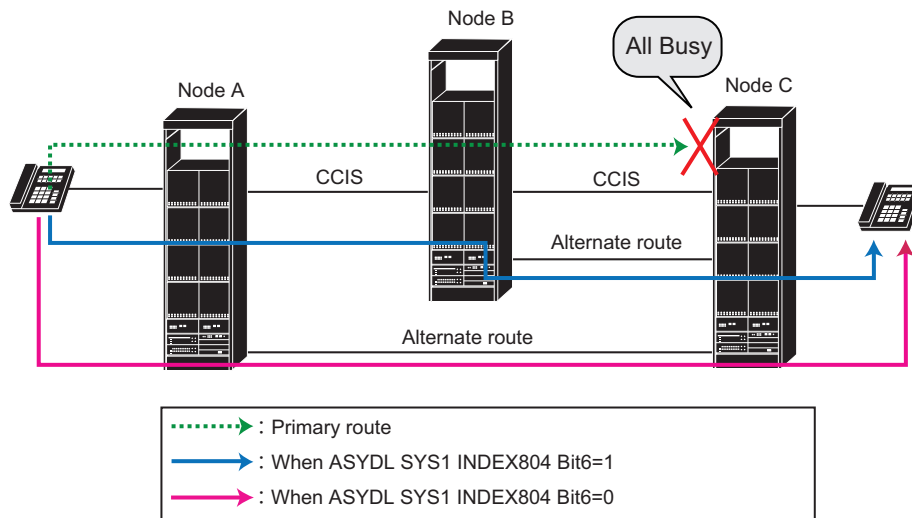


2. Alternate routing in tandem connections:

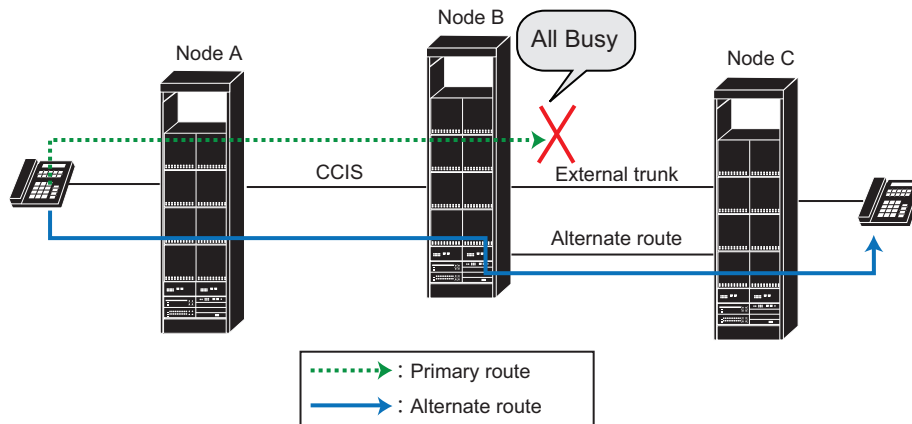
- a.) When the incoming trunk of the relaying node does not use CCIS, the relaying node detours the route.



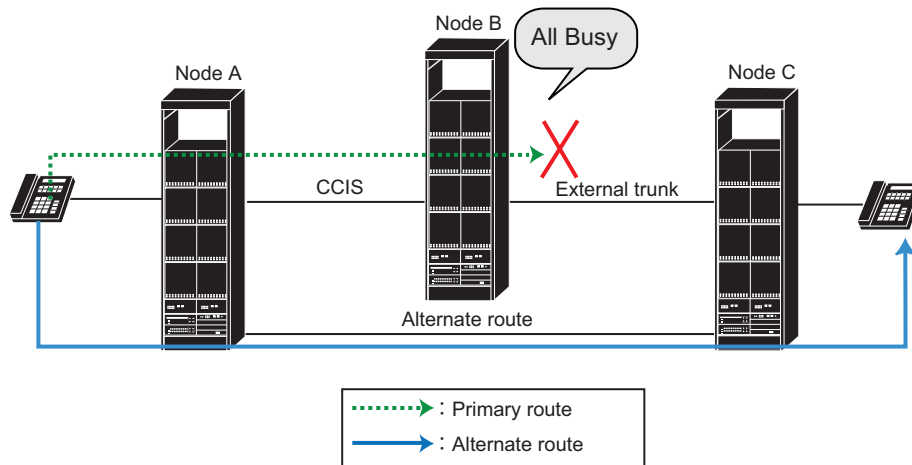
- b.) When the incoming trunk of the relaying node uses CCIS, you can specify which node detours a route by assigning System Data (ASYDL System Data 1 Index 804 Bit 6). When Bit6=1, the relaying node detours the route, and when Bit6=0, the originating node detours the route.



- c.) When the outgoing trunk of the relaying node is busy, the route is detoured according to the settings of the AOPR/AOPRL/AOPRN commands regardless of System Data (ASYDL System Data 1 Index 804 Bit 6).
- When the relaying node (Node B) has an alternate route:

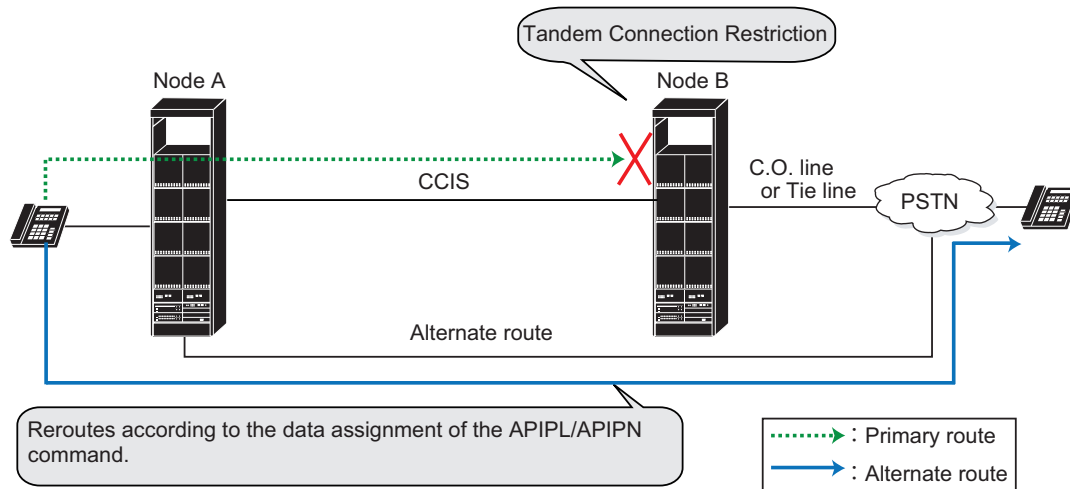


- When the relaying node does not have an alternate route:



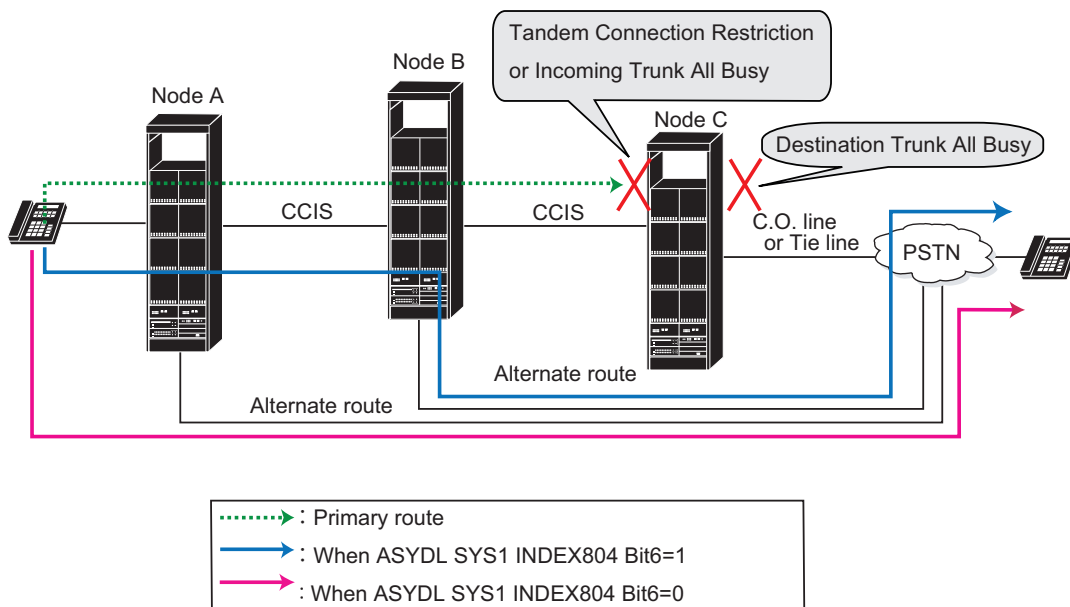
3. Alternate routing in the event of tandem connection restriction:

When tandem connections are restricted on the relaying node (Node B as shown in the illustration below), the originating node (Node A) routes calls via an alternate route. You can specify conditional alternate routing on the originating node by using the APIPL/APIPN command on the relaying node.



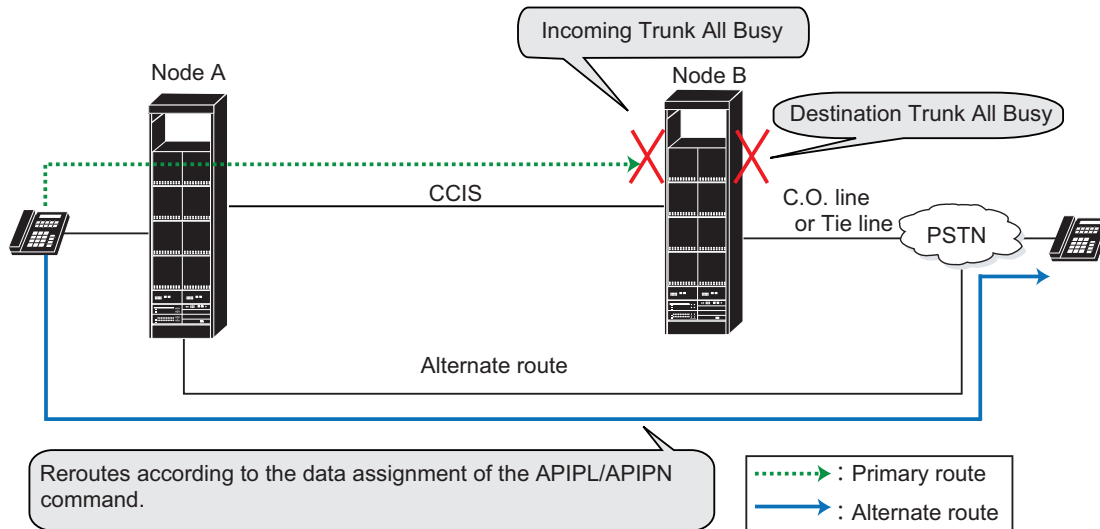
4. Preference of an alternate routing node in the event of tandem connection restriction, destination trunk busy or incoming trunk busy:

With System Data assignment (ASYDL System Data 1 Index 804 Bit 6) on the relaying node (Node B, as shown in the illustration below), you can specify a switching node to provide alternate routing. When Bit 6=1, the relaying node (Node B) routes calls via an alternate route, and when Bit 6=0, the originating node (Node A) routes calls via an alternate route.



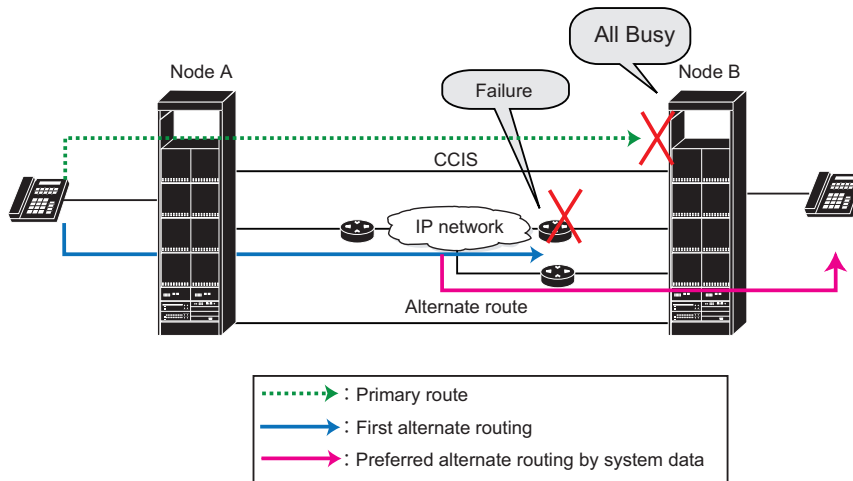
5. Conditional alternate routing on the originating node in the event of destination trunk or incoming trunk busy:

When the destination trunk or incoming trunk on the relaying node (Node B as shown in the illustration below) is busy, the originating node (Node A) routes calls via an alternate route. This feature, while re-directing calls on the originating node based on the predefined condition, is set up from the relaying node with the APIPL/APIPN command.



6. Preferred routing to IP network:

When System Data (ASYDL System Data 1 Index 804 Bit 7 = 1) is assigned, IP network is selected preferentially for alternate routes.



Operating Procedure

No manual operation is required.

Service Conditions

<Important Notices>

1. The following outgoing calls can take an alternate route by LOOK AHEAD ROUTING - CCIS [L-25]:
 - A call originated by a station
 - A call forwarded by Call Forwarding - All Calls
 - A call forwarded by Call Forwarding - Busy Line
 - A call forwarded by Call Forwarding - Don't Answer
 - A call forwarded by Logged Out IP Station - Call Destination
 - A call forwarded by Call Forwarding - PS Incoming Call Incomplete
 - A call transferred after holding the station
 - A call transferred after holding the trunk
 - A call mediated for Tandem Connection
 - A call originated by an Attendant Console
 - A call made from an Attendant Console which also has a held station call
 - A call made from an Attendant Console which also has a held trunk call
2. To have a relaying node detour a route with tandem connection, assign System Data (ASYDL System Data 1 Index 804 Bit 6) to the relaying node. **Note 1**
3. The following features are available only when both originating and relaying nodes are telephony servers in CCIS over IP (PHC) network:
 - Look Ahead Routing - CCIS during tandem connection restriction
 - Conditional alternate routing (i.e. enable/disable option for alternate routing) with the APIPL/APIPN command on the originating node in the event of tandem connection restriction, destination trunk busy, or incoming trunk busy.
4. Alternate routing may not be performed depending on the value of Timer for Alternate Routing (ASYDL, System Data 1 Index 671 Bits 0-3) when using a terminal in which T310 timer has been set.

Note 1:

- Only when the incoming trunk of the relaying node uses CCIS.
- When the outgoing trunk of the relaying node is busy, the route is detoured according to the settings of AOPR/AOPRL/AOPRN commands.

<Interactions with Other Features>

1. The following table shows the availability of various CCIS features when this service is used:

X: Available N: Not Available R: Some restrictions -: Not Applicable

Feature name	Availability	Remarks
Attendant console features		
SUPERVISORY CALL - CCIS [S-73]	-	
DIAL ACCESS TO ATTENDANT - CCIS [D-71]	X	
INDIVIDUAL ATTENDANT ACCESS - CCIS [I-17]	X	
SERIAL CALL - CCIS [S-52]	-	
STEP CALL - CCIS [S-59]	X	
ATTENDANT CAMP-ON WITH TONE INDICATION - CCIS [A-45]	N	Setting is not available, ROT connection
BUSY VERIFICATION - CCIS [B-9]	N	Setting is not available, ROT connection
CENTRALIZED ATTENDANT SERVICE (CAS) [C-20]	-	
CALL TRANSFER - ATTENDANT - CCIS [C-54]	-	
STATION-TO-STATION CALLING - OPERATOR ASSISTANCE - CCIS [S-58]	-	
Display features		
NAME DISPLAY - OAI - CCIS [N-36]	X	
CLI SUPPRESSION - CCIS [C-202]	-	
DIGITAL DISPLAY - STATION - CCIS [D-72] (Incoming side)	-	
DIGITAL DISPLAY - STATION - CCIS [D-72] (Outgoing side)	-	
Forwarding features		
CALL FORWARDING - ALL CALLS - CCIS [C-45]	X	
CALL TRANSFER - ALL CALLS - CCIS [C-50]	X	
CALL FORWARDING - DON'T ANSWER - CCIS [C-47]	X	
CALL FORWARDING - BUSY LINE - CCIS [C-46]	X	
CALL FORWARDING I'M HERE - CCIS [C-201]	-	

L-25 Look Ahead Routing - CCIS

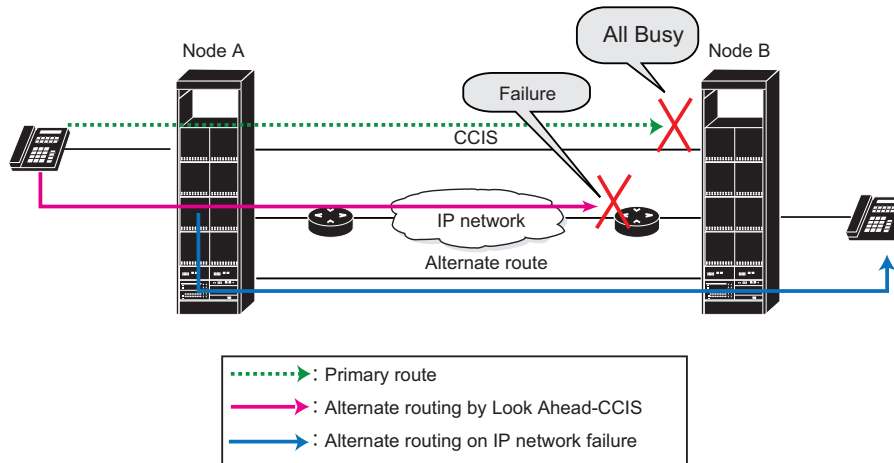
X: Available N: Not Available R: Some restrictions -: Not Applicable

Feature name	Availability	Remarks
Call termination from outer office features		
Dial-In CCIS	X	
DIRECT-IN TERMINATION - CCIS [D-74]	N	Detouring is not available, ROT connection
DISTINCTIVE RINGING - CCIS [D-75]	X	
Station features		
HOT LINE - CCIS [H-12]	X	
Privacy feature through CCIS	-	
CALL BACK - CCIS [C-44]	N	Setting is not available, ROT connection
STEP CALL - CCIS [S-59]	X	
Step Call - CCIS Restriction	X	
EXECUTIVE RIGHT OF WAY - CCIS [E-8]	N	Setting is not available, ROT connection
Desktop terminal features		
DO NOT DISTURB -D- CCIS [D-76D]	X	
MESSAGE REMINDER - CCIS [M-34]	R	Setting while calling is available. Setting while talking is not available.
VOICE CALL - CCIS [V-7]	X	
CCIS features (Others)		
H0 Switching	-	
CENTRALIZED SYSTEM MANAGEMENT REPORT - CCIS [C-57]	-	

2. When the following feature is set, LOOK AHEAD ROUTING - CCIS [L-25] is not available.
 - OUTGOING TRUNK QUEUING - CCIS [O-12]
 - CALL BACK - CCIS [C-44]
 - ATTENDANT CAMP-ON WITH TONE INDICATION - CCIS [A-45]
 - OFF-HOOK QUEUING - CCIS [O-11]
 - INTER-OFFICE OFF-HOOK QUEUING [I-11]
3. OUTGOING TRUNK QUEUEING - CCIS [O-12] is not available when the alternate route which your call takes is busy. You will hear Busy Tone in this case.
4. This feature can be used in combination with CCIS ALTERNATE ROUTING - BACKUP [C-178] and PRI/PRA FAILSAFE ROUTING (DPM-ISDN)[P-49/50]. See CCIS Alternate Routing - Backup [C-178] in this manual, or PRI/PRA Failsafe Routing (DPM-ISDN) [P-49/50] in Data Programming Manual - ISDN for details.

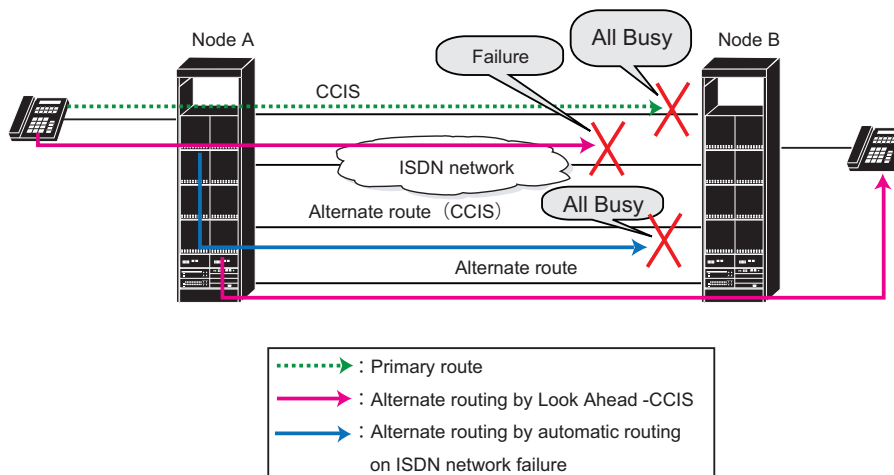
- If calls are attempted to be detoured by this feature, but not executed due to IP network failure, CCIS ALTERNATE ROUTING - BACKUP [C-178] is available. If calls are attempted to be detoured by this feature, but not executed due to ISDN network failure, PRI/PRA FAILSAFE ROUTING (DPM-ISDN) [P-49/50] is available.

The following figure is an example for CCIS ALTERNATE ROUTING - BACKUP [C-178].

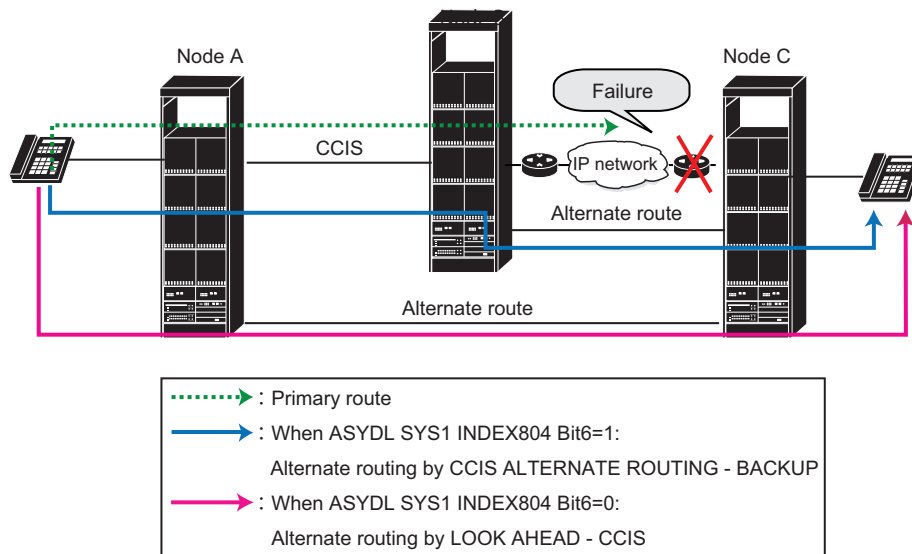


- If calls are attempted to be detoured to a CCIS route by CCIS ALTERNATE ROUTING - BACKUP [C-178] or PRI/PRA FAILSAFE ROUTING (DPM-ISDN) [P-49/50], but not executed because all alternate routes are busy, LOOK AHEAD ROUTING - CCIS [L-25] is available.

The following figure is an example for PRI/PRA FAILSAFE ROUTING (DPM-ISDN) [P-49/50].



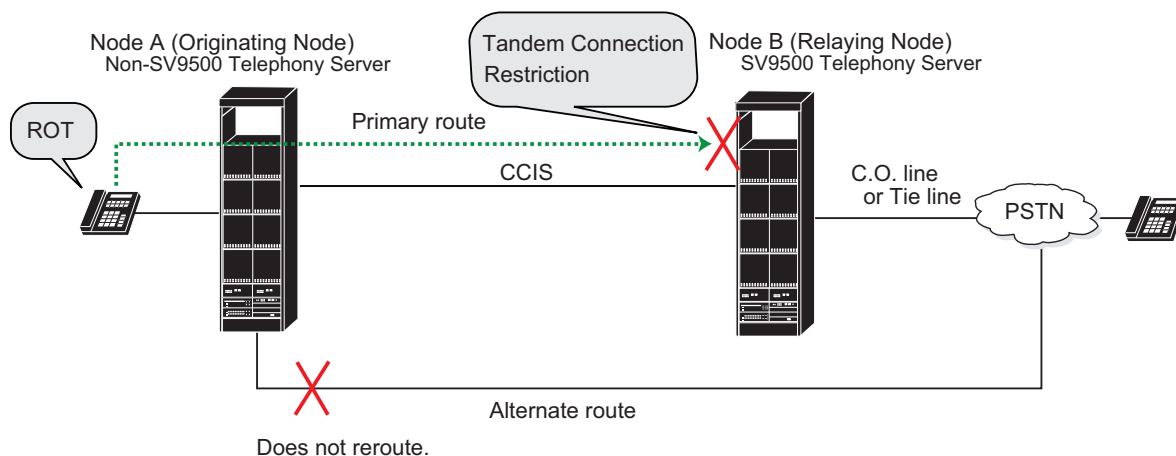
- In a tandem connection, if a failure occurs in the IP network further than a relaying node, detouring behavior depends on System Data set on the relaying node (ASYDL System Data 1 Index 804 Bit 6). When Bit 6=1, the relaying node detours the route by CCIS ALTERNATE ROUTING - BACK-UP [C-178].



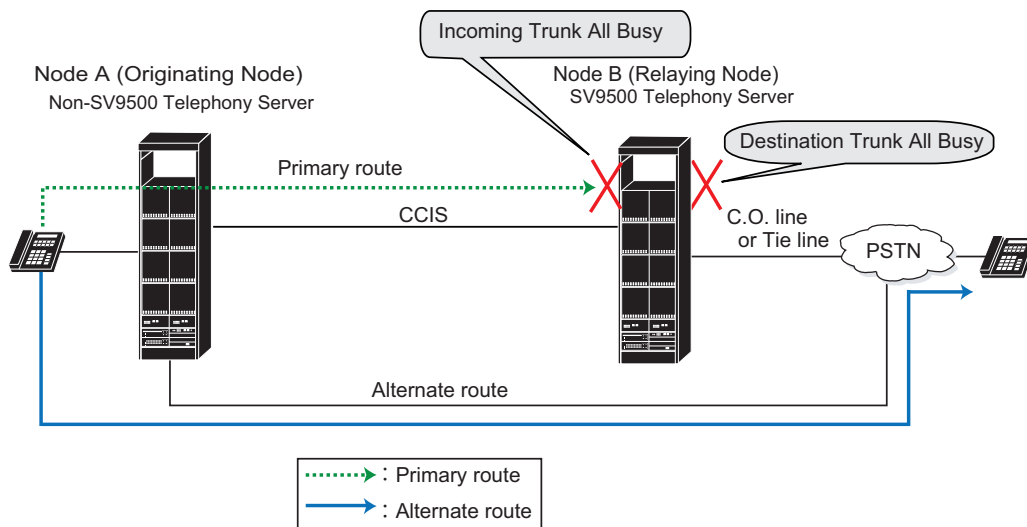
- This feature does not support OAI/ACD related services.

<Hardware/Software>

- Calling from an ISDN terminal is not available.
 - A call originated by a non-IP station cannot take a detour with a PHC trunk when an IPPAD of a source/relaying node is busy. You will hear Busy Tone from the station in this case.
- Tandem connection restriction on the relaying node



- Destination trunk or incoming trunk of the relaying node busy



3. This feature is not available for a PS user roaming in a visited node.

<Interactions with Network Features>

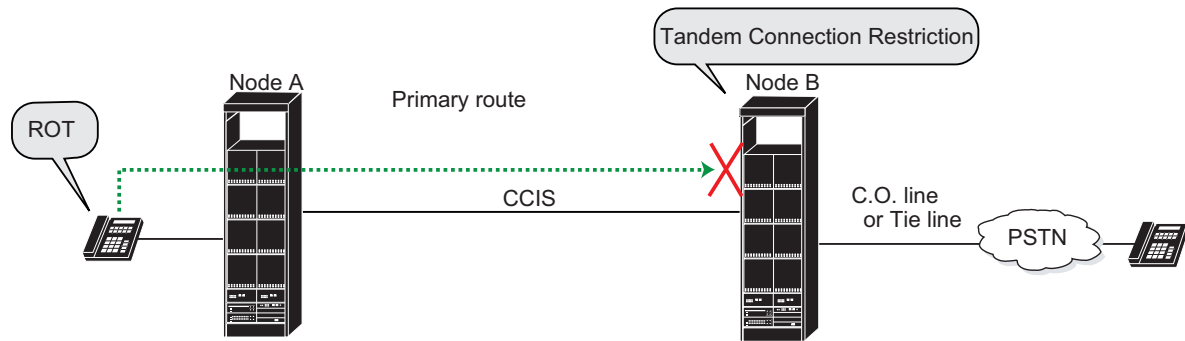
1. Up to seven routes can be specified for alternate routes.

<Conditions Specific to This Feature>

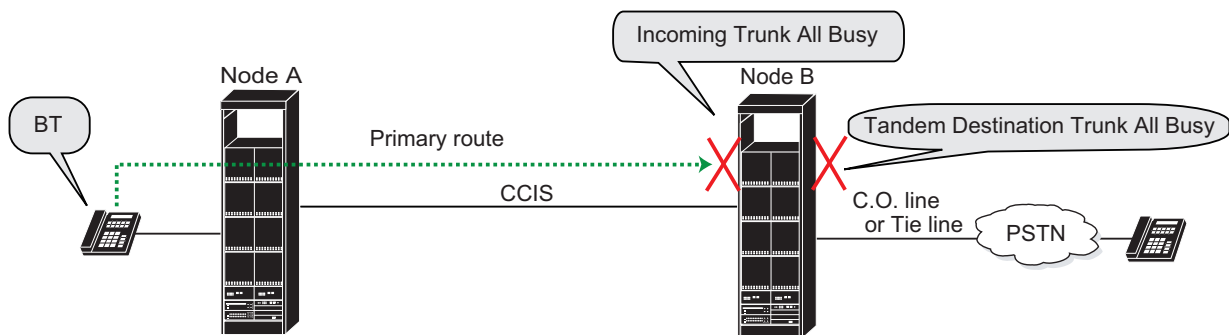
1. System behavior in case where no alternate routes are available:
 - When alternate routes or the destination node are restricted, LCD on the terminal displays “RST,” and you will hear a reorder tone. If the tone is from the counter node, LCD displays nothing.
 - When the destination node is busy, LCD on the terminal displays “BUSY,” and you will hear Busy Tone. If the tone is from the counter node, LCD displays nothing.
 - If the last alternate route is not available for communication due to network failures, LCD on the terminal displays nothing, and you will hear Busy Tone.
2. MFC cannot be used as an alternate route with LOOK AHEAD ROUTING - CCIS [L-25].
3. When the originating node has no alternate route, and if it receives a message announcing tandem connection restriction, destination trunk busy, or incoming trunk busy, a reorder tone or Busy Tone is heard on the originating terminal.

L-25 Look Ahead Routing - CCIS

- When a message announcing tandem connection restriction is sent to an originating node that has no alternate route, the caller will hear a reorder tone.



- When a message announcing destination trunk busy or incoming trunk busy is sent to an originating node that has no alternate route, the caller will hear Busy Tone.



Programming

Refer to LCR/LCRS in Chapter 2 of the Data Programming Manual - Business.

Set the following:

STEP 1: ASYDL/ASYDN (System Data (LDM/NDM))

System Data 1

Index 1144

Bit 3: Look Ahead Routing - CCIS

0/1: In service/Out of service

Bit 7: Look Ahead Routing - CCIS in the event of tandem connection restriction, destination trunk busy, or incoming trunk busy when alternate routing on the originating node is enabled

0/1: In service/Out of service

STEP 2: APIPL/APIPN (Assignment of IP Address Data for Point Code for LDM/NDM)

LOOK AHEAD: Look Ahead (Condition Look Ahead Routing - CCIS on the originating node) [0-3]

0: Busy Enable (Restriction disable)

1: Restriction Enable (Busy disable)

2: Busy/Restriction Enable

3: Busy/Restriction Disable

Note: Perform this step on the relaying node. Set up the data for the Originating Point Code.

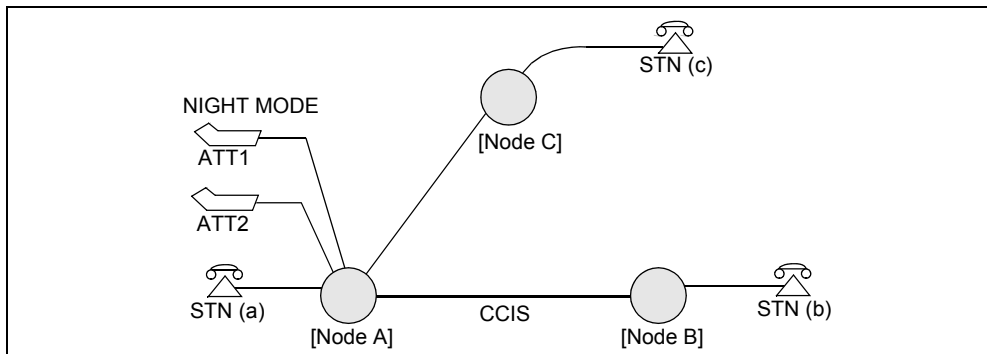
L-29 LDN Night Connection - CCIS

General Description

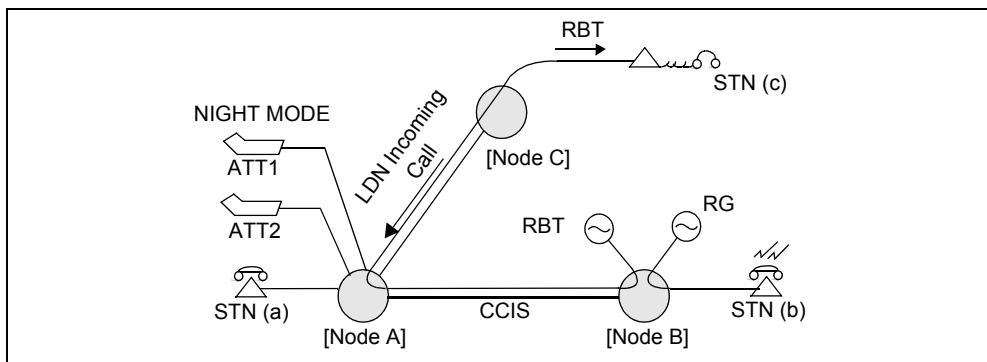
When an LDN Incoming Call arrives from a CCIS Line or other Outside Line while the system is in Night mode, this feature transfers the call to a Transfer Destination Outside Line, including CCIS Lines, assigned for that LDN.

Operating Procedure

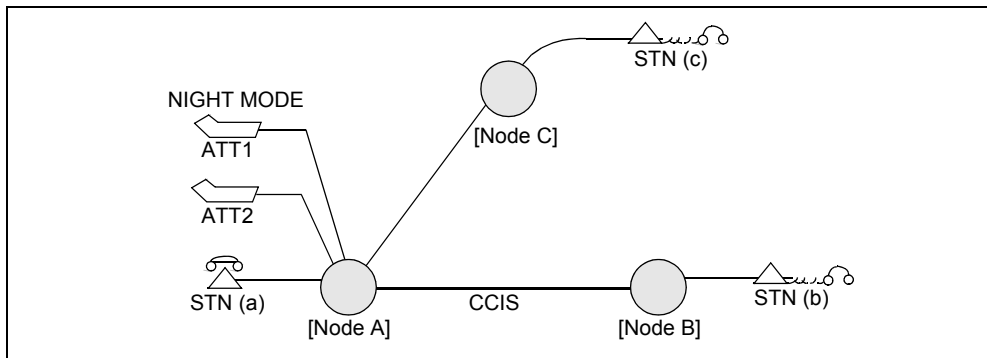
1. Attendants 1 and 2 in Node A set into Night mode using the Night key. The Night Lamp illuminates indicating that Night mode has been set for handling Incoming Calls.



2. Station (C) dials the LDN Number of Attendant Console 1. Station (C) is automatically connected to Night Connection Station (B), preset for Attendant Console 1. Station (C) receives Ringback Tone, and Station (B) is rung.



- Station (B) answers. Stations (B) and (C) are connected with each other. If necessary, the call can be transferred to another Station by means of Call Transfer - All Calls Service.



Service Conditions

- The ranking of this feature within the Night Connection Service is as follows:
 - Night Connection flexible.
 - Night Connection fixed.
 - LDN Night Connection (This service).
 - Night Connection Outside.
 - Trunk Answer from Any Station (TAS) Connection.
 - Busy Tone Connection.
- It is possible to register Individual Transfer Destinations for up to 16 LDNs per Tenant. (Total of 16 LDNs for LDN Night Connection and LDN Night Connection Outside.)
- Valid connections with this feature are shown below:

RECEIVE	SEND			REMARKS
	CCIS	LD	MFC	
CCIS	Available	Available	Not Available	
LD	Available	Available	Not Available	
MFC	Available	Available	Not Available	

- If the Transfer Destination is busy, restricted, etc., the call is routed to Busy Tone or Reorder Tone even when the Transfer Destination is a CCIS Line.
- In the cases listed below, the next-ranked Night Connection Service becomes effective.
 - Data assignment for this feature has not been made for the LDN.
 - Toll Restriction or Connection Control is in effect between the Incoming Route and the Transfer Destination Route.
 - All Trunks/Routes are busy.
 - There is a Link Block Condition.
- When there is no Night Connection Service, the call is routed to Busy Tone.
- If the system changes to night mode during a call termination to the Attendant Console, an LDN Incoming Call will be connected to the Transfer Destination associated with the LDN dialed. If this connection is not possible because of the status of the Transfer Destination, the call is handled by the next-ranked Night Connection Service (Night Connection Outside, TAS etc.), or is queued with the caller hearing Ringback Tone.

8. If the system changes to day mode, Incoming Calls being queued are handled as Attendant Console Incoming Calls.

Programming

When Transfer Destination is Outside Line (less than eight digits).

- STEP 1: **ANPD** - Assign minimum necessary number of digits for the first number of the transfer destination access code.
- STEP 2: **ASPA** - Assign the transfer destination access code.
SRV: "OGC: Outgoing Call", "OGCA: Outgoing Call with route advance", "LCR: Least Cost Routing", or "LCRS: Register Sender LCR"
- STEP 3: **ALDN** - Assign the transfer destination to the LDN.
TN: Tenant Number of Listed Directly Number
LDN: Listed Directly Number
TYPE: Transfer Type: Enter 2.
STN: Station number of transfer destination:
Enter Access Code + Called Number.

When Transfer Destination is Outside Line (more than eight digits).

- STEP 1: **ANPD** - Assign Minimum Necessary Number of Digits for the first number of the Transfer Destination Access Code.
- STEP 2: **ASPA** - Assign the Transfer Destination Access Code.
SRV: "OGC: Outgoing Call", "OGCA: Outgoing Call with route advance", "LCR: Least Cost Routing", or "LCRS: Register Sender LCR"
- STEP 3: **ASPD** - Assign the transfer destination number as Speed Calling Code (Abbreviated Digit Code).
- STEP 4: **ALDN** - Assign the transfer destination to the LDN.
TN: Tenant Number of Listed Directly Number
LDN: Listed Directly Number
TYPE: Transfer Type: Enter 3.
STN: Station number of transfer destination:
Enter Access Code + Called Number.

M-34 Message Reminder - CCIS

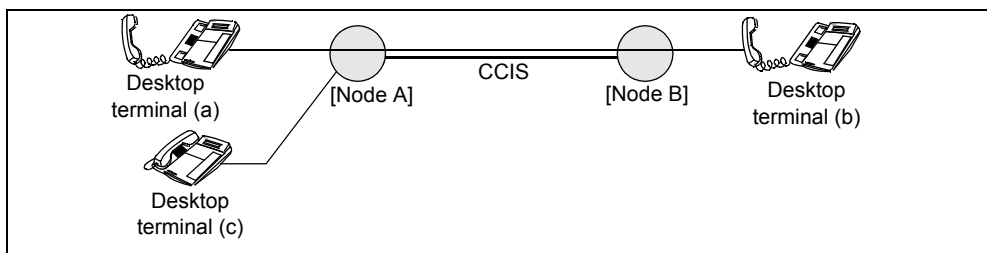
General Description

This feature allows a station to leave a MESSAGE REMINDER at a station in a different Node in the CCIS Network.

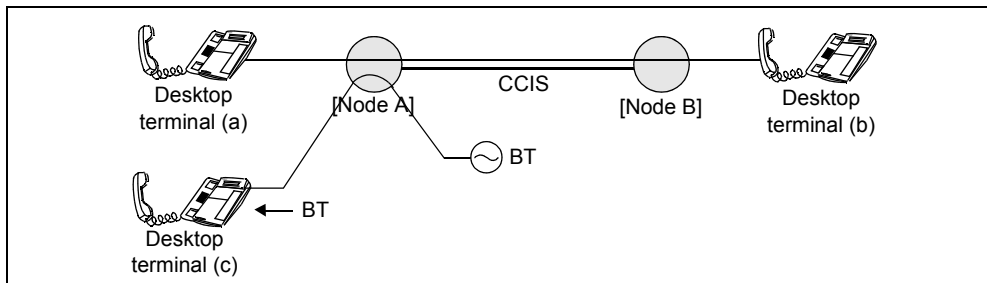
Operating Procedure

To activate MESSAGE REMINDER - CCIS from a Desktop terminal to an idle or busy Desktop terminal:

1. Desktop terminal A and B are engaging in a call.



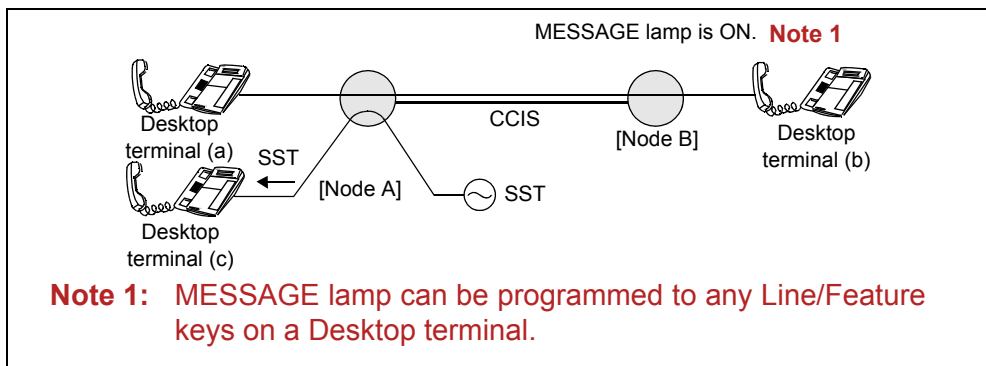
2. Desktop terminal C goes off-hook and dials the number for Desktop terminal B. Receives Busy Tone.



3. Desktop terminal C presses the MSG key and receives Service Set Tone. The LCD displays:

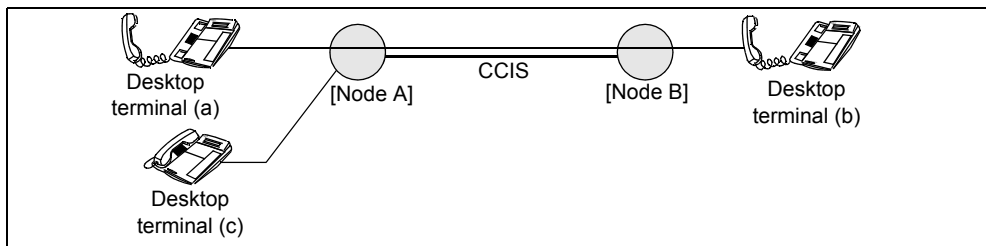
MESSAGE SET (Time Display)	XXXX

4. On the called station, Desktop terminal B, the MESSAGE Lamp illuminates, indicating that the message has been set.

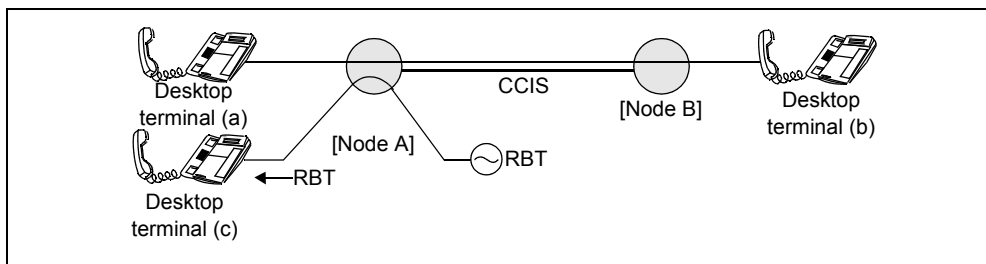


To activate MESSAGE REMINDER - CCIS from a Desktop terminal to an idle or busy Desktop terminal after activating a VOICE CALL:

1. Desktop terminal A and B are engaging in a call.



2. Desktop terminal C goes off-hook and dials the number for Desktop terminal B. Receive Ringback Tone.



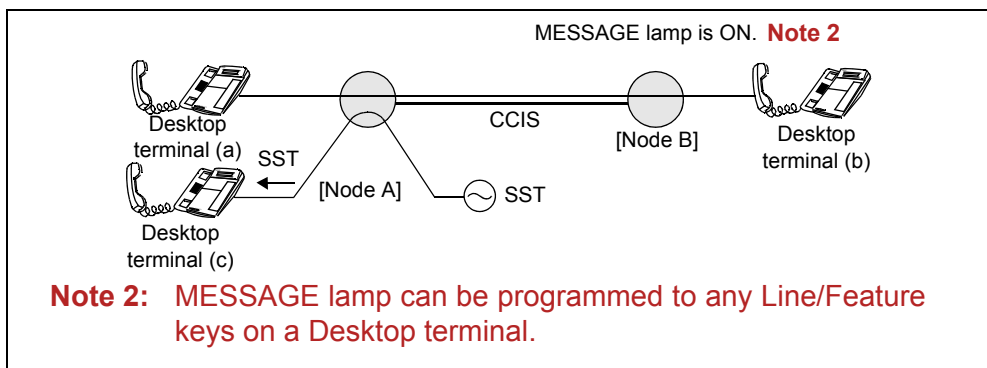
3. Desktop terminal C presses the VOICE CALL [V-2] Feature key. VOICE CALL is activated. The LCD displays:

MESSAGE SET	XXXX
(Time Display)	

4. Desktop terminal C presses the MSG key. Receive Service Set Tone. The LCD displays:

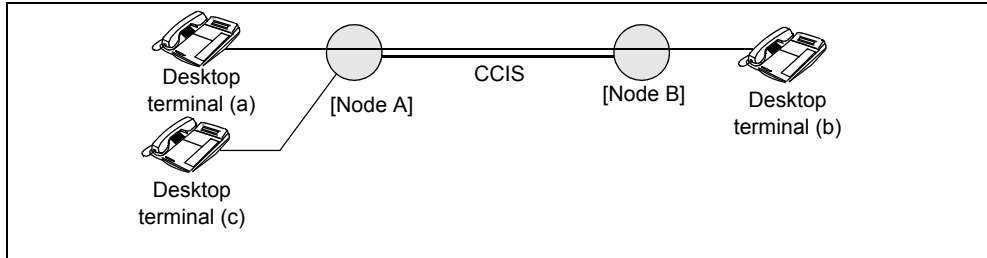


5. On the called station, Desktop terminal B, the MESSAGE LED will light to indicate a message has been left.

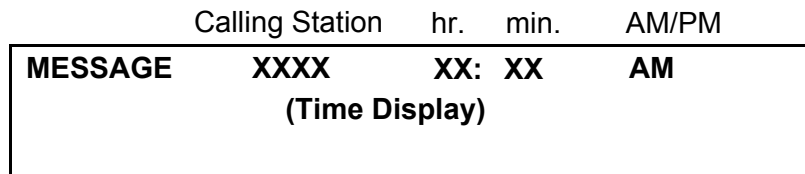


To review the message:

1. Desktop terminal B hangs up.



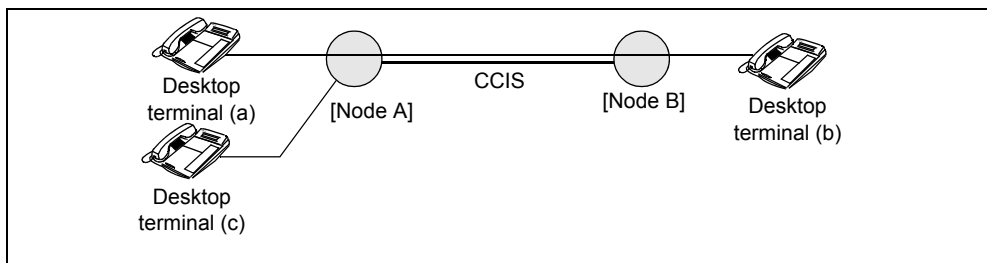
2. Desktop terminal B presses the MSG key while idle. The LCD displays:



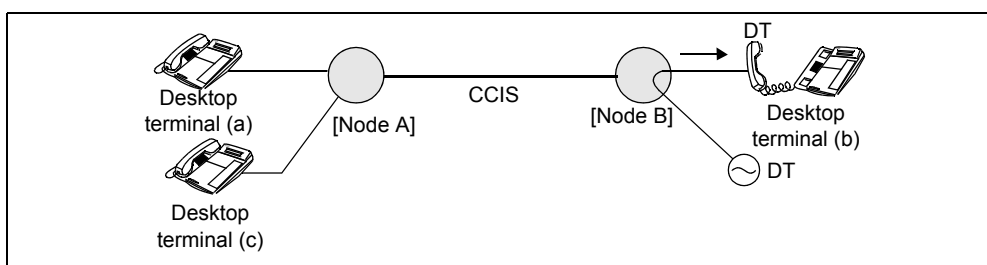
3. Desktop terminal B presses the MSG key successively to review other messages (maximum of four messages in total).

To return the message:

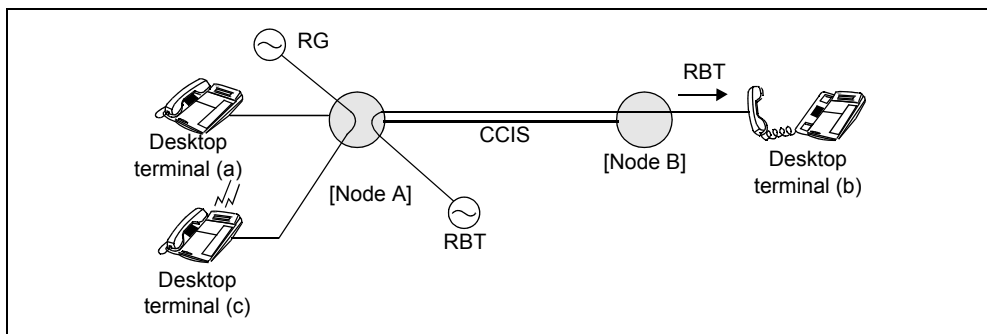
1. Desktop terminal B hangs up.



2. While the desired message is displayed, Desktop terminal B goes off-hook or presses the SPEAKER key. Receive Dial Tone.

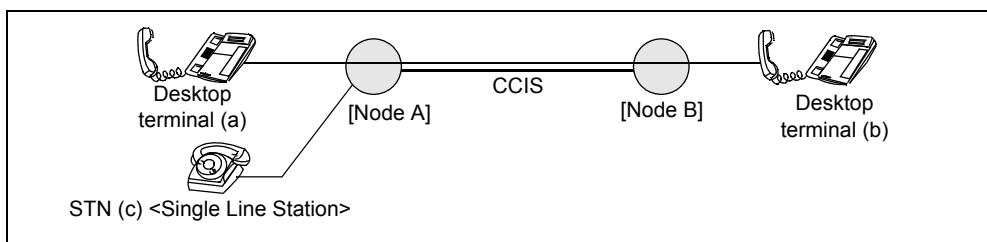


3. Desktop terminal B presses the MSG key. Redial is automatically made to the calling station, Desktop terminal C, and Desktop terminal C rings. If any other message is not returned, the MESSAGE LED will still be lit.

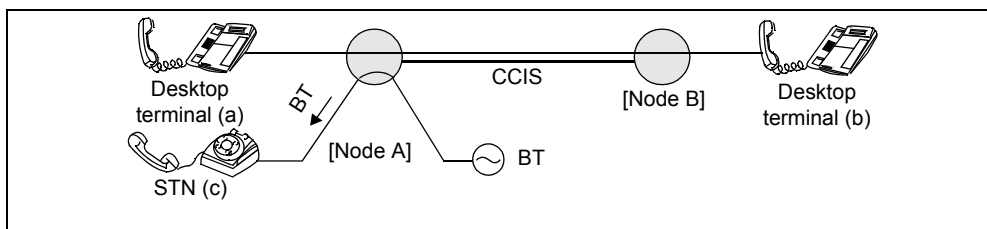


To activate MESSAGE REMINDER - CCIS from a Single Line Station to an idle or busy Desktop terminal:

1. Desktop terminals A and B are engaging in a call.



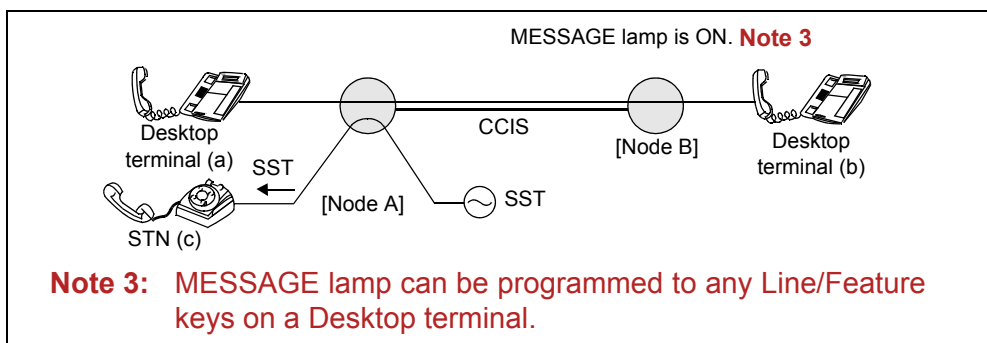
2. Station C goes off-hook and dials the number for Desktop terminal B. Receives Busy Tone.



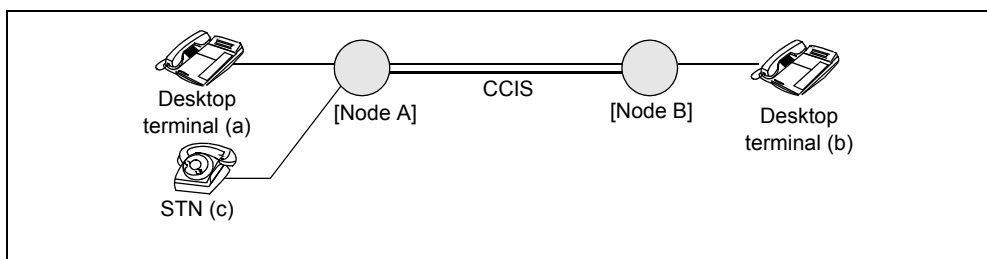
3. Station C switch hook flashes. Receives Special Dial Tone.

Note: The availability of Special Dial Tone is changed depending on the combination of the Step Call - CCIS Restriction (ASYD: Sys 2, Index 6, Bit 2) and SHF method (ASYD: Sys 1, Index 68, Bit 0). Refer to Step Call - CCIS [S-59] for the detail.

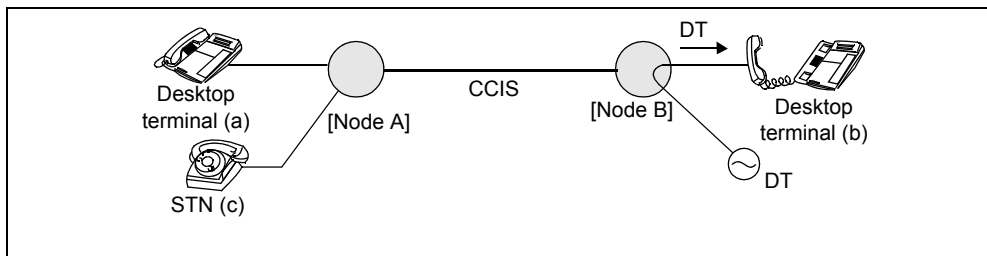
4. Station C dials the MESSAGE REMINDER Access Code. Receives Service Set Tone. The MESSAGE Lamp on Desktop terminal B illuminates, indicating that the message has been set.



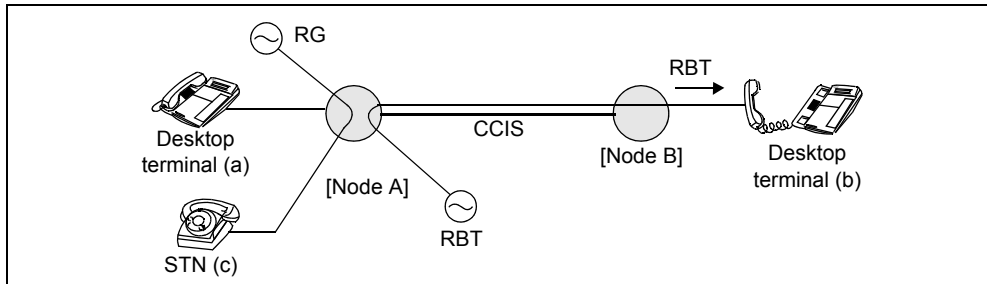
5. Desktop terminal B hangs up.



6. While the Message Lamp illuminates, Desktop terminal B goes off-hook or presses the SPEAKER key and receives Dial Tone.



7. Desktop terminal B presses the MSG key and receives Ringback Tone. Redial is automatically made to Station C and Station C rings.



Service Conditions

MESSAGE REMINDER - CCIS from a Desktop terminal to an idle or busy Desktop terminal

1. This feature is only available between two Desktop terminals that both have the MESSAGE Feature key. If a message is directed to a Single Line or a Desktop terminal that does not have the MESSAGE REMINDER feature, the calling station's LCD displays:

MESSAGE REST
(Time Display)

2. Messages cannot be sent while engaged in calling or recall from CALL TRANSFER - ALL CALLS [C-11] [C-50] or from CONSULTATION HOLD - ALL CALLS [C-17] [C-58].
3. A maximum of four messages may be received at any one Desktop terminal. If the fifth message is terminates, the LCD of the Station setting Message Reminder displays:

MESSAGE BUSY
(Time Display)

4. Messages can only be displayed when the Desktop terminal is idle.
5. A message may be cleared by pressing the MSG key on the Desktop terminal and pressing the "*" or "#" key on the keypad. ("*" or "#" key is selected via ASYD - System Data 1, Index 80, Bit 1)
6. A message is automatically cleared when it is returned using the MSG key.
7. Once a message has been sent, it cannot be cleared by the Sender.
8. After the first message, all subsequent messages sent by the same Station are regarded as individual messages.
9. When a user sets MESSAGE REMINDER - CCIS to the Station setting CALL FORWARDING - ALL CALLS [C-5] [C-45], BUSY LINE [C-2] [C-46] while hearing Ringback Tone, MESSAGE REMINDER is set to the dialed Station (not the Forwarding Destination).
10. If the Called Desktop terminal answers the call while the calling station is dialing the MESSAGE REMINDER - CCIS Access Code, the calling and called stations will be connected.
11. Messages can be sent only if the called station is in the idle, busy, or VOICE CALL [V-2] condition.

12. When this service is restricted and the calling station receives Busy Tone, the calling station can activate busy services.
13. This service is available when the calling station receives Busy Tone upon encountering all Trunks busy.
14. When using this feature through the CCIS network, the number of digits to be delivered to the network must be eight or less. If the number of digits is nine or more, this feature does not work.

MESSAGE REMINDER - CCIS from a Single Line Station to an idle or busy Desktop terminal

1. A message can be sent out only when the called station is either idle or busy.
2. A message can be sent out during ringing, recall from CALL TRANSFER - ALL CALLS [C-11] [C-50], or recall from CONSULTATION HOLD - ALL CALLS [C-17] [C-58].
3. A maximum of four messages can be received at one Desktop terminal. If the fifth message terminates, the LCD of the Station setting Message Reminder displays:

MESSAGE BUSY

4. A message is displayed only when the handset is resting on the switch hook.
5. To clear the message, display the message and press “# or *” on the keypad. (ASYD - System Data 1, Index 80, Bit 1)
6. If the MSG key is reset, the message is cleared.
7. A message cannot be cleared by the Message Sender.
8. If the second message is sent out from the same Desktop terminal, it is recorded as the second unique message.
9. If CALL TRANSFER - ALL CALLS [C-11] [C-50] Feature is set, a message is also transferred to the designated Transfer Destination.
10. Messages are recorded on any Desktop terminal on which the Feature key has been programmed as MESSAGE REMINDER Feature key.
11. When using this feature through the CCIS network, the number of digits to be delivered to the network must be eight or less. If the number of digits is nine or more, this feature will not work.

Interactions

If CALL WAITING-ORIGINATING [C-31] automatic operation is in service between two Desktop terminals, it will supersede MESSAGE REMINDER sending a message from Desktop terminal. If a third station calls and receives Busy Tone, MESSAGE REMINDER sending a message from Desktop terminal can be set.

Programming**Setting by MSG key (Desktop terminal)**

- STEP 1: **ASYD** - System Data 1, Index 80, Bit 1. Message Reminder Feature key used for Message Deletion (Desktop terminal)
0/1: # Key / * Key
- STEP 2: **AKYD** - Assign the Station according to the following parameters:
- TN: 1
STN: Station Number
TP: Type of Desktop terminal (0-3)
KYN: Key Number (1 - 40) For the four-button Desktop terminal, use keys 13-16 only.
KYI: Service Index
0: Key Not Used
-

—> 1: Feature Key

2: Multi Line Key

KD: Not assigned for Feature Key

FKY: Feature Key Number

6 (Message Reminder)

14 (Voice Call)

RG: Ringing Assignment per Multi Line Appearance

0: No Ringing.

1: Ringing in Night mode only.

2: Ringing in Night mode only.

3: Not Used

4: Ringing in Day and Night Mode - 30 second delay.

5: Ringing in Day and Night Mode - 20 second delay.

6: Ringing in Day and Night Mode - 10 second delay.

7: Ringing in Day and Night Mode.

STEP 3: **ASFC** - With respect to SFC of the Stations that sets Message Reminder Service, cancel the restriction of SFI 53. (Message Reminder Service) **Note 4**

Note 4: Desktop terminals with a MESSAGE REMINDER Feature key do not require the Service Feature Restriction Class assignment. Only Single Line sets require the ASFC assignment.

Setting by SHF + Access Code (Single Line Sets)

STEP 1: **ASYD** - System Data 1, Index 17, Bit 0. Is SHF and Access Code Service allowed? 0/1: No/Yes. For MESSAGE REMINDER from a Single Line set.

STEP 2: **ANPD** - Reserve a Number Level for Service Feature Access. Select Normal Service (N), Hooking Service (H), or Busy Service (B) from the combo box for Connection Indexes. Assign NND in accordance with a predetermined Numbering Plan.

STEP 3: **ASPA** - Assign an Access Code to MESSAGE REMINDER. Assign SRV = "SSCA: Service Code Appendix", SIDA = 42. Assign a Connection Index of "N: Normal" and "B: Busy".

STEP 4: **ASFC** - Assign to the Single Line Stations that will have MESSAGE REMINDER a Service Feature Restriction Class that allows SFI 53.

M-35 Message Waiting Lamp Setting - Attendant - CCIS

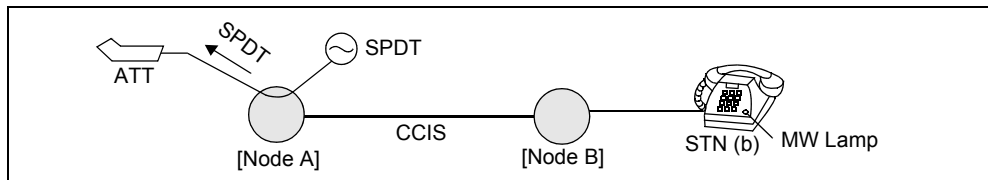
General Description

This feature allows the MESSAGE WAITING (MW) Lamp on the Desktop terminal or Telephone Set, equipped with Message Waiting Lamp accommodated in the Satellite Offices, to be controlled from the Attendant Console in the CCIS Network.

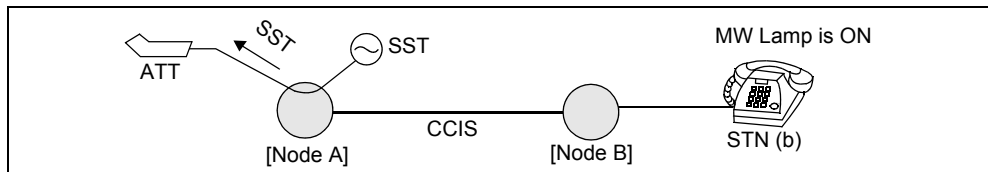
Operating Procedure

To set Message Waiting Indication:

1. The Attendant in Node A presses an Idle Loop key.
2. The Attendant enters the Message Waiting set code (maximum of three digits). Receives Special Dial Tone.



3. The Attendant dials Station (B), which is equipped with an Message Waiting Lamp. The Attendant receives Service Set Tone. The Message Waiting Lamp on Station B illuminates.



4. The Attendant presses the RELEASE key and returns to an idle state.

To cancel Message Waiting Indication:

1. The Attendant presses an Idle Loop key, then enters the Message Waiting Cancel Code (maximum three digits). Receives Special Dial Tone.
2. The Attendant dials Station B, which is equipped with an Message Waiting Lamp. The Attendant receives Service Set Tone. The Message Waiting Lamp on Station B goes out.
3. The Attendant presses the RELEASE key and returns to an idle state.

Service Conditions

1. The Message Waiting Lamp on a Desktop terminal or Single Line Telephone will be lit when this feature is activated.
2. Message Waiting cannot be set when the Attendant is in a consultation condition with a Station or Trunk.
3. An Attendant attempting to set Message Waiting to a Station where Message Waiting has previously been set, will receive Busy Tone.
4. In a MULTIPLE CONSOLE OPERATION [M-4], if Message Waiting is set by one ATTENDANT CONSOLE [A-3], it can be cancelled by another.

Programming

- STEP 1: **ANPD** - Assign Minimum Necessary Number of Digits for the first number of the Access Code and Connection Index for Message Waiting service.
- STEP 2: **ASPA** - Assign the Access Code and Connection Index for Message Waiting Service.
To Set: CI = "N: Normal", SRV = "SSCA: Service Code Appendix", SIDA = 54
To Cancel: CI = "N: Normal", SRV = "SSCA: Service Code Appendix", SIDA = 55
- STEP 3: **ASFC** - Allow Message Waiting Lamp Control (SFI 74) to the SFC of the Station.

M-36 Message Waiting Lamp Setting - Station - CCIS

General Description

This feature allows any Desktop terminal or Single Line Telephone to set/cancel a MESSAGE WAITING Indication or lamp at any other Station equipped with this feature in the CCIS Network.

Operating Procedure

To set Single line Telephone

- a.) Lift the handset. Receive Dial Tone.
- b.) Dial the MESSAGE WAITING LAMP SETTING (SET) Access Code (up to three digits). Receive Special Dial Tone.
- c.) Dial the desired Telephone Number. Receive Service Set Tone.
- d.) MESSAGE WAITING indication is set.

To cancel Single line Telephone

- a.) Lift the handset. Receive Dial Tone.
- b.) Dial the MESSAGE WAITING LAMP SETTING (CANCEL) Access Code (up to three digits). Receive Special Dial Tone.
- c.) Dial the desired telephone number. Receive Service Set Tone.
- d.) MESSAGE WAITING indication is cancelled.

To set from a Desktop terminal

- a.) Lift the handset or press the SPEAKER key. Receive Dial Tone.
- b.) Press the MESSAGE WAITING LAMP SETTING (SET) Feature key. Receive Special Dial Tone.
- c.) Dial the desired Telephone Number. Receive Service Set Tone.
- d.) MESSAGE WAITING indication is set.

To cancel from a Desktop terminal

- a.) Lift the handset or press the SPEAKER key. Receive Dial Tone.
- b.) Press the MESSAGE WAITING LAMP SETTING (CANCEL) Feature key. Receive Special Dial Tone.
- c.) Dial the desired Telephone Number. Receive Service Set Tone.
- d.) MESSAGE WAITING indication is cancelled.

Service Conditions

1. Single Line Telephones must be equipped with a 90-volt neon light for MESSAGE WAITING indication.
2. An external + 80-volt Booster Power Unit is required at each Node for lighting Single Line Telephones.
3. 16LC card can be used to for stutter Dial Tone instead of Message Waiting Lamp Indication.
4. The MESSAGE WAITING Lamp on a Single Line Telephone and eight-button Desktop terminal lights when MESSAGE WAITING LAMP SETTING - STATION - CCIS is activated.
5. When MESSAGE WAITING LAMP SETTING - STATION - CCIS is set to a Desktop terminal, the display is:



This display appears in place of the time display.

6. If a user attempts to set MESSAGE WAITING to a Station where MESSAGE WAITING has already been set, Busy Tone will be sent to the Station, and the Desktop terminal will display:

(Time Display)	MW BUSY

7. When a Station is restricted from MESSAGE WAITING LAMP SETTING - STATION - CCIS or is an unused Telephone Number, and another user attempts to set/cancel MESSAGE WAITING LAMP SETTING - STATION - CCIS, the Calling Station will hear Reorder Tone. A Desktop terminal will display:

(Time Display)	MW REST

8. When a Desktop terminal user presses the MESSAGE WAITING LAMP SETTING Feature key, the display will indicate:

(Time Display)	MW SET

9. When a Desktop terminal user presses the MESSAGE WAITING LAMP SETTING cancel Feature key, the display will indicate:

(Time Display)	MW CANCEL

Interactions

An external power source is required to light a lamp for a Single Line Telephone.

Programming

- STEP 1: **ANPD** - Reserve a Number Level for Feature Access and Cancel. Select Normal Service (N), Hooking Service (H), or Busy Service (B) from the combo box for Connection Indexes. Assign NND in accordance with a predetermined Numbering Plan.
- STEP 2: **ASPA** - Assign an Access Code to MESSAGE WAITING LAMP SETTING activate SRV = "SSCA: Service Code Appendix", SIDA = 54 and to MESSAGE WAITING LAMP SETTING extinguish SRV = "SSCA: Service Code Appendix", SIDA = 55. Assign Connection Status Index (CI) for "N: Normal".
- STEP 3: **ASFC** - Assign a Service Feature Restriction Class that allows SFI 74 to the Stations that will receive the feature MESSAGE WAITING LAMP SETTING. Assign a Service Feature Restriction Class that allows SFI 82 to Stations that set the feature MESSAGE WAITING - CCIS.
- STEP 4: **AKYD** - Assign Feature key Boss - Secretary Msg. Wait Set [9] to set Message Waiting. Assign Feature key Boss - Secretary Msg. Wait Cancel [11] to cancel Message Waiting.

M-37 Miscellaneous Trunk Access - CCIS

General Description

This feature provides access through the CCIS Network to all types of external and customer provided equipment/facilities, such as TIE LINE ACCESS [T-3], as well as DICTATION ACCESS [D-3], PAGING ACCESS - CCIS, and CODE CALLING ACCESS [C-21].

Operating Procedure

MISCELLANEOUS TRUNK ACCESS - CCIS is programmed in System Data via PCPro.

Service Conditions

1. Access to these Trunk Routes is allowed or denied in CLASS OF SERVICE - INDIVIDUAL [C-15] programming.
2. An Interface Circuit must be provided for each Trunk.

Interactions

If other services such as STATION MESSAGE DETAIL RECORDING (SMDR) [S-10], TOLL RESTRICTION - CCIS T-26 on page 1416, and/or LEAST - COST ROUTING-3/6 DIGIT [L-15] are being used, refer to these feature descriptions, as these services may require programming steps not listed.

Programming

STEP 1: **ARTD** - Refer to the feature listing for the type of Trunk Route to be accessed.

Note: To change the data for existing route (RT), initialize the circuit card.

STEP 2: **ATRK** - Assign the LENS, Route Number, Trunk Number, and Tenant Number.

STEP 3: **MBTK** - Assign the Make Idle status to the Trunks.

STEP 4: **ANPD** - Assign a level for Trunk Access. Select Normal Service (N) or Hooking Service (H) from the combo box for Connection Indexes. Number of Necessary Digits is assigned according to a predetermined Numbering Plan. Busy Lamp Field is not activated.

STEP 5: **ASPA** - Assign the Access Code as in the level assigned in ANPD above. Kind of Service, SRV = "LCR: Least Cost Routing".

STEP 6: **ARSC** - Assign a Route Restriction Class (RSC) that is allowed in Route Restriction Index (RRI) 0, 1, 2 and 3 to the Station that is allowed access to these Trunks.

STEP 7: **ASDT** - Assign an RSC that allows access to these Trunks to the Stations.

STEP 8: **AFRS, AOPR** - Assign for Flexible Routing LEAST COST ROUTING - 3/6-DIGIT (LCR).

M-38 Miscellaneous Trunk Restriction - CCIS

General Description

This feature allows certain Stations and dial-repeating TIE Line Trunks to be denied access through CCIS to certain Trunk Routes, such as TIE LINE ACCESS [T-3], as well as the Exchange Network, DICTATION ACCESS [D-3], or PAGING ACCESS - CCIS [P-28].

Operating Procedure

No manual operation is required. Restricted Stations will receive Reorder Tone.

Service Conditions

1. Restricted Call Attempts can be either:
 - a.) intercepted by the Attendant.
 - b.) Reorder Tone can be sent to the originating user.
2. Access to a particular Trunk Route is allowed or denied by a Station's Route Restriction Class (RSC). A maximum of 15 RSCs can be assigned per Tenant. Each RSC can restrict a Station from any number of Trunk Routes, to a maximum of 255 Trunk Routes.
3. This feature can be assigned to Stations or dial-repeating TIE Trunks via CLASS OF SERVICE - INDIVIDUAL [C-15] restrictions.
4. If a Station's CLASS OF SERVICE - INDIVIDUAL [C-15] allows Outgoing Calls via the Attendant Console, the station user can dial "0" for Attendant-assisted Trunk Calls.
5. MISCELLANEOUS TRUNK RESTRICTION - CCIS can change for a particular Station when the system is in the Night mode.
6. If a restricted station user calls another Station, the Called Station cannot use CALL TRANSFER - ALL CALLS [C-11, C-50] to connect the Calling Station to a Trunk Route from which it is restricted.
7. If a user accesses a TIE Trunk to a distant System, access to outside exchanges can only be controlled by the distant System.

Interactions

If other services such as STATION MESSAGE DETAIL RECORDING (SMDR) [S-10], TOLL RESTRICTION-3/6 DIGIT - CCIS T-26 on page 350, and/or LEAST - COST ROUTING - 3/6 DIGIT [L-5] are being used, refer to these feature descriptions for commands that may be required and are not listed.

Programming

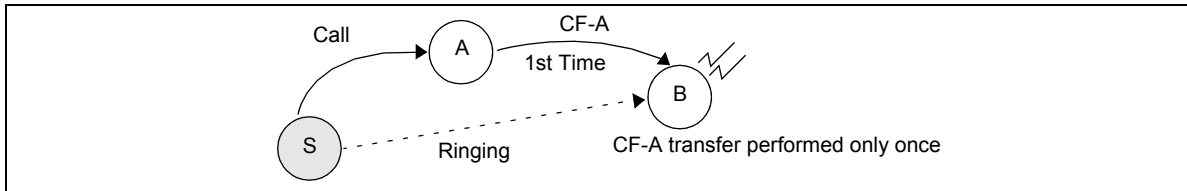
- STEP 1: **ASYD** - System Data 2, Index 1, Bits 4 and 5. Should a restricted Station be routed to the Attendant Console or receive Reorder Tone?
Reorder Tone: Bit 4 = 0, Bit 5 = 0.
Attendant Console: Bit 4 = 1, Bit 5 = 0.
- STEP 2: Follow the procedure for MISCELLANEOUS TRUNK ACCESS [M-2]. Assign ARSC to restrict RSCs from receiving certain Routes. Then assign the restricted RSCs to Stations via ASDT or ASCL. When assigning the ARRC, restrict Incoming TIE Lines from accessing certain Routes.

M-40 Multiple Call Forwarding - All Calls - CCIS

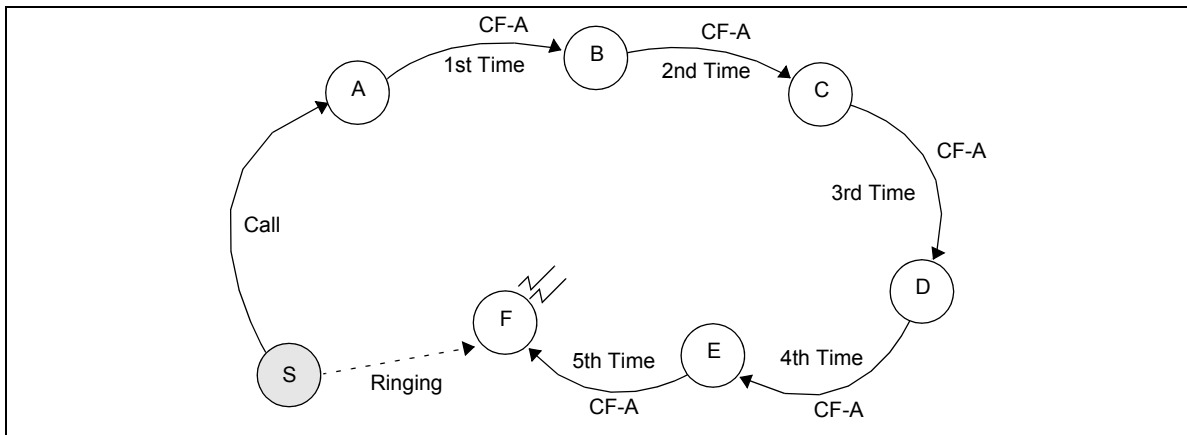
General Description

This feature permits all calls destined for a particular Station in a CCIS Network to be routed to another Station or to the Attendant multiple times, regardless of the busy or idle status of the Called Station.

1. With CALL FORWARDING - ALL CALLS [C-5] (CF-A):



2. With MULTIPLE CALL FORWARDING - ALL CALLS [M-44] Service:



Operating Procedure

1. Station A is set for Call Forwarding - All Calls to Station B. Station B is set for Call Forwarding - All Calls to Station C. Station C is set for Call Forwarding - All Calls to Station D.
2. When a call is directed to Station A, it is forwarded first to Station B, then to Station C, and then to Station D. The Calling Party receives Ringback Tone and ringing starts at Station D.
3. Station D lifts the handset to answer and is connected to the Calling Party.

Service Conditions

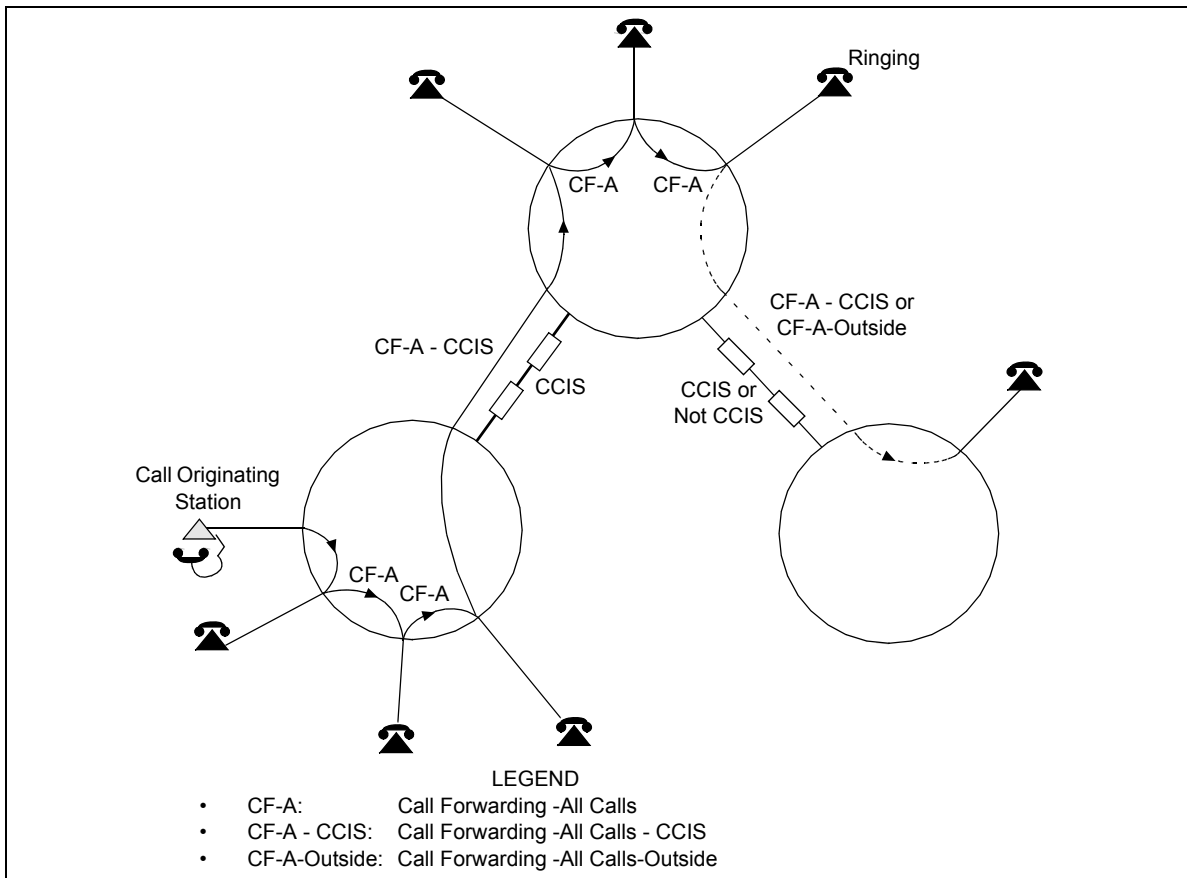
1. The Service Conditions within the Node comply with those of MULTIPLE CALL FORWARDING - ALL CALLS [M-44].
2. A call can be forwarded by CALL FORWARDING a maximum of one time between Nodes in a CCIS Network.
3. When CALL FORWARDING is performed in a CCIS Network, the following services are not available at a Forwarded-to Station:

CALL FORWARDING - ALL CALLS - OUTSIDE [C-28]

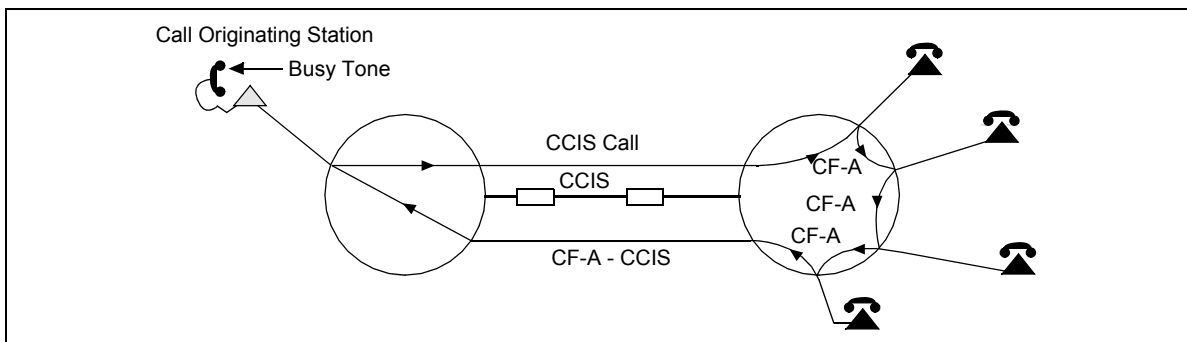
CALL FORWARDING - BUSY LINE - OUTSIDE [C-60]

CALL FORWARDING - DON'T ANSWER - OUTSIDE

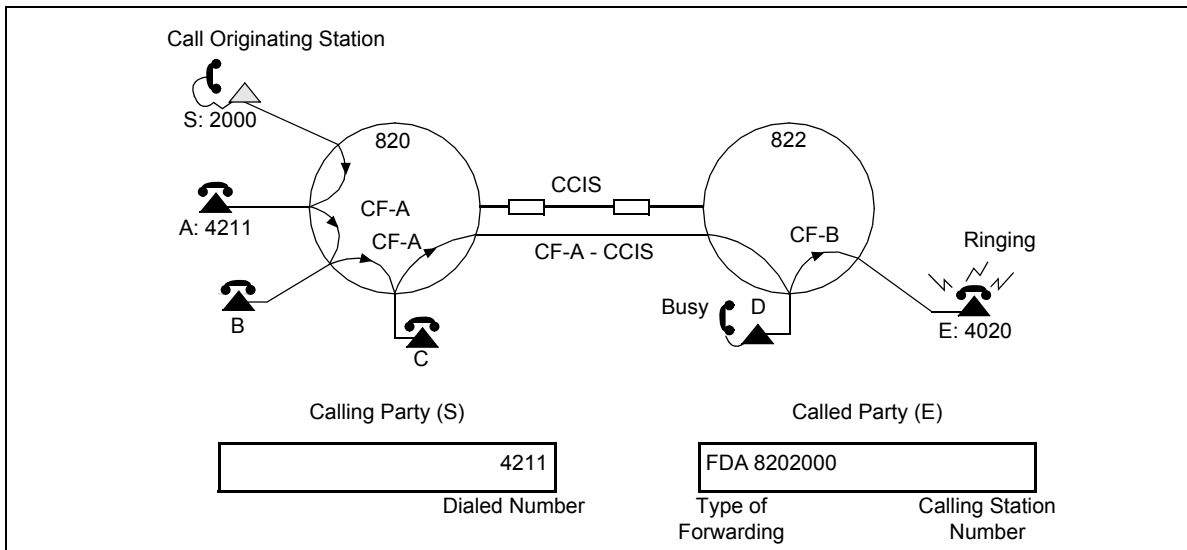
[C-74]



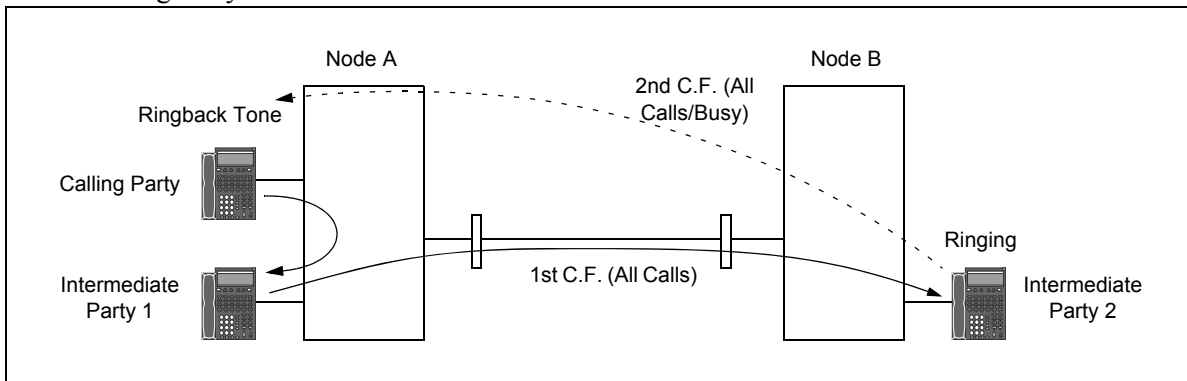
4. When a call is forwarded to the Calling Party by CALL FORWARDING - ALL CALLS - CCIS [M-40], the Calling Party hears a Busy Tone.



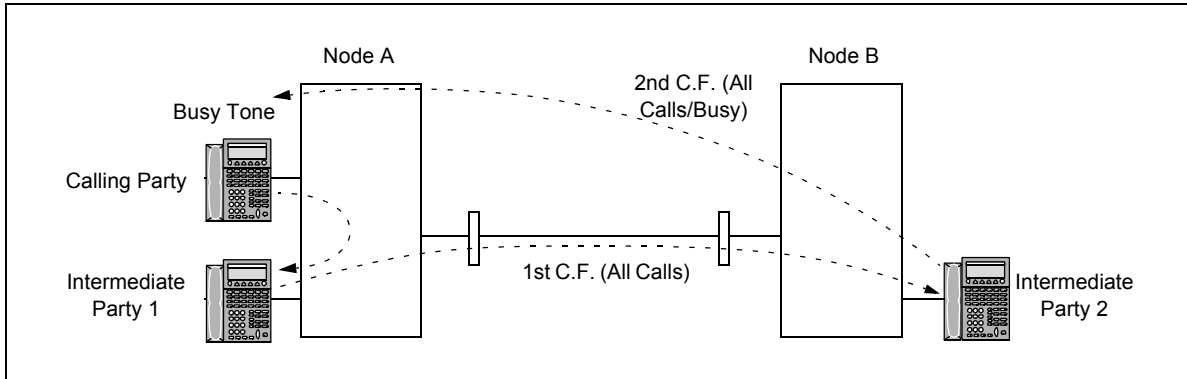
5. SERVICE DISPLAY - CCIS [S-53] is available at the Terminating Node. The type of forwarding to be displayed is CALL FORWARDING - ALL CALLS.



6. When a call is terminated to an ATTENDANT CONSOLE [A-3] by MULTIPLE CALL FORWARDING - ALL CALLS - CCIS [M-40], the call type is ATND.
7. The System Data (ASYD, System Data 1, Index 486, Bit 0-2) decides the maximum number of times for activating a Call Forwarding Service between Nodes through CCIS. The number of times is selected in the range of one time to seven times (ASYD, System Data 1, Index 486, Bit 0-2 = 0 means the enhanced feature is not available).
8. The number of times for activating this service between CCIS Nodes is decided by System Data programmed at the Node that has the Station operating the first Call Forwarding service through CCIS. However, when the Node that accommodates the Station operating the service first has not been programmed, the number of times is decided at the Node that accommodates the destination of the first Call Forwarding - CCIS Service.
9. When Multiple Call Forwarding - CCIS is activated and the last Intermediate Party forwards (returns) the call to the first Calling Party, the Calling Party may hear either Ringback Tone or Busy Tone. The Calling Party hears Ringback Tone when the Forwarding Destination Number, assigned to the last Intermediate Party (Intermediate Party 2 in the example below), and the Calling Party Number sent from the Calling Party are identical.

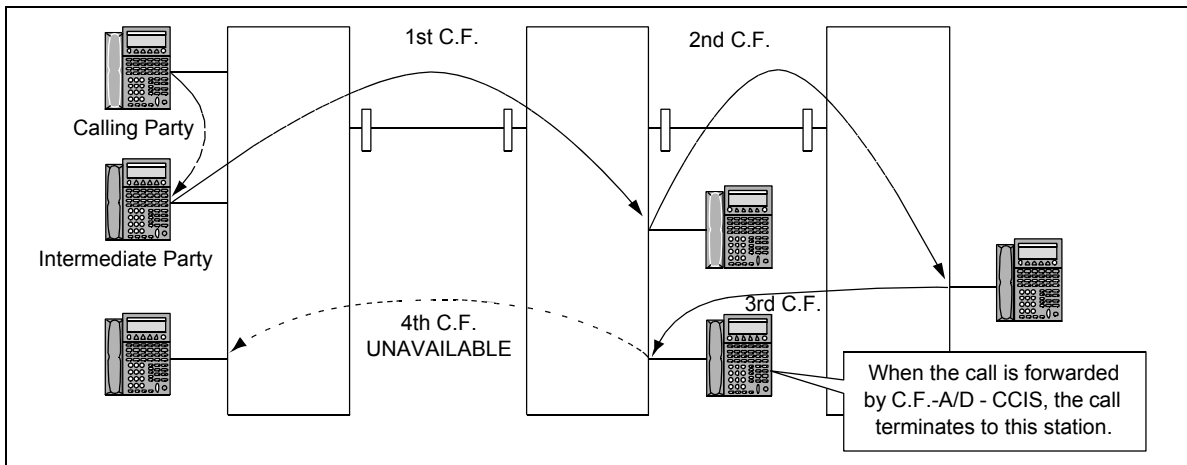


The Calling Party hears Busy Tone when the Forwarding Destination Number, assigned to the last Intermediate Party (Intermediate Party 2 in the example below), and the Calling Party Number sent from the Calling Party are not identical.

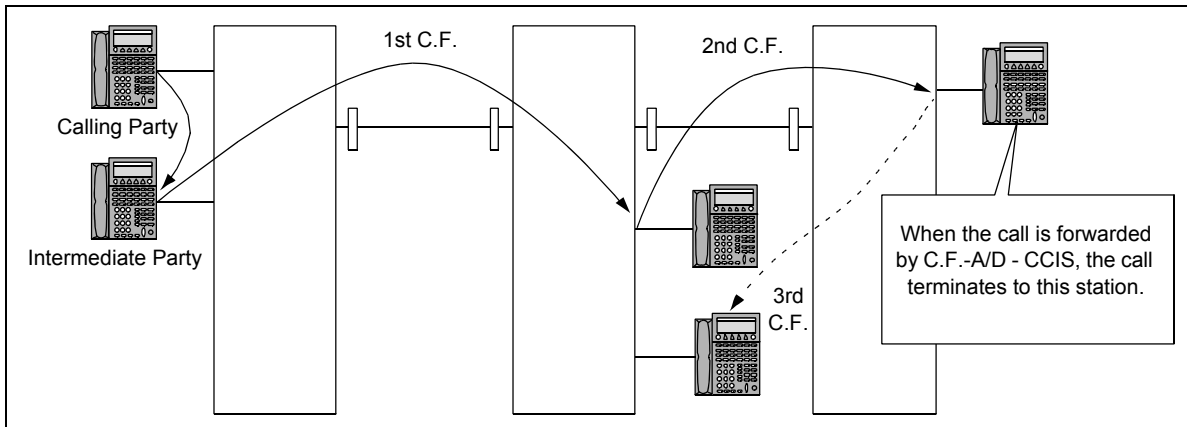


10. When Call Forwarding is restricted because the number of times data or the Service Restriction Data, the call is terminated to the Station that is restricted Multiple Call Forwarding - CCIS service.

Example 1: MULTIPLE C.F. - CCIS is restricted because the service has already been activated the preassigned maximum number of times. A maximum of three times is available for Call Forwarding through CCIS.



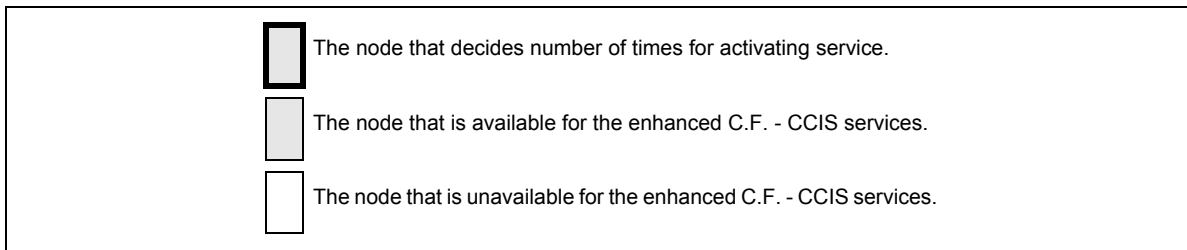
Example 2: Multiple Call Forwarding - CCIS Service is restricted because the service is not effective at the Node.



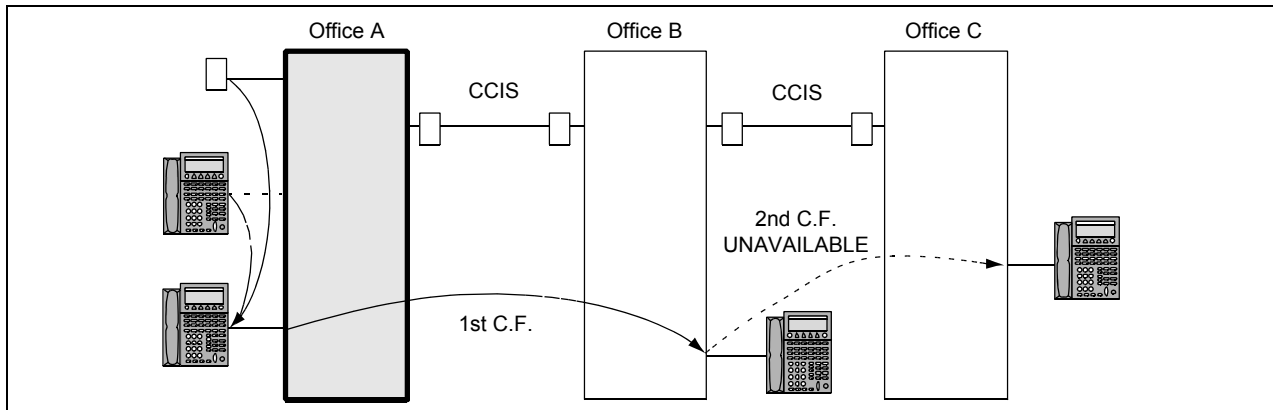
11. The following services set to the Forwarded Destination are not available with Multiple Call Forwarding - CCIS Services, except when the services below are activated through CCIS:

CALL FORWARDING - ALL CALLS - OUTSIDE	[C-28]
CALL FORWARDING - BUSY LINE - OUTSIDE	[C-60]
CALL FORWARDING - DON'T ANSWER - OUTSIDE	[C-74]
12. The following services are activated within one Node. The maximum number of times for activating this feature is as follows:

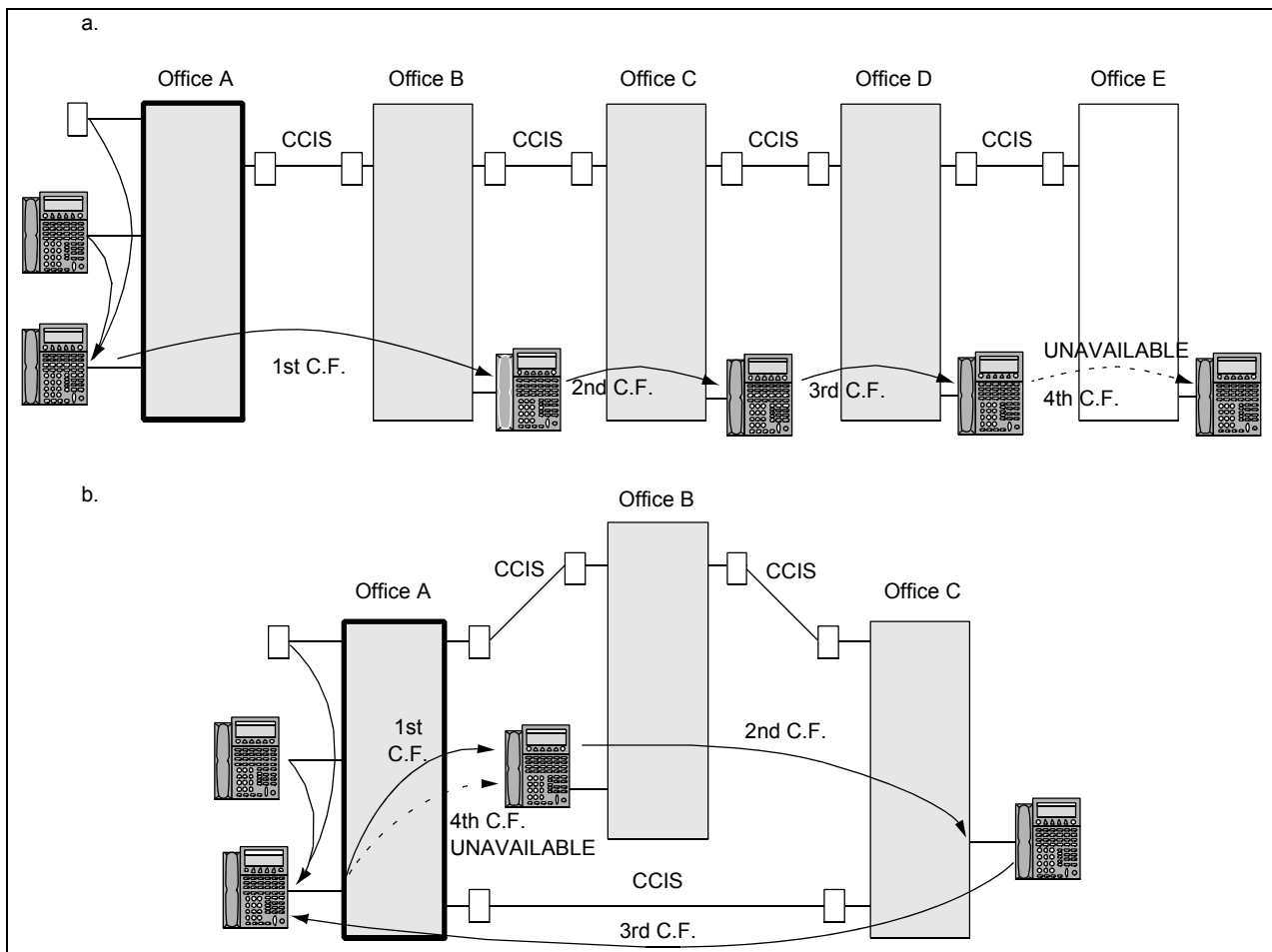
MULTIPLE CALL FORWARDING - ALL CALLS [M-44]:	five times
MULTIPLE CALL FORWARDING - BUSY LINE [M-24]:	five times
MULTIPLE CALL FORWARDING - DON'T ANSWER [M-25]:	Unlimited
13. The following are detailed examples of Call Forwarding - CCIS activation. These examples are activated under the conditions below:
 - The maximum number of times to activate the service is three (programmed in Office A and Office B).
 - The last Call Forwarding is operated by Call Forwarding - All Calls/Don't Answer Service.
 - Any kind of Dterm, ISDN Terminal, PS, etc. is available to be used for the Calling/Intermediate Party.
 - Any kind of Call Forwarding Service (All Calls/Busy Line/Don't Answer) is available to be set at the Calling/Intermediate Terminal.



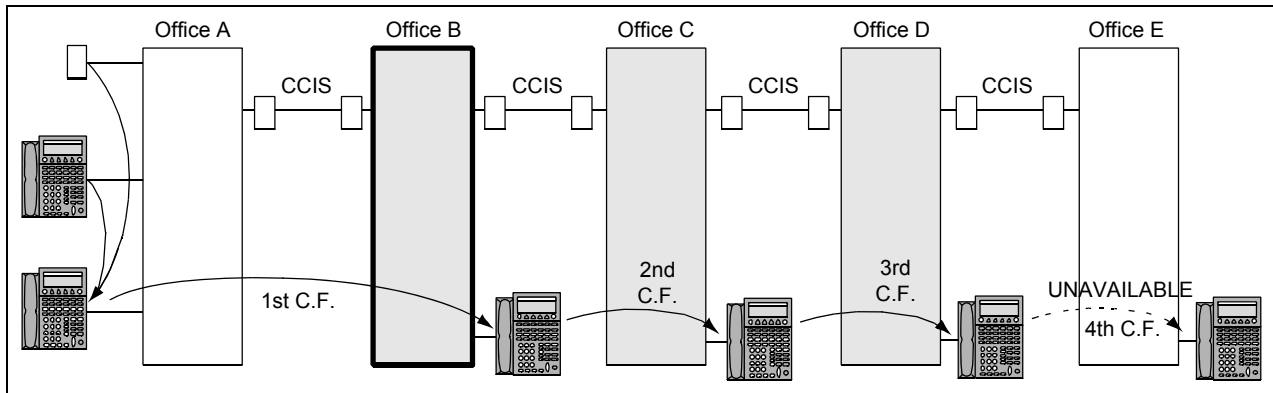
- a.) The service is restricted because the Terminating Office B is unavailable for Enhanced Call Forwarding - CCIS Service.



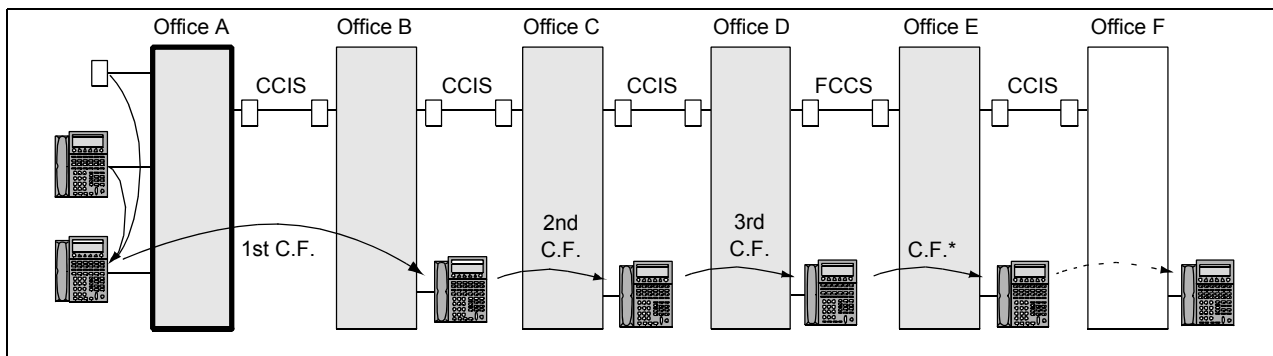
- b.) The service is restricted because the service has already been activated the predetermined number of times.



- c.) When Office A is not available for the Enhanced Call Forwarding feature, the number of times the service is activated is decided by Office B (three times are effective in this example). Note that Call Forwarding Service from Office A to Office B is included in the number of times service is activated.



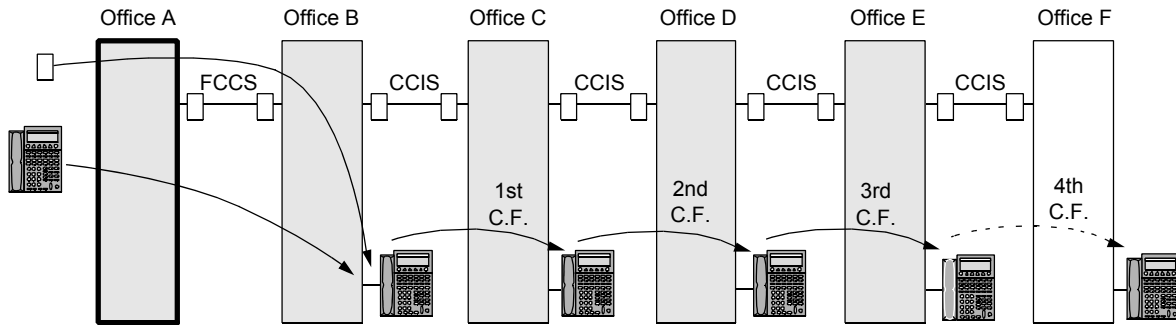
- d.) The Call Forwarding Service is activated four times, because the call is forwarded from Office D to Office E through FCCS:



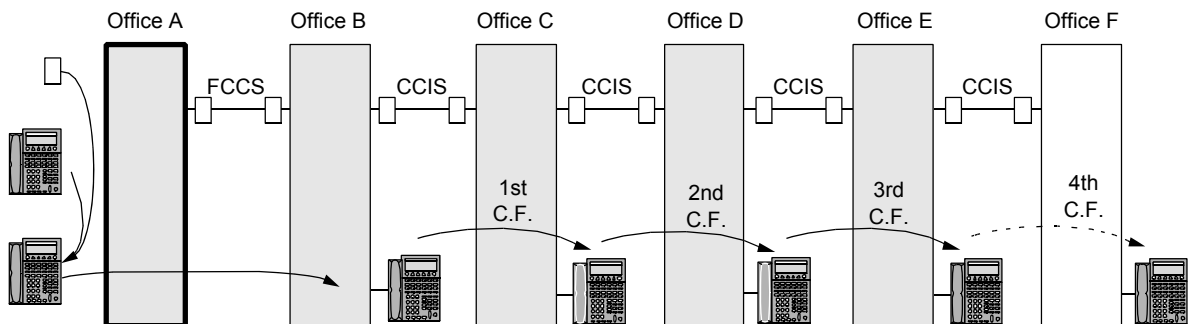
Note: Call Forwarding Service activated through FCCS (Call Forwarding.*) is not included in the number of times that the Multiple Call Forwarding - CCIS Service activates.

- e.) When the Trunk/Station Incoming Call terminates through FCCS, the number of times for the service activation is decided by the FCCS Node. This condition is also applied when the call is forwarded from Office A to Office B through FCCS.

a. When a call terminates through FCCS link, the number of times is decided by Office A (the FCCS node has the calling party) in this case.



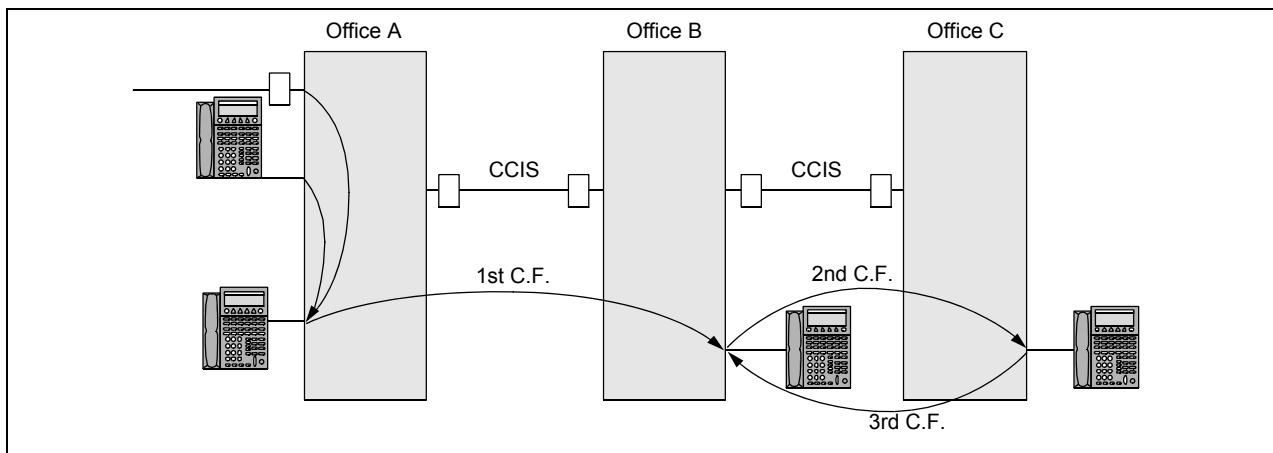
b. When a call forwarded through FCCS link, the number of times is decided by Office A (the FCCS node has the forwarding party) in this case.



f.) This service is restricted when a call from the CCIS Line is forwarded to other Lines except CCIS (for example: Central Office Line).

g.) Even if Call Forwarding is set from the forwarded station to the forwarding station, the Call Forwarding service is effective, as shown in the example below:

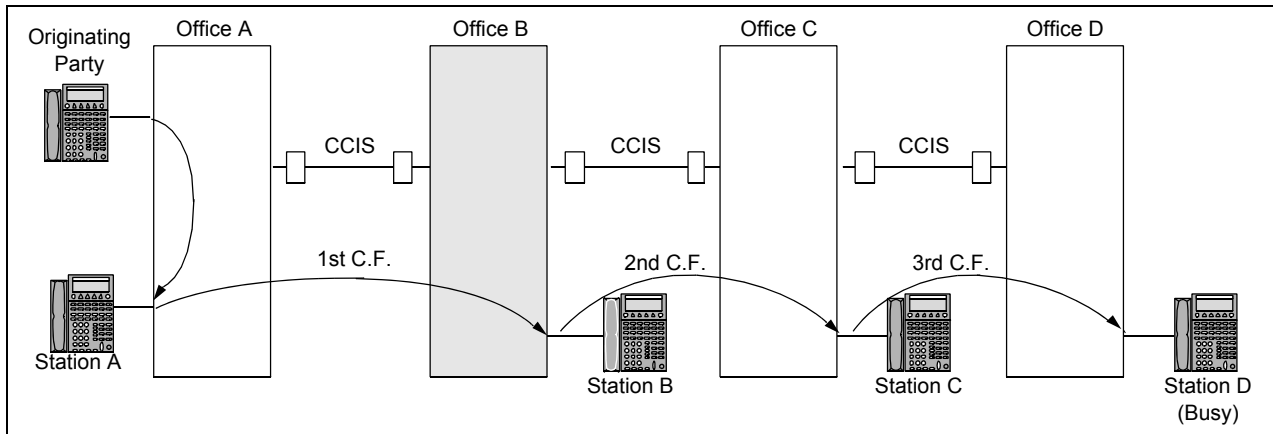
When Office A selects the number of times for Call Forwarding for 5 times, five times of Call Forwarding are executed as C.F. 1 to C.F. 2 to C.F. 3 to C.F. 2 to C.F. 3.



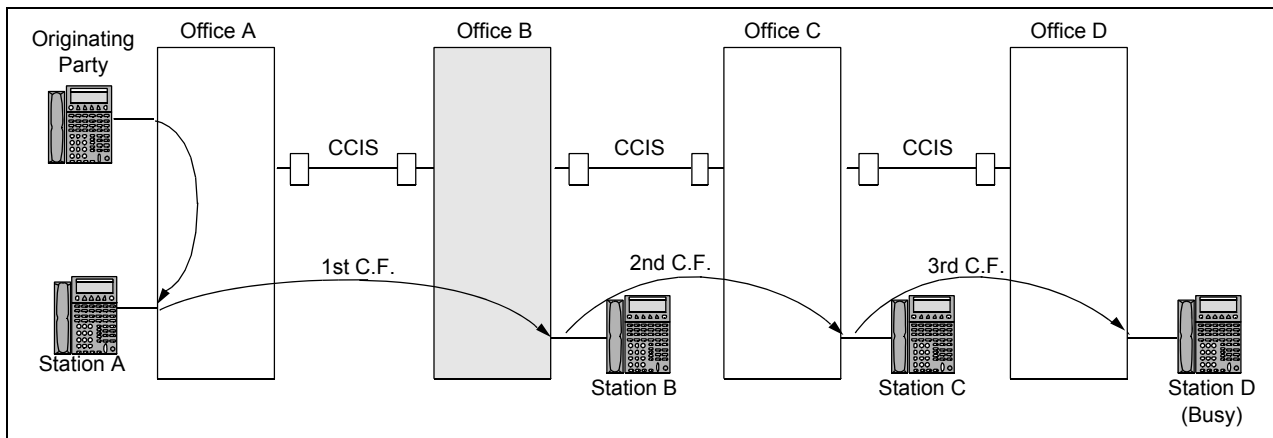
Interactions

When a Calling Party sets the services shown below while the Destination Party is in busy status, the services are performed to the first Forwarded Party.

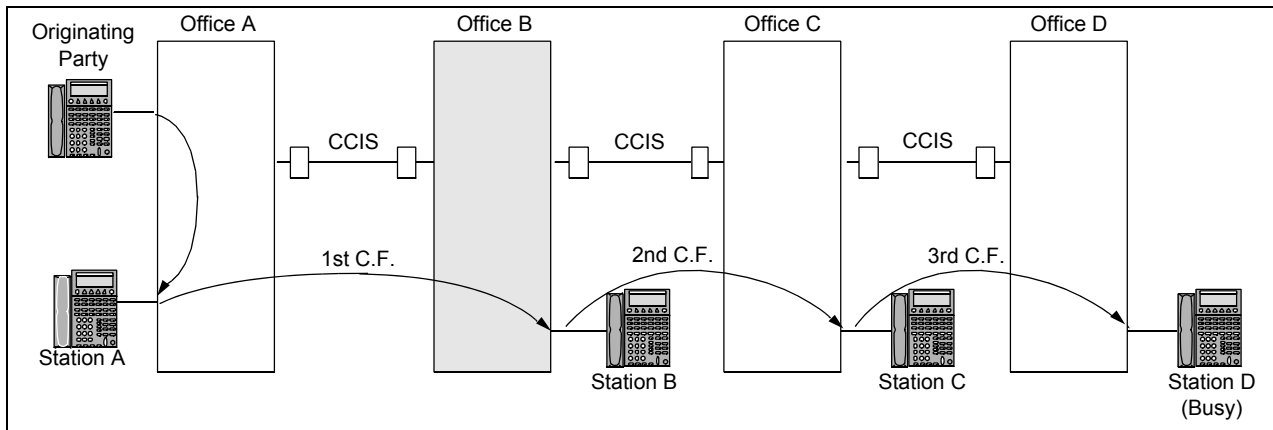
1. In the case of Busy Verification - CCIS [B-9] or Executive Right-of-Way - CCIS [E-8], the service is effective to Station B in Office B. The service is invalid to Station D.
 - a.) When Station B is in busy status, Busy Verification - CCIS [B-9] and Executive Right-of-Way - CCIS [E-8] are activated.
 - b.) When Station B is in idle status, Station B is rung.



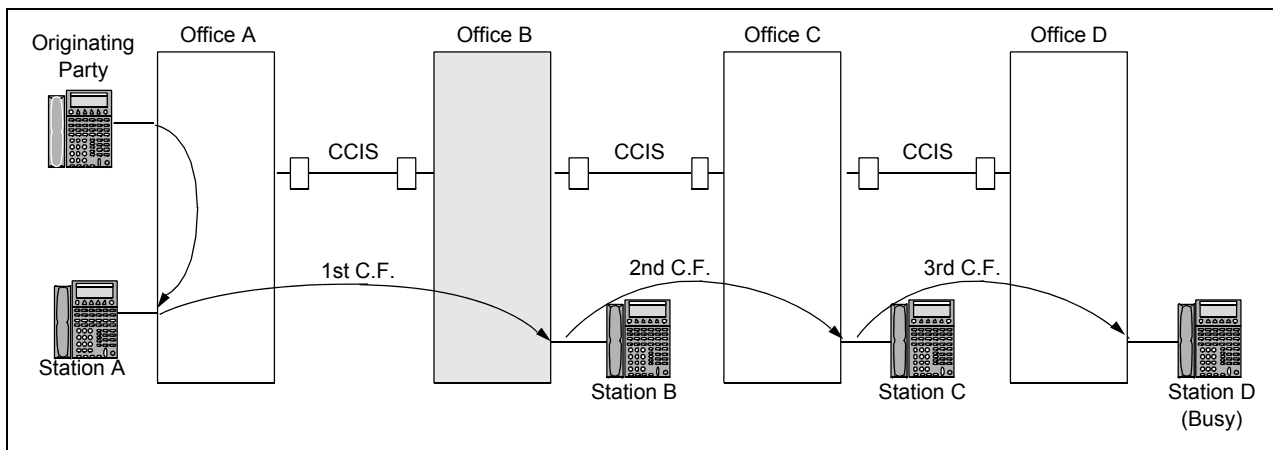
2. In the case of Message Reminder - CCIS [M-34, 34D], service is performed to Station B in Office B. The service is invalid to Station D.



3. In the case of Call Back - CCIS [C-44], service is effective to Station B in Office B. The service is invalid to Station D.



4. In the case of Step Call - CCIS [S-59], the service is valid to Station B in Office B. The service is invalid to Station D.



5. When a SIP Handler Controlled SIP terminal is in Multiple Mode, the Call Forwarding setting applies to the seized line while setting. In normal case, where My Line is not used by another station, the Call Forwarding setting applies to My Line. To set the Call Forwarding to Sub Line, use the ACFS/ACFS_T commands.

Programming

- STEP 1: **ASYD** - System Data 1, Index 69, Bit 1: Call Forward All Calls Short Tone Service 0/1 = Not Required/Required. Bit 7: (1) Multiple Call Forwarding in service.
System Data 2, Index 6, Bit 4: Call Origination Restriction of Station upon setting Call Forwarding - All Calls. 0/1 = Required/Not Required.
System Data 1, Index 486, Bit 0-2. The maximum number of times for activating Call Forwarding - CCIS Service (1 to 7 times: 01 Hexadecimal-07 Hexadecimal)
When assigning "0 (default)", this feature is not available (the Call Forwarding is activated between CCIS Nodes only one time).
- STEP 2: **ASYDL/N** - SYS1, Index 686, Bit 0=1.
Disabling Call Forwarding - All Calls with entry Access Code is in service.

Note: Available from FP95-114 V4 Issue 2.0.

- STEP 3: **ASFC** - Release SFI 7 (Call Forwarding - All Call Service) Restriction with regard to SFC of station allowing Call Forwarding - All Calls.
- STEP 4: **ANPD** - Assign Minimum Necessary Number of Digits for the first number of the Access Codes (**Note 1**) for Call Forwarding - All Calls.
- STEP 5: **ASPA** - Sets the Access Codes for Call Forwarding - All Calls.
For setting:CI = "N: Normal", SRV = "SSC: Service Code", SID = 8
For Cancel:CI = "N: Normal", SRV = "SSC: Service Code", SID = 9 **Note 1**

Note 1: When SYS1, Index 686, Bit 0=1 (Disabling Call Forwarding - All Calls with entry Access Code is in service), Call Forwarding - All calls cancel is not required because the cancellation can be performed with the entry Access Code.

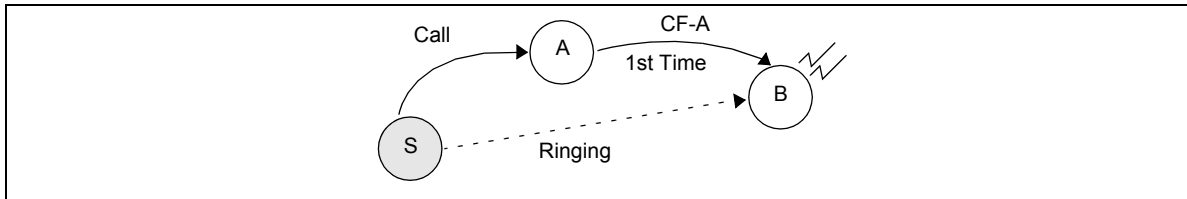
- STEP 6: **ATNR** - Assign the allowable data into the corresponding items of Tenant Restriction Index.

M-41 Multiple Call Forwarding - Busy Line - CCIS

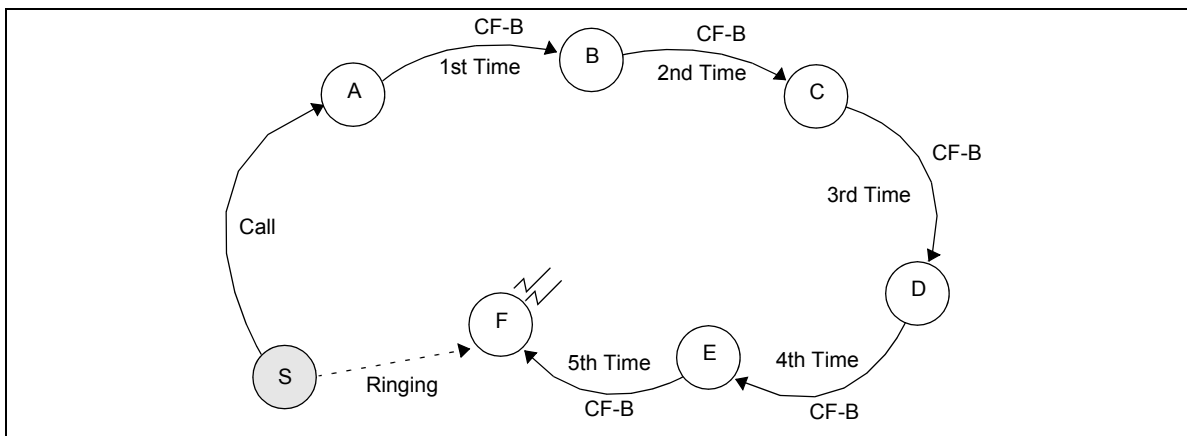
General Description

This feature permits a call to a busy Station to be forwarded in a CCIS Network, multiple times, to a predesignated idle Station.

1. With existing CALL FORWARDING - BUSY LINE [C-2] Service:



2. With MULTIPLE CALL FORWARDING - BUSY LINE [M-24] Service:



Operating Procedure

1. Station A sets Call Forwarding - Busy Line to Station B. Station B sets Call Forwarding - Busy Line to Station C. Station C sets Call Forwarding - Busy Line to Station D.
2. Stations A, B, and C are busy when an Incoming Call is directed to Station A. The call is forwarded to Station B first, then to Station C, and on to Station D. The Calling Party receives Ringback Tone, and ringing starts at Station D.
3. Station D lifts the handset to answer and is connected to the Calling Party.

Service Conditions

1. The Service Conditions within the Node comply with those of MULTIPLE CALL FORWARDING - BUSY LINE [M-24].
2. A call can be forwarded by CALL FORWARDING a maximum of one time between Nodes in a CCIS Network.
3. When CALL FORWARDING is performed in a CCIS Network, the following services are not available at a Forwarded-to-Station:

CALL FORWARDING - ALL CALLS - OUTSIDE

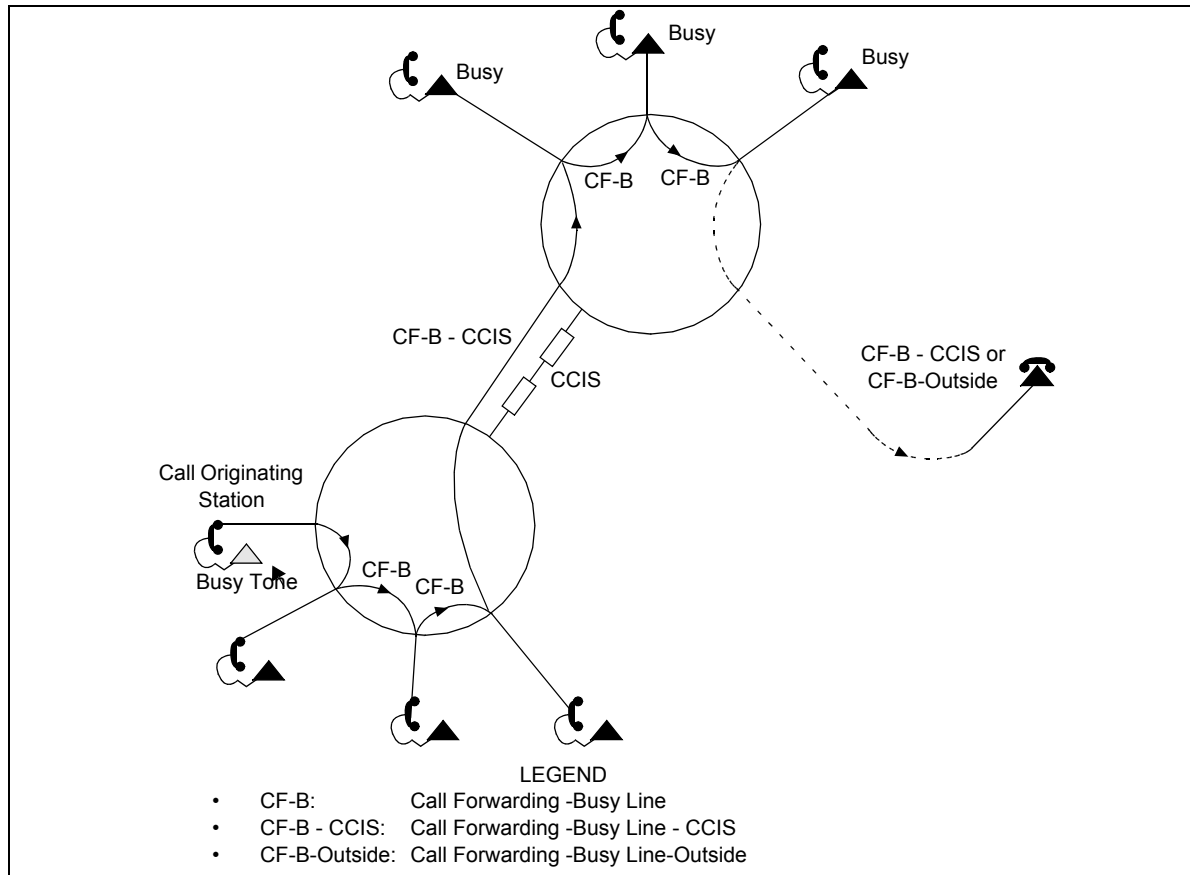
[C-28]

CALL FORWARDING - BUSY LINE - OUTSIDE

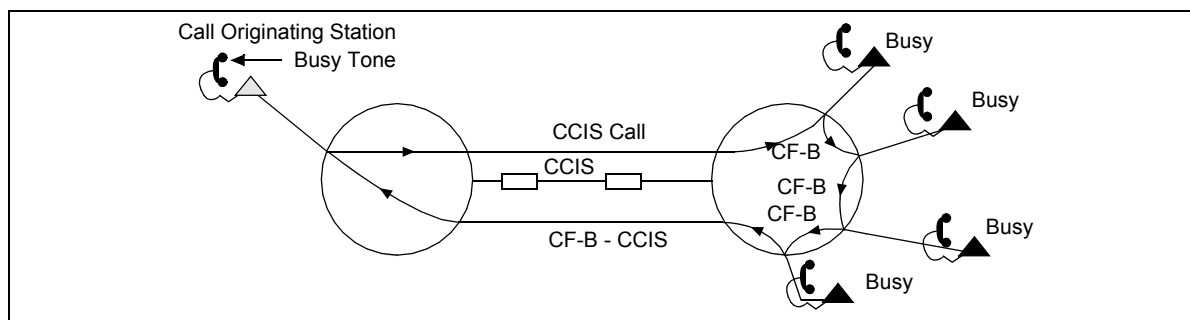
[C-60]

CALL FORWARDING - DON'T ANSWER - OUTSIDE

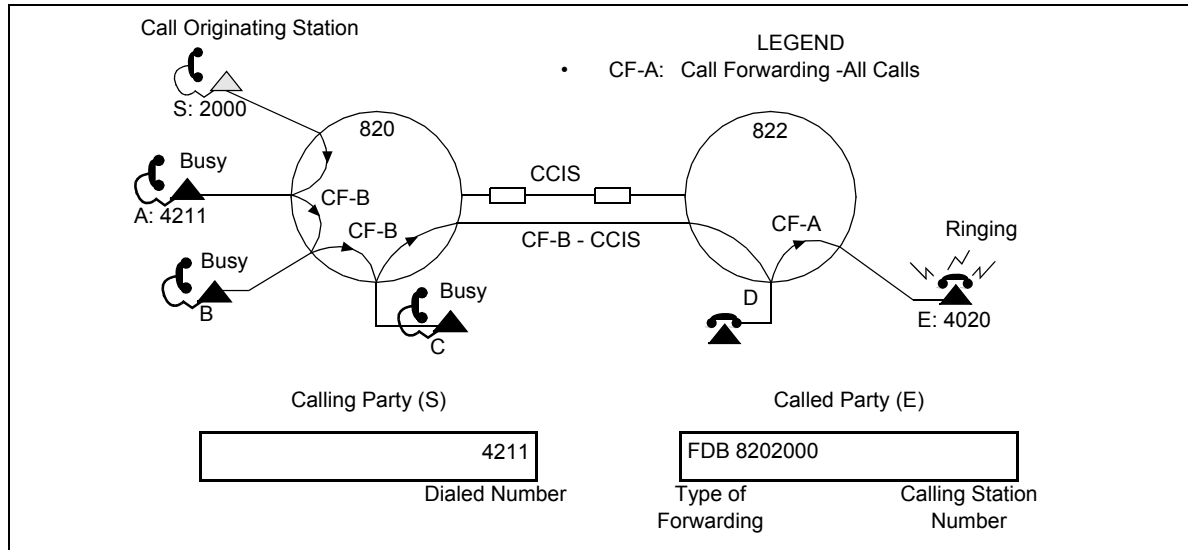
[C-74]



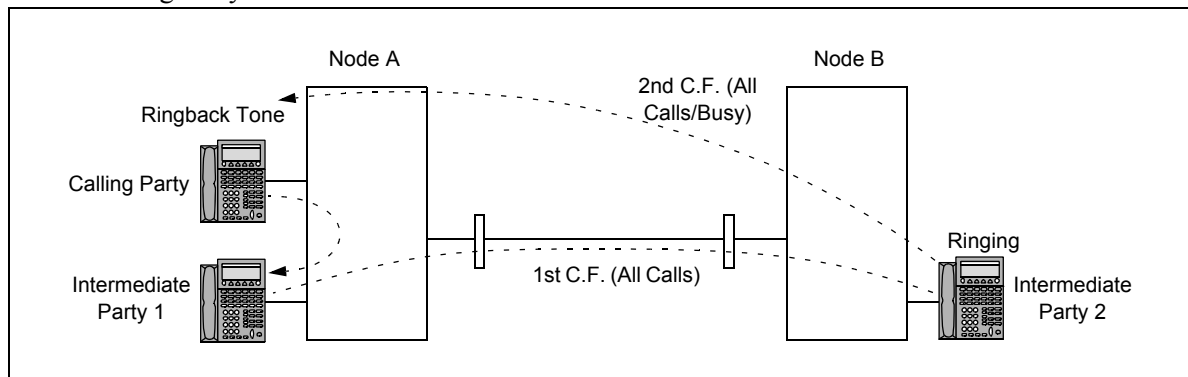
4. When a call is forwarded to the Calling Party by CALL FORWARDING - BUSY LINE - CCIS [M-41], the Calling Party hears Busy Tone.



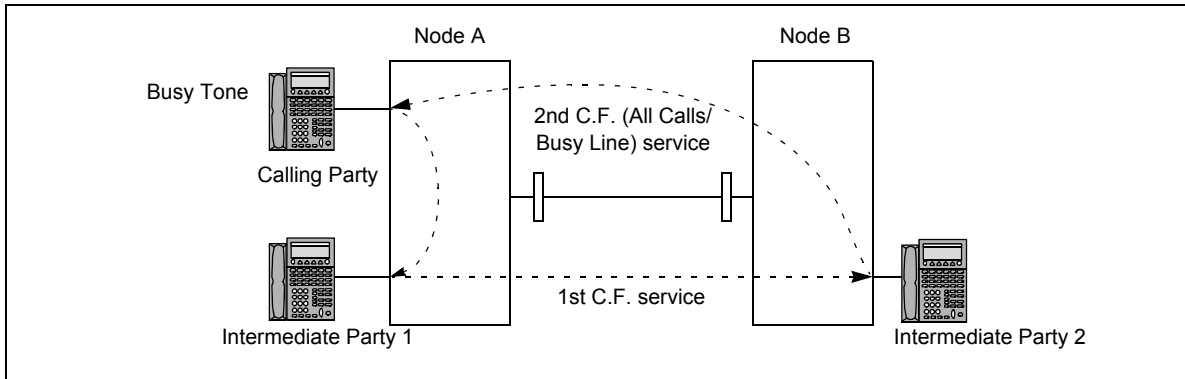
5. SERVICE DISPLAY - CCIS [S-53] is available at the Terminating Node. The type of forwarding to be displayed is CALL FORWARDING - BUSY LINE.



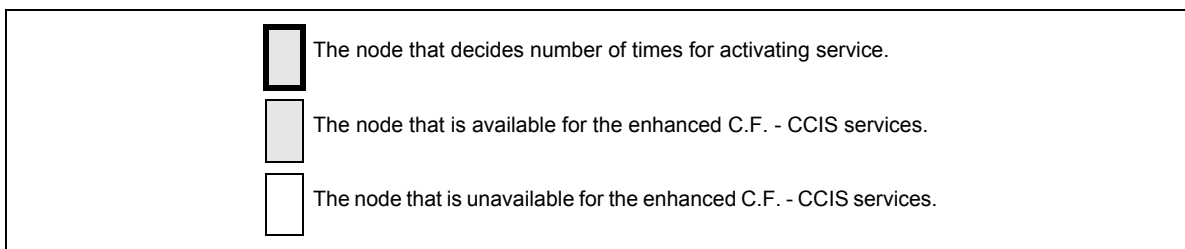
6. When a call is terminated to an ATTENDANT CONSOLE [A-3] by the MULTIPLE CALL FORWARDING - BUSY LINE - CCIS [M-41], the call type is BUSY.
7. The System Data (ASYD, System Data 1, Index 486, Bit 0-2) decides the maximum number of times for activating a Call Forwarding Service between Nodes through CCIS. The number of times is selected in the range of one time to seven times (ASYD, System Data 1, Index 486, Bit 0-2 = 0 means the enhanced feature is not available).
8. The number of times for activating this service between CCIS Nodes is decided by System Data programmed at the Node that has the Station operating the first Call Forwarding Service through CCIS. However, when the Node that accommodates the Station operating the service first has not been programmed, the number of times is decided at the Node that accommodates the destination of the first Call Forwarding - CCIS Service.
9. When Multiple Call Forwarding - CCIS is activated and the last Intermediate Party forwards (returns) the call to the first Calling Party, the Calling Party may hear either Ringback Tone or Busy Tone. The Calling Party hears Ringback Tone when the Forwarding Destination Number, assigned to the last Intermediate Party (Intermediate Party 2 in the example below), and the Calling Party Number sent from the Calling Party are identical.



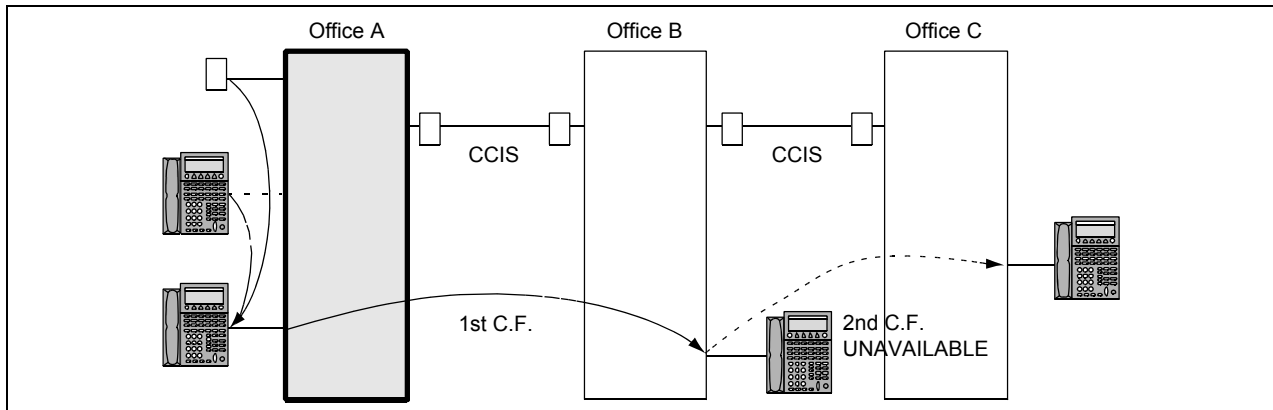
The Calling Party hears Busy Tone when the Forwarding Destination Number, assigned to the last Intermediate Party (Intermediate Party 2 in the example below), and the Calling Party Number sent from the Calling Party are not identical.



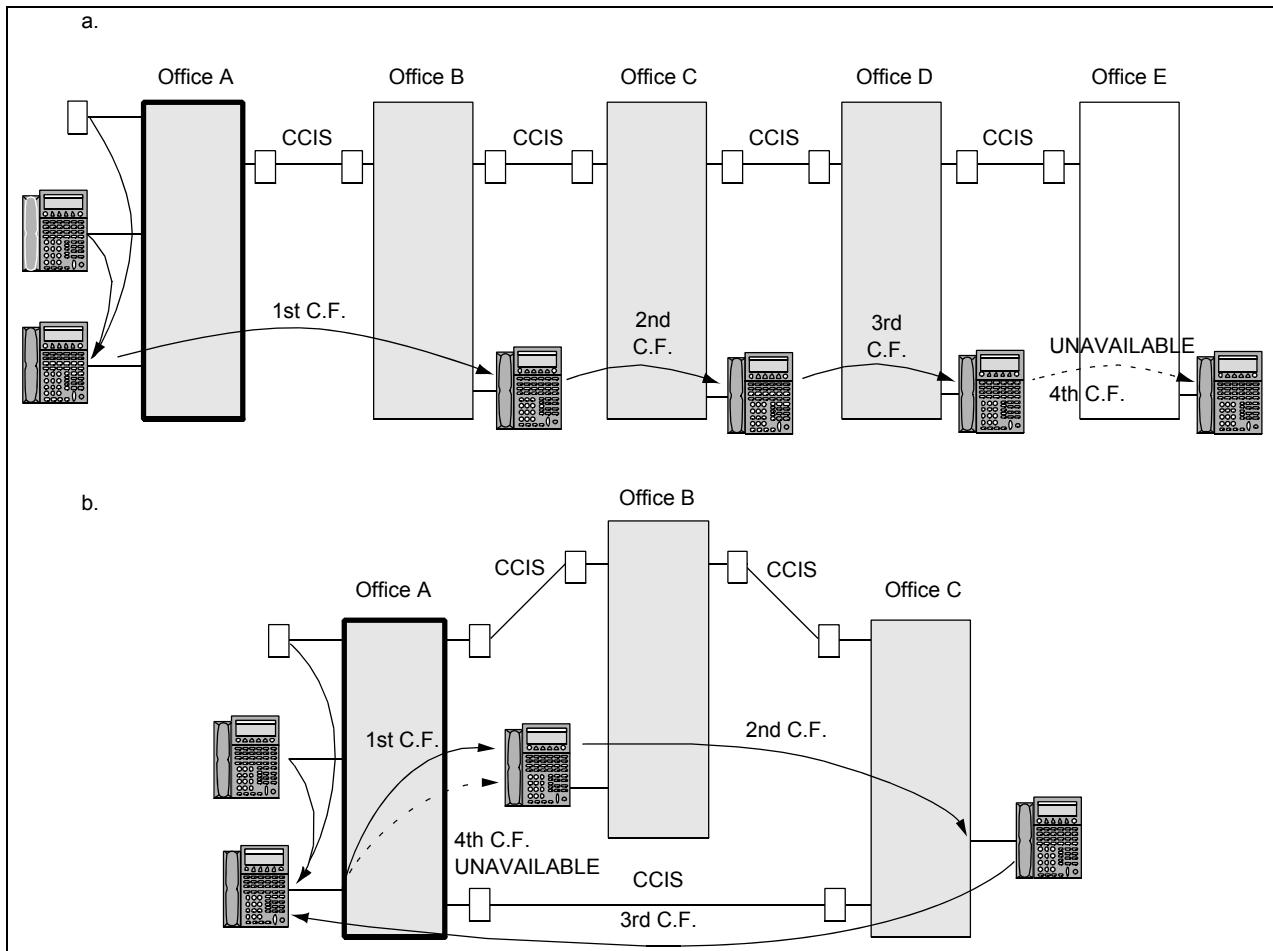
10. When Call Forwarding is restricted because the number of times data or Service Restriction Data, the caller hears Busy Tone.
11. The following services set to the Forwarded Destination are not available with Multiple Call Forwarding - CCIS Services, except when the services below are activated through CCIS:
 - CALL FORWARDING - ALL CALLS - OUTSIDE [C-28]
 - CALL FORWARDING - BUSY LINE - OUTSIDE [C-60]
 - CALL FORWARDING - DON'T ANSWER - OUTSIDE [C-74]
12. The following services are activated within one Node. The maximum number of times for activating this feature is as follows:
 - MULTIPLE CALL FORWARDING - ALL CALLS [M-44]: five times
 - MULTIPLE CALL FORWARDING - BUSY LINE [M-24]: five times
 - MULTIPLE CALL FORWARDING - DON'T ANSWER [M-25]: unlimited
13. The following are detailed examples of Call Forwarding - CCIS activation. These examples are activated under the conditions below:
 - The maximum number of times to activate the service is three (programmed in Office A and Office B).
 - The last Call Forwarding is operated by Call Forwarding - All Calls/Don't Answer Service.
 - Any Kind of Dterm, ISDN Terminal, PS, etc. is available to be used for the Calling/Intermediate Party.
 - Any kind of Call Forwarding Service (All Calls/Busy Line/Don't Answer) is available to be set at the Calling/Intermediate Terminal.



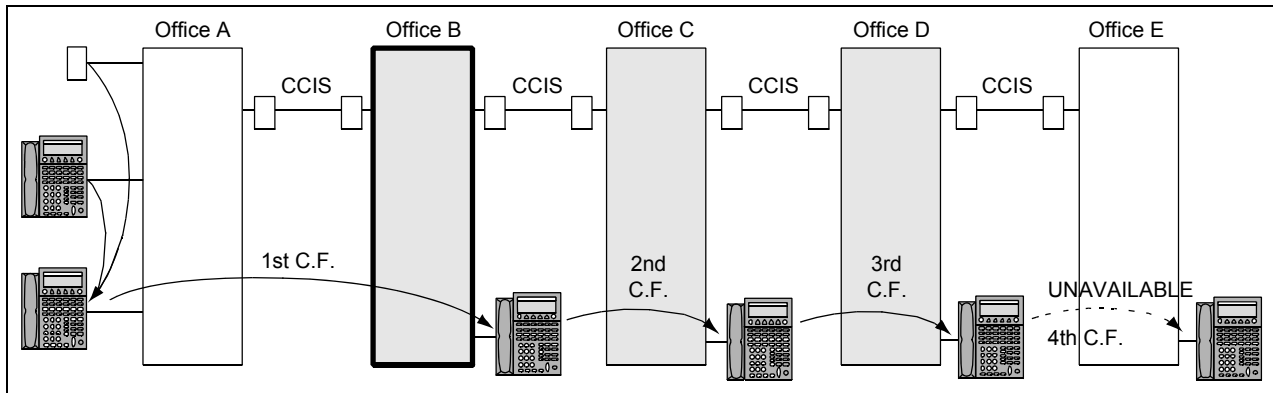
- a.) The service is restricted because the Terminating Office B is unavailable for Enhanced Call Forwarding - CCIS Service.



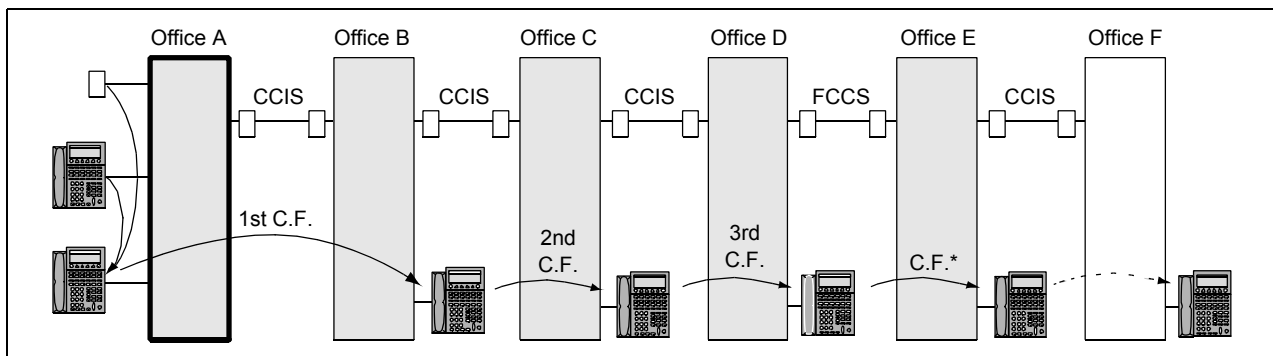
- b.) The service is restricted because the service has already been activated the predetermined number of times.



- c.) When Office A is not available for the Enhanced Call Forwarding feature, the number of times the service is activated is decided by Office B (three times are effective in this example). Note that Call Forwarding Service from Office A to Office B is included in the number of times service is activated.

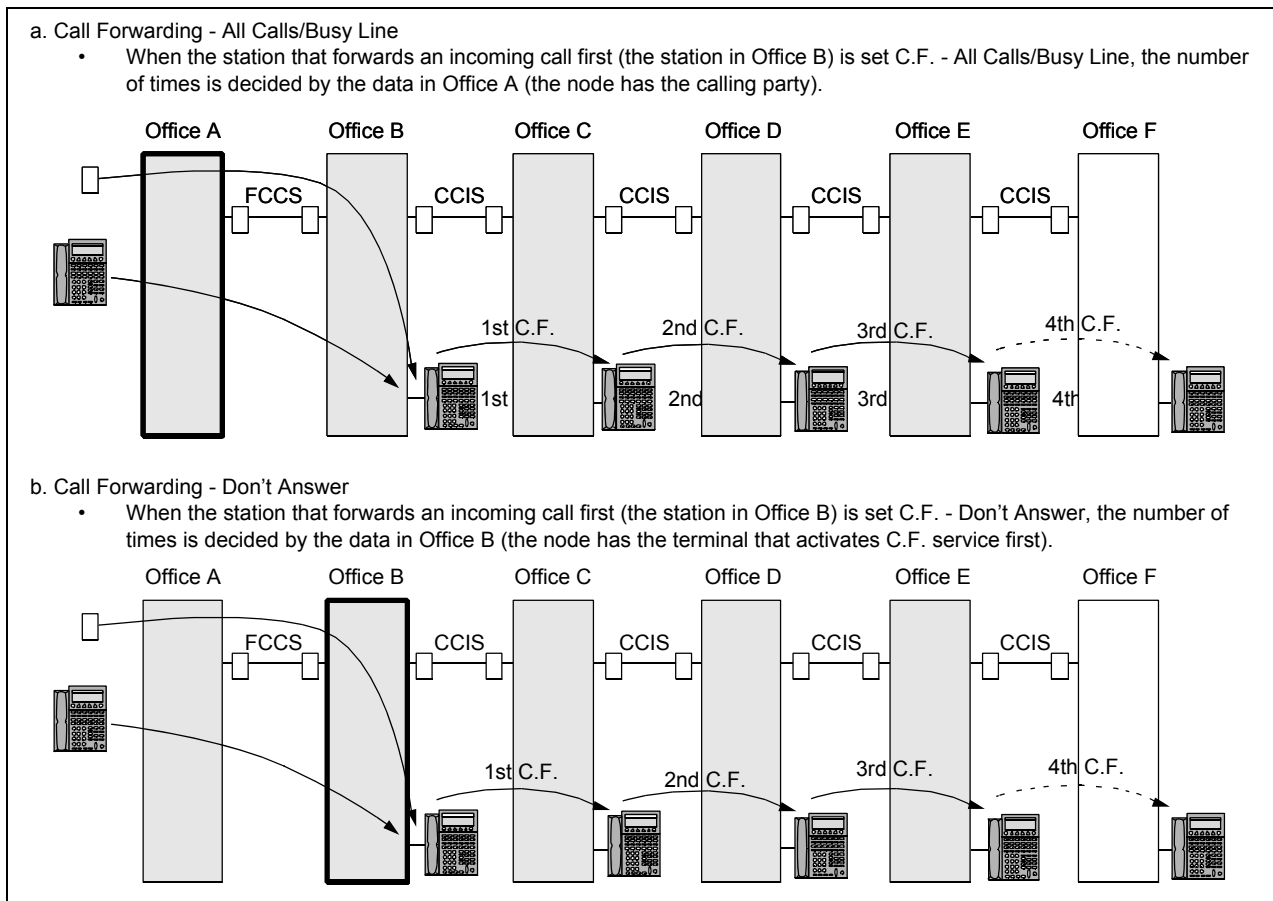


- d.) The Call Forwarding Service is activated four times, because the call is forwarded from Office D to Office E through FCCS:



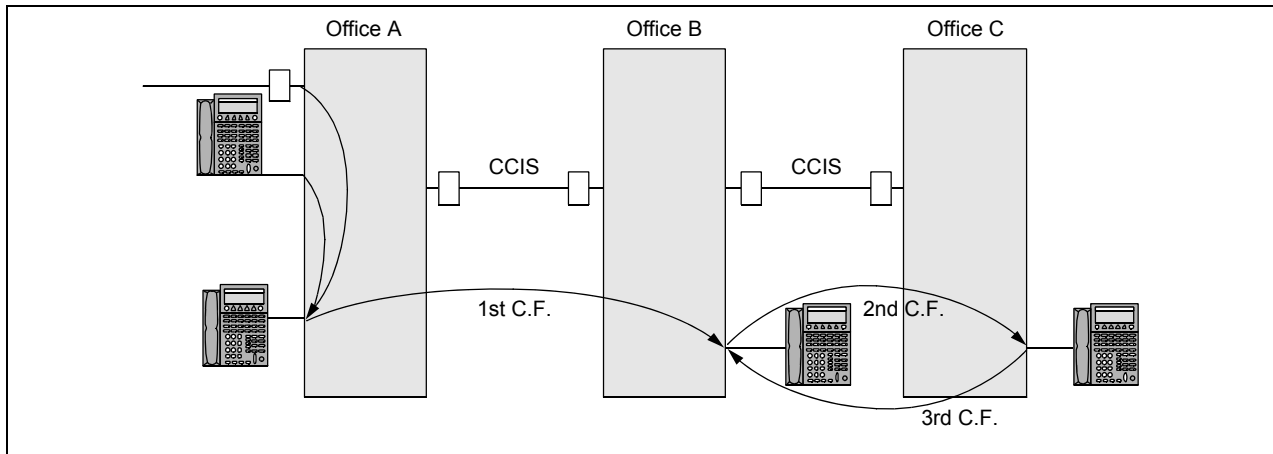
Note: Call Forwarding Service activated through FCCS (Call Forwarding*) is not included in the number of times that the Multiple Call Forwarding - CCIS Service activates.

- e.) When the Trunk/Station Incoming Call terminates through FCCS, the number of times for the service activation may vary, depending on the kind of Call Forwarding Service (All Calls/Busy Line/Don't Answer) set to the Station in the Terminated Node. This condition is also applied when the call is forwarded from Office A to Office B through FCCS.



- f.) This service is restricted when a call from the CCIS Line is forwarded to other Lines except CCIS (for example: Central Office Line).

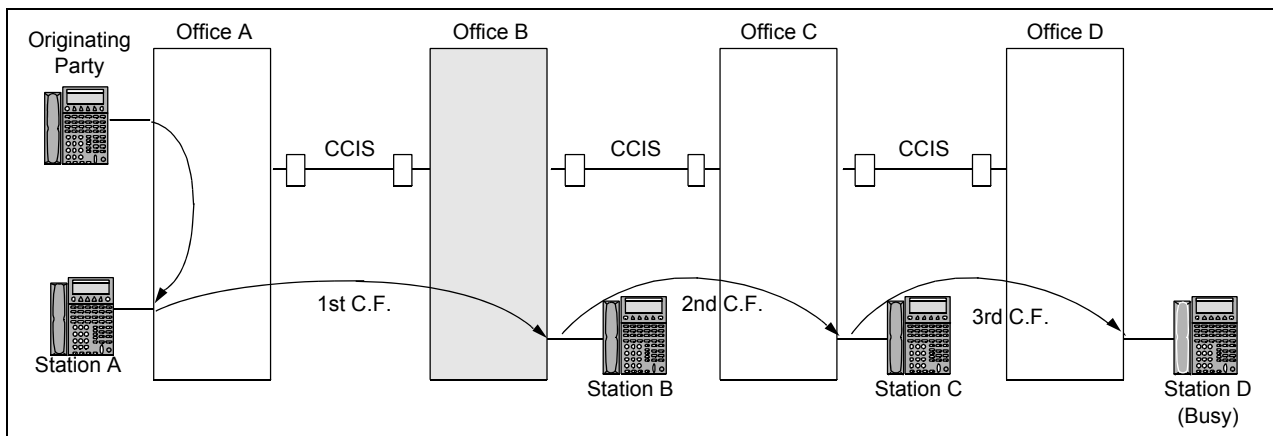
- g.) Even if Call Forwarding is set from the forwarded station to the forwarding station, the Call Forwarding service is effective, as shown in the example below:
When Office A selects the number of times for Call Forwarding for 5 times, five times of Call Forwarding are executed as C.F. 1 to C.F. 2 to C.F. 3 to C.F. 2 to C.F. 3.



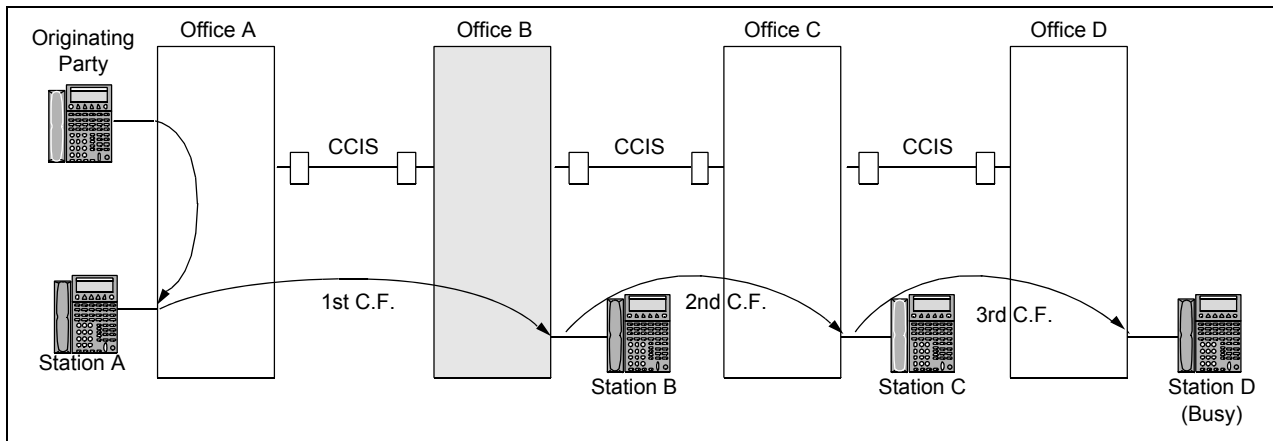
Interactions

When a Calling Party sets the services shown below while the Destination Party is in busy status, the services are performed to the first Forwarded Party.

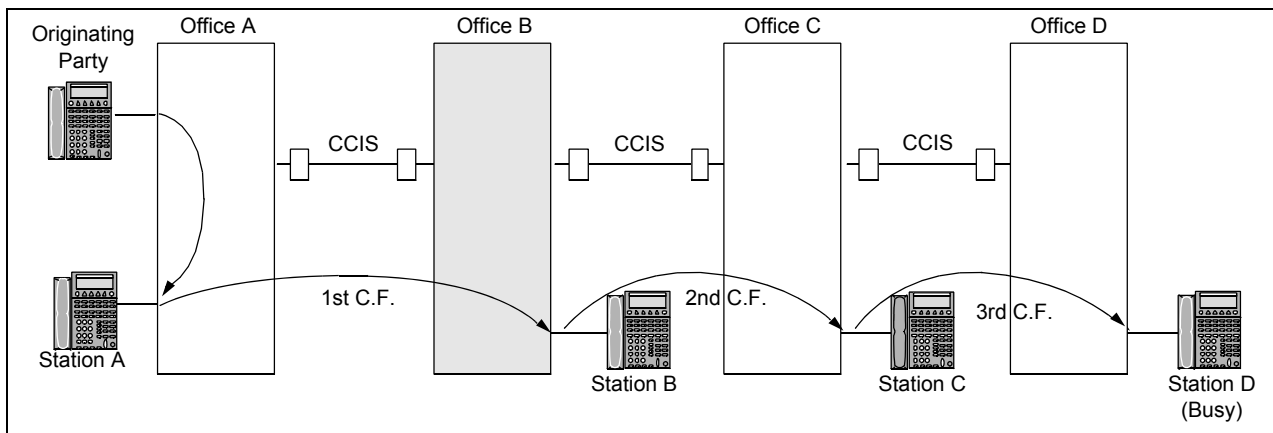
1. In the case of Busy Verification - CCIS [B-9] or Executive Right-of-Way - CCIS [E-8], the service is effective to Station B in Office B. The service is invalid to Station D.
 - a.) When Station B is in busy status, Busy Verification - CCIS [B-9] and Executive Right-of-Way - CCIS [E-8] are activated.
 - b.) When Station B is in idle status, Station B is rung.



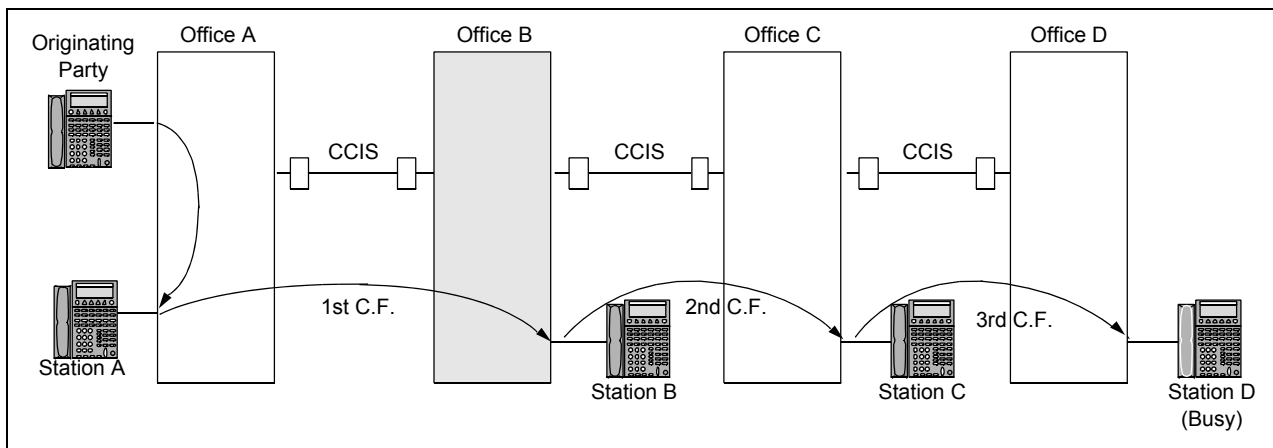
2. In the case of Message Reminder - CCIS [M-34, 34D], service is performed to Station B in Office B. The service is invalid to Station D.



3. In the case of Call Back - CCIS [C-44], service is effective to Station B in Office B. The service is invalid to Station D.



4. In the case of Step Call - CCIS [S-59], the service is valid to Station B in Office B. The service is invalid to Station D.



5. When SIP Handler Controlled SIP terminal is in Multiple Mode, the Call Forwarding setting applies to the seized line while setting. In normal case, where My Line is not used by another station, the Call Forwarding setting applies to My Line. To set the Call Forwarding to Sub Line, use the ACFS/ACFS_T commands.

Programming

STEP 1: **ASYD** - System Data 1, Index 5, Bit 0: Access Code for Call Forwarding - Busy Line and Call Forwarding Don't Answer Service. 0/1 = Same/Separate.

System Data 1, Index 5, Bit 1, 2 and 3: Number of Multiple Call Forwarding jumps:

BIT3	BIT2	BIT1	
0	0	0	1 JUMP
0	0	1	1 JUMP
0	1	0	2 JUMPS
0	1	1	3 JUMPS
1	0	0	4 JUMPS
1	0	1	5 JUMPS

System Data 1, Index 69, Bit 7: (1) Multiple Call Forwarding in service.

System Data 1, Index 486, Bit 0-2. The maximum number of times for activating Call Forwarding - CCIS Service (0 to 7 times: 01Hexadecimal-07Hexadecimal)

When assigning "0 (default)", the Call Forwarding is activated between CCIS Nodes only one time.

STEP 2: **ASFC** - Allow Call Forwarding - Busy (SFI 9) to the SFC of the Stations.

STEP 3: **ANPD** - Assign Minimum Necessary Number of Digits for the first number of the Access Code for Call Forwarding - Busy.

STEP 4: **ASPA** - Assign the access code for Call Forwarding - Busy.

To set: CI = "N: Normal", SRV = "SSC: Service Code", SID = 10

To cancel: CI = "N: Normal", SRV = "SSC: Service Code", SID = 11

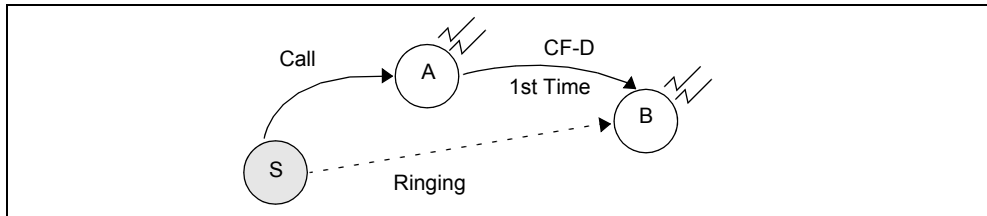
STEP 5: **ATNR** - Assign allowable data to the corresponding Tenant Restriction Index.

M-42 Multiple Call Forwarding - Don't Answer - CCIS

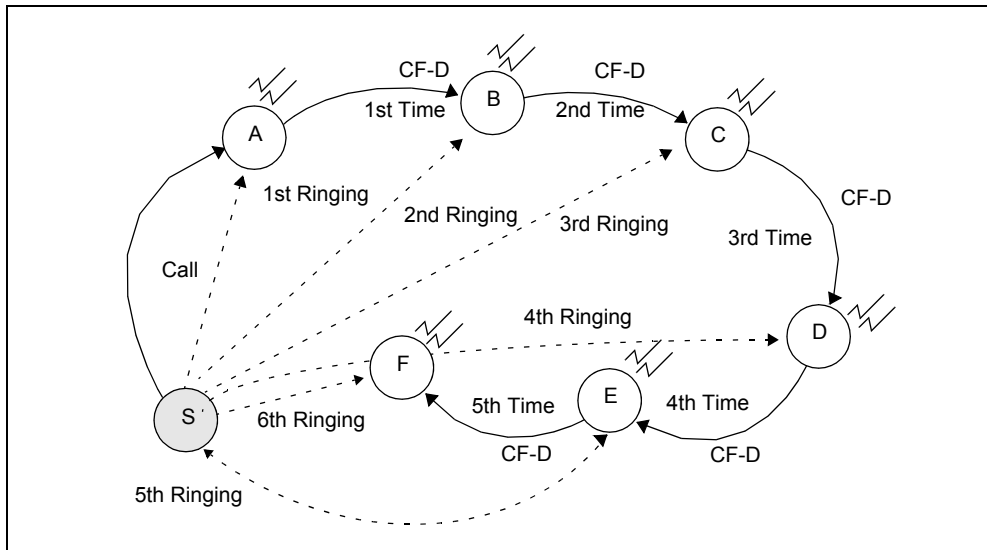
General Description

This service permits a call to an unanswered Station to be forwarded, multiple times, to a predesignated Station that does not have CALL FORWARDING - DON'T ANSWER [C-3] Service Set, or to the ATTENDANT CONSOLE [A-3] in a CCIS Network.

1. With existing CALL FORWARDING - DON'T ANSWER [C-3] Service:



2. With MULTIPLE CALL FORWARDING - DON'T ANSWER [M-25] Service:



Operating Procedure

1. Station A sets Call Forwarding - Don't Answer to Station B. Station B sets Call Forwarding - Don't Answer to Station C. Station C sets Call Forwarding - Don't Answer to Station D.
2. A call is directed to Station A. The Calling Party receives Ringback Tone, and ringing starts at Station A.
3. The call is not answered within a predetermined amount of time and is forwarded to Station B. Ringing stops at Station A and starts at Station B.
4. The call is not answered within a predetermined amount of time and is forwarded to Station C. Ringing stops at Station B and starts at Station C.
5. The call is not answered within a predetermined amount of time and is forwarded to Station D. Ringing stops at Station C and starts at Station D.
6. Station D lifts the handset and is connected to the Calling Party.

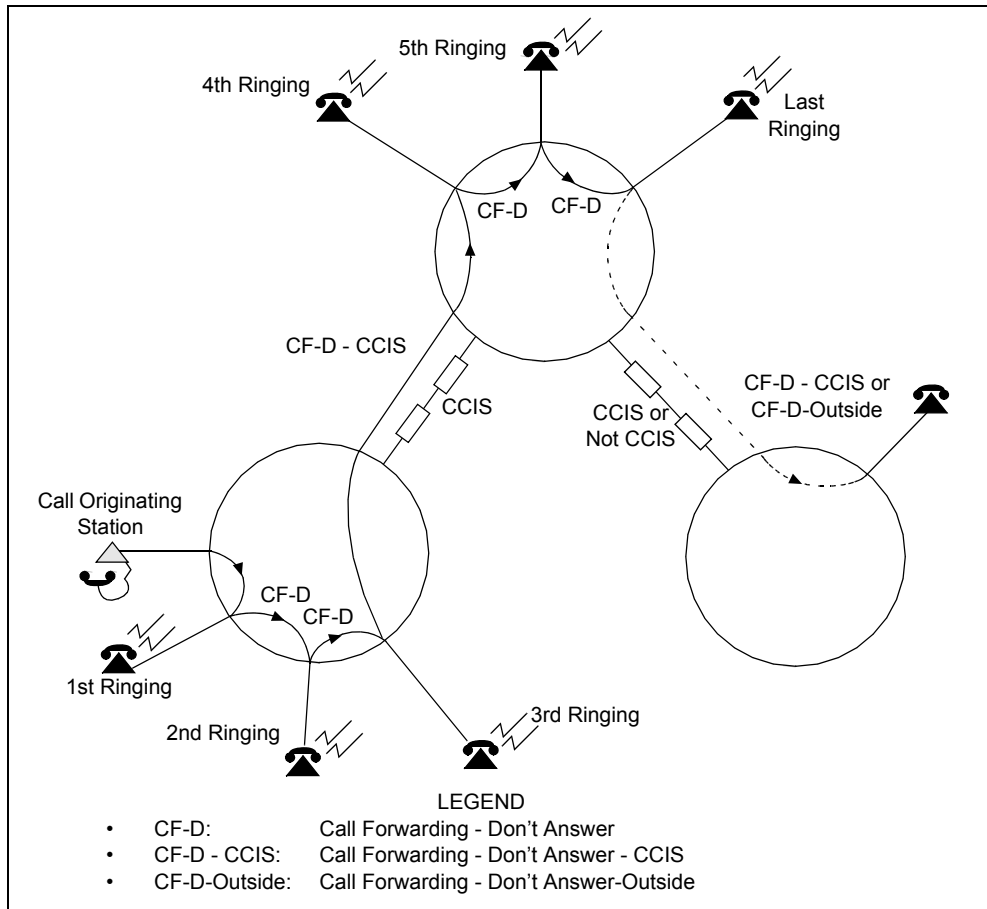
Service Conditions

1. The Service Conditions within the Node comply with those of MULTIPLE CALL FORWARDING - DON'T ANSWER [M-25].
2. A call can be forwarded by Call Forwarding a maximum of one time between nodes in a CCIS network.
3. When CALL FORWARDING is performed in a CCIS Network, the following services are not available at a Forwarded-to Station:

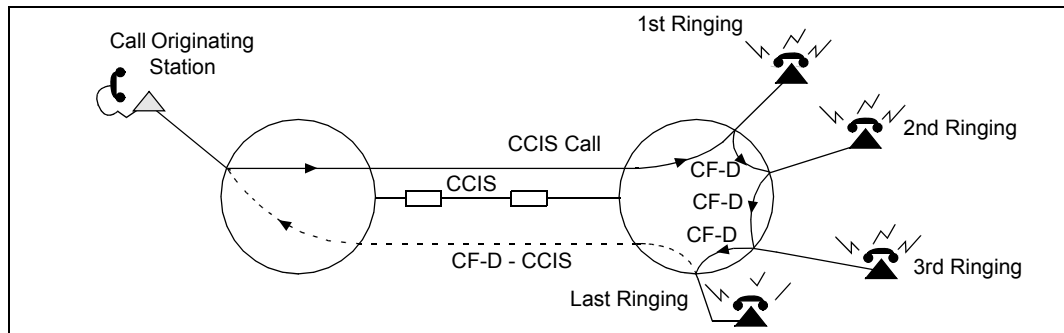
CALL FORWARDING - ALL CALLS - OUTSIDE [C-28]

CALL FORWARDING - BUSY LINE - OUTSIDE [C-60]

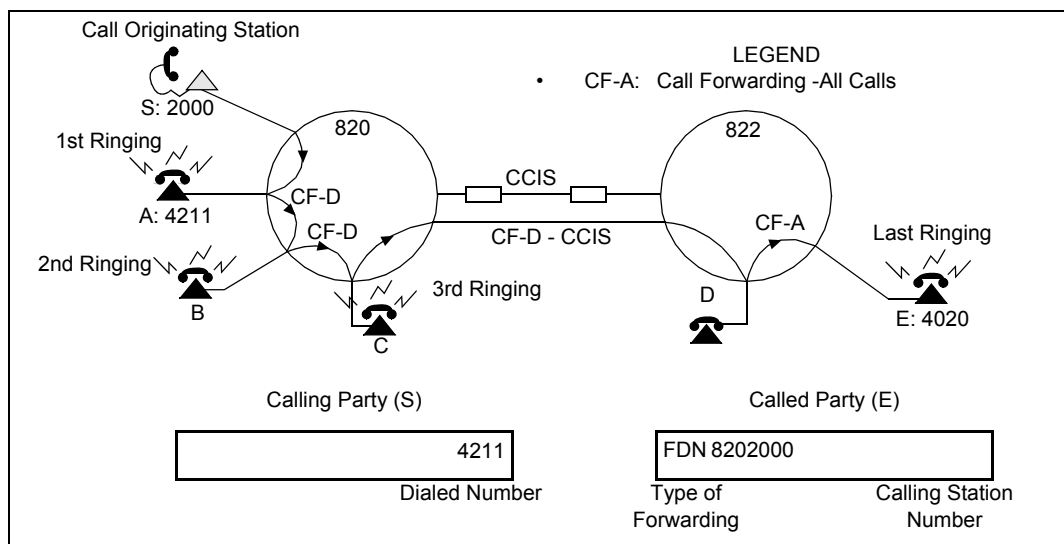
CALL FORWARDING - DON'T ANSWER - OUTSIDE [C-74]



4. When a call is set to be forwarded to a calling party by CALL FORWARDING - DON'T ANSWER - CCIS [M-42], the Call forwarded to the Calling Party is ignored and the last Station keeps ringing.



5. The type of forwarding to be displayed is CALL FORWARDING - NANS at the Terminating Node.

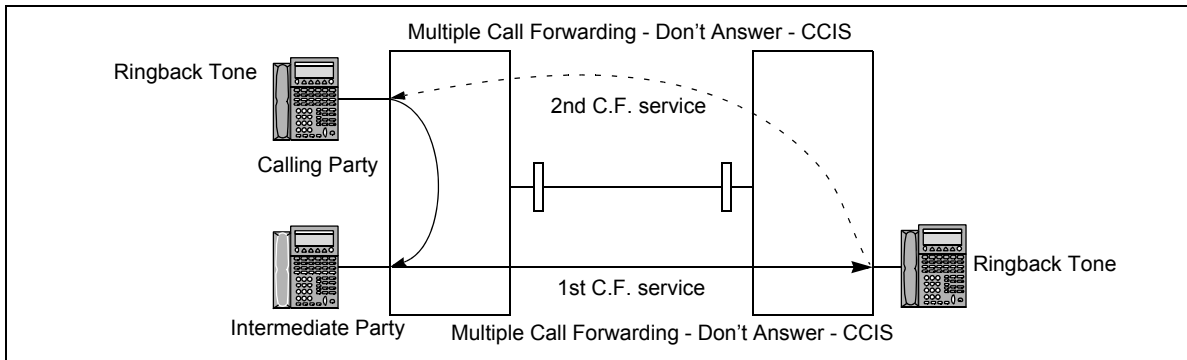


6. When a call is terminated to an ATTENDANT CONSOLE [A-3] by the MULTIPLE CALL FORWARDING - DON'T ANSWER - CCIS [M-42], the call type is NANS.
7. There is no limit to the number of jumps for MULTIPLE CALL FORWARDING - NO ANSWER.
8. The System Data (ASYD, System Data 1, Index 486, Bit 0-2) decides the maximum number of times for activating a Call Forwarding Service between Nodes through CCIS. The number of times is selected in the range of one time to seven times (ASYD, System Data 1, Index 486, Bit 0-2 = 0 means this feature is not available).
9. The number of times for activating this service between CCIS Nodes is decided by System Data programmed at the Node that has the Station operating the first Call Forwarding Service through CCIS. However, when the Node accommodating the Station operating the service first has not programmed, the number of times is decided at the Node that accommodates the destination of the first Call Forwarding - CCIS Service.

10. When the destination is the Calling Party:

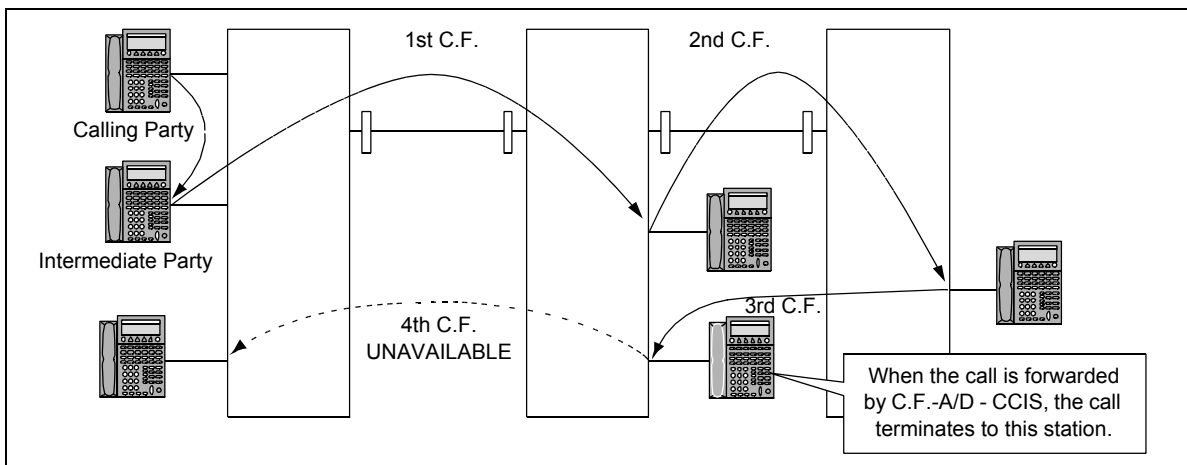
a.) CALL FORWARDING - DON'T ANSWER: the call continues to place at the Station that forwards the call to the caller.

In this case, the Calling Party hears Ringback Tone:

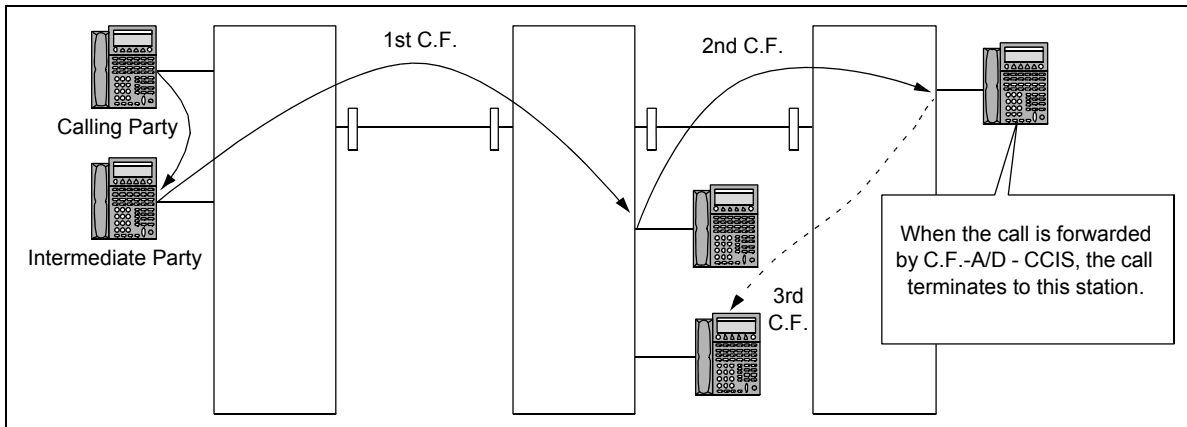


11. When Call Forwarding is restricted because the number of times data or Service Restriction Data, the call continues to ring at the Station that has restricted the service.

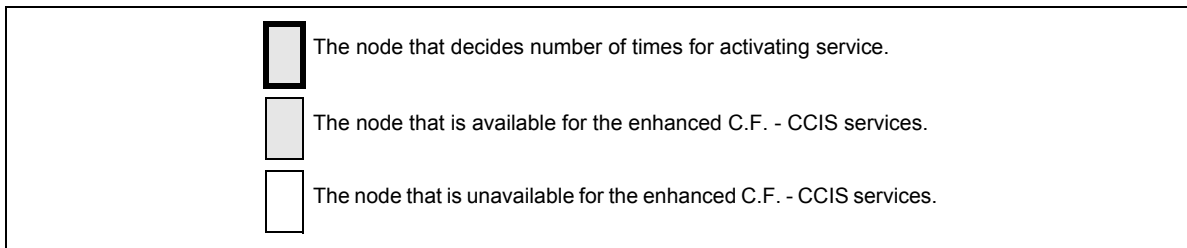
Example 1: Multiple Call Forwarding - CCIS is restricted because the service has already been activated the preassigned maximum number of times. A maximum of three times is available for Call Forwarding through CCIS.



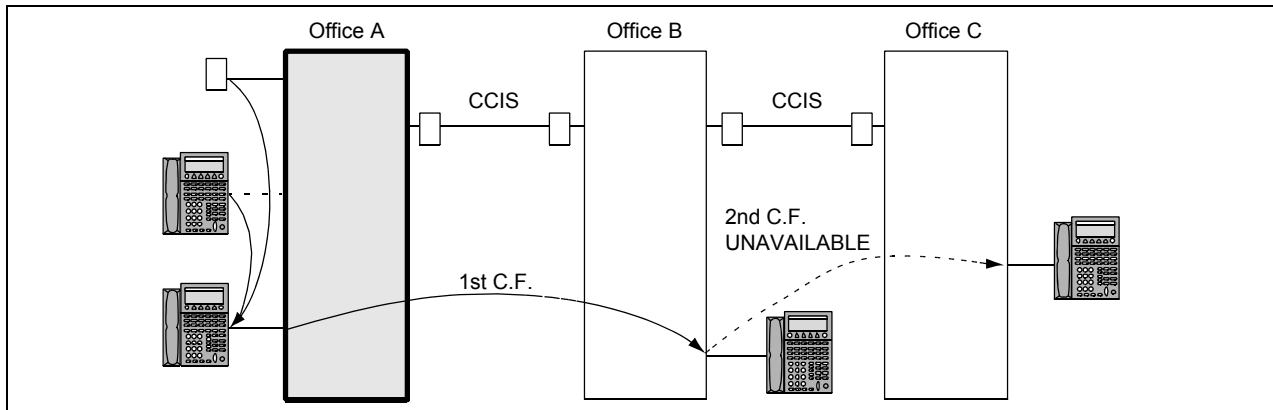
Example 2: Multiple Call Forwarding - CCIS Service is restricted because the service is not effective at the Node.



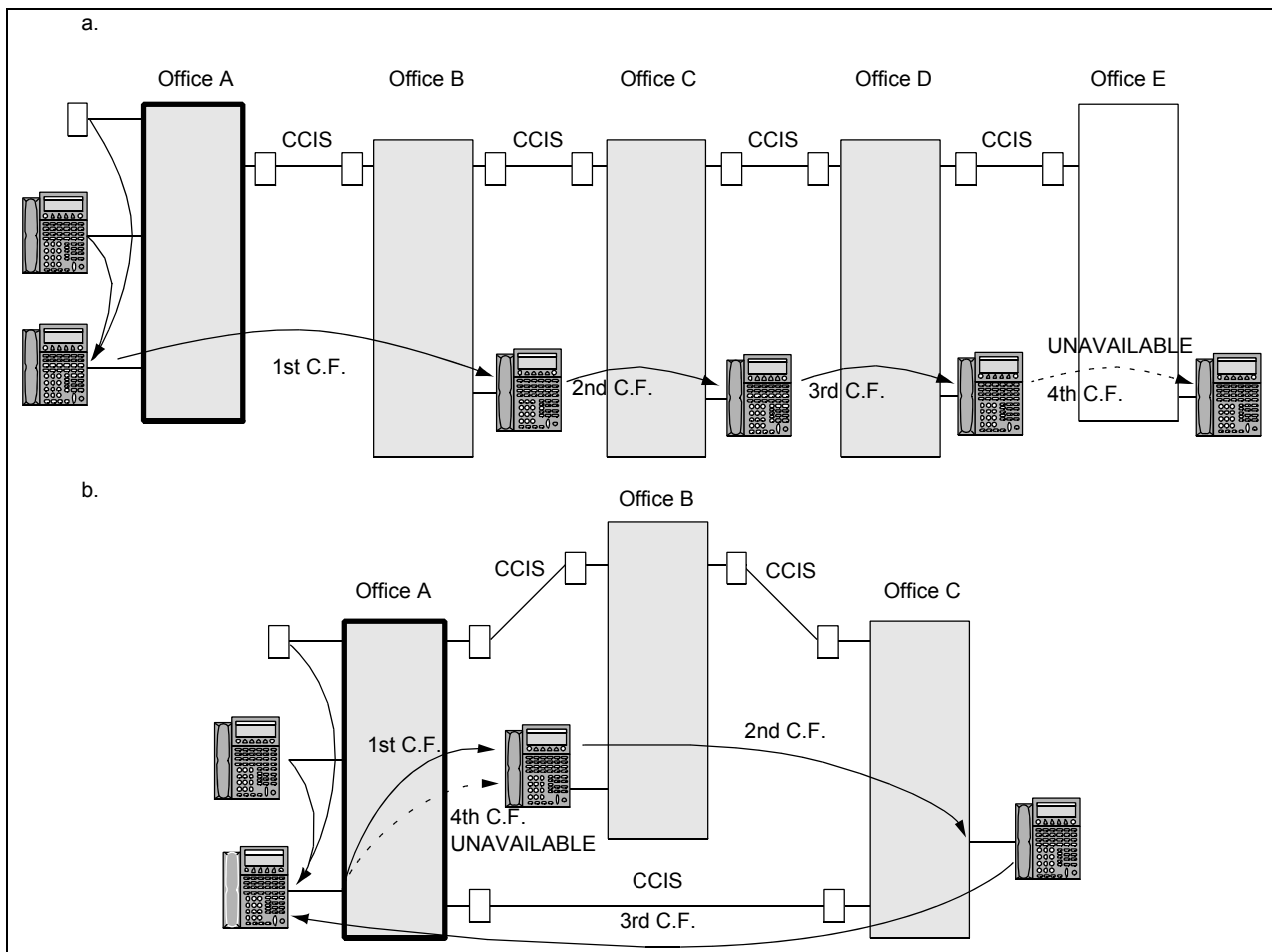
12. The following services set to the Forwarded Destination are not available with Multiple Call Forwarding - CCIS Services, except when the services below are activated through CCIS:
 - CALL FORWARDING - ALL CALLS - OUTSIDE [C-28]
 - CALL FORWARDING - BUSY LINE - OUTSIDE [C-60]
 - CALL FORWARDING - DON'T ANSWER - OUTSIDE [C-74]
13. The following services are activated within one Node. The maximum number of times for activating this feature is as follows:
 - MULTIPLE CALL FORWARDING - ALL CALLS [M-44]: five times
 - MULTIPLE CALL FORWARDING - BUSY LINE [M-24]: five times
 - MULTIPLE CALL FORWARDING - DON'T ANSWER [M-25]: unlimited
14. The following are detailed examples of Call Forwarding - CCIS activation. These examples are activated under the conditions below:
 - The maximum number of times to activate the service is three (programmed in Office A and Office B).
 - The last Call Forwarding is operated by Call Forwarding - All calls/Don't Answer.
 - Any kind of Dterm, ISDN Terminal, PS, etc. Can be used for the Calling/Intermediate Party.
 - Any kind of Call Forwarding Service (All Calls/Busy Line/Don't Answer) is available to be set at the Calling/Intermediate Terminal.



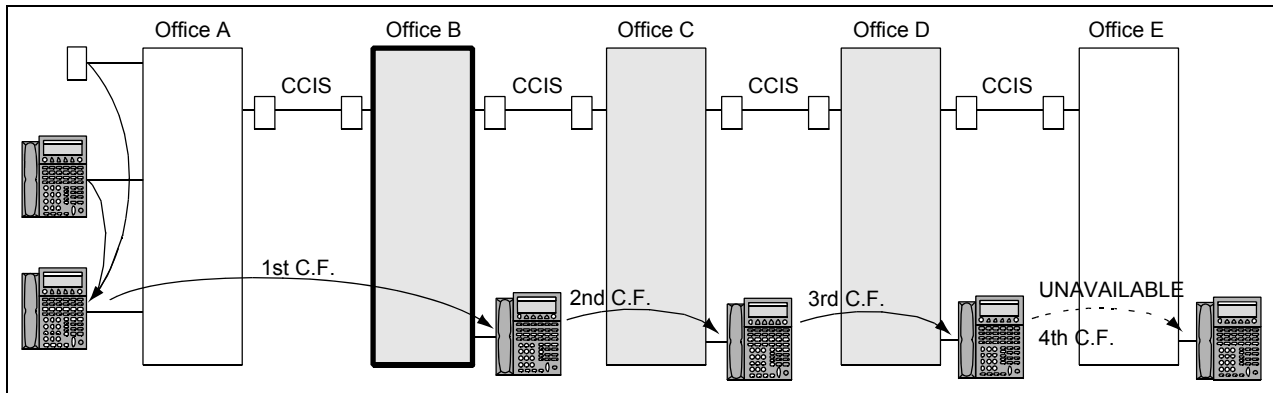
- a.) The service is restricted because the Terminating Office B is unavailable for Enhanced Call Forwarding - CCIS Service.



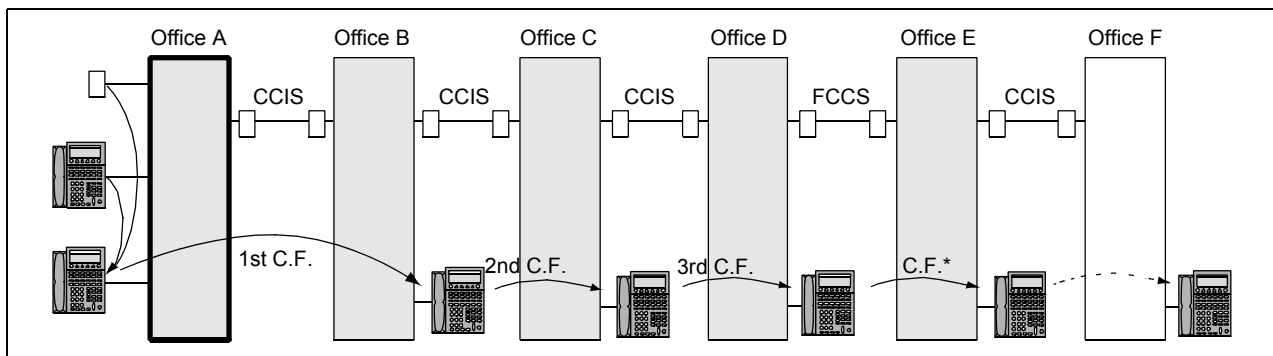
- b.) The service is restricted because the service has already been activated the programmed number of times.



- c.) When Office A is not available for the Enhanced Call Forwarding feature, the number of times the service is activated is decided by Office B (three times are effective in this example). Note that Call Forwarding Service from Office A to Office B is included in the number of times service is activated.

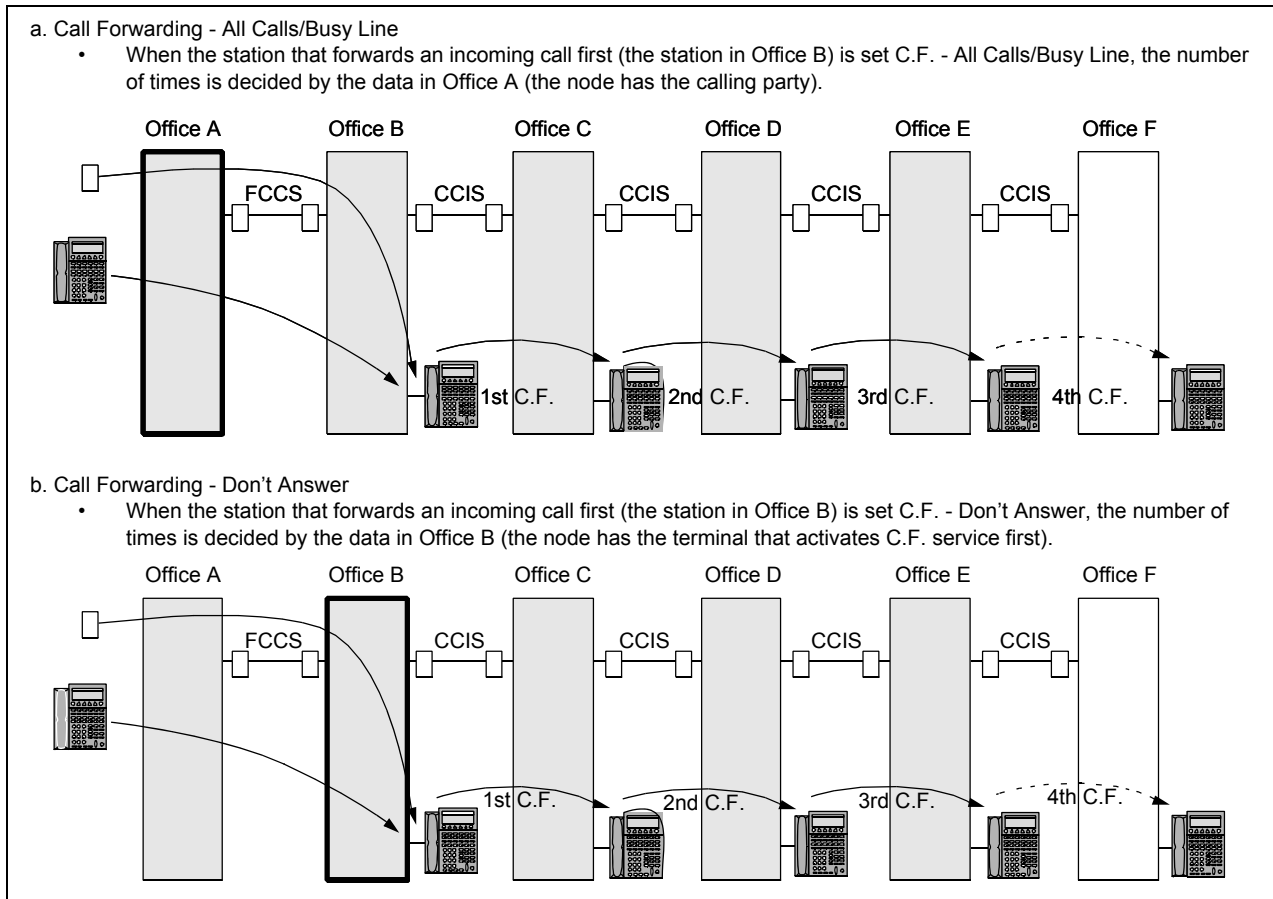


- d.) The Call Forwarding Service is activated four times, because the call is forwarded from Office D to Office E through FCCS:



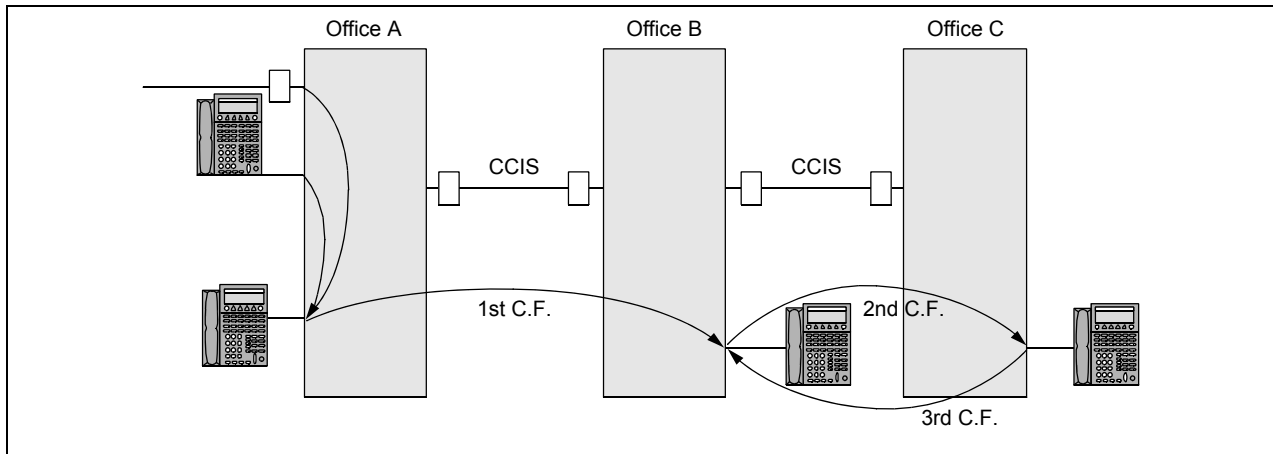
Note: Call Forwarding Service activated through FCCS link (Call Forwarding*) is not included in the number of times that the Multiple Call Forwarding - CCIS Service is activated.

- e.) When the Trunk/Station Incoming Call terminates through FCCS, the number of times for the service activation may vary, depending on the kind of Call Forwarding Service (All Calls/Busy Line/Don't Answer) set to the Station in the Terminated Node. This condition is also applied when the call is forwarded from Office A to Office B through FCCS.



- f.) This service is restricted when a call from the CCIS Line is forwarded to other Lines except CCIS (for example: Central Office Line).

- g.) Even if Call Forwarding is set from the forwarded station to the forwarding station, the Call Forwarding service is effective, as shown in the example below:
When Office A selects the number of times for Call Forwarding for 5 times, five times of Call Forwarding are executed as C.F. 1 to C.F. 2 to C.F. 3 to C.F. 2 to C.F. 3.

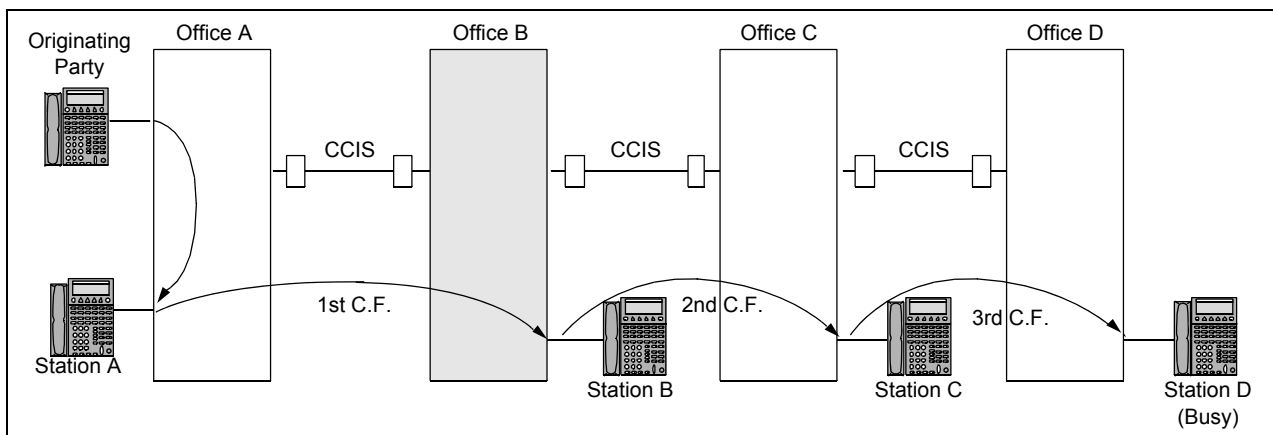


15. When a SIP Handler Controlled SIP terminal is in Multiple Mode, the Call Forwarding setting applies to the seized line while setting. In normal case, where My Line is not used by another station, the Call Forwarding setting applies to My Line. To set the Call Forwarding to Sub Line, use the ACFS/ACFS_T commands.

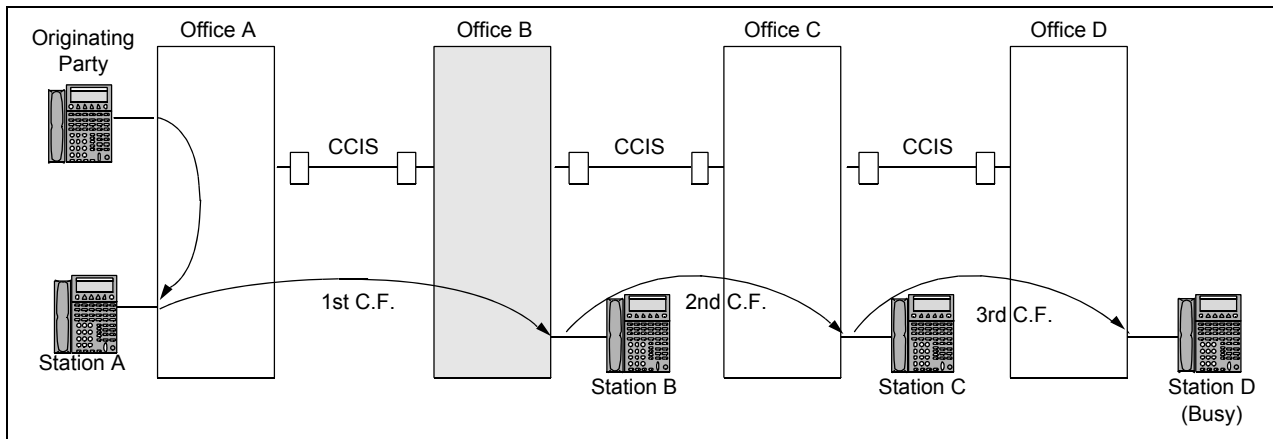
Interactions

When a Calling Party sets the services shown below while the Destination Party is in busy status, the services are performed to the first Forwarded Party.

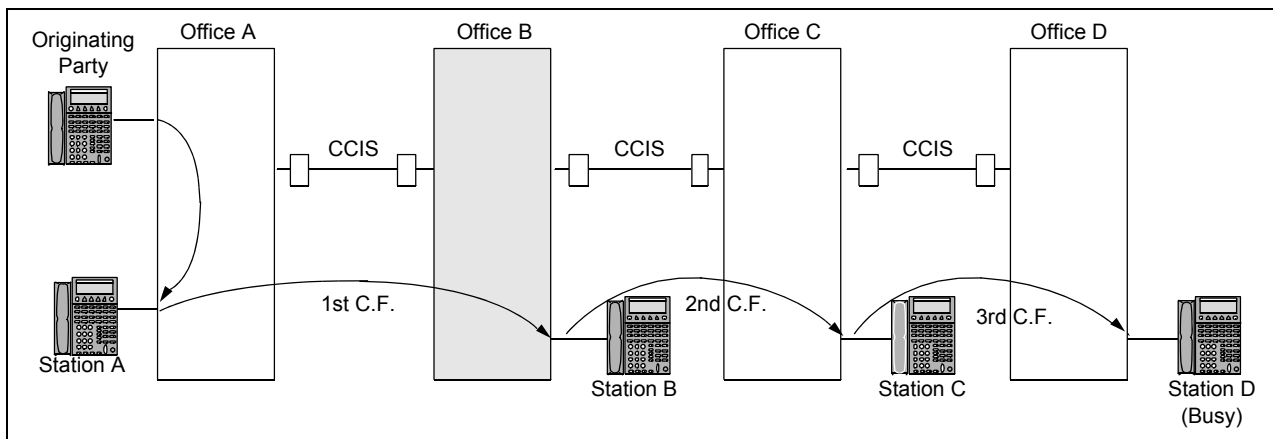
1. In the case of Busy Verification - CCIS [B-9] or Executive Right-of-Way - CCIS [E-8], the service is effective to Station B in Office B. The service is invalid to Station D.
 - a.) When Station B is in busy status, Busy Verification - CCIS [B-9] and Executive Right-of-Way - CCIS [E-8] are activated.
 - b.) When Station B is in idle status, Station B is rung.



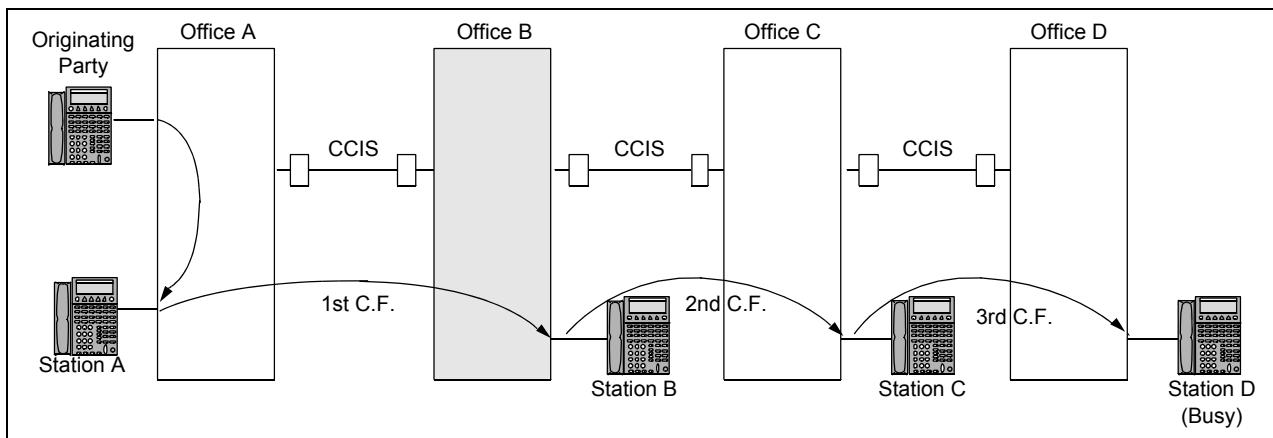
2. In the case of Message Reminder - CCIS [M-34, 34D], service is performed to Station B in Office B. The service is invalid to Station D.



3. In the case of Call Back - CCIS [C-44], service is effective to Station B in Office B. The service is invalid to Station D.



4. In the case of Step Call - CCIS [S-59], the service is valid to Station B in Office B. The service is invalid to Station D.



5. When a SIP Handler Controlled SIP terminal is in Multiple Mode, the Call Forwarding setting applies to the seized line while setting. In normal case, where My Line is not used by another station, the Call Forwarding setting applies to My Line. To set the Call Forwarding to Sub Line, use the ACFS/ACFS_T commands.

Programming

STEP 1: **ASYD** - System Data 1, Index 5, Bit 0: Access Code for Call Forwarding - Busy Line and Call Forwarding - Don't Answer Service. 0/1 = Same/Separate.

System Data 1, Index 5, Bits 1, 2, and 3: Number of Multiple Call Forwarding jumps:

BIT3	BIT2	BIT1	
0	0	0	1 JUMP
0	0	1	1 JUMP
0	1	0	2 JUMPS
0	1	1	3 JUMPS
1	0	0	4 JUMPS
1	0	1	5 JUMPS

STEP 2: **ASFC** - Allow Call Forwarding - Don't Answer (SFI 8) to the SFC of the Stations.

STEP 3: **ANPD** - Assign Minimum Necessary Number of Digits for the first number of the Access Code for Call Forward - Don't Answer Service.

STEP 4: **ASPA** - Assign the Access Code for Call Forward - Don't Answer Service.

To set: CI = "N: Normal", SRV = "SSC: Service Code", SID = 12

To cancel: CI = "N: Normal", SRV = "SSC: Service Code", SID = 13

STEP 5: **ATNR** - Assign allowable data into the corresponding item of the Tenant Restriction Index.

System Data 1, Index 486, Bit 0-2. The maximum number of times for activating Call Forward - CCIS service (0 to 7 times: 01Hexadecimal-07Hexadecimal)

When assigning "0 (default)", the Call Forwarding is activated between CCIS Nodes only one time.

M-43 Multiple Console Operation - CCIS

General Description

This feature provides Console operation where ATTENDANT CONSOLES [A-3] are installed in more than one Node in the CCIS Network.

Operating Procedure

No manual operation is required.

Service Conditions

1. Call transfer among ATTENDANT CONSOLES [A-3] in different nodes is possible, but Call Identification information cannot be transferred from one Node to another.
2. When ATTENDANT CONSOLES [A-3] are installed in multiple Nodes, Day/Night mode Changeover is controlled independently in each Node.
3. The following types of calls on the CCIS Network are identified by the lamps on the ATTENDANT CONSOLE [A-3]:
 - LDN
 - FX
 - WATS
 - CCSA
 - TIE
 - ATND
4. When ATTENDANT CONSOLES [A-3] are installed in multiple Nodes, an Incoming Call is only indicated at the Terminating ATTENDANT CONSOLE [A-3]. No indication is given on the ATTENDANT CONSOLES [A-3] at the other Nodes.
5. The maximum number of Consoles per unit is two.
6. The maximum number of Consoles allowed per system is 16 for 1-IMG and 60 for 4-IMGs.
7. Each Incoming Call is displayed on a Console whether idle or busy. If all Attendants are involved in processing calls when another Central Office Call arrives, the Call Waiting Lamp will light on all Consoles. This is Switched-Loop Attendant Operation.
8. If one of the Consoles enters the Night mode, all calls addressed to the Attendant will be directed to the other Consoles. However, the Console which has entered the Night mode must complete processing of all calls already connected to its Loop.
9. A Station can be connected to only one Attendant Loop at a time. Any attempt at establishing Multiple Connections will result in Reorder Tone being sent to the Attendant.
10. The System operates only on a Switched-Loop basis. Fixed Loop operation is not available.

Interactions

1. For information regarding a single ATTENDANT CONSOLE [A-3] and system features provided to the ATTENDANT CONSOLE [A-3], see ATTENDANT CONSOLE [A-3] in Data Programming Manual - Business. The ATTENDANT CONSOLE [A-3] must be provided first.
2. For each Tenant, only one type of ATTENDANT CONSOLE [A-3] system can be assigned, either normal or Primary ATTENDANT CONSOLE [A-3] system.
3. ASAT must be programmed for INTERPOSITION TRANSFER [I-5].

4. ATTENDANT CONSOLES [A-3] may not dial another console directly. Talk path will occur only during INTERPOSITION TRANSFER [I-5].
5. When more than one ATTENDANT CONSOLE [A-3] is installed, a Primary ATTENDANT CONSOLE [A-3] may be assigned (AMAT). This ATTENDANT CONSOLE [A-3] will control the implementation of DAY/NIGHT CLASS OF SERVICE [D-15].

Programming

- STEP 1: **ASYD** - System Data 1, Index 9, Assign the number of ATTENDANT CONSOLE [A-3] in system. System Data 2, Index 2, Bit 2, Is this Primary ATTCON system? 0/1: No/Yes. (When Primary goes into Night, Tenant goes into Night.) System Data 2, Index 2, Bit 3, Is this normal ATTCON system? 0/1: No/Yes. (When all ATTENDANT CONSOLES [A-3] go into Night, Tenant goes into Night.)
- STEP 2: **ATRK** - To assign the ATTENDANT CONSOLE [A-3]: LENS = LP, and UNIT. The Line Group is always 20 and the Level is either 0 or 1. Assign as Route 901. Also assign a Service Feature Restriction Class (SFC 0) and a Route Restriction Class (RSC 0) to the ATTENDANT CONSOLE [A-3].
- STEP 3: **ASAT** - Assign a specific Attendant Number to the ATTENDANT CONSOLE [A-3]. See INDIVIDUAL ATTENDANT ACCESS [I-6] in Data Programming Manual - Business.
- STEP 4: **AMAT** - Assign one of the ATTENDANT CONSOLES [A-3] to serve as the Primary ATTENDANT CONSOLE [A-3]. This service is assigned on a Tenant basis. The ATT Number will correspond to the Trunk Number of that specific Console.
- STEP 5: **MBTK** - Make Idle the ATTENDANT CONSOLE [A-3] Trunk.
- STEP 6: **ATNR** - Allow Tenant-to-Tenant Connection for Inter and Intra-Tenant basis. Assign Tenant Restriction Index (TRI) 1 for Station to Station Calling; TRI 1 for CALL FORWARDING, TRI 3 for CALL FORWARDING set by the ATTENDANT CONSOLE [A-3]; TRI 4 for Incoming Calls to the ATTENDANT CONSOLE [A-3].

M-67 Message Center Interface - CCIS

General Description

This feature provides an INTERFACE to the External CPU for MESSAGE CENTER information when a specific UCD Group or Console in a CCIS Network is called. This interface allows external control of Message Waiting Lamp (MWL) indications on equipped stations.

Operating Procedure

The Message Center Interface (MCI) can provide one of two modes of operation. These modes are described as Feature 1 and Feature 2:

Feature 1:

- Incoming Call information is sent to the MCI when an Attendant answers.
- Control of MWLs is based on data from the External CPU.

Feature 2:

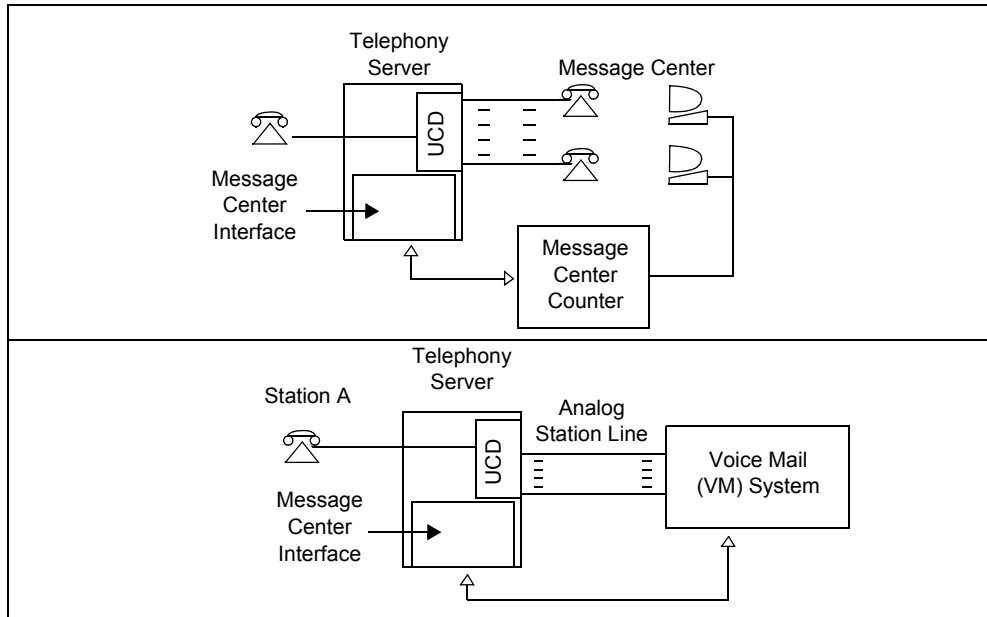
- Incoming Call information is sent to the MCI when a UCD Station answers.
- Dual Call Forwarding Service is possible.
- Control of MWLs is based on data from the External CPU.

Feature 1:

1. When the Attendant answers a call, the System transmits a Call Handling Record to the MCI. The External CPU, based on the received data, will display a profile of the Station/Trunk being handled by the Attendant on the monitor.
2. MWL control is based on data from the External CPU. Through the External CPU Terminal, when information is registered, the Host/CPU system forwards MWL control data according to the MWL ON/OFF control information sent.
3. The System, upon receiving this control data from the MCI, will extinguish or illuminate the MWL, depending on the subscriber displayed on the Attendant's monitor/display.
4. The Called Station will be able to receive a message from the Attendant by dialing "0", or from a Computer Terminal by entering the Identification Number.
5. The external CPU, upon retrieval of message information, will transmit a data record requesting the System to extinguish the MWL of the corresponding Station.

Feature 2:

1. The purpose of this MCI is to provide an interface to a Voice Mail System, or a Message Center Computer which is capable of sending MWL control data to the System.
2. In order to perform the data transfer to the External CPU, a Station/Trunk is connected to a designated UCD Group. These Stations in the UCD Group are connected to the Voice Mail System/Message Center System to Collect Call Connection Status of MWL Control information. Refer to the following block diagram.
3. The System, upon receiving this control data from the MCI, will extinguish or illuminate the MWL depending on the subscriber displayed on the Attendant's monitor/display.
4. The user at the Called Station will be able to receive a message from the system by dialing the Pilot Number of the UCD Station Group connected to the Voice Mail System.
5. The External CPU, upon retrieval of message information, will transmit a data record requesting the System to extinguish the MWL of the corresponding Station.



Service Conditions

1. The call type is sent to the External CPU via the MCI Interface. This Call Record will pertain to the following services:

Feature 1:

- CALL FORWARDING - DON'T ANSWER [C-3] from Internal Call
- CALL FORWARDING - DON'T ANSWER [C-3] from External Call
- CALL FORWARDING - DON'T ANSWER - CCIS [C-47] from Internal Call
- CALL FORWARDING - DON'T ANSWER - CCIS [C-47] from External Call
- CALL FORWARDING - BUSY LINE [C-2] from Internal Call
- CALL FORWARDING - BUSY LINE [C-2] from External Call
- CALL FORWARDING - BUSY LINE - CCIS [C-46] from Internal Call
- CALL FORWARDING - BUSY LINE - CCIS [C-46] from External Call
- CALL FORWARDING - ALL CALLS [C-5] from Internal Call
- CALL FORWARDING - ALL CALLS [C-5] from External Call
- CALL FORWARDING - ALL CALLS - CCIS [C-45] from Internal Call
- CALL FORWARDING - ALL CALLS - CCIS [C-45] from External Call
- MULTIPLE CALL FORWARDING - DON'T ANSWER - CCIS [M-42] from Internal Call
- MULTIPLE CALL FORWARDING - DON'T ANSWER - CCIS [M-42] from External Call
- MULTIPLE CALL FORWARDING - BUSY LINE - CCIS [M-41] from Internal Call
- MULTIPLE CALL FORWARDING - BUSY LINE - CCIS [M-41] from External Call
- MULTIPLE CALL FORWARDING - ALL CALLS - CCIS [M-40] from Internal Call
- MULTIPLE CALL FORWARDING - ALL CALLS - CCIS [M-40] from External Call
- ATTENDANT CAMP-ON WITH TONE INDICATION [A-1]
- ATTENDANT CAMP-ON WITH TONE INDICATION - CCIS [A-45]
- AUTOMATIC RECALL [A-8]
- Call Return from Hold
- Operator Call
- LDN Call

Feature 2:

- Station dials Message Center Number Directory.
 - Direct Trunk Call to Message Center.
 - Trunk Call to Message Center extended by ATTENDANT
 - Station Call is FORWARDED - ALL CALLS to Message Center.
 - Trunk Call is FORWARDED - ALL CALLS to Message Center.
 - Station Call is FORWARDED - BUSY LINE to Message Center.
 - Trunk Call is FORWARDED - BUSY LINE to Message Center.
 - Station Call is FORWARDED - DON'T ANSWER to Message Center.
 - Trunk Call is FORWARDED - DON'T ANSWER to Message Center.
2. The MCI can control the Desktop terminal display for Message Indication. One of four applications of the MCI can be displayed. The four applications are as follows: Message Waiting in a Message Center System, VMM in a Voice Mail System, TMM in a Text Mail System, and FMM in a Fax Mail System.
 3. If an ATTENDANT CONSOLE [A-3] calls a UCD Group directly for Feature 2, the System will not generate a Call Record to the MCI.
 4. If the Host/CPU malfunctions and stops collecting Call Records, the System can store up to 16 Call Records. If the maximum of 16 Call Records is stored and a 17th is generated, the system will overwrite the oldest stored record, thus giving the stack the most recently generated Call Records.
 5. The System connected to a Message Center CPU in a CCIS Network forms a Message Center Node. In the CCIS Network, one Message Center Node can be provided.
 6. The maximum number of Remote Nodes where the Message Center CPU sends the OFF command for MWLs of all the Stations is 32.
 7. This service is used together with CALLED NUMBER DISPLAY - ATTENDANT [C-59].

Programming

- STEP 1: **ASYD** - System Data 1, Index 28, Bit 0, 1, 2, and 3: Assign Message Sending Guard Timer for MCI. Guard Timer: (data value × 128 milliseconds). Bit 5: MWL Control by MCI. 0/1 = Out/In Service.
System Data 1, Index 29, Bits 0-7: Assign the Port Number for message output to the MC In the case of dual service, two bits are assigned.
System Data 1, Index 34, Bits 1 and 2: Specify the RS232C Output Parity Code.
System Data 1, Index 70, Bit 0 = 1 (Called Number Display in service.)
System Data 1, Index 78, Bit 1 = 1 (Calling and Intermediate Station Number Indication.) Bit 1= 1 (Kind of Service Class Indication.)
System Data 1, Index 116 (Port 0) through Index 123 (Port 7): Assign the kind of Terminal = 1: Printer/MCI to the corresponding Output Port. (Assigned via AIOC.)
System Data 2, Index 6, Bit 0: MCI Service when Terminating UCD Group in this Tenant. 0/1 = Out/In Service.
System Data 2, Index 7, Bit 1: MCI Service when Terminating the Attendant in this Tenant. 0/1 = Out/In Service.
- STEP 2: **ASYDL** - System Data 1, Index 529, Bits 0 & 1. Parity check method for SMDR/MCI/CS Report with LAN interface.

b0	b1	
0	0	= Odd Parity Check (Default)
0	1	= Odd Parity Check
1	0	= Even Parity Check
1	1	= Non-Parity Check

- STEP 3: **ADTM** - Specify the Port Number used for MCI within the range of 1024 to 65534. When “0” is set, the default value (60020) is automatically used.
- STEP 4: **AIOC** - Assign the Function and Attribute Data of the IOC Ports.
- STEP 5: **ASFC** - Allows MWL Control (SFI 74) to the SFC of the Station. SFI 74 [Message Waiting Lamp Setting-Station (Called Party)].
- STEP 6: **ARPC** - Assigns the Remote Point Code Data for the Message Center.

Note: For the detail information on programming, refer to document “Message Center Interface (MCI) Specification”.

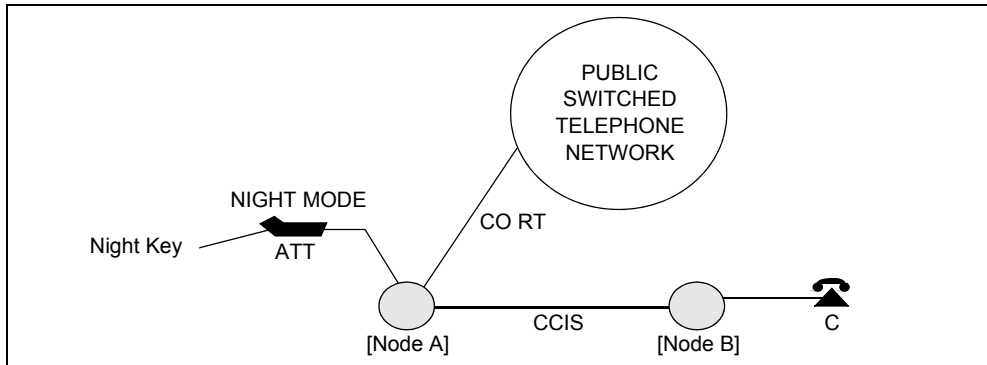
N-15 Night Connection - Fixed - CCIS

General Description

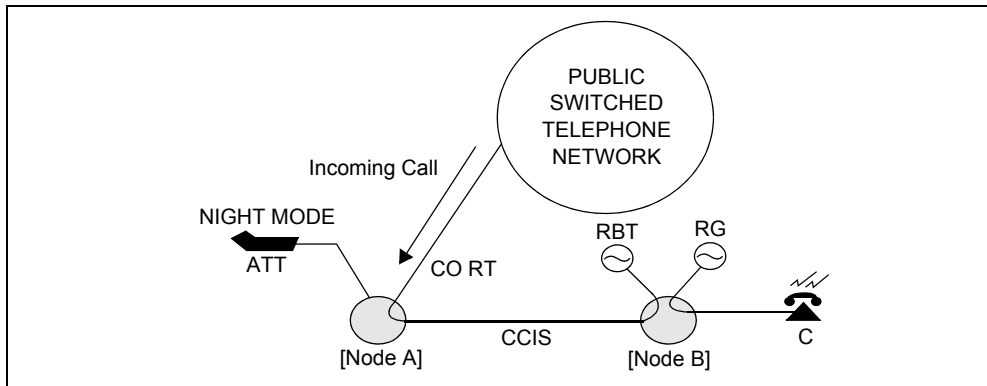
When the Night mode has been entered, this feature routes calls, normally directed to the ATTENDANT CONSOLE [A-3], to a preselected Station in another Node through CCIS.

Operating Procedure

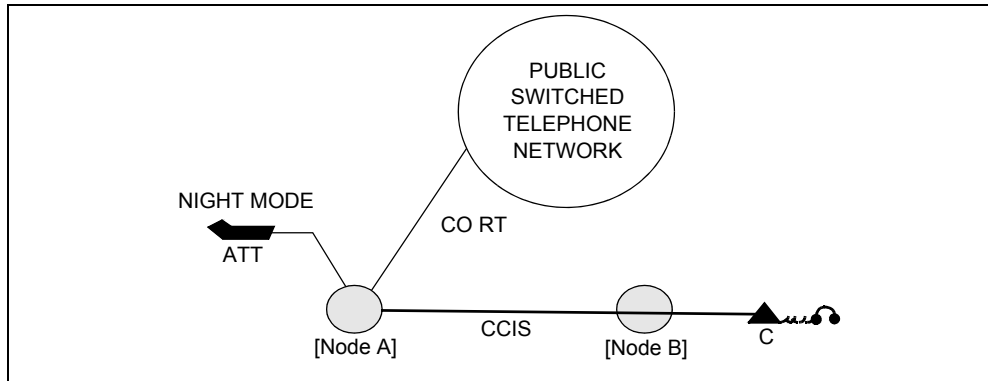
1. The Night Lamp illuminates, when the Attendant in Node A sets Night mode with the Night key pressed.



2. An Incoming Call from the Central Office RT to the Attendant in Night mode. The Central Office RT is automatically connected to Station C for Night Connection and receives Ringback Tone. Station C is rung.



3. Station C answers and is connected with the Central Office RT. If necessary, the call can be transferred to another Station by means of Call Transfer - All Calls Service.



Service Conditions

1. Calls that are being processed, or are in the Hold state when the NIGHT mode is entered, will be disconnected after the mode Changeover has been completed.
2. If the NIGHT CONNECTION Station to which an Incoming Call has been directed is busy, the Calling Party will hear Ringback Tone until the Station becomes idle.
3. This feature may be provided with NIGHT CONNECTION - FLEXIBLE [N-2] and TRUNK ANSWER FROM ANY STATION [T-8] in the same system.
4. If the NIGHT CONNECTION Station is set for CALL FORWARDING - ALL CALLS [C-5], Incoming Central Office Trunk Calls terminated to that Station will be forwarded to the designated Station.
5. Incoming Calls that will be routed to NIGHT CONNECTION Stations are limited to RingDown Trunks.
6. Such calls programmed in ALDN should use LDN NIGHT CONNECTION - CCIS [L-29].

Programming

- STEP 1: **ACSI** - Assign the Night Connection - Fixed station number to the Route and Trunk Number.
RT= ☐, TK= ☐
CSI = 6 (Night Connection - Outside)
ADC= ☐
- STEP 2: **ACFR** - Release the Call Forwarding Restriction by Night Connection Fixed (TSFI = 2).
- STEP 3: **ARSC** - Release the Incoming Connection Restriction of the Route and Station assigned in ACSI.
(RRI = 0, 1)
- STEP 4: **ASPD** - Assign Speed Dial Number.

N-16 Night Connection - Flexible - CCIS

General Description

This feature provides Inter-Office Flexible Night Connection Service through the CCIS Network, when the NIGHT CONNECTION - FIXED - CCIS and NIGHT CONNECTION - FLEXIBLE - CCIS Stations are located in different Nodes.

Operating Procedure

To Set

1. The NIGHT CONNECTION - FIXED - CCIS Station in the Destination Office sets CALL FORWARDING - ALL CALLS - CCIS [C-45] to a Station in another Node.

To answer

1. In the Night mode, an Incoming Call to the Attendant Console is automatically routed through CCIS to a NIGHT CONNECTION - FIXED - CCIS Station located in another Node. This Station is then forwarded to a NIGHT CONNECTION - FLEXIBLE - CCIS Station in a different Node.
2. The Calling Party hears Ringback Tone.
3. Ring Signal is sent to the NIGHT CONNECTION - FLEXIBLE - CCIS Station.
4. The NIGHT CONNECTION - FLEXIBLE - CCIS Station goes off-hook to answer the Incoming Call.

Service Conditions

1. Destination Stations are assigned on a flexible basis using CALL FORWARDING - ALL CALLS - CCIS [C-45].
2. For NIGHT CONNECTION - FLEXIBLE - CCIS to function, a NIGHT CONNECTION - FIXED - CCIS [N-15] Station must be assigned to the Trunk via PCPro.
3. The NIGHT CONNECTION - FLEXIBLE - CCIS Destination Station can be in the same Node as the Attendant Console, which has set NIGHT CONNECTION - FIXED - CCIS [N-15].
4. If an Incoming Call has terminated to a Flexible Night Station and that Station is busy, the call will queue to the Night Station.
5. The Destination Telephone Number at the Distant Office is stored in SPEED CALLING - SYSTEM [S-3] memory.

Interactions

1. NIGHT CONNECTION - FLEXIBLE - CCIS is the combination of CALL FORWARDING - ALL CALLS [C-5] and NIGHT CONNECTION - FIXED [N-1] or NIGHT CONNECTION - FIXED - CCIS [N-15].
2. CLASS OF SERVICE - INDIVIDUAL [C-15]: The Station chosen as the NIGHT CONNECTION - FLEXIBLE - CCIS Station should be assigned a Class of Service capable of performing the Night Station functions.

Programming

See CALL FORWARDING - ALL CALLS [C-5] and NIGHT CONNECTION - FIXED [N-1] features in Data Programming Manual - Business.

N-36

Name Display - OAI - CCIS

General Description

This feature allows a Desktop terminal with an LCD to indicate the User Name corresponding to the Calling Telephone Number while engaged in a call over the CCIS Network. There are two ways to indicate the User Name, eight-digit display and 16-digit display, and one of them is chosen in the system. The database of the User Name is managed by an application running on the OAI Host Computer.

Note: This feature is not available in North America.

Operating Procedure

Note: These examples below are only for Desktop Terminals and DESKCON.

1. Station A calls Station B in another office:
Station A User Mary Jones
Station B User Nancy Williams

Eight digit display

LCD of Station A (Calling Party) displays:

Name of Station B user (Steady display)

NANCY W. (Time Display)

LCD display of Station B (called party) when ringing:

Name of Station A user (Flashing)

MARY J. (Time Display)

When Station B answers, the LCD of Station A displays:

Elapsed time

Name of Station B user (Steady display)

0:15	NANCY W.
(Time Display)	

The LCD of Station B displays:

Elapsed time	Name of Station A user (Steady display)
0:15 (Time Display)	MARY J.

16-digit display

LCD of Station A (Calling Party) displays:

Office code + telephone number of Station B (Steady display)
2217461 NANCY WILLIAMS
Name of Station A user (Steady display)

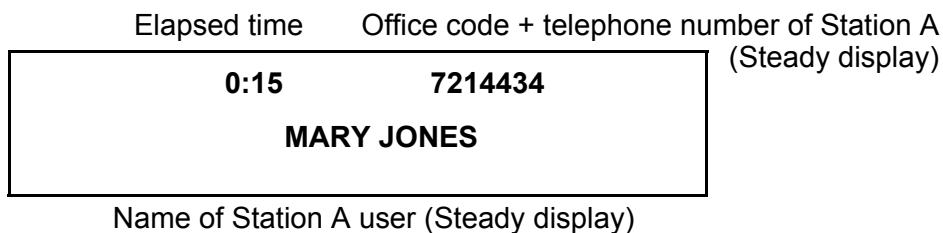
LCD of Station B (Calling Party) when ringing:

Office code + telephone number of Station B (Flashing)
7214434 MARY JONES
Name of Station A user (Flashing)

When Station B answers, the LCD of Station A displays:

Elapsed time	Office code + telephone number of Station B (Steady display)
0:15 NANCY WILLIAMS	2217461
Name of Station B user (Steady display)	

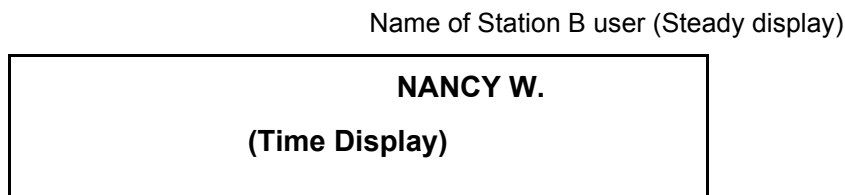
The LCD of Station B displays:



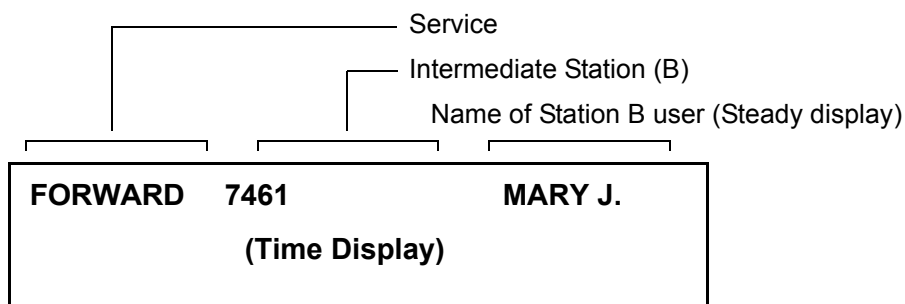
2. Station A User calls Station B User in another office who has set CALL FORWARDING - ALL CALLS - OUTSIDE [C-28] to Station C:
Station A User Mary Jones
Station B User Nancy Williams
Station C User Michael Anderson

Eight-digit display

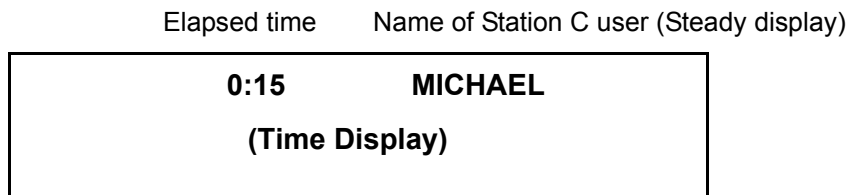
LCD of Station A (Calling Party) displays:



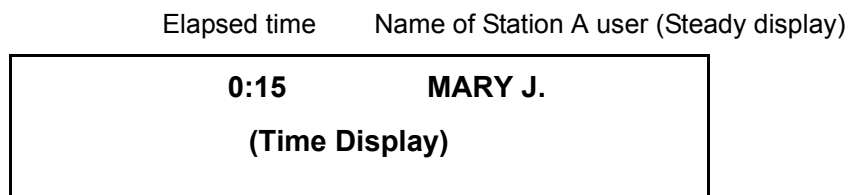
LCD display of Station C (Destination Station) when Ringing:



When Station C answers, the LCD of Station A displays:

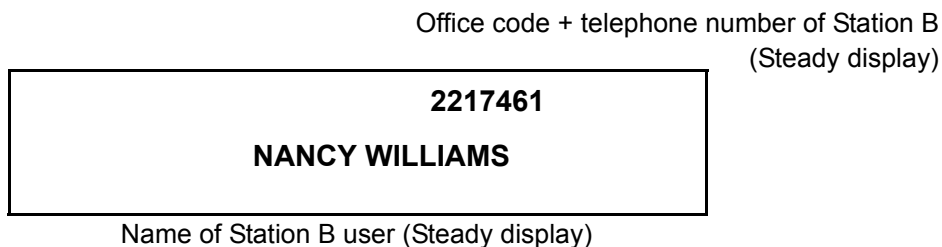


The LCD of Station C displays:

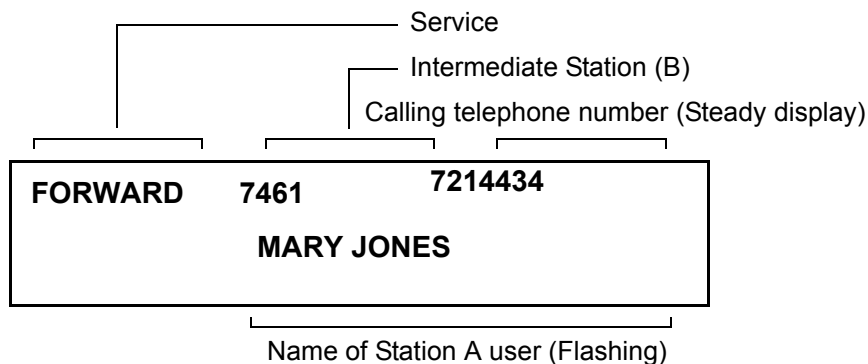


16-digit display

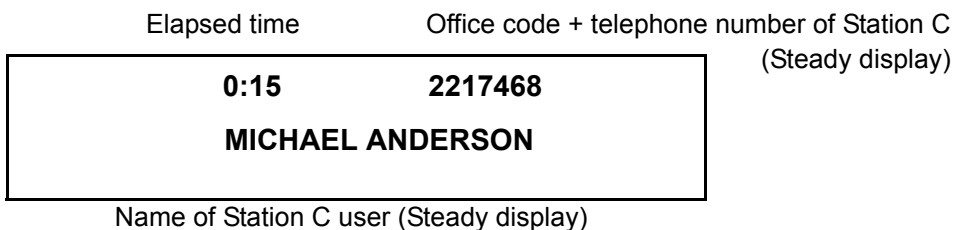
LCD of Station A (Calling Party) displays:



LCD display of Station C (Destination Station) when ringing:



When Station C answers, the LCD of Station A displays:



The LCD of Station C displays:

Elapsed time	Office code + telephone number of Station A (Steady display)
0:15	7214434
MARY JONES	
Name of Station A user (Steady display)	

3. Station A User calls Station B User in another office who is busy:
Station A User Mary Jones
Station B User Nancy Williams

Eight-digit display

Display of Station A (Calling party) displays:

Service	Name of Station A user (Flashing)
BUSY	NANCY W.
(Time Display)	

16-digit display

Display of Station A (Calling Party) displays:

Service	Office code + telephone number of Station B (Flashing)
BSY	2217461
NANCY WILLIAMS	
Name of Station B user (Flashing)	

Service Conditions

1. If the station user name is not assigned in user information, the Telephone Number is displayed instead.
2. Following table shows how the name of Calling/Called Party is displayed when eight-digit display and 16-digit display are used simultaneously.
(Both Calling/Called Party have a Desktop terminal with three-line LCD.)

Calling party → Called party (No. of information digits)	Name Display of Calling Party	Named Display of Called Party
16 → 8	- 16-digit display in lower/middle line (8 segments from right are left blank)	- 8-digit display in upper line (first 8 digits are displayed)
8 → 16	- 8-digit display in upper line (first 8 digits are displayed)	- 16-digit display in lower/middle line (8 segments from right are left blank)
8 → 16 → 8	- 8-digit display in upper line	- 8-digit display in upper line
16 → 8 → 16	- 16-digit display in lower/middle line	- 16-digit display in lower/middle line

3. In case of 16-digit display, multiline cannot be assigned on the Desktop terminal.
4. A call originating on a Desktop terminal Sub Line will display the name associated with the Sub Line (only in case of eight-digit display).
5. The name of the Calling Party is displayed only on the Desktop terminal whose Prime Line is the Called Number (in case of both eight and 16-digit display).
6. The information to be displayed may consist of English alphabet, numeric characters, and most keyboard symbols.
7. The database of Names and Telephone Numbers is managed by an application running on the OAI Host Computer (UAP), via Free Location Facility (FLF). The names may be displayed in any format (MARY JONES, M. JONES, etc.).
8. Different routes should be assigned for the office where NAME DISPLAY service is activated and where it is not activated.
9. In case of an interoffice call, dialed number is not displayed even when it is set in the system.
10. Usually the Office Code and the Telephone Number are displayed, However, if the Telephone Number is assigned, the Telephone Number without Office Code is displayed instead. The Telephone Number is a unique number assigned to each station user in the network.
11. If the Called Station has set CALL FORWARDING - ALL CALLS - OUTSIDE/BUSY LINE - OUTSIDE [C-28, 60], the name of the destination station user is displayed on the calling party's Desktop terminal LCD.
12. This service is not available when the call is routed over the office where NAME DISPLAY service is not activated or routes other than the CCIS Network.
13. This service cannot be activated with CALLING PARTY INFORMATION TRANSFER [C-112].
14. This service is available when Calling or Called Station is in following status or has set following services:

CALL FORWARDING - ALL CALLS - CCIS	[C-45]
CALL FORWARDING - BUSY LINE - CCIS	[C-46]
CALL FORWARDING - DON'T ANSWER - CCIS	[C-47]
CALL PICKUP	[C-7]
CALL WAITING - ORIGINATING/TERMINATING	[C-31/12]
MESSAGE REMINDER - CCIS (Calling Station only)	[M-34]
VOICE CALL - CCIS	[V-7]
Answering a parked call	
Recalled from ATTENDANT CAMP-ON WITH TONE INDICATION - CCIS	[A-45]
Recalled from a Held Call	
Receiving a call from Uniform Call Distribution [U-1] queuing	

15. In case of 16-digit display, when Camp-On or CALL WAITING [C-12, 31] is set, the name information and the number displayed on the called party's Desktop terminal do not agree. The name of the Connected Party is displayed. LCD of Station A while connected to Station B

(Elapsed Time)	(Station B number)
(Station B user name)	

- When Station C user sets CALL WAITING to Station A, LCD of Station A displays:

C WAIT	(Station C number)
(Station B user name)	

- LCD returns to previous status after a predetermined period of time.
16. This service can be activated when the Called Party is busy or lockout. However, in case the Called Party is restricted, it is not available.
17. This service is not available when the Calling Party is connected to the Attendant.
18. When one party places the other on Consultation Hold and Blind Transfers the call by Voice Call (by pressing the VOICE key), the names displayed on the LCD disappear when the Transferring Party releases. When the third party answers the call, the names are displayed again.
19. When a call arrives at a SIP Handler Controlled SIP terminal which supports RFC3325 and RFC5876, Calling Name can be displayed on the SIP Handler Controlled SIP terminal (in the INVITE request message, Name Display information is given in the display-name field of the From header). However, when the connected party is changed by the transferring operation or shifting from a three-way call into a two-way call due to the disconnect of one of the three parties, the display of the connected party information depends on the standard SIP terminal. For the conditions of the display, refer to SIP HANDLER - SIP TERMINAL [S-167] of Data Programming Manual - Business.
20. Name information assigned with the NAME parameter of the ANDD command is displayed on the SIP Handler Controlled SIP terminal. Only Name Display information containing symbols and alphanumeric characters can be notified.

Programming

This procedure explains to assign Name Information from User's Application. (OAI Service) Otherwise assign by using ANDD command.

- STEP 1: **ASYD** - System Data 1, Index 78, Bit 5=1: Name Display Service is in service. Bit 3:0/1 (Dialing Number Display service is in service/Not in service)
System Data 1, Index 79, Bit 6 = 0 (OAI/ACD service is in service)
System Data 1, Index 241, Bit 1:0/1 [Name Display (Guest Name Service) eight-digit/16-digit Display].
- STEP 2: **ARTD** - Assign the Route Class Data of trunk at the Node.
- | | |
|---|--|
| BT (CDN: 43) Inter Office Busy Service: | 1 (In service) |
| DPLY (CDN: 50) Caller ID display over CCIS: | 1 (Enabled Note 1) |
| CI (CDN: 98) ISDN transmitting information: | 0/1 Out of service/16-digit Caller
Number Service, Attribute Information
Notification Service, and Calling
Sub-Address Transfer Service |
| IND (CDN: 112) Inter-office Name Display: | 1 (In service) |

Note: To change the data for existing route (RT), initialize the circuit card.

Note 1: Up to 8 digits of a Caller ID can be shown on the display.

N-37 Name Display - System - CCIS

General Description

In between CCIS Networks, this service allows Calling or Called Party information (User's Name, Telephone Number, etc.) to be displayed on the LCD of the Desktop terminal.

Operating Procedure

No manual operation is required.

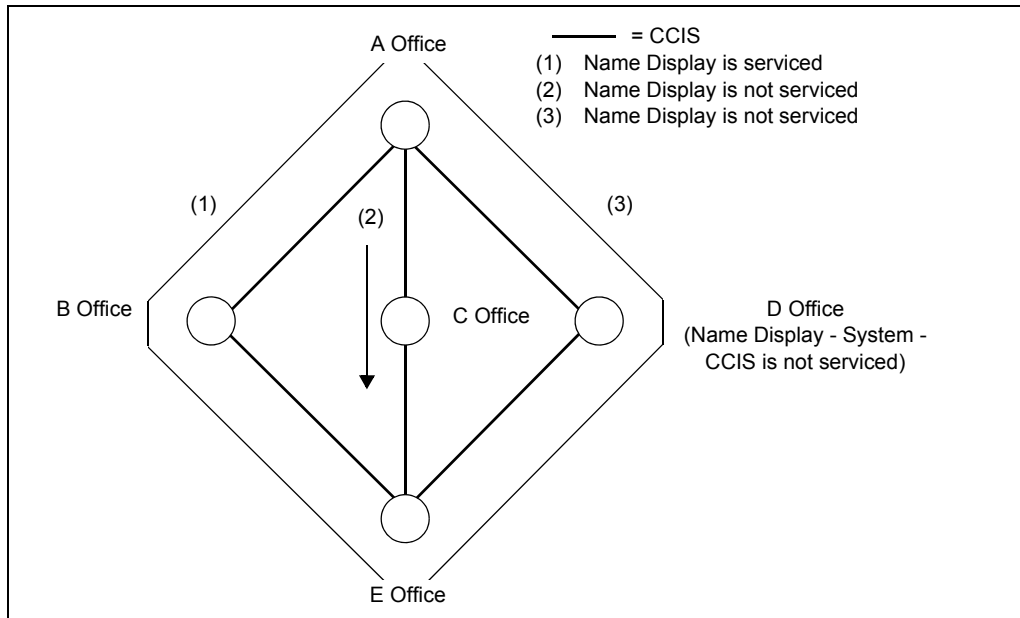
Service Conditions

1. When the Called Party is being rung, the LCD of the Calling Desktop terminal displays the name of the Called Party.
2. When the Caller or Called Party's Name information is not available, name information is not displayed. Instead, the Calling Party's Number/Called Party's Number is displayed.
3. When both eight-digit display and 16-digit display are used for this Name Display - System - CCIS Service, the Calling Party's/the Called Party's Names are displayed as shown in the table below.

NAME DISPLAY - SYSTEM - CCIS ORIGINATING OFFICE → TERMINATING OFFICE	CALLING PARTY'S NAME DISPLAY (LCD 3-LINE DISPLAY DESKTOP TERMINAL)	CALLED PARTY'S NAME DISPLAY (LCD 3-LINE DISPLAY DESKTOP TERMINAL)
16 digits → 8 digits	Middle Line: 16 digits (Right 8 digits: Blank)	Top Line: 8 digits (Front 8-character display)
8 digits → 16 digits	Top Line: 8 digits (Front 8-character display)	Middle Line: 16 digits (Right 8 digits: Blank)
8 digits → 16 digits → 8 digits	Top Line: 8 digits	Top Line: 8 digits
16 digits → 8 digits → 16 digits	Middle Line: 16 digits	Middle Line: 16 digits

4. When a call from a Desktop terminal Sub Line has terminated to the Called Side via a CCIS, the Calling Party's Sub Line Name information is displayed on the LCD of the Called Station.
5. Name display by both eight digits and 16 digits at the Call Destination is made only for the My Line.
6. ASCII characters can be displayed by this service.
7. Name information for this service is assigned by ANDD on a station number basis.
8. The Routes to the Offices where this service is provided and the Routes to the Office where this service is not provided must be separated from each other.
9. The Terminals subject to the Name Display Service are limited only to the Desktop terminal equipped with LCD.
10. Office Code + Telephone Number is usually displayed. However, when use of a Telephone Number is specified, the Telephone Number is displayed. (A CCIS Network is assigned only one Telephone Number.)

11. When a call has been transferred by Call Forwarding - All Outside Line Calls or Call Forwarding - Busy Outside Line Service, the LCD of the Calling Party's Desktop terminal displays the name information of the Transfer Destination instead of the Name information of the originally dialed Station.



12. This service cannot be used in conjunction with ISDN Information Transfer - CCIS Service.
13. When changing the station number of a station, be sure to change the user's information.
14. The CCIS Services for which Name Display - System - CCIS can be valid are as follows:
- Voice Call
 - Call Forwarding - All Calls - CCIS
 - Call Forwarding - Busy Line - CCIS
 - Call Forwarding - Don't Answer - CCIS
 - Camp-On - CCIS (Ringing only)
 - Message Reminder (Outgoing Call only)
15. The Intra-Office Services, inclusive of CCIS Trunks, for which Name Display - System - CCIS can be valid are as follows:
- Call Pickup
 - Ringing for Call Hold
 - Answering of Call Park
 - Call Waiting
 - Call Termination from UCD Queuing
 - Message Reminder (Outgoing Call only)

Programming

STEP 1: **ASYD** - System Data 1, Index 78, Bit 5: (1) Name Display Service in service.
System Data 1, Index 79, Bit 6: (0) OAI/ACD in service.
System Data 1, Index 241, Bit 1: User's Information Display Service. 0/1: Eight-Digit Display Service/16-Digit Display Service.

STEP 2: **ARTD** - Assign Route Class Data for CCIS Trunk Route.

RT:

43-BT :1 50-DPLY :1 **Note 1** 98-CI :0 112-IND:1

Note: To change the data for existing route (RT), initialize the circuit card.

Note 1: Up to 8 digits of a Caller ID can be shown on the display.

N-38 Node Number Suppression - CCIS

General Description

In a CCIS Network adopting the Closed Numbering System, when calling to or called from the another switching office, this feature allows only the calling or called party's number to be displayed on either the Desktop terminal or Attendant LCD. (Whether the Office Code (Node Number) is assigned or not, the display of the Office Code is suppressed.)

Note: This feature is not available in North America.

Operating Procedure

No manual operation is required.

Service Conditions

1. Even if this feature is available, the Office Code is included in the Station Message Detail Recording (SMDR) message.
2. Whether this feature is available or not must be unified in the network.
3. In case this feature is available, a Closed Numbering System must be adopted in a CCIS Network, and the combination of the CCIS Network adopting the Closed Numbering System with the Uniform Numbering System is impossible.

Programming

- STEP 1: **ASYD**, System Data 1, Index 214, Bit5. Node Suppression - Centralized Billing CCIS
0/1 = Out/In service
- STEP 2: **ARNP** - Assign the self office Identification Code against RT0.

O-11 Off-Hook Queuing - CCIS

General Description

This feature allows a user in a CCIS Network to remain off-hook and automatically enter a first-in, first-out queue at the Calling and Distant Nodes when an All Trunk Busy condition has been encountered. As soon as an Outgoing Trunk becomes available, the off-hook Station is connected to that Trunk through CCIS.

Operating Procedure

1. Dial the Trunk Access Code and the desired number.
2. The distant System determines that no Trunks are available and automatically places the call in an available queue slot.
3. The Calling Party receives Service Set Tone and remains off-hook.
4. When a Trunk becomes available, the Dialed Number is automatically forwarded.

Service Conditions

1. This feature is used in conjunction with LEAST - COST ROUTING - 3/6 DIGIT [L-5].
2. A maximum of 256 Stations at each Office can use OFF-HOOK QUEUING - CCIS simultaneously.
3. The queue slots for OFF-HOOK QUEUING - CCIS are used in common with OUTGOING TRUNK QUEUING [O-2] and OUTGOING TRUNK QUEUING - CCIS [O-12].
4. If no queue slots are available, the user will receive a Trunk Busy Signal.
5. The LCR Route Restriction Class can provide the OFF-HOOK QUEUING - CCIS option.
6. OFF-HOOK QUEUING - CCIS and OUTGOING TRUNK QUEUING [O-2] Services are mutually exclusive.
7. ACCOUNT CODE [A-18] and FORCED ACCOUNT CODE [F-7] information can be recorded on STATION MESSAGE DETAIL RECORDING (SMDR)[S-10] when used in conjunction with OFF-HOOK QUEUING - CCIS.
8. OFF-HOOK QUEUING - CCIS can be set concurrently to a maximum of eight connecting Systems (including the Self Node).
9. OFF-HOOK QUEUING - CCIS is, by definition, set to a connecting CCIS Node.
10. A maximum of 1024 Stations per system can use OFF-HOOK QUEUING - CCIS simultaneously.

Interactions

1. UNIVERSAL SENDER [U-3] must be provided first.
2. The System attempts Trunk seizure every four seconds until the connection has been completed.
3. LEAST - COST ROUTING - 3/6 DIGIT [L-5] information will be applied to these attempts. Therefore, OUTGOING TRUNK QUEUING [O-2, 12] will be set to all Routes in the Outgoing Pattern Routing (OPR).
4. If all queuing memory slots are in use, the user will receive a Trunk Busy Signal.
5. The time a call may remain in queue is unlimited.
6. The following features cannot be activated toward the busy Station:

CALL WAITING - ORIGINATING	[C-31]
CALL WAITING - TERMINATING	[C-12]
ATTENDANT CAMP-ON WITH TONE INDICATION	[A-1, 45]

BUSY VERIFICATION

[B-3, 9]

EXECUTIVE RIGHT-OF-WAY

[E-1, 8]

7. To disable constant Service Set Tone, change ASYD System Data 1, Index 42 Bit 7 to data "1". This changes constant Service Set Tone to Burst Special Dial Tone, and Special Dial Tone to Burst Special Dial Tone, followed by a constant Dial Tone.
8. This feature is not available for forwarding calls with Call Forwarding-Don't Answer-Outside [C-74].
9. This feature is not available for forwarding calls with Split Call Forwarding - All Calls (for trunk), Split Call Forwarding - Busy Line (for trunk), or Split Call Forwarding - Don't Answer (for trunk).

Programming

- STEP 1: **ASFC** - Assign a Service Feature Restriction Class that allows SFI 21 (Off Hook OG Queuing) to Stations that will have OFF-HOOK QUEUING - CCIS. Also assign SFI 21 at the Remote Node for SFC 0.
- STEP 2: **ARTD** - Routes to be used for OFF-HOOK QUEUING - CCIS must be flagged in CDN 9:TQ. Outgoing Queuing Service. Also allow trunk queuing to Route 31, the LCR(S) flag route, except the CCIS Route. Assign CDN 41:TDMQ = 1 in ARTD at the Remote Site CCIS Voice Route.

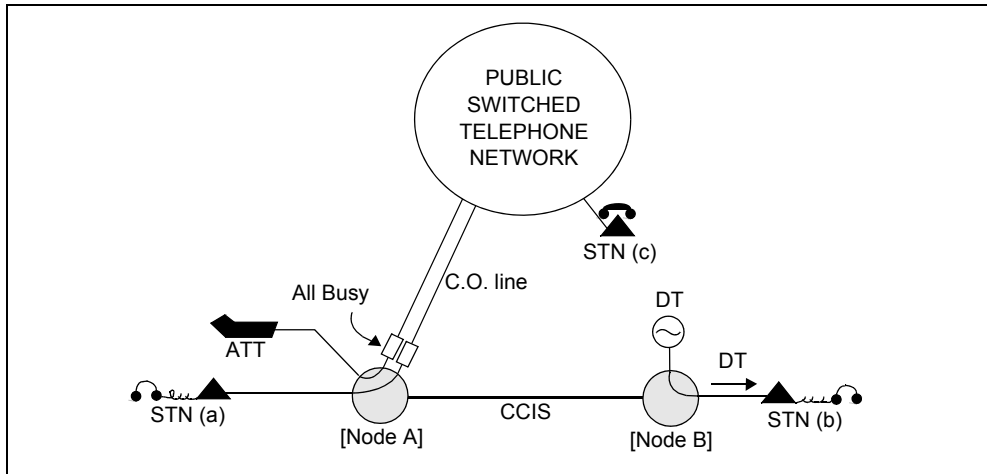
Note: To change the data for existing route (RT), initialize the circuit card.

O-12 Outgoing Trunk Queuing - CCIS

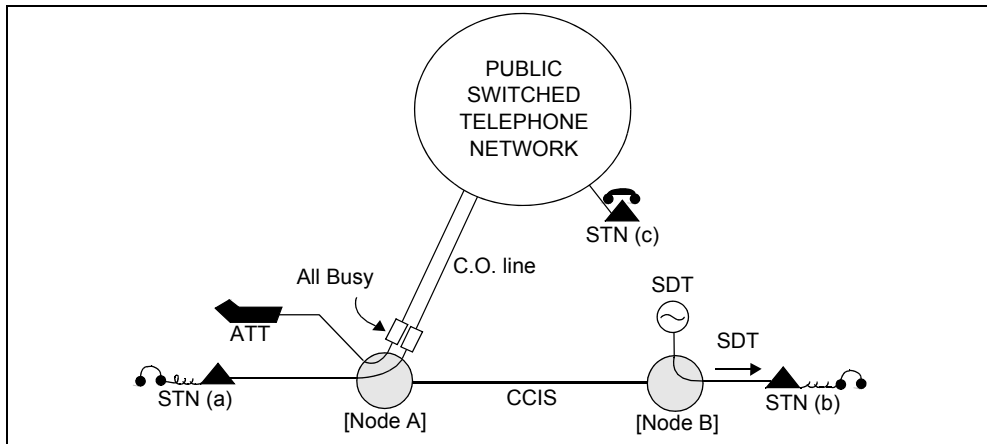
General Description

This feature allows Inter-Office, On-hook OUTGOING TRUNK QUEUING (OGQ) when a Station in the CCIS Network initiates a Central Office Line Call from one System to a different System, and encounters all Central Office line busy.

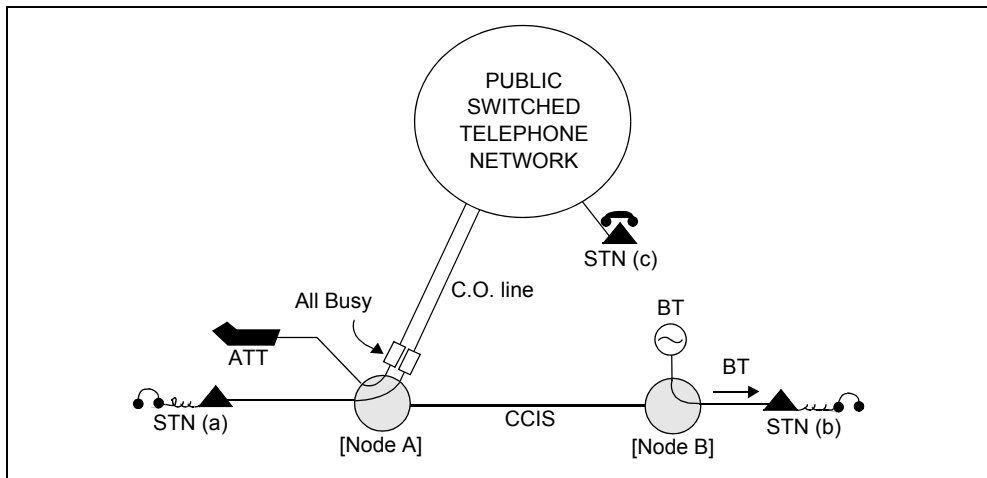
1. Station (b) goes off-hook. Receives Dial Tone.



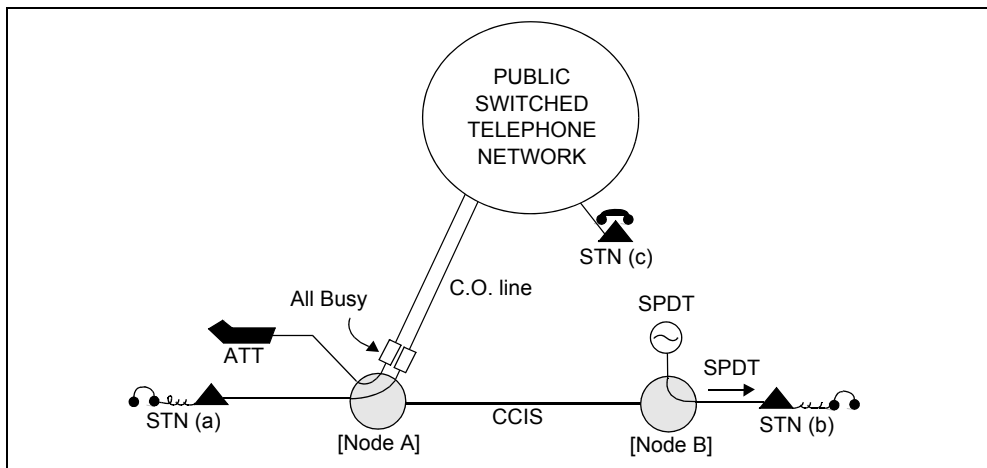
2. Station (b) dials the C.O. line Outgoing Call Access Code. Receives Second Dial Tone.



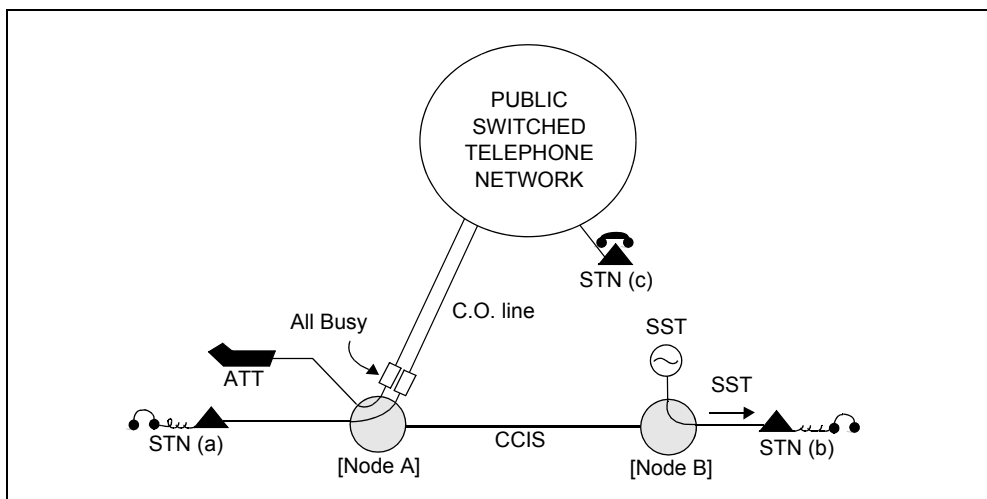
3. Station (b) dials Station (c) in the Center Office and receives a Busy Tone.



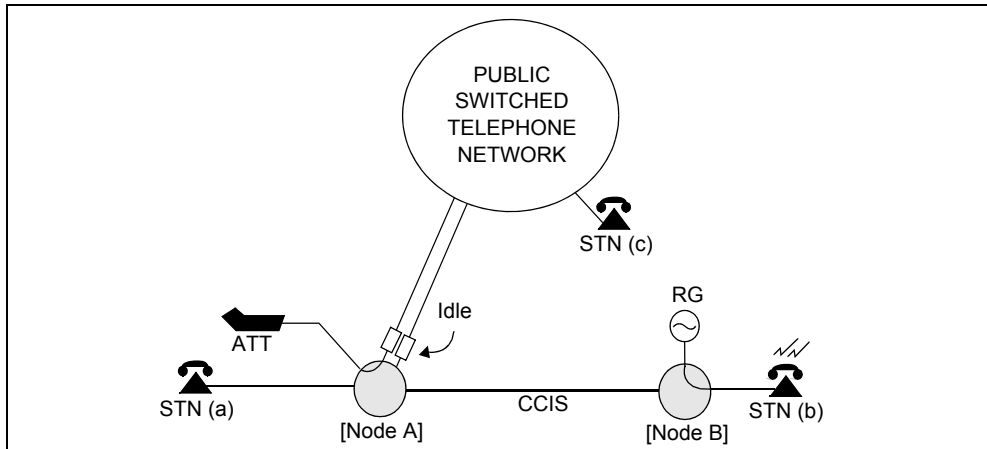
4. Station (b) switch hook flashes and receives the Special Dial Tone.



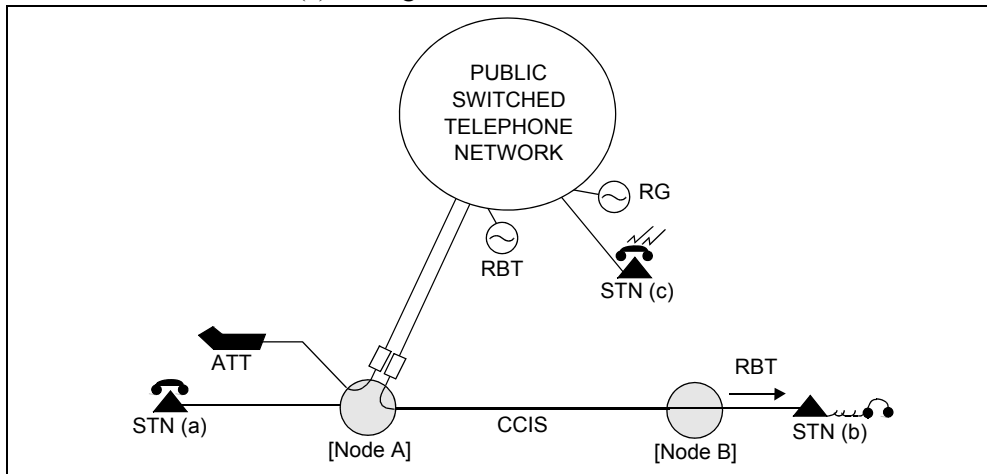
5. Station (b) dials the OGQ Access Code and receives a Service Set Tone.



6. Station (b) hangs up. Outgoing Trunks become available for processing the call from Station (b). Station (b) is rung.



7. Station (b) goes off-hook and is connected to the Public Switched Telephone Network. Station (b) receives Ringback Tone while Station (c) is rung.



Service Conditions

1. After an OUTGOING TRUNK becomes available, the user's Station will ring for 20 seconds. If not answered within that time, the Station will be automatically dropped from the queue.
2. When this feature is used in conjunction with SPEED CALLING - SYSTEM [S-3] or LEAST COST ROUTING - 3/6-DIGIT [L-5] if a Sender is involved, the Sender will automatically dial out the Called Subscriber Number when the handset is lifted.
3. If the user wishes to remove himself from the queue prior to being rung, the specified Cancel Code must be dialed.
4. Individual Stations may only initiate one OGQ at a time. Subsequent attempts will result in a Reorder Tone.
5. This feature is not available for an ATTENDANT CONSOLE [A-3].
6. The OGQ is common to all Central Office type Groups (DDD, FX, WATS, etc.) in the system.

7. The OGQ Call Back will return to the Originating Station, not the CALL FORWARDING terminating Station.
8. OGQ is denied to a Station Line when the CALL BACK [C-1] or CALL HOLD [C-6] feature is already activated.
9. If a user goes on-hook within 6-8 seconds after encountering all Trunks busy, OGQ can be set automatically to the Station.
10. The Station is set for OGQ for a maximum of 30 seconds to one hour. This time is adjustable through the System Data. After this timing, OGQ will be cancelled automatically.
11. ACCOUNT CODE [A-18] and FORCED ACCOUNT CODE [F-7] information can be recorded on SMDR when used in conjunction with OGQ.

Programming

- STEP 1: **ASYD** - System Data 1, Index 68, Bit 3: (1) OGQ (ON-HOOK) automatic cancel.
System Data 1, Index 159: Assign the OGQ (ON-HOOK) automatic Cancel Timer when System Data 1 Index 68 Bit 3 = 1. (ROM Data = 30 minutes)
System Data 2, Index 4, Bit 0: Call Back and OG Trunk Queuing Access Code. 0/1 = Separate/ Common.
Bit 1: Method to Access On Hook Queuing
0/1 = SHF and Access Code/Automatic
System Data 3, Index 3, Bit 5: Distinctive Ringing for Ring Pattern 5.
System Data 3, Index 7: Assign the OGQ Ring Back Pattern.
- STEP 2: **ASYDL** - System Data 1, Index 805, Bit 7: CCIS Tandem Trunk Queuing. 0/1 = Out of service / In service.
- STEP 3: **ANPD** - Assign the first digit of the OGQ Access Code and the number of necessary digits.
- STEP 4: **ASPA** - Assign the OGQ Access Codes.
To set: CI = "B: Busy", SRV = "SSC: Service Code", SID = 19
To cancel: CI = "N: Normal", SRV = "SSC: Service Code", SID = 20
- STEP 5: **ARTD** - Assign the OGQ Service for each Route except the CCIS Route.
9:TQ = 1: OGQ in service
- Note:** To change the data for existing route (RT), initialize or reboot the trunk device such as a circuit card or MG.
- STEP 6: **ASFC** - Allows Outgoing Queuing (SFI = 1) to the SFC of the Stations.

P-28

Paging Access - CCIS

General Description

This feature provides dial access to Paging Equipment from an ATTENDANT CONSOLE [A-3] or Station through the CCIS Network.

Note: When using this feature, see PAGING ACCESS [P-1] in Assignment of Basic Office Data chapter of Data Programming Manual - Business.

Operating Procedure

To access Paging through CCIS:

1. Lift the handset and receive Dial Tone.
2. Dial the Office Code and the Paging Access Code.
3. Connection to Paging Equipment is established.

Service Conditions

1. Paging Equipment must be provided by the customer.
2. One Trunk Circuit is required for each PAGING ACCESS.
3. If TENANT SERVICE [T-12] is provided, separate Access Codes and hardware should be provided for each TENANT.
4. A maximum of three digits can be used for the PAGING ACCESS Code.
5. The DIGITAL DISPLAY - TRUNK - CCIS [D-73] at the ATTENDANT CONSOLE [A-3] shows the Route and Trunk Number of the CCIS Trunk.
6. Following services are not available when this service is activated:

ALL ZONE PAGING	[A-53]
MEET-ME PAGING	[M-1]
PAGING TRANSFER	[P-10]
Paging Answer	

Interactions

1. MEET ME PAGING and PAGING ACCESS [P-1] can be provided simultaneously in the same system.
2. To directly answer PAGING ACCESS by the ATTENDANT CONSOLE [A-3], the Paged Party should use the INDIVIDUAL ATTENDANT ACCESS [I-4] feature.
3. Paging is limited to Stations or ATTENDANT CONSOLES [A-3]. Other parties (Central Office Trunk Calls) must have the ATTENDANT CONSOLE [A-3] or user perform the PAGING operation.
4. BUSY VERIFICATION [B-3], EXECUTIVE RIGHT-OF-WAY [E-1] - These features will be denied if the Paging Route has been assigned for Privacy. Verify the data in the Assignment of Route Data command, ARTD, CDN 44:PRV. If CDN 6:TCL is assigned as data "8", CDN 44:PRV is not required.
5. For simple PAGE ACCESS, assignments in ASFC are not required. Refer directly to the other Paging service features such as PAGING TRANSFER [P-10].
6. The ATTENDANT CONSOLE [A-3] can dial Priority Page Access Code and release a station.
7. When disconnecting from a Paging Trunk, the Trunk becomes idle immediately.

8. PAGING ACCESS is possible from CONSULTATION HOLD [C-17]. Therefore, Station A places Party B on soft hold and dials the Access Code to the Paging Trunk. Another switch hook flash disconnects the Page Trunk immediately and reconnects Party B to Station A.
9. CALL HOLD [C-6] - A Paging Trunk cannot be placed on CALL HOLD.
10. BUSY is displayed on the Desktop terminal LCD display when the Paging Trunk is busy. Reorder Tone is returned.
11. If Priority Page is to be used with PAGE ACCESS: in ARTD, CDN 6:TCL must be assigned as Data 8, Page with Ringback Tone. System Data 1, Index 73 affects the operation of Page Routes assigned Page with Ringback Tone. Therefore, if Priority Page is used with PAGE ACCESS then MEET ME PAGE [M-1, 11] and PAGING TRANSFER [P-10] are not available to the system.
12. Priority Page access will not disconnect an ATTENDANT CONSOLE [A-3] engaged in a paging trunk connection.

Programming

STEP 1: **ASYD** - System Data 1, Index 73, Bits 0 and 1. For PAGE function only, assign data "00".

STEP 2: **ARTD** - Assign the Paging Route as shown below:

RT:1

1-OSGS	:2	2-ONSG	:3	5-TF	:1	6-TCL	:11	7-L/T	:1
8-RLP	:2	15-LSG	:1	30-PAD	:7	44-PRV	:1		

Note: To change the data for existing route (RT), initialize the circuit card.

STEP 3: **ATRK** - Assign the LENS, Paging Trunk Route Number, Trunk Number, and Tenant Number.

STEP 4: **MBTK** - Assign the Make Idle status to the Paging Trunks.

STEP 5: **ANPD** - Assign a level for Trunk Access. Select Normal Service (N) or Hooking Service (H) from the combo box for Connection Indexes. Assign the Number of Necessary Digits according to a predetermined Numbering Plan. Busy Lamp Field is not activated.

STEP 6: **ASPA** - Assign the PAGE ACCESS Code. Type of service, SRV = "OGC: Outgoing Call". Assign the correct Route Number that is associated with this Access Code. Assign for "N: Normal" and "H: Hooking".

STEP 7: **ARSC** - Assign to the Station that is allowed access to Paging Trunks a Route Restriction Class (RSC) that is allowed these Routes in Route Restriction Index (RRI) 2 and 3.

R-22 Restriction from Outgoing Calls - CCIS

General Description

This feature automatically restricts preselected Stations from placing certain Outgoing Calls through CCIS without Attendant assistance.

Operating Procedure

No manual operation is required. Restricted Stations will receive Reorder Tone when trying to place a restricted call.

Service Conditions

1. This feature is programmed in System Data from PCPro.
2. The Attendant can allow restricted Stations to place Outgoing Calls via the ATTENDANT CONSOLE [A-3] using NON-DELAY OPERATION [N-3].
3. Restriction from particular Trunk Routes is determined by the Station's Route Restriction Class.
4. If a restricted Station calls another Station, the Called Station cannot use the CALL TRANSFER - ALL CALLS - CCIS [C-50] feature to connect the Calling Station to a Trunk Route from which it is restricted. If transfer is attempted, it will recall to the Called Station.
5. THREE-WAY CALLING [T-2] is denied if a restricted Station calls another Station and the Called Station attempts to add on an Outside Party in a Trunk Route from which the Calling Station is restricted.
6. If a user accesses a TIE Trunk to a System outside the CCIS Network, access to outside exchanges is controlled by the outside System.
7. For a particular Station, Day Mode and Night Mode Restrictions can differ.
8. Non-restricted Stations within the systems can CALL TRANSFER - ALL CALLS [C-11] Outgoing Calls to Stations restricted by this feature.
9. Station Line access to a given Trunk Group is controlled by assigning a Route Restriction Class (RSC) to each line. There can be a maximum of 15 different RSCs per system, each of which can be programmed to restrict an assigned Station from none, one or more than one Trunk Group (maximum 255 Trunk Groups on the System).
10. Two Outgoing Trunk Group Restriction Tables are provided per system. The Direct Dial Access Table is indexed when a user dials the Trunk Group Access Code, and the ATTENDANT CONSOLE [A-3] Table is indexed on Attendant-completed Calls. The restriction options per RSC can differ per table thus allowing Attendant-completion of Outgoing Calls for restricted Stations.
11. TIE LINE ACCESS [T-3]: If the user accesses a TIE Trunk to a distant System (outside the CCIS Network), access to outside exchanges can only be controlled by the distant System.

Interactions

1. Transferring Restrictions may not be desired for a restricted Station.
2. CALL TRANSFER - ALL CALLS [C-11]: Station A is allowed access to Outgoing on Route 1. Station B is restricted access for Outgoing on Route 1 via RRI 2 and 3. The unrestricted Station A makes an Outgoing Call on Route 1 and cannot use the CALL TRANSFER - ALL CALLS feature to connect Station B to Route 1, If CALL TRANSFER - ALL CALLS is attempted, Station A is immediately rung back.
3. CONSULTATION HOLD [C-17]: Station A may Consult with Station B when Route 1 is on soft hold.

4. THREE-WAY CALLING [T-2]: Station A cannot include restricted Station B in a THREE-WAY CALLING Connection with Route 1.
5. DAY/NIGHT CLASS OF SERVICE [D-15]: Restricted Station B may be allowed access to Route 1 when the system is placed in the Night mode. See DAY/NIGHT CLASS OF SERVICE [D-15] in Data Programming Manual - Business.
6. RESTRICTION FROM OUTGOING CALLS are constructed on a per Route Restriction basis. Two Route Restriction Indexes are constructed. RRI 2, Outgoing Calls via the ATTENDANT CONSOLE [A-3] and RRI 3, Outgoing Call via Direct Dial Access.

Programming

- STEP 1: **ASYD** - System Data 1, Index 75. Should the following commands be developed for Day/Night. 0/1: No/Yes.
Bit 0 - Develop ARSC/ARSCN for Day/Night?
Bit 3 - Develop ATDP/ATDPL/ATDPN for Day/Night?
System Data 2, Index 3, Bits 4 and 5. Should a Toll Restricted Station be routed to the ATTENDANT CONSOLE [A- 3] or receive Reorder Tone?
Reorder Tone: bit 4 = 0, 5 = 0.
ATTENDANT CONSOLE [A-3]:bit 4 = 1, bit 5 = 0.
Route Restriction Class
- STEP 2: **ARSC** - 16 different Route Restriction Classes may be constructed either allowing, denying, or Toll Restricting access to the various Routes of the stem. Assign the RSC using Route Restriction Indexes 2 (Outgoing via the ATTENDANT CONSOLE [A-3]) and 3 (Outgoing Direct).
- STEP 3: **ASDT** - Assign Tenant Number, station number, LENS and the Telephone Equipment Class (TEC) to the Station. This is used in regular Business Systems. Also assigned to the telephone is the Service Feature Restriction Class (SFC) and Route Restriction Class RSC.
- TN: Tenant Number
STN: Station Number
LENS: Line Equipment Numbers (six digits)
TEC: Telephone Class (1 -31)
- 1: DP (10PPS)
 - 2: PB
 - 3: DP/PB
 - 11: VMM
 - 12: Dterm
 - 13: Data Terminal via Dterm
 - 14: Hotline
 - 15: CAS Line
 - 16: Data Terminal via Data Module
 - 18: Virtual Line Appearance (for Dterm Multi-Line)
 - 19: TMM
 - 20: PSM
 - 23: ISDN Terminal
 - 27: Eight Conference Equipment
- RSC: Route Restriction Class (0-15)
- For assignment of RSC, ARSC.
SFC: Service Feature Restriction Class (0-15)
For assignment of SFC, ASFC.
-

S-52

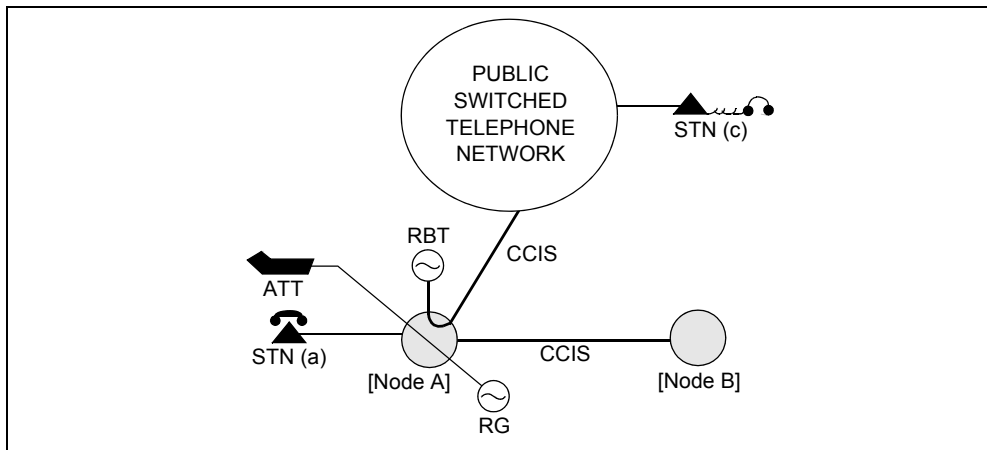
Serial Call - CCIS

General Description

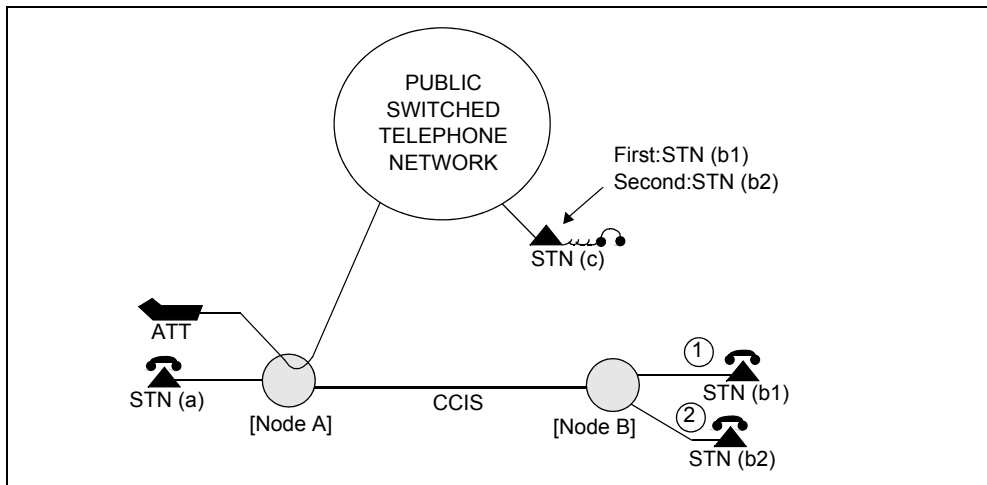
This feature is the Inter-Office Serial Call Service to be provided when the ATTCON and the Called Party respectively, belong to different Systems (Main System/Satellite System) in the CCIS Network.

Operating Procedure

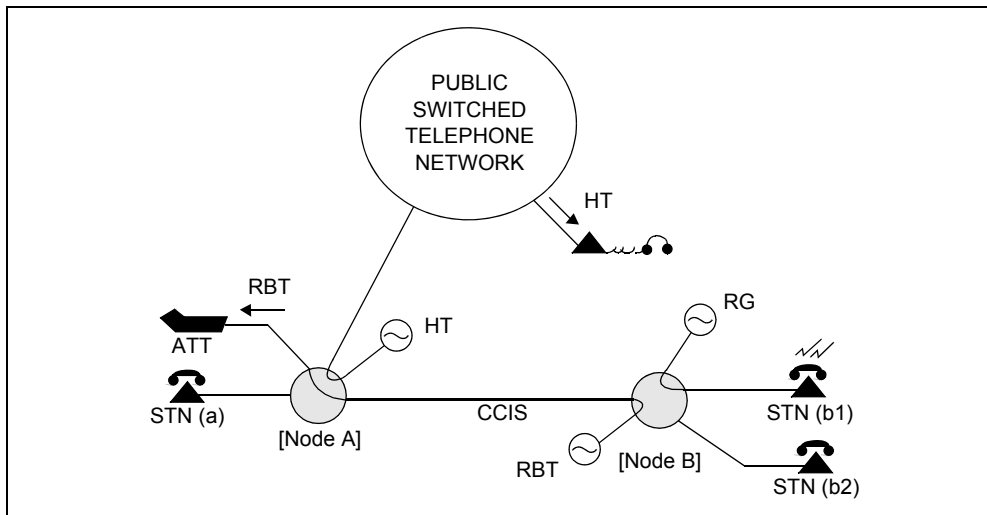
1. Station (c) in the Public Switched Telephone Network places a call to Node A and receives Ringback Tone. The Attendant in Node A receives an audible Tone.



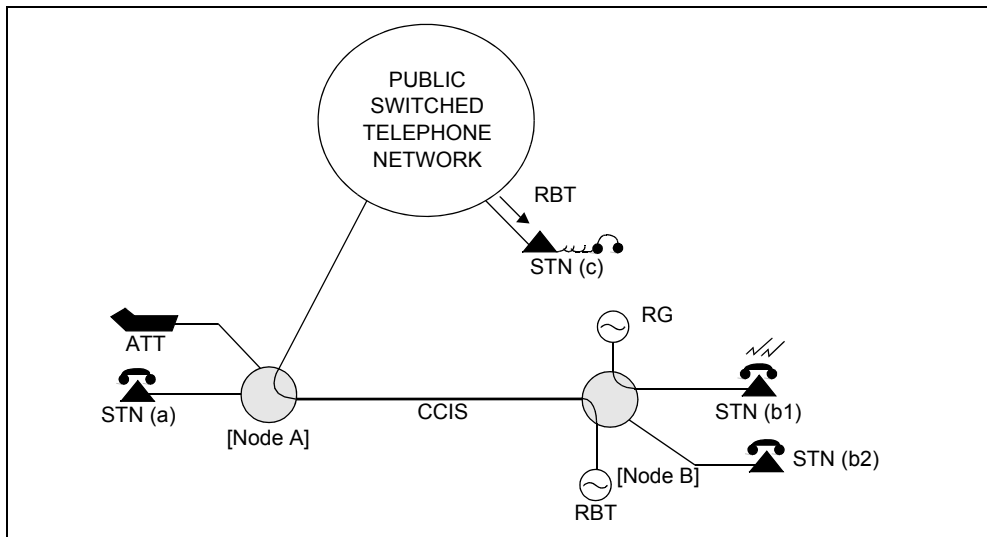
2. The Attendant presses the ANSWER key and is connected with Station (c). The user at Station (c) asks the Attendant to set up a connection first with Station (b1) and then with Station (b2) in Node B.



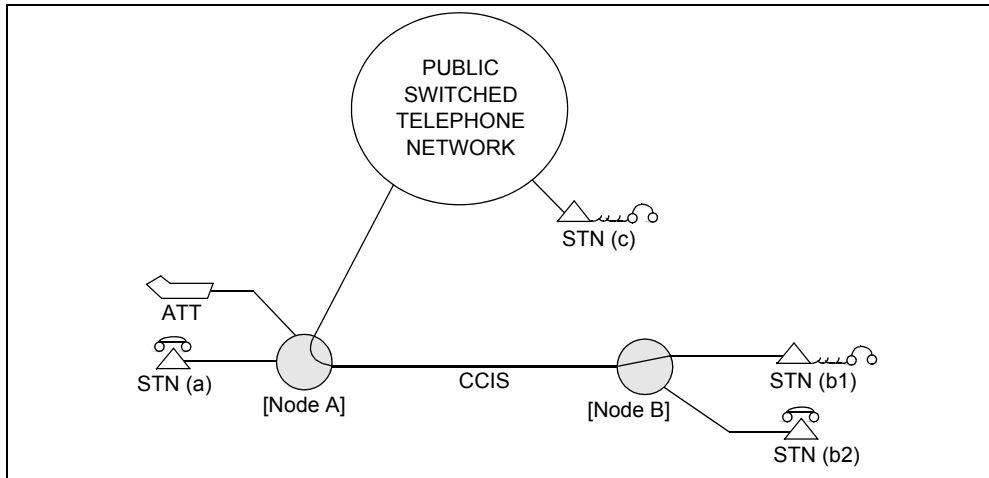
3. The Attendant dials Station (b1) in Node B. Receives Ringback Tone. Station (b1) is rung and Station (c) receives a hold tone.



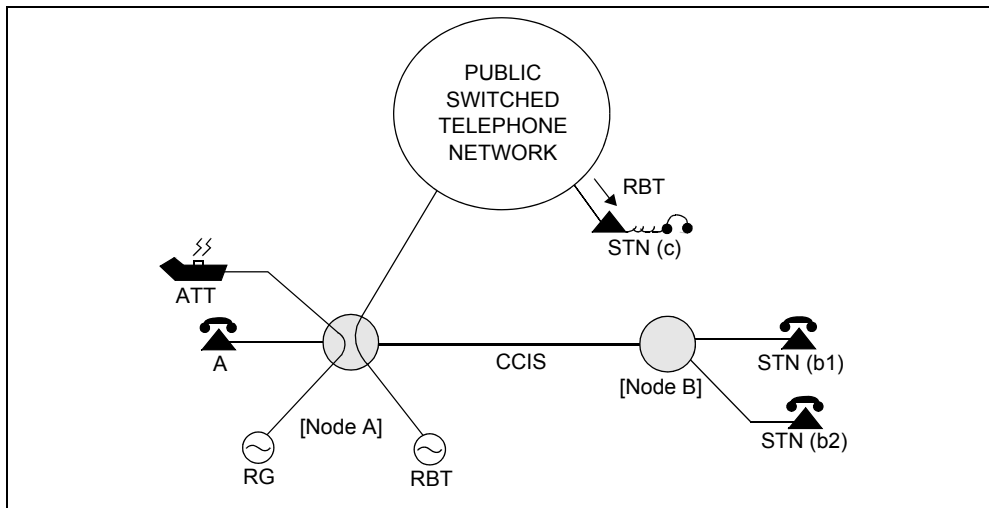
4. The Attendant presses the Serial Call (SC) key and Station (c) receives Ringback Tone. The Loop key flashes red.



5. Station (b1) answers and is connected with Station (c). The Loop key flashes red.



6. Station (b1) hangs up. On the Attendant Console, the lamps in the Loop key Section corresponding to the Incoming Call keep flashing at 60 IPM, and the bell rings. Station (c) receives Ringback Tone.



7. The Attendant presses the Loop key corresponding to the flashing lamps. Station (c) and the Attendant are connected again. The Attendant assists the connection to the next Station.

Service Conditions

1. If the Attendant enters a Loop that is already set up for a Serial Call, the service is automatically cancelled.
2. SERIAL CALL is not provided for Station-to-Station Calling.
3. SERIAL CALL can be provided on a TENANT SERVICE [T-12] basis.
4. A Called Station that has the SERIAL CALL feature activated will automatically recall the Attendant if the Station switch hook flashes.
5. This feature is not applicable for Tandem Connections.
6. The following services cannot be used while SERIAL CALL - CCIS is activated:

ATTENDANT CAMP-ON WITH TONE INDICATION - CCIS	[A-45]
BUSY VERIFICATION - CCIS	[B-9]
CALL HOLD - CCIS	[C-6]
EXECUTIVE RIGHT-OF-WAY	[E-8]

Programming

ASYD - System Data 1, Index 43, Bit 4:(1): Allow ATT to reenter Loop on Serial Call.
System Data 1, Index 186, Bit 4: At the time of Serial Call, 0/1: ATT Loop Wait/ATT Loop Release.
System Data 2, Index 7, Bit 2:(1) Serial Call Service.

Note: The Serial Call key is the button right of the DEST key.

S-53D

Service Display - D - CCIS

General Description

This feature allows a Desktop terminal user to receive LCD displays corresponding to the various features as they are initiated.

Operating Procedure

Each display is automatically generated when a service feature is initiated.

Service Conditions

1. Each display is controlled by System Data and is produced accordingly. A display may be allowed or denied in System Data programming on a per system basis.
2. The contrast on the LCD Display Panel is controlled by the UP/DOWN key of the Desktop terminal. Press the UP key for a darker image or the DOWN key for a lighter image.

Programming

STEP 1: **ASYD** - System Data 1, Index 78, Bit 1. Is SERVICE DISPLAY in service? 0/1: No/Yes.

S-55 Single-Digit Station Calling - CCIS

General Description

This feature allows single-digit station numbers to be assigned.

Operating Procedure

1. Lift the handset. Receive Dial Tone,
2. Dial the single-digit Station Code,
3. The Called Station will ring.

Service Conditions

1. The single-digit number must not duplicate the first digit of:
 - a.) Trunk Access Codes
 - b.) Feature Access Codes
 - c.) Other Telephone Numbers
2. Timing Start is not available with this feature.

Interactions

1. An entire Number Level is eliminated for each Station with one-digit access. Do not plan to have more than one or two such phones in a system.
2. The Attendant Console Busy Lamp Field (BLF) is not available for this feature.

Programming

- STEP 1: **ASYD** - System Data 1, Index 16, Bit 0. Assign this Bit as data "1", enabling station numbers.
- STEP 2: **ANPD** - Reserve a Number Level for Station Access. Assign an NND = 1, and BLF is 0.
- STEP 3: **ASPA** - For the desired station number, assign SRV = "STN: Station Number", NND is not required. Assign Connection Index (CI) of "N: Normal", "H: Hooking", and "B: Busy".
- STEP 4: **ASDT** - Assign the station number to a specific station within the system.

S-56 Station-Controlled Conference - CCIS

General Description

This feature allows any SV9500 station to establish a Conference through CCIS. The Conference can be any combination of Stations and Trunks (On-network and Off-network Parties).

Operating Procedure

To establish a Conference Call

1. The user wishing to establish the Conference (Conference Leader) Calls each party to be included and advises them of the Conference.
2. All participating Stations then call the Conference Extension Number or the Conference Leader, who will transfer them to the Conference Number.
3. The Conferees are automatically connected.
4. Any pushbutton Station within the Conference can dial 9 to lock out additional parties using the MMCB.

To release from a Conference Call

1. If any pushbutton Station in the Conference dials 0, all Conferees will be disconnected. Otherwise, the Conference is terminated after all parties have hung up.
2. Any individual Conferee can release from the Conference Call by hanging up. All other Conferees will remain connected.

Using the CFT card, the Conference Leader can dial "0" to lock out additional parties. Dialing "0" again will allow more parties to be connected. If the Conference Leader dials "#", all Conferences will be disconnected. Otherwise, the Conference is terminated after all parties have hung up.

Service Conditions

1. Conference Units are designed to provide adequate amplification, but the condition of the Central Office Connections will affect transmission.
2. Conference Unit Extension Numbers should be placed in a STATION HUNTING - TERMINAL [S-9] Group. Only the Pilot Number of this group should be published.
3. Each Conference Unit can provide up to an 8-Party Conference.
4. Override Services, such as BUSY VERIFICATION [B-3, B-9], ATTENDANT OVERRIDE [A-7], or EXECUTIVE RIGHT-OF-WAY [E-1, E-8], are denied to Stations engaged in a Conference Call.
5. An External Conference Unit MMCB and a 16LC card are required.
6. A CFT card may be used instead of a MMCB. A 16LC card is not required by the CFT card.
7. While a Desktop terminal is connected to one of conference ports in a conference trunk, if a DSS key where a station number for another conference port is assigned is pressed by mistake, the call is transferred to the conference port whose station number is assigned to the DSS Key. Even after the Desktop terminal is released, the connection between these conference ports is retained, and the conference trunk becomes unavailable.

To prevent this, do not assign station numbers for conference ports on any DSS keys.

Note: When assigning station numbers for conference ports on DSS keys is required for any operational reasons, set different tenant numbers to a Desktop terminal and a conference trunk respectively, and restrict TRI=0 (station within OGTM calls to a station within TMTN) in the ATNR command for tenants where the conference ports belong.

Interactions

The 16LC card provides a momentary open for all 16 Circuits. This is required to provide a release signal when line circuits are connected to External Equipment such as Conference and Page Units. This keeps Reorder Tone from being sent to the Conference Unit. This is not used in conjunction with a CFT card.

Programming

ASHP - Assign a Pilot Hunting Group using eight of line circuits on 16LC card. These ports are connected to an External Conference Unit, MMCB Model 37008. Make sure that SFI 4 [Executive Right-of-Way (Called)] is denied to the Conference Stations.

S-57 Station-to-Station Calling - CCIS

General Description

This feature allows any user to dial another Station directly, through CCIS, without operator assistance.

Operating Procedure

1. Lift the handset. Receive Dial Tone.
2. Dial the desired Telephone Number.

Service Conditions

1. The maximum number of digits per Telephone Number is eight.
2. Either Calling Party Release or First Party Release can be selected on a system basis.
3. Inter-Node STATION-TO-STATION CALLING - CCIS is based on the Route Restriction Class of the Calling and Called Parties.

Interactions

1. ATNR is required for STATION-TO-STATION CALLING - CCIS.
2. The normal 5dB PAD loss inserted for STATION-TO-STATION CALLING - CCIS may be eliminated on a per Station basis. For these Stations, assign a Service Feature Restriction Class that allows SFI 50. Remove 5dB pad for Off-Premises Extensions, OPX.

Programming

- STEP 1: **ASYD** - System Data 1, Index 4, Bits 2 and 3. Assign data "10" for First Party Release.
- STEP 2: **ATNR** - Assign for Tenant Restriction Index (TRI) 1. This index allows for Station-to-Station Calling between Stations with the same Tenant, and between different Tenants.

S-58 Station-to-Station Calling - Operator Assistance - CCIS

General Description

This feature allows a user to call another Station (through CCIS) with the help of the Attendant Console operator.

Operating Procedure

To place a Station-to-Station Call through the Attendant Console:

1. Lift the handset. Receive Dial Tone.
2. Dial the Operator Access Code (normally “0”).
3. Give the desired Telephone Number to the Attendant.
4. The Attendant dials the Telephone Number.
5. The Calling and Called Parties are connected when the Attendant presses the RELEASE key.

Service Conditions

1. The Attendant can drop out of the connection before or after the Called Party has answered.
2. When Loop Release is in service, AUTOMATIC RECALL [A-8] will not be activated if the Called Station does not answer.
3. The Attendant can connect the Calling Party to a fully restricted Station.
4. STATION-TO-STATION CALLING - OPERATOR ASSISTANCE - CCIS is based on the Route Restriction Class of the Calling and Called Station.
5. When Attendant Console presses the Loop key and returns to the conversation with the Calling Party after pressing the RELEASE key, a Three-Way Calling is established. If the Called Party doesn't answer the call, the Attendant Console and Calling Party hear RBT (they are engaged in a two-way conversation).

Interactions

1. ATNR is required for STATION-TO-STATION CALLING - OPERATOR ASSISTANCE - CCIS.
2. The normal 5dB PAD loss inserted for STATION-TO-STATION CALLING - OPERATOR ASSISTANCE - CCIS may be eliminated on a per Station basis. For these Stations, assign a Service Feature Restriction Class that allows SFI 50. Remove 5dB pad for Off-Premises Extensions, OPX.
3. The Attendant Console must first be provided.
4. ATTENDANT CAMP-ON WITH TONE INDICATION [A-1, 45]: The Attendant Console cannot camp-on a Station-to-Station Call.

Programming

- STEP 1: **ASYD** - System Data 1, Index 4, Bits 2 and 3. Assign data "10" for First-Party Release.
System Data 1, Index 186, Bit 1.
Restriction check based on the caller's restriction class when the outgoing trunk is using the No.7 CCIS in a tandem connection.
0/1 = No Check/Check
System Data 1, Index 508, Bit 6.
In case of the tandem connection (incoming trunk is using CCIS) is restricted because of the calling party's restriction class (ASYD, SYS1, Index 186, Bit 1=1):
0 =When Attendant Console pressed "Release" key before the originating party release the call, RSC information of the originating party is cleared.
1 =When Attendant Console pressed "Release" key before the originating party release the call, RSC information of the originating party is not cleared.
- STEP 2: **ATNR** - Assign for Tenant Restriction Index (TRI) 1. This index allows for STATION-TO-STATION CALLING-OPERATOR ASSISTANCE - CCIS between station within the same tenant, and between different tenants. The tenant in which the Attendant resides must also be allowed STATION-TO-STATION CALLING-OPERATOR ASSISTANCE - CCIS to assist in placing the call.
- STEP 3: **ARSC** - Assign a Route Restriction Class (RSC) that is allowed in Route Restriction Index (PRI) 2 to the station that activates this feature.
Allow trunk-to-trunk connection between the Incoming Route and the Outgoing Route.

S-59

Step Call - CCIS

General Description

This feature allows Inter-Office Step Call when the Calling Station and the Called Station belong to different Systems in the CCIS Network.

This feature allows Calling Station telephone to turn to hooking state automatically and calling station user to dial the access code to activate the features for line busy state by restricting this feature.

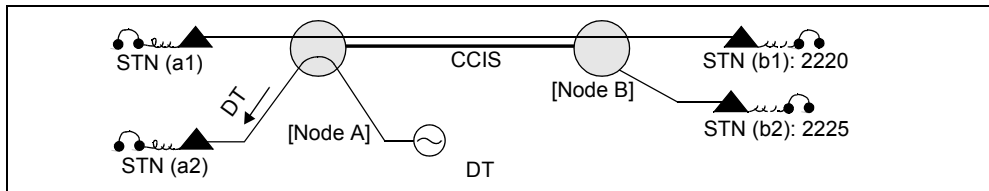
Note: Features for line busy state are as follows.

- Call Back - CCIS [C-44]
- Executive Right-of-Way - CCIS [E-8]
- Message Reminder - CCIS [M-34]

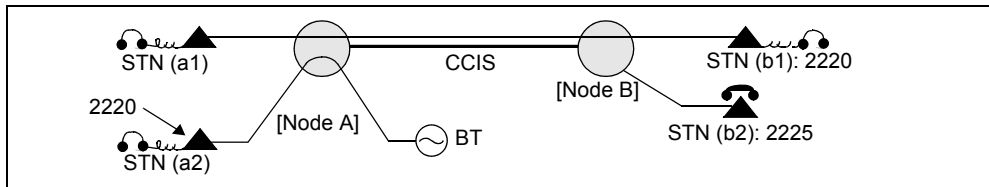
Operating Procedure

To activate Step Call - CCIS without Restriction

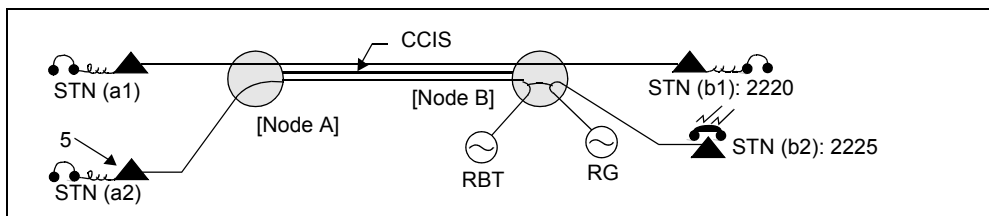
1. While Station (a1) and (b1) are engaging in a call, Station (a2) goes off-hook and receives Dial Tone.



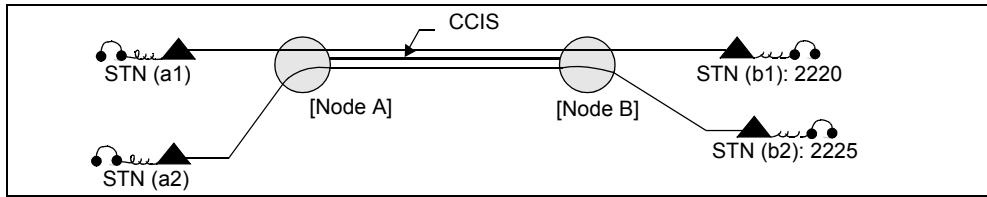
2. Station (a2) dials Number 2220 for Station (b1) and receives Busy Tone.



3. Station (a2) dials the lowest digit of the number (5 of N= 2225) of Station (b2) and receives Ringback Tone while Station (b2) is rung.

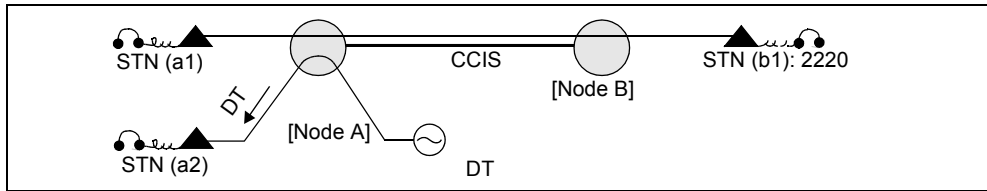


- Station (b2) answers and is connected with Station (a2).

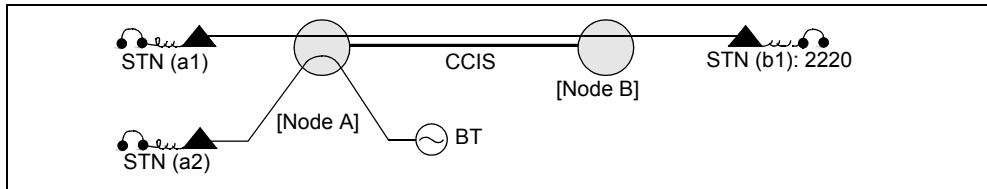


To activate Step Call - CCIS Restriction

- While Station (a1) and (b1) are engaging in a call, Station (a2) goes off-hook and receives Dial Tone.

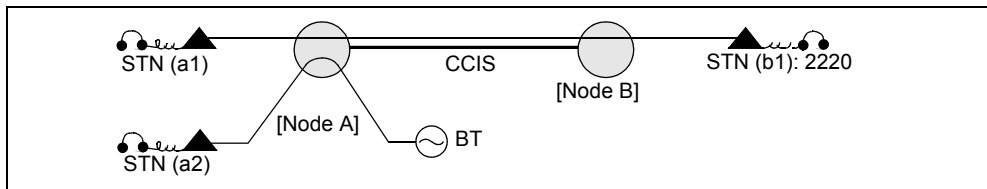


- Station (a2) dials Number 2220 for Station (b1) and receives Busy Tone.



- Station (a2) dials the Access Code to activate the feature for line busy state. Feature for line busy state will be activated.

Note: After dialing Access Code, follow the operation procedure for Call Back - CCIS [C-44], Executive Right-of-Way - CCIS [E-8], Message Reminder - CCIS [M-34].



Service Conditions

- This feature can be provided for all Stations and the ATTENDANT CONSOLE [A-3].
- STEP CALLING can be in any order, 1-9 or 9-1.
- If the second selected Station is also busy, STEP CALLING can continue until a Station rings.
- If a Station is set for any type of CALL FORWARDING - ALL CALLS, BUSY LINE, DON'T ANSWER, the CALL FORWARDING [C-2, C-3, C-5] will take effect.

5. This feature can be activated between Desktop terminals and SP Controlled SIP terminal/WLAN Handset (MH Series), under the following conditions:

Activated From	To	Availability
IP terminal	SP Controlled SIP terminal/WLAN Handset (MH Series)	Available
SP Controlled SIP terminal/WLAN Handset (MH Series)	IP terminal	Not available
SP Controlled SIP terminal/WLAN Handset (MH Series)	SIP Multiline terminal	Not available

6. When Step Call - CCIS Restriction is activated during the line busy state, the calling party can dial the Access Code (ASPA CI= "B: Busy") while hearing Busy Tone to activate the feature for line busy state. The following shows conditions for Step Call - CCIS Restriction.

Note: When the Step Call - CCIS Restriction is activated, the same restriction is applied to the following features.

- Call Back - CCIS [C-44]
- Executive Right-of-Way - CCIS [E-8]
- Message Reminder - CCIS [M-34]

- Step Call - CCIS Restriction is available by the terminals supporting Step Call - CCIS without restriction.
- Step Call - CCIS is restricted per tenant number by the system data assignment (ASYD SYS 2 Index 6 Bit 2=1).
- This service is not available when the calling party is Attendant Console.
- Step Call - CCIS will not be restricted if the calling party keeps a line on hold or the called party is in Line Lockout mode.
- When Step Call - CCIS is restricted, BUSY (Busy Tone is heard) is displayed on Desktop terminal LCD of calling party.
- When Step Call - CCIS is restricted, the operation from the calling party, SYS 1 Index 68 Bit 0=1: Last Digit + Access Code, is invalid.
- When Step Call - CCIS is restricted, features for line busy state can be activated only by dialing Access Code from the calling station while the called party is in line busy state. The features for line busy state cannot be activated by Function key or Soft key operation.
- Depending on the following data assignment, the SHF method and the availability of SPDT are changed.

Note: The setting of SHF method will be invalid when Step Call - CCIS Restriction is in service.

Step Call - CCIS Restriction (ASYD: Sys 2, Index 6, Bit 2)	SHF method (ASYD: Sys 1, Index 68, Bit 0)		Operation	Remark
Bit 2 = 0 (Out of service)	Valid	Bit 0 = 0	SHF (SPDT) + ACC	SPDT available
		Bit 0 = 1	Last Digit + ACC	SPDT not available
Bit 2 = 1 (In service)	Invalid	-	ACC	SPDT not available

7. System data that enables to receive digits when the destination is in busy (ASYDL, SYS1, Index1382 bit0 = 0) is required to use this feature through a SIP Handler Controlled SIP terminal.

Programming

ASYD - System Data 1, Index 68, Bit 0: SHF method (Step Call becomes effective).

To activate Step Call - CCIS Restriction

ASYD - System Data 2, Index 6, Bit 2: Step Call - CCIS Restriction 1= In service.

S-73

Supervisory Call - CCIS

General Description

This feature allows an Attendant, in a CCIS Network, to set Supervisory Call Status before releasing a Central Office Call to a Station. When the call is extended to a Station, the Loop will remain up until the Called Station answers. This overrides ATTENDANT LOOP RELEASE [A-6] on a per call basis.

Operating Procedure

1. The Attendant answers an Incoming Central Office Call.
2. The Attendant extends the call to the desired Station.
3. The Attendant presses the SVC key. The Automatic Recall Lamp.
4. The Called Station and Incoming Call are connected.
5. The Called Station switch hook flashes. The HOLD Lamp on the ATTENDANT CONSOLE [A-3] flashes at 60 IPM. If an Attendant position is available, an audible indication will be provided.
6. The Attendant presses the associated Loop key to return to the Called Station. The Calling Station is placed on hold (MUSIC ON HOLD [M-7]).

Service Conditions

1. If the Attendant enters a Loop that is already set up for a SUPERVISORY CALL - CCIS, the service is automatically cancelled and a Three-party Connection is established.
2. SUPERVISORY CALL - CCIS is not provided for Station-to-Station Intra-Node Calling.
3. SUPERVISORY CALL - CCIS can be provided on a TENANT SERVICE [T-12] basis.
4. When the station performs switchhook flash during SUPERVISORY CALL - CCIS, the Attendant Console is automatically recalled. At this time, if the Attendant Console answers the call by pressing the Loop key, SUPERVISORY CALL - CCIS is canceled.
5. If the Incoming Central Office Call or the Station releases during the SUPERVISORY CALL - CCIS, the Loop becomes idle at the ATTENDANT CONSOLE [A-3].
6. When the Attendant answers a recalled SUPERVISORY CALL, the service is complete. If the call is to be extended to another Station, SUPERVISORY CALL - CCIS can be re-established.
7. SUPERVISORY CALL - CCIS is provided for inter-node station-to-station calling in a CCIS network.
8. The SUPERVISORY CALL status will also provide simultaneous SERIAL CALL [S-15] [S-52] Service.
9. The following services are restricted while this service is activated.

AUTOMATIC CAMP-ON WITH TONE INDICATION - CCIS [A-45]	
BUSY VERIFICATION - CCIS	[B-9]
CALL HOLD	[C-6]
EXECUTIVE RIGHT-OF-WAY	[E-8]

Interactions

SUPERVISORY CALL - CCIS is normally used in a loop-release ATTENDANT CONSOLE [A-3] setup, so that calls that are normally released from the Attendant loop can be monitored on a per-call basis.

Programming

STEP 1: **ASYD** - System Data 2, Index 7, Bit 3. Supervisory Call Service. 0/1. Out/In Service. System Data 1, Index 43, Bit 4. Attendant re-enters Loop on Supervisory Call? 0/1: Restricted/Allowed.

T-26 Toll Restriction - 3/6-Digit - CCIS

General Description

This feature allows the System to restrict Outgoing Calls through CCIS according to specific Area and/or Central Office Codes. This restriction is determined on the basis of a three-digit Area Code or six-digit Area and Office Code Numbering Plan.

Operating Procedure

No manual operation is required.

Service Conditions

1. The programmed restriction pattern can consist of codes to be allowed or codes to be restricted.
2. TOLL RESTRICTION - CCIS is assigned on a CLASS OF SERVICE - INDIVIDUAL [C-15] basis.
3. The system can be programmed to ignore "1" prefixing in an Area Code Pattern.
4. When a Toll Call is denied, the Calling Party receives Reorder Tone. If desired, the Calling Party can be routed to the ATTENDANT CONSOLE [A-3].
5. A Restriction Table is assigned to each Trunk Group.
6. Tandem Calling does not override TOLL RESTRICTION - 3/6-DIGIT - CCIS.
7. TOLL RESTRICTION - 3/6-DIGIT - CCIS is assigned on a TENANT SERVICE [T-12] basis.
8. Through Dialing feature: The Through Dialing feature does not override the Toll Restriction feature.
9. The Toll Restriction feature is assigned on a per Line Class of Service basis. When provided, the feature is applicable on a per Trunk Group basis.

Interactions

1. When Toll Restriction is specified in ARRC, all possible dialing patterns must be assigned in ATDP. If Office Codes within an Area Code do not need to be restricted, allow the Area Code only. Always provide the system with the most economical configuration of digits when constructing TOLL RESTRICTION Tables.
2. In ARRC, ARI-A-RES must be programmed to allow two Trunks and a Station in a Conference. ARI-D-RES is programmed if the two Trunks are to remain connected after the Station drops off or if TOLL RESTRICTION applies to a direct trunk-to-trunk connection such as a TIE Line to DDD.
3. ROUTE ADVANCE [R-6] - Station A dials a Toll Call by accessing Route 1. Route 1 is busy and advances to Route 2. Station A is restricted from making this call on Route 2. The call will be restricted.
4. PASSING DIAL TONE [P-2] - The ATTENDANT CONSOLE [A-3] cannot use the PASSING DIAL TONE feature to allow a TOLL RESTRICTED Station to use a restricted Route.
5. OUTGOING TRUNK QUEUING [O-2] - When a Station is restricted from all other Routes, a Station may use this feature to queue a Trunk to complete a call over the unrestricted Route(s).
6. LEAST COST ROUTING [L-5] - Transactions in AFRS must be such that the digits dialed in the trunk-to-trunk connection should be recognizable in terms of choosing a Route. If a Route cannot be chosen, TOLL RESTRICTION - 3/6-DIGIT cannot be applied.

Programming

- STEP 1: **ASYD** - System Data 1, Index 75. Should the following commands be developed for Day/Night? 0/1: No/Yes.
 Bit 0 - Developed ARSC/ARSCN for Day/Night?
 Bit 3 - Developed ATDP/ATDPL/ATDPN for Day/Night?
 See DAY/NIGHT CLASS OF SERVICE [D-15] in Data Programming Manual - Business.
 System Data 2, Index 1, Bit 3. Does TOLL RESTRICTION apply to SPEED CALLING - STATION? 0/1: Yes/No.
 System Data 2, Index 1, Bits 4 and 5. If TOLL DENIAL is required assign these Bits as data "00". If TOLL DIVERSION is required assign these Bits as "01".
 System Data 2, Index 1, Bit 7. Does TOLL RESTRICTION apply to SPEED CALLING - SYSTEM? 0/1: Yes/No.
- STEP 2: **ARSC** - Assign Route Restriction Classes. When assigned to Stations these classes will determine whether or not a Station will be allowed access to a specific Route or specific dialing sequence. Assign the following:
 DAY/NIGHT:Day/Night mode
 D: Day mode
 N: Night mode
 TN: Tenant Number
 RT: Route Number
 RSC: Route Restriction Class
 RRI: Route Restriction Index
 0: IC Restriction via ATTENDANT CONSOLE [A-3] (DDD, etc.)
 1: IC Restriction Direct Connection (DID, etc.)
 2: OG Restriction via ATTENDANT CONSOLE [A-3]
 —> 3: OG Restriction Direct Connection (DDD, etc.)
 RES: Restriction Data
 0: Connection is restricted
 1: Connection is allowed
 —> 2: Connection is Toll Restricted
- STEP 3: **AMND** - This command is used to tell the system the total number of digits to expect based upon the first few DIGITS DIALED. Nine plus a Local Call will equal eight digits, Nine plus one plus an Area Code Call will equal 12 digits. Assign the DIALED DIGITS information and the corresponding Maximum Necessary Digits (MND) Data. Flag this data as a Toll Call (Toll Code), or a Local Call (Local Code).

N + DIALING

(N = 2-9, P = 0 or 1, A/X = 0-9)

CALL TYPE	DIGITS DIALED Note 1	DIGITS NEEDED	MND	TOLL
Local Calls	9- <u>N</u> NX-XXXX	9-N	8	Local Code
Near Distance Calls	9-1- <u>N</u> NX-XXXX	9-1-NN	9	Toll Code
Long Distance Calls	9-1- <u>N</u> PA-NXX-XXXX	9-1-NP	12	Toll Code

WITHOUT N + DIALING

(N = 2-9, P = 0 or 1, A/X = 0-9)

CALL TYPE	DIGITS DIALED Note 1	DIGITS NEEDED	MND	TOLL
Local Calls	9- <u>NN</u> X-XXXX	9-N	8	Local Code
Long Distance Calls	9- <u>NPA</u> -NXX-XXXX	9-NP	11	Toll Code

Note 1: The digits underlined are to be listed in the DC parameter. Overseas or Operator-assisted Calls should be listed with an MND = 24. Special dialing sequences such as 911 with an MND = 4 should also be listed.

STEP 4: **ATDP** - This command is used along with AARP. This command designates the digit codes that will be Allowed, Denied, or Toll Restricted. These codes are designated by Route Restriction Class. The Number of Necessary Digit Data is used to specify where a three or six-digit translation should begin. The digits to be examined for three or six-digit translation are listed in AARP. Assign the following:

D/N: Day/Night mode

→ 1: Day mode

2: Night mode

TDM/OG: Tandem Connection/Outgoing Connection

1: T (Tandem Connection)

→ 2: O (Outgoing Connection)

IC RT: Incoming Route Number (Tandem Connection only)

RSC: Restriction Class (0-15)

OG RT: Outgoing Route Number

DC: Destination (Area) Code (Maximum 11 digits)

TDI: Restriction Data*

0: Connection is restricted

1: Connection is allowed

2: 3/6-Digit Toll Restriction (Go to AARP)

3: Central Office Operator Call 9 + 0.

NND: Number of Necessary Digits (Used only when TDI = 2).

Note: TDI 4 may appear when the digits input under the DC parameter are incorrect. The switch is looking for more digits.

STEP 5: **AARP** - This command is used to designate digits translated for three and six-digit restriction. In ATDP, a digit code is listed. The system will examine these digits and if the Restriction Code (TDI) is assigned as data "2," Toll Restriction, the program will do two operations. The first is to examine the NND value. If NND is "6," then the AARP information will apply to the sixth digit dialed. For example, assume 9-1-301-555-1212 is dialed. AARP will look at the sixth digit dialed for translation. Translation will begin with 555.

Assign the following:

OGRT: Outgoing Route Number

RSC: Route Restriction Class

FLAG: 1: three Digits
2: six Digits
DC: 555
RES: Restriction Data
0: Restricted
1: Allowed

Note: Only three digits or six digits may be entered for the DC parameter of this command.

EXAMPLES OF TOLL RESTRICTION

Listed below are several examples of the use of TOLL RESTRICTION. For these examples refer to the following sample user requirements:

RSC 1:Allowed Local only.

RSC 2:Allowed Local plus Area Codes 718, 212, 201, and 914

RSC 3:Allowed Local plus Area Codes 718, 212, 201, and Office Codes 239, 465 and 798 only within the 914 Area Code.

RSC 4:Allowed Local plus all Area Codes except 808, 213, 408, 714.

RSC 5:Allowed Local plus all Area Codes but restricted from 976 within each Area Code.

To simplify the examples, only one Route, (Route 1, DDD) will be used. There will be no difference between Day and Night Restrictions. 1 + dialing is assumed with an LCR Access Code of 9.

Example 1 - RSC 1 Assignment

ATDP Command

TDM/OG:2 (O: Outgoing Connection)

D/N: 1 (Day Mode)

OG RT:1 RSC:1

DC: 92 TDI:1 (Connection is allowed)

Repeat these same assignments for Digit Codes (DC) 93 - 99 to allow all Local Office Codes.

Notice that assignments for Digit Codes 90 and 91 which cover Operator Calls and all 1 + Area Codes Calls are not assigned. Digit Codes (DC) which are not assigned are automatically restricted.

AARP Command

Not required. This command is only required when TDI = 2 is assigned in ATDP.

Example 2 - RSC 2 Assignment

ATDP Command

TDM/OG:2 (O: Outgoing Connection)

D/N: 1 (Day Mode)

OG RT:1 RSC:2

DC: 92 TDI:1 (Connection is allowed)

Repeat these same assignments for Digit Codes (DC) 93 - 99 to allow all Local Office Codes.

To allow Area Codes 718, 212, 201, and 914 repeat ATDP for the following Digit Codes:

DC: 91718 TDI: 1 (Connection is allowed)

DC: 91212 TDI: 1 (Connection is allowed)

DC: 91201 TDI: 1 (Connection is allowed)

DC: 91914 TDI: 1 (Connection is allowed)

This allows these specific Area Codes. All Area Codes not assigned are automatically restricted.

AARP Command

Not required.

Example 3 - RSC 3 Assignment

ATDP Command

TDM/OG:2 (O: Outgoing Connection)

D/N: 1 (Day Mode)

OG RT:1 RSC:3

DC: 92 TDI:1 (Connection is allowed)

Repeat these same assignments for Digit Codes (DC) 93 - 99 to allow all Local Office Codes.

To allow Area Codes 718, 212, and 201 repeat ATDP for the following Digit Codes (DC):

DC: 91718 TDI: 1 (Connection is allowed)

DC: 91212 TDI: 1 (Connection is allowed)

DC: 91201 TDI: 1 (Connection is allowed)

To allow Office Codes 239, 465, and 798 within the 914 Area Code, assign ATDP as follows:

TDM/OG:2 (O: Outgoing Connection)

D/N: 1 (Day Mode)

OG RT:1 RSC:3

DC: 91914 TDI:2 (Go to AARP)

NND: 6 (Begin restriction after 91914, the sixth digit dialed.)

AARP Command

OGRT: 1 RSC:3FLAG: 1

DC: 239 RES:1 (Connection is allowed)

Repeat these same assignments for the following Digit Codes.

OGRT: 1 RSC:3 FLAG: 1 DC: 465 RES: 1

OGRT: 1 RSC:3 FLAG: 1 DC: 798 RES: 1

This allows Office Codes 239, 465, and 798 to Area Code 914. All other Office Codes are automatically restricted.

Note: That this method of assignment allows Office Codes 239, 465 and 798 to any Area Code that is assigned as TDI = 2 in ATDP.

For example, if the assignment for Area Code 718 was changed from TDI = 1 (allowed) to TDI = 2, then the Office Codes 239, 465, and 798 would also be allowed for Area Code 718.

If different Office Codes are to be allowed in the 718 Area Code (for example 623 and 567) then the assignments for 914 and 718 must be made as indicated in ATDP.

ATDP Command

TDM/OG:2 (O: Outgoing Connection)

D/N: 1 (Day Mode)

RSC: 3 OG RT:1

DC: 919 TDI:2 (Go to AARP)

NND: 3

TDM/OG:2 (O: Outgoing Connection)

D/N: 1 (Day Mode)

RSC: 3 OG RT:1

DC: 917 TDI:2 (Go to AARP)

NND: 3

This tells the system to check AARP Tables for restrictions for all Area Codes beginning with 9 and 7.

AARP Command

OGRT: 1 RSC:3FLAG: 2

DC: 914239 RES:1 (Connection is allowed)

DC: 914465 RES:1 (Connection is allowed)

DC: 914798 RES:1 (Connection is allowed)

OGRT: 1 RSC:3 FLAG: 2

DC: 718623 RES:1 (Connection is allowed)

DC: 718567 RES:1 (Connection is allowed)

This allows just these Office Codes within these particular Area Codes. All other Area Codes beginning with 7 or 9 are also restricted. If at this point allowing Area Code 714 is desired, assign AARP as follows:

AARP Command

OGRT: 1 RSC:3 FLAG:1

DC: 714 RES:1 (Connection is allowed)

Example 4 - RSC 4 Assignment

ATDP Command

TDM/OG:2 (O: Outgoing Connection)

D/N: 1 (Day Mode)

OG RT:1 RSC:3

DC: 92 TDI:1 (Connection is allowed)

Repeat these same assignments for Digit Codes (DC) 93 - 99 to allow all Local Office Codes.

TDM/OG:2 (O: Outgoing Connection)

D/N: 1 (Day Mode)

OG RT:1 RSC:4

DC: 912 TDI:2 (Go to AARP)

NND: 3

DC: 913 TDI:2 (Go to AARP)NND: 3

DC: 914 TDI:2 (Go to AARP)NND: 3

\\\ (Through) \\\

DC: 919 TDI:2 (Go to AARP)NND: 3

This tells the system to check AARP Tables for all Area Code Restrictions.

AARP Command

OGRT: 1 RSC:4FLAG:1DC: 808 RES: 0*

OGRT: 1 RSC:3FLAG:1DC: 213 RES: 0*

OGRT: 1 RSC:3FLAG:1DC: 408 RES: 0*

OGRT: 1 RSC:3FLAG:1DC: 714 RES: 0*

OGRT: 1 RSC:3FLAG:2DC: 000000 RES: 1**

* This assignment restricts the Area Codes listed.

**DC: "000000" indicates all other Destination Codes except those already assigned Destination Codes.

RES: Restriction Data: (0/1)

0: Not assigned Area Codes are restricted.

1: Not assigned Area Codes are allowed.

The above assignment allows all other dialing patterns (Area Codes) except 808, 213, 408, and 714.

Example 5 - RSC 5 Assignment

ATDP Command

TDM/OG:2 (O: Outgoing Connection)

D/N: 1 (Day Mode)

OG RT:1 RSC:3

DC: 92 TDI:1 (Connection is allowed)

Repeat these same assignments for Digit Codes (DC) 93 - 99 to allow all Local Office Codes.

TDM/OG:2 (O: Outgoing Connection)

D/N: 1 (Day Mode)

OG RT:1 RSC:5

DC: 912 TDI:2 (Go to AARP)

NND: 6

DC: 913 TDI:2 (Go to AARP)

NND: 6

DC: 914 TDI:2 (Go to AARP)

NND: 6

\\\ (Through) \\\

DC: 919 TDI:2 (Go to AARP)

NND: 6

This tells the system to check AARP Tables for all Area Code Restrictions.

AARP Command

OGRT: 1 RSC: 5 FLAG: 1

DC: 976 RES: 0 (Restricted)

OGRT: 1 RSC: 5 FLAG: 2

DC: 000000 RES: 1 (Allowed)

This will restrict 976 and allow every other Office Code.

ARRC Command

This command provides trunk-to-trunk connection abilities according to the requirements of the system. The applicable Trunk-to-Trunk will be those connections provided by parameter ARI-D-RES Direct Connection. For example, REMOTE ACCESS TO THE SYSTEM [R-2] and TANDEM SWITCHING OF TIE TRUNKS - 2/4 WIRE [T-1].

ICRT: Incoming Route Number

OGRT: Outgoing Route Number

ARI-A-RES: Alternative Route Index

This allows/restricts Trunk-to-Trunk and Tandem Connection via the ATTENDANT CONSOLE [A-3] (and Stations).

→ D: This allows/restricts Trunk-to-Trunk and Tandem Connections via direct dial access from a Station.

RES: Restriction Data

Attendant Console (ARI-A-RES)

0: Alternate Routing is restricted.

- 1: Alternate Routing is allowed.
Dial Access (ARI-D-RES)
0: Alternate Routing is restricted.
1: Alternate Routing is allowed.
—→ 2:Toll Restriction is required.

ATDP Command

When TOLL RESTRICTION is required for trunk-to-trunk connections, ATDP will provide all digit information. Up to 11 digits may be listed as being allowed for a specific trunk-to-trunk connection. TDI = 2 should not be assigned because AARP cannot be used for Tandem Connections.

Example 6 - Trunk to Trunk Connection

(Allow all Local Calls)

ATDP Command

TDM/OG:1 (T: Tandem Connection)

IC RT: 2 OG RT:1

DC: 92 TDI:1 (Connection is allowed)

Repeat these same assignments for Digit Codes (DC) 93 - 99 to allow all Local Office Codes.

Notice that assignments for Digit Codes 90 and 91 which cover Operator Calls and all 1 + Area Code Calls are not assigned. Digit Codes (DC) which are not assigned are automatically restricted.

Example 7 - Trunk to Trunk Connection

(Allow Limited Area Codes)

ATDP Command

TDM/OG:1 (T: Tandem Connection)

IC RT: 2 OG RT:1

DC: 92 TDI:1 (Connection is allowed)

Repeat these same assignments for Digit Codes (DC) 93 - 99 to allow all Local Office Codes.

To allow Area Codes 718, 212, 201, and 914 repeat ATDP for the following Digit Codes:

DC: 91718 TDI: 1 (Allow)

DC: 91212 TDI: 1 (Allow)

DC: 91201 TDI: 1 (Allow)

DC: 91914 TDI: 1 (Allow)

This allows these specific Area Codes. All Area Codes not assigned are automatically restricted.

T-27 Trunk Answer from Any Station - CCIS

General Description

This feature allows any Station not restricted from Incoming Calls to answer Incoming Calls when the network is in Night mode.

When this feature is activated, Incoming Central Office Calls will activate a common TRUNK ANSWER FROM ANY STATION (TAS) Signal. By dialing a specified code, any Station may answer the call and extend it to any other Station in the CCIS Network using CALL TRANSFER - ALL CALLS - CCIS [C-50].

Operating Procedure

To answer an Incoming Call

1. The TAS Signal sounds indicating an Incoming Call.
2. Lift the handset and receive Dial Tone.
3. Dial the TAS Access Code. The Incoming Call is connected.

Service Conditions

1. An Incoming Call terminating in the Night mode will be forwarded to the TAS Equipment of the Terminating Node.
2. An Incoming Call to the Main Node in the Night mode will not be forwarded to TAS Equipment in a Satellite Node through the CCIS Network. Therefore, the Main Node must provide TAS Equipment for Incoming Central Office Calls.
3. When Night mode is set at the Main Node, Satellite Nodes not equipped with an ATTENDANT CONSOLE [A-3] can automatically be set to the Night mode by CENTRALIZED DAY/NIGHT MODE CHANGE - CCIS [C-56] Service.
4. A TAS indicator can be provided for each Node's Incoming Trunks.
5. An Incoming Call terminating in the Night mode will have the following order of priority:
 - a.) NIGHT CONNECTION - FLEXIBLE - CCIS [N-16],
 - b.) NIGHT CONNECTION - FIXED - CCIS [N-15],
 - c.) TRUNK ANSWER FROM ANY STATION - CCIS [T-27]. Incoming calls will overflow to TAS [T-27], if this feature is provided, when the NIGHT CONNECTION FIXED/FLEXIBLE [N-1] [N-2] [N-15] [N-16] stations are busy.
6. TAS indication will be activated for the LDN, WATS, FX, CCSA Incoming Calls.
7. TAS indication can be provided on a TENANT SERVICE [T-12] basis.
8. Individual Stations can be denied access to this feature via CLASS OF SERVICE - INDIVIDUAL [C-15].
9. If the system is changed to the Day mode while a TAS Call is being indicated, a call terminating at a Node without an ATTENDANT CONSOLE [A-3] will not be transferred through the CCIS Network to an ATTENDANT CONSOLE [A-3].
10. This feature is also referred to as Universal Night Answer (UNA).
11. The TAS indicator must be locally provided.
12. All ATTENDANT CONSOLES [A-3] assigned to handle calls for a particular group of Stations (whether or not they belong to the same TENANT SERVICE [T-12]) must have NIGHT CONNECTION [N-15, 16] set before this feature will be activated.

Interactions

The system must be in the Night mode for TAS to operate. Take into consideration the type of ATTENDANT CONSOLE [A-3] system that is in service. Take special care when setting the resistance value via switch settings on the ATI circuit card.

Programming

- STEP 1: **ASYD** - System Data 1, Index 68, Bit 2. Type of TAS ringing; 0/1: Continuous/Interrupted.
System Data 1, Index 77, Bit 0. Is Day/Night change accomplished by removing ATTENDANT CONSOLE [A-3] handset? 0/1: No/Yes.
- STEP 2: **ANPD** - Reserve a Number Level for Service Feature Access. Select Normal Service (N), Hooking Service (H), or Busy Service (B) from the combo box for Connection Indexes. Assign NND in accordance with a predetermined Numbering Plan.
- STEP 3: **ASPA** - Assign an Access Code to TRUNK ANSWER FROM ANY STATION, SRV = "SSC: Service Code", SID = 16 TAS. Connection Status CI = "N: Normal".
- STEP 4: **ASFC** - Assign Station to receive TRUNK ANSWER FROM ANY STATION a Service Feature Restriction Class that allows SFI 13 [Trunk Answer (TAS)].
- STEP 5: **ACFR** - Allow the types of Incoming Calls to be answered by TAS listed in Call Class Index (CCI) a Transfer Service Feature Index of 5, TAS. The Call Class Indexes will correspond to ARTD, CDN 6:TCL; Trunk Class parameter.
CCI: 1 - LDN
 2 - DDD 2
 3 - DDD 3
 4 - TIE Line
 5 - DDD 4
- STEP 6: **ATAS** - Assign the TAS Circuit to the TN, LP, PIR, and the CKT Number 0/1 based on the Circuit Location. TAS CKT Number = ATTENDANT CONSOLE [A-3] CKT Number.

U-5 Uniform Numbering Plan - CCIS

General Description

In a CCIS Network, a Uniform Numbering Plan enables a user to call any other Station in the network using a Uniform Numbering System. Two alternative Numbering Plans are provided:

- In the first plan, the station user dials a four or five-digit station number. The Node in which the Called Station is located is identified by either the first digit or the first two digits of the station number. More than one Location Number can be assigned to a particular Node.
- In the second plan, the user dials a single-digit Access Code, a three-digit Code identifying the particular Node in the CCIS Network, and a two, three, or four-digit Station Code.

Operating Procedure

To call a Station at another Office using Numbering Plan 1:

1. Lift the handset. Receive Dial Tone.
2. Dial the four or five-digit Telephone Number.
3. The call is routed to another node according to programmed routing information, and the called Station rings.
4. The Called Station answers and the parties are connected.

To call a Station at another Office using Numbering Plan 2:

1. Lift the handset. Receive Dial Tone.
2. Dial Access Code + Office Code - Station Code:
X-XXX-XX, or
X-XXX-XXX, or
X-XXX-XXXX
3. The call is routed to the Node designated by the Office Code. The Called Station rings.
4. The Called Station answers, and the parties are connected.

Service Conditions

1. Numbering Plan 1:
 - a.) All Telephone Numbers must be four or five digit numbers.
 - b.) The location of the System can be identified by either the first digit or the first two digits of the Telephone Number.
2. Numbering Plan 2:
 - a.) The Calling and Called Party's LCD can display the Office and Station Codes or the Station Code only. This option is selected via PCPro.
 - b.) Within the same System, a Station-to-Station Call is made by simply dialing the two, three, or four-digit Telephone Number.
3. The maximum number of digits per Telephone Number is eight.

Interactions

If seven-digit Uniform Numbering Plans are used, an Access Code to the CCIS Network may be added. Thus, a total of eight digits will be dialed. For example, a user in Illinois wishes to reach a CCIS station number (753-4526) in New York. Two options exist for network setup. The digit “8” may be programmed as a CCIS Network Access Code, such as a Least Cost Routing Access Code. The user then dials 8-753-4526. With this option, the 8 is assigned as the CCIS Access Code. Digits 8-753 and all other CCIS Office Codes must then be listed in AFRS. The second option is to program 753 as the CCIS Access Code, as in an LCR Access Code. If 753 is assigned as the CCIS Access Code, then 753 and all other CCIS Office Codes must be listed in AFRS. In this case, the user only dials 753-4526.

Programming

STEP 1: **ARTD** - The CCIS TIE Line Voice/Data Route(s) over T-1 should be assigned as follows:

RT:1

2-ONSG	:2	4-INSG	:2	5-TF	:3	6-TCL:4	7-L/T:1
8-RLP	:2	13-AC	:1	15-LSG	:12	28-ANS:1	30-PAD:7 Optional
43-BT	:1	49-TRKS	:0/1*	50-DPLY	:1	(Note 1)	

Note: When data “0” is assigned at one Office, data “1” must be assigned at the Opposite Office.

Note 1: Up to 8 digits of a Caller ID can be shown on the display.

The CCIS TIE Line Signal Link Route(s) should be assigned as follows:

RT:2

6-TCL	:4	7-L/T	:1	9-TQ	:*0	15-LSG:13	30-PAD:7 fixed

Note: * CDN 9:TQ is optional. Only use if an LCR Route requires Trunk queuing.

Note: To change the data for existing route (RT), initialize the circuit card.

STEP 1: **ARTD** - The LCR Flag Route should then be assigned as follows:

RT:31

6-TCL	:1	7-L/T	:1	9-TQ	:1	13-AC	:1

Note: To change the data for existing route (RT), initialize the circuit card.

STEP 2: **ATRK** - Assign the LENS of the CCIS Voice/Data Trunks, Route Number, Trunk Number, and Tenant Number. The Trunk LENS will correlate to Channels 8-31 of the sub-highway in which the 1.5 M DTI/CCT is mounted when 1.5 M DTI/CCT is used. The LENS corresponding to the last level of the last group is reserved for the CCIS Signal Link Route.

STEP 3: **MBTK** - Assign the Make Idle status to the CCIS Voice/Data Trunk.
Numbering Plan

STEP 4: **ANPD** - Reserve a Number Level for LCR. This level should correspond to the station numbering plan of the Opposite Office. Select Normal Service (N) or Hooking Service (H) from the combo box for Connection Indexes. Number of Necessary Digits will be the length of the digits assigned in ASPA.

STEP 5: **ASPA** - Assign the Access Code of the LCR Flag Route. Type of service, SRV= “LCR: Least Cost Routing”, LEAST - COST ROUTING - 3/6 DIGIT [L-5]. Assign the LCR Flag Route (usually Route 31).

STEP 6: **ARNP** - Assign the Physical Route Numbers (CCIS Voice TIE Lines), as assigned in ARTD, and

relate these Routes to the LCR Access Code as assigned in ASPA for SRV = "LCR: Least Cost Routing". The LCR Access Code is the first digit of the Opposite Offices' station numbers.

STEP 7: **AMND** - Assign the Maximum Necessary Digits the system must translate for a correct Route selection. In this case, assign the first digit of the opposite system's station numbering and the number of digits in the station numbering plan.

STEP 8: **AFRS** - List the dialing patterns in groups that will be served by a specific sequence of Routes. In this case, the CCIS Routes and the first digit of the station numbering will be considered. Also, if overflow to DDD is used, the Off-net Numbers must be listed. These numbers will include the added digits from AOPR. Assign this dialing sequence to an OPR.

STEP 9: **AOPR** - AFRS designates the dialing sequence and the OPR to be selected. The AOPR defines the Routes and in what order these Routes will be selected. In this case, the DTI Routes will be assigned. Also, it may be desirable to include DDD Trunks as an overflow. Assign the following parameters:

TDC Number - Time-of-Day Pattern Change. Usually, this parameter does NOT apply and data "0" must be entered. However, if different OPRs will be required as a function of time for an AFRS assignment, designate 1-7 for which Time-of-Day Pattern Change Number (TDC NO) this OPR is assigned.

OPR Number - Outgoing Pattern Route. The number referenced in AFRS, consisting of a series of Routes to be chosen based on number dialed.

Route Advance Number (RA) - The order in which a Route will be selected (0-7). Usually only one or two Routes are involved with DTI TIE lines.

Route Advance End Display - The last Route in the Route Advance Group. Indicate with data "0". All other Routes are indicated by data "1".

Route Number - The Physical Route Number to be selected, as programmed in ARTD.

Skip Digits - Do not skip any digits. Usually the LCR Access Code is the opposite system's Station Level. This digit must be sent to the Opposite System.

If dialing Pattern 2 is being used from the final Node, send only the two, three, or four-digit station number before the Node dialed.

Pattern Number Location - Digits to be added after translating the dialed digits in AFRS. Go to AADC. This is usually not applicable to the DTI Trunks, but will be used for DDD Overflow. Add a 1 if required, and possibly the Area Code.

Overflow Tone - Assign if a Tone is wanted for the Last Choice Route. If so, assign data "1" for DDD. Assign the primary RSC as data "0".

STEP 10: **ARRC** - Assign trunk-to-trunk connection capabilities between the various CCIS Routes within each Node of the network. Assign for both Alternative Route Index ARI-D-RES, Direct Connection and ARI-A-RES, via the Attendant Console. Assign RES: 1, allowed.

STEP 11: **ARNP** - For Pattern 2 dialing, Route 0 must be used to assign the Access Code and an Office Code to this Office. This information is transmitted to the Desktop terminal display at the other Offices of the network. Therefore, when an Incoming Call is received at a Distant Office, the Called Party will recognize which Office is originating the call. This information will also appear in characters 96-103 in the SMDR output for an OG Call Record. It is also required for MESSAGE REMINDER - CCIS [M-34].

V-7

Voice Call - CCIS

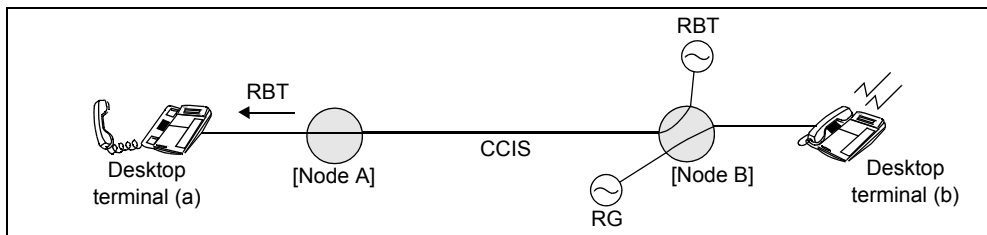
General Description

This feature allows Inter-Office VOICE CALL when the Calling Desktop terminal/Single line Station and the Called Desktop terminal belong to different Systems in the CCIS Network.

Operating Procedure

From a Desktop terminal to a Desktop terminal:

1. Desktop terminal (a) places a call to Desktop terminal (b) through a CCIS Line. Receives Ringback Tone. Desktop terminal (b) rings.



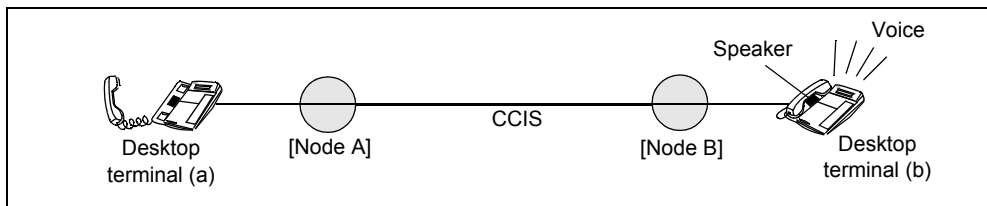
2. Desktop terminal (b) still does not answer. Desktop terminal (a), then presses the VOICE key and sends a tone to Desktop terminal (b). The LCD on Desktop terminal (a) displays:

VOICE XXXX

called Desktop terminal

Note: If the MIC key on Desktop terminal (a) is turned on, Desktop terminal (a) can talk with Desktop terminal (b) hands-free.

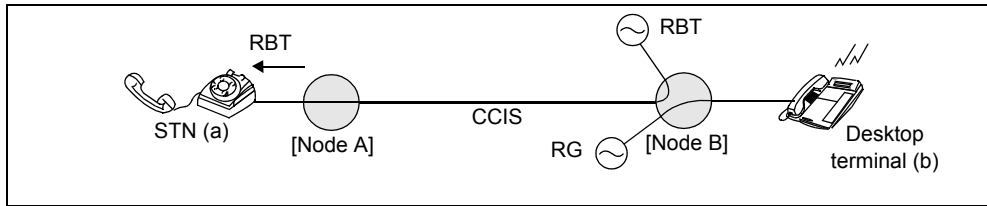
3. Desktop terminal (a) talks with Desktop terminal (b) over the speaker.



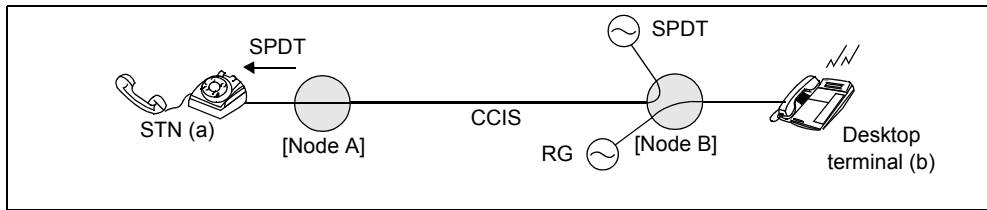
Note: If the MIC key on the Desktop terminal (b) is turned on, Desktop terminal (b) can talk with Desktop terminal (a) hands-free.

From A Single-Line Station To A Desktop terminal:

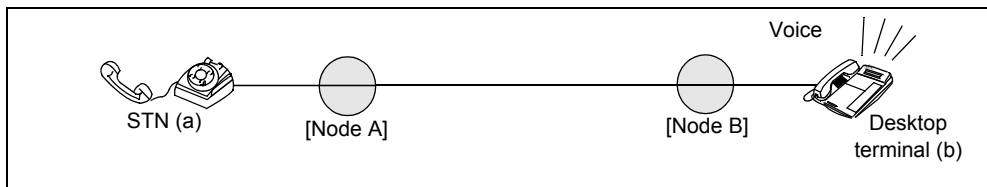
1. Station (a) places a call to Desktop terminal (b) through a CCIS Line and receives Ringback Tone while Desktop terminal (b) is ringing.



2. Station (a) switch hook flashes and receives Special Dial Tone. Desktop terminal (b) still does not answer.



3. Station (a) dial the Access Code of VOICE CALL Service and sends out a Signal Tone to Desktop terminal (b) over the speaker. Desktop terminal (b) talks with Station (a) via the speaker.



Service Conditions

1. Once a VOICE CALL is executed, the message "VOICE on Multi Line set" is displayed on the Called Station.
2. Call Forwarding - All Calls/ -Busy Line/ -Don't Answer can be serviced by VOICE CALL.
3. VOICE CALL will terminate at the Station whose My Line equals the extension called.
4. When a called party is using a headset (in the headset mode), a VOICE CALL over CCIS cannot be made.

Programming

Setting by SHF + Access Code (Individual Station):

- STEP 1: **ASYD** - System Data 1, Index 17, Bit 0: (1)
SHF + ACC Code during RBT.
- STEP 2: **ANPD** - Assign Minimum Necessary Number of Digits for the first number of the Access Code of Voice Call.
- STEP 3: **ASPA** - Assigns Access Code of Voice Call.
CI= "H: Hooking", SIDA= 41, SRV= "SSCA: Service Code Appendix"
- STEP 4: **ASFC** - Assign a Service Feature Restriction Class that allows SFI = 52 (Voice Call Using an Access Code) to Single Line Stations which will be allowed to initiate Voice Calls.

To refuse Voice Call:

Assign a Service Feature Restriction Class allowing SFI = 93 (Voice Call Restrict) to Desktop terminals that do not allow access by Voice Call.

Setting by VOICE Button:

- STEP 1: **AKYD** - Assign data to a Feature key. (Voice Call [14])
- STEP 2: **ADSL** - Assign SN = 2 (Originating; RBT Connection) and a Feature key (Voice Call; [14]).
This command is used for assigning the function to each Soft key.

UNIVERGE SV9500

Data Programming Manual - CCIS

NWD-165801-001

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